



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

March 19, 1991

A.P.A. Development Inc.
Box 215
Cortez, Colorado 81321

Attention: Patrick Woosley

Re: Reactivation of Division Order No. SWD-213

Dear Mr. Woosley:

Reference is made to your request dated April 3, 1990, to utilize the Santa Fe-Barbs Well No. 1 located 990 feet from the South line and 500 feet from the West line (Unit M) of Section 10, Township 21 North, Range 10 West, NMPM, San Juan County, New Mexico, as a salt water disposal well with injection into the Entrada formation, Leggs Entrada Pool, through perforations from approximately 5516 feet to 5595 feet.

It is our understanding that the subject well was previously authorized for use as a salt water disposal well by Division Order No. SWD-213 dated December 8, 1978, and that you simply wish to reactivate the permit at this time.

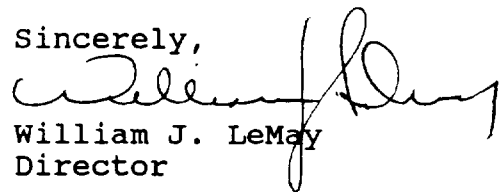
It appears that the application has been duly filed, all offset operators and surface owner have been notified, no objections have been recieved, and all requirements prescribed in Rule 701 will be met. You are therefore authorized to utilize the Santa Fe-Barbs Well No. 1 as described above as a salt water disposal well subject to the following conditions:

- 1) Injection shall be into the Entrada formation through perforations from 5516 feet to 5595 feet;
- 2) 3 1/2 inch plastic lined tubing shall be utilized for injection and shall be set in a packer located at 5450 feet;
- 3) The injection well shall be equipped with a pressure limiting device which will limit the

wellhead injection pressure to no more than 1103 psi;

- 4) Prior to commencing disposal operations, the subject well shall be pressure tested, said test to be witnessed by a representative of the Division;
- 5) All other provisions contained within Division Order No. SWD-213 shall remain in full force and effect.

Sincerely,


William J. LeMay
Director

xc: OCD-Aztec
File-SWD-213

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ Yes ☐ No
- II. Operator: A.P.A. Development Inc.
Address: Box 215, Cortez, CO 81321
Contact party: Patrick Woosley Phone: (303) 565-2458
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ Yes ☒ No
If yes, give the Division order number authorizing the project END-213
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review. Attached Map
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail. There are none within the area of review.
- VII. Attach data on the proposed operation, including: Surface - Tribal - Navajo
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any. NA
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.) Well logs have been filed.
- * XI. See attached step rate test.
Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken. There are none.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water. See attached statement at part XII.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Patrick B. Woosley Title President A.P.A. Development Inc
Signature: Patrick B. Woosley Date: April 3, 1990
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. The information has been submitted before, however, the date
is unknown so we are resubmitting it.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR A.P.A. Development Inc.		ADDRESS P.O. Box 215, Cortez, CO 81321	
LEASE NAME Santa Fe - Barbs	WELL NO. 1	FIELD Leggs Entrada Pool	COUNTY San Juan
LOCATION UNIT LETTER <u>M</u> WELL IS LOCATED <u>990</u> FEET FROM THE <u>South</u> LINE AND <u>500</u> FEET FROM THE <u>West</u> LINE, SECTION <u>10</u> TOWNSHIP <u>21N</u> RANGE <u>10W</u> NMPM.			
CASING AND TUBING DATA			
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT
SURFACE CASING	9-5/8"	197	200
INTERMEDIATE			
LONG STRING	7"	5607	940
TUBING	3-1/2"	5450	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Model "SAB"
NAME OF PROPOSED INJECTION FORMATION Entrada		TOP OF FORMATION 5428	BOTTOM OF FORMATION 5600
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLES Perforations	PROPOSED INTERVAL(S) OF INJECTION 5516-5595
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Test potential oil pay		HAS WELL EVER BEEN PERFORATED IN AN ZONE OTHER THAN THE PROPOSED INJECTION ZONE? No
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA None		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA 5400'	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA None
ANTICIPATED DAILY INJECTION VOLUME (BBL/S.)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM Closed
			IS INJECTION TO BE BY GRAVITY OR PRESSURE? Pressure
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE -		WATER TO BE DISPOSED OF Yes	APPROX. PRESSURE (PSI) 1000
		NATURAL WATER IN DISPOSAL ZONE Yes	ARE WATER ANALYSES ATTACHED? Yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) The Navajo Tribe, Bureau of Indian Affairs, Window Rock, Az.			
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	
SURFACE OWNER Yes		Yes	
THE NEW MEXICO STATE ENGINEER Yes		Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)?		ELECTRICAL LOG	
PLAT OF AREA Yes		Yes	
		DIAGRAMMATIC SKETCH OF WELL Yes	

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

(Signature)

(Title)

(Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

NOTICE

A. P. A. Development Inc. at P. O. Box 215, Cortez, Colorado or (303)565-2458; proposes to reactivate an injection well at Santa Fe Leggs Field located in Section 10 Township 21 North Range 10 West, 990 feet from the south line and 500 feet from the west line San Juan County, New Mexico. The injection formation is the Entrada at 5516' with expected maximum rate of 4,000 barrels per day and maximum pressure of 1080 psi. Any interested parties must file objections or requests for hearing with the Oil Conservation Division at P. O. Box 2088, Santa Fe, New Mexico 87501 with 15 days.

