ENERGY AND MINERALS DEPARTMENT

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

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: Yates Drilling Company

Address: 207 South Fourth Street, Artesia, New Mexico 88210

Contact party: Tobin L. Rhodes Phone: (505) 746-9889

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: Tobin L. Rhodes Title Engineer

Signature: [signature] Date: February 12, 1985

* 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. Subject well logs were submitted to the NMOCD in Hobbs.

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

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

Case No. 8502 Exhibit No. 1

Submitted by YATES DRILLING

Hearing Date 10/17/85

FORM C-108 SUPPLEMENT

DOYAL #3

I. Purpose:

To convert the temporarily abandoned Doyal #3 well to an injection well for the purpose of partial pressure maintenance in the Queen formation. Initially only produced water from the wells listed in part VII-4 will be injected into this well. At a later date when oil production has significantly lowered reservoir pressure, a full pressure maintenance project will be considered. We respectfully request the ability to handle the transition from partial pressure maintenance to full pressure maintenance administratively.

II. The operator is Yates Drilling Company
207 South 4th Street
Artesia, New Mexico 88210

III. Well Data:

See attached well data sheet.

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

V. An ownership may is attached. Well and lease information is posted through 12-31-84. Displayed on this map are one-half mile and two-mile radius circles, which are centered around the Doyal #3 location.

VI. There are eleven wells other than the proposed injection well within the area of review, as indicated by the attached map. All available data concerning the eleven wells is included in the attached tabulation and schematic.

VII. Data on proposed partial pressure maintenance operations:

(1) The proposed average and maximum daily rates of fluid injection are 200 barrels per day and 400 barrels per day respectively.

(2) We intend to use a closed system.

(3) The proposed average and maximum surface injection pressures are approximately 265 psig and 1500 psig.

(4) The source of the injection fluid will be produced water from the following Yates Drilling Company wells which are producing from the Queen formation in the general area of the subject well, identified as follows:

a. Doyal #1
660' FNL & 990' FEL
Section 35-T12S-R31E
See attached tabulation.

b. Doyal #2
500' FSL & 760' FEL
Section 27-T12S-R31E
See attached tabulation.

c. Doyal #4
330' FSL & 330' FWL
Section 26-T12S-R31E
See attached tabulation.

d. Gallagher State #1
330' FNL & 330' FWL
Section 35-T12S-R31E
See attached tabulation.

e. Garner Federal #7
660' FSL & 1980' FEL
Section 27-T12S-R31E
See attached tabulation.

f. Garner Federal #9
1650' FSL & 2310' FEL
Section 27-T12S-R31E
See attached tabulation.

g. Burkitt Federal #3
330' FNL & 2310' FWL
Section 34-T12S-R31E
See attached tabulation.

h. DeLuna Federal #3
330' FNL & 1980' FEL
Section 34-T12S-R31E
See attached tabulation.

i. Pebble Queen #1
990' FNL & 1980' FWL
Section 11-T13S-R31E
This well is not within the area of review and therefore not included in the tabulation. This well is approximately 2.5 miles south and .5 miles east of the subject well and is producing from the Queen formation at 3028'-3038'.

The water produced from subsequently drilled wells in this area which produce water from the Queen formation will also utilize the injection well covered by this application.

(5) The fluid injected into the Queen formation in the subject well will be produced water from the Queen formation, thus water compatibility will be assured.

VIII. Geologic data:

Injection zone: Queen at +1435' to +1429' subsea, very fine grained gray and red sandstone with traces of anhydrite and dolomite. Porosity is intergranular with very little natural secondary porosity.

Analysis of logging, pressure, and production data has resulted in the composition of the attached isopach, structure and pressure maps. The structure map shows the top of the Queen formation to be 1445 feet above sea level in the Doyal #3 well. Production test data has proved the water-oil contact to be between +1445 and +1449 in this reservoir.

The underground source of drinking water in this area is the Ogollala formation of Tertiary age, the base of which is estimated to be 300' in the area of the subject well. This aquifer is behind the surface pipe of the subject well and all other wells within the area of review. The Chinlee formation is also a fresh water aquifer which immediately underlies the Ogollala formation. The base of the Chinlee is estimated to be at approximately 500' in the area of the subject well. The Chinlee aquifer is behind the production casing of the subject well and all producing wells within the area of review.

IX. No additional stimulation program is planned for the subject well.

X. LDT-CNL, DLL-RXO logs have been submitted to the NMOCD in Hobbs.

XI. According to records from the Division II State Engineer Office, there are seven water wells within one mile of the subject well. The total depths from four of the seven wells are unknown, however all seven wells are assumed to be producing water from the Ogollala formation. An analysis of water taken from three of the seven wells is attached.

XII. Available geological and engineering data have been examined and no evidence of open faults or any other hydrologic connections between the disposal zone and any underground fresh water aquifers have been found.

XIII. The off-set leasehold operators listed below have been furnished a copy of this application by certified mail.

HNG Oil Company
P.O. Box 2267
Midland, Texas 79702

Enserch Exploration, Inc.
P.O. Box 4815
Midland, Texas 79701

The Toles Company
P.O. Drawer 1300
Roswell, New Mexico 88201

C.R. Gallagher, Jr. et al
1005 Texas Commerce Bank Building
Lubbock, Texas 79401

Rich Partnership
2008 American Bank Building
New Orleans, Louisiana 70130

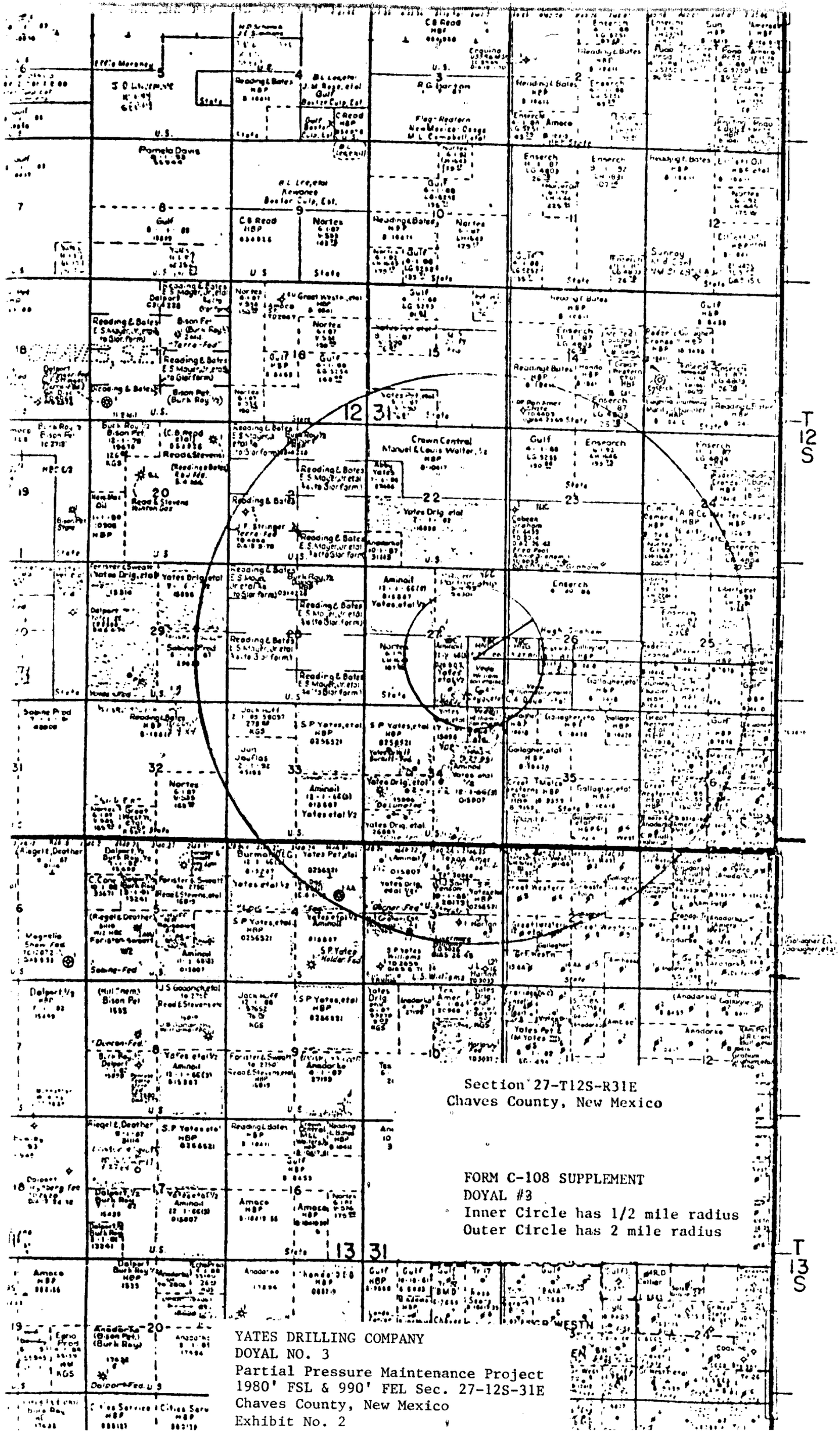
Phillips Oil Company
P.O. Box 1967
Houston, Texas 77001

