SWD 9/26/97

677

SDX RESOURCES, INC.
P.O. BOX 5061
MIDLAND, TEXAS 79704
(915) 685-1761

September 8, 1997

✓NMOCD
2040 S. Pacheco
Santa Fe, NM 87505

NMOCD
811 S. 1st St.
Artesia, NM 88210

Re: Application for Authority to Inject
Sec. 5, T28S, R27E
Eddy Co., NM

Gentlemen:

Enclosed is Form C-108 (Application for Authority to Inject) for the following well operated by SDX Resources, Inc.

Chalk Bluff Draw #1
Unit K, Sec. 5, T18S, R27E
2055' FSL & 1980' FWL
Eddy Co., NM

The legal ad will be run in the "Artesia Daily Press" on Tuesday, September 8, 1997. We will forward that affidavit to you as soon as we receive it.

Should you have any questions, please contact us at the letterhead address.

Sincerely,

Chuck Morgan/ba

Chuck Morgan
Engineer

/ba

attachment

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: SDX Resources, Inc.

Address: PO Box 5061, Midland, TX 79704

Contact party: Chuck Morgan Phone: 915/685-1761

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: Bonnie Atwater Title Production Asst.

Signature: Bonnie Atwater Date: 9-8-97

* 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.

Application for Authorization to Inject
SDX Resources, Inc.

Chalk Bluff Draw #1
Unit K, Sec. 5, T18S, R27E
2055' FSL & 1980' FWL
Eddy Co., New Mexico

I. SDX plans to convert this well to an injection well in the Penn formation.

II. Operator: SDX Resources, Inc.
PO Box 5061
Midland, TX 79704

III. Well Data: See Attachment A1 - A3.

IV. This is not an expansion of an existing project.

V. See Attachment B1 & B2 (1/2 – 2 mile map & large scale map)

VI. No wells within the area of review penetrated the proposed injection zone.

VII. (1.) Proposed Average Daily Injection Volume: 200 BWPD.
Maximum Daily Injection Volume: 1000 BWPD.

(2.) This will be a closed system.

(3.) Proposed Average Injection Pressure: Unknown.
Proposed Maximum Injection Pressure: 1400#.

(4.) Injection water would be produced water from the producing wells on the Chalk Bluff Federal lease in the San Andres and Grayburg formations. Injection fluid analysis attached (Attachment C).

(5.) Formation Water Analysis not available.

VIII. (1.) The proposed injection interval is the portion of the Penn consisting of porous dolomite.

(2.) Limited fresh water zones overlie the proposed injection zone at appx. 150'.

IX. The proposed injection interval may be acidized with 15% HCL acid.

X. Well logs are on file at the OCD.

XI. No fresh water wells are within a ½ mile radius.

XII. Geologic and engineering data have been examined and no evidence of open faults or any other hydrological connection between the injection zone and any fresh water aquifer has been found.

XIII. (1.) Certified letters sent to offset operators. (Attachment D)
Surface Owner: Bureau of Land Management.

(2.) Copy of legal advertisement attached along with an Affidavit of Publication. (Attachment E1 & E2)

ATTACHMENT A1

III. Well Data: Chalk Bluff Draw #1

A. (1.) Unit K, Sec 5, T18S, R27E
Eddy Co., New Mexico
2055' FSL 1980' FWL

(2.) Casing: 13-3/8", 38#, set at 550'. Cement with 350 sx. TOC surface.
9-5/8", 36#, set at 3013'. Cement with 1700 sx. TOC surface.
5-1/2", 14-17#, set at 9500'. Cement with 2235 sx. TOC surface.
(Volumes calculated on .75% efficiency.)
Well P&A'd in 1985 as shown in Attachment A2.

(3 & 4.) Proposed well condition: Perfs from 7900' – 8300'.
2-7/8" PC tubing with an AD-1 PC packer. Set at 7800' as shown in Attachment A3.

B. (1.) Injection Formation: Cisco/Canyon

(2.) Injection interval will be thru perforations 7900' – 8300'.

(3.) Well was drilled and completed as a producer in the Morrow formation.

(4.) Perforations: 9443' – 9465'.

