WFX 10/17/97

729

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

September 24, 1997

OCT - 2 1997

NMOCD
2040 S. Pacheco
Santa Fe, NM 87505

NMOCD
P.O. Box 1980
Hobbs, NM 88241-1980

Re: Application for Authority to Inject
Sec. 23, T29S, R35E
Lea County, New Mexico

Gentlemen:

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

Northeast Pearl Queen Unit #7
Unit C, Sec. 23, T29S, R35E
330' FNL & 1650' FWL
Lea County, New Mexico

Northeast Pearl Queen Unit #9
Unit A, Sec. 23, T29S, R35E
990' FNL, 990' FEL
Lea County, New Mexico

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

Sincerely,

Chuck Morgan

Chuck Morgan
Engineer

:ba

enclosure

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: SDX Resources, Inc. Well: NE Pearl Queen Nos. 7 & 9

Contact: Chuck Morgan Title: Eng. Phone: _____

DATE IN 10-2-97 RELEASE DATE 10-17-97 DATE OUT 12-8-97

Proposed Injection Application is for: X **WATERFLOOD** X Expansion ___ Initial

Original Order: R- 3837 X Secondary Recovery ___ Pressure Maintenance

SENSITIVE AREAS ___ **SALT WATER DISPOSAL** ___ Commercial Well

___ WIPP ___ Capitan Reef

Data is complete for proposed well(s)? YES Additional Data Req'd _____

AREA of REVIEW WELLS

19 Total # of AOR 4 # of Plugged Wells

YES Tabulation Complete YES Schematics of P & A's

YES Cement Tops Adequate ___ AOR Repair Required

INJECTION FORMATION

Injection Formation(s) Queen Compatible Analysis YES

Source of Water or Injectate Area Production

PROOF of NOTICE

YES Copy of Legal Notice YES Information Printed Correctly

YES Correct Operators YES Copies of Certified Mail Receipts

NO Objection Received ___ Set to Hearing _____ Date

NOTES: _____

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

COMMUNICATION WITH CONTACT PERSON:

1st Contact: ___ Telephoned ___ Letter _____ Date Nature of Discussion _____

2nd Contact: ___ Telephoned ___ Letter _____ Date Nature of Discussion _____

3rd Contact: ___ Telephoned ___ Letter _____ Date Nature of Discussion _____

NEPOE 1

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 R-3837.

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 Tech.

Signature: Bonnie Atwater Date: 9-29-97

* 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.

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.

Northeast Pearl Queen Unit #7
Unit C, Sec. 23, T29S, R35E
330' FNL & 1650' FWL
Lea County, New Mexico

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

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

III. Well Data: See Attachment A1 – A3.

IV. This is an expansion of an existing project.
Division Order No.: R-3837

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

VI. See Attachment C.

VII. (1.) Proposed Average Daily Injection Volume: 200 BWPD
Maximum Daily Injection Volume: 500 BWPD

(2.) This will be a closed system.

(3.) Proposed Average Injection Pressure: Unknown
Proposed Maximum Injection Pressure: To be determined.

(4.) Re-inject produced water into the same zone. Water analysis attached Attachment D-1 and D-2.

(5.) Not Applicable.

VIII. (1.) The proposed injection interval is the Penrose portion of the Queen formation, consisting of dolomitic sands.

(2.) Limited fresh water zones overlie the proposed injection zone at appx. 60-100'.

IX. The proposed injection interval may be acidized if necessary.

X. Well logs are on file at the OCD.

XI. No fresh water wells are within a 1 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 E-1 & E-2).
Surface Owner: State of New Mexico

(2.) Copy of legal advertisement attached along with an Affidavit of Publication (Attachment F1 & F2).

ATTACHMENT A1

III. Well Data: Northeast Pearl Queen Unit #7

A. (1.) Unit C, Sec. 23, T19S, R35E
Lea County, New Mexico
330' FNL & 1650' FWL

(2.) Casing: 8-5/8" @ 318'. Cement with 250 sx. Circ to surface.
4-1/2" @ 5045'. Cement with 350 sx. TOC 3523', calc.
(Attachment A2 - Present Schematic).

(3. & 4.) Proposed well condition: Perfs from 4948' – 5043'.
2-7/8" PC tubing with an AD-1 PC packer set at 4848'.
(Attachment A3 – Proposed Schematic).

B. (1.) Injection Formation: Queen

(2.) Injection interval will be thru perforations: 4948' - 5043'

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

(4.) Perforations: 4948' – 5043'.

