

Appendices

Appendix

- I SeaBee Wells Drilled at the Naval Air Weapons Station**
- II Generalized Cross-Section Well Information**
- III Study Area Water Quality Analyses**

US Navy SeaBee Well Drilling Program

Western Boundary Well Data

**Naval Air Weapons Station
China Lake, California**

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Background

Groundwater discussions during the past few years have focused on the Naval Air Weapons Station's 1980 Groundwater Management Policy (Policy), authored by Pierre St. Amand, Carl Austin, and William Bonner. Lately, special focus has centered on the fact that the 1980 Policy stated the Navy would entertain proposals from local water purveying entities to drill a series of production wells in a south to north alignment and approximately 1/2 mile east of the Navy's western boundary.

The Policy also stated the Navy would not increase it's groundwater production in the Intermediate Wellfield. Instead, the Navy would also relocate it's production wells in the same general alignment along it's western boundary. Since 1980, the Station has drilled two production wells (Wells #30 and #31) in the Indian Wells Valley and both have been located in accordance with the 1980 Policy. Well #30 is located at the southwest corner of the Station and Well #31 is located approximately 3/4 mile east of Well #30 (just north of the railroad tracks).

I have gathered geohydrologic data from the west side area for the past year. The purpose of the data collection effort is to make recommendations to Command in case a formal proposal (to drill on the Navy's west side) is made.

Geohydrologic Data Collected

Seven monitor wells have been utilized in this data collection effort. All seven wells have been drilled in the west side area during the past two years. Four wells were drilled during the Bureau of Reclamation's Indian Wells Valley Deep Well Drilling Project (Project) and the other three were drilled by the US Navy SeaBees. Figure 1 shows the map location of each well. Sample chips were logged at 10 foot intervals for the Project wells and at 5 foot intervals for the SeaBee wells. All but one of the SeaBee wells were sampled for water quality constituents (I was unable to sample Well 08- L02 due to development problems). Ground surface elevations were surveyed at each well site except Well 08-L02 and Well 15 J01. Once this data was collected and reduced, a generalized geologic cross-section (Figure 2) was constructed using the monitor well data up to and including the Neal Ranch wells (Well BR #6 was not included due to map scaling difficulties). An isochemical map (Figure 3) was constructed to show the typical Total Dissolved Solids (TDS) make-up of the west side area. Figure 4 is an isopach-type (geologic deposit thickness) map showing the depth to the top of the confining clay layer in the area.

Conclusions

Geologic Conditions

The generalized geologic cross-section shows the grey-green to black, confining clay deposit existing throughout the entire west side beginning about 1.25 miles north of the southwest corner of the NAWS' boundary (refer to Figure 4 for the plan view of the confining clay deposit). This deposit correlates very well with the deposit found at depth beneath the Neal Ranch properties, now owned and managed by the IWV Water District. Figures 5 through 12 show the lithologic logs from all the monitor wells used in this report. The thickness of the clay deposit, ranging from about 800 feet in NR #2 to over 1450 feet in NR #1, beneath Neal Ranch indicate this area to be the "sink" from fairly recent geologic processes. Past gravity and seismic work completed for the Eastern Kern County Resource Conservation District in this

area also indicate the same results. The clay deposit exhibits an arcuate pattern throughout the western boundary area and truncates just south of the North American Chemical Company monitor well #17-1. The importance of mapping this clay unit with respect to potential production well construction is two-fold:

- 1) The clay's ability to allow water to pass through it and be transmitted into a well is very low. Typical transmissivities estimated for wells used in this report are in the .05 ft / min - .10 ft / min. range. Typical transmissivities in fine to medium sand wells are in the .25-.35 ft /min. range. Obviously, the clay deposits along the western boundary are not conducive to high production wells for any length of time and,
- 2) The clays have an effect on water quality in the area. Note in Figure 3 the dramatic TDS level increase as you go from south to north. This is the same general pattern the proposed alignment of wells will also entail. Furthermore, there are other constituents over the MCL that must also be addressed (especially the radiological constituents).

Hydrologic Conditions

As previously mentioned, the TDS levels increase from south to north in the study area. Groundwater analyses from wells MW#32 (252 ppm) and NACC 17-1 (185 ppm) show excellent water quality. These wells were screened in sands and sands with some clay. The wells in the northern portion of the study area show very poor quality. These wells were screened in the confining clay deposit. Water quality analyses completed by the District at the Neal Ranch property show water quality to exceed California State Standards under Title 22 Maximum Constituent Levels (MCL). MCL for TDS under Title 22 is 500 ppm for Primary Standards and 1000 ppm for Secondary Standards. The District has served it's customers Primary Standard water since it's inception. TDS levels in the Neal Ranch wells increase with the depth of sample. The following table shows this trend.

Table 1

<u>Well Designation</u>	<u>Sample Depth</u>	<u>TDS Level</u>
NR #1	250'-270'	2405 ppm
NR #1	1130'-1150'	3660 ppm
NR #1	1960'-1980'	3251 ppm
NR #2	330'-350'	808 ppm
NR #2	1540'-1560'	1367 ppm
NR #2	1910'-1930'	3305 ppm

There are two obvious correlations here: 1) The confining clay deposit and poor water quality in the northern portion of the study area, and 2) The clean sands and excellent water quality in the southern portion of the study area.

Recommendations

1. The available data shows that it would **NOT** be a prudent use of west side groundwater reserves to drill a series of production wells at 1/2 mile intervals throughout the entire western boundary area. Certain locations in the southern portion of the study area may be desirable for production well purposes.
2. If the west side is to be utilized for groundwater production, a blending program in the area should be investigated and implemented since the water quality does degrade to the north and northeast.
3. Additional investigations in the study area should include:
 - A. Drill monitor well 26/39-08 L02 to 1000 feet, log and sample the groundwater for general mineral constituents.
 - B. Sample monitor well 26/39-15 J01 for general mineral constituents.
 - C. Drill a monitor well in 26/39-Section 20 and 26/38-Section 30. These wells should be drilled to 1000 feet, logged, and sampled for general mineral constituents.
4. Revise the 1980 Groundwater Policy as necessary.

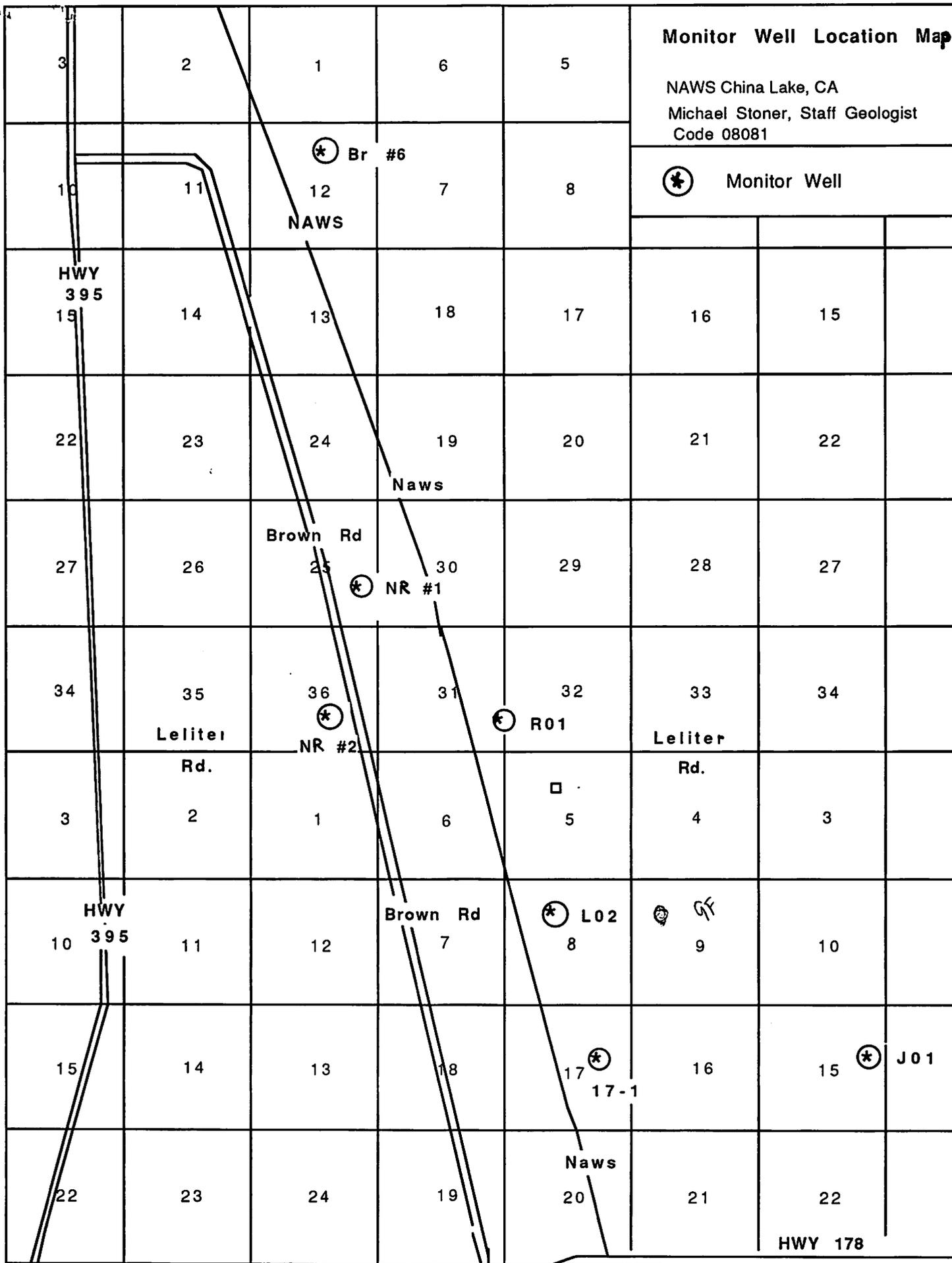
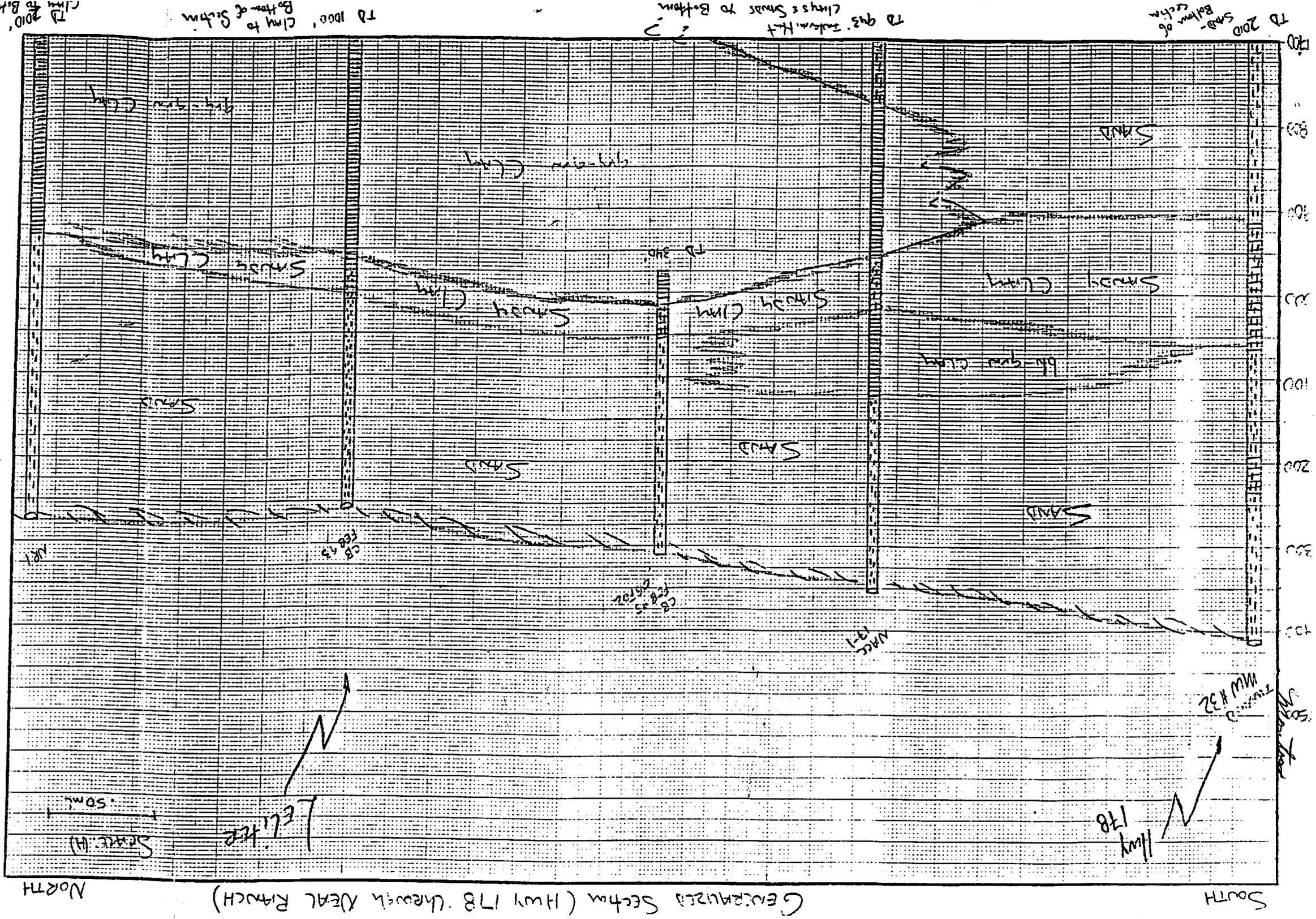


