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

11-13-91

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Dec 13
SWD-455

RE: Proposed:
MC
DHC
NSL
NSP
SWD X
WFX
PMX

Gentlemen:

I have examined the application for the:

Mitchell Energy corp. Sapphire Federal unit #1-J 23-19-33
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed

VIA FEDERAL EXPRESS

November 7, 1991

Mr. David Catanach
Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87504

RE: Form C-108
Sapphire Federal SWD Well No. 1
Lea County, New Mexico

Dear Mr. Catanach:

Enclosed for your review you will find an original copy of Form C-108, Application for Authorization to Inject, and various other information to aid you in processing our request for a permit to inject salt water in the subject well.

Should you require additional information or if I can be of any further help, kindly advise.

Very truly yours,

MITCHELL ENERGY CORPORATION

George Mullen

GM/lgb

enc.

bcc: Joe Wanamaker/Mark Whitley - MND-4N
Ed Earles - Midland
George Tullos - Midland
Susan Norman - OB-3
Central Records - MND-2N

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no

II. Operator: Mitchell Energy Corporation

Address: 400 W. Illinois, Ste. 1000 Midland, TX 79701

Contact party: James Blount Phone: 915-682-5396

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 _____.

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.

* 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.

VII. Attach data on the proposed operation, including:

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.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. 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.

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.

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: James Blount Title Engineer

Signature: James Blount Date: 10-22-91

* 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. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division

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

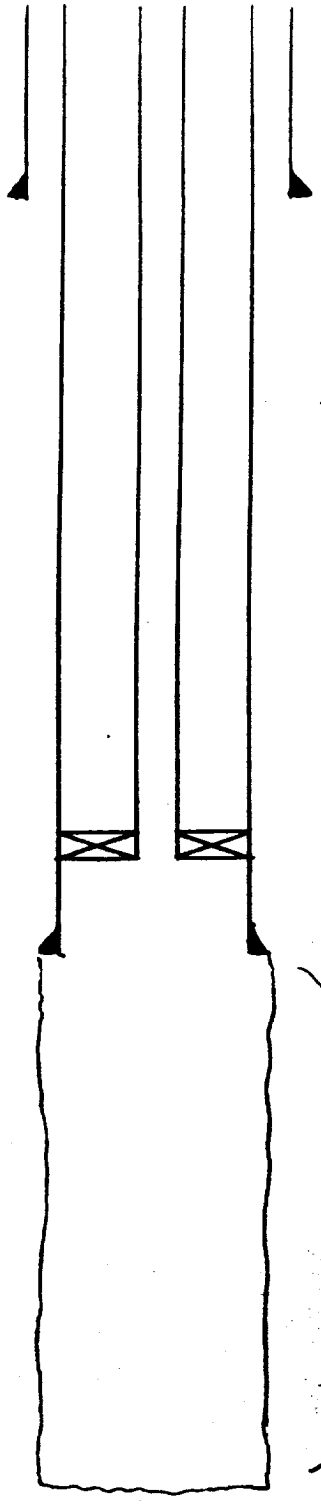
(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

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.

SAPPHIRE FED SWD #1
1600' FSL 1750' FEL
SEC 23, T19S, R33E

PROPOSED



8 5/8" 54.5# K-55 @ 500'
CMTD TO SURF

2 7/8" 6.5#/FT J-55
FIBERGLASS LINED
W/ GUIBERSON UNI-VI PKR

5 1/2" 15.5# K-55 @ 4300'
CMTD TO SURF.

OPEN HOLE
7 7/8"

TD : 4820'

III WELL DATA

A. (1) Sapphire Federal SWD #1
Section 23, T19S, R33E
1600' FSL & 1750' FEL

(2) 8 5/8" 32#/ft K-55 @ 500' cmtd to surf.
12 1/4" hole.
5 1/2" 15.5# cmtd to surf.
7 7/8" hole.

(3) 2 7/8" 6.5#/ft J-55 fiberglass lined tbg set @ ±4250'.

(4) Guiberson Uni-VI pkr @ ±4250'.