BelNorth Petroleum Corporation
One Petroleum Center Building Six
InterNorth Suite 201
3300 North A
Midland, Texas 79701

The surface owners listed below have been furnished a copy of this application by certified mail.

Raymond Spears
307 North 7th
Lovington, New Mexico 88260

J.D. Spears
P.O. Box 1017
Carlsbad, New Mexico 88220

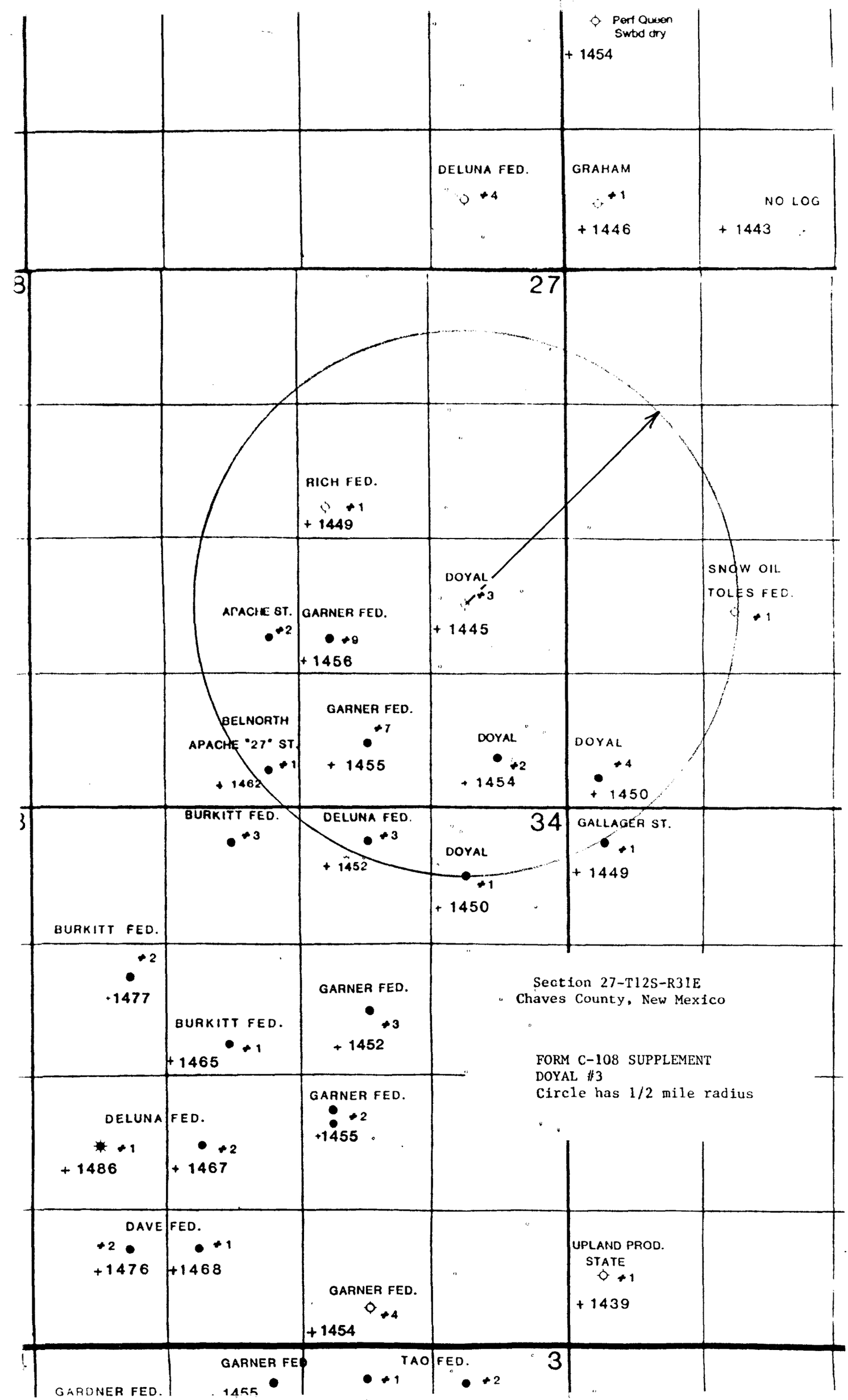

T 12 S
T 13 S
Section 27-T12S-R31E
Chaves County, New Mexico
FORM C-108 SUPPLEMENT
DOYAL #3
Inner Circle has 1/2 mile radius
Outer Circle has 2 mile radius
YATES DRILLING COMPANY
DOYAL NO. 3
Partial Pressure Maintenance Project
1980' FSL & 990' FEL Sec. 27-12S-31E
Chaves County, New Mexico
Exhibit No. 2

BEFORE THE
OIL CONSERVATION DIVISION

Case No. 8502 Exhibit No. 2

Submitted by: YATES DRILLING

Hearing Date: 10/17/85



Section 27-T12S-R31E
Chaves County, New Mexico

FORM C-108 SUPPLEMENT
DOYAL #3
Circle has 1/2 mile radius

LEASE NAME: Doyal WELL NUMBER:

OPERATOR: Yates Drilling Company LEASE NUMBER: Fee

FORMATION: Queen POOL: S.E. Chaves Queen Area Gas Assoc.

LOCATION: 660' FNL & 990' FEL Section 34- T12S-R31E

ELEVATION: 4428' TOTAL DEPTH: 3100'

SURFACE CASING: 8 5/8", 24# @ 409.46' CEMENT: 250 sx. TOP: Surface

INT. CASING: CEMENT: sx. TOP:

PROD. CASING: 5 1/2", 14# @ 3098' CEMENT: 250 sx. TOP: 2200' (Temp. Sur.)