Figure 2



Geological Section (July 178 through Neal Ranch)

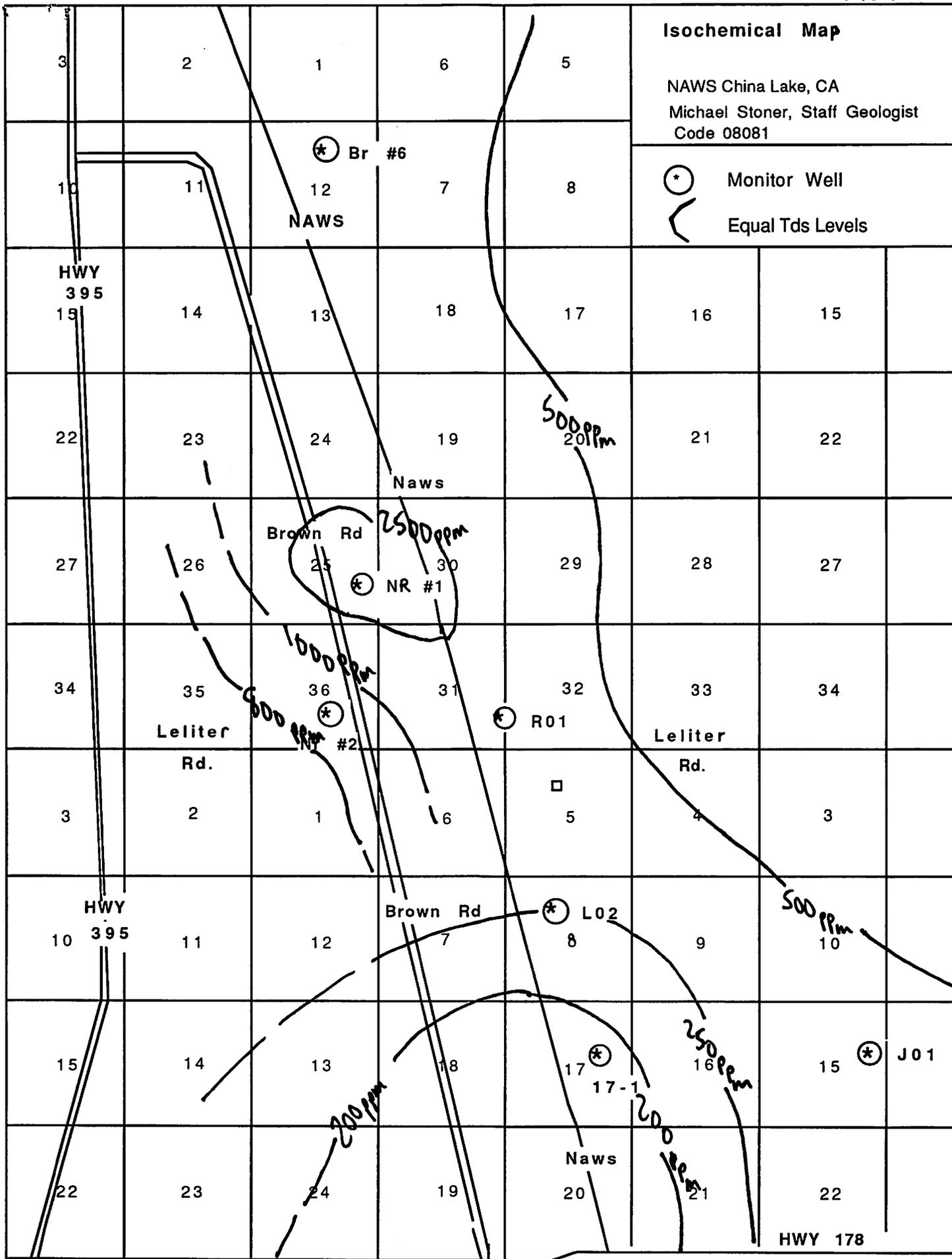
NORTH

SOUTH

TD 2000 SAND - Bottom of section
TD 925. Indurated Clay & Sands to Bottom
TD 1000 Clay to Bottom of Section
TD 2000 Clay to Bottom

153

FIGURE 3



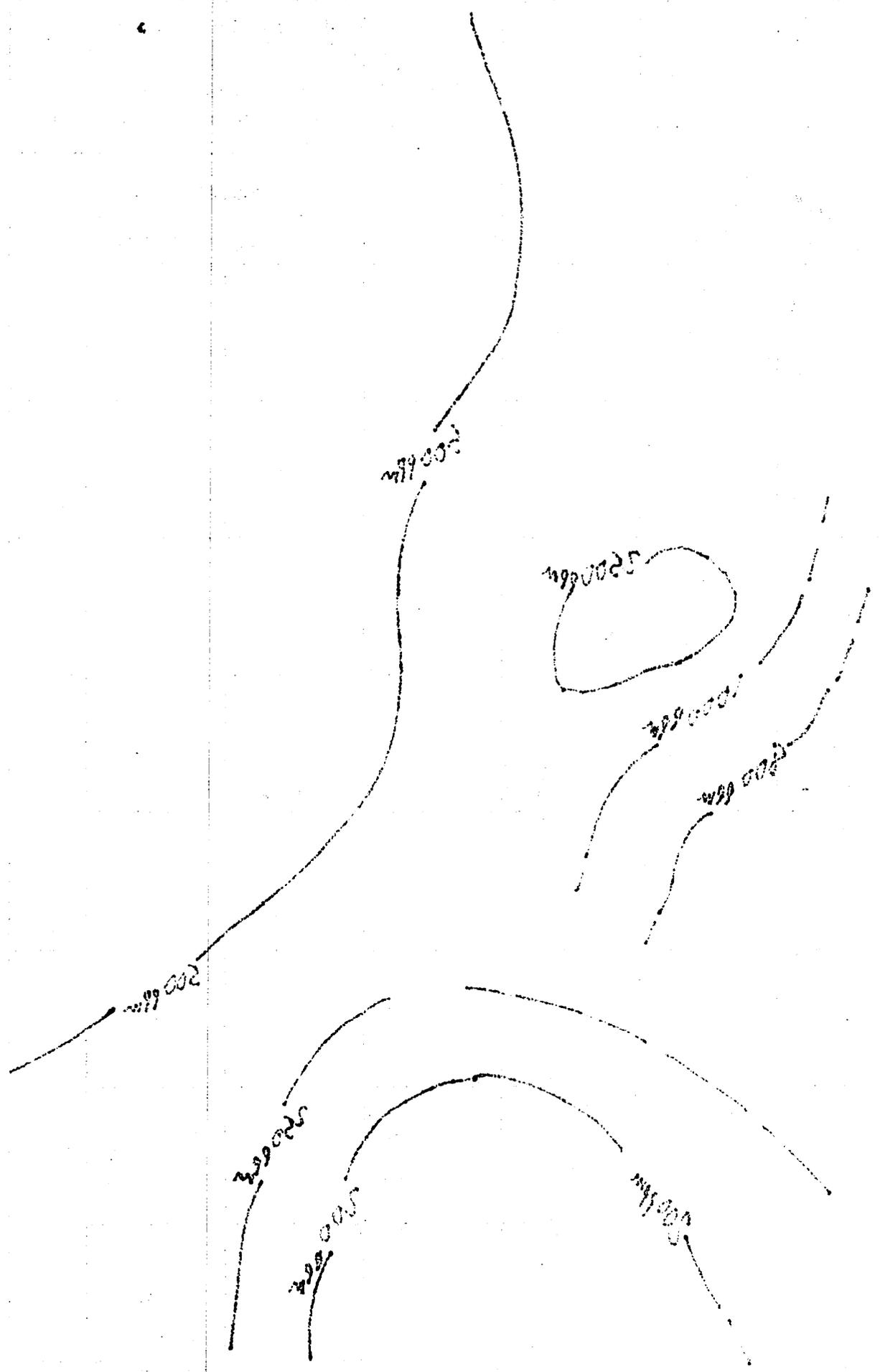
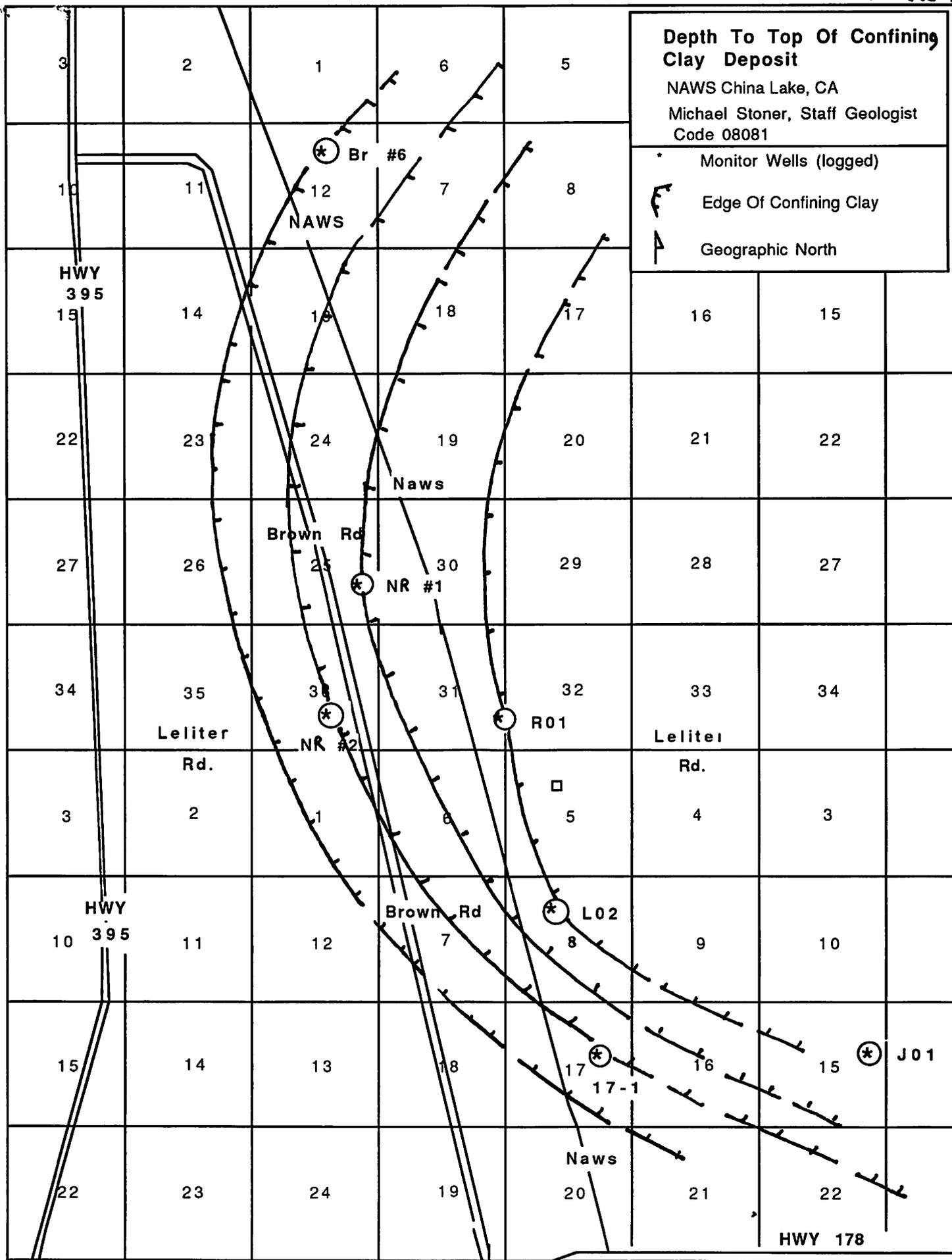