(5.) Next shallow oil or gas zone: Queen.
Next deeper oil or gas zone: San Andres

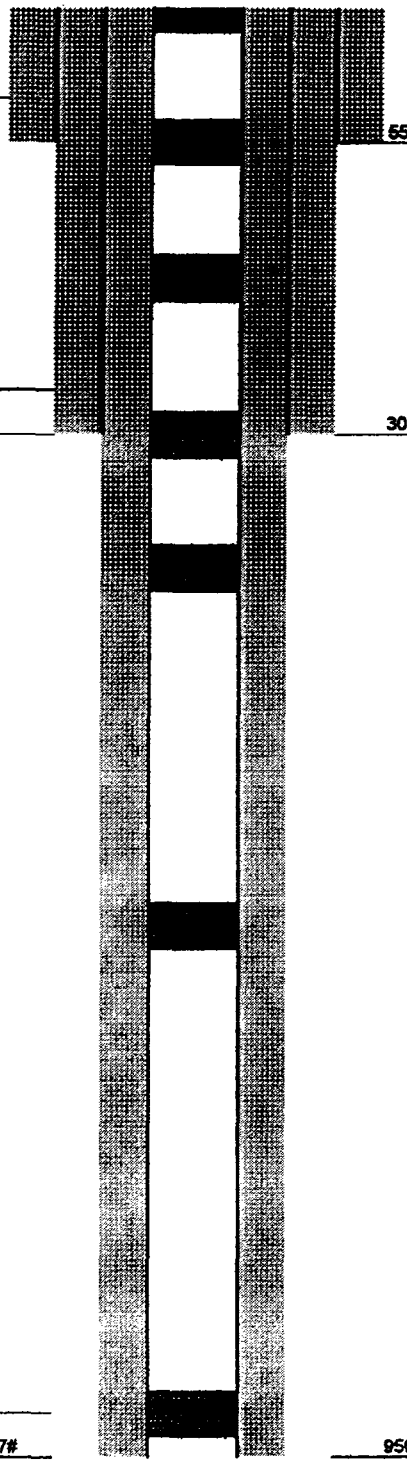
NO. 2 - EXHIBIT "A" -2
EXISTING CONDITION BOREHOLE DIAGRAM

SDX RESOURCES, INC.

WELLBORE SCHEMATIC
(BEFORE)

WELL NAME: Chalk Bluff Draw Federal #1

LOCATION: 2055' FSL, 1980' FWL, Unit K, 5/18/27, Eddy Co., NM



17 1/2" Hole

13 3/8" - 36#
~~450~~ 350 sx - circ.

559'

12 1/4" Hole

9 5/8" - 36#
1700 sx - circ.

3013'

7 7/8" Hole

5 1/2" - 14#,15.5#, 17#
2235 sx - circ.

9500'

TD - 9500'