SPUD DATE: 7-31-84 COMP. DATE: 8-25-84

PERFORATIONS: 2982'-2989'

STIMULATION: 750 gals. of 15% HCL, 15000 gals, 14F-30, 5000 SCF N_2 per barrel.
10900# 20/40 sand, 4200# 10/20 sand.

COMP. TYPE: Oil Well

CURRENT STATUS: Pumping

LEASE NAME: Doyal WELL NUMBER: 2

OPERATOR: Yates Drilling Company LEASE NUMBER: Fee

FORMATION: Queen POOL: S.E. Chaves Queen Area Gas Assoc.

LOCATION: 500' FSL & 760' FEL Section 27-T12S-R31E

ELEVATION: 4427' TOTAL DEPTH: 3100'

SURFACE CASING: 8 5/8", 24# @ 411' CEMENT: 275 sx. TOP: Surface

INT. CASING: CEMENT: sx. TOP:

PROD. CASING: 5 1/2", 14# @ 3090' CEMENT: 400 sx. TOP: 1810' (Temp. Sur.)

SPUD DATE: 9-7-84 COMP. DATE: 9-20-84

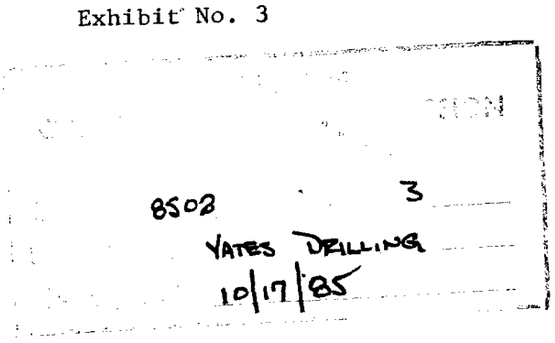
PERFORATIONS: 2981'-2987'

STIMULATION: 750 gals. 15% HCL, 15000 gals. WF-30, 25% CO_2, 12000# 20/40 sand, 10000# 10/20 sand.

COMP. TYPE: Oil Well

CURRENT STATUS: Pumping

YATES DRILLING COMPANY
DOYAL #3
Partial Pressure Maintenance Project
1980' FSL & 990' FEL Section 27-12S-31E
Chaves County, New Mexico
Exhibit No. 3



LEASE NAME: Doyal WELL NUMBER: 3

OPERATOR: Yates Drilling Company LEASE NUMBER: Fee

FORMATION: Queen POOL: S.E. Chaves Queen Gas Area Assoc.

LOCATION: 1980' FSL & 990' FEL Section 27-T12S-R31E

ELEVATION: 4429' TOTAL DEPTH: 3100'

SURFACE CASING: 8 5/8", 24# @ 409' CEMENT: 260 sx. TOP: Surface

INT. CASING: CEMENT: sx. TOP:

PROD. CASING: 5 1/2", 14# @ 3099' CEMENT: 850 sx. TOP: 630' (CBL)

SPUD DATE: 9-20-84 COMP. DATE:

PERFORATIONS: 2991'-2997'

STIMULATION: 750 gals. 15% HCL acid, 15000 gals. WF-30, 25% CO_2, 20000# 20/40 sand, 10000# 10/20 sand.

COMP. TYPE: Not completed

CURRENT STATUS: Temporarily abandoned.

LEASE NAME: Doyal WELL NUMBER: 4

OPERATOR: Yates Drilling Company LEASE NUMBER: Fee

FORMATION: Queen POOL: S.E. Chaves Queen Gas Area Assoc.

LOCATION: 330' FSL & 330' FWL Section 26-T12S-R31E

ELEVATION: 4425' TOTAL DEPTH: 3100'

SURFACE CASING: 8 5/8", 24# @ 400' CEMENT: 250 sx. TOP: Surface

INT. CASING: CEMENT: sx. TOP:

PROD. CASING: 5 1/2", 14# @ 3088' CEMENT: 975 sx. TOP: 310' (Temp. Sur.)

SPUD DATE: 11-18-84 COMP. DATE: 1-24-85

PERFORATIONS: 2982'-2985'

STIMULATION: 750 gals. 15% HCL, 15000 gals. WF-30, 22 Tons CO_2, 12000 20/40 sand and 8500# 12/20

COMP. TYPE: Oil Well

CURRENT STATUS: Pumping

LEASE NAME: Gallagher Stat. WELL NUMBER: 1

OPERATOR: Yates Drilling Company LEASE NUMBER: B-10418

FORMATION: Queen POOL: S.E. Chaves Queen Gas Area Assoc.

LOCATION: 330' FNL & 330' FWL Section 35-T12S-R31E

ELEVATION: 4424.5' TOTAL DEPTH: 3100'

SURFACE CASING: 8 5/8", 24# @ 433' CEMENT: 250 sx. TOP: Surface

INT. CASING: CEMENT: sx. TOP:

PROD. CASING: 5 1/2", 14# @ 3084' CEMENT: 900 sx. TOP: Surface

SPUD DATE: 10-28-84 COMP. DATE: 11-9-84

PERFORATIONS: 2982'-2987'

STIMULATION: 650 gals. 15% HCL acid, 15000 gals. WF-30, 22 Tons CO_2, 12000# 20/40 sand, 10750# 10/20 sand.

COMP. TYPE: Oil Well

CURRENT STATUS: Pumping

LEASE NAME: Garner Federal WELL NUMBER: 7

OPERATOR: Yates Drilling Company LEASE NUMBER: NM-015807

FORMATION: Queen POOL: S.E. Chaves Queen Gas Area Assoc.

LOCATION: 660' FSL & 1980' FEL Section 27-T12S-R31E

ELEVATION: 4432.6' TOTAL DEPTH: 3100'

SURFACE CASING: 8 5/8", 24# @ 424' CEMENT: 250 sx. TOP: Surface

INT. CASING: CEMENT: sx. TOP:

PROD. CASING: 5 1/2", 14# @ 3098.54' CEMENT: 270 sx. TOP: 1900' (Temp. Sur.)

SPUD DATE: 10-14-84 COMP. DATE: 10-30-84

PERFORATIONS: 2987'-2993'

STIMULATION: 750 gals. 15% HCL, 15000 gals. WF-30, 1000 SCF CO_2/barrel, 13000 # 20/40 sand, 9000# 10/20 sand.

COMP. TYPE: Oil Well

CURRENT STATUS: Pumping

LEASE NAME: Garner Federal **WELL NUMBER:** 2

OPERATOR: Yates Drilling Company **LEASE NUMBER:** NM-015807

FORMATION: Queen **POOL:** S.E. Chaves Queen Gas Area Assoc.

LOCATION: 1650' FSL & 2310' FEL Section 27-T12S-R31E

ELEVATION: 4434.5' **TOTAL DEPTH:** 3100'

SURFACE CASING: 8 5/8", 24# @ 428' **CEMENT:** 250 **sx. TOP:** Surface

INT. CASING: **CEMENT:** **sx. TOP:**

PROD. CASING: 5 1/2", 14# @ 3098' **CEMENT:** 320 **sx. TOP:** 1820' (Temp. Sur.)

SPUD DATE: 11-11-84 **COMP. DATE:** 11-30-84

PERFORATIONS: 2985'-2995'

STIMULATION: 750 gals. 15% HCL, ball sealers, 15000 gals. WF-30, 16 Tons CO_2, 18000# 20/40 sand & 12500# 10/20 sand.