FIGURE 4



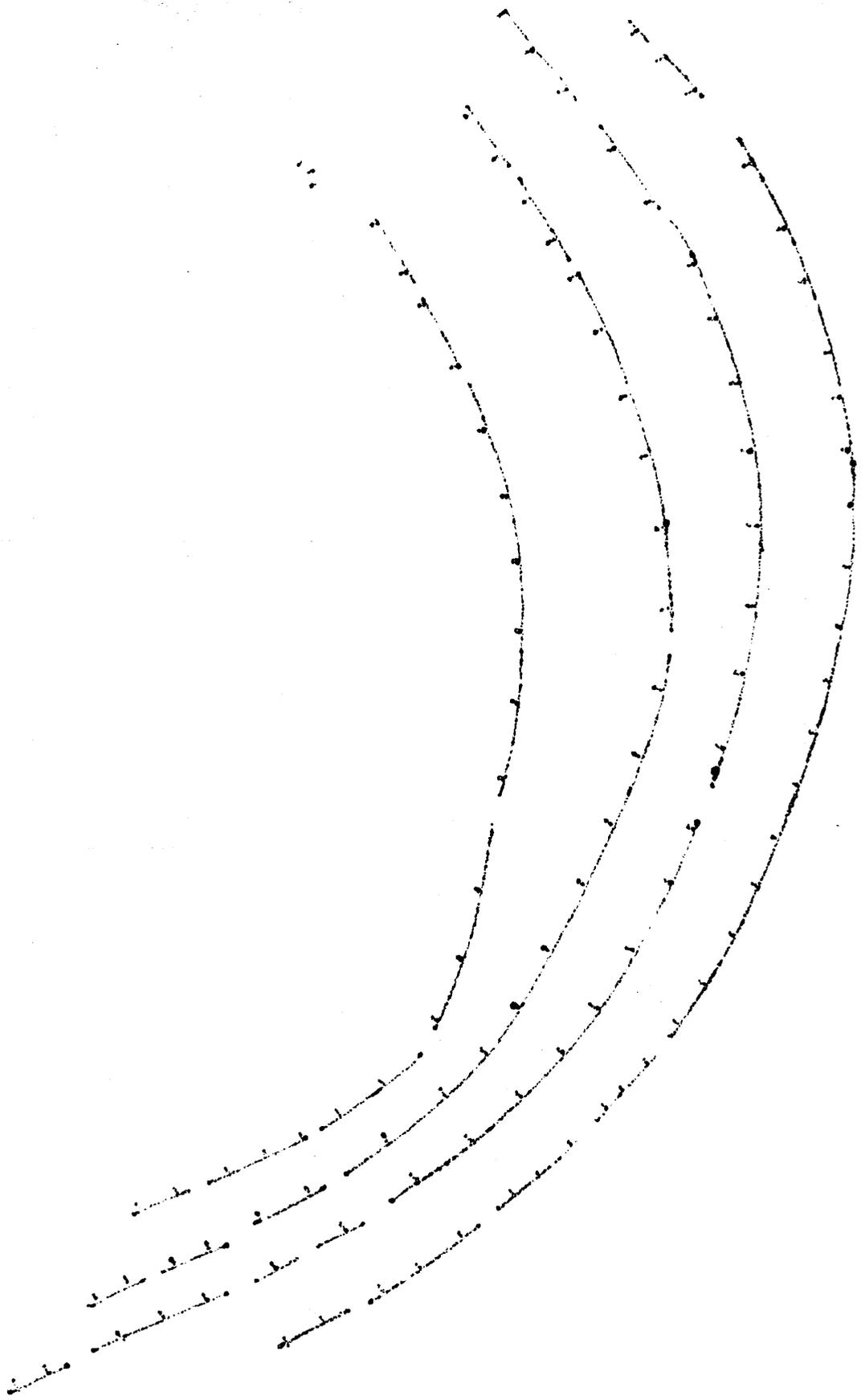


FIGURE 5

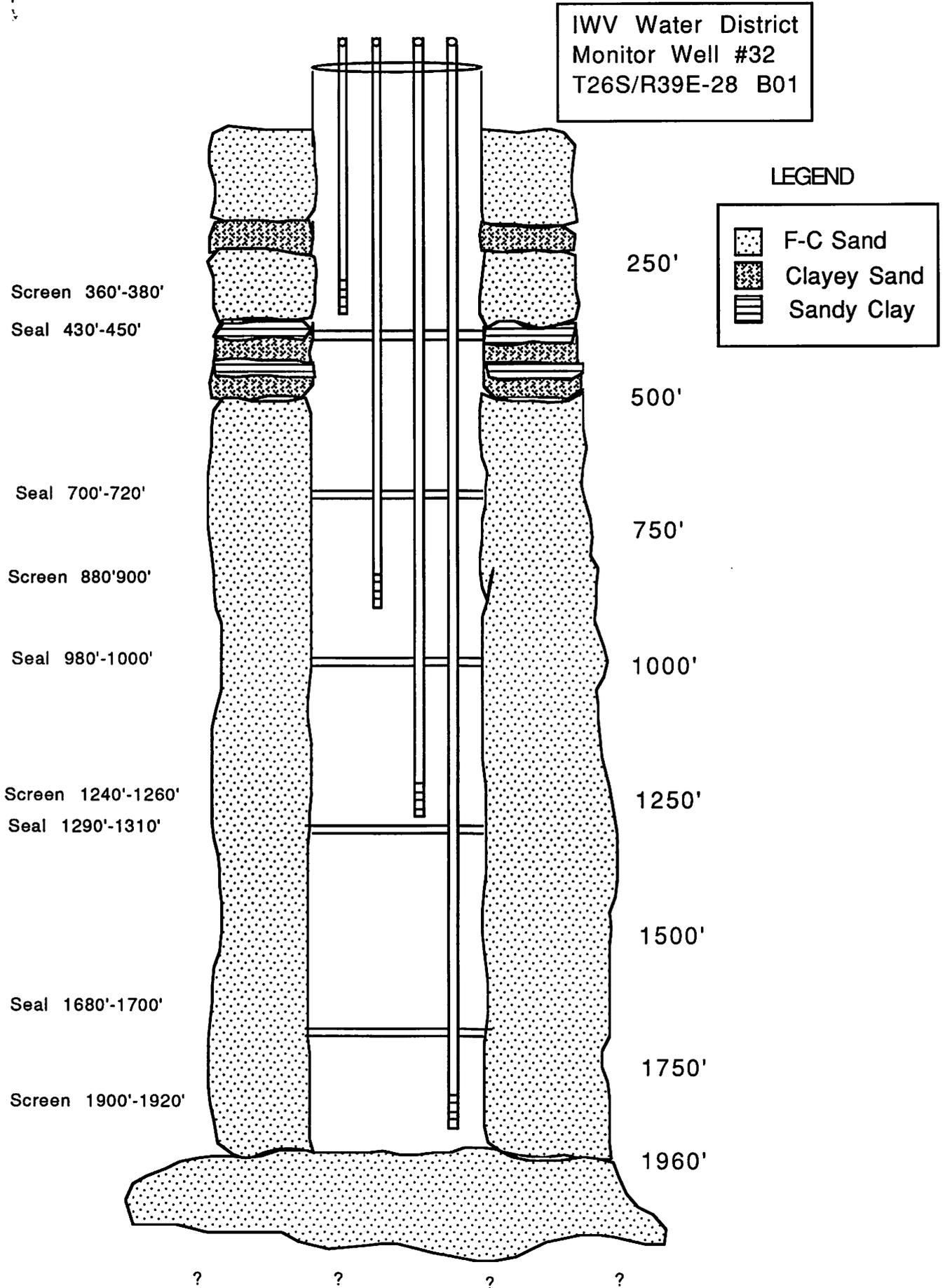
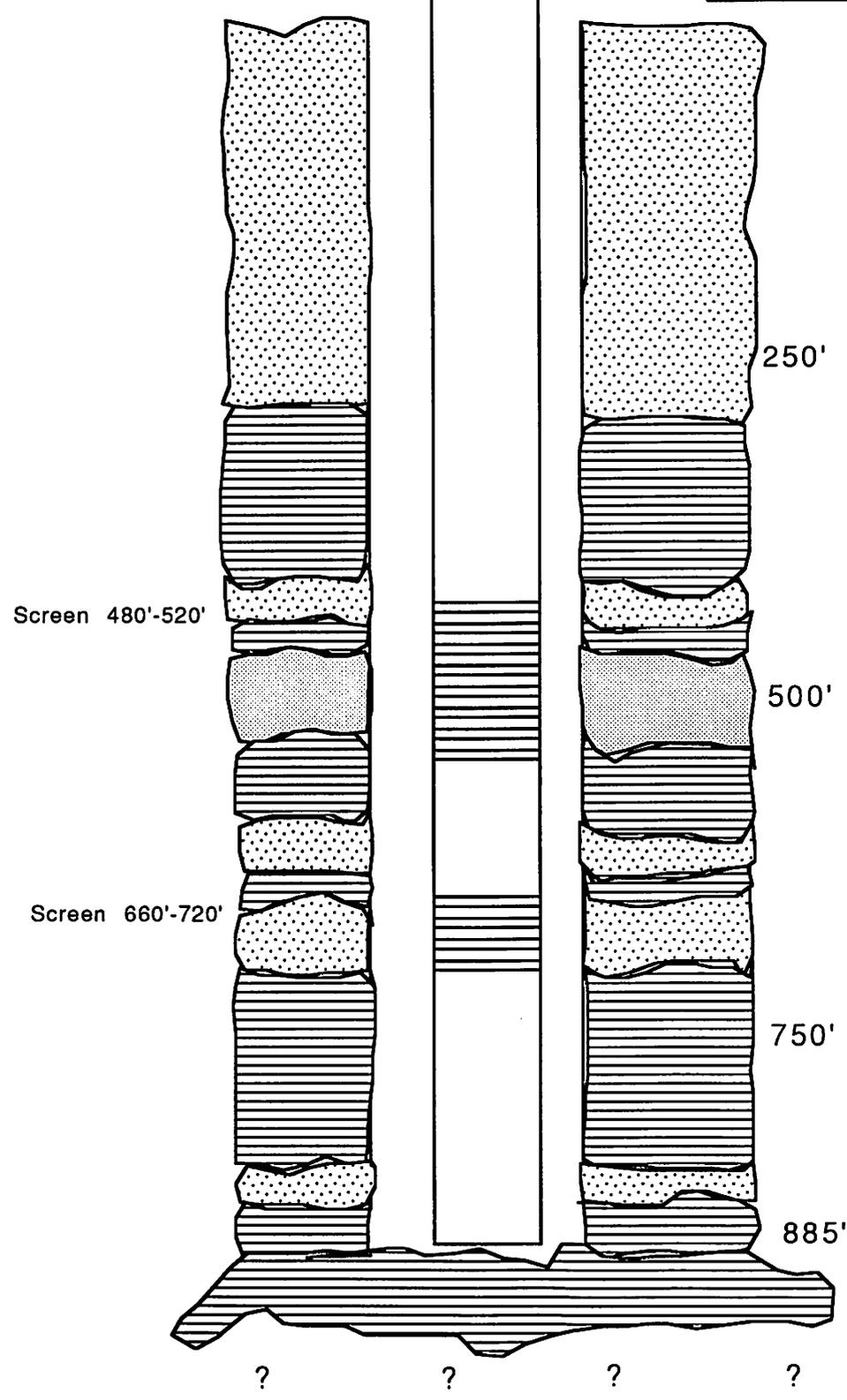


FIGURE 6

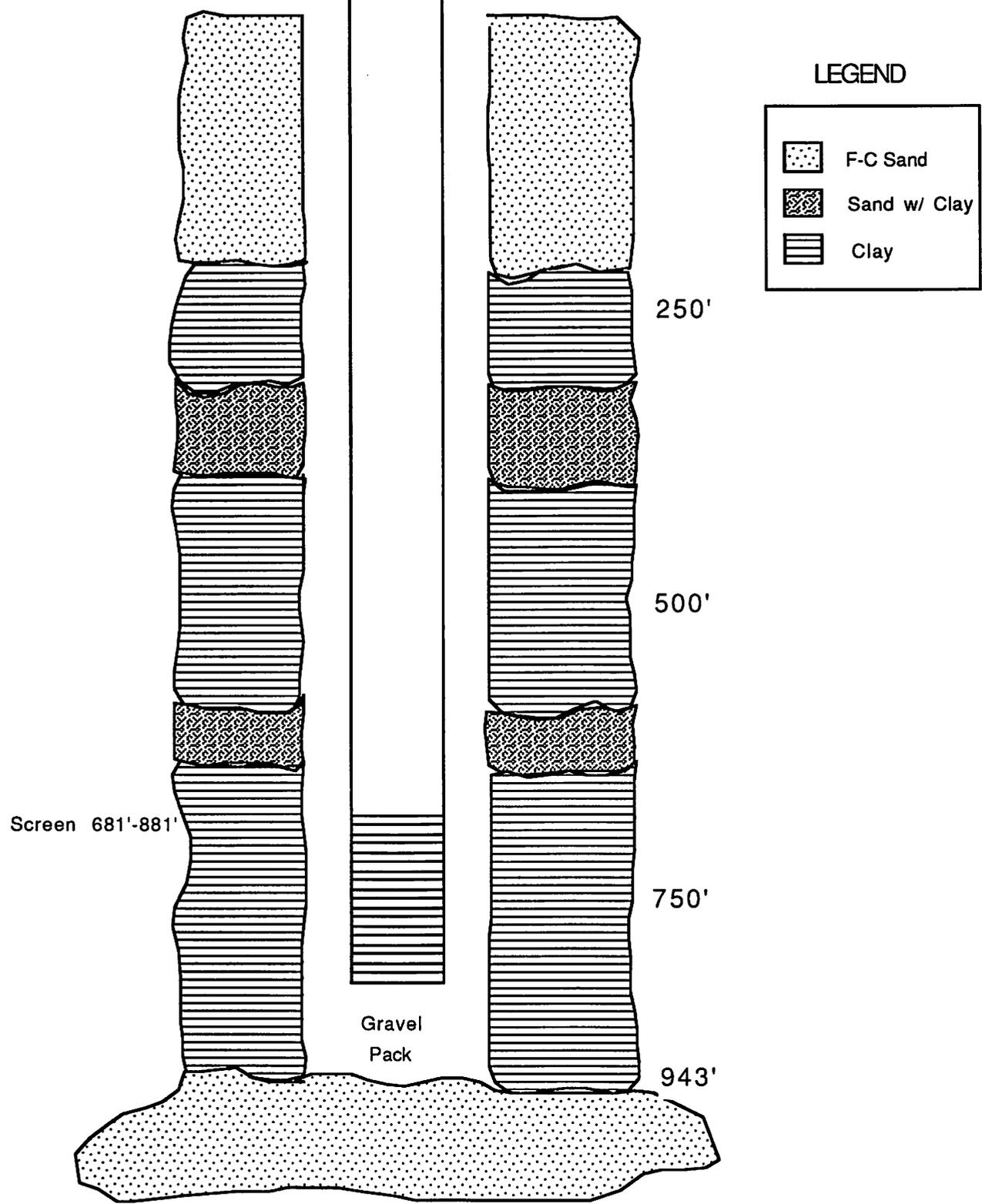
Sandquist Spa
#1 Monitor Well
T26S/R39E-15 J01



