



WATER-RIGHT DOCKET

Fort Davis National Historic Site

Docket No: 1

HEADQUARTERS WELL

Supporting Hydro Data

00-00-1973: texas water development board: survey of ground and surface water use

TEXAS WATER DEVELOPMENT BOARD

P. O. Box 13087, Capitol Station
AUSTIN, TEXAS 78711

SURVEY OF GROUND AND SURFACE WATER USE 1973

PLEASE TYPE
OR PRINT ALL
ANSWERS

Please indicate any changes in
name and address or ownership
TWDB CODE NO. 295300

PLEASE NOTE: ALL OF THE FOLLOWING QUESTIONS ARE FOR THE CALENDAR YEAR 1973

I. Water Sales

Please list the names of water purchasers, their locations, and the quantities of water sold to them by you during the calendar year for:

- all purchasers of 1,000,000 million gallons or more, and
- all public water suppliers regardless of quantity purchased.

Please indicate treated or raw water. (Please indicate)

Name and Location	WATER SALES	Gallons

Please use additional paper if necessary.

II. Ground Water Use

Please answer the following questions if you used or pumped ground water:

A. Number and Location (county) of water wells owned or operated by you.

One well - Hospital Canyon, Ft. Davis

B. County(ies) in which water was used.

C. Please complete the following table to show the total quantity, in gallons, of self-supplied and purchased ground water. Include any water sold to others.

GROUND WATER USE								
MONTH	SELF-SUP.	PURCHASED	MONTH	SELF-SUP.	PURCHASED	MONTH	SELF-SUP.	PURCHASED
Jan.	10,840	33,248	May	47,860	64,256	Sep.	19,910	26,944
Feb.	4,940	22,944	Jun.	33,130	78,848	Oct.	22,890	30,224
Mar.	22,960	34,530	Jul.	24,060	45,408	Nov.	12,760	35,200
Apr.	36,670	41,472	Aug.	36,120	50,912	Dec.	10,210	37,700

Yearly Totals: Self-Supplied 282,350 Purchased 501,686

Purchased from: Ft. Davis Water Supply Corp., Ft. Davis, Tx

Was purchased water raw or treated? Treated

How did you arrive at the ground water use figures which you provided above?

Meter Readings

III. Surface Water Use

Please answer the following questions if you used or diverted fresh surface water.

A. Source of diversion: County

Name of stream, river, lake, and/or reservoir

B. County(ies) in which water was used.

OVER

TEXAS WATER DEVELOPMENT BOARD

P. O. Box 13087, Capitol Station
AUSTIN, TEXAS 78711PLEASE TYPE
OR PRINT ALL
ANSWERS

SURVEY OF GROUND AND SURFACE WATER USE

Please indicate any changes in
name and address or ownership
TWDB CODE NO. _____

PLEASE NOTE: ALL OF THE FOLLOWING QUESTIONS ARE FOR THE CALENDAR YEAR

I. Water Sales

Please list the names of water purchasers, their locations, and the quantities of water sold to them by you during the calendar year for:

- all purchasers of _____ million gallons or more, and
- all public water suppliers regardless of quantity purchased.

Please indicate treated or raw water.

Name and Location	WATER SALES	Gallons

Please use additional paper if necessary.

II. Ground Water Use

Please answer the following questions if you used or pumped ground water.

- A. Number and Location (county) of water wells owned or operated by you.

1 well, Jeff Davis County, Tx.

- B. County(ies) in which water was used Jeff Davis

- C. Please complete the following table to show the total quantity, in gallons, of self-supplied and purchased ground water. Include any water sold to others.

GROUND WATER USE								
MONTH	SELF-SUP.	PURCHASED	MONTH	SELF-SUP.	PURCHASED	MONTH	SELF-SUP.	PURCHASED
Jan.	56,170		May	97,930		Sep.	11,710	35,648
Feb.	63,350		Jun.	107,611		Oct.	11,240	26,556
Mar.	81,670		Jul.	82,520	29,440	Nov.	23,790	24,416
Apr.	90,800		Aug.	22,040	45,312	Dec.	16,260	22,816

Yearly Totals: Self-Supplied 665,091 Purchased 184,188

Purchased from: Ft. Davis Water Supply Corp., Ft. Davis, Tx.

Was purchased water raw or treated? Treated

How did you arrive at the ground water use figures which you provided above?
Meter readings

III. Surface Water Use

Please answer the following questions if you used or diverted fresh surface water.

- A. Source of diversion: County _____

Name of stream, river, lake, and/or reservoir _____

- B. County(ies) in which water was used _____

OVER

AS WATER DEVELOPMENT BOARD
P. O. BOX 13087, CAPITOL STATION
AUSTIN, TEXAS 78711

SURVEY OF GROUND WATER PUMPAGE IN TEXAS DURING CALENDAR YEAR 1970

DUPLICATE - RETAIN FOR YOUR FILES

1. Counties in which wells are located

Jeff Davis

2. Source of water:

Water Wells X

Surface Water _____

Other _____

FORT DAVIS NHS
FORT DAVIS, TEXAS 79734

TWDB Code No. 29530

3. Number of water wells in each county owned and operated by you Two

4. Number of water wells owned by others but supplying water to you None

Names of well owners _____

5. If your records show the amount of ground water pumped by months in 1970 or if you can reasonably estimate the monthly pumpage, please fill in the following table by reporting pumpage in gallons.

Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons	Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons
Jan	<u>44,590</u>		July	<u>122,300</u>	
Feb	<u>48,890</u>		Aug	<u>100,450</u>	
Mar	<u>100,570</u>		Sept	<u>84,170</u>	
Apr	<u>141,940</u>		Oct	<u>54,250</u>	
May	<u>158,340</u>		Nov	<u>47,800</u>	
June	<u>127,420</u>		Dec	<u>44,760</u>	

Total pumpage for year 1970 1,075,480 Gallons

Note: If you have not been able to give the pumpage by months, please show the yearly pumpage for 1970 in the above space.

6. Please check one of the following to indicate how the figures you have provided in item 5 were obtained.

 A. Master Meter

X B. Well Meters

 C. Average Pumping Rates

 D. Power consumption

 E. Storage Facilities

 F. Other

(See reverse side)

WATER DEVELOPMENT BOARD
P. O. BOX 12386, CAPITOL STATION
AUSTIN, TEXAS 78711

SURVEY OF GROUND WATER PUMPAGE IN TEXAS DURING CALENDAR YEAR 1969

DUPLICATE - RETAIN FOR YOUR FILES

1. Counties in which wells are located

Jeff Davis

FORT DAVIS NHS
FORT DAVIS, TEXAS 79734

2. Source of water:

Water Wells X

Surface Water _____

Other _____

TWDB Code No. 29530

3. Number of water wells in each county owned and operated by you Two

4. Number of water wells owned by others but supplying water to you None

Names of well owners _____

5. If your records show the amount of ground water pumped by months in 1969 or if you can reasonably estimate the monthly pumpage, please fill in the following table by reporting pumpage in gallons.

Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons	Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons
Jan	61,080		July	78,780	
Feb	34,400		Aug	118,820	
Mar	60,190		Sept	100,570	
Apr	130,870		Oct	108,257	
May	92,330		Nov	59,651	
June	92,620		Dec	77,820	

Total pumpage for year 1969 1,015,388 Gallons

Note: If you have not been able to give the pumpage by months, please show the yearly pumpage for 1969 in the above space.

6. Please check one of the following to indicate how the figures you have provided in item 5 were obtained.

☐ A. Master Meter ☒ B. Well Meters ☐ C. Average Pumping Rates
☐ D. Power consumption ☐ E. Storage Facilities ☐ F. Other

(See reverse side)

WATER DEVELOPMENT BOARD
P. O. BOX 12386, CAPITOL STATION,
AUSTIN, TEXAS 78711

SURVEY OF GROUND WATER PUMPAGE IN TEXAS DURING CALENDAR YEAR 1968

DUPLICATE - RETAIN FOR YOUR FILES

1. Counties in which wells are located

Jeff Davis

FORT DAVIS NHS
FORT DAVIS, TEXAS 79734

2. Source of water:

Water Wells X

Surface Water _____

Other _____

TWDB Code No. 29530

3. Number of water wells in each county owned and operated by you Two

4. Number of water wells owned by others but supplying water to you None

Names of well owners _____

5. If your records show the amount of ground water pumped by months in 1968 or if you can reasonably estimate the monthly pumpage, please fill in the following table by reporting pumpage in gallons.

Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons	Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons
Jan	<u>37,250</u>		July	<u>79,390</u>	
Feb	<u>38,820</u>		Aug	<u>61,210</u>	
Mar	<u>52,240</u>		Sept	<u>49,810</u>	
Apr	<u>93,960</u>		Oct	<u>77,440</u>	
May	<u>95,400</u>		Nov	<u>41,480</u>	
June	<u>137,870</u>		Dec	<u>33,870</u>	

Total pumpage for year 1968 798,740 Gallons

Note: If you have not been able to give the pumpage by months, please show the yearly pumpage for 1968 in the above space.

6. Please check one of the following to indicate how the figures you have provided in item 5 were obtained.

 A. Master Meter X B. Well Meters C. Average Pumping Rates
 D. Power consumption E. Storage Facilities F. Other

(See reverse side)

WATER DEVELOPMENT BOARD
P. O. BOX 12386, CAPITOL STATION
AUSTIN, TEXAS 78711

SURVEY OF GROUND WATER PUMPAGE IN TEXAS DURING CALENDAR YEAR 1967

DUPLICATE — RETAIN FOR YOUR FILES

1. Counties in which wells are located

Jeff Davis

FORT DAVIS NHS
FORT DAVIS, TEXAS 79734

2. Source of water:

Water Wells X

Surface Water _____

Other _____

TWDB Code No. 29530

3. Number of water wells in each county owned and operated by you Two

4. Number of water wells owned by others but supplying water to you None

Names of well owners _____

5. If your records show the amount of ground water pumped by months in 1967 or if you can reasonably estimate the monthly pumpage, please fill in the following table by reporting pumpage in gallons.

Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons	Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons
Jan	<u>43,710</u>		July	<u>86,910</u>	
Feb	<u>36,110</u>		Aug	<u>92,800</u>	
Mar	<u>86,600</u>		Sept	<u>58,710</u>	
Apr	<u>83,150</u>		Oct	<u>77,490</u>	
May	<u>89,720</u>		Nov	<u>50,420</u>	
June	<u>69,430</u>		Dec	<u>43,130</u>	

Total pumpage for year 1967 818,180 (Main Well), Plus 40,000 (Supplemental Well) Gallons

858,180 Gallons = Total pumpage

Note: If you have not been able to give the pumpage by months, please show the yearly pumpage for 1967 in the above space.

6. Please check one of the following to indicate how the figures you have provided in item 5 were obtained.

 A. Master Meter

X B. Well Meters

 C. Average Pumping Rates

 D. Power consumption

 E. Storage Facilities

 F. Other

(See reverse side)

S WATER DEVELOPMENT BC
P. O. BOX 12386, CAPITOL STATIO.
AUSTIN, TEXAS 78711

SURVEY OF GROUND WATER PUMPAGE IN TEXAS DURING CALENDAR YEAR 1966

DUPLICATE — RETAIN FOR YOUR FILES

FORT DAVIS NHS
FORT DAVIS, TEXAS 79734

1. County Jeff Davis

2. Source of Water:

Water Wells X

Surface Water _____

Other _____

TWDB Code No. 29530

3. Number of water wells owned and operated by you Two

4. Number of water wells owned by others but supplying water to you None

Names of well owners _____

5. If your records show the amount of ground water pumped by months in 1966 or if you can reasonably estimate the monthly pumpage, please fill in the following table by reporting pumpage in gallons.

Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons	Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons
Jan	62,500		July	80,760	
Feb	60,710		Aug	96,300	
Mar	75,820		Sept	78,420	
Apr	119,760		Oct	42,184	
May	100,210		Nov	42,850	
June	66,420		Dec	41,140	

Total pumpage for year 1966 872,074 (Main Well) Plus 50,000 (Supplemental Well) Gallons

Total Pumpage: 922,074 Gallons

Note: If you have not been able to give the pumpage by months, please show the yearly pumpage for 1966 in the above space.

6. Please check one of the following to indicate how the figures you have provided in item 5 were obtained.

 A. Master Meter X B. Well Meters (Pump House) X C. Average Pumping Rates
 D. Power consumption E. Storage Facilities F. Other

The increase in water usage over 1965 was due primarily to a 26% increase in visitation to the site, the completion of ^(See reverse side) three new employee residences and consequently increased domestic use, and three major construction projects which required considerable quantities of water.

L54

Southwest Region
P.O. Box 728
Santa Fe, New Mexico
87501

NEW 4 1965

Memorandum

To: Director
From: Assistant Regional Director, Operations
Subject: Water Use Report, Fort Davis

We have enclosed a copy of the Water Use Report and the transmittal memorandum from the Acting Superintendent at Fort Davis. This report covers the period of water usage from September 15, 1964 to September 15, 1965.

As the transmittal memorandum explains, all the figures are estimates with the exception of the readings for the pump house where a meter was installed in November of 1964. The memorandum gives a thorough explanation of the usage throughout the year.

This report should be filed in the Water Use, Fort Davis file and by copy of this memorandum are sending it to Chief, WOBC for insertion in his file.

(SIGNED)

George W. Miller

In duplicate

Enclosures

cc:
Chief, WOBC (2), w/encs.
Superintendent, Fort Davis
w/o encs.



IN REPLY REFER TO:

D5039

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

Fort Davis National Historic Site
Fort Davis, Texas 79734

September 14, 1965

NPS SOUTHWEST	
SEP 17 1965	
Regional Director	
Operations	
Admission	
Construction	
Education	
Finance	
General Services	
Information	
Legal	
Planning	
Public Affairs	
Records Management	
Security	
Training	
Utilities	
Wildlife	
Wilderness	
World War II	

Land + Seeg
9/17
Fields

Memorandum

To: Regional Director, Southwest Region
From: Acting Superintendent, Fort Davis
Subject: Water Use Report

Water usage at Fort Davis National Historic Site for the period from September 15, 1964 to September 15, 1965 is shown in the attached chart. The figures are, of necessity, estimates made on the same basis as those in our last year's report. A meter was installed in the pump house on November 5, 1964, and the total gallons used each month from November through September has been figured from the meter readings. However, we still lack metering into individual buildings, and the figures shown under the breakdown are estimates. Domestic use shows a decrease between December 1964 and March 1965 due to Residence HB-1 being vacant during this period. As explained in footnotes on the chart usage was up in November due to the fact that 66,000 gallons were required to fill the new storage tank and mains, and during December and January, due to the loss of approximately 30,000 gallons each month through a leak in the new system which was not discovered and repaired until late January. Diversion of runoff into the Grove was down due to a decrease in rainfall. Metering is being provided at the new Visitor Center which should make more accurate figures available for next year's report.

Bobby L. Crisman
Bobby L. Crisman

Enclosure

In duplicate

~~DSD~~
L 54 Ma

WATER USE AT FORT DAVIS NHS - - - 9/15/64 through 9/15/65

Date	Watering Trees (gal)	Diversion of Runoff into Grove (acre- feet)	Adobe Prod.	Construction (Contractor)	Domestic Use	Total for Month (Gallons)
Sept. 15	1,500	0	8,800	0	8,000	18,300
Oct.	2,400	0	0	0	14,000	16,400
Nov.	2,400	0	0	600	14,000	83,000 ¹
Dec.	2,400	0	0	0	8,680	41,080 ²
Jan.	2,400	0	0	0	8,570	45,970 ³
Feb.	2,400	0	0	0	7,290	9,690
March	2,400	0	0	0	15,190	17,590
April	3,000	0	12,000	20,070	20,000	55,070
May	3,000	(1 acre ft.)	0	20,120	20,000	43,120
June	3,000	(1 acre ft.)	0	26,381	27,000	56,381
July	3,000	0	0	83,109	30,000	116,109
Aug.	3,000	0	4,000	73,620	30,000	110,620
Sept. 1-15	1,500	(1 acre ft.)	0	7,390	8,000	16,890
Totals	32,400	(3 acre ft.)	24,800	231,290	210,730	630,220*

1. 66,000 gallons used to fill 50,000-gallon storage tank and 6" mains. (Actual usage was 17,000).
2. An estimated 30,000 gallons lost thru a leak in the system which was found and repaired in late January, 1965.
3. An estimated 35,000 gallons lost through a leak in the system which was found and repaired in late January, 1965.

* Includes 131,000 gallons in footnotes 1. 2. and 3.

STATE WATER DEVELOPMENT BOARD
P. O. BOX 12386, CAPITOL STATIO...
AUSTIN, TEXAS 78711

SURVEY OF GROUND WATER PUMPAGE IN TEXAS DURING CALENDAR YEAR 1965

DUPLICATE — RETAIN FOR YOUR FILES

1. County Jeff Davis

2. Source of Water:

Water Wells X

Surface Water _____

Other _____

FORT DAVIS NHS
FORT DAVIS, TEXAS 79734

TWDB Code No. 295303. Number of water wells owned and operated by you One4. Number of water wells owned by others but supplying water to you None

Names of well owners _____

5. If your records show the amount of ground water pumped by months in 1965 or if you can reasonably estimate the monthly pumpage, please fill in the following table by reporting pumpage in gallons.

Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons	Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons
Jan	45,970*		July	116,109**	
Feb	9,690		Aug	110,620	
Mar	17,590		Sept	39,790	
Apr	55,070		Oct	41,760	
May	43,120		Nov	34,930	
June	56,381		Dec	32,520	

Total pumpage for year 1965 603,550 * A leak in system caused excessive gallonage
** Construction under way, and contractors using water.

Note: If you have not been able to give the pumpage by months, please show the yearly pumpage for 1965 in the above space.

6. Please check one of the following to indicate how the figures you have provided in item 5 were obtained.

 A. Master Meter X B. Well Meters C. Average Pumping Rates
 D. Power consumption E. Storage Facilities X F. Other (Visitor Center)

(See reverse side)

581-10-20-64

W.R. Copy

Southwest Region
Santa Fe, New Mexico

OCT 15 1964

Memorandum

To: Director
From: Regional Director
Subject: Water Use Report, Fort Davis

We have enclosed a copy of the Water Use Report prepared by the Superintendent, Fort Davis for January 1st through September 15th of this year.

Although this chart is based on estimates, we think he has done an excellent job in estimating water use.

As time and money permit, we plan to install meters and measuring devices so that a more adequate report can be made.

We have started a folder for our water rights file entitled "Water Use, Fort Davis" and by copies of this memorandum are requesting that you, WODC, and the Superintendent at Fort Davis start a similar file.

(SIGNED)
Daniel B. Beard

In duplicate

Enclosures

cc: WODC (2), w/encs.
Superintendent, Fort Davis, w/encs.