1. Surface Plug - 50 sx T - Surface

2. Plug - 25 sx. T - 450' - 610'

3. Plug - 25 sx. T - 1147' - 1300'

4. Plug - 25 sx. T - 2780' - 3070'

5. Plug - 25 sx. T - 4670' - 4900'

6. Plug - 25 sx. T - 6006' - 6220'

7. Plug - BP in packer @ 9205' - 14 sx. on top - 9140' - 9200'

NO. 2 - EXHIBIT A-3

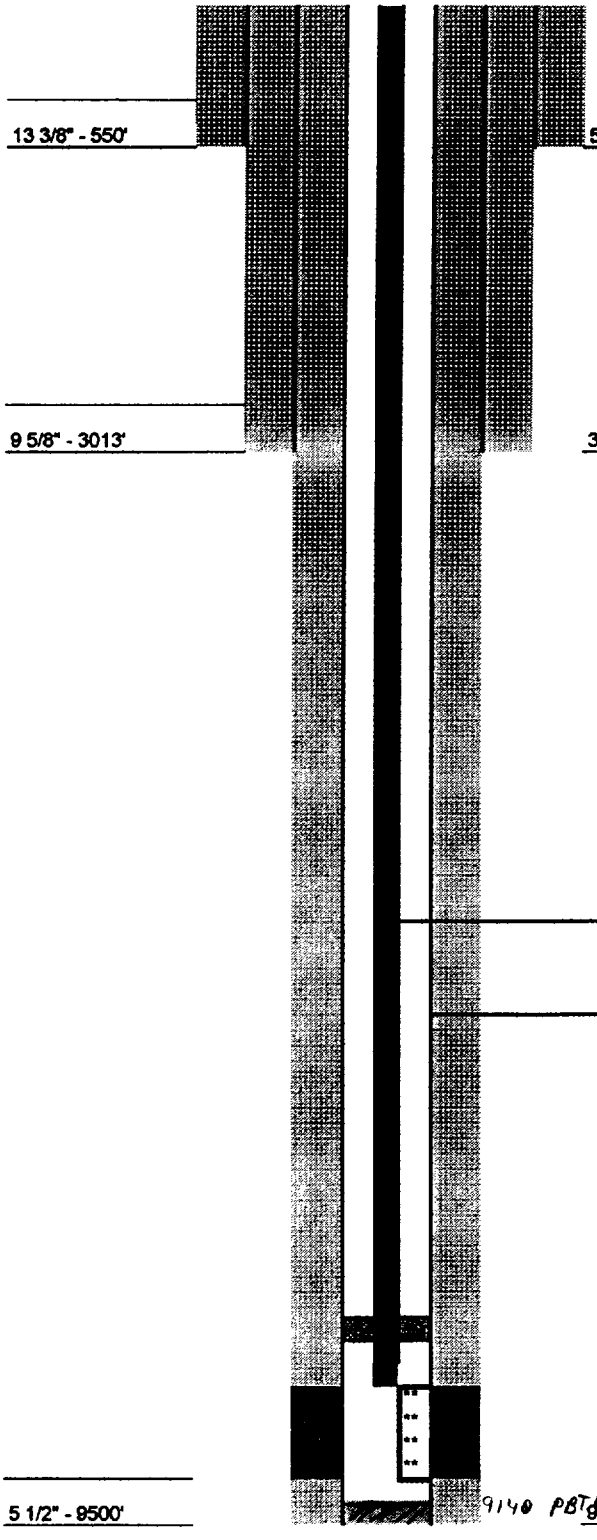
PROPOSED CONDITION BOREHOLE DIAGRAM

SDX RESOURCES, INC.

WELLBORE SCHEMATIC
(AFTER)

WELL NAME: Chalk Bluff Draw Federal #1

LOCATION: S A M E



13 3/8" - 550'

550'

9 5/8" - 3013'

3013'

5 1/2" - 9500'

9140 PBTD 9500'

FORMATIONS

GRAYBURG - 1500'

YESO - 2900'

CLEARFORK - 3850'