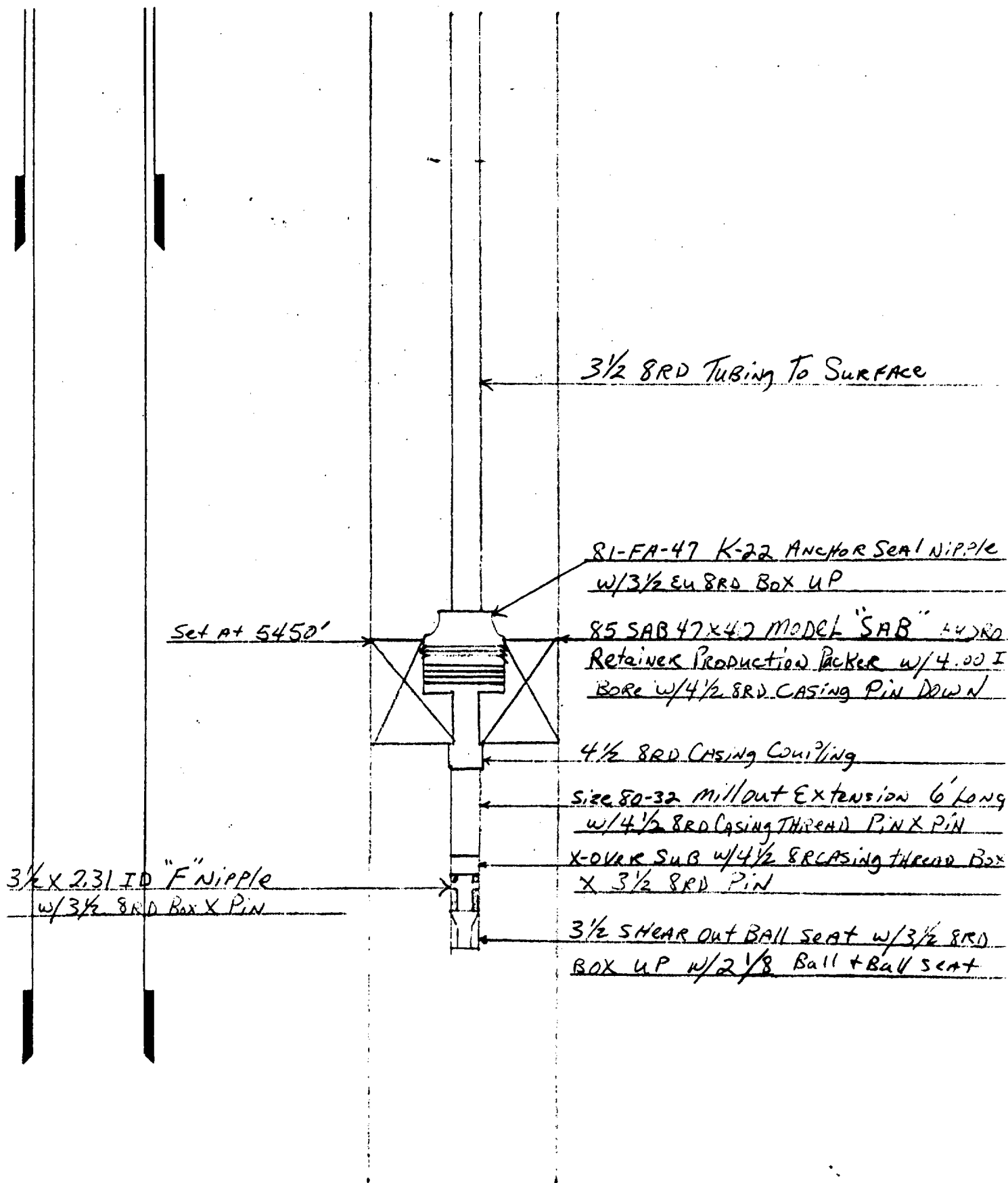
Legal No. 25063 published in the Farmington Daily Times, Farmington, New Mexico on Fridays, March 30, April 6 and 13, 1990.

AFFIRMATIVE STATEMENT PART XII

We the applicant of this disposal well, have examined all available geological and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water in this area.

