

26. March. 07	4/16/07	W. Jones	27. March. 07	SWD	PLC P0708626564
DATE	SUSPENSE	ENGINEER	LOGGED IN	TYPE	APP NO.

30 - Mech
15 -

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]**
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
- [A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD
- Check One Only for [B] or [C]
- [B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR
- [D] Other: Specify _____
- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply
- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☐ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Print or Type Name	Signature	Title	Date
		e-mail Address	

RECEIVED

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? x Yes No
- II. OPERATOR: Kaiser-Francis Oil Company
ADDRESS: P. O. Box 21468, Tulsa, OK 74121-1468
CONTACT PARTY: Charlotte Van Valkenburg PHONE: 918-491-4314
- 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 x 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. See attached
- 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 No other wells within $\frac{1}{2}$ mile.
- VII. Attach data on the proposed operation, including: See attached
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 geologic data on the injection zone including appropriate lithologic detail, geologic 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 sources known to be immediately underlying the injection interval. See attached
- IX. Describe the proposed stimulation program, if any. See attached
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). n/a
- *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. See attached
- 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 sources of drinking water. See attached
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. See attached
- 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: Charlotte Van Valkenburg TITLE: Technical Coordinator
SIGNATURE: C. Van Valkenburg DATE: 3-22-07
E-MAIL ADDRESS: Charlotv@KFOC.net
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

APPLICATION FOR AUTHORIZATION TO INJECT

NORTH BELL LAKE 4-15
1980' FSL and 1980' FWL
Section 8-23S-34E
Lea County, New Mexico

ITEM VI: Data on all wells of public record within ½ mile of proposed SWD well:

THERE ARE NO WELLS WITHIN ½ MILE OF THE PROPOSED SWD WELL.

ITEM VII: Data on the proposed operation

Average daily rate: 1300 BWPD

Maximum daily rate: 2500 BWPD

System will be a CLOSED **system**

Average injection pressure: 1500#

Maximum injection pressure: 2500#

Sources for reinjected (disposed) water: North Bell Lake 3-6, 6-23S-34E, Lea Co.

Analysis of Disposed Water: Well has not been completed yet. Attached is an analysis from the same zone that is disposing into Bell lake #2 SWD operated by Kaiser-Francis Oil Company

Compatibility with receiving formation: Similar SWD is occurring in 30-23S-34E

Chemical Analysis of Disposal Zone Water: Attached is analysis from well in the area

ITEM VIII: Geologic Data on the SWD zone

Geologic Name: DELAWARE

Depth: 4,940'-8,475'

Thickness: 3,535''

Depth to bottom of all drinking water: Deepest water well in the area is 500' deep

ITEM IX: Proposed Stimulation Program

NO STIMULATION EXPECTED.

ITEM X: Logs/Test Data

No test data within 1 mile of well. Logs are on file with the Division

SEE ATTACHED

ITEM XI: Chemical Analysis of two or more fresh water wells within 1 mile

SEE ATTACHED – ONLY ONE (1) WELL WAS ACTIVE. COULD NOT GET SAMPLES FROM TWO (2) WELLS.

APPLICATION FOR AUTHORIZATION TO INJECT

ITEM XII: Statement concerning geologic and engineering data

WE HAVE BEEN UNABLE TO FIND ANY EVIDENCE OF OPEN FAULTS OR OTHER
HYDROLOGIC CONNECTION BETWEEN THE DISPOSAL ZONE AND ANY
UNDERGROUND SOURCE OF DRINKING WATER. DELAWARE TOP IS A 4,940 AND IS
SEPARATED FROM DRINKING WATER BY A THICK SALT SECTION.

**NORTH BELL LAKE 4-15
1980' FSL and 1980' FWL
Section 8-23S-34E
Lea County, New Mexico**

ITEM XIII: "Proof of Notice:

**PROOF OF NOTICES HAVE BEEN MAILED TO ALL LEASEHOLD OWNERS WITHIN
ONE-HALF MILE OF THE WELL LOCATION AND TO THE SURFACE OWNERS OF
THE LAND ON WHICH THE WELL IS LOCATED**

SURFACE OWNER IS:

**State of New Mexico
Office of Commissioner of Public Lands
P. O. Box 1148
Santa Fe, NM 87504-1148**

LAND TENANT IS:

**Keller RV LLC
2811 County Road 460
Oakley, Kansas 67748**

**NORTH BELL LAKE 4-15
1980' FSL & 1980' FWL
Sec. 8-23S-34E
Lea Co., NM**

ITEM XIII: "Proof of Notice" (Continued):

OFFSET OPERATORS ARE:

**Apache Corp.
2000 Post Oak Blvd.
Suite 100
Houston, TX 77056-4400**

**B T A
104 S. Pecos
Midland, TX 79701**

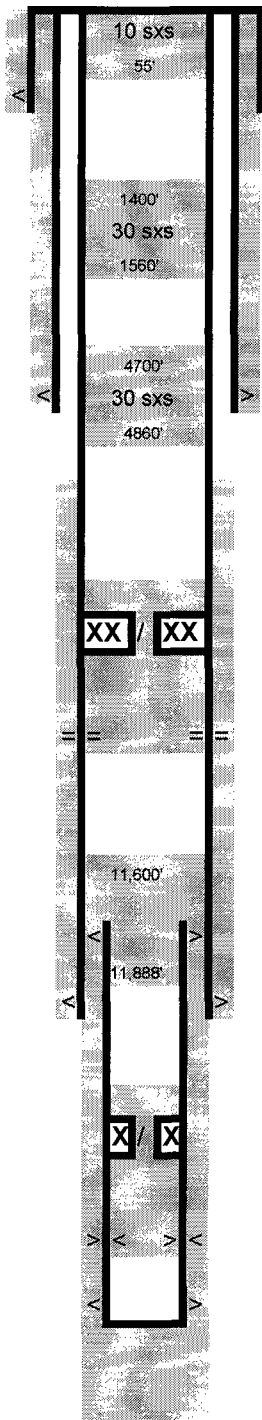
**Devon Energy Corp.
20 N. Broadway Ave.
Oklahoma City, OK 73102-8260**

NORTH BELL LAKE UNIT 4-15

8-23S-34E

1980' FSL & 1980' FWL

LEA CO., NM



20" HOLE

16" 15#

550' w/500 sxs

Cement Circulated

14 3/4" HOLE

10 3/4" 45.5#

4773' w/2600 sxs

Cement Circulated

TOC 5150'

Per Compl. Rpt.

Retainer 8450'

Bone Springs

8490'-8609' O/A

cmt plug 11600'-888'

TOL 11786'

9 1/2" HOLE

7 5/8" 33.7/39#

11900' w/1490 sxs

cmt on top

Retainer 13,000'

Morrow

13,303'-13'

6 1/2" HOLE

5" 18#

13483' w/260 sxs

TD: 13,589'

PBTD: 13,483'

SPUD: 10/09/74 COMP: 04/14/75 GL: 3445' DF: 3474' API 30-025-24771

COMPLETION

PF: MORROW: 13,303'-13' (2psf)

WO: 05/76: RECOMPLETE TO BONE SPRINGS

Set retainer at 13,000'. Sqz w/100 sxs. Dump 10 sxs on retainer

Spot 50 sxs cement plug 11,600'-11,888'.

PF: BONE SPRINGS: 8490'94"; 8524'-28"; 50'-54"; 66'-68"; 87'-90"; 607'-9'

OVERALL PERFS: 8490'-8609' O/A

Acid w/4000 g 28%.

TA well

WO: 06/77: PLUG AND ABANDON

Set retainer at 8450'. Sqz w/150 sxs. Dump 5 sxs on top of retainer

Spot 30 sxs cmt plug - 4860'-4700'

Spot 30 sxs cmt plug - 1560'-1400'

Spot 10 sx cmt plug - 55' to surface.

PRESENT WELL CONDITIONS - 2/15/07

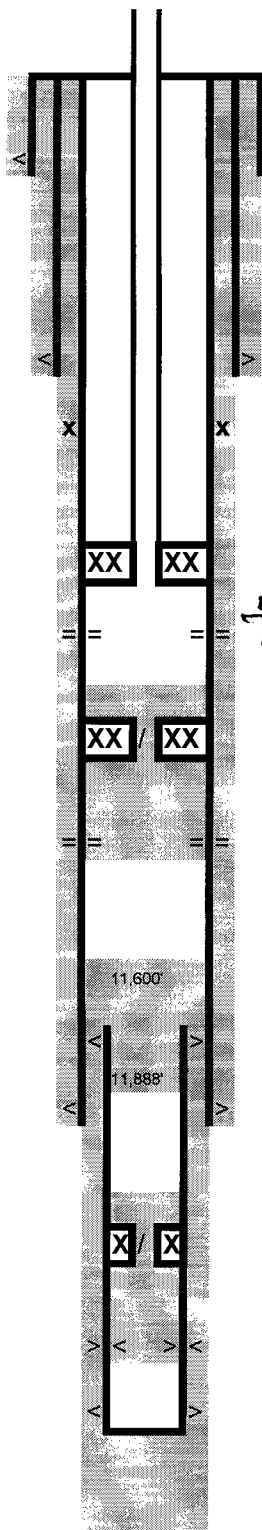
NORTH BELL LAKE 4-15

8-23N-34E

LEA COUNTY, NEW MEXICO

ITEM III

1/2



2 7/8" IPC tubing

20" HOLE

16" 15#

> 550' w/500 sxs

Cement Circulated

14 3/4" HOLE

10 3/4" 45.5#

4773' w/2600 sxs

Cement Circulated

Pf/Szq Cmt to Surf

Packer 4890'

5060-6550
4940-8175

PROPOSED INJ INT

Retainer 8450'

Bone Springs

8490'-8609' O/A

cmt plug 11600'-888'

TOL 11786'

9 1/2" HOLE

7 5/8" 33.7/39#

11900' w/1490 sxs

cmt on top

Retainer 13,000'

Morrow

13,303'-13'

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TD: 13,589'

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NORTH BELL LAKE UNIT 4-15

8-23S-34E

1980' FSL & 1980' FWL

LEA CO., NM

SPUD: 10/09/74 COMP: 04/14/75 GL: 3445' DF: 3474' API 30-025-24771

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Spot 30 sxs cmt plug - 4860'-4700'

Spot 30 sxs cmt plug - 1560'-1400'

Spot 10 sx cmt plug - 55' to surface.