COMP. TYPE: Oil Well

CURRENT STATUS: Pumping

LEASE NAME: Rich Federal **WELL NUMBER:** 1

OPERATOR: Yates Drilling COmpany **LEASE NUMBER:** NM-54301

FORMATION: Queen **POOL:** S.E. Chaves Queen Gas Area Assoc.

LOCATION: 2310' FNL & 2310' FEL Section 27-T12S-R31E

ELEVATION: 4435.6' **TOTAL DEPTH:** 3100'

SURFACE CASING: 8 5/8", 24# @ 412' **CEMENT:** 250 **sx. TOP:** Surface

INT. CASING: **CEMENT:** **sx. TOP:**

PROD. CASING: **CEMENT:** **sx. TOP:**

SPUD DATE: 11-30-84 **COMP. DATE:**

PERFORATIONS: None

STIMULATION: None

COMP. TYPE: Dry Hole

CURRENT STATUS: P&A, See attached schematic.

LEASE NAME: DeLuna Federa WELL NUMBER: 3

OPERATOR: Yates Drilling Company LEASE NUMBER: NM-15896

FORMATION: Queen POOL: S.E. Chaves Queen Gas Area Assoc.

LOCATION: 330' FNL & 1980' FEL Section 34-T12S-R31E

ELEVATION: 4433.4' GL TOTAL DEPTH: 3100'

SURFACE CASING: 8 5/8", 24# @ 433' CEMENT: 300 sx. TOP: Surface

INT. CASING: CEMENT: sx. TOP:

PROD. CASING: 5 1/2", 14# @ 3094' CEMENT: 410 sx. TOP: 1900' (CBL)

SPUD DATE: 2-11-85 COMP. DATE: 3-20-85

PERFORATIONS: 2987½'-2993

STIMULATION: 750 gals. 15% HCL, 15000 gals, 30# gel water, 23½ tons CO_2, 23000# (13000 20/40 and 10000# 10/20) sand

COMP. TYPE: Oil

CURRENT STATUS: Pumping

LEASE NAME: Burkitt Federal WELL NUMBER: 3

OPERATOR: Yates Drilling Company LEASE NUMBER: NM-0256521

FORMATION: Queen POOL: S.E. Chaves Queen Gas Area Assoc.

LOCATION: 330' FNL & 2310' FWL Section 34-T12S-R31E

ELEVATION: 4438' GR TOTAL DEPTH: 3100'

SURFACE CASING: 8 5/8", 24# @ 424' CEMENT: 270 sx. TOP: Surface

INT. CASING: CEMENT: sx. TOP:

PROD. CASING: 5 1/2", 14# @ 3083' CEMENT: 260 sx. TOP: 1640' (Temp. Sur.)

SPUD DATE: 8-9-85 COMP. DATE: 10-1-85

PERFORATIONS: 2988'-2992'

STIMULATION: 750 gals. 15% HCL acid, 15000 gals. gelled 2% KCL water, 24 tons CO_2 and 19000# (12000# 20/40 and 7000# 12/20) sand

COMP. TYPE: Oil

CURRENT STATUS: Pumping

LEASE NAME: Apache Stat. WELL NUMBER: 1

OPERATOR: BelNorth Petroleum Corp. LEASE NUMBER: LH-1648

FORMATION: Queen POOL: S.E. Chaves Queen Gas Area Assoc.

LOCATION: 330' FSL & 2310' FWL Section 27-T12S-R31E

ELEVATION: 4436' GR TOTAL DEPTH: 3150'

SURFACE CASING: 8 5/8" set at 422' CEMENT: ____ sx. TOP: surface

INT. CASING: ____ CEMENT: ____ sx. TOP: ____

PROD. CASING: 4 1/2" set at 3150' CEMENT: ____ sx. TOP: 210'

SPUD DATE: 5-9-85 COMP. DATE: 6-27-85

PERFORATIONS: 2984'-2991'

STIMULATION: 100 gals. 15% NEFE. Pumped 20 Bbls. corrosion and scale inhibitor. Frac'd with 12000 gals. gelled 2% KCL + 4000 gals. CO_2 and with 10,500# 20/40 sand and 10,000 12/20 sand.

COMP. TYPE: Oil Well

CURRENT STATUS: Pumping

LEASE NAME: Apache State WELL NUMBER: 2

OPERATOR: BelNorth Petroleum Corp. LEASE NUMBER: LH-1648

FORMATION: Queen POOL: S.E. Chaves Queen Gas Area Assoc.

LOCATION: 1650' FSL & 2310' FEL Section 27-T12S-R31E

ELEVATION: 4438' GR TOTAL DEPTH: 3150'

SURFACE CASING: 8 5/8" set at 454' CEMENT: ____ sx. TOP: surface

INT. CASING: ____ CEMENT: ____ sx. TOP: ____

PROD. CASING: 4 1/2" set at 3150' CEMENT: ____ sx. TOP: surface

SPUD DATE: 7-29-85 COMP. DATE: 8-23-85

PERFORATIONS: 2996'-3000'

STIMULATION: 850 gals. 15% DS-30 acid Paratrol Paraffin inhibitor + Unichem 793 scale inhibitor with Unichem 397 corrosion inhibitor. Frac'd with 16000 gals. gelled 2% KCL + 25% CO_2 and with 10,500 # 20/40 sand and 10,000# 12/20 sand.

COMP. TYPE: Oil Well

CURRENT STATUS: Pumping

LEASE NAME: Toles Federal WELL NUMBER: 1

OPERATOR: Snow Oil Company LEASE NUMBER: NM-31113

FORMATION: Queen POOL: S.E. Chaves Queen Gas Area Assoc.

LOCATION: 1980' FSL & 1650' FWL Section 26-T12S-R31E

ELEVATION: 4424' GR TOTAL DEPTH: 3115'

SURFACE CASING: 8 5/8" @ 473' CEMENT: ____ sx. TOP: Surf.

INT. CASING: ____ CEMENT: ____ sx. TOP: ____

PROD. CASING: 4 1/2" CEMENT: est. 1800 sx. TOP: ____

SPUD DATE: 1-8-85 COMP. DATE: ____

PERFORATIONS: 2344'-2845'

STIMULATION: ____

COMP. TYPE: ____

CURRENT STATUS: No completion has been filed: The above information is all that is available for public record. We believe the well has been P&A.