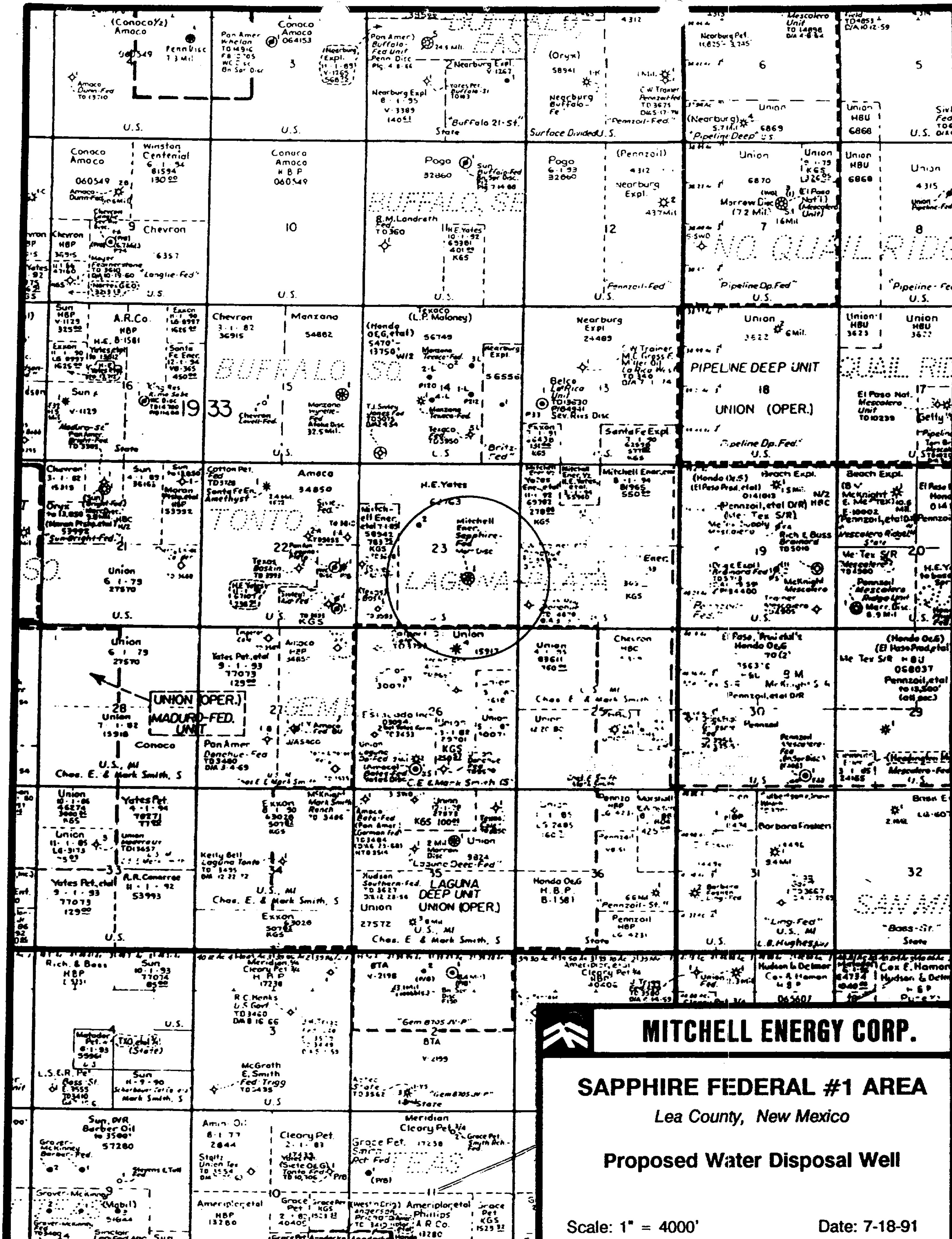
B. (1) Queen Formation.

(2) 4300-4820', Open hole.

(3) Drilled for injection.

(4) New well.

(5) Seven Rivers ±3600' in Texaco wells 1 mile north.
Delaware ±7300' in Sapphire Fed #2 & #1.



MITCHELL ENERGY CORP.