PROPOSED WELL CONDITIONS - 2/15/07

PROPOSED SWD WELL

NORTH BELL LAKE 4-15

8-23N-34E

LEA COUNTY, NEW MEXICO

ITEM III

2/2



**ARDINAL
LABORATORIES**

PHONE (815) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 383-2328 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
KAISER-FRANCIS
ATTN: DAVID ROADAWALT
11722 W. HWY. 80 E.
ODESSA, TX 79765
FAX TO: (432) 563-2995

Receiving Date: 02/09/07
Reporting Date: 02/17/07
Project Number: NOT GIVEN
Project Name: BELL LAKE N. 4-15
Project Location: BELL LAKE N. 4-15

Sampling Date: 02/09/07
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C ₈ -C ₁₀) (mg/L)	DRO (C ₁₀ -C ₂₈) (mg/L)
ANALYSIS DATE:		02/13/07	02/13/07
H12181-1	KELLER FRESH H2O WELL	<5.0	<5.0
H12181-2	BELL LAKE 2-B	12.2	171
Quality Control		27.9	29.1
True Value QC		30.0	30.0
% Recovery		93.1	96.9
Relative Percent Difference		0.5	3.6

METHOD: SW-846 8015 M

Buyer's Copy
Chemist

2/17/07
Date

H12181

Corrected Copy

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidents or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client. Its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal regardless of whether such claim is based upon any of the above-stated reasons or otherwise.


ARDINAL
LABORATORIES

PHONE (915) 673-7001 • 2111 BEECH-WOOD • ABILENE, TX 79603

PHONE (505) 393-2308 • 101 E MARLAND • HOBBES, NM 87040

 ANALYTICAL RESULTS FOR
 KAISER-FRANCIS
 ATTN: DAVID ROADAWALT
 11722 W. HWY 80 E.
 ODESSA, TX 79765
 FAX TO: (432) 563-2995

 Receiving Date: 02/09/07
 Reporting Date: 02/12/07
 Project Owner: NOT GIVEN
 Project Name: BELL LAKE N. 4-15
 Project Location: BELL LAKE N. 4-15

 Sampling Date: 02/09/07
 Sample Type: WATER
 Sample Condition: COOL & INTACT
 Sample Received By: NF
 Analyzed By: LB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		02/12/07	02/12/07	02/12/07	02/12/07
H12181-1	Keller Fresh H2O Well	<0.002	<0.002	<0.002	<0.006
H12181-2	Bell Lake 2-B	0.308	0.589	0.033	0.903
Quality Control		0.101	0.101	0.101	0.314
True Value QC		0.100	0.100	0.100	0.300
% Recovery		101	101	101	106
Relative Percent Difference		0.4	0.3	0.5	0.1

METHOD: EPA SW-846 8021B


 Chemist

 2/12/07
 Date

PLEASE NOTE: Liability and Damages: Cardinal's ability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. Cardinal shall not be liable for incidents or consequential damages, including, without limitation, business interruption, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or subcontractors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

 Item VII
 WATER ANALYSIS


ARDINAL
LABORATORIES

PHONE (815) 873-7021 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (805) 383-2326 • 101 E. MARLAND • HOBBS NM 88240

ANALYTICAL RESULTS FOR
KAISER-FRANCIS
ATTN: DAVID ROADAWALT
11722 W. HWY. 80 E.
ODESSA, TX 79765
FAX TO: (402) 563-2995

Receiving Date: 02/09/07
Reporting Date: 02/17/07
Project Number: NOT GIVEN
Project Name: BELL LAKE N. 4-15
Project Location: BELL LAKE N. 4-15

Sampling Date: 02/09/07
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO	DRO
		(C ₁ -C ₁₀) (mg/L)	(C ₁₁ -C ₂₈) (mg/L)
ANALYSIS DATE:		02/13/07	02/13/07
H12181-1	KELLER FRESH H2O WELL	12.2	17.1
H12181-2	BELL LAKE 2-6	<5.0	<5.0
Quality Control		27.9	29.1
True Value QC		30.0	30.0
% Recovery		93.1	96.9
Relative Percent Difference		0.5	3.6