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

Fort Davis National Historic Site
Fort Davis, Texas

D5039

September 25, 1964

Memorandum

To: Regional Director, Southwest Region

From: Superintendent, Fort Davis

Subject: Water use report

When you made the well tests in February, you requested that we submit an annual report of water use. This first report will be nothing more than our estimate. After the new system is installed, we can simply break down the water pump meter reading and thereby give you a more accurate figure for water use.

You will note that the following chart is broken into different types of water uses. All water, with the obvious exception of runoff, is from the park's present well. When the present water, sewer, and electrical contract is complete, we will switch to the well which was drilled recently.

Date	Watering Trees (gal.)	Diversion of Runoff Into Grove In Acre Ft.	Adobe Product. (gal.)	Well Testing (gal.)	Domestic Use (gal.)	Total for Month (gal.)
Jan.	2,400				14,000	16,400 ✓
Feb.	2,400		12,000	50,000	14,000	78,400 ✓
Mar.	2,400				16,000	18,400 ✓
Apr.	3,000				15,000	18,000 ✓
May	3,000	2 acre ft.			17,000	20,000 + 2 acre ft.
June	3,000	2 acre ft.			25,000	28,000 + 2 acre ft.
July	3,000	2 acre ft.			27,000	30,000 + 2 acre ft.
Aug.	3,000				29,000	32,000 ✓
Sept. 15	1,500		8,000	100,000	15,000	124,500 ?
TOTAL	23,700	6 acre ft.	20,000	150,000	172,000	365,700 + 6 acre ft.
				GRAND TOTAL		976,700
						742,400

25039 7

RECEIVED
NPS SOUTHWEST REGIONAL OFFICE
SEP 28 1964

Regional Director
Operations
Administration

L. L. L. 8 101
x Fields

An explanation of our figures may be in order:

- Item #1 (Trees) We know how often we water these trees and how much water is used.
- Item #2 (Runoff) This occurs only after heavy rains when the arroyo on the south end of the parade ground is diverted into the cottonwood grove. We simply figured 2 acre feet after each 2-3 inch rain.
- Item # 3 (Adobe) We know how much water we use per hour and simply multiplied this figure by the number of hours worked.
- Item #4 (Testing) We got this information from the person testing the well.
- Item #5 (Domestic) (a) For residences we figured 100 gallons per day per person.
- (b) For office we figured 30 gallons per day per employee.
- (c) For visitor contact station we figured 3 gallons per day per visitor.
- (d) 100 gallons per day for maintenance purposes.

For the domestic and office figure we rounded off to the next higher thousand during the summer and the next lower thousand during the winter.

Unless you have some suggestions for change, we will use this same format for future reports.

Michael J. Becker

Michael J. Becker

In duplicate

XAS WATER COMMISSION
P. O. BOX 12311, CAPITOL STATION
AUSTIN, TEXAS 78711

SURVEY OF GROUND WATER PUMPAGE IN TEXAS DURING CALENDAR YEAR 1964

DUPLICATE - RETAIN FOR YOUR FILES

1. County Jeff Davis

2. Source of Water:

Water Wells ☒

Surface Water ☐

Other ☐

Old Ft. Davis
U. S. Dept. of Interior
Fort Davis, Texas

FORT DAVIS NHS
FORT DAVIS, TEXAS
79734

TWC Code No. _____

3. Number of water wells owned and operated by you Two during 1964 - one 1965

4. Number of water wells owned by others but supplying water to you None

Names of well owners _____

5. If your records show the amount of ground water pumped by months in 1964 or if you can reasonably estimate the monthly pumpage, please fill in the following table by reporting pumpage in gallons.

Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons	Mo.	Total Pumpage for Month in Gallons	Maximum Daily Pumpage for Month in Gallons
Jan	16,400		July	30,000	
Feb	78,400	50,000 on yield tests	Aug	32,000	
Mar	18,400		Sept	124,000	100,000 on yield tests
Apr	18,000		Oct	50,000	
May	20,000		Nov	33,000	meter installed Nov
June	28,000		Dec	41,080	50,000 to fill new storage tank

Total pumpage for year 1964 _____ Gallons

Note: If you have not been able to give the pumpage by months, please show the yearly pumpage for 1964 in the above space.

6. Please check one of the following to indicate how the figures you have provided in item 5 were obtained.

☐ A. Master Meter

Nov + Dec

☒ B. Well Meters

☐ C. Average Pumping Rates

☐ D. Power consumption

☐ E. Storage Facilities

☒ F. Other

LSA
FOOA

Fort Davis National Historic Site
Fort Davis, Texas 79734

April 27, 1971

RECEIVED	
WATER RESOURCES SECTION	
APR 29 1971	
ACT. INFO.	INITIALS
WITKOWSKI, C.	
BARNETT, L.	
CHAVEZ, D.	
KENNEDY, M.	
COLD, S.	
FILE	
REMARKS	

Memorandum

To: Director, Southwest Region

From: Superintendent, Fort Davis-Chamizal

Subject: Fort Davis Well

Enclosed is a record of the water level of the well at Fort Davis, which as you know has been worrying us since last summer. The records indicate that the aquifer has evidently not been refilling at a rate commensurate with the rainfall, and the water level and capacity have been falling steadily. We cannot, of course, be sure, but there seems to be a possibility that the well which provides water for the Fort Davis town system may be draining water from below us, and thus inhibiting the refilling of the table at the fort.

The drawdown at the present water level (59') is only five feet before cutting out the pump, which draws from the sixty-four foot level. Already this spring the pump has gone into a cycling pattern at least once, repeatedly drawing down the water to the point of cutoff before refilling the tank. Since this did not happen last year until well into the summer months, we feel that it is a harbinger of trouble this summer, when irrigation and visitor demands treble the current water needs. Accordingly, we would appreciate your consideration of an effort to redevelop the water source.

We could, of course, try to do this by deepening the existing seventy-five foot well to tap the aquifer at a greater depth. This would perhaps save some money, but the storage capacity of the existing tank--50,000 gallons--would make it a touchy process, since our fire hazard will remain high through the early summer, and a week without water would put us at a dangerously low level. (There is little possibility of obtaining water from the city system without considerable expense.)

Accordingly, we submit that the drilling of a completely new well, as suggested in the past by Hydraulic Engineer Fields, would be the best solution. Placement would be no problem; we feel that a new well close to the existing one would be practical and would constitute no more intrusion on the historic scene than does the current well.

We would appreciate your reaction to this proposal.