BAKER PACKERS DIVISION

DATE _____ WELL NO. #1 Barbs LEASE Santa Fe Barbs FIELD SANTA Fe Loggs



LOG CORRELATIONS
SAN JUAN BASIN
NEW MEXICO

COUNTY: San Juan

WELL: Santa Fe Barbs #1

LOCATION: Sec. SW/SW 10 T. 21N R. 10W

K.B. 6416'

TOTAL DEPTH: 5614'

FORMATION	DEPTH	ELEVATION
Base Ojo Alamo Ss (Toa)		
Pictured Cliffs (Kpc)		
Chacra Ss. (Kch)		
La Ventana Ss. (Klv)		
Lower Menefee (Klm)		
Point Lookout Ss (Kpl)	2160	+4256
Mancos Shale (Km)	2254	+4162
Mancos Marker (Kmm)	2515	+3901
Gallup Sandstone (Kgp)	2962	+3454
Sanostee (Ks)	3759	+2657
Greenhorn (Kgn)	4104	+2312
Graneros Ss (Kgs)	4222	+2194
Dakota (Kd)	4280	+2136
Morrison (Jm)	4453	+1963
Summerville Sh. (Js)	5332	+1084
Todilto (Jt)	5419	+997
Entrada Ss (Je)	5428	+988
Carmel (Jc)	5600	+816
Chinle (Trc)		

Ks - Jt = 1660'

Ks - Jc = 1841'

Je(thickness) = 172'

Ks - Je = 1669'

Jt (thickness) = 9'

CHEMICAL & GEOLOGICAL LABORATORIES

P. O. Box 2794
Casper, Wyoming

WATER ANALYSIS REPORT

OPERATOR Dome Petroleum Corp. DATE October 24, 1977 LAB NO. 25114
 WELL NO. Santa Fe Leggs No. 1 LOCATION Sec. 11-21N-10W
 FIELD Wildcat FORMATION _____
 COUNTY San Juan INTERVAL _____
 STATE New Mexico SAMPLE FROM Production Water (9-20-77)

REMARKS & CONCLUSIONS:

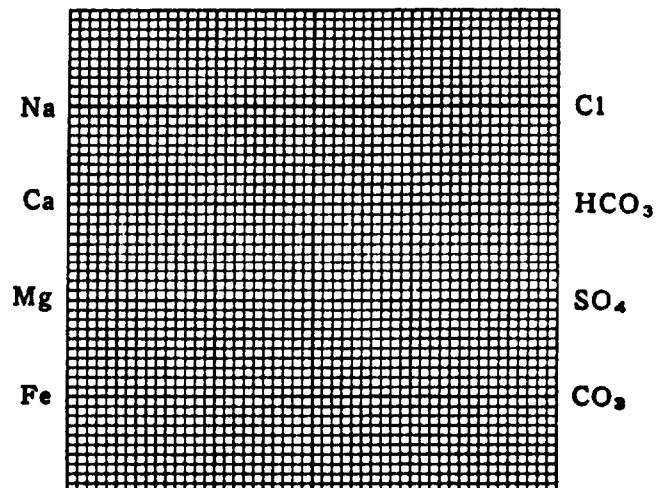
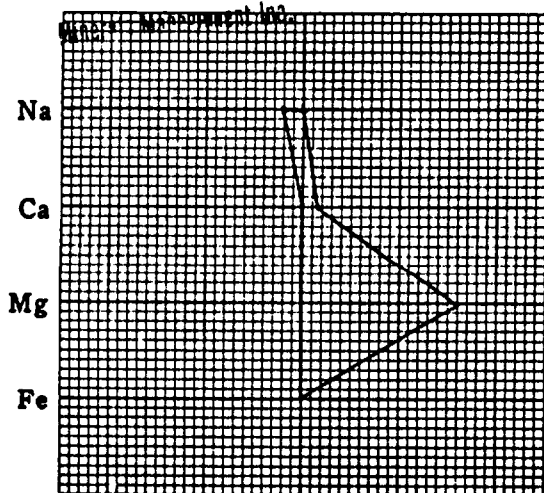
Cations			Anions		
	mg/l	meq/l		mg/l	meq/l
Sodium	2552	111.02	Sulfate	3900	81.12
Potassium	17	0.44	Chloride	750	21.15
Lithium			Carbonate	60	2.00
Calcium	31	1.55	Bicarbonate	573	9.40
Magnesium	8	0.66	Hydroxide		
Iron	-		Hydrogen sulfide	-	
Total Cations		113.67	Total Anions		113.67
Total dissolved solids, mg/l			Specific resistance @ 68°F.:		
			Observed		
NaCl equivalent, mg/l			Calculated		
Observed pH					

RECEIVED

OCT 31 1977

WATER ANALYSIS PATTERN

Sample above described

Scale
MEQ per Unit

(Na value in above graphs includes Na, K, and Li)

NOTE: Mg/l=Milligrams per liter Meq/l= Milligram equivalents per liter

Sodium chloride equivalent=by Dunlap & Hawthorne calculation from components

1-Dome/2-jedi