METHOD: SW-846 8015 M

David Roadawalt
Chemist

2/17/07
Date

H12181

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ITEM VII
WATER ANALYSIS

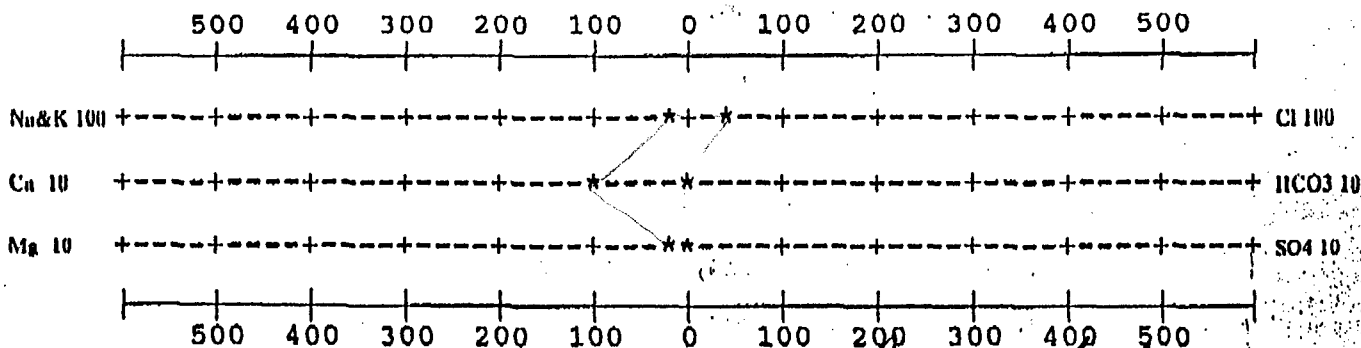
4/3

ANALYSIS #: HB010227

DEPTH: 0
DATE SAMPLED: 10-25-92
DATE RECEIVED: 10-26-92
SUBMITTED BY: PUMPER???
WORKED BY: D. SHEPHERD
PHONE #: 505-392-5556

SPECIFIC GRAVITY:	1.167 @ 78 °F	PH:	5.59
RESISTIVITY (CALC.)	: .045 OHMS @ 75 °F		
IRON (FE++):	25 PPM	SULFATE:	266 PPM
CALCIUM:	20497 PPM	TOTAL HARDNESS:	58612 PPM
MAGNESIUM:	1791 PPM	BICARBONATE:	105 PPM
CHLORIDE:	132789 PPM	SODIUM CHLORIDE (CALC)	218438 PPM
SODIUM+POTASS:	59384 PPM	TOT. DISSOLVED SOLIDS:	251155 PPM
PERCENT OIL	:00	H2S	:NO TRACE

REMARKS:

ATTACHMENT VII ANALYST

D. SHEPHERD

CHEMICAL ANALYSIS OF WATER FROM DISPOSAL ZONE (DELAWARE)



PHONE (815) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2328 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
KAISER-FRANCIS
ATTN: DAVID ROADAWALT
11722 W. HWY. 80 E
ODESSA, TX 79755
FAX TO: (432) 683-2995

Receiving Date: 02/09/07
Reporting Date: 02/16/07
Project Number: NOT GIVEN
Project Name: BELL LAKE N. 4-15
Project Location: BELL LAKE N. 4-15

Sampling Date: 02/09/07
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: HM
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity (mgCaCO ₃ /L)
ANALYSIS DATE:		02/16/07	02/15/07	02/15/07	02/16/07	02/14/07	02/15/07
H12181-1	KELLER FRESH H2O	20	67.9	33.1	3.84	790	148
	WELL						
H12181-2	BELL LAKE 2-6	21992	2744	389	785	104700	304
Quality Control		NR	53.2	51.8	1.95	1383	NR
True Value QC		NR	50.0	50.0	2.00	1413	NR
% Recovery		NR	106	103	98	98	NR
Relative Percent Difference		NR	7.8	1.6	0.6	0.2	NR

METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1	
		Cl ⁻	SO ₄	CO ₃	HCO ₃	pH	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)

ANALYSIS DATE:		02/14/07	02/15/07	02/15/07	02/15/07	02/14/07	02/14/07
H12181-1	KELLER FRESH H2O	24	188	0	181	7.46	531
	WELL						
H12181-2	BELL LAKE 2-6	39488	1196	0	371	7.16	82236
Quality Control		480	27.9	NR	915	6.91	NR
True Value QC		500	25.0	NR	1000	7.00	NR
% Recovery		96	112	NR	92	98	NR
Relative Percent Difference		1	17	NR	2.7	0.0	NR

METHODS:		SM4500-Cl-E	375.4	310.1	310.1	150.1	180.1
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John S. Marino
Chemist

02-16-07
Date

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable contract. Cardinal shall be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

ATTACHMENT XI
FRESH WATER WELL ANALYSIS

1/3



PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 323-2305 • 101 E. MARLAND • HORRIS, NM 87040

ANALYTICAL RESULTS FOR
KAISER-FRANCIS
ATTN: DAVID ROADAWALT
11722 W. HWY 80 E.
ODESSA, TX 79765
FAX TO: (432) 563-2995

Receiving Date: 02/09/07
Reporting Date: 02/12/07
Project Owner: NOT GIVEN
Project Name: BELL LAKE N. 4-15
Project Location: BELL LAKE N. 4-15

Sampling Date: 02/09/07
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: LB

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		02/12/07	02/12/07	02/12/07	02/12/07
H12181-1	Keller Fresh H2O Well	<0.002	<0.002	<0.002	<0.006
H12181-2	Bell Lake 2-6	0.308	0.589	0.033	0.903
Quality Control		0.101	0.101	0.101	0.314
True Value QC		0.100	0.100	0.100	0.300
% Recovery		101	101	101	106
Relative Percent Difference		0.4	0.3	0.5	0.1

METHOD: EPA SW-846 8021B

Chemist

2/12/07
Date

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ATTACHMENT ~~to~~ XI
FRESH WATER