LEGEND

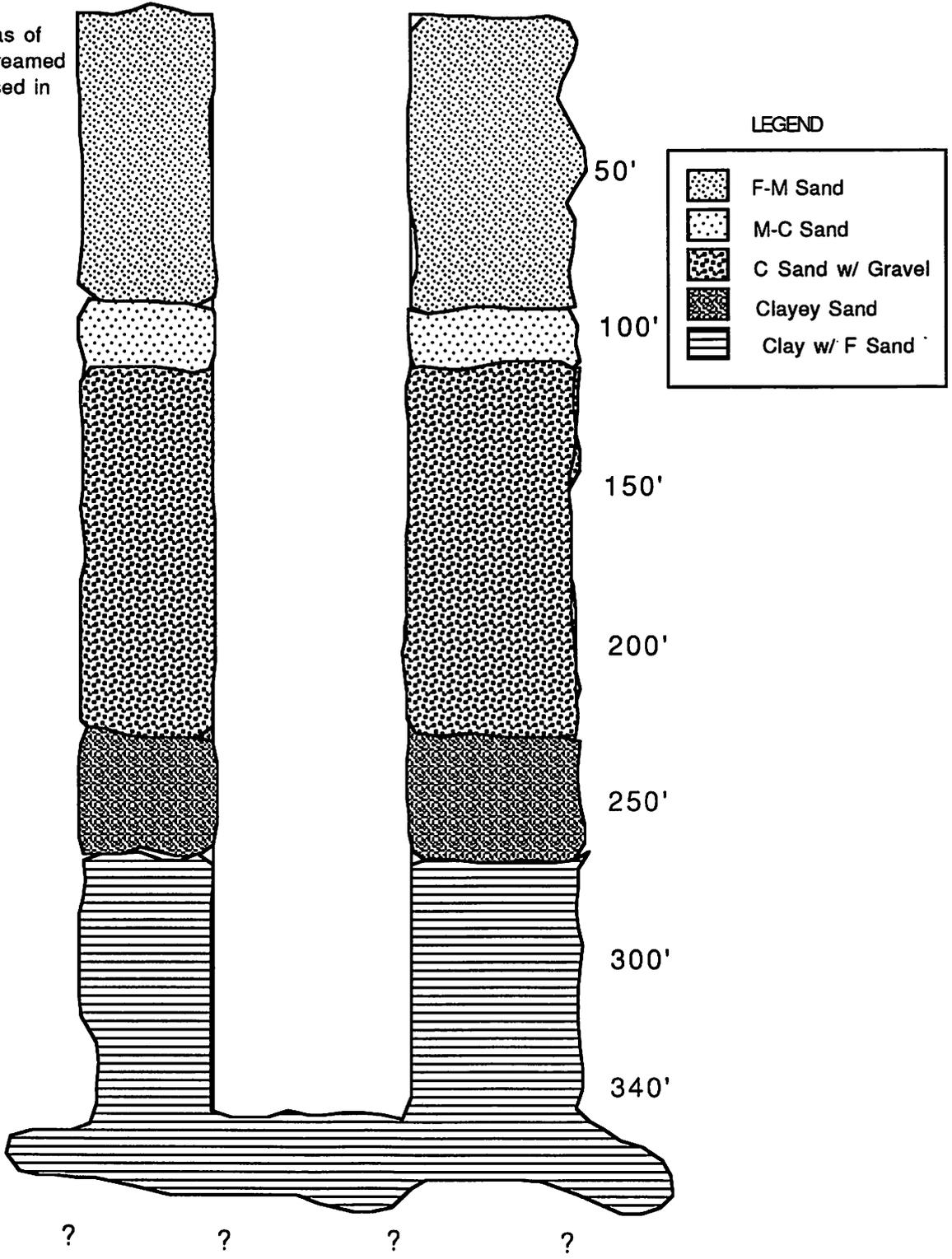
	F-C Sand
	Clay

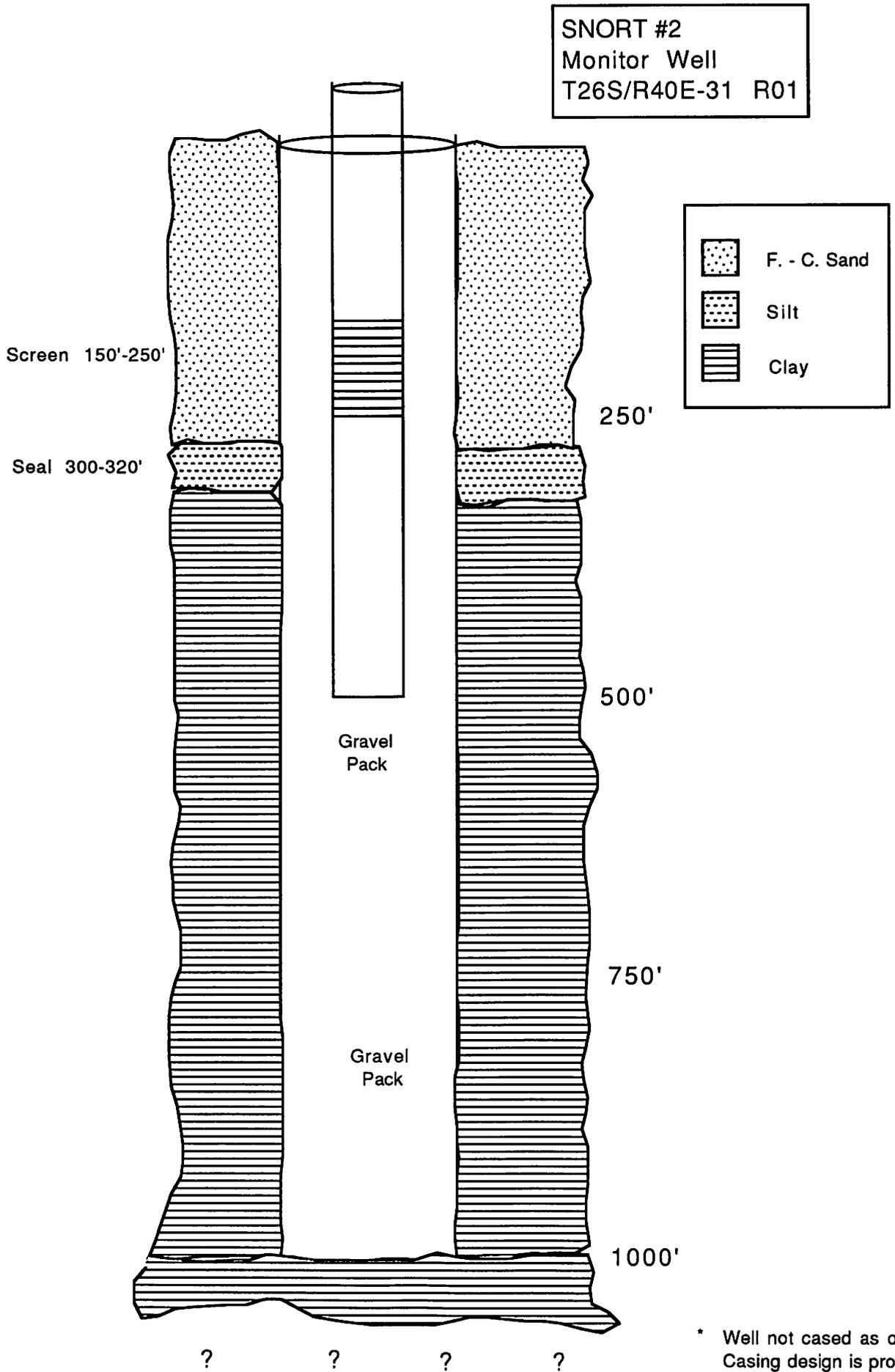
North American
Chemical Company
17-1 Monitor Well



US Navy SeaBee
Monitor Well
T26S/R39E-08 L02

* well is not cased as of
07-20-93. Will be reamed
to 1000 feet and cased in
August 1993.

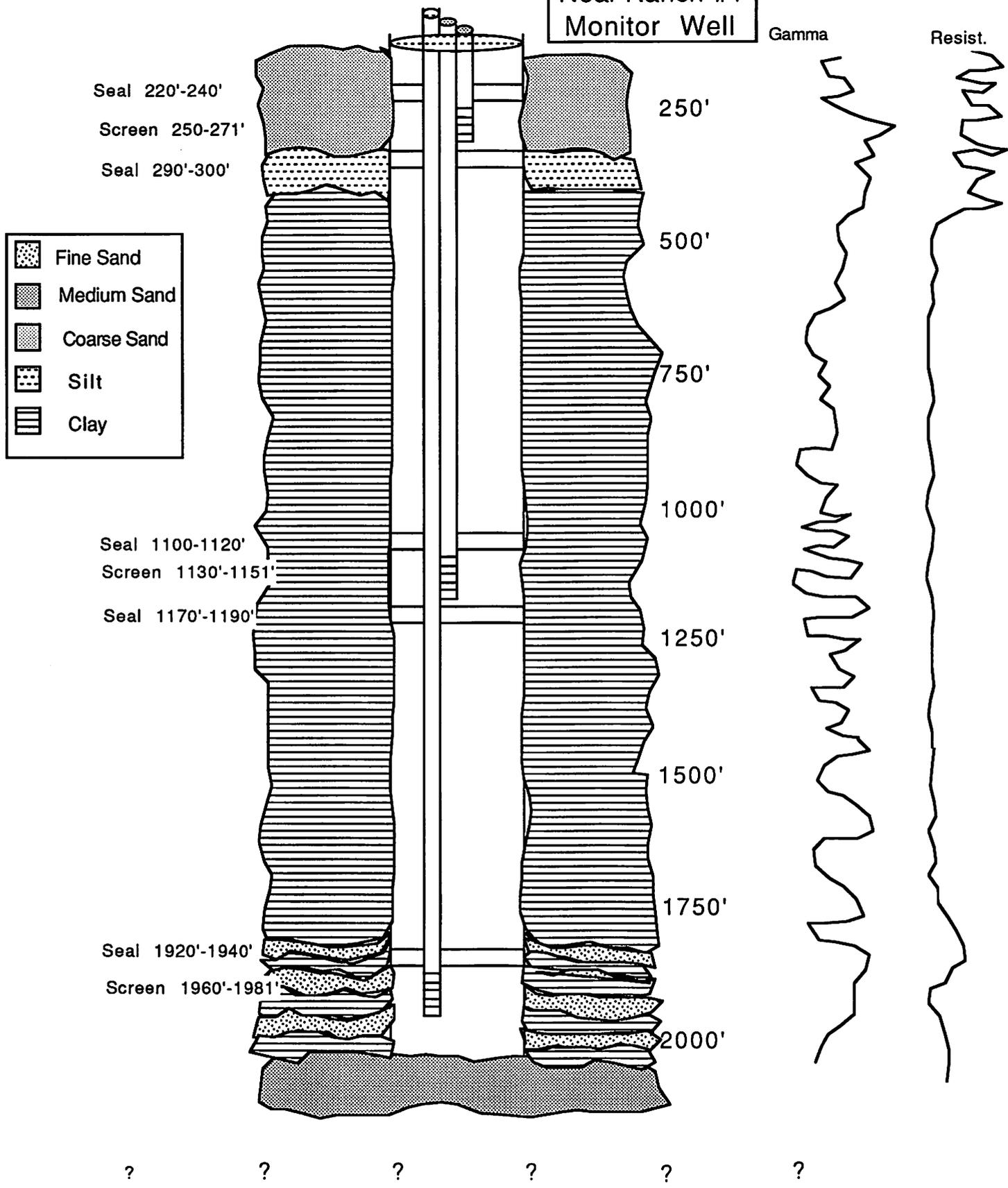


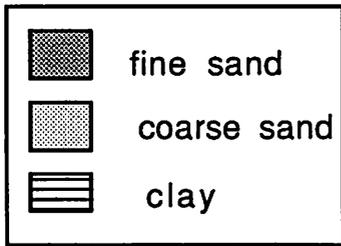


* Well not cased as of 7-21
Casing design is proposed
to be completed in August.