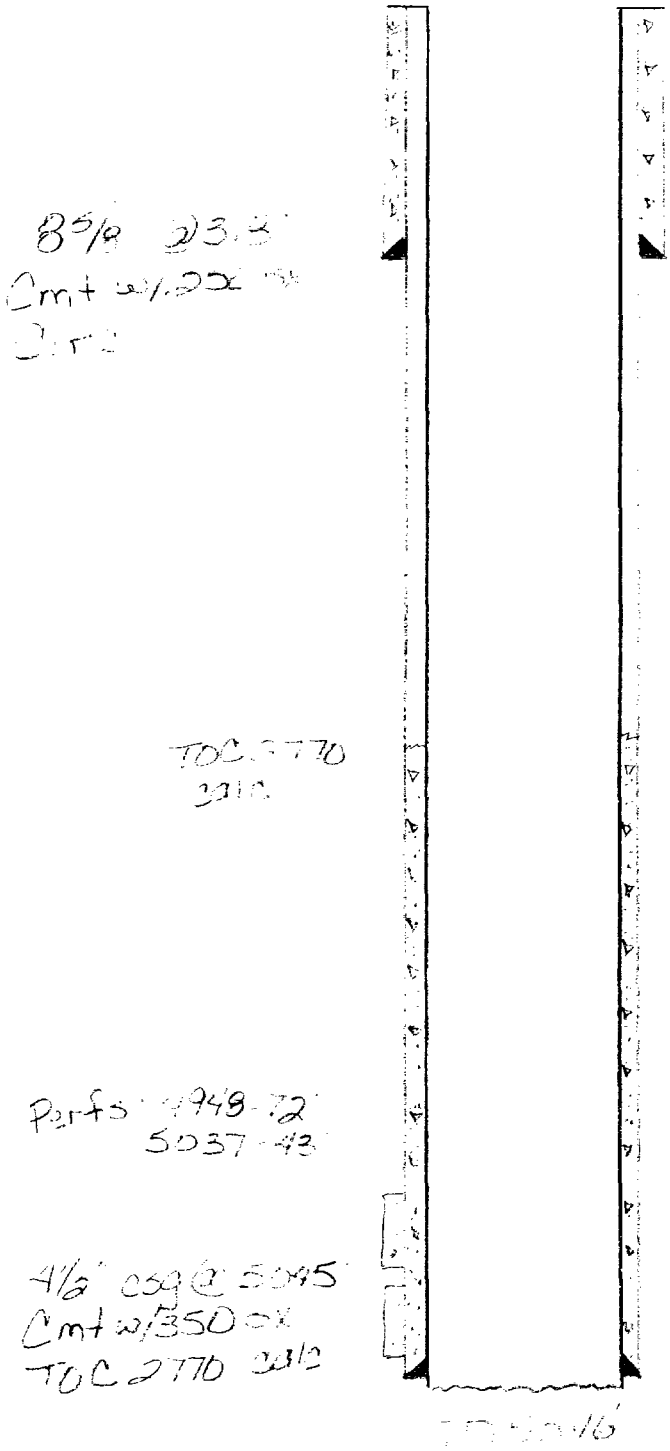
(5.) Next shallow oil or gas zone: NA
Next deeper oil or gas zone: Grayburg

WELL NAME: NEPU #77

OPERATOR: SDX Resources, Inc

LOCATION: 530 FNL, 1650 FWL Sec 23 T19S R25E

COMPLETED: 11/61



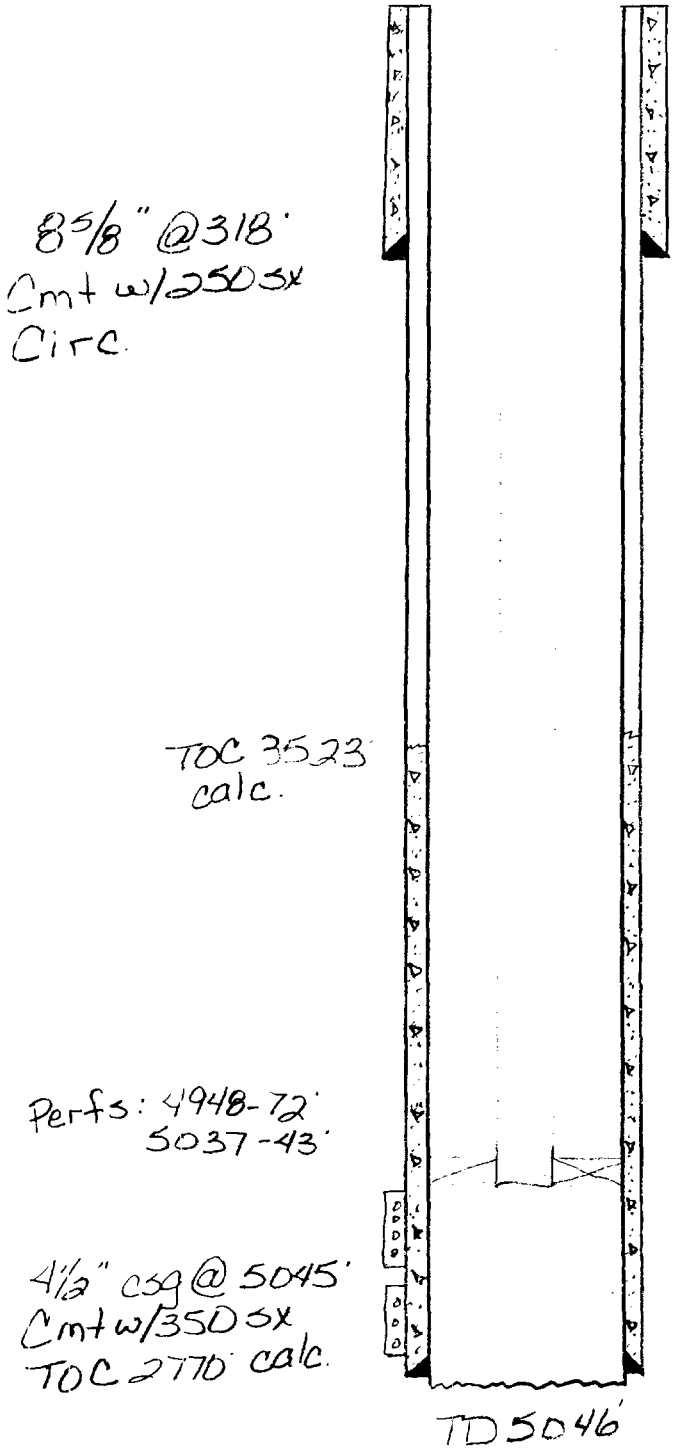
Attachment #2 (Existing)