2/3


ARDINAL
LABORATORIES

PHONE (815) 873-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (805) 385-2328 • 101 E. MARLAND • HOBBS, NM 88240

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Sample Received By: NF
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO	DRO
		(C ₈ -C ₁₄) (mg/L)	(>C ₁₅ -C ₂₈) (mg/L)
ANALYSIS DATE:		02/13/07	02/13/07
H12181-1	KELLER FRESH H2O WELL	12.2	17.1
H12181-2	BELL LAKE 2-6	<5.0	<5.0
Quality Control		27.9	29.1
True Value QC		30.0	30.0
% Recovery		93.1	96.9
Relative Percent Difference		0.5	3.6

METHOD: SW-846 8015 M


Chemist


Date

H12181

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services rendered by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

ATTACHMENT XI
Fresh Water Analysis

3/4

KAISER-FRANCIS OIL COMPANY

P. O. BOX 21468

TULSA, OKLAHOMA 74121-1468

6733 South Yale Avenue, 74136
(918) 494-0000

April 12, 2007

RECEIVED

APR 18 2007

Mr. William V. Jones
New Mexico Oil Conservation Division
1220 S. St. Francis
Santa Fe, NM 97505

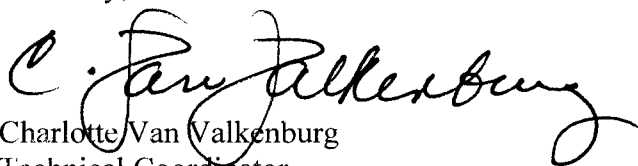
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 97505

Re: Email request for additional data
pertaining to SWD application:
North Bell Lake 4 #15
API #025-24771

Dear Sir:

In response to your email dated March 29, 2007. I am enclosing copies of the certified mail receipts to all affected parties (item 7). I have also enclosed a copy of the newspaper notice and affidavit of publication (item 8). Our engineer, Jim Wakefield, will be answering all other inquiries (items 1 through 6 & 9) under separate cover

Sincerely,



Charlotte Van Valkenburg
Technical Coordinator

Enclosures

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 or PO Box No.
 City, State, ZIP+4 Santa Fe, NM 87504-1148

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Stamp: MAR 22 2007 BMEU

Sent To
 Keller RV LLC
 Street, Apt. No.: 2811 County Road 460
 or PO Box No.
 City, State, ZIP+4 Oakley, KS 67748

PS Form 3800, June 2002 See Reverse for Instructions

Appl to Inject ~ North Bell Lake 4-15

CVV

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 Ofc of Commissioner of Public Land
 P. O. Box 1148
 Santa Fe, NM 87504-1148

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 B. Received by (Printed Name) ☐ Addressee
 C. Date of Delivery

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1. Article Addressed to:
 Keller RV LLC
 2811 County Road 460
 Oakley, KS 67748

Appl to Inject ~ North Bell Lake 4-15

CVV

COMPLETE THIS SECTION ON DELIVERY

A. Signature *MacDonald* ☒ Agent
 B. Received by (Printed Name) *Lisa Macette* ☐ Addressee
 C. Date of Delivery *3/22/07*
 D. Is delivery address different from item 1? ☐ Yes
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☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
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 Apache Corp.
 Street, Apt. No.: 2000 Post Oak Blvd., Ste. 100
 or PO Box No.
 City, State, Zip+4 Houston, TX 77056-4400
 PS Form 3800, June 2002 See Reverse for Instructions

7005 1820 0007 1456 5762

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 B T A
 Street, Apt. No.: 104 S. Pecos
 or PO Box No.
 City, State, Zip+4 Midland, TX 79701
 PS Form 3800, June 2002 See Reverse for Instructions

Appl to Inject ~ North Bell Lake 4-15

CVY

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1. Article Addressed to:

Apache Corp.
 2000 Post Oak Blvd., Ste. 100
 Houston, TX 77056-4400

COMPLETE THIS SECTION ON DELIVERY

A. Signature ☒ Agent

B. Received by (Printed Name) C. Date of Delivery
 Maryus Carter 3-26-07

D. Is delivery address different from item 1? ☐ Yes
 If YES, enter delivery address below: ☐ No

3. Service Type

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4. Restricted Delivery? (Extra Fee) ☐ Yes

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1. Article Addressed to:

B T A
 104 S. Pecos
 Midland, TX 79701

COMPLETE THIS SECTION ON DELIVERY

A. Signature ☒ Agent

B. Received by (Printed Name) C. Date of Delivery
 Maryus Carter 3-26-07

D. Is delivery address different from item 1? ☐ Yes
 If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
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Abil to inject ~ North Bell Lake 4-15 CVV

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1. Article Addressed to:

Devon Energy Corp.
20 N. Broadway Ave.
Oklahoma City, OK 73102-8260

COMPLETE THIS SECTION ON DELIVERY

A. Signature

[Signature]

☐ Agent
☐ Addressee

B. Received by (Printed Name)

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

C. Date of Delivery

3. Service Type

- ☒ Certified Mail
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- ☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

2. Article Number

(Transfer from service label)

7005 1820 0007 1456 5748

PS Form 3811, February 2004

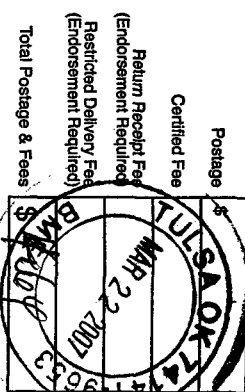
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Restricted Delivery Fee

Endorsement Required

Sent To Devon Energy Corp.