LEASE NAME: ____ WELL NUMBER: ____

OPERATOR: ____ LEASE NUMBER: ____

FORMATION: ____ POOL: ____

LOCATION: ____

ELEVATION: ____ TOTAL DEPTH: ____

SURFACE CASING: ____ CEMENT: ____ sx. TOP: ____

INT. CASING: ____ CEMENT: ____ sx. TOP: ____

PROD. CASING: ____ CEMENT: ____ sx. TOP: ____

SPUD DATE: ____ COMP. DATE: ____

PERFORATIONS: ____

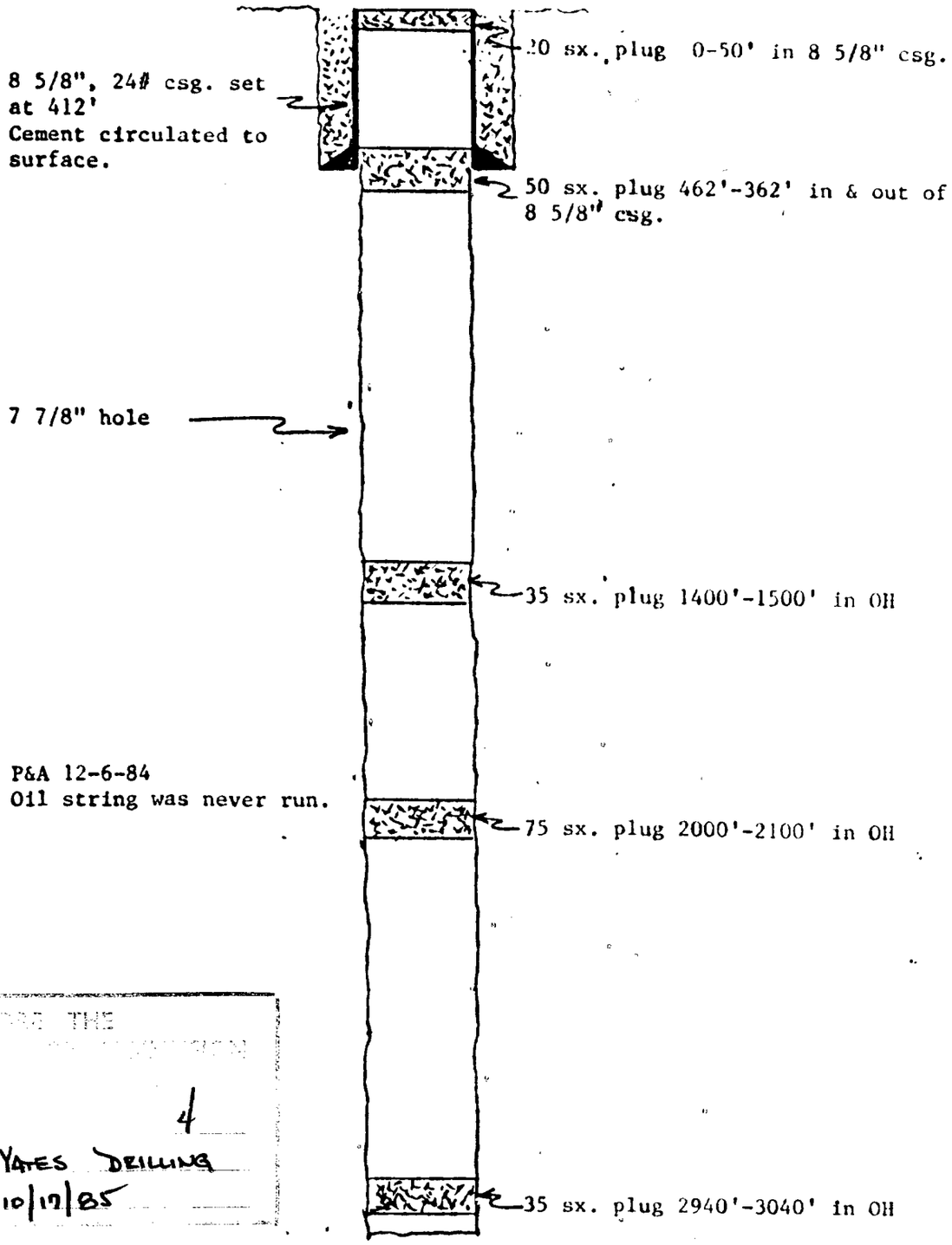
STIMULATION: ____

COMP. TYPE: ____

CURRENT STATUS: ____

RICH FEDERAL NO. 1
2310' FNL & 2310' FEL
Section 27-T12S-R31E
Chaves County, N.M.

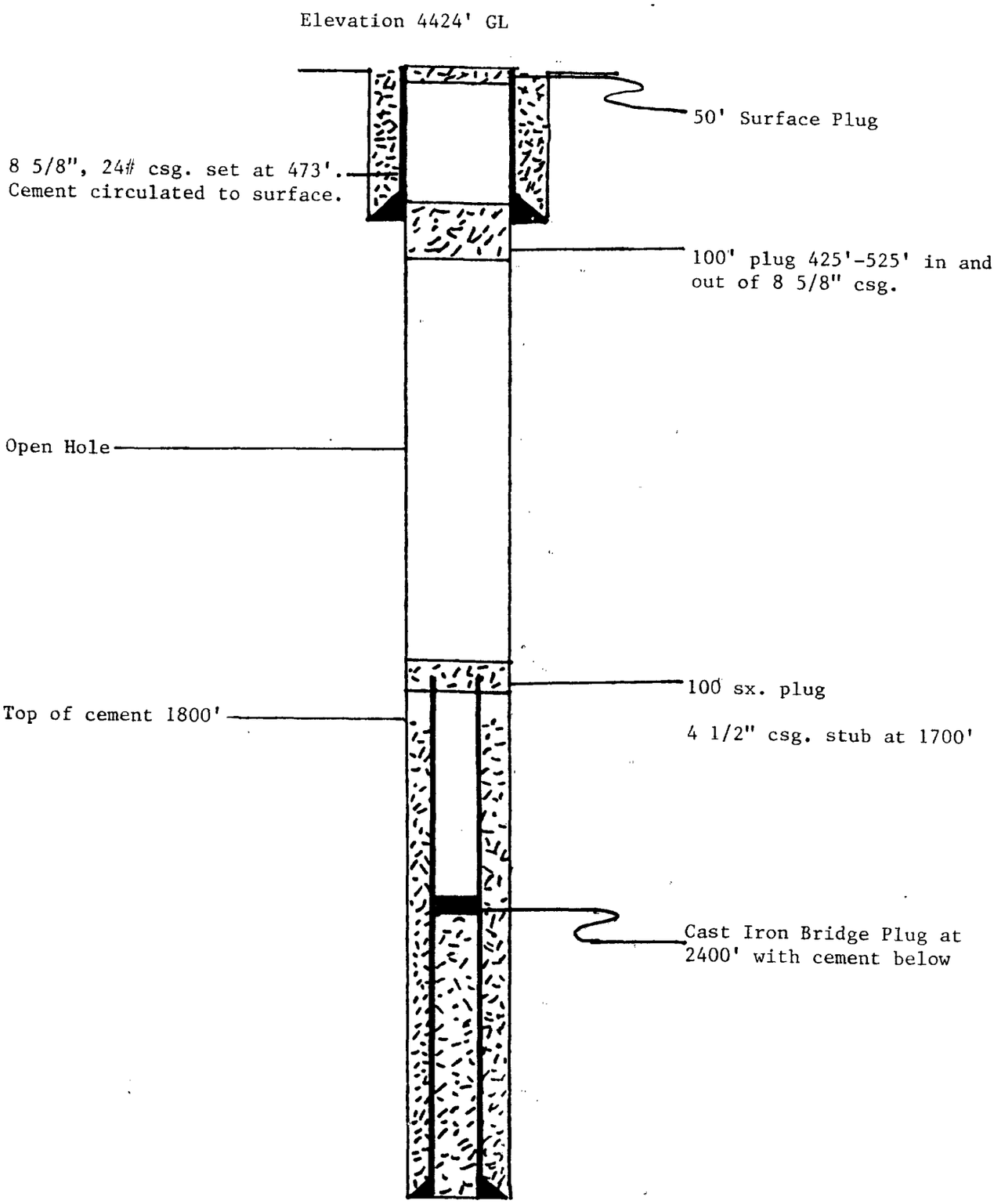
Elevation-4435.6' GL.