SAPPHIRE FEDERAL #1 AREA

Lea County, New Mexico

Proposed Water Disposal Well

Scale: 1" = 4000'

Date: 7-18-91

VI. Area of Review Wells:
Laguna Deep Unit Fed #4
Sapphire Fed #1
Sapphire Fed #2
Donahue #1
(See attached well bore schematics)

VII. Proposed Operation:

1. Avg Rate - 1000 BPD Max Rate - 1500 BPD
   Avg Volume - 300 bbls Max Volume - 500 bbls

2. Closed system

3. Avg inj. pressure - 1000 psi
   Max inj. pressure - 2000 psi

4. Water source - Delaware
   (See attached compatability analysis)

5. Disposal Zone - Queen
   (See attached water analysis)

VIII. Queen Sandstone, 480' thick, 4335-4815'.
Deepest aquifer in 7-Rivers - Bottom @ 870'.

IX. Propose to stimulate zone w/5,000 gal 15% HCl.

X. Logs previously filed on Sapphire Fed Unit #1.

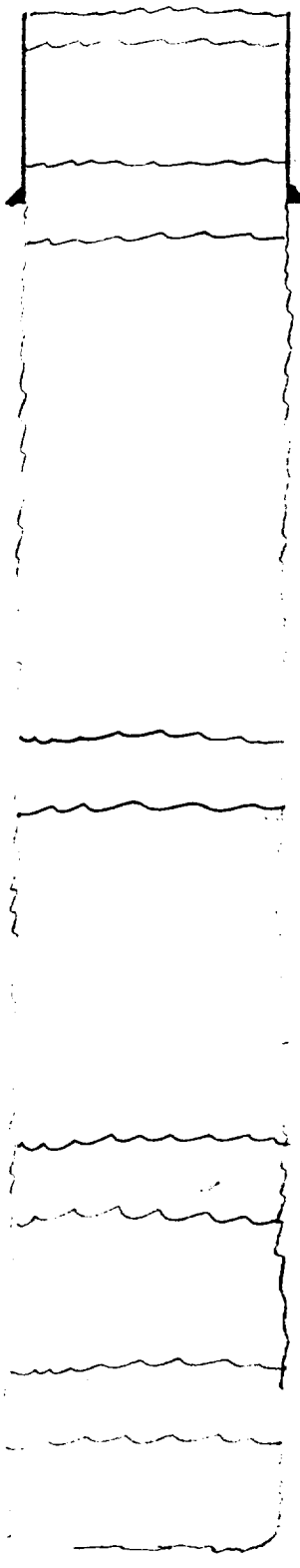
XI. Fresh water sample from well in Sec 18, T19S, R33E is attached.

XII. I hereby affirm that there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

James Blow

Donohue #1
Burk Royalty Co.
Lea County, N.M.
24-19S-33E

G.L. Elev 3637'
KB 10'



Spudded 2/25/71
P&A 3/13/71

WELL NAME: BURK ROYALTY DONOHUE WELL #1
LOCATION: 800' FSL & 330' FWL, Sec. 24, T19S, R33E
SPUD DATE: 2-25-71
COMPL. DATE: P&A'd 3-13-91
TOTAL DEPTH: 4,870'
STATUS/POOL: P&A'd