Street, Apt. No.

20 N. Broadway Ave.

City, State, ZIP+4

Oklahoma City, OK 73102-8260

PS Form 3800, June 2002

See Reverse for Instructions

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs News-Sun, a 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 1 weeks.
Beginning with the issue dated

March 30 2007
and ending with the issue dated

March 30 2007

Kathi Bearden

Publisher

Sworn and subscribed to before

me this 30th day of

March 2007

[Signature]

Notary Public.

My Commission expires
February 07, 2009
(Seal)



OFFICIAL SEAL
DORA MONTZ
NOTARY PUBLIC
STATE OF NEW MEXICO

My Commission Expires: _____

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
March 30, 2007

NOTICE OF APPLICATION FOR
AUTHORIZATION TO INJECT

Kaiser-Francis Oil Company, P.O. Box 21468, Tulsa, OK 74121-1468, has made application to the State of New Mexico % Oil Conservation Division for authorization to inject fluid into the Delaware formation of the North Bell Lake #4-15. Contact person: Drew Tyler (918) 491-4343.

The applicant proposes to inject fluid into the Delaware formation of the North Bell Lake #4-15. The proposed injection well is approximately 1980' FSL & 1980' FWL of Sec. 8-23S-34E in the Wildcat (Delaware) field, in Lea County. Fluid will be injected into strata in the subsurface depth interval from 4940' to 8475' with a maximum injection pressure of 2500# and a maximum injection rate of 2500 BWPD.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, NM 87505 within 15 days.
#23148

67102285000

67543297

KAISER-FRANCIS OIL COMPANY
P.O. BOX 21468
TULSA, OK 74121-1468

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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease
State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No. E-9458

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR.
USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. <input type="checkbox"/> OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER-	7. Unit Agreement Name BELL LAKE
2. Name of Operator CONTINENTAL OIL COMPANY	8. Farm or Lease Name BELL LAKE Unit 4
3. Address of Operator Box 460, HOBBS, N.M. 88240	9. Well No. 15
4. Location of Well UNIT LETTER K , 1980 FEET FROM THE SOUTH LINE AND 1980 FEET FROM THE WEST LINE, SECTION 8 TOWNSHIP 23-S RANGE 34-E NMPM.	10. Field and Pool, or Wildcat UNDESIGNATED
15. Elevation (Show whether DF, RT, GR, etc.) 3474' DF	12. County LEA

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOBS <input checked="" type="checkbox"/>	OTHER SET INTER. CSG. <input type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

SET 10 3/4" casing @ 4750'. Cemented w/ 2050 sks.
50-50 Poz, 350 sks. Class "C" Cement, 200 sks.
Class "H" Next Cement in 3 stages. Cement Circ.
to sfc. on 11-1-74. Tested csq w/1500#, held ab.
New drilling 9 1/2" hole.

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

SIGNED *John D. Hickey* TITLE SR. ANALYST DATE 11-4-74

APPROVED BY Joe D. Hickey TITLE Dist. I. Supv. DATE 11-4-74
CONDITIONS OF APPROVAL, IF ANY:

Nmocc. & Phillips, Skelly, Union, File

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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease	
State <input checked="" type="checkbox"/>	Fee <input type="checkbox"/>
5. State Oil & Gas Lease No. E 9458	

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. <input type="checkbox"/> OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER-		7. Unit Agreement Name BELL LAKE
2. Name of Operator CONTINENTAL OIL COMPANY		8. Farm or Lease Name BELL LAKE UNIT 4
3. Address of Operator Box 460, HOBBS, N.M. 88240		9. Well No. 15
4. Location of Well UNIT LETTER K 1980 FEET FROM THE SOUTH LINE AND 1980 FEET FROM THE WEST LINE, SECTION 8 TOWNSHIP 23 S RANGE 34 E N.M.P.M.		10. Field and Pool, or Wildcat UNDESIGNATED
15. Elevation (Show whether DF, RT, CR, etc.) 3474' DF		12. County LEA

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>	OTHER SET INTERMEDIATE CASING <input checked="" type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

SET 7 5/8" 39# E 33.70# Casing @ 11,900'. Cemented w/1490 sacks cmt. in 2 stages. TOC @ 5150'. Tested w/1500#, held ok. Cont. drilling. Plug down 11-22-74. WOC 27 Hrs. before testing csq.