Franklin G. Smith

Enclosure
FCS:slb

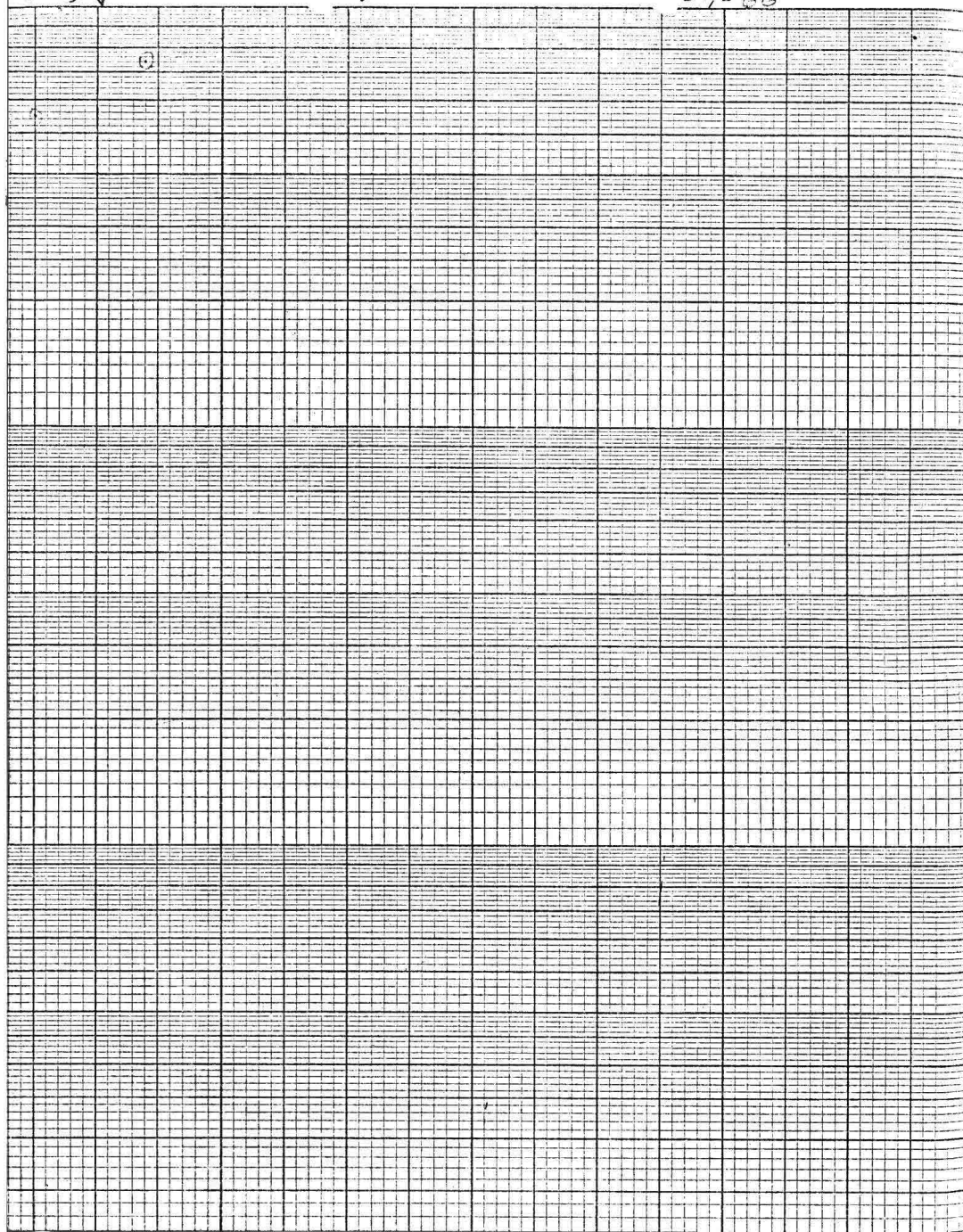
WATER STATIC LEVELS

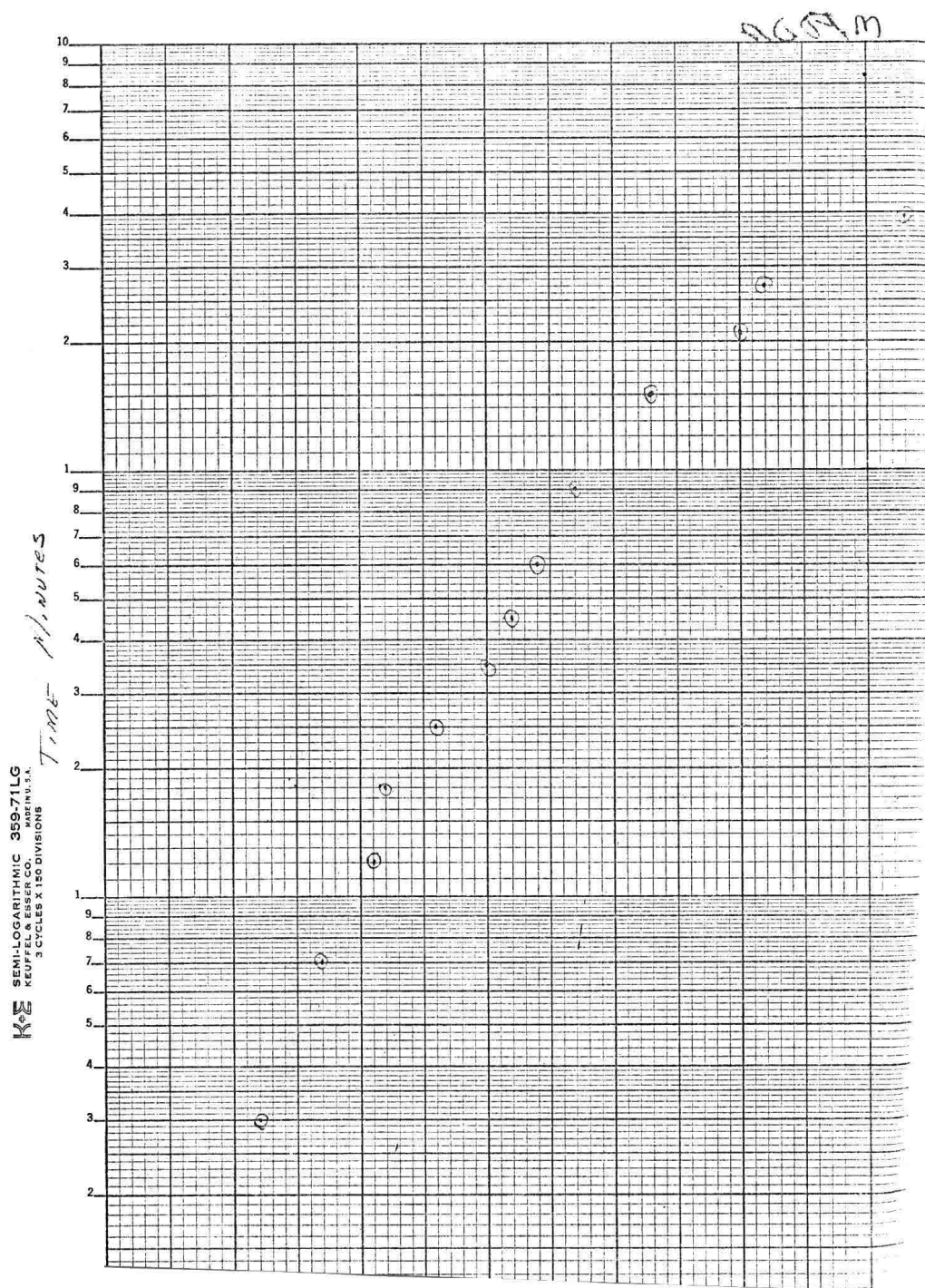
January, 1970	56'
February, 1970	56'
March, 1970	57' 6"
April, 1970	57' 6"
May, 1970	57'
June, 1970	58'
July, 1970	59'
August, 1970	59'
September, 1970	59' 6"
October, 1970	59'
November, 1970	58'
December, 1970	57' 6"
January, 1971	57' 6"
February, 1971	57' 6"
March, 1971	58' 6"
April, 1971	59'

AW DOWN
Feet 7) 4

5

FOR DAVIS
-9-66





DIXON PUMP & DRILLING COMPANY

2309 West Second St.
Phone FE 7-8505

DRILLING LOG

P.O. Box 1756
Odessa, Texas

Customer: Clyde Construction Co. P.O. No. _____
Odessa, Texas Contract No. _____
 Well No. 3

Location: Fort Davis, Texas (inside Fort)

Our Rig No. 2 Bit Size: 8" Our Work Order No. 2165

FORMATION SAMPLES

From	To	Formations	From	To	Formations
0 Ft.	5 Ft.	Top Soil	55 Ft.	60 Ft.	Brintridge
5 Ft.	10 Ft.	Gravel	60 Ft.	65 Ft.	Rock (Sand) - Water
10 Ft.	15 Ft.	Gravel	65 Ft.	70 Ft.	Sand Rock - Water
15 Ft.	20 Ft.	Gravel	70 Ft.	75 Ft.	Water
20 Ft.	25 Ft.	Gravel			
25 Ft.	30 Ft.	Gravel			
30 Ft.	35 Ft.	Brown Rock			
35 Ft.	40 Ft.	Brintridge			
40 Ft.	45 Ft.	Clay			
45 Ft.	50 Ft.	Clay			
50 Ft.	55 Ft.	Brintridge			

FORMATION SAMPLE TO BE TAKEN ~~IN~~ EVERY FORMATION CHANGE BUT NOT TO EXCEED 10 Ft.

Total Depth of Hole: 75 Ft. DIRECTIONS: _____

Casing Size: 6-5/8" Set: 76' Ft. _____

Perforated From: 57 Ft. To: 72 Ft. _____

Gravel Packed From: 10 Ft. To: 75 Ft. _____

With 2 Yds of #5 Gravel _____

Cemented From: 0 Ft. to: 10 Ft. _____

Bailer Test — GPM Date started: August 28, 1964

Well Capped with: Pump Date Completed: September 1, 1964

Water Sample Taken At: — Ft. Driller: Roy Keith Helpers: Lloyd Sebolt

(Make other notes on back)

Driller: _____ Helpers: _____

page 1 of 6 pages

DIXON PUMP & DRILLING COMPANYWATER WELL TEST LOGOur Work Order No. 2165 Date: 9-2-64Customer: Clay Construction Company

Lease: _____

Address: Odessa, TexasWell No. Ft. Davis Well #1 #3Well Dia. (I.D.) 6" Well Depth 75' Casing Length: 75'Tested By:
Lloyd Sebolt &
Sid WagonerCasing Perforated from: 57 to 72 Static Level: 50'Column Size: 3" X 1" Column Setting: 70' Bowl Size: 5"LC No. of Stages: 13

Plus bowls (Note: 70' of airline)

Date	Time	AM/PM	GPH	Pumping Level	Pump RPM	Remarks: (Clear, Sandy, Etc.)
9-2-64	2:30	PM	Started Pumping		2000	Little Muddy
"	2:35	"	60	55'	"	Clearing
"	2:40	"	60	55'	"	Clear
"	2:45	"	60	55'	"	Clear
"	2:50	"	60	55'	"	Clear
"	2:55	"	60	55'	"	Clear
"	3:00	"	60	55'	"	Clear
"	3:05	"	60	55'	"	Clear
"	3:10	"	60	55'	"	Clear
"	3:15	"	60	55'	"	Clear
"	3:20	"	60	55'	"	Clear
"	3:25	"	60	55'	"	Clear
"	3:30	"	60	55'	"	Clear
"	3:35	"	60	55'	"	Clear
"	3:40	"	60	55'	"	Clear
"	3:45	"	63	55'	"	Clear
"	3:50	"	63	55'	2300	Clear
"	3:55	"	65	57'	"	Clear
"	4:00	"	65	57'	"	Clear
"	4:05	"	65	58'	"	Clear
"	4:10	"	65	58'	"	Clear
"	4:15	"	65	59'	"	Clear
"	4:20	"	65	59'	"	Clear

WATER WELL TEST LOG

DIXON PUMP & DRILLING COMPANY

Our Work Order No. 2165 Date: 9-2-64

Customer: Clyde Construction Company

Lease: Ft. Davis Fort

Address:

Well No. 1

Well Dia. (I.D.) _____ Well Depth _____ Casing Length: _____

 Tested By:
 Lloyd Sebolt &
 Sid Wagoner

Casing Perforated from: _____ to _____ Static Level: _____

Column _____

Settings: _____

Bowl Size: _____

No. of

Column Size: _____

Settings: _____

Bowl Size: _____

Stages: _____

Date	Time	AM/PM	GPM	Pumping Level	Pump RPM	Remarks: (Clear, Sandy, Etc.)
9-2-64	4:25	PM	65	59'	2300	Clear
"	4:30	"	65	59'	"	Clear
"	4:35	"	65	59'	"	Clear
"	4:40	"	65	59'	"	Clear
"	4:45	"	65	59'	"	Clear
"	4:50	"	65	59'	"	Clear
"	4:55	"	65	59'	"	Clear
"	4:57	"	65	59'	"	Clear
"	5:00	"	65	59'	"	Clear
"	5:05	"	67	60'	2400	Clear
"	5:10	"	67	60'	"	Clear
"	5:15	"	67	60'	"	Clear
"	5:20	"	67	60'	"	Clear
"	5:25	"	67	60'	"	Clear
"	5:30	"	67	60'	"	Clear
"	5:35	"	67	60'	"	Clear
"	5:40	"	70	60'	2500	Clear
"	5:45	"	70	60'	"	Clear
"	5:50	"	70	60'	"	Clear
"	5:55	"	70	63'	"	Clear
"	6:00	"	60	60'	2000	Clear
"	6:05	"	60	60'	"	Clear
"	6:10	"	60	60'	"	Clear

WATER WELL TEST LOG

DIXON PUMP & DRILLING COMPANY

Our Work Order No. 2165 Date: 9-2-64

Customer: Clyde Construction Company

Lease: Ft. Davis Fort

Address: _____ Well No. 1

Well Dia. (I.D.) _____ Well Depth _____ Casing Length: _____

Tested By:
Lloyd Sebolt &
Sid Wagoner

Casing Perforated from _____ to _____ Static Level: _____

Column Size: _____ Column Setting: _____ Bowl Size: _____ No. of Stages: _____

[illegible]

WATER WELL TEST LOG

DIXON PUMP & DRILLING COMPANY

Page 4 of 6 pages

Our Work Order No. 2165 Date: 9-3-64

Customer: Clyde Construction Company

Lease: Ft. Davis Fort

Address: _____ Well No. 1

Well Dia. (I.D.) _____ Well Depth _____ Casing Length: _____

Tested By:
Lloyd Sebolt &
Sid Wagoner

Casing Perforated from: _____ to _____ Static Level: _____

Column Size: _____ Column Setting: _____ Bowl Size: _____ No. of Stages: _____

Date	Time	AM/PM	GPM	Pumping Level	Pump RPM	Remarks: (Clear, Sandy, Etc.)
9-3-64	8:00	AM	Started 60	Pumping 55'	2000	Clear
"	8:15	"	60	55'	"	Clear
"	8:30	"	60	55'	"	Clear
"	9:00	"	60	55'	"	Clear
"	9:30	"	60	58'	"	Clear
"	10:00	"	60	58'	"	Clear
"	10:30	"	60	60'	"	Clear
"	11:00	"	60	60'	"	Clear
"	11:30	"	53	65'	1900	Clear
"	12:00	Noon	53		"	Pumping off
"	12:15	PM	50	65'	1750	Clear
"	12:30	"	50		"	Pumping off
"	1:00	"	44	65'	1500	Clear - blowing some air
"	1:30	"	42	65'	1250	Clear
"	2:00	"	42	60'	"	Clear
"	2:15	"	40		1000	Pumping off
"	2:30	"	40	60'	"	Clear
"	3:00	"	40	59'	"	Clear
"	3:30	"	40	59'	"	Clear
"	4:00	"	40	59'	~~2100~~	Clear
"	4:30	"	40	59'	"	Clear
"	5:00	"	40	59'	~~2100~~	Clear
"	5:30	"	40	59'	"	Clear

WATER WELL TEST LOG

DIXON PUMP & DRILLING COMPANY

Our Work Order No. 2165 Date: 9-3-64

Customer: Clyde Construction Company

Lease: Ft. Davis Fort

Address: _____ Well No. 1

Well Dia. (I.D.) _____ Well Depth _____ Casing Length: _____

Tested By:
Lloyd Sebolt &
Sid Wagoner

Casing Perforated from: _____ to _____ Static Level: _____

Column _____ No. of
Column Size: _____ Settings: _____ Bowl Size: _____ Stages: _____

Date	Time	AM/PM	GPM	Pumping Level	Pump RPM	Remarks: (Clear, Sandy, Etc.)
9-3-64	6:00	PM	40	59'	1000	Clear
"	6:30	"	40	59'	"	Clear
"	7:00	"	40	59'	"	Clear
"	7:30	"	40	59'	"	Clear
"	8:00	"	40	59'	"	Clear
"	8:30	"	40	59'	"	Clear - blowing some air
"	9:00	"	37	60'	900	Clear
"	9:30	"	37		900	Pumping off
"	10:00	"	34	65'	800	Clear
"	10:30	"	31	65'	"	Clear
"	10:45	"	Pumped off			
"	11:00	"	28	59'	750	Clear
"	11:30	"	28	58'	"	Clear
"	12:00	M.N.	28	61'	"	Clear
9-4-64	12:30	AM	28	61'	"	Clear
"	1:00	"	28	61'	"	Clear
"	1:30	"	28	61'	"	Clear
"	2:00	"	28	61'	"	Clear
"	2:30	"	28	61'	"	Clear
"	3:00	"	28	61'	"	Clear
"	3:30	"	28	61'	"	Clear
"	4:00	"	28	61'	"	Clear
"	4:30	"	28	61'	"	Clear

DIXON PUMP & DRILLING COMPANY

WATER WELL TEST LOG

Our Work Order No. 2165 Date: 9-6-64

Customer: Clyde Construction Company

Lease: Ft. Davis Fort

Address: _____ Well No. 1

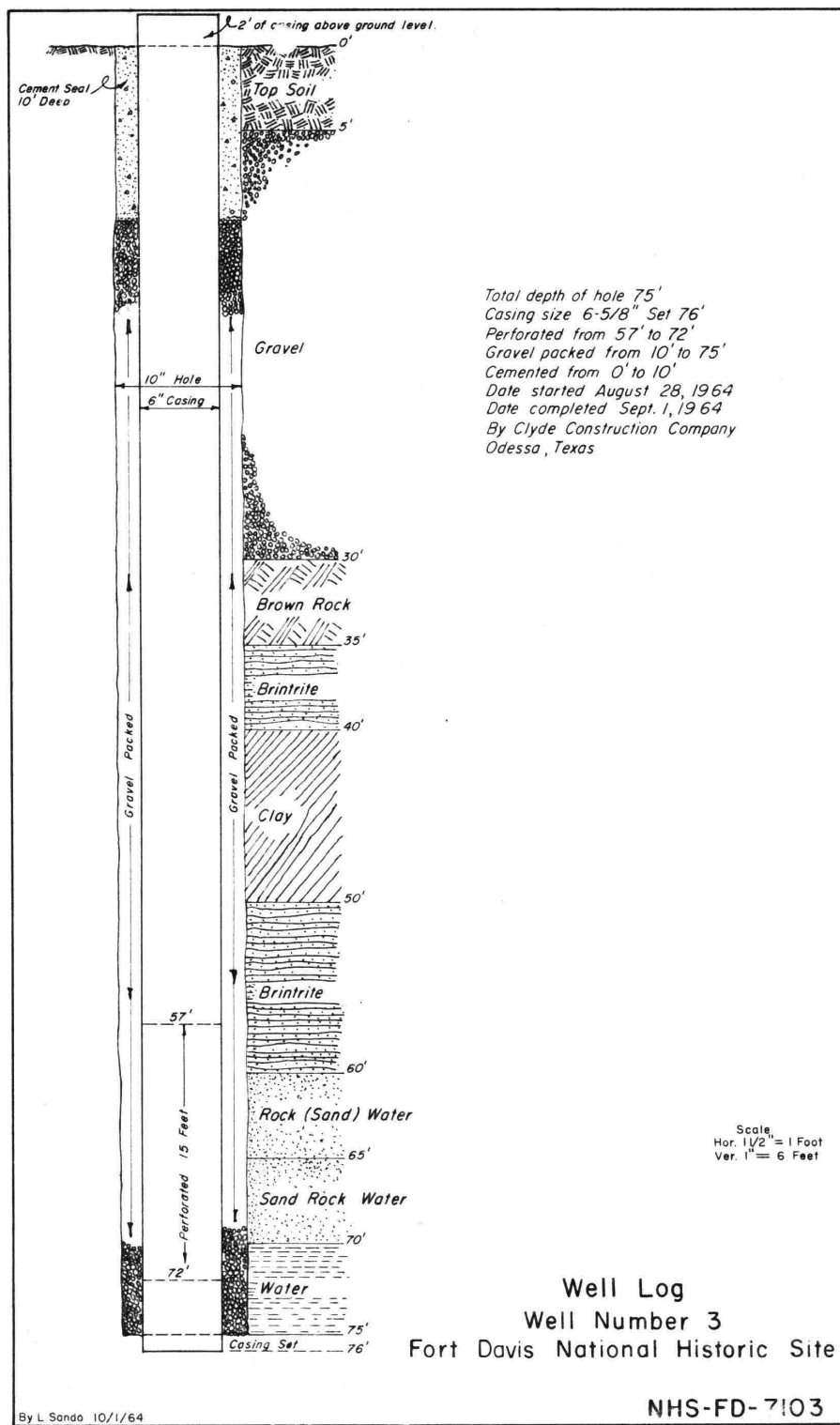
Well Dia. (I.D.) _____ Well Depth _____ Casing Length: _____

Tested By:
Lloyd Sebolt &
Sid Wagoner

Casing Perforated from: _____ to _____ Static Level: _____

Column _____ No. of
Column Size: _____ Settings: _____ Bowl Size: _____ Stages: _____

