

conoco

RECEIVED  
FEB 03 1982

Production Department  
Hobbs Division  
Western Hemisphere Petroleum Division

Conoco Inc.  
P.O. Box 450  
1001 North Tenth  
Hobbs, NM 88240  
(505) 393-4141  
CONSERVATION DIVISION  
SANTA FE

February 1, 1982

New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Attention Mr. R. L. Stamets

Dear Dick:

Case No. 7466, Examiner Hearing - January 22, 1981

During the Examiner Hearing for our request to initiate a waterflood project on our Warren Unit and other leases, Mr. Hoover testified concerning the pressure required to fracture the Blinebry Formation in recently completed wells in the project area. Since he was not sure, you requested that the information be furnished at a later date.

In researching our files to determine the type of treatment used and from the design of such treatment, we furnish the following information:

- Specific Gravity of Frac Fluid = 1.02 (sand frac)
- Specific Gravity of Water to be Injected = 1.04

We do not believe the difference would be of any significance in the pressure required to fracture the Blinebry Formation.

If you need additional information, I would appreciate your calling.

Very truly yours,

  
H. A. Ingram  
Conservation Coordinator

  
Gerry W. Hoover  
Reservoir Engineer

HAI:rej

PS Form 3811, Jan 1978

SENDER: Complete items 1, 2, and 3.  
Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)  
 Show to whom and date delivered.  
 Show to whom, date and address of delivery.  
 RESTRICTED DELIVERY  
 Show to whom and date delivered.  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery.

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 Bureau of Land Management  
 P.O. Box 1775  
 Carlsbad, NM 88230

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. 419761 CERTIFIED NO. INSURED NO.

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent  
 SARAH BACHMAN

4. DATE OF DELIVERY: DEC 23 1981 POSTMARK: 23 1981

5. ADDRESS (Complete only if requested):

6. UNABLE TO DELIVER BECAUSE: CLERK'S INITIALS: *BJ*

GPO : 1979-238-848

PS Form 3811, Jan 1978

SENDER: Complete items 1, 2, and 3.  
Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)  
 Show to whom and date delivered.  
 Show to whom, date and address of delivery.  
 RESTRICTED DELIVERY  
 Show to whom and date delivered.  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery.

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 Morris Antwell  
 Box 2010  
 Hobbs, NM 88240

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. 419762 CERTIFIED NO. INSURED NO.

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent  
 Dan Dreed

4. DATE OF DELIVERY: POSTMARK: DEC 23 1981

5. ADDRESS (Complete only if requested):

6. UNABLE TO DELIVER BECAUSE: CLERK'S INITIALS:

GPO : 1979-238-848

PS Form 3811, Jan 1978

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 RESTRICTED DELIVERY  
 Show to whom and date delivered.  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery.

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 Exxon Company  
 P.O. Box 1600  
 Midland, TX 79701

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. 419763 CERTIFIED NO. INSURED NO.

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent  
 Edward Whitlock

4. DATE OF DELIVERY: 12-28-81 POSTMARK: DEC 28 1981

5. ADDRESS (Complete only if requested):

6. UNABLE TO DELIVER BECAUSE: CLERK'S INITIALS: *BJ*

GPO : 1979-238-848

PS Form 3811, Jan 1978

SENDER: Complete items 1, 2, and 3.  
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1. The following service is requested (check one.)  
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 Show to whom, date and address of delivery.  
 RESTRICTED DELIVERY  
 Show to whom and date delivered.  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery.

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 ELKO Company  
 Box 310  
 Roswell, NM 88201

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. 419764 CERTIFIED NO. INSURED NO.

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent

4. DATE OF DELIVERY: POSTMARK: DEC 24 1981

5. ADDRESS (Complete only if requested):

6. UNABLE TO DELIVER BECAUSE: CLERK'S INITIALS:

GPO : 1979-238-848

BEFORE EXAMINER STAMETS  
 OIL CONSERVATION DIVISION

EXHIBIT NO. 2

CASE NO. 7866

Submitted by Conoco Inc.