WELL NAME: NEPQ #7

OPERATOR: SDX Resources, Inc.

LOCATION: 330' FNL, 1650' FWL, Sec. 23, T19S, R35E

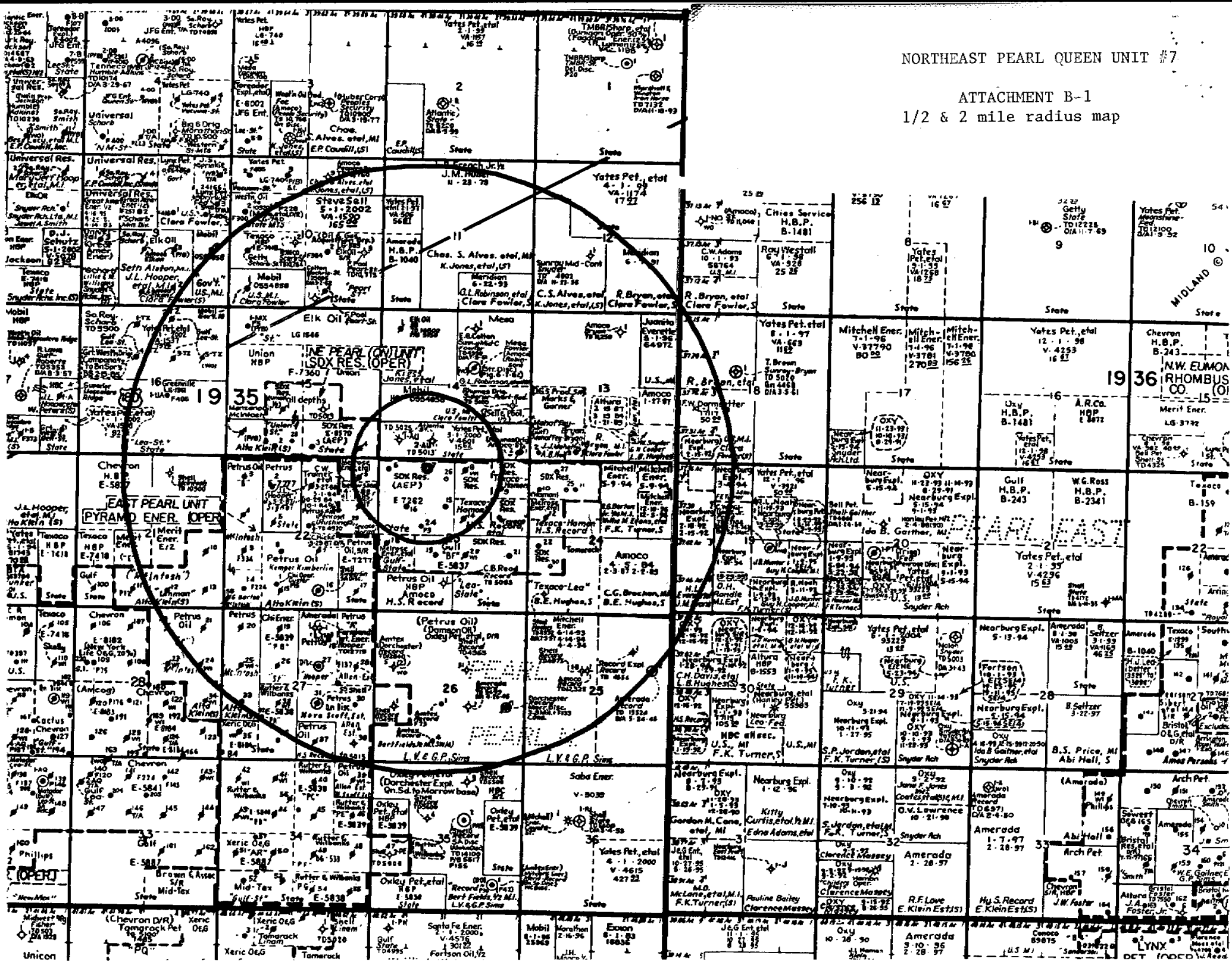
COMPLETED: 11/61



Attachment A-3 (Proposed)