8502 4
YATES DRILLING
10/17/85

YATES DRILLING COMPANY
DOYAL NO. 3
Partial Pressure Maintenance Project
1980' FSL & 990' FEL Sec. 27-12S-31E
Chaves County, New Mexico
Exhibit No. 4

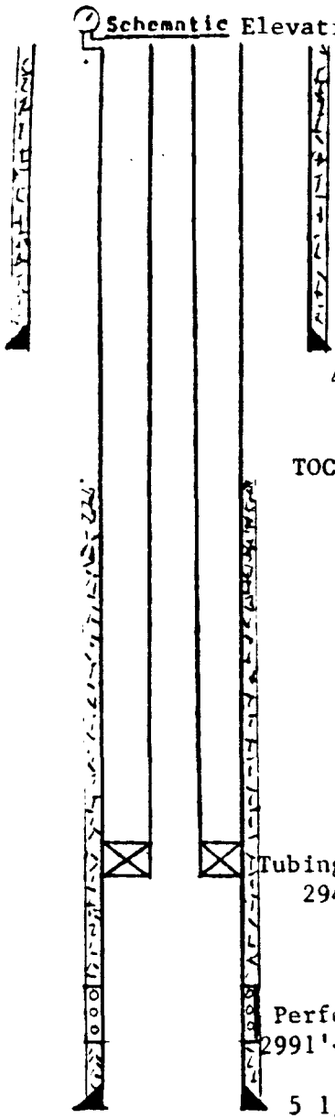
TOLES FEDERAL #1
1980 ' FSL & 1650' FWL
Section 26-T12S-R31E
Chaves County, N.M.



YATES DRILLING COMPANY
DOYAL NO. 3
Partial Pressure Maintenance Project
1980' FSL & 990' FEL Sec. 27-12S-31E
Chaves County, New Mexico
Exhibit No. 4

Yates Drilling Company — OPERATOR
Doyal — LEASE

3 — WELL NO.
1980' FSL & 990' FEL — FOOTAGE LOCATION
27 — SECTION
12-S — TOWNSHIP
31-E — RANGE



Tubular Data

Surface Casing

Size 8 5/8"; 24# " Cemented with 260 sx.

TOC Surface feet determined by circulation

Hole size 12 1/4"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 5 1/2" 14# " Cemented with 700 sx.

TOC 630' feet determined by CBL

Hole size 7 7/8"

Total depth 3099'

Injection interval

2991 feet to 2997 feet
(perforated or open-hole, indicate which)

BEFORE THE
OIL CONSERVATION DIVISION
Case 8502 5
Submitted by YATES DRILLING
Hearing Date 10/17/85

Tubing size 2 3/8" lined with Plastic (material) set in a plastic coated Baker AD 1 Tension (brand and model) packer at 2945 feet (or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen
2. Name of Field or Pool (if applicable) Southeast Chaves Queen Gas Area Assoc.
3. Is this a new well drilled for injection? / / Yes /X/ No
   If no, for what purpose was the well originally drilled? Oil Production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No other perforations
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None, known

YATES DRILLING COMPANY
DOYAL NO. 3
Partial Pressure Maintenance Project
1980' FSL & 990' FEL Sec. 27-12S-31E
Chaves County, New Mexico
Exhibit No. 5

CHEMEX

P O Box 423
Artesia, N M 88210

WATER ANALYSIS REPORT

Company Yates Drlg. Co. Date 8-23-84

Field _____ County _____ State _____

Lease and Well No. Doyal #1 Prod. Formation _____

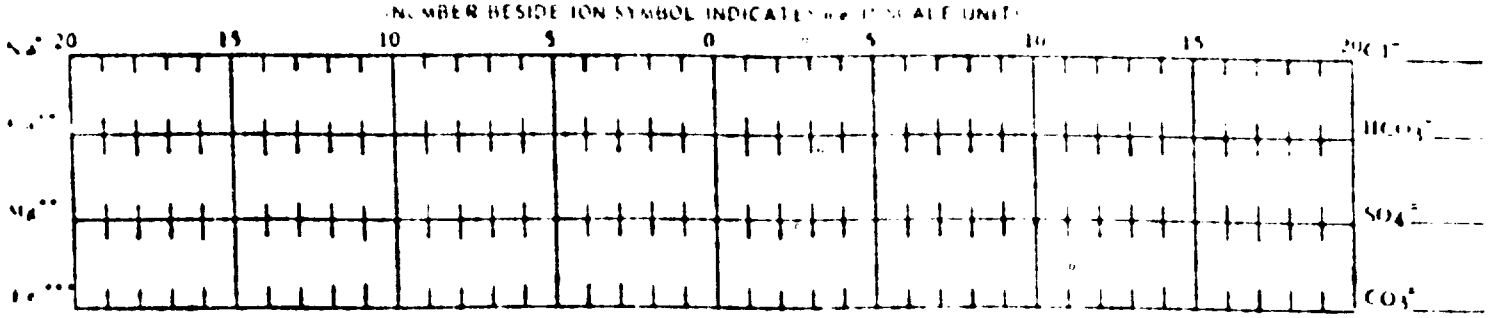
Source of Sample Frac Tank

Sample of Prod. Water X Inj. Water _____ Other _____

Time Collected 8-23-84 _____ Analyst K. Jones

WATER ANALYSIS PATTERN

NUMBER BESIDE ION SYMBOL INDICATES ... SCALE UNITS



Dissolved Solids Constituent	MG/L (PPM)	EPM
Calcium	1920	96
Magnesium	1280	105
Sodium	4324 est.	
Iron	32.40	3070
Chloride	109000	3070
Bicarbonate	565	9
Carbonate	0	
Sulfate	3480	73

ph 6.5

Sp Gravity _____

Total Hardness 3200

Total Dissolved Solids 116245

Hydrogen Sulfide 3

Oxygen 10

OIL CONSERVATION DIVISION
Case No. 8502 6
Submitted by YATES DRILLING
Hearing Date 10/17/85

Remarks:

YATES DRILLING COMPANY
DOYAL NO. 3
Partial Pressure Maintenance Project
1980' FSL & 990' FEL Sec. 27-12S-31E
Chaves County, New Mexico
Exhibit No. 6

CHEMEX

P. O. Box 423
Artesia, N. M. 88210

WATER ANALYSIS REPORT

Company Yates Drlg. Date 9-21-84

Field _____ County _____ State _____

Lease and Well No. Doyal #2 Prod. Formation _____

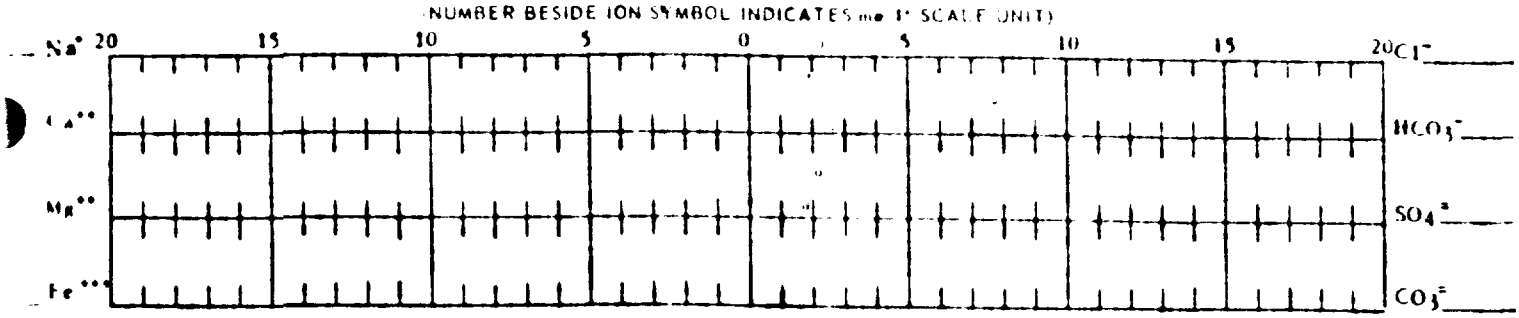
Source of Sample _____

Sample of Prod. Water X Inj. Water ( ) Other ( )

Date Collected _____ Analyst K. Jones

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me I" SCALE UNIT)



Dissolved Solids Constituent	MG/L (PPM)	EPM
Calcium	2720	136
Magnesium	2980	244
Sodium	103477	
Iron	50+	
Chloride	172000	4845
Bicarbonate	415	6
Carbonate	0	
Sulfate	1368	28
Total Hardness	5700	
Total Dissolved Solids	179483	
Hydrogen Sulfide	7	
Oxygen	10+	

ph 7.0

Sp. Gravity _____

Remarks:

KCL 0%

CHEMEX

P O Box 423
Artesia, N M 88210

WATER ANALYSIS REPORT

Company Yates Drilling Co. Date 11-20-84

Field _____ County _____ State N.M.