FIGURE 10

Neal Ranch #1
Monitor Well



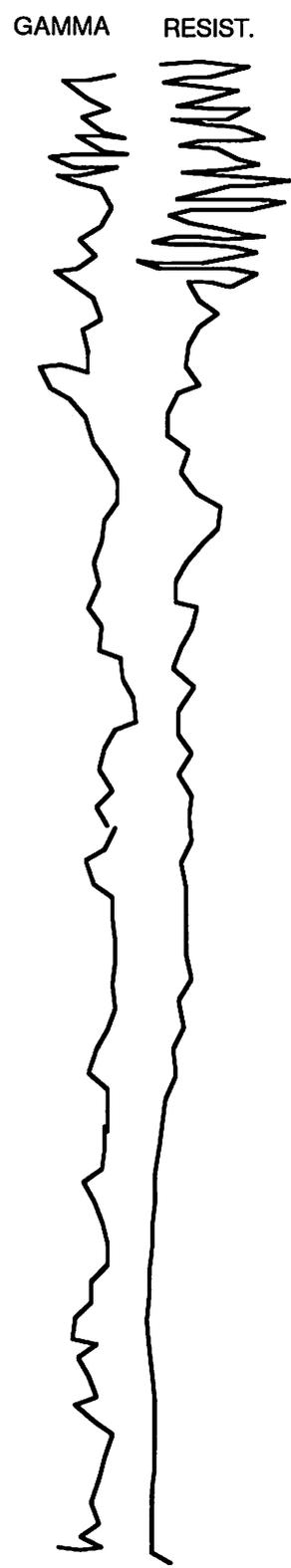


Neal Ranch # 2
Monitor well

Seal 250'-270'
Screen 330'-350'
Seal 450'-470'

Screen 1540'-1560'
Seal 1580'-1600'
Screen 1910'-1930'

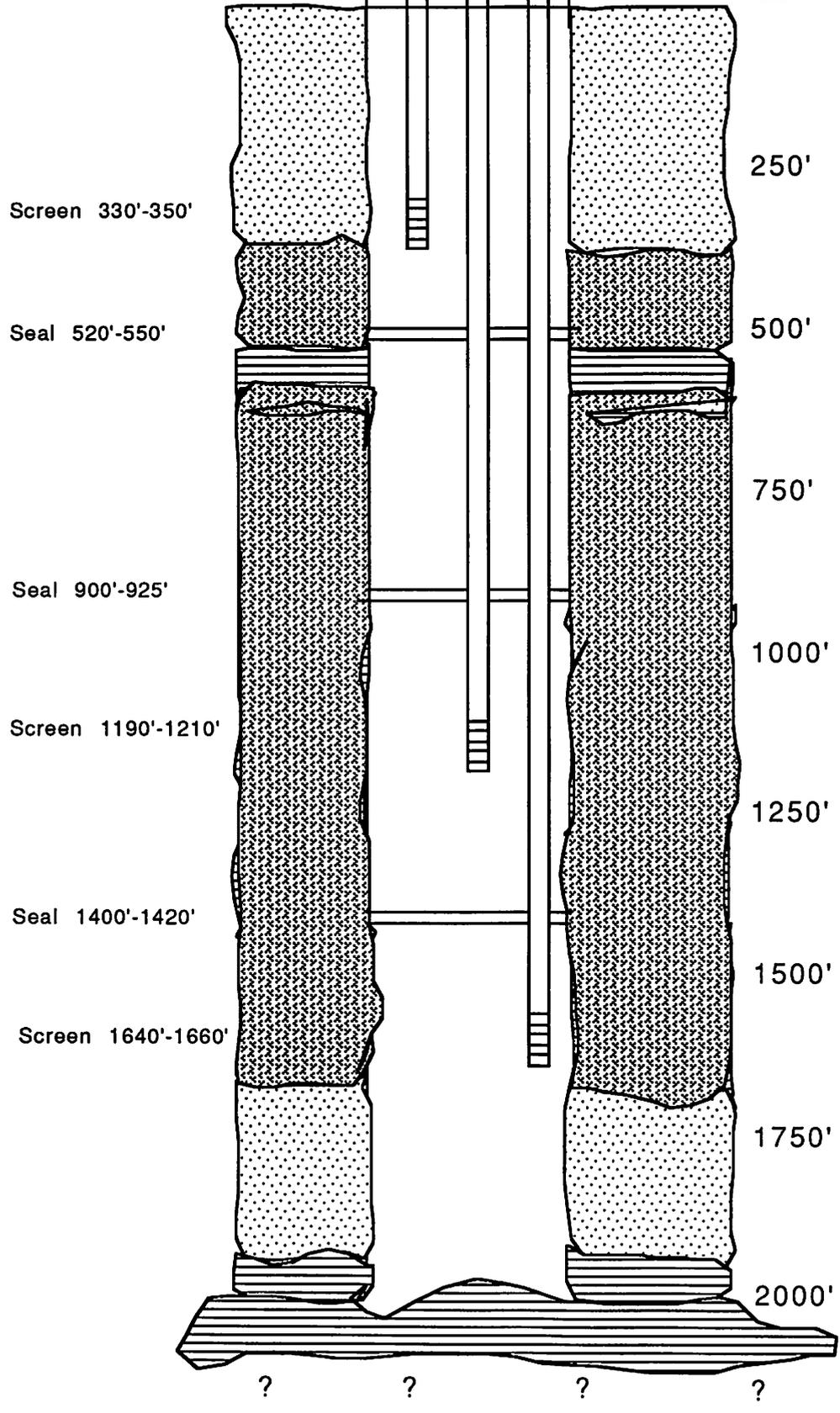
250'
500'
750'
1000'
1250'
1500'
1750'
2000'



? ? ? ? ?

FIGURE 12

Bureau of Reclamation
Monitor Well #6
T25S/R38E-12 M01



LEGEND

- F-C Sand
- Sandy Clay
- Clay

Appendices

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SeaBee Wells Drilled at NAWS (1985-1993)

Date	Location	T.D.	L.S.D.	Blank Interval	Screen Interval	Well Type
6-87	26/40-18G01	200	2580.0	0-140	140-200	Production
6-87	26/41-27B01	200	2040.0	0-140	140-200	Monitor
9-87	26/41-18H01	130	2060.0	0-90	90-130	Production
9-87	26/41-28A01	100	2100.0	0-40, 80-100	40-80	Monitor
9-87	26/40-27H01	130	2040.0	0-50, 110-130	50-110	Monitor
9-87	26/41-22N01	80	2030.0	0-25, 60-80	25-60	Monitor
12-87	26/40-27E01	500	2270.06	0-380, 480-500	380-480	Monitor
12-87	22/41-12K01	520	5660.0	0-380	380-520	Production
12-87	26/40-27D01	155	2267.41	0-65, 145-155	65-145	Monitor
6-88	25/39-30F01	540	2255.0	0-420, 520-540	420-520	Monitor
6-88	26/41-18G02	160	2580.0	0-60, 140-160	60-140	Production
6-88	26/40-27D02	170	2268.0	0-100, 150-170	100-150	Monitor
9-88	26/41-11P01	168	2150.0	0-88, 148-168	88-148	Monitor
9-88	26/41-12D01	65.5	2280.0	0-32	32-65.5	Monitor
9-88	26/41-31L01	150	2400.0	Not Cased	Not Cased	Not Cased
3-89	25/39-03N01	315	2246.0	Lost Steel	Lost Steel	Not Cased
3-89	24/39-34D01	325	2225.0	0-205, 305-325	205-305	Monitor
3-89	25/39-03R01	180	2225.0	0-60, 160-180	60-160	Monitor
6-89	26/40-35Q01	200	2247.0	0-80, 180-200	80-180	Monitor
6-89	26/40-25D03	100	2250.0	0-80	80-100	Monitor
6-89	21/41-36Q01	500	5688.0	0-380, 480-500	380-480	Monitor

Comments: T.D. = Total Depth of Well
LSD = Land Surface Datum (Elevation Above Mean Sea Level)

Appendix I

SeaBee Wells Drilled at NAWS (1985-1992)

Date	Location	T.D.	L.S.D.	Blank Interva	Screen Interva	Well Type
9-85	26/40-22A01	155	2227.0	0-35, 75-155	35-75	Monitor
9-85	26/40-22H01	60	2227.0	0-10, 30-60	10-30	Monitor
9-85	26/40-22A02	100	2227.0	0-20, 40-100	20-40	Monitor
9-85	25/39-31R01	600	2260.0	0-320, 380-480	320-380	Monitor
6-86	26/40-04Q01	290	2185.0	0-30, 50-70 90-110,130-290	30-50, 70-90 110-130	Monitor
6-86	26/40-09A01	100	2187.0	0-20, 40-60	20-40, 60-100	Monitor
6-86	26/39-13R03	300	2318.0	0-100, 120-180 200-230, 250-300	100-120, 180-200 230-250	Monitor
6-86	26/40-25D02	160	2252.0	0-20, 40-60 80-160	20-40, 60-80	Monitor
12-86	26/40-23A04	240	2210.0	0-180, 220-240	180-220	Monitor
12-86	26/40-14B02	425	2187.0	0-315, 415-425	315-415	Monitor
12-86	26/40-06D01	320	2220.0	0-276, 300-320	276-300	Monitor
9-86	22/41-12L01	530	5680.0	0-390, 490-530	390-490	Production
9-86	26/40-23A03	360	2210.0	0-300, 340-360	300-340	Monitor
1-87	28/41-15M01	200	2580.0	0-140, 180-200	140-180	Monitor
1-87	28/41-15L01	600	2560.0	0-420, 480-520 560-600	420-480, 520-560	Production
2-87	26/40-35H01	150	2243.0	0-55, 70-110 130-150	55-70, 110-130	Monitor
2-87	26/40-25C01	48	2255.0	0-28	24-48	Monitor
3-87	26/40-06D01	260	2210.0	0-120, 200-260	120-200	Monitor
3-87	26/40-06C01	600	2190.0	0-500	500-600	Monitor
6-87	26/39-13R04	800	2295.0	0-640, 780-800	640-780	Monitor
6-87	26/40-35H02	500	2250.0	0-340, 480-500	340-480	Monitor

Comments: T.D. = Total Depth of Well
LSD = Land Surface Datum (Elevation Above Mean Sea Level)

SeaBee Wells Drilled at NAWS (1985-1992)

Date	Location	T.D.	L.S.D.	Blank Interval	Screen Interval	Well Type
6-87	26/40-18G01	200	2580.0	0-140	140-200	Production
6-87	26/41-27B01	200	2040.0	0-140	140-200	Monitor
9-87	26/41-18H01	130	2060.0	0-90	90-130	Production
9-87	26/41-28A01	100	2100.0	0-40, 80-100	40-80	Monitor
9-87	26/40-27H01	130	2040.0	0-50, 110-130	50-110	Monitor
9-87	26/41-22N01	80	2030.0	0-25, 60-80	25-60	Monitor
12-87	26/40-27E01	500	2270.06	0-380, 480-500	380-480	Monitor
12-87	22/41-12K01	520	5660.0	0-380	380-520	Production
12-87	26/40-27D01	155	2267.41	0-65, 145-155	65-145	Monitor
6-88	25/39-30F01	540	2255.0	0-420, 520-540	420-520	Monitor
6-88	26/41-18G02	160	2580.0	0-60, 140-160	60-140	Production
6-88	26/40-27D02	170	2268.0	0-100, 150-170	100-150	Monitor
9-88	26/41-11P01	168	2150.0	0-88, 148-168	88-148	Monitor
9-88	26/41-12D01	65.5	2280.0	0-32	32-65.5	Monitor
9-88	26/41-31L01	150	2400.0	Not Cased	Not Cased	Not Cased
3-89	25/39-03N01	315	2246.0	Lost Steel	Lost Steel	Not Cased
3-89	24/39-34D01	325	2225.0	0-205, 305-325	205-305	Monitor
3-89	25/39-03R01	180	2225.0	0-60, 160-180	60-160	Monitor
6-89	26/40-35Q01	200	2247.0	0-80, 180-200	80-180	Monitor
6-89	26/40-25D03	100	2250.0	0-80	80-100	Monitor
6-89	21/41-36Q01	500	5688.0	0-380, 480-500	380-480	Monitor

Comments: T.D. = Total Depth of Well
 LSD = Land Surface Datum (Elevation Above Mean Sea Level)

Appendix I

SeaBee Wells Drilled at NAWS (1985-1992)

Date	Location	T.D.	L.S.D.	Blank Interval	Screen Interval	Well Type
9-89	22/41-26J01	370	5720.0	Not Cased	Not Cased	Not Cased
12-89	26/40-21M01	400	2282.0	0-180, 360-400	180-360	Monitor
12-89	26/40-20L01	400	2284.0	0-280, 380-400	280-380	Monitor
6-90	21/41-36Q01	500	5688.0	0-360, 480-500	360-480	Monitor
9-90	27/44-33M01	120	2278.0	Not Cased	Not Cased	Not Cased
9-90	26/40-21K01	420	2278.0	0-300, 400-420	300-400	Monitor
6-91	26/39-05F02	440	2350.0	0-147, 231-252	147-231	Production
6-91	26/39-24N02	835	2370.0	Not Cased	Not Cased	Not Cased
9-91	21/41-26J02	400	5720.0	Not Cased	Not Cased	Not Cased
9-92	26/39-15J01	885	2355.0	Not Cased	Not Cased	Not Cased
12-92	26/39-15J01	885	2355.0	0-600, 700-720	600-700	Monitor
12-92	25/39-31R01	400	2260.0	Not Cased	Not Cased	Not Cased
02-93	26/39-08F01	340	2315.0	Not Cased	Not Cased	Not Cased