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

SIGNED **John Dwyer** TITLE **SR. ANALYST** DATE **11-26-74**

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

NADCC-4, Phillips, Union (Roswell), Skelly, File

Jones, William V., EMNRD

From: Jim Wakefield [JimWake@kfoc.net]
Sent: Wednesday, May 09, 2007 12:23 PM
To: Jones, William V., EMNRD
Cc: Charlotte VanValkenburg; Karl Bode; Drew Tyler; Wayne Fields; Brent Meadows
Subject: FW: SWD Application: North Bell Lake 4-15 API No. 30-025-24771

Mr. Jones, it appears that Kaiser may have given you some contradictory depths for injection on our SWD permit and re-entry applications. It is our intent to inject into the Bell Canyon zone at a depth of 5,060' to 5,855' and the Cherry Canyon zone from 5,855' to 6,550'. Conoco termed the limestone interval in the 4-15 well as the Castile rather than the Capitan at North Bell Lake Unit. However, Kaiser did not inherit a viable well file from Conoco and/or Exxon when we acquired their WI in this well, so we have no information on the placement of the three DV tools used to cement the 10 3/4" casing set at 4,773' to surface, and we have no mud logs which might shed some light on the quality of the limestone interval above 4,940'. We do have mud logs on two offsets, the N. Bell Lake Unit No. 6 in the SE/4 of Section 6-23S-34E which does not begin readings until 5,800', and the Amerada Hess N. Bell Lake 2 well in SW/4 of Section 5-23S-34E, drilled in 1994, begins readings at 4,875' just below the 13 3/8" casing set below the "Castile limestone". As a result, the immediate offsets do not help us in determining the lithology of the "Castile" limestone. Further, I do not have a copy of a Capitan Reef location plat to answer your question concerning lateral distance to the Capitan reef. I was unable to find a reference to a Capitan Reef location plat on the OCD web site. I, therefore, would appreciate any assistance you could give me in obtaining one.

I do believe that the Lamar limestone interval located in the 4-15 well from 4,948' to 5,040' is an adequate barrier to prevent vertical and lateral communication between the Bell Canyon and Cherry Canyon disposal zones and the limestone interval above 4,940' due to its widespread deposition. Also, the Lamar limestone was described by the mud logger at the N. Bell Lake Unit 2-5 well in the SW/4 of Section 5-23S-34E as being dense with no fluorescence or shows and comprised of very fine to fine crystalline limestone with some hard crystalline matrix. As a result the Lamar Limestone should be an effective barrier between the Delaware disposal zones and the "Castile" Limestone.

In regard to wellbore isolation, Kaiser is unsure of the top of cement behind the 7 5/8" casing. It is Kaiser's plan to locate the top of cement via a cement bond log and then circulate cement from the top of cement to a depth above the 10 3/4" shoe at 4,773'. We can easily modify this procedure to include an additional step to perforate the 7 5/8" casing at 5,050' at the base of the Lamar Lime and pressure test the cement job with a provision to squeeze the perfs to achieve isolation.

Kaiser and Apache are prepared to recomplate the Apache operated N. Bell Lake Unit No. 3-6 well in the NE/4 of Section 6-23S-34E from the Ellenberger to test for attic gas in the Devonian. We need the 4-15 well for SWD service to make this recompletion economical. As a result, I would appreciate any assistance you can give us to expedite approval of the SWD and re-entry permit for the 4-15 well.

Please call me at 918-491-4510 or email me at Jimwake@kfoc.net if you have any other requests for information or questions regarding our re-entry and SWD completion procedures. Also, note that Devon on March 29, 2007 applied for a SWD permit for their Caballo 9 State #1 well in the NW/4 of Section 9-23S-34E. The two permits appear to be similar except for the location of the intermediate casing in the 4-15 well which was set above the base of the "Castile" limestone. I hope that my above comments have satisfied the OCD's requirement as to isolation of the zone of injection, and clarified the depths of injection into the Bell Canyon and Cherry Canyon Delaware zones.

As you requested, below are listed the formation tops from the surface to below the Bone Springs in the 4-15 wellbore:

Zone	Depth
Rustler	1090
Salt	1376
Castile	3055 (difficult to determine without a porosity log over this zone)
Lamar Lime	4940
Bell Canyon Ramsey	5060

5/9/2007

Cherry Canyon	5855
Brushy Canyon	7115
Bone Springs Lime	8478
1st Bone Springs Sd	9160
2nd Bone Springs Lm	9460
2nd Bone Springs Sd	9760
3rd Bone Springs Lm	10540
3rd Bone Springs Sd	11030
Wolfcamp	11375

I assume that since Kaiser does not plan to dispose of water into the Brushy Canyon and Bone Springs intervals, your questions concerning these intervals do not require an answer.

-----Original Message-----

From: Charlotte VanValkenburg

Sent: Friday, March 30, 2007 11:29 AM

To: Jim Wakefield; Drew Tyler; Karl Bode

Subject: FW: SWD Application: North Bell Lake 4-15 API No. 30-025-24771

I have items 7 & 8 under control. You all get the rest.

-----Original Message-----

From: Jones, William V., EMNRD [mailto:William.V.Jones@state.nm.us]

Sent: Thursday, March 29, 2007 12:33 PM

To: Charlotte VanValkenburg

Cc: Kautz, Paul, EMNRD; Ezeanyim, Richard, EMNRD

Subject: SWD Application: North Bell Lake 4-15 API No. 30-025-24771

Hello Ms. Van Valkenburg:

The Division in Santa Fe received your application to re-enter this plugged well and inject saltwater on March 26, 2007.