NORTHEAST PEARL QUEEN UNIT #7

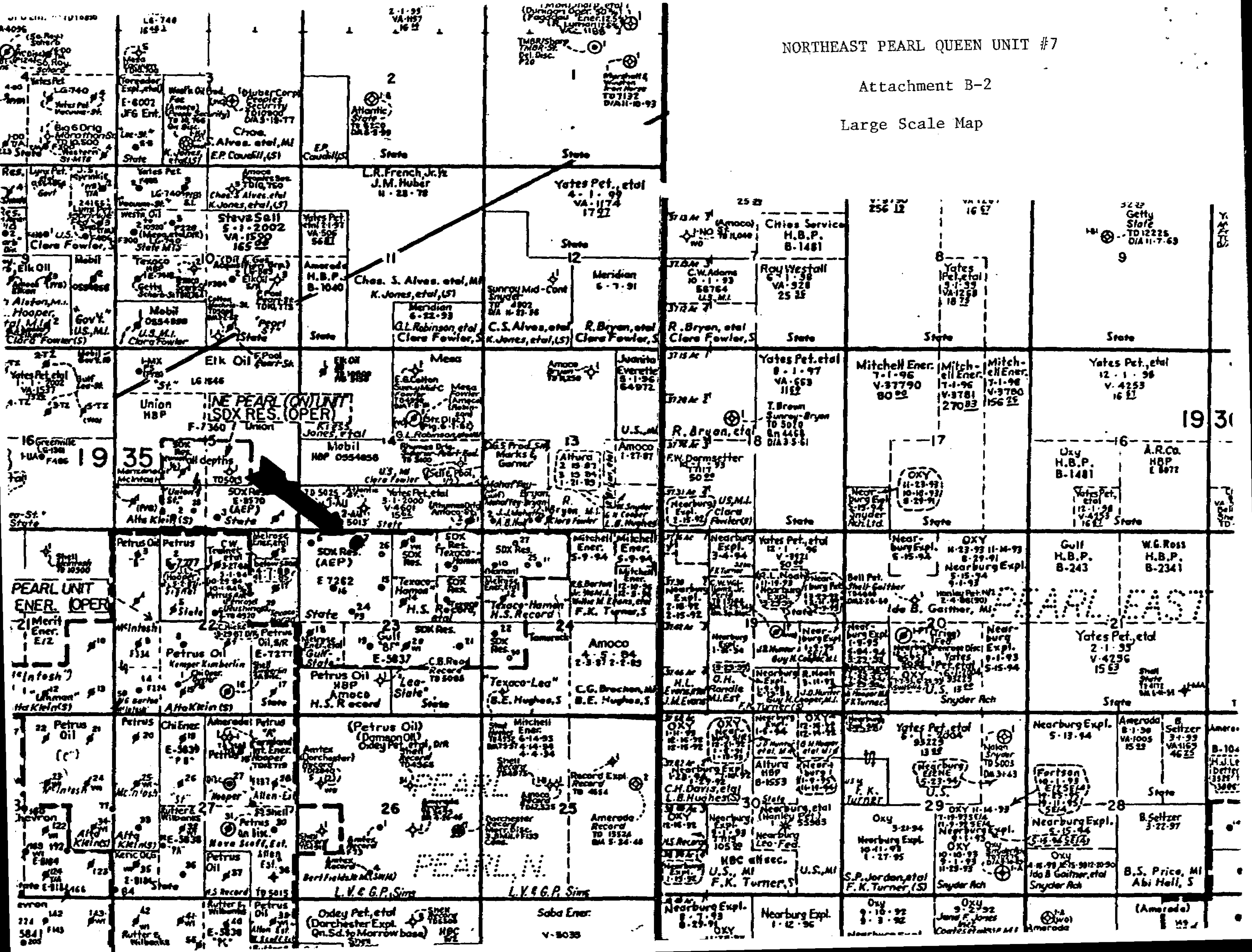
ATTACHMENT B-1
1/2 & 2 mile radius map



NORTHEAST PEARL QUEEN UNIT #7

Attachment B-2

Large Scale Map



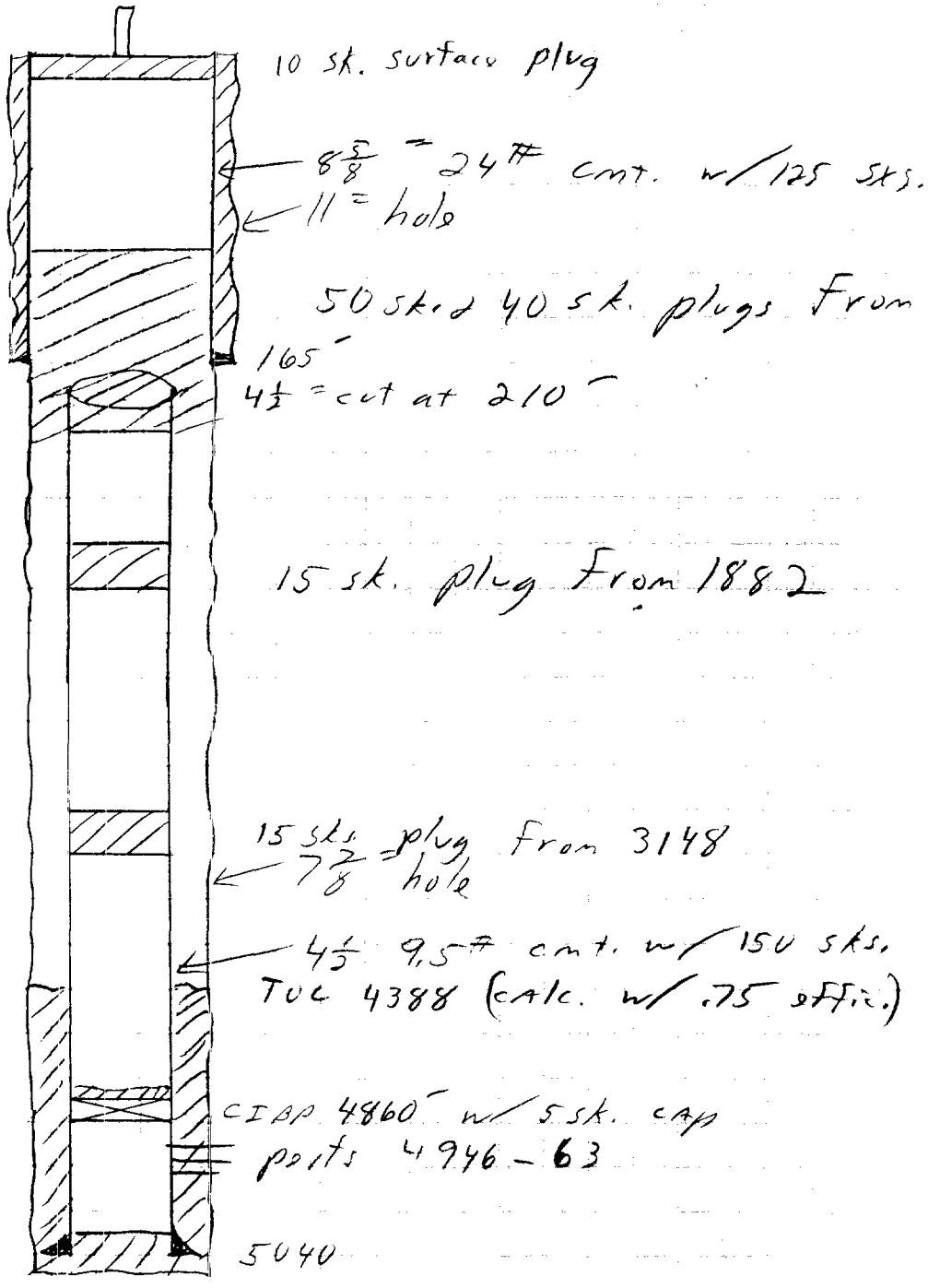
ATTACHMENT C

WELL NAME	OPERATOR	TYPE	CONSTRUCTION	DATE DRLD	LOCATION	TD	COMPLETION
NEPQ #4	SDX Resources	O	11" hole,8-5/8" @ 165, 125 sx. TOC surf (calc .75 eff) 7-7/8" hole,4-1/2"@5040, 150 sx, TOC 4388' (calc)	8-22-61	330' FSL 660 FEL Sec 15, T19S, R35E	5045'	4946-4963 500 g acid, 20000 g + 20000# sd
See Schematic		P&A	4-1/2" csg cut 210'				CIBP @ 4860', cap W/5 sx. 15 sx plug 3148', 15 sx plug 1882', 50 & 40 sx plug 260-122', 10 sx @ surface.
NEPQ #5	SDX Resources	O	11" hole,8-5/8" @ 167', 100 sx, TOC surf (calc) 6-3/4" hole,4-1/2"@5048' 170 sx, TOC 3831' (calc)	10-14-61	660' FNL 660' FEL Sec 22, T19S, R35E	5056'	4946-4961 250 g acid, 20000 g + 20000# sd
See Schematic		P&A		5-16-97			CIBP @ 4750' cap W/35 sx. Perf 4-1/2" csg @ 400' sqz/circ to surf 15 sx @ surf.
NEPQ #6	SDX Resources	O	8-5/8" @ 316', 300 sx TOC surf (calc) 5-1/2" @ 4995', 200 sx TOC 3226' (calc)	9-22-61	330' FNL 330' FWL Sec 23, T19S, R35E	4995'	4930-4956 500 g acid, 30000 g frac
NEPQ #7	SDX Resources	O	12" hole,8-5/8" @ 318', 250 sx, TOC surf (calc) 7-7/8" hole,4-1/2"@5044' 350 sx, TOC 3523' (calc)	11-5-61	330' FNL 1650' FWL Sec 23, T19S, R35E	5046'	4948-4972 30000 g + 60000# sd