2⅞ ~~2 3/8"~~ N-80 Plastic - Lined Injection Tubing

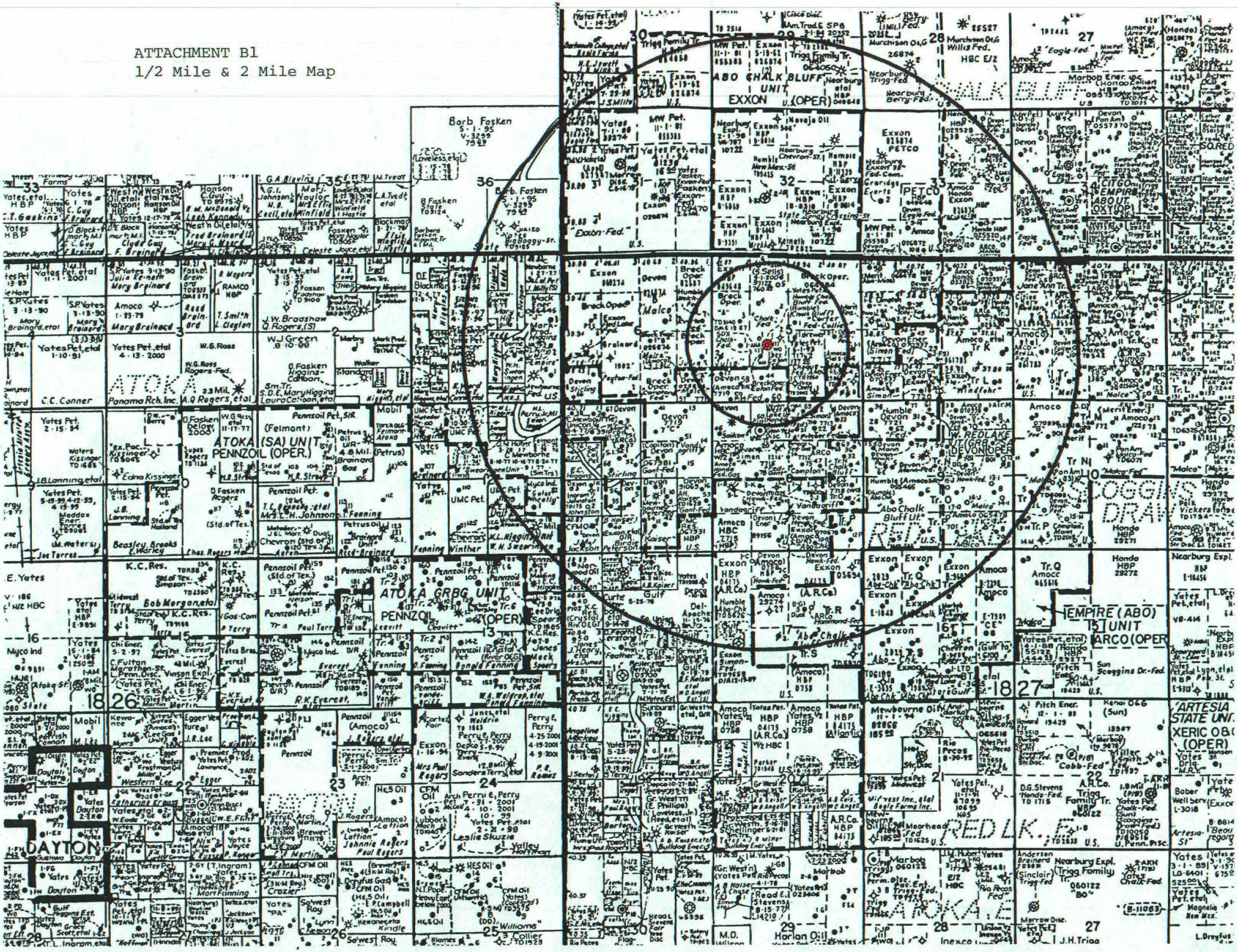
Baker Packer Fluid

Injection Packer Set @ ~~9100'~~ 7800

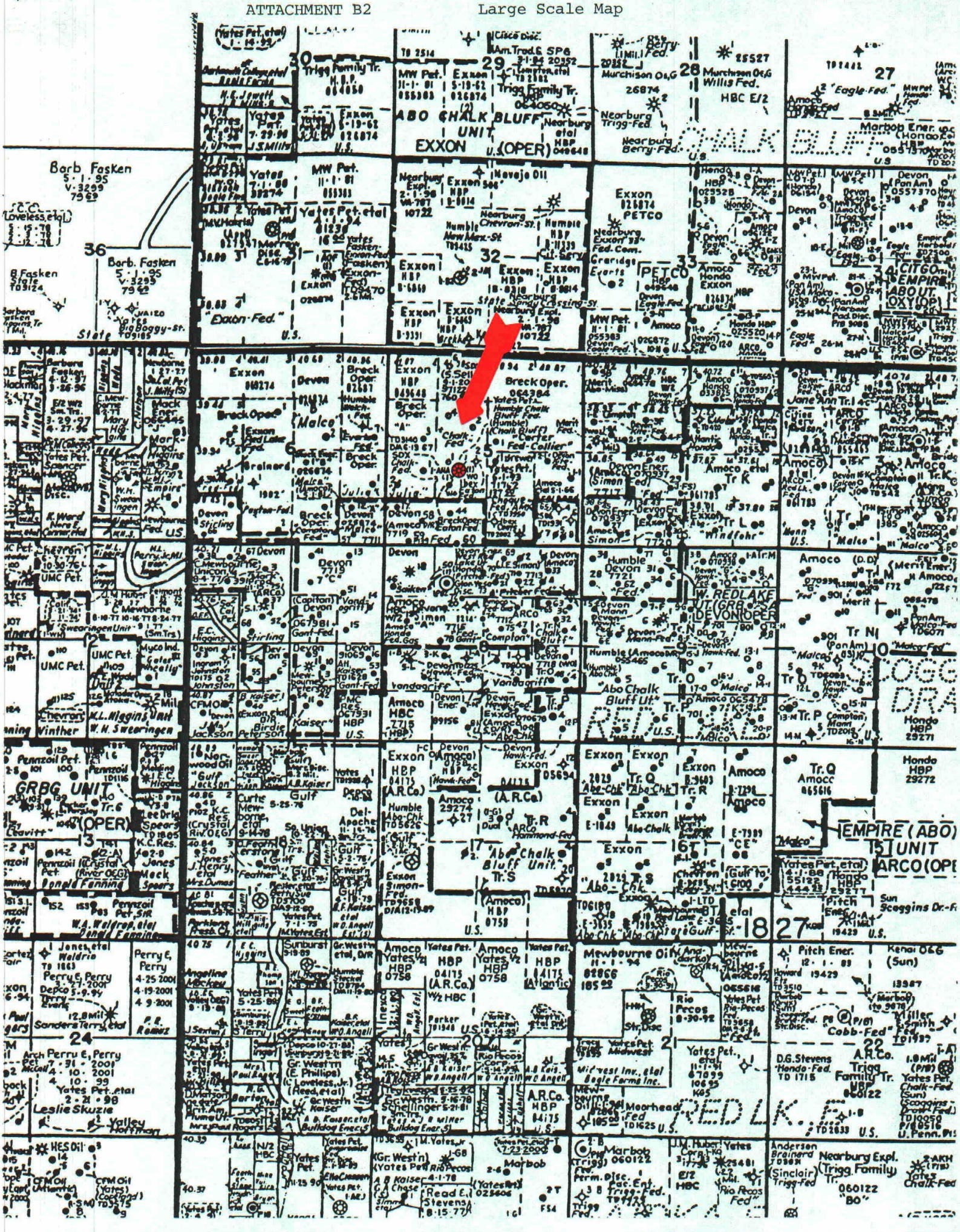
~~SUPERVAC 9200'~~

Proposed Injection Interval ~~9200' - 9400'~~ 7900 - 8300

ATTACHMENT B1
1/2 Mile & 2 Mile Map



ATTACHMENT B2 Large Scale Map



Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

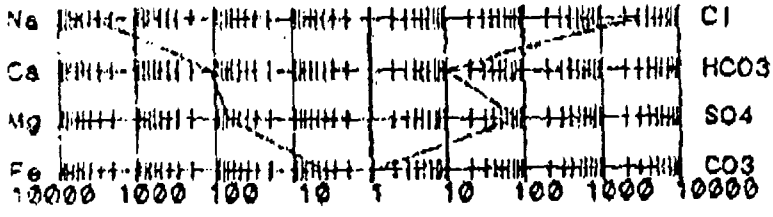
Oil Co. : SDX Resources
Lease : Chalk Fed.
Well No.: # 1
Salesman:

Sample Loc. :
Date Analyzed: 02-September-1997
Date Sampled :

ANALYSIS

1.	pH		6.110		
2.	Specific Gravity 60/60 F.		1.128		
3.	$CaCO_3$ Saturation Index	@ 80 F.	+0.057		
		@ 140 F.	+1.157		
	Dissolved Gasses		**MG/L**	**EQ. WT.**	***MEQ/L**
4.	Hydrogen Sulfide		400		
5.	Carbon Dioxide		125		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium	(Ca^{++})	2,160	/ 20.1 =	108.48
8.	Magnesium	(Mg^{++})	794	/ 12.2 =	65.08
9.	Sodium	(Na^{+}) (Calculated)	74,586	/ 23.0 =	3,242.87
10.	Barium	(Ba^{++})	Not Determined		