Comments: T.D. = Total Depth of Well
 LSD = Land Surface Datum (Elevation Above Mean Sea Level)

Cross-Section Well Information

Well Designation	Total Depth	Screened Interval	TDS
MW #32	2000 feet	380-400 feet	252 ppm
MW 17-F01	943 feet	681-881 feet	173 ppm
MW 08-L02	340 feet	Not Cased	UNK
MW 31-R02	1000 feet	Not Cased	590 ppm
NR #1	2000 feet	250-270 feet	2406 ppm
NR #2	2000 feet	330-350 feet	808 ppm
Bur Rec #6	2000 feet	330-350 feet	596 ppm
MW 15 J01	885 feet	480-520 feet	UNK

CLINICAL\LABS SAN BERNARDINO
 1595 NORTH "D" STREET
 SAN BERNARDINO, CA. 92405

GENERAL MINERAL & PHYSICAL, INORGANIC, & RADIOLOGICAL CHEMICAL ANALYSIS
 Date of Report: 10/25/91 Sample ID No. 91-9450
 Laboratory Signature Lab
 Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director: *Carol J. King*
 Name of Sampler: MIKE C. Employed By: ROTTMAN DRILLING CO.
 Date/Time Sample Date/Time Sample Date Analyses
 Collected: 91/10/17/2350 Received @ Lab: 91/10/21/1700 Completed: 91/10/25

System System
 Name: INDIAN WELLS VALLEY CWD - RIDGECREST Number: 15-017
 Name or Number of Sample Source: W32 P-1 (380') (This sample was filtered)

 * User ID: CYA Station Number: 000/000-00X00 2 *
 * Date/Time of Sample: |91|10|17|2350| Laboratory Code: 3761 *
 * YY MM DD TTTT *
 * Date Analysis Completed: |91|10|25| *
 * YY MM DD *
 * Submitted by: _____ Phone #: _____ *

MCL	REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900	86.0	
	mg/L	Calcium (Ca)	00916	24.0	
	mg/L	Magnesium (Mg)	00927	6.3	
	mg/L	Sodium (Na)	00929	60.0	
	mg/L	Potassium (K)	00937	4.6	
Total Cations Meq/L Value: 4.4					
	mg/L	Total Alkalinity (AS CaCO3)	00410	104.0	
	mg/L	Hydroxide (OH)	71830	< 1.0	
	mg/L	Carbonate (CO3)	00445	< 1.0	
	mg/L	Bicarbonate (HCO3)	00440	126.9	
*	mg/L*	Sulfate (SO4)	00945	57.0	
*	mg/L*	Chloride (Cl)	00940	40.2	
45	mg/L	Nitrate (as NO3)	71850	7.2	
****	mg/L	Fluoride (F) Temp. Depend.	00951	1.1	0.1
Total Anions Meq/L Value: 4.6					
	Std. Units	PH (Laboratory)	00403	8.6	
**	umho/cm**	Specific Conductance (E.C.)	00095	450.0	
***	mg/L***	Total Filterable Residue at 180C (TDS)	70300	252.4	
	Units	Apparent Color (Unfiltered)	00081	< 3.0	
	TON	Odor Threshold at 60 C	00086	1.0	
	NTU	Lab Turbidity	82079	0.9	
0.5	mg/L	MBAS	38260	< 0.02	
* 250-500-600 ** 900-1600-2200 *** 500-1000-1500 **** 1.4-2.4					

CLINICAL\LABS SAN BERNARDINO
 1595 NORTH "D" STREET
 SAN BERNARDINO, CA. 92405

GENERAL MINERAL & PHYSICAL, INORGANIC, & RADIOLOGICAL CHEMICAL ANALYSIS

Date of Report: 10/25/91

Sample ID No.91-9451

Laboratory

Signature Lab

Name: CLINICAL LABORATORIES OF SAN BERNARDINO

Director:

Name of Sampler: LEROY JONES "DRILLER"

Employed By: ROTTMAN DRILLING CO.

Date/Time Sample

Date/Time Sample

Date Analyses

Collected: 91/10/18/2400

Received @ Lab: 91/10/21/1700

Completed: 91/10/25

System

System

Name: INDIAN WELLS VALLEY CWD - RIDGECREST

Number: 15-017

Name or Number of Sample Source: W32 P-2 (900')

* User ID: CYA

Station Number: 000/000-00X00 3 *

* Date/Time of Sample: |91|10|18|2400|
 * YY MM DD TTTT

Laboratory Code: 3761 *

Date Analysis Completed: |91|10|25|
 YY MM DD *

* Submitted by: _____

Phone #: _____

MCL	REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900	35.2	
	mg/L	Calcium (Ca)	00916	10.4	
	mg/L	Magnesium (Mg)	00927	2.2	
	mg/L	Sodium (Na)	00929	49.2	
	mg/L	Potassium (K)	00937	3.7	

Total Cations Meq/L Value: 2.9

	mg/L	Total Alkalinity (AS CaCO3)	00410	84.0	
	mg/L	Hydroxide (OH)	71830	< 1.0	
	mg/L	Carbonate (CO3)	00445	< 1.0	
	mg/L	Bicarbonate (HCO3)	00440	102.5	
*	mg/L*	Sulfate (SO4)	00945	24.3	
*	mg/L*	Chloride (Cl)	00940	23.3	
45	mg/L	Nitrate (as NO3)	71850	16.9	
****	mg/L	Fluoride (F) Temp. Depend.	00951	0.8	0.1

Total Anions Meq/L Value: 3.2

	Std. Units	PH (Laboratory)	00403	8.3	
**	umho/cm**	Specific Conductance (E.C.)	00095	330.0	
***	mg/L***	Total Filterable Residue at 180C (TDS)	70300	172.8	
	Units	Apparent Color (Unfiltered)	00081	< 70.0	
	TON	Odor Threshold at 60 C	00086	3.0	
	NTU	Lab Turbidity	82079	20.0	
0.5	mg/L	MBAS	38260	< 0.02	

* 250-500-600

** 900-1600-2200

*** 500-1000-1500

**** 1.4-2.4

Appendix III

CLINICAL\LABS SAN BERNARDINO
 1595 NORTH "D" STREET
 SAN BERNARDINO, CA. 92405

GENERAL MINERAL & PHYSICAL, INORGANIC, & RADIOLOGICAL CHEMICAL ANALYSIS
 Date of Report: 10/25/91 Sample ID No. 91-9499
 Laboratory Signature Lab
 Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director: *Carol J. Kelly*
 Name of Sampler: MICHAEL Employed By: ROTTMAN DRILLING CO.
 Date/Time Sample Date/Time Sample Date Analyses
 Collected: 91/10/21/0300 Received @ Lab: 91/10/23/1700 Completed: 91/10/25

System Number: 15-017
 Name: INDIAN WELLS VALLEY CWD - RIDGECREST
 Name or Number of Sample Source: W32 P-3 (1200 FT.)

 * User ID: CYA Station Number: 000/000-00X00 5 *
 * Date/Time of Sample: |91|10|21|0300| Laboratory Code: 3761 *
 * YY MM DD TTTT Date Analysis Completed: |91|10|25| *
 * YY MM DD *
 * Submitted by: _____ Phone #: _____ *

MCL	REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900	28.0	
	mg/L	Calcium (Ca)	00916	5.6	
	mg/L	Magnesium (Mg)	00927	3.4	
	mg/L	Sodium (Na)	00929	59.2	
	mg/L	Potassium (K)	00937	2.0	
Total Cations		Meq/L Value: 3.2			
	mg/L	Total Alkalinity (AS CaCO3)	00410	90.0	
	mg/L	Hydroxide (OH)	71830	< 1.0	
	mg/L	Carbonate (CO3)	00445	< 1.0	
	mg/L	Bicarbonate (HCO3)	00440	109.8	
*	mg/L*	Sulfate (SO4)	00945	22.6	
*	mg/L*	Chloride (Cl)	00940	26.1	
45	mg/L	Nitrate (as NO3)	71850	14.8	
****	mg/L	Fluoride (F) Temp. Depend.	00951	0.6	0.1
Total Anions		Meq/L Value: 3.3			
	Std. Units	PH (Laboratory)	00403	8.5	
**	umho/cm**	Specific Conductance (E.C.)	00095	340.0	
***	mg/L***	Total Filterable Residue at 180C (TDS)	70300	179.3	
	Units	Apparent Color (Unfiltered)	00081	< 70.0	
	TON	Odor Threshold at 60 C	00086	4.0	
	NTU	Lab Turbidity	82079	25.0	
0.5	mg/L	MBAS	38260	< 0.02	
* 250-500-600	** 900-1600-2200	*** 500-1000-1500	**** 1.4-2.4		

CLINICAL\LABS SAN BERNARDINO
 1595 NORTH "D" STREET
 SAN BERNARDINO, CA. 92405

GENERAL MINERAL & PHYSICAL, INORGANIC, & RADIOLOGICAL CHEMICAL ANALYSIS

Date of Report: 10/25/91
 Laboratory Name: CLINICAL LABORATORIES OF SAN BERNARDINO
 Name of Sampler: BILL B.
 Date/Time Sample Collected: 91/10/21/2200
 Signature Lab Director: *Carol Pelley*
 Employed By: ROTTMAN DRILLING CO.
 Date/Time Sample Received @ Lab: 91/10/23/1700
 Date Analyses Completed: 91/10/25
 Sample ID No. 91-9498

System Name: INDIAN WELLS VALLEY CWD - RIDGECREST
 Name or Number of Sample Source: W32 P4 (1900 FT.)
 System Number: 15-017

 * User ID: CYA
 * Date/Time of Sample: |91|10|21|2200|
 * YY MM DD TTTT
 * Station Number: 000/000-00X00 4 *
 * Laboratory Code: 3761 *
 * Date Analysis Completed: |91|10|25| *
 * YY MM DD *
 * Submitted by: _____ Phone #: _____ *

MCL	REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900	26.0	
	mg/L	Calcium (Ca)	00916	7.4	
	mg/L	Magnesium (Mg)	00927	1.8	
	mg/L	Sodium (Na)	00929	190.5	
	mg/L	Potassium (K)	00937	4.1	
Total Cations		Meq/L Value: 8.9			
	mg/L	Total Alkalinity (AS CaCO3)	00410	198.0	
	mg/L	Hydroxide (OH)	71830	< 1.0	
	mg/L	Carbonate (CO3)	00445	< 1.0	
	mg/L	Bicarbonate (HCO3)	00440	241.6	
*	mg/L*	Sulfate (SO4)	00945	138.2	
*	mg/L*	Chloride (Cl)	00940	78.8	
45	mg/L	Nitrate (as NO3)	71850	1.0	
****	mg/L	Fluoride (F) Temp. Depend.	00951	5.6	0.1
Total Anions		Meq/L Value: 9.4			
	Std. Units	PH (Laboratory)	00403	8.6	
**	umho/cm**	Specific Conductance (E.C.)	00095	960.0	
***	mg/L***	Total Filterable Residue at 180C (TDS)	70300	526.4	
	Units	Apparent Color (Unfiltered)	00081	< 70.0	
	TON	Odor Threshold at 60 C	00086	1.0	
	NTU	Lab Turbidity	82079	74.0	
0.5	mg/L	MBAS	38260	< 0.02	
*	250-500-600	** 900-1600-2200	*** 500-1000-1500	**** 1.4-2.4	

WATER TEST RESULTS

WELL 17-1

<u>Mineral</u>	<u>ppm</u>	<u>Maximum Allowable</u>
Calcium	8.3	N/A
Magnesium	4.6	N/A
Sodium	48.3	N/A
Potassium	2.1	
Manganese	.013	.05
Copper	.001	1.0
Iron	.03	.3
Zinc	Less than .001	5.0
MBAS	Less than .005	.5
Alkalinity	56	N/A
Hardness	40	N/A
TDS	173	1000
Hydroxide	Less than 1	N/A
Carbonate	Less than 1	N/A
Bicarbonate	68	N/A
Chloride	27	500
Sulfate	20	500
Nitrate	9	
Fluoride	1.2	1.4
% Sodium	70	N/A
pH	8.49	
Conductant	290	1600
 <u>Inorganic</u>		
Chromium		.03



DIVERSIFIED ANALYTICAL SERVICES, INC.