Date	Time	AM/PM	GPM	Pumping Level	Pump RPM	Remarks: (Clear, Sandy, Etc.)
9-6-64	5:00	AM	28	61'	750	Clear
"	5:30	"	28	61'	"	Clear
"	6:00	"	28	61'	"	Clear
"	6:30	"	28	61'	"	Clear
"	7:00	"	28	61'	"	Clear
"	7:30	"	28	61'	"	Clear
"	8:00	"	28	61'	"	Clear - shut pump down and started recovery test at 8:20 AM
"	8:20	"	28	61'	"	
"	8:25	"		56'		
"	8:30	"		55'		
"	8:35	"		55'		
"	8:40	"		55'		
"	8:45	"		54'		
"	8:50	"		54'		
"	8:55	"		54'		
"	9:00	"		54'		
"	9:10	"		52'		
"	9:20	"		52'		
"	9:30	"		52'		
Shut Down - Test Completed.						
9-5-64				56.0'		
9-6-64				55.7'		
9-8-64				54.4'		
9-7				No report		



Other Supporting Information

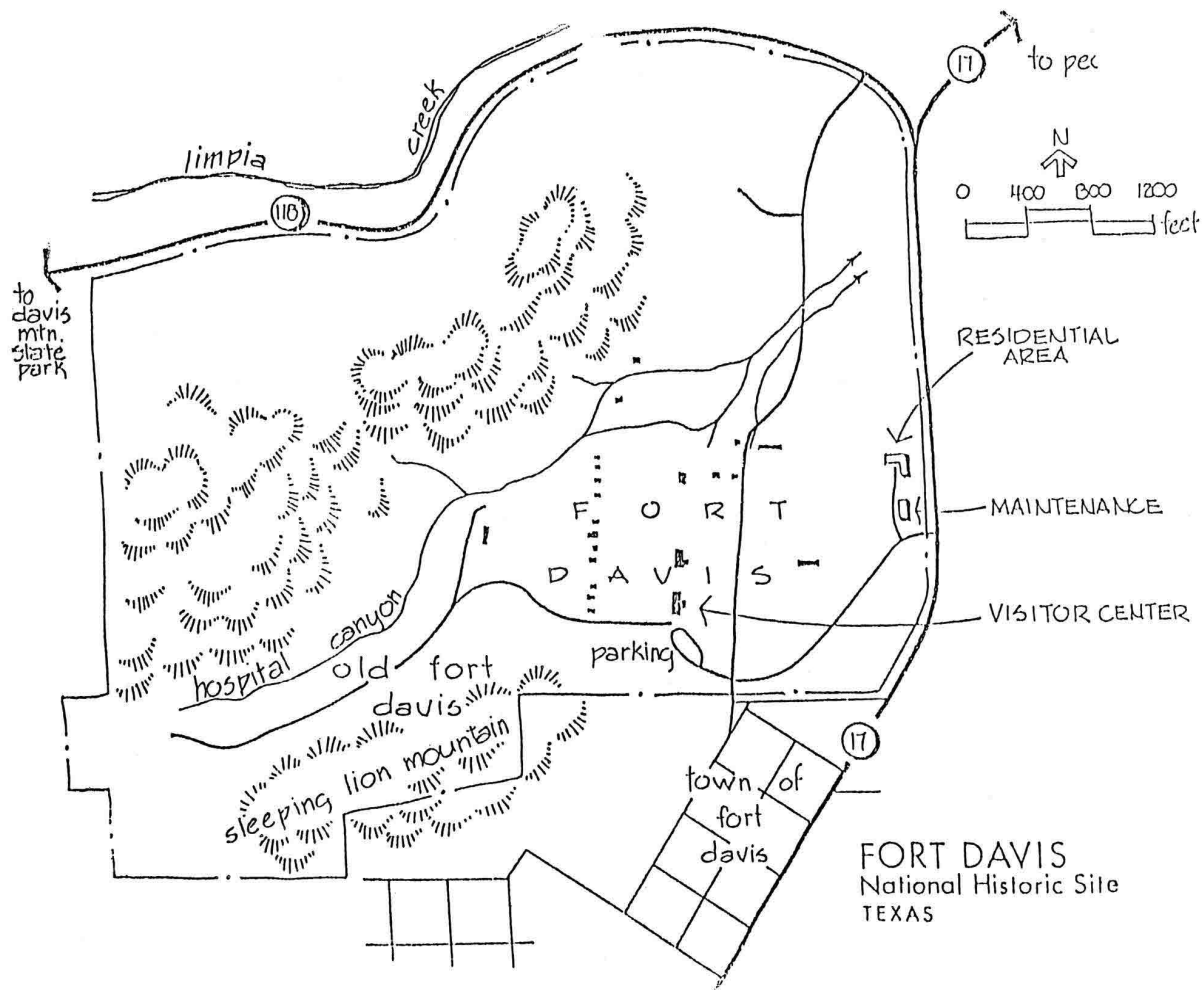
Water Resources Management Profile

for

Fort Davis National Historic Site

Recommended by: Douglas D. McChristian Sept. 30, 1982
Superintendent, Fort Davis National Historic Site Date

Approved by: Robert J. Lee 10/8/82
Regional Director, Southwest Region Date



6. Water as it Supports the Purposes of the Park:

Water at the historic site is used for drinking water and sanitation for visitors, for domestic purposes at park staff residences, for irrigation to maintain the aesthetics of the site, and for fire protection.

7. Floodplain Identification: According to the Jaco and Turner (1969) soils survey of the historic site, the Cornell soils at the foot of the hills in Hospital Canyon indicate a slight flood hazard, while the Pima silt loam on the terraces along the ephemeral drainage in Hospital Canyon are indicative of severe flood hazard. Other areas of the historic site show no indication of flooding. A system of dikes and ditches was installed by the U.S. Army during the 1880s to mitigate flood hazard, and additional small diversion dikes have been installed since that time.

II. Water Management

1. Water Rights:

The United States claims riparian water rights in the following wells:

- a. Headquarters well, latitude 30°36'49"N, longitude 103°53'39". The right dates from September 4, 1964. The well has a capacity of 25 gpm.
- b. Church Camp site well, latitude 30°35'43"N, longitude 103°54'04". This well has a capacity of 8 gpm.

2. State Administrative Agencies:

The following agencies are responsible for various aspects of water management:

Department of Water Resources
P.O. Box 13087
Capital Station
Austin, Texas 78711
(512) 475-2651

State Soil and Water Conservation Board
Box 658
Temple, Texas 76501
(817) 773-2250

IV. Recommended Strategies for Water Protection

FODA-W-1: Deepen/Relocate Headquarters Well.

In order to provide a better flow in the well which has been undercut by the falling regional water table, either redrill the existing well deeper into the aquifer, or if that does not appear feasible, locate a new well.

FODA-W-2: Study Neighboring Well Pumping Rates.

To ascertain whether the drawdown in the headquarters well is due to overpumping by neighboring landowner wells. If this proves to be the case, the information may provide the basis for legal action.

FODA-W-3: Purchase Reverse-Osmosis Demineralization Unit (Fluoride reduction)

To provide to any park staff home with young children.

FODA-W-4: Floodplain Study

To quantify the definition of "slight and severe flood hazards" and to define its aerial extent within the park.

References Cited:

Bowman, C. R., 1982. Report on Survey of Environmental Health Facilities, Fort Davis National Historic Site, Texas. Report in files of NPS, SWR.

Fort Davis National Historic Site Staff, 1981. Resources Management Plan for Fort Davis National Historic Site.

Jaco, H.B. and A.J Turner, 1969. Soils Handbook: Detailed Soil Survey of the Fort Davis National Historical Site. USDA Soil Conservation Service.

Determination

It is determined that none of the actions outlined above significantly affect the natural environment nor cause controversy.

NO ENVIRONMENTAL ASSESSMENT WILL BE PREPARED.

Recommended by: Garland Mone Sept 23, 1982
Hydraulic Engineer, Southwest Region Date

Concurred by: Douglas C. McChristian Sept 30, 1982
Superintendent, Fort Davis National Historic Site Date

Concurred by: Roger High 10/7/82
~~Acting~~ Associate Regional Director, Park Operations, SWR Date

Approved by: Robert J. [Signature] 10/8/82
Regional Director, Southwest Region Date

Texas Attorney General
Environmental Protection Division
Box 12548
Austin, Texas 78711
(512) 475-4143

Texas Department of Health
1100 West 49th Street
Austin, Texas 78756
(512) 458-7497 (Division of Water Hygiene)
7293 (Division of Wastewater Technology)

Texas Water Well Drillers Board
Box 13087, Capitol Station
Austin, Texas 78711
(512) 475-3191

U.S. Environmental Protection Agency (Regional Office)
1201 Elm
Dallas, Texas 75270
(214) 767-2630

The NPS Southwest Regional Hydraulic Engineer should be used as liaison between the park and any of the above-listed agencies. The address is :

National Park Service
Southwest Region
P.O. Box 728
Santa Fe, New Mexico 87501
(505) 988-6368

III. Water Resource Problems (Actual/Potential)

1. As identified in the Resource Management Plan, the municipal fire hydrants need to be replaced by underground units to cause less of an intrusion in the historic setting.
2. The regional water table around Fort Davis is apparently declining, reducing the safe yield of the headquarters well from 25 gpm to 6 gpm.
3. The fluoride content of the water is a problem if there are any children under 10 among the historic site staff families.
4. A minimum floodplain identification study at the site is advisable in order to assess whether the existing system of diversion dikes to sufficient protection against the 100-year and 500-year flood.