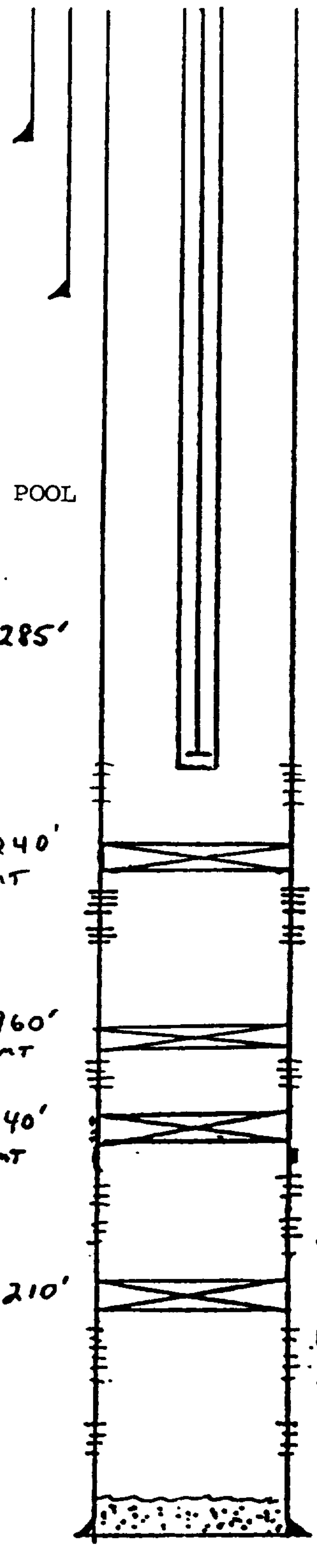
DLT 7/2/91

PRESENT

Sapphire Federal Unit #1
East Gem Field
Lea County, New Mexico

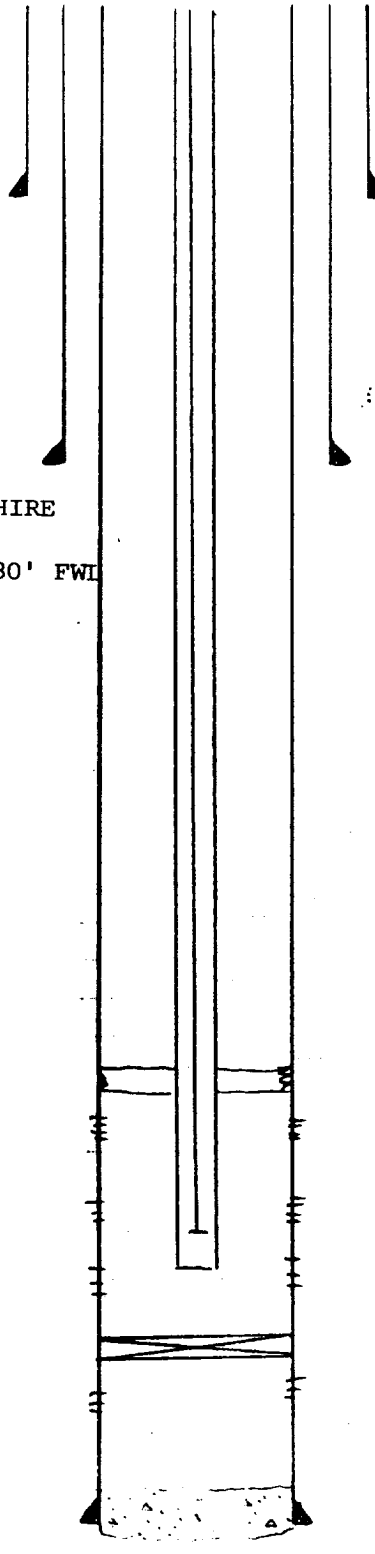
K.B. 22.0'
K.B. Elev 3661'

WELL NAME: MITCHELL SAPPHIRE FEDERAL UNIT WELL #1
LOCATION: 1,650' FEL & 1,650' FSL, SEC. 23, T19S, R33E
SPUD DATE: 12-31-88
COMPL. DATE: 6-29-91
TOTAL DEPTH: 13,600
STATUS/POOL: PRODUCING, E. GEM-DELAWARE POOL



JSB 3/1/91

SAPPHIRE FED #2 LEA COUNTY, NM



WELL NAME: MITCHELL SAPPHIRE FEDERAL UNIT WELL #2
LOCATION: 660' FNL & 1980' FWL SEC. 23, T19S, R33E
SPUD DATE: 4-18-91
COMPL. DATE: 6-12-91
TOTAL DEPTH: 8,000
STATUS/POOL: PRODUCING, E. GEM-DELAWARE POOL

$13\frac{3}{8}$" 54.5 # K-55 @ 487'
CMTD w/ 530 sx Cl. C TO SURF.

TOC - 530'

$8\frac{5}{8}$" 32 # K-55 @ 3420'
CMTD w/ 1100 sx PP LITE + 250 sx PP TO SURF

$2\frac{7}{8}$" J-55 TBG @ 7430'

76 NORRIS 97 ROD STRING w/ $2\frac{1}{2} \times 1\frac{3}{4}$" x RG' RHBC

PERFS: 7257 - 64'
7303 - 07'
7330 - 42'
7380 - 7404'

CIBP @ 7575'

PERFS: 7586 - 7606'

$5\frac{1}{2}$" 17# K-55 @ 7999'
CMTD w/ 1250 SX 50/50 POZ/A.