State Certified — Environmental Laboratory

420 S. Hindry Avenue, Suite A, Inglewood, CA 90301 • (310) 671-5346 • Fax: (310) 645-6819 • (800) 862-9310

LABORATORY REPORT

Reference: China Lake Naval Air Weapons Station - D.O. #0011 Well
Water Samples Collected for the IWV Geochemical Project
on 3/10-18/93

Test Methods: EPA Method 120.1 for Specific Conductance
EPA Method 150.1 for pH
EPA Method 160.1 for Total Dissolved Solids (TDS)
EPA Method 310.1 for Total Alkalinity
EPA Method 310.1 for Bicarbonate
EPA Method 300.0 for Chloride, Nitrate, Phosphate, &
Sulfate
EPA Method 340.2 for Fluoride
EPA Method 200.7 for Boron, Calcium, Iron, Magnesium,
Potassium, Silica, and Sodium
Calculation Method for Sodium Adsorption Ratio
Calculation Method for Total Hardness

Date Received: March 24, 1993
Date Analyzed: March 31 - April 16, 1993
Date Reported: April 30, 1993

Note: See attached documents for further information.

ANALYTICAL RESULTS

All Results in ppm (mg/L) Unless Otherwise Specified

Constituent	3-09505 BH-01	2-09506 BH-02	3-09507 BH-03	3-09508 BH-04
Specific Conductance, umho/cm	1110	2000	28200	879
pH, pH Units	7.5	7.4	9.7	7.8
Total Dissolved Solids	670	1660	24300	590
Alkalinity, Total (CaCO ₃)	98	80	11318	151
Bicarbonate (HCO ₃)	120	98	1830	184
Chloride	272	50	5980	89
Fluoride	0.8	0.6	21.5	0.4
Nitrate	0.6	7.2	0.6	1.5
Phosphate, Total	<0.3	<0.3	<0.3	<0.3
Sulfate	48	1020	45	181
Potassium	14	39	41	4
Sodium	154	222	9500	96
Percent Sodium	0.0154	0.0222	0.950	0.0096
Sodium-Adsorption Ratio	5.3	4.0	N/A	2.7

Results continued on next page.

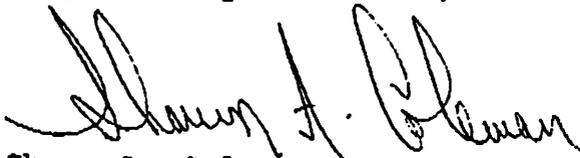
Appendix III

Constituent	3-09505 BH-01	3-09506 BH-02	3-09507 BH-03	3-09508 BH-04
Boron	1.5	0.6	447	0.9
Calcium	42	157	<1	68
Iron, ug/L	240	60	70	<50
Magnesium	15	50	<1	17
Silica	50	79	36	34
Total Hardness	167	598	0	240

< = less than; the number following this sign is the detection limit for that specific constituent.

Diversified Analytical Services currently maintains Certificate Number 1201 under the California State Department of Health Services Environmental Laboratory Accreditation Program.

Respectfully Submitted,



Shawn A. Coleman,
Laboratory Director/
Analytical Chemist

CLINICAL LABS/SAN BERNARDINO
 1595 NORTH "D" STREET
 SAN BERNARDINO, CA. 92405

TITLE 22 CHEMICAL ANALYSIS

Date of Report: 02/26/91
 Laboratory Name: CLINICAL LABORATORIES OF SAN BERNARDINO
 Name of Sampler: MOULTON
 Date/Time Sample Collected: 91/02/02/1200
 Signature Lab Director: C. Jolly
 Employed By: PURVEYOR
 Date/Time Sample Received @ Lab: 91/02/02/1200
 Date Analyses Completed: 91/02/26
 Sample ID No. 910945

System Name: NORTH AMERICAN CHEMICAL - AKA KERR MCGEE
 Name or Number of Sample Source: NEAL RANCH #1 250-270
 Station Number: 036/042-001
 User ID: TAN
 Date/Time of Sample: |91|02|02|1200|
 Y Y M M D D H H M M
 Analyzing Agency Code: 3761
 Date Analysis Completed: |91|02|26|
 Y Y M M D D
 Submitted by: _____ Phone #: _____

Place an 'X' in box to delete all data for this station/date/time.

PORTING UNITS	CONSTITUENT ALL CONSTITUENTS REPORTED uG/L	ENTRY #	ANALYSES RESULTS	MCL	DLR
mg/L	Total Hardness (as CaCO3)	00900	1030.0		
mg/L	Calcium (Ca)	00916	221.1		
mg/L	Magnesium (Mg)	00927	116.2		30.0
mg/L	Sodium (NA)	00929	456.8		
mg/L	Potassium (K)	00937	5.6		

Total Cations Meq/L Value: 40.6

mg/L	Total Alkalinity (AS CaCO3)	00410	370.0		
mg/L	Hydroxide (OH)	71830	< 1.0		
mg/L	Carbonate (CO3)	00445	< 1.0		
mg/L	Bicarbonate (HCO3)	00440	451.4		
mg/L*	Sulfate (SO4)	00945	1094.7		
mg/L*	Chloride (Cl)	00940	290.7		
mg/L	Nitrate (as NO3)	71850	260.3	45	
mg/L	Fluoride (F) Temp. Depend.	00951	2.4	****	0.1

Total Anions Meq/L Value: 42.7

Std. Units	PH (Laboratory)	00403	7.9		
umho/cm**	Specific Conductance (E.C.)	00095	3880.0		
mg/L***	Total Filterable Residue at 180C (TDS)	70300	2405.6		
Units	Apparent Color (Unfiltered)	00081	< 3.0		
TON	Odor Threshold at 60 C	00086	1.0		1.0
NTU	Lab Turbidity	82079	1.9		
mg/L	MBAS	38260	0.18	0.5	0.02

* 250-500-600 ** 900-1600-2200 *** 500-100-1500 **** 1.4-2.4

Appendix III

CLINICAL LABS/SAN BERNARDINO
 1595 NORTH "D" STREET
 SAN BERNARDINO, CA. 92405

TITLE 22 CHEMICAL ANALYSIS

Date of Report: 02/26/91

Sample ID No. 910946

Laboratory

Signature Lab

Name: CLINICAL LABORATORIES OF SAN BERNARDINO

Director: C. Gallif

Name of Sampler: MOULTON

Employed By: PURVEYOR

Date/Time Sample

Date/Time Sample

Date Analyses

Collected: 91/02/02/1300

Received @ Lab: 91/02/02/1300

Completed: 91/02/26

System

System

Name: NORTH AMERICAN CHEMICAL - AKA KERR MCGEE

Number: 36-042

Name or Number of Sample Source: NEAL RANCH #1 1130-1150

 * Water Type: (G/S) |S| Station Number: 036/042-002 *
 * Date/Time of Sample: |91|02|02|1300| User ID: TAN *
 * YY MM DD HHMM *
 * * * * *
 * Analyzing Agency Code: 3761 Date Analysis Completed: |91|02|26| *
 * YY MM DD *
 * Submitted by: _____ Phone #: _____ *

Place an 'X' in box to delete all data for this station/date/time.

REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	MCL	DLR
mg/L	Total Hardness (as CaCO3)	00900	310.0		
mg/L	Calcium (Ca)	00916	32.0		
mg/L	Magnesium (Mg)	00927	55.9		30.0
mg/L	Sodium (NA)	00929	1240.0		
mg/L	Potassium (K)	00937	14.6		
Total Cations Meq/L Value: 60.5					
mg/L	Total Alkalinity (AS CaCO3)	00410	2184.0		
mg/L	Hydroxide (OH)	71830	< 1.0		
mg/L	Carbonate (CO3)	00445	< 1.0		
mg/L	Bicarbonate (HCO3)	00440	2664.5		
mg/L*	Sulfate (SO4)	00945	125.4		
mg/L*	Chloride (Cl)	00940	245.0		
mg/L	Nitrate (as NO3)	71850	35.4	45	
mg/L	Fluoride (F) Temp. Depend.	00951	2.4	****	0.1
Total Anions Meq/L Value: 53.9					
Std. Units	PH (Laboratory)	00403	9.9		
umho/cm**	Specific Conductance (E.C.)	00095	6000		
mg/L***	Total Filterable Residue at 180C (TDS)	70300	3660.0		
Units	Apparent Color (Unfiltered)	00081	70		
TON	Odor Threshold at 60 C	00086	4.0		1.0
NTU	Lab Turbidity	82079	166.0		
mg/L	MBAS	38260	0.45	0.5	0.02

* 250-500-600 ** 900-1600-2200 *** 500-100-1500 **** 1.4-2.4

CLINICAL LABS/SAN BERNARDINO
 1595 NORTH "D" STREET
 SAN BERNARDINO, CA. 92405

TITLE 22 CHEMICAL ANALYSIS

Date of Report: 02/26/91
 Laboratory Name: CLINICAL LABORATORIES OF SAN BERNARDINO
 Name of Sampler: MOULTON
 Date/Time Sample Collected: 91/02/02/1100
 Signature Lab Director: C. Jolly
 Employed By: PURVEYOR
 Date/Time Sample Received @ Lab: 91/02/02/1100
 Date Analyses Completed: 91/02/26
 Sample ID No. 910947

System Name: NORTH AMERICAN CHEMICAL - AKA KERR MCGEE
 Name or Number of Sample Source: NEAL RANCH #1 1960-1980
 Station Number: 036/042-003
 User ID: TAN
 Analyzing Agency Code: 3761
 Date Analysis Completed: 91/02/26
 Submitted by: _____ Phone #: _____
 Y Y MM DD HHMM
 Y Y MM DD

Place an 'X' in box to delete all data for this station/date/time.

REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	MCL	DLR
ALL CONSTITUENTS REPORTED uG/L					
mg/L	Total Hardness (as CaCO3)	00900	78.0		
mg/L	Calcium (Ca)	00916	12.8		
mg/L	Magnesium (Mg)	00927	11.2		30.0
mg/L	Sodium (NA)	00929	1340.0		
mg/L	Potassium (K)	00937	6.4		
Total Cations		Meq/L	Value: 60.0		
mg/L	Total Alkalinity (AS CaCO3)	00410	2460.0		
mg/L	Hydroxide (OH)	71830	< 1.0		
mg/L	Carbonate (CO3)	00445	< 1.0		
mg/L	Bicarbonate (HCO3)	00440	3001.2		
mg/L*	Sulfate (SO4)	00945	304.8		
mg/L*	Chloride (Cl)	00940	246.7		
mg/L	Nitrate (as NO3)	71850	35.0	45	
mg/L	Fluoride (F) Temp. Depend.	00951	3.3	****	0.1
Total Anions		Meq/L	Value: 63.2		
Std. Units	PH (Laboratory)	00403	8.6		
umho/cm**	Specific Conductance (E.C.)	00095	5330.0		
mg/L***	Total Filterable Residue at 180C (TDS)	70300	3251.3		
Units	Apparent Color (Unfiltered)	00081	50		
TON	Odor Threshold at 60 C	00086	2.0		1.0
NTU	Lab Turbidity	82079	32.0		
mg/L	MBAS	38260	0.20	0.5	0.02

* 250-500-600 ** 900-1600-2200 *** 500-100-1500 **** 1.4-2.4

Clinical Laboratory of San Bernardino, Inc.

P. O. Box 329
1595 North "D" Street
San Bernardino, California 92405
(714) 885-3216

PURVEYOR: INDIAN WELLS VALLEY WATER

SAMPLE I.D.#: 911536

STREET ADDRESS:

DATE OF REPORT: 3/6/91

CITY, STATE, ZIP:

DESCRIPTION OF SAMPLING POINT: NEAL RANCH #2 1910-1930 *Lawn*

DATE/TIME COLLECTED: 2/26/91 1000

NAME OF SAMPLER: MOULTON

	RESULTS	MCL		RESULTS	MCL
TOTAL HARDNESS	143.6 mg/L				
CALCIUM HARDNESS	42.8 mg/L				
ALCIUM	17.1 mg/L				
MAGNESIUM	24.5 mg/L				
SODIUM	1296.0 mg/L				
POTASSIUM	11.3 mg/L				
TOTAL ALKALINITY	2112.0 mg/L				
HYDROXIDE	< 1.0 mg/L				
CARBONATE	< 1.0 mg/L				
BICARBONATE	2576.6 mg/L				
SULFATE	236.4 mg/L				
CHLORIDE	230.6 mg/L				
NITRATE	38.2 mg/L	45			
FLUORIDE	3.0 mg/L				
TOTAL ANIONS	54.43 mEq/L				
TOTAL CATIONS	59.50 mEq/L				
RPD ANIONS/CATIONS	5.84 PERCENT				
pH	8.4 STD UNITS				
E.C.	5330.0 umho/cm				
TDS	3304.6 mg/L				
MBAS	< 0.02 mg/L				
			MANGANESE	80 ug/L	50
			COPPER	< 50 ug/l	1000
			IRON	250 ug/L	300
			ZINC	< 50 ug/L	5000
			BARIUM	< 100 ug/L	1000
			CHROMIUM	< 10 ug/L	50
			CADMIUM	< 1 ug/L	10
			LEAD	< 5 ug/l	50
			ALUMINUM	< 100 ug/L	1000
			MERCURY	< 1 ug/l	2
			ARSENIC	460 ug/L	50
			SELENIUM	20 ug/L	100
			SILVER	< 10 ug/L	50
			COLOR	<i>15</i>	
			ODOR	<i>3</i>	
			TURBIDITY	<i>4.5 NTU</i>	

DATE(S) RECEIVED: 2/28/91

STARTED: 2/28/91

COMPLETED: 3/6/91

ALL ANALYSES ARE PERFORMED IN ACCORDANCE WITH APHA'S STANDARD METHODS,
(17TH EDITION) OR EPA'S METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTE

ANALYST: _____

DIRECTOR: _____

Appendix III

C. J. Jelliff

NR-2 Deep

Clinical Laboratory of San Bernardino, Inc.