5. Water Quality: See Table 1 for the water quality analyses of the two principal wells at the historic site and the City of Fort Davis water supply system. The only problem constituent is fluoride in the headquarters well and the city water, which poses the threat of causing mottling of the teeth in children under ten who drink the water on a regular basis. This is considered to be a cosmetic rather than a public health problem, and high fluoride content is so common in west Texas well water that the State has issued a variance to the Federal guidelines on fluoride.

Table 1 - Chemical Analyses

<u>Constituent</u>				
pH	6-8.5	7.5	7.3	7.8
Total hardness (as CaCO ₃)	250 ppm	218 ppm	288 ppm	157 ppm
Silica	-	49 ppm	65 ppm	-
Calcium	200 ppm	71 ppm	97 ppm	55 ppm
Magnesium	125 ppm	10 ppm	11 ppm	4 ppm
Sodium	250 ppm	37 ppm	28 ppm	29 ppm
Potassium	1000 ppm	4.1 ppm	3.8 ppm	-
Total Iron	0.3 ppm	0.02 ppm	0.05 ppm	0.02 ppm
Bicarbonate	700 ppm	251 ppm	283 ppm	240 ppm
Carbonate	350 ppm	0 ppm	0 ppm	0
Sulfate	250 ppm	25 ppm	65 ppm	10 ppm
Chloride	250 ppm	33 ppm	28 ppm	9 ppm
Fluoride	1.4 - 2.4 depending on temperature	2.3 ppm	1.1 ppm	2.5 ppm
Nitrate	10 ppm	19 ppm	15 ppm	0.46 ppm
Boron	-	0.11 ppm	0.07 ppm	-
Total Dissolved Solids	500 ppm	374 ppm	453 ppm	230 ppm
Specific Conductance (at 25°C)	1000 micromhos	586 micromhos	669 micromhos	450 micromhos

I. Physical Description:

1. Physical Setting: Fort Davis National Historic Site sits at the foot of the Davis Mountains of the Trans Pecos region of west Texas. The Davis Mountains were formed by dissection of a vast volcanic area, and this rock is exposed in the foothills northwest of the historic site. The historic site is located within the Rio Grande Drainage Basin (Region 13, ASA 03).
2. Climate: Annual precipitation at Fort Davis has ranged from 6.78 inches to 27.68 inches (period of record unknown), with an average of 16.66 inches. Most of the precipitation arrives in July through September. July temperatures average 75.1°F and January average temperature is 43.8°F. The average frost-free period is from March 29 through October 26 (Jaco and Turner, 1969).
3. Soils: Most of the site occupies a flat plain where the soils consist of the Musquiz loam, a moderately well-drained, non-calcareous soil. In Hospital Canyon west of the site the soils are a mixture of Cornell and Pima silt loam, both well-drained soils. The lower slopes of the hills north of Hospital Canyon are primarily rock outcrop with very little soil; the top of the hill is made up of the Mac-Lou-Brewster Association. These soils, too, are classified as well-drained (Jaco and Turner, 1969).
4. Estimate of Water Quantity: The historic site has kept unusually good records of water consumption over the years. Since approximately 1970, the site has purchased water from the Fort Davis Water Supply Corporation, Fort Davis, Texas, in addition to using water from their own wells. In 1970 the annual totals were 665,091 gallons of historic site well water and 184,188 gallons of purchased water. In 1973 the ratio was 282,350 gallons self-supplied to 501,686 purchased. Increasing visitation is predicted to increase water use to 2.5 million gallons by 1985 and 3.1 million gallons by the year 2000.

The only well functioning at the historic site at present is the headquarters well. It serves for irrigation, fire protection, and as the water source for one seldom-used bathroom. The other well that is in functional order but is not used at present, is the Hospital Canyon well. Both wells are connected to a 50,000 gallon tank on the hill south of Hospital Canyon. Both wells are used to supplement the City of Fort Davis water supply in an emergency (Bowman, 1982).

In addition to the headquarters well and Church Camp well, there are two abandoned wells near the barrack ruins, both between 45 and 75 feet deep and producing little or no water.

151-3-18-64

W.R. copy
3/13/64

Southwest Region
Santa Fe, New Mexico

L54

MAR 13 1964

Memorandum

To: Chief, WODC, Attn: Don Marley, Project Supervisor
From: Assistant Regional Director, Resource Planning
Subject: Test Pumping Wells, Fort Davis

After Hydraulic Engineer Fields of this office returned from Fort Davis he called your office and relayed the test pump data to Project Supervisor Don Marley and Engineer David W. Geisinger.

For your records we are enclosing a copy of Mr. Fields trip report and by copies of this memorandum are sending this report to Chief, Branch of Water Resources in the Director's office.

(SIGNED)

Leslie P. Amberger

In duplicate

Enclosure
cc: Director (2) ✓ w/enc
Superintendent, FCDA w/enc

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Assistant Regional Director, Resource Planning DATE: March 12, 1964

FROM : Hydraulic Engineer

SUBJECT: Trip Report to Fort Davis for Test Pumping of Wells

I departed from Santa Fe at 6:45 A.M. on February 24th enroute to Fort Davis. The purpose of my trip was to supervise the well testing at the Headquarters well and the Church Camp well in that area.

Enroute I stopped at U.S.G.S. Ground Water office in Albuquerque and left eight (8) samples of water to be chemically analyzed.

I arrived in Fort Davis at 7:30 P.M. that evening. The following morning I went to the monument and was met by Superintendent Becker who showed me the wells. Loyd Henderson from Alpine, Texas, had been given the contract to make the pump test. He did not arrive until 11:30 A.M. at which time he made preparations to insert the test pump in the Headquarters well. After the present pump was removed we could get a heavy probe down the well, however, our electrical probe would not go beyond the 8 1/2' mark because of root and plant growth in the well. Superintendent Becker, at my request, contracted with Mr. Henderson to clean this well before testing. Then the pump (a 3/4hp submersible) was installed in the Church Camp well. At 4:21 P.M. on February 25th we started the test on the Church Camp well and pumped at varying discharges from 8 to 2 gpm until 12:00 P.M. At 12:30 P.M. I established the rate of flow at 8.0 gpm and by 4:00 A.M. I was satisfied that this was the desired yield of the well. I held the pump at 8 gpm until 6:20 P.M. that same day.

Meanwhile Mr. Henderson had cleaned out the Headquarters well and installed a one hp, submersible pump. Due to the amount of friction loss because of the distance required to pump the water the pump produced only 24 gpm at full choke. We started this pump test at 4:35 P.M. and by 1:30 A.M. the following morning the draw down was 46". I maintained this 24 gpm flow in that well until 4:30 the afternoon of February 29 with a final drawdown of 58". This was very close to the desired yield so no attempt was made to produce a greater amount of water. Meanwhile I had checked recovery in the Church Camp well and was amazed to have full recovery of the well in slightly over three (3) minutes. Recovery readings were started on the Headquarters well at the time the pump was shut off. At 12:00 A.M. on the 28th of February the well had recovered to within one (1) foot of the surface and I had enough information that I could project final recovery time.

2

On the ground observations and findings resulting from the tests are as follows:

*Note: This information relayed
- to WOC by telephone on
March 7, 1964*

The Headquarters well is 61' deep and has 10' of water in the bore. The bore is 7"-8" in diameter and has 8 1/2' of 6" casing at the top. The entire depth of bore under the casing has a thick intrusion of roots and tubular growth. The water table reacts normally to pumping and will produce good clear water in the amount of 25 gpm for an extended period of time with 5' of drawdown. No one in the area seems to know whether or not this well bottomed in bed rock. Because it is obviously a strong aquifer it is probable that it did not and extending the depth of the hole might produce a greater volume of water. At any rate prior to use it should be reamed, cleaned and cased through the entire depth.