After reviewing the application, we have the following questions and requests for you and your geologist and your reservoir engineer:

- 1) This well as spotted on a map of the Capitan Reef looks like it is either on the edge of the reef or in the reef. The elogs for this well show a formation which appears similar to the Reef to be directly above the Bell Canyon and extending below the 10-3/4 inch intermediate casing. Please have your geologist send all formation tops from the surface to below the Bone Spring and send an evaluation of how close (in feet) this planned injection into the Delaware is vertically and laterally to the Reef. Is there any barriers to prevent injection water from entering the reef both vertically and laterally? What are these barriers?
- 2) You have listed the entire Delaware Mountain Group from 4940 to 8475 as an interval to be permitted for injection. The upper portion of this interval may be close to the Reef. The lowest portion of this interval is near the Bone Spring perfs that were tested or produced in this well. Which portion of the Delaware is really being targeted for injection?
- 3) If you are planning on injection close to the Bone Spring - send an evaluation of the remaining oil saturation and producibility of this Bone Spring and a Reservoir Engineering opinion as to what harm this injection might possibly do to the Bone Spring.
- 4) Keep in mind that your top permitted injection interval will be the footage used to calculate your maximum allowable surface injection pressure. We use 0.2 PSI/foot times the depth to the top of the injection interval as the maximum surface injection pressure.
- 5) You may be required to swab test the perforations prior to beginning injection and run an injection survey on this well within 6 months of beginning injection and send a copy of both results to the Division.
- 6) Please look at your internal well file on this well and let us know where the three DV Stage tools were set on the 10-3/4inch casing and how much cement was used below and above these Stage tools. The use of so many stages and the elogs implies that the Capitan Reef may be behind or directly below this casing string.

5/9/2007

- 7) Please send the certified mailing numbers KF received from the Post Office when mailing notice to all affected parties.
- 8) A newspaper notice is required - please send a copy of the notice that was posted in a newspaper in Eddy County.
- 9) We think your other "notices" are OK, but please confirm that you read Division Rule 704 concerning whom to notify of your intended injection permit. The pertinent parties are those with mineral ownership or mineral leases in the Delaware Mountain Group.

Please send the requested data as soon as possible. If the Division does not receive enough data to evaluate this application before April 15, the application will be cancelled from our pending database.

Thank You,

William V. Jones PE
New Mexico Oil Conservation Division
1220 South St. Francis
Santa Fe, NM 87505
505-476-3448

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5/9/2007

Injection Permit Checklist 2/8/07

SWD Order Number 1084 Dates: Division Approved _____ District Approved _____

Well Name/Num: North Bell Lake 4-15 Date Spudded: 10/9/74

API Num: (30-) 025-24771 County: LEA

Footages 1980 FSL/1980 FWL Sec 8 Tsp 23S Rge 34E

Operator Name: Kaiser-Francis Oil Co. Contact Charlotte Von Valkenburg

Operator Address: P.O. Box 21468, Tulsa, OK, 74121-1468

Current Status of Well: P&A'ED Planned Work: _____ Inj. Tubing Size: 2 7/8" @ 4890'

	Hole/Pipe Sizes	Depths	Cement	Top/Method
Surface	20" 16"	550'	500	CIRC
Intermediate	14 3/4 13 3/4	4773	2600 SX	CIRC
Production	9 1/2 7 5/8	11,900	1,490 SX	5150'
Last DV Tool				
Open Hole/Liner				
Plug Back Depth				

Diagrams Included (Y/N): Before Conversion ☒ After Conversion ☒

Checks (Y/N): Well File Reviewed ☒ ELogs in Imaging ☒

Intervals:	Depths	Formation	Producing (Yes/No)
Salt/Potash	OK 1376-3055		
Capitan Reef	at EDGE of Reef		
Cliff House, Etc.			
Formation Above	5060 = Bell Canyon Ramsey		
Top Inj Interval	4773 DOL		
Bottom Inj Interval	8473 DOL		
Formation Below	7115 Brushy		

Bell Canyon
5060-3255
5055-6550
cherty

1012 PSI Max. WHIP
NO Open Hole (Y/N)
NO Deviated Hole (Y/N)

Fresh Water: Depths: 0-500' Wells(Y/N) 102 Analysis Included (Y/N): Yes Affirmative Statement ☒

Salt Water Analysis: Injection Zone (Y/N/NA) Yes DispWaters (Y/N/NA) _____ Types: Devonian and?

Notice: Newspaper(Y/N) Yes Surface Owner SLO Mineral Owner(s) _____

Other Affected Parties: Keller RV LLC, APACHE, BTA, DEVON

AOR/Repairs: NumActiveWells 0 Repairs? — Producing in Injection Interval in AOR —

AOR Num of P&A Wells 0 Repairs? — Diagrams Included? — RBDMS Updated (Y/N) _____

Well Table Adequate (Y/N) _____ AOR STRs: Sec _____ Tsp _____ Rge _____ UIC Form Completed (Y/N) ☒

New AOR Table Filename _____ Sec _____ Tsp _____ Rge _____ This Form completed 5/16/07

Conditions of Approval: Sec _____ Tsp _____ Rge _____ Data Request Sent 3/29/07

Perf x 5150' SQZ CNT TO SURF / Run CBL on 10 3/4" CASING
Set 200' Below PLUG

AOR Required Work: _____

Required Work to this Well: _____