WELL NAME	OPERATOR	TYPE	CONSTRUCTION	DATE DRLD	LOCATION	TD	COMPLETION
NEPQ #8	SDX Resources	O	10-1/2" hole,8-5/8" @ 150' 50 sx, TOC surf (calc) 7-7/8" hole,4-1/2"@5064', 250 sx, TOC 3977' (calc)	3-3-62	330' FNL 2310' FEL Sec 23, T19S, R35E	5065'	4943-4963 250 g Clag + 500 g acid 41000 g+71000# sd
NEPQ #9	SDX Resources	O	11" hole,8-5/8" @ 252' 175 sx TOC surf (calc) 7-7/8" hole,4-1/2" @ 5095', 250 sx TOC 4008' (calc)	6-16-64	990' FNL 990' FEL Sec 23, T19S, R35E	5095'	4930-5025 1100 g acid, SD 38000 g gelbrine,30000# sd
NEPQ #14	SDX Resources	O	10-1/2" hole,8-5/8"@164' 75 sx, TOC surf (calc) 7-7/8" hole,4-1/2"@5102' 200 sx, TOC 4233' (calc)	6-15-62	1980' FNL 2310' FEL Sec 23, T19S, R35E	5103'	4967-5050 250 g acid, 37000 g + + 70000# sd
NEPQ #15	SDX Resources	O	12" hole, 8-5/8" @ 330' 300 sx TOC surf (calc) 7-7/8" hole, 4-1/2"@5029' 200 sx, TOC 4160' (calc)	8-8-62	1650' FNL 2310' FWL Sec 23, T19S, R35E	5039'	5029-5039 500 g acid, 20000 g + 40000# sd. 4945-4960 500 g acid, 20000 g + 40000# sd
NEPQ #16	SDX Resources	O	12" hole, 8-5/8" @ 331' 300 sx TOC surf (calc) 7-7/8" hole,4-1/2"@5015' 200 sx TOC 4146' (calc)	9-5-62	1650' FNL 990' FWL Sec 23, T19S, R35E	5020'	5015-5020 20000 g + 40000# sd. 4942-4959 20000 g + 40000# sd
NEPQ #24	SDX Resources	O	12-1/4" hole,8-5/8" @ 470' 350 sx TOC surf (calc) 7-7/8" hole,5-1/2" @ 5100' 950 sx TOC surf (calc)	6-21-96	2310' FNL 1500' FWL Sec 23, T19S, R35E	5100'	4948-5035 3000 g acid, 40000 g SW + 93000# sd

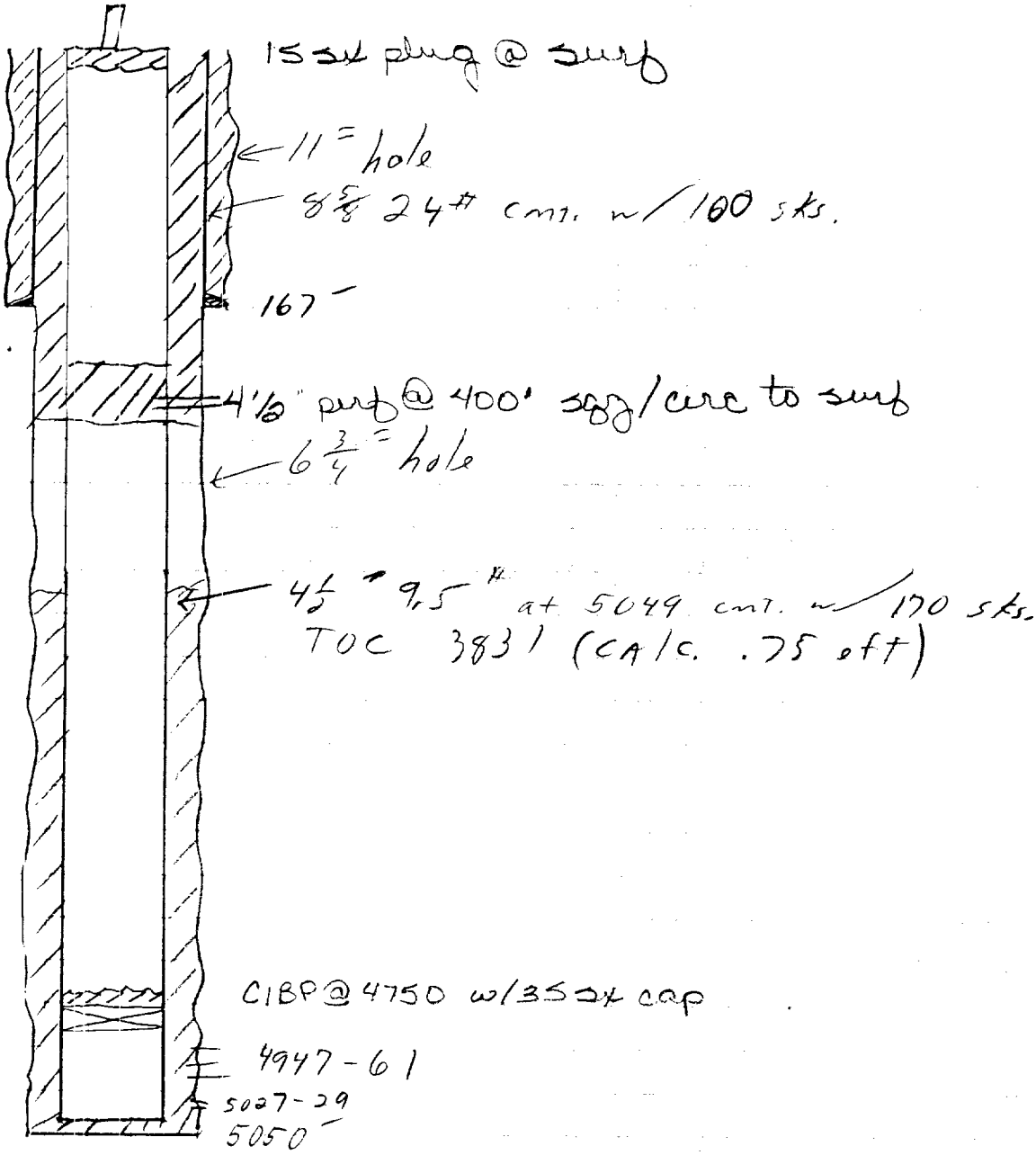
WELL NAME	OPERATOR	TYPE	CONSTRUCTION	DATE DRLD	LOCATION	TD	COMPLETION
State AU #1	Atlantic Rfg	O	8-5/8" @ 340', 230 sx 4-1/2" @ 5020', 246 sx	4-14-62	660' FSL 660' FWL Sec 14, T29S, R35E	5025'	4941-4972 500 g SF 20000+49000#
		P&A	8-5/8" left in well 4-1/2" pulled @ 1258'	5-17-62			20 sx inside 4-1/2 @ 4719-79 25 sx 1181-1288 25 sx 306-392 10sx @ surf.
State AU #2	Atlantic Rfg	O	8-5/8" @ 342', 180 sx	4-29-62	660 FSL 1800 FWL Sec. 14 T19S, R35E	5013'	Did not complete. Prep to P&A
		P&A	8-5/8" left in well	5-15-62			10.6#/gal salt gel mud between plugs. 25 sx 4926-5013' 25 sx 4491-4578' 25 sx 3282-3369' 25 sx 2972-3059' 25 sx 1980-2067' 25 sx 306-392' 10 sx surface.