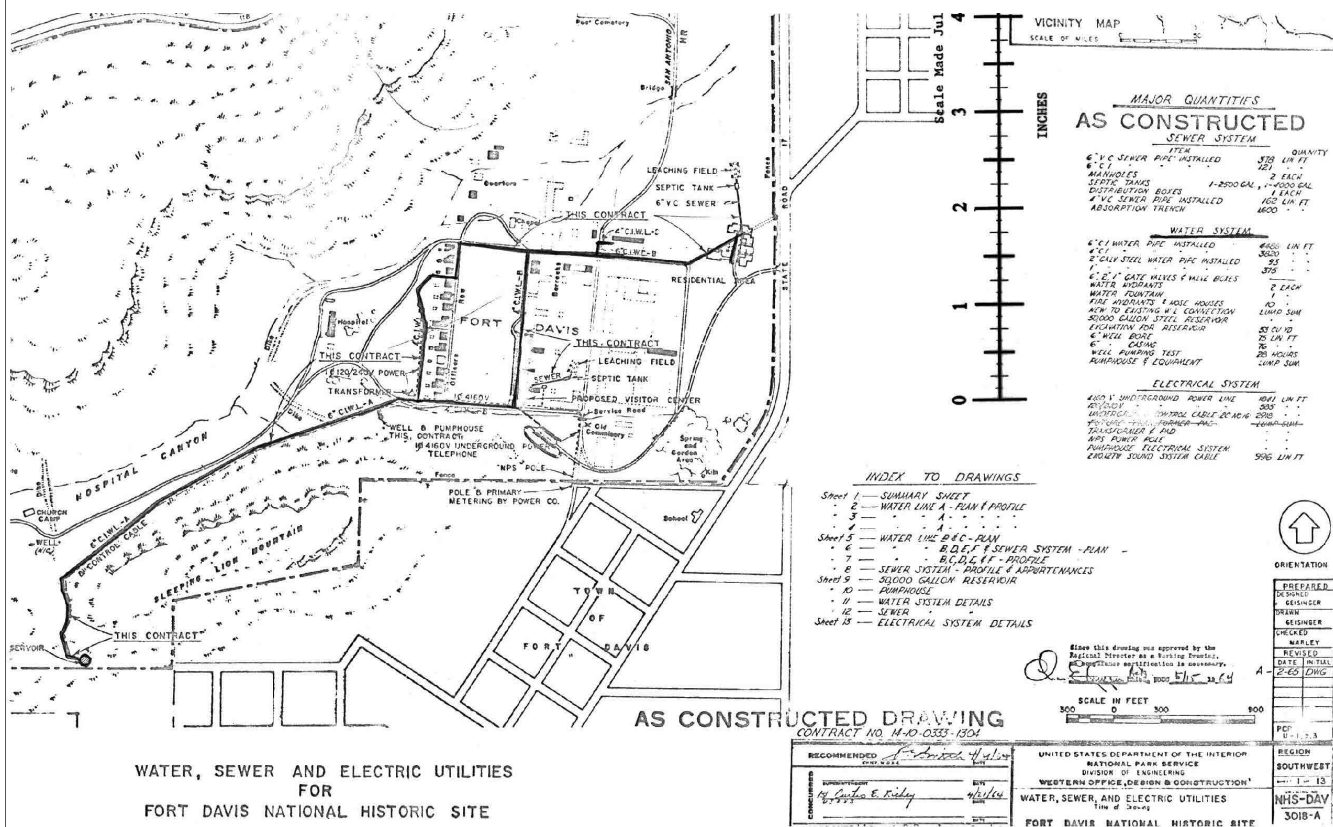
The Church Camp well is 48' in depth with 9.6' of water in the hole. The bore is 6" in diameter and has about 10' of 4" casing at the top. The aquifer is very porous and probably only 4'-5' in thickness with no artesian pressure. This is evidenced in the reactions of drawdown to various discharges and the fast recovery. This well will produce 8 gpm for an extended period of time and local people who were present when the well was drilled state that this well bottomed in bed rock.

I departed from Port Davis at 1:15 P.M. staying overnight in Roswell and arriving in Santa Fe at 12:30 P.M. the 29th of February.

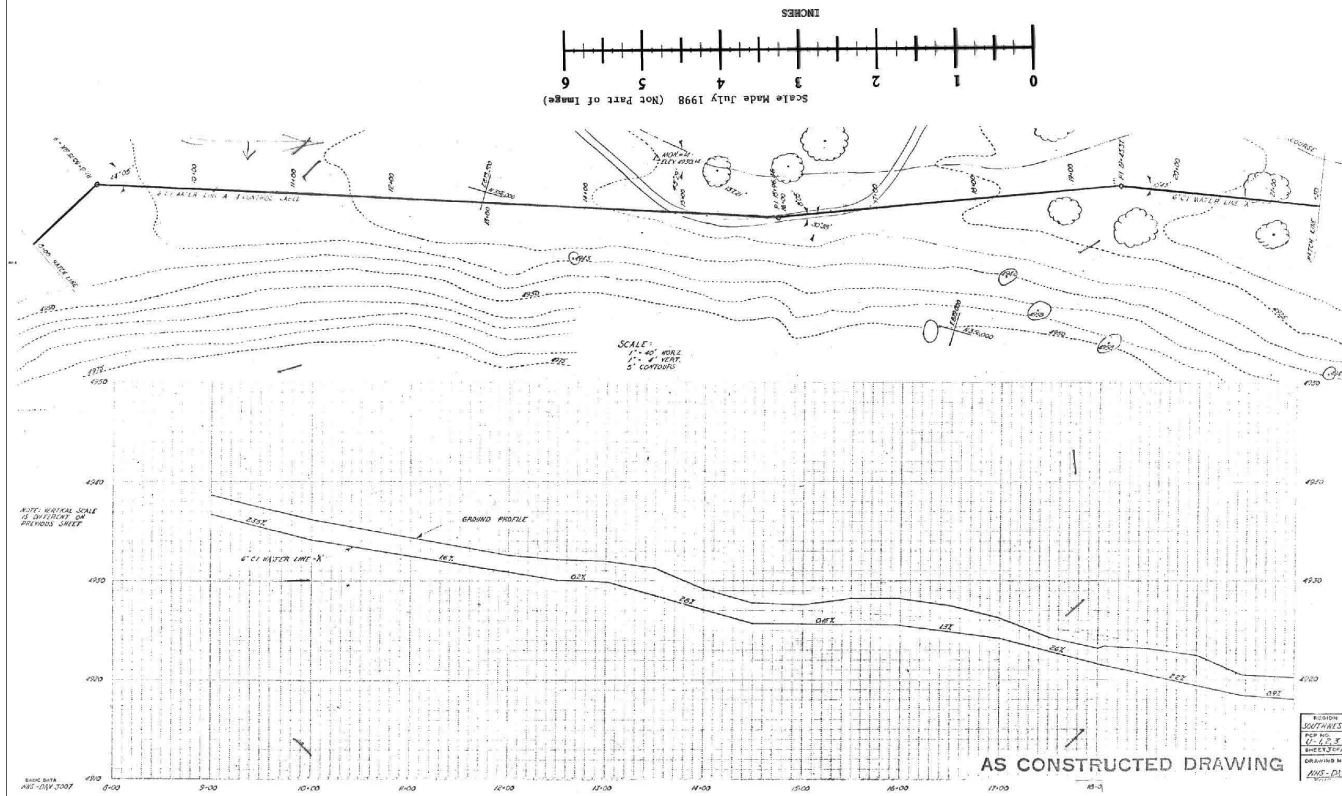
William E. Fields
William E. Fields

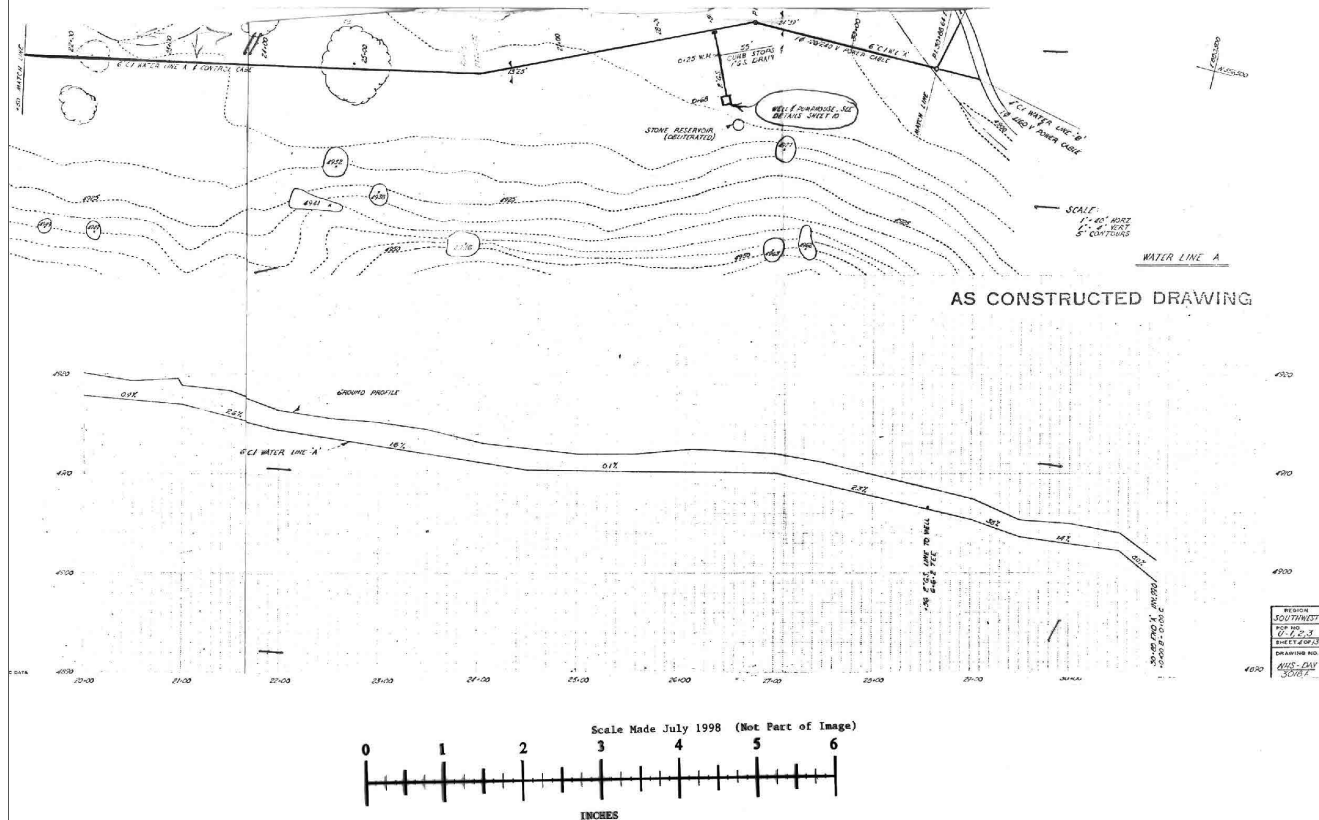
cc: Regional Director
Assistant Regional Director, Administration
Assistant Regional Director, CIU
Regional Chief of Lands
Oper. & Maint. Engineer Moran

Maps and Miscellaneous Information









Docket Information

Number of Documents in Docket 45

Documents Dated from 3/12/1964 to 6/15/1985

Docket Compiled: 3/21/2011