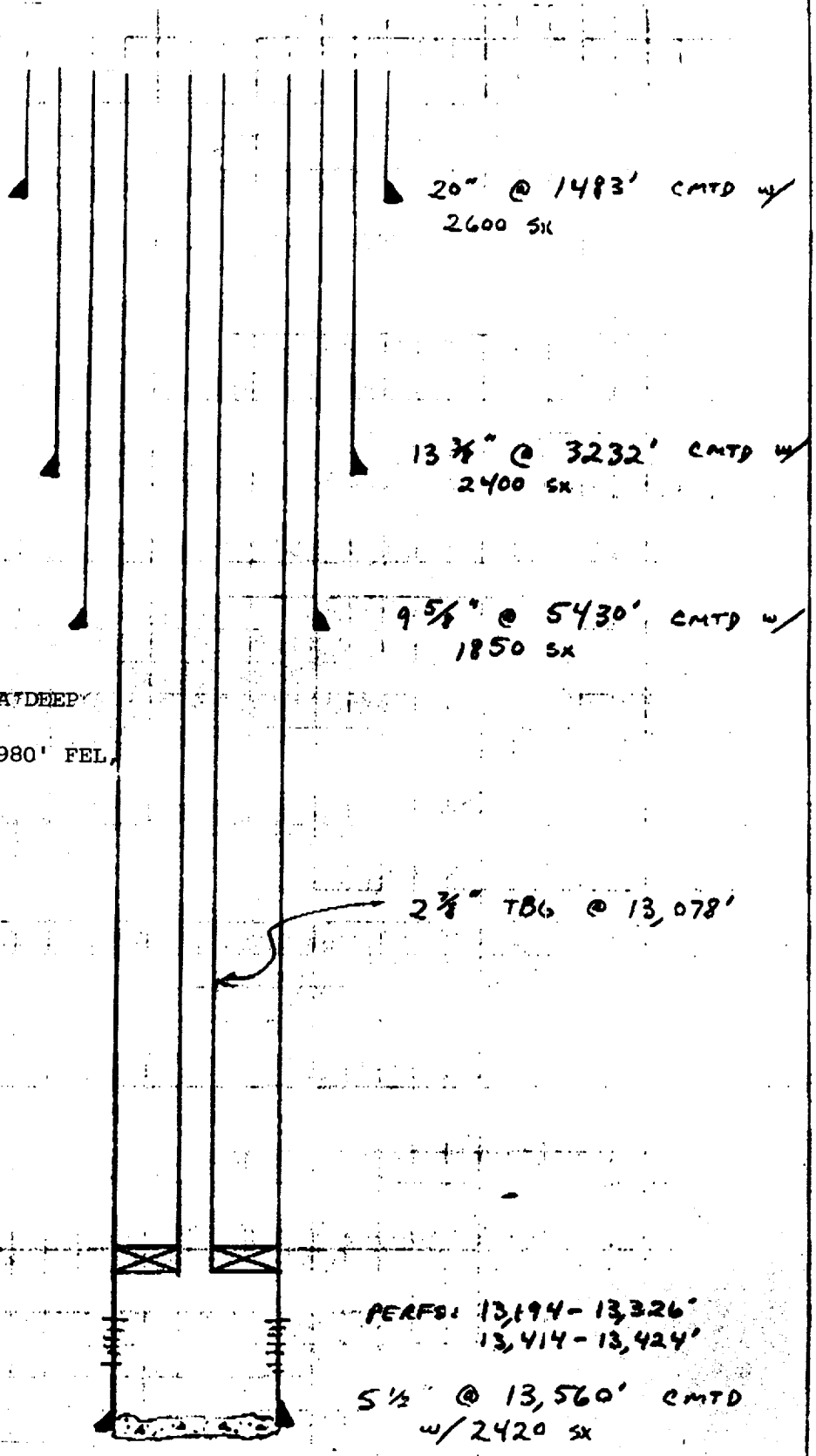
TD: 8000'
PBTD: 7911'

JSB
5/13/91

UNION OIL OF CAL
LAGUNA DEEP UNIT | FEDERAL #4

660' FNL + 1980' FEL SEC 26 T19S R33E

DRILLED: 10/16/89
COMP: 3/10/90



WELL NAME: UNOCAL LAGUNA DEEP UNIT FEDERAL WELL #4
LOCATION: 660' FNL & 1980' FEL, SEC. 26, T19S, R33E
SPUD DATE: 10-16-89
COMPL. DATE: 3-10-90
TOTAL DEPTH: 13,560'
STATUS/POOL: PRODUCING, E. GEM-MORROW POOL

JSB
7/25/91

MARTIN WATER LABORATORIES, INC.