Lease and Well No. Gallagher St. # 1 Prod. Formation _____

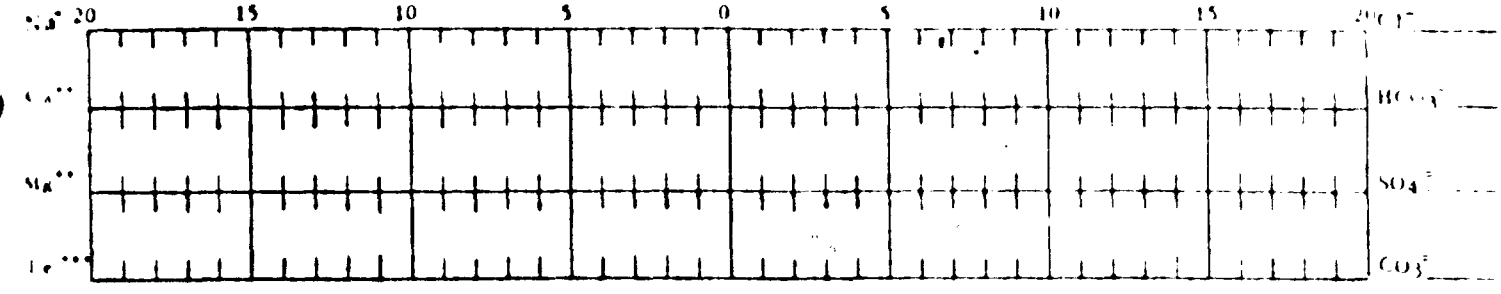
Source of Sample _____

Sample of Prod. Water ☐ Inj. Water ☐ Other ☐

Date Collected 11-20-84 Analyst James Campanella

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me/l SCALE UNIT)



Dissolved Solids Constituent	MG/L (PPM)	EPM
Calcium	3,800	190
Magnesium	44,200	362
Sodium	118,266	
Iron	394	
Chloride	201,000	5662
Bicarbonate	400	7
Carbonate	Nil	711
Sulfate	1,200	25
Total Hardness	48,000	
Total Dissolved Solids	250,600	
Hydrogen Sulfide	Nil	
Oxygen	2.5	

ph 5.5

Sp Gravity _____

Remarks:

CHEMEX

P. O. Box 420
Artesia, N. M.

WATER ANALYSIS REPORT

Company Yates Drilling Co. Date 10-3-84

Field _____ County _____ State N.M.

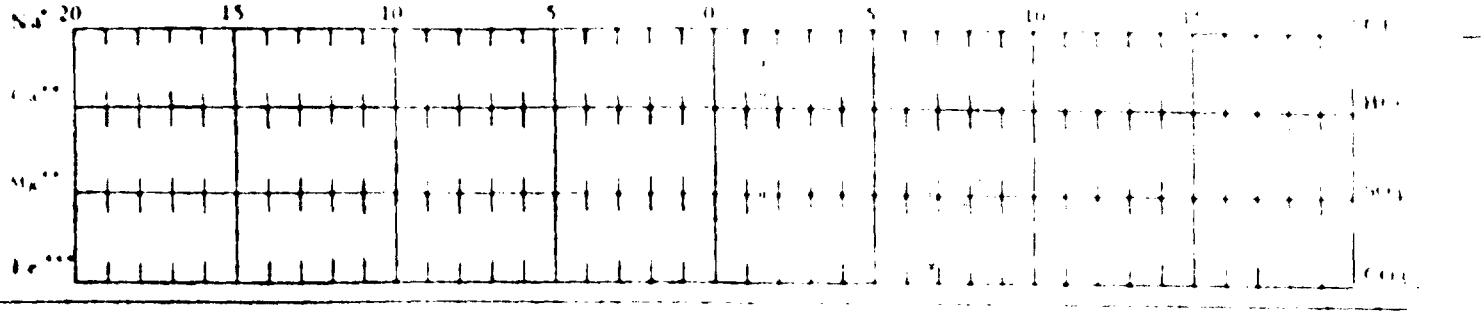
Lease and Well No. Garner #7 Prod. Formation _____

Source of Sample Well head

Sample of Prod. Water X Inj. Water Other _____

Date Collected 10-2-84 Analyst James Campanella

WATER ANALYSIS PATTERN



Dissolved Solids Constituent	MG/L (PPM)	EPM
Calcium	2240	112
Magnesium	23960	1964
Sodium	37099	
Iron	48	
Chloride	129,500	3648
Bicarbonate	384	6
Carbonate	nil	nil
Sulfate	1680	35
Total Hardness	26,200	
Total Dissolved Solids	157,764	
Hydrogen Sulfide	nil	
Oxygen	10+	

pH 6.0

Specific Gravity _____

Remarks:

Phone (505) 746-6100

CHEMEX

P. O. Box 423
Artesia, N. M. 88210

WATER ANALYSIS REPORT

Company Yates Drilling Company Date 6-21-82

Field _____ County _____ State _____

Lease and Well No. Pebble Queen #1 Prod. Formation _____

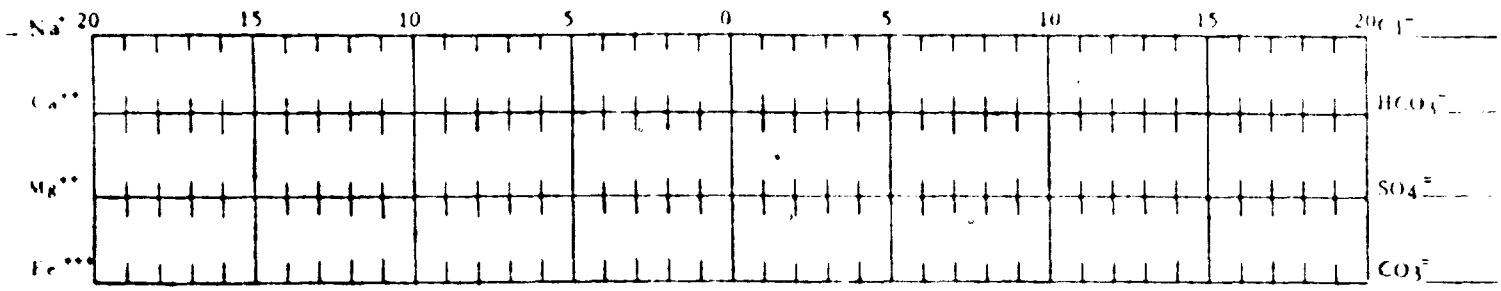
Source of Sample _____

Sample of Prod. Water X Inj. Water Other _____

Date Collected _____ _____ Analyst K. J.