	Anions				
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	($CO_3^{=}$)	0	/ 30.0 =	0.00
13.	Bicarbonate	(HCO_3^{-})	586	/ 61.1 =	9.59
14.	Sulfate	($SO_4^{=}$)	3,900	/ 48.8 =	79.92
15.	Chloride	(Cl^{-})	117,973	/ 35.5 =	3,323.18
16.	Total Dissolved Solids		200,018		
17.	Total Iron (Fe)		69	/ 18.2 =	3.76
18.	Total Hardness As $CaCO_3$		8,712		
19.	Resistivity @ 75 F. (Calculated)		0.001 /cm.		

LOGARITHMIC WATER PATTERN
*meq/L.

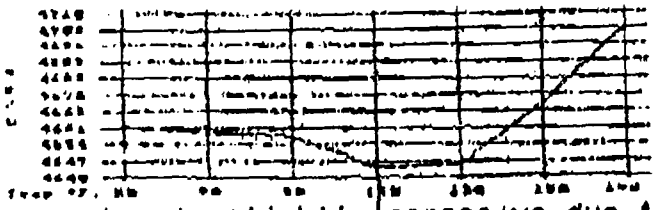


PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L	= mg/L.
$Ca(HCO_3)_2$	81.04	9.59	777
$CaSO_4$	68.07	79.92	5,440
$CaCl_2$	55.50	18.95	1,052
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	65.08	3,099
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	3,239.15	189,361

*Milli Equivalents per Liter

Calcium Sulfate Solubility Profile



This water is slightly porrosive due to the pH observed on analysis. The corrosivity is increased by the content of mineral salts, and the presence of H2S, CO2 in solution.