NEPU # 4



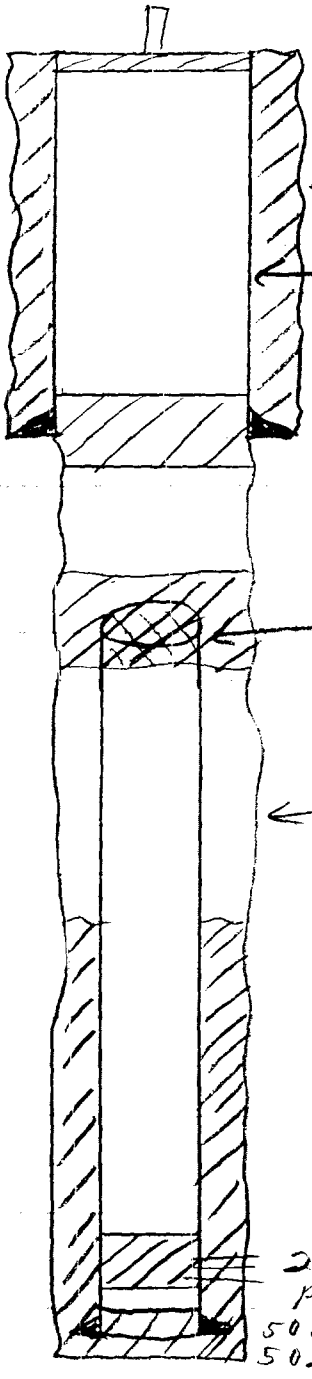
Attachment C

NEPA #5



Attachment C

ARCO ST. AV #1



10 sk. surface plug

← Assumed 12¼" = hole

← 8⅝" = 24# J-55 cmt. w/ 230 sks.

340' 25 sk. plug 306' - 392'

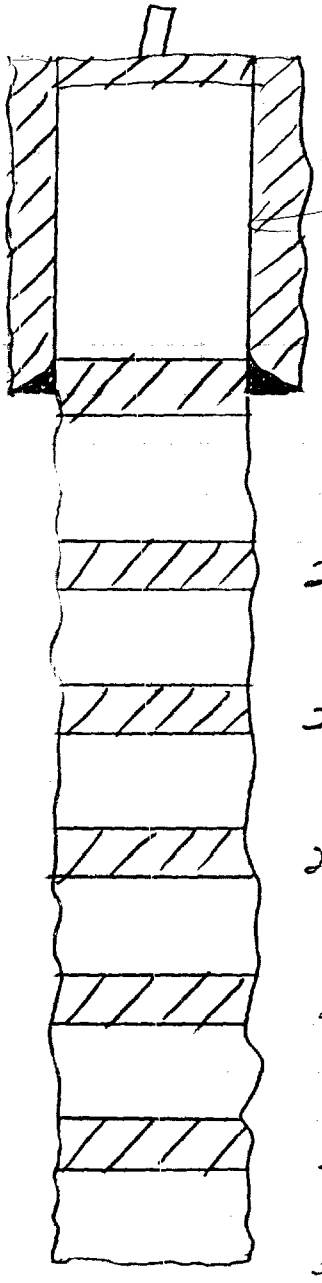
← 4½" = csg. cut & pulled from 1258'
25 sk. plug 1181' - 1288'

← 7⅞" = hole

T.O.C 3950' (calc. .75 eff.)