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me 1" SCALE UNIT)



Dissolved Solids Constituent	MG/L (PPM)	EPM
Calcium	2,400 mg/l	120
Magnesium	2,800 mg/l	229
Sodium	68,287 est. mg/l	2969
Iron	17	
Chloride	115,000	3239
Carbonate	0	0
Bicarbonate	32	1
Sulfate	3,750	78
Total Hardness	5,200 mg/l	
Total Dissolved Solids	123,982 mg/l	
Hydrogen Sulfide	0	
Oxygen	10+	

ph 6.35

Sp. Gravity 1.140

Remarks:

KCL = 0

Phone (505) 746-[illegible]

CHEMEX

P. O. Box [illegible]
Artesia, N. M. 88210

WATER ANALYSIS REPORT

Yates Drilling Co. Date 2-5-85

County Chaves State NM

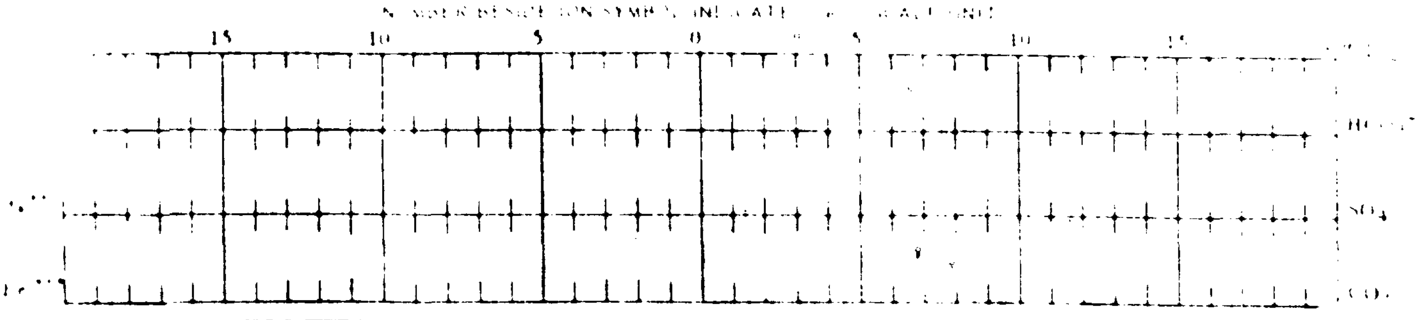
Well No Sample #1 Prod Formation

[illegible] Sample well head

Prod Water X Inj. Water Other

[illegible] Analyst James B. Campanella

WATER ANALYSIS PATTERN



Dissolved Solids

Constituent	MG/L (PPM)	EPM
Calcium	nil	
Magnesium	nil	
Sodium	nil	
[illegible]	nil	
Chloride	nil	
Bicarbonate	88	
Carbonate	nil	
Sulfate	nil	
Total Hardness	nil	
Total Dissolved Solids	88	
Hydrogen Sulfide	nil	
Oxygen	10+	

ph 6.0

Sp. Gravity

Notes: H_2S

SE¼NW¼NE¼SE¼NE¼, Section 27-T12S-R31E

BEFORE THE
OIL CONSERVATION COMMISSION

Case No. 8502 7
Submitted by YATES DRILLING
Hearing Date 10/17/85

YATES DRILLING COMPANY
DOYAL NO. 3
Partial Pressure Maintenance Project
1980' FSL & 990' FEL Sec. 27-12S-31E
Chaves County, New Mexico
Exhibit No. 7

Phone (505) 746-6100

P. O. Box 423
Artesia, N. M. 88210

WATER ANALYSIS REPORT

Company Yates Drilling Co. Date 2-6-85

Lease County Chaves State NM

Field and Well No. Sample #2 Prod. Formation

Depth of Sample well head

Type: Prod. Water x Inj. Water Other

Date Rec'd Analyst James B. Campanella

WATER ANALYSIS PATTERN

NUMBER BESIDE ION SYMBOL INDICATES me/l SCALE UNITS

	15	10	5	0	5	10	15	
Ca++								HCO3-
Mg++								SO4=
Fe+++								CO3=

Total Solids

	MG/L (PPM)	EPM	
Calcium	nil		ph 6.0
Magnesium	nil		Sp. Gravity
Sodium	nil		
Iron	nil		
Chloride	nil		
Bicarbonate	108		
Carbonate	nil		
Sulfate	nil		
Total Hardness	nil		
Total Dissolved Solids	108		
Hydrogen Sulfide	nil		
Oxygen	10+		

REMARKS

SW¼SW¼SW¼SW¼SE¼, Section 26-T12S-R31E

Phone (505) 746-6100

CHEMEX

P. O. Box 423
Artesia, N. M. 88210

WATER ANALYSIS REPORT

Company Yates Drilling Date 3-22-85

Field Spears Water Sample, NW/4SW/4 Section 26-12S-31E County Chaves State N.M.

Lease and Well No. _____ Prod. Formation _____

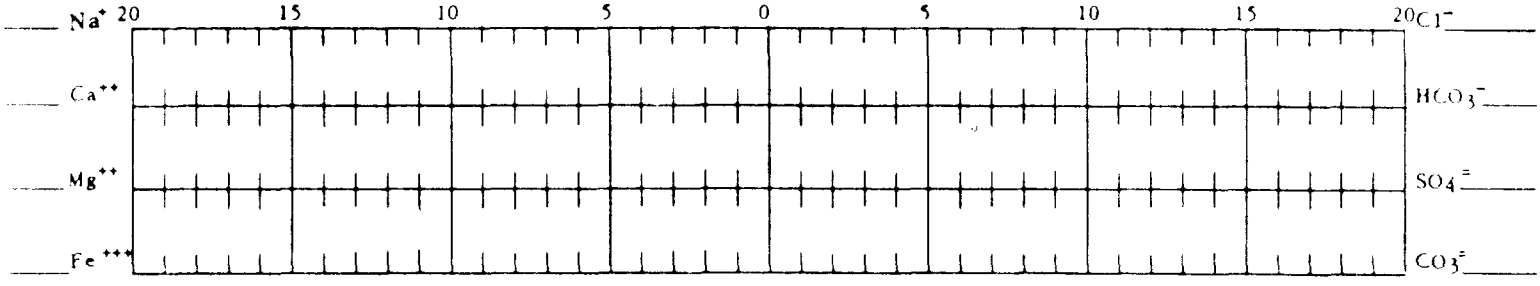
Source of Sample _____

Sample of Prod. Water ☐ Inj. Water ☐ Other ☐

Date Collected _____ Analyst James B. Campanella

WATER ANALYSIS PATTERN

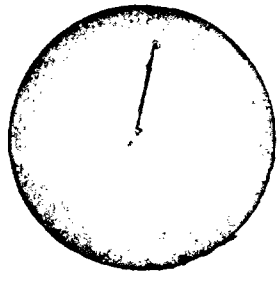
(NUMBER BESIDE ION SYMBOL INDICATES me l' SCALE UNIT)



Dissolved Solids Constituent	MG/L (PPM)	EPM
Calcium	nil	
Magnesium	nil	
Sodium	nil	
Iron	nil	
Chloride	nil	
Bicarbonate	nil	
Carbonate	nil	
Sulfate	120	
Total Hardness	nil	
Total Dissolved Solids	120	
Hydrogen Sulfide	nil	
Oxygen	10+	

ph 6.0

Sp. Gravity _____



Remarks:

Fresh H2O