ATTACHMENT D
OFFSET OPERATORS

Yates Petroleum Corp.
Attn: Land Dept.
105 S. 4th St.
Artesia, NM 88210

Breck Operating, Co.
Attn: Ron Hollow (Land Dept.)
PO Box 911
Breckenridge, TX 76424

Devon Energy Corp.
Attn: Land Dept.
20 N. Broadway, Ste. 1500
Oklahoma City, OK 73102

Amoco Expl/Altura Energy, Ltd.
Attn: Jerry West (Land Dept.)
PO Box 4294
Houston, TX 77210-4294

Exxon USA
Attn: Land Dept.
PO Box 1600
Midland, TX 79702

September 5, 1997

ADDRESS

ATTENTION:

Re: Application for Authority to Inject
Sec 5, T28S, R27E
Eddy Co., NM

Gentlemen:

Enclosed is a copy of Form C-108 (Application for Authority to Inject) for the following well operated by SDX Resources, Inc.

Chalk Bluff Draw #1
Unit K, Sec. 5, T18S, R27E
2055' FSL & 1980' FWL
Eddy Co., NM

Should you have any questions, please contact us at the letterhead address or call 915/685-1761. Thank you for your consideration in this matter.

Sincerely,

Chuck Morgan
Engineer

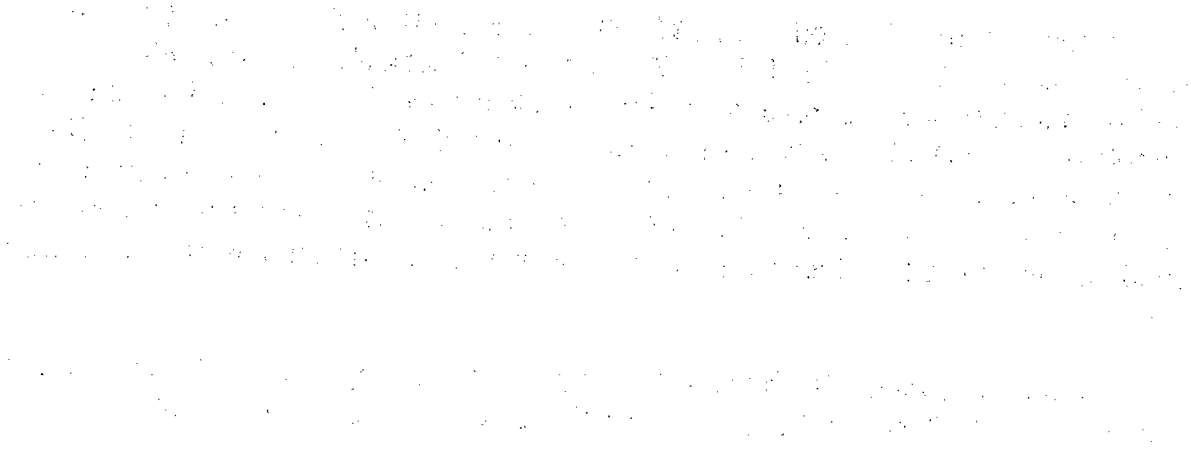
/ba
enclosure

NOTICE OF APPLICATION FOR FLUID INJECTION WELL PERMIT

SDX Resources, Inc., located at 511 W. Ohio St., Ste 601, Midland, TX 79702, mailing address PO Box 5061, Midland, TX 79704, Contact: Chuck Morgan 915/685-1761 is seeking administrative approval from the New Mexico Oil Conservation Division to complete the Chalk Bluff Draw #1 located in Section 5, T18S, R27E, Eddy Co., New Mexico as an injection well. The proposed injection zone is the Penn formation with perforations from 7900'-8300'. SDX Resources, Inc. intends to inject a maximum of 1000 barrels of produced formation water per day at a maximum injection pressure of 1400#.

Interested parties must file objections or request for hearing with the Oil Conservation Division, 2040 S. Pacheco, Santa Fe, New Mexico 87505 within 15 days of this notice.

This legal ad will run in the "Artesia Daily Press" in Tuesday's (9-9-97) paper.



The affidavit from the "Artesia Daily Press" will be mailed to you as soon as we receive it.