P.O. Box 1468 Phone 943-3234 or 563-1040
Monahans, Texas 79756

RESULT OF WATER ANALYSES

709 W. Indiana Phone 683-4521
Midland, Texas 79701

LABORATORY NO. 79185 (Page 3)

TO: Mr. Ed Earles
400 W. Illinois, Suite 1000, Midland, TX

SAMPLE RECEIVED 7-11-91

RESULTS REPORTED 7-16-91

API WATER ANALYSIS REPORT FORM

Company		Sample No.	Date Sampled
Mitchell Energy Corporation			
Field	**Legal Description**	**County or Parish**	**State**
Sapphire		Lea	NM
Lease or Unit	**Well**	**Depth**	**Formation**	**Water, B/D**
Sapphire	#2		Delaware	
Type of Water (Produced, Supply, etc.)	**Sampling Point**		**Sampled By**
Produced			

DISSOLVED SOLIDS

CATIONS	*mg/l*	*me/l*
Sodium, Na (calc.)	71,477	3,107.7
Calcium, Ca	32,600	1,630.0
Magnesium, Mg	4,374	360.0
Barium, Ba		

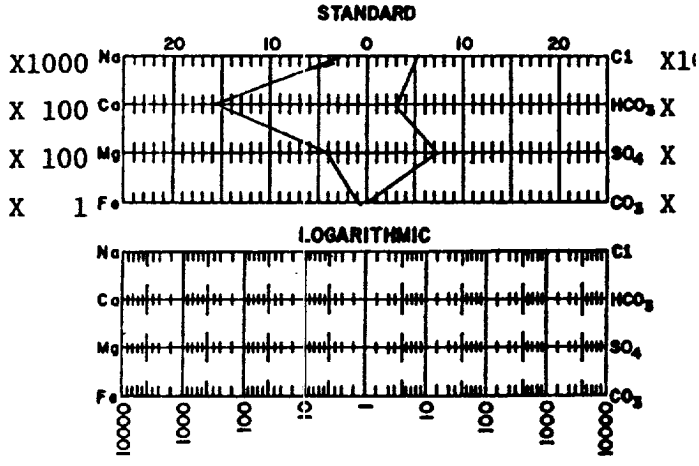
ANIONS		
Chloride, Cl	180,388	5,086.9
Sulfate, SO_4	358	7.4
Carbonate, CO_3	0	0.0
Bicarbonate, HCO_3	200	3.3

Total Dissolved Solids (calc.)	289,397	
Iron, Fe (total)	26.8	1.1
Sulfide, as H_2S	0.0	

OTHER PROPERTIES

pH	5.62
Specific Gravity, 60/60 F.	1.1874
Resistivity (ohm-meters) 77° F.	0.047
Total Hardness, as $CaCO_3$	99,500

WATER PATTERNS — *me/l*



REMARKS & RECOMMENDATIONS: The objective herein is to evaluate the compatibility of the water from Quail #1 with the waters from Sapphire #1 and #2. In studying these results, we have identified no evidence of any incompatibility between these waters and therefore see no reason why they cannot be effectively mixed with no resulting detrimental effects to be expected.

Waylan C. Martin, M.A.

MARTIN WATER LABORATORIES, INC.

P.O. Box 1468 Phone 943-3234 or 563-1040
Monahans, Texas 79756

709 W. Indiana Phone 683-4521
Midland, Texas 79701

RESULT OF WATER ANALYSES

LABORATORY NO. 79185
SAMPLE RECEIVED 7-11-91
RESULTS REPORTED 7-16-91

TO: Mr. Ed Earles
400 W. Illinois, Suite 1000, Midland, TX

API WATER ANALYSIS REPORT FORM

Company		Sample No.	Date Sampled
Mitchell Energy Corporation			
Field	**Legal Description**	**County or Parish**	**State**
Quail		Lea	NM
Lease or Unit	**Well**	**Depth**	**Formation**	**Water, B/D**
Quail ST	#1		Queen	
Type of Water (Produced, Supply, etc.)	**Sampling Point**		**Sampled By**
Produced			

DISSOLVED SOLIDS

CATIONS	*mg/l*	*me/l*
Sodium, Na (calc.)	79,345	3,449.8
Calcium, Ca	21,600	1,080.0
Magnesium, Mg	4,982	410.0
Barium, Ba		