20 sk. plug 4719' - 4979'
Perfs. 4941-52
5020
5025

Arco St. A.V. # 2



10 sk. surface plug.

12 1/4" assumed hole

8 5/8" J-55 24# circ. to surface
cmt. w/ 180 sks.

342' 25 sk. plug 306' - 392'

25 sk. plug 1980' - 2067'

25 sk plug 2972' - 3059'

25 sk. plug 3282' - 3369'

25 sk. plug 4491' - 4578'

25 sk. plug 4926' - 5013'

5013'

Attachment C

I

Unichem International

707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : SDX
Date : 09-18-1997
Location: NEPQ (on 09-18-1997)

	Sample 1
Specific Gravity:	1.141
Total Dissolved Solids:	196981
pH:	5.05
Resistivity:	20.000 ohms @ 79[F
IONIC STRENGTH:	4.024

CATIONS:		me/liter	mg/liter
Calcium	(Ca+2)	700	14000
Magnesium	(Mg+2)	380	4620
Sodium	(Na+1)	2390	55000
Iron (total)	(Fe+2)	0.081	2.26
ANIONS:			
Bicarbonate	(HCO3-1)	1.000	61.0
Carbonate	(CO3-2)	0	0
Hydroxide	(OH-1)	0	0
Sulfate	(SO4-2)	28.1	1350
Chloride	(Cl-1)	3440	122000
DISSOLVED GASES			
Carbon Dioxide	(CO2)		220
Hydrogen Sulfide	(H2S)		17.0

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86[F	30[C	-0.92	11
104[F	40[C	-0.28	11
122[F	50[C	0.01	11
140[F	60[C	0.35	11
168[F	76[C	0.91	11
176[F	80[C	1.1	11

Comments:
cc: Isaac Huskey
Jay Brown
I

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Unichem International

707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : SDX
Date : 09-18-1997
Location: Windmill #1 (on 09-18-1997)

	Sample 1
Specific Gravity:	1.001
Total Dissolved Solids:	960
pH:	7.12
Resistivity:	20.000 ohms @ 79[F
IONIC STRENGTH:	0.018

CATIONS:		me/liter	mg/liter
Calcium	(Ca+2)	2.00	40.0
Magnesium	(Mg+2)	2.40	29.2
Sodium	(Na+1)	11.7	269
Iron (total)	(Fe+2)	0.098	2.73
ANIONS:			
Bicarbonate	(HCO3-1)	2.00	122
Carbonate	(CO3-2)	0	0
Hydroxide	(OH-1)	0	0
Sulfate	(SO4-2)	0	0
Chloride	(Cl-1)	14.1	500
DISSOLVED GASES			
Carbon Dioxide	(CO2)		0
Hydrogen Sulfide	(H2S)		17.0

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86[F	30[C	-0.72	-19
102[F	39[C	-0.11	-19
122[F	50[C	0.21	-19
140[F	60[C	0.54	-19
168[F	76[C	1.1	-19
176[F	80[C	1.3	-19

Comments:
cc: Isaac Huskey
Jay Brown
I

ATTACHMENT E-1
OFFSET OPERATORS

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

Mobil
Attn: Land Dept.
PO Box 633
Midland, TX 79702

Unocal
Attention: Land Dept.
PO Box 4551
Midland, TX 79702

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

Date

Address
Address
Address

Attention:

Re: Application for Authority to Inject
Sec. 23, T29S, R35E
Lea County, New Mexico

Gentlemen:

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

Northeast Pearl Queen Unit #7
Unit C, Sec. 23, T29S, R35E
330' FNL & 1650' FWL
Lea County, New Mexico

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

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 Northeast Pearl Queen Unit #7 & #9 located in Sec. 23, T19S, R35E, Lea Co., New Mexico as injection wells. The proposed injection zone is the Queen formation with perforations from 4948'-5043' on #7 & 4930'-5025' on #9. SDX Resources, Inc. intends to inject a maximum of 500 barrels of produced formation water per day at a maximum injection pressure of 900# on each well.

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 was run in the "Hobbs News – Sun", Thursday, September 18, 1997.

ATTACHMENT F-2

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

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 1

weeks.

Beginning with the issue dated

September 18 1997

and ending with the issue dated

September 18 1997

Kathi Bearden

Publisher

Sworn and subscribed to before

me this 18th day of

September 1997

Jodi Henson

Notary Public.

My Commision expires
October 18, 2000
(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
September 18, 1997
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 Northeast Pearl Queen Unit #7 & #9 located in Sec. 23, T19S, R35E, Lea Co., New Mexico as injection wells. The proposed injection zone is the Queen formation with perforations from 4948'-5043' on #7 & 4930'-5025' on #9. SDX Resources, Inc. intends to inject a maximum of 500 barrels of produced formation water per day at a maximum injection pressure of 900# on each well.

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

#15428

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SDX Resources, Inc.
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