P. O. Box 329
 1595 North "D" Street
 San Bernardino, California 92405
 (714) 885-3216

PURVEYOR: INDIAN WELLS VALLEY WATER

SAMPLE I.D.#: 911535

STREET ADDRESS:

DATE OF REPORT: 3/6/91

CITY, STATE, ZIP:

DESCRIPTION OF SAMPLING POINT: NEAL RANCH #2 1540-1560 *mi*

DATE/TIME COLLECTED: 2/26/91 0800

NAME OF SAMPLER: MOULTON

RESULTS		MCL		
TOTAL HARDNESS	457.2 mg/L			
CALCIUM HARDNESS	285.2 mg/L			
CALCIUM	114.2 mg/L		RESULTS	MCL
MAGNESIUM	41.8 mg/L		MANGANESE	< 30 ug/L 50
SODIUM	272.3 mg/L		COPPER	< 50 ug/l 1000
POTASSIUM	4.5 mg/L		IRON	< 100 ug/L 300
			ZINC	< 50 ug/L 5000
TOTAL ALKALINITY	310.0 mg/L			
HYDROXIDE	< 1.0 mg/L		BARIUM	< 100 ug/L 1000
CARBONATE	< 1.0 mg/L		CHROMIUM	< 10 ug/L 50
			CADMIUM	< 1 ug/L 10
BICARBONATE	378.2 mg/L		LEAD	< 5 ug/l 50
SULFATE	467.7 mg/L		ALUMINUM	< 100 ug/L 1000
CHLORIDE	159.9 mg/L		MERCURY	- < 1 ug/l 2
NITRATE	107.1 mg/L	45	ARSENIC	12 ug/L 50
FLUORIDE	1.1 mg/L		SELENIUM	60 ug/L 100
			SILVER	< 10 ug/L 50
TOTAL ANIONS	22.23 mEq/L			
TOTAL CATIONS	21.09 mEq/L		COLOR	< 3
RPD ANIONS/CATIONS	3.55 PERCENT		ODOR	1
			TURBIDITY	1.2 NTU
pH	8.0 STD UNITS			
E.C.	2240.0 umho/cm			
TDS	1366.8 mg/L			
MBAS	< 0.02 mg/L			

DATE(S) RECEIVED: 2/28/91

STARTED: 2/28/91

COMPLETED: 3/6/91

ALL ANALYSES ARE PERFORMED IN ACCORDANCE WITH APHA'S STANDARD METHODS, (17TH EDITION) OR EPA'S METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTE

Appendix III

ANALYST: _____

DIRECTOR: _____

C. Collins

Clinical Laboratory of San Bernardino, Inc.

P. O. Box 329
 1595 North "D" Street
 San Bernardino, California 92405
 (714) 885-3216

PURVEYOR: INDIAN WELLS VALLEY WATER

SAMPLE I.D.#: 911534

STREET ADDRESS:

DATE OF REPORT: 3/6/91

CITY, STATE, ZIP:

DESCRIPTION OF SAMPLING POINT: NEAL RANCH #2 330-350 *upper*

DATE/TIME COLLECTED: 2/26/91 0900

NAME OF SAMPLER: MOULTON

RESULTS		MCL	RESULTS		MCL
TOTAL HARDNESS	241.2 mg/L		MANGANESE	50 ug/L	50
CALCIUM HARDNESS	136.8 mg/L		COPPER	< 50 ug/l	1000
CALCIUM	54.8 mg/L		IRON	< 100 ug/L	300
MAGNESIUM	25.4 mg/L		ZINC	< 50 ug/L	5000
SODIUM	201.4 mg/L		BARIUM	< 100 ug/L	1000
POTASSIUM	6.2 mg/L		CHROMIUM	< 10 ug/L	50
TOTAL ALKALINITY	295.6 mg/L		CADMIUM	< 1 ug/L	10
HYDROXIDE	< 1.0 mg/L		LEAD	12 ug/l	50
CARBONATE	< 1.0 mg/L		ALUMINUM	< 100 ug/L	1000
BICARBONATE	360.6 mg/L		MERCURY	< 1 ug/l	2
SULFATE	232.8 mg/L		ARSENIC	< 10 ug/L	50
CHLORIDE	85.0 mg/L		SELENIUM	10 ug/L	100
NITRATE	25.6 mg/L	45	SILVER	< 10 ug/L	50
FLUORIDE	0.8 mg/L				
TOTAL ANIONS	13.61 mEq/L		COLOR	< 3	
TOTAL CATIONS	13.73 mEq/L		ODOR	1	
RPD ANIONS/CATIONS	0.60 PERCENT		TURBIDITY	0.5 NTU	
pH	8.3 STD UNITS				
E.C.	1370.0 umho/cm				
TDS	808.3 mg/L				
MBAS	< 0.02 mg/L				

DATE(S) RECEIVED: 2/28/91

STARTED: 2/28/91

COMPLETED: 3/6/91

ALL ANALYSES ARE PERFORMED IN ACCORDANCE WITH APHA'S STANDARD METHODS, (17TH EDITION) OR EPA'S METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTE

ANALYST: _____

DIRECTOR: _____

Appendix III

C. Jelliff

CLINICAL LABORATORY OF SAN BERNARDINO
 1595 NORTH "D" STREET
 SAN BERNARDINO, CA. 92405

GENERAL MINERAL & PHYSICAL, INORGANIC, & RADIOLOGICAL CHEMICAL ANALYSIS
 Date of Report: 02/06/92 Sample ID No. 92-0736
 Laboratory Signature Lab
 Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director: Carol J. [Signature]
 Name of Sampler: UNKNOWN Employed By: UNKNOWN
 Date/Time Sample Date/Time Sample Date Analyses
 Collected: 92/01/10/0000 Received @ Lab: 92/01/29/1700 Completed: 92/02/05

System System
 Name: INDIAN WELLS VALLEY CWD - RIDGECREST Number: 15-017
 Name or Number of Sample Source: BOR WELL 6 330 - 350

 * User ID: CYA Station Number: *****
 * Date/Time of Sample: |92|01|10|0000| Laboratory Code: 3761 *
 * YY MM DD TTTT *
 * Date Analysis Completed: |92|02|05| *
 * YY MM DD *
 * Submitted by: Phone #: *****

MCL	REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900	100.0	
	mg/L	Calcium (Ca)	00916	24.0	
	mg/L	Magnesium (Mg)	00927	9.7	
	mg/L	Sodium (Na)	00929	198.7	
	mg/L	Potassium (K)	00937	13.9	

| Total Cations Meq/L Value: 11.0 |

	mg/L	Total Alkalinity (AS CaCO3)	00410	192.0	
	mg/L	Hydroxide (OH)	71830	< 1.0	
	mg/L	Carbonate (CO3)	00445	< 1.0	
	mg/L	Bicarbonate (HCO3)	00440	234.2	
*	mg/L*	Sulfate (SO4)	00945	168.0	
*	mg/L*	Chloride (Cl)	00940	76.0	
45	mg/L	Nitrate (as NO3)	71850	6.3	
****	mg/L	Fluoride (F) Temp. Depend.	00951	3.7	0.1

| Total Anions Meq/L Value: 9.8 |

	Std. Units	PH (Laboratory)	00403	8.9	
**	umho/cm**	Specific Conductance (E.C.)	00095	1030.0	
***	mg/L***	Total Filterable Residue at 180C (TDS)	70300	596.3	
	Units	Apparent Color (Unfiltered)	00081	15.0	
	TON	Odor Threshold at 60 C	00086	2.0	
	NTU	Lab Turbidity	82079	180.0	
0.5	mg/L	MBAS	38260	< 0.02	

* 250-500-600 ** 900-1600-2200 *** 500-1000-1500 **** 1.4-2.4

Appendix III

CLINICAL LABORATORY OF SAN BERNARDINO
 1595 NORTH "D" STREET
 SAN BERNARDINO, CA. 92405

GENERAL MINERAL & PHYSICAL, INORGANIC, & RADIOLOGICAL CHEMICAL ANALYSIS
 Date of Report: 02/06/92 Sample ID No. 92-0734
 Laboratory Signature Lab
 Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director: *Carol Green*
 Name of Sampler: UNKNOWN Employed By: UNKNOWN
 Date/Time Sample Date/Time Sample Date Analyses
 Collected: 92/01/10/0000 Received @ Lab: 92/01/29/1700 Completed: 92/02/05

=====
 System System
 Name: INDIAN WELLS VALLEY CWD - RIDGECREST Number: 15-017
 Name or Number of Sample Source: BOR WELL 6 1190- 1210

 * User ID: CYA Station Number: *
 * Date/Time of Sample: |92|01|10|0000| Laboratory Code: 3761 *
 * YY MM DD TTTT *
 * Date Analysis Completed: |92|02|05| *
 * YY MM DD *
 * Submitted by: _____ Phone #: _____ *

MCL	REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900	80.0	
	mg/L	Calcium (Ca)	00916	4.8	
	mg/L	Magnesium (Mg)	00927	16.5	
	mg/L	Sodium (Na)	00929	188.6	
	mg/L	Potassium (K)	00937	8.6	

| Total Cations Meq/L Value: 10.0 |

	mg/L	Total Alkalinity (AS CaCO3)	00410	380.0	
	mg/L	Hydroxide (OH)	71830	< 1.0	
	mg/L	Carbonate (CO3)	00445	< 1.0	
	mg/L	Bicarbonate (HCO3)	00440	463.6	
*	mg/L*	Sulfate (SO4)	00945	34.6	
*	mg/L*	Chloride (Cl)	00940	33.3	
45	mg/L	Nitrate (as NO3)	71850	1.7	
****	mg/L	Fluoride (F) Temp. Depend.	00951	3.3	0.1

| Total Anions Meq/L Value: 9.5 |

	Std. Units	PH (Laboratory)	00403	9.1	
**	umho/cm**	Specific Conductance (E.C.)	00095	950.0	
***	mg/L***	Total Filterable Residue at 180C (TDS)	70300	481.4	
	Units	Apparent Color (Unfiltered)	00081	5.0	
	TON	Odor Threshold at 60 C	00086	2.0	
	NTU	Lab Turbidity	82079	85.0	
0.5	mg/L	MBAS	38260	< 0.02	

* 250-500-600 ** 900-1600-2200 *** 500-1000-1500 **** 1.4-2.4

APPENDIX III

CLINICAL LABORATORY OF SAN BERNARDINO
1595 NORTH "D" STREET
SAN BERNARDINO, CA. 92405

GENERAL MINERAL & PHYSICAL, INORGANIC, & RADIOLOGICAL CHEMICAL ANALYSIS

Date of Report: 02/06/92 Sample ID No. 92-0735
 Laboratory Signature Lab
 Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director: Carl J. [Signature]
 Name of Sampler: UNKNOWN Employed By: UNKNOWN
 Date/Time Sample Date/Time Sample Date Analyses
 Collected: 92/01/10/0000 Received @ Lab: 92/01/29/1700 Completed: 92/02/05

System System
 Name: INDIAN WELLS VALLEY CWD - RIDGECREST Number: 15-017
 Name or Number of Sample Source: BOR WELL 6 1640 - 1660

 * User ID: CYA Station Number: *
 * Date/Time of Sample: |92|01|10|0000| Laboratory Code: 3761 *
 * YY MM DD TTTT Date Analysis Completed: |92|02|05| *
 * YY MM DD *
 * Submitted by: _____ Phone #: _____ *

MCL	REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900	76.0	
	mg/L	Calcium (Ca)	00916	5.8	
	mg/L	Magnesium (Mg)	00927	15.0	
	mg/L	Sodium (Na)	00929	223.4	
	mg/L	Potassium (K)	00937	7.4	

Total Cations Meq/L Value: 11.4

	mg/L	Total Alkalinity (AS CaCO3)	00410	440.0	
	mg/L	Hydroxide (OH)	71830	< 1.0	
	mg/L	Carbonate (CO3)	00445	< 1.0	
	mg/L	Bicarbonate (HCO3)	00440	536.8	
*	mg/L*	Sulfate (SO4)	00945	37.5	
*	mg/L*	Chloride (Cl)	00940	29.4	
45	mg/L	Nitrate (as NO3)	71850	< 1.0	
****	mg/L	Fluoride (F) Temp. Depend.	00951	1.7	0.1

Total Anions Meq/L Value: 10.5

	Std. Units	PH (Laboratory)	00403	8.9	
**	umho/cm**	Specific Conductance (E.C.)	00095	980.0	
***	mg/L***	Total Filterable Residue at 180C (TDS)	70300	540.1	
	Units	Apparent Color (Unfiltered)	00081	40.0	
	TON	Odor Threshold at 60 C	00086	2.0	
	NTU	Lab Turbidity	82079	140.0	
0.5	mg/L	MBAS	38260	< 0.02	

* 250-500-600 ** 900-1600-2200 *** 500-1000-1500 **** 1.4-2.4



Figure 10