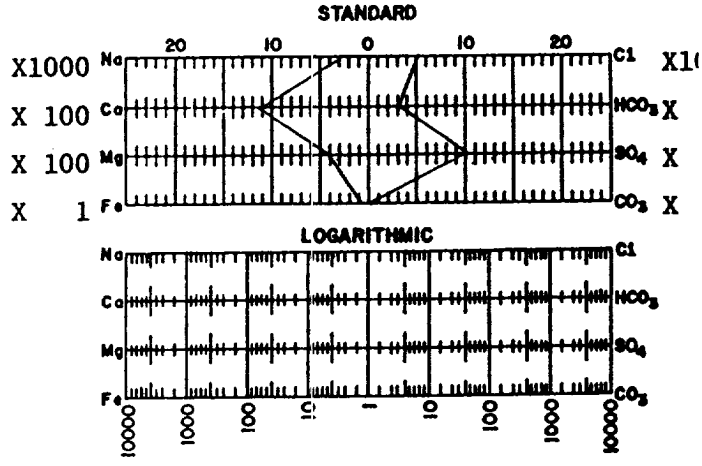
ANIONS		
Chloride, Cl	174,707	4,926.7
Sulfate, SO_4	477	9.9
Carbonate, CO_3	0	0.0
Bicarbonate, HCO_3	188	3.1

Total Dissolved Solids (calc.)	281,298	
Iron, Fe (total)	27.2	1.1
Sulfide, as H_2S	0.0	

OTHER PROPERTIES

pH	5.19
Specific Gravity, 60/60 F.	1.1808
Resistivity (ohm-meters) 77° F.	0.047
Total Hardness, as $CaCO_3$	74,500

WATER PATTERNS — *me/l*



REMARKS & RECOMMENDATIONS:

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 89112

TO: Mr. Ed Earles
400 W. Illinois, Suite 1000, Midland, TX

SAMPLE RECEIVED 8-1-91

RESULTS REPORTED 8-6-91

COMPANY Mitchell Energy Corporation LEASE Smith Ranch

FIELD OR POOL East Gem

SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from water supply well. 7-31-91

NO. 2

NO. 3

NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0031			
pH When Sampled				
pH When Received	7.97			
Bicarbonate as HCO_3	359			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	63			
Calcium as Ca	12			
Magnesium as Mg	8			
Sodium and/or Potassium	380			
Sulfate as SO_4	394			
Chloride as Cl	131			
Iron as Fe	0.08			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	1,283			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	6.11			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Form No. 3

By Ronnie Tucker

Ronnie D. Tucker, B.S.

October 22, 1991

Union Oil Co of California
1004 N. Big Spring
Midland, TX 79701

Mark Smith
P. O. Box 1296
Lovington, NM 88260

RE: Application for
Authorization to Inject

Dear Sirs:

Enclosed is a copy of the Application for Injection for the Sapphire Fed #1-A to be located 1600' FSL and 1750' FEL in Section 23, T19S, R33E. We are proposing to drill the well for salt water disposal. The injection formation will be the Queen at 4300-4900'.

If you have any objections or request for hearing with the Oil Conservation Division please contact within 15 days of receipt of this notice.

If you have any questions about this matter, please call Jim Blount at (915) 682-5396.

Sincerely,

E. R. Earles
Dist Drlg Mgr

JSB/tl

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
Union Oil Co of California
1004 N. Big Spring
Midland, TX 79701

4. Article Number
P 355 201 808

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X Linda E. Williams

7. Date of Delivery
10-23-91

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, Apr. 1989 ★U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECEIPT

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
Mark Smith
P. O. Box 1296
Lovington, NM 88260

4. Article Number
P 355 201 809

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X Nancy Smith

6. Signature — Agent
X

7. Date of Delivery
10-29-91

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, Apr. 1989 ★U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECEIPT

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, Kathi Bearden

____

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period

of ______________________

One weeks.

Beginning with the issue dated

Oct. 25, 1991

and ending with the issue dated

Oct. 25, 1991

Kathi Bearden

General Manager

Sworn and subscribed to before

me this 28 day of

Oct, 1991

Paula Parrish

Notary Public.

My Commission expires

Aug. 25, 1995

(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

LEGAL NOTICE
October 25, 1991
NOTICE OF INTENTION TO INJECT

Mitchell Energy Corp., 400 West Illinois, Ste. 1000, Midland, Texas 79701, hereby gives notice of intention to drill the Sapphire Fed #1-A located 1600' FSL & 1750' FEL, Sec. 23, T19S, R33E, for a SWD well. The disposal zone will be the Queen Formation from 4300'-4900' with a maximum injection pressure of 2000 psi and maximum rate of 1500 BPD. Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, NM 87501 within 15 days.