Hearing Date 1-22-82

EXHIBIT NO. 2

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  yes  no
- II. Operator: Conoco, Inc.  
Address: P. O. Box 460, 726 E. Michigan, Hobbs, New Mexico 88240  
Contact party: Mark Mosely, Division Manager phone: 505 393-4141
- 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; *created water to remove O<sub>2</sub>*
  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. *no*
- 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: Hugh Ingram Title: Conservation Coordinator  
Signature: [Signature] Date: 12-22-81
- \* 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 District office.

BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

EXHIBIT NO. 3

CASE NO. 7466

Submitted by Conoco Inc.

Hearing Date 1-22-82

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

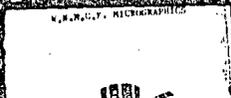
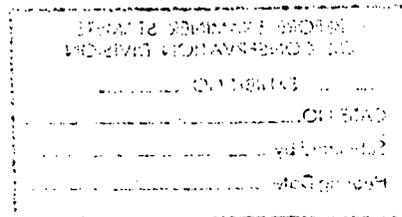
All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

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 2008, 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.



PS Form 3811, Jan. 1978

SENDER: Complete items 1, 2, and 3. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)  
 Show to whom and date delivered.  
 Show to whom, date and address of delivery.  
 RESTRICTED DELIVERY  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery. 5

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 John Hendrix  
 525 Millard Tower  
 Millard, TX 79701

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. CERTIFIED NO. INSURED NO.  
 419759

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent

4. DATE OF DELIVERY POSTMARK  
 DEC 24 1981

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE: CLERK'S INITIALS

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

GPO : 1979-289-048

PS Form 3811, Jan. 1978

SENDER: Complete items 1, 2, and 3. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)  
 Show to whom and date delivered.  
 Show to whom, date and address of delivery.  
 RESTRICTED DELIVERY  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery. 5

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 Gulf Oil  
 P.O. Drawer 1150  
 Millard, TX 79702

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. CERTIFIED NO. INSURED NO.  
 419765

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent

4. DATE OF DELIVERY POSTMARK  
 12-28-81 DEC 28 1981

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE: CLERK'S INITIALS  
 DJ

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

GPO : 1979-289-048

PS Form 3811, Jan. 1978

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 Show to whom, date and address of delivery.  
 RESTRICTED DELIVERY  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery. 5

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 NM Commission of Public Lands  
 Box 1148  
 Santa Fe, NM 87501

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. CERTIFIED NO. INSURED NO.  
 419759

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent

4. DATE OF DELIVERY POSTMARK  
 DEC 23 1981

5. ADDRESS (Complete only if requested)

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GPO : 1979-289-048

PS Form 3811, Jan. 1978

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 RESTRICTED DELIVERY  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery. 5

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 Dallas M. Castland  
 P.O. Box 206  
 Luvick, NM 88231

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. CERTIFIED NO. INSURED NO.  
 419760

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent

4. DATE OF DELIVERY POSTMARK  
 DEC 24 1981

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE: CLERK'S INITIALS  
 am

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

GPO : 1979-289-048

U.S. GOVERNMENT PRINTING OFFICE



PS Form 3811, JAN 1973

SENDER: Complete items 1, 2, and 3. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)  
 Show to whom and date delivered. . . . . c  
 Show to whom, date and address of delivery. . . . . c  
 RESTRICTED DELIVERY  
 Show to whom and date delivered. . . . . c  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery. \$ \_\_\_\_

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 Shell Oil Company  
 P.O. Box 991  
 Houston, TX 77001

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. CERTIFIED NO. INSURED NO.  
 419762

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent

4. DATE OF DELIVERY: 12/29/72

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE:

POSTMARK: HOUSTON TX GPO VS DEC 29 1972

RETURN RECEIPT REGISTERED, INSURED AND CERTIFIED MAIL

GPO : 1973 218-4-8

PS Form 3811, JAN 1973

SENDER: Complete items 1, 2, and 3. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)  
 Show to whom and date delivered. . . . . c  
 Show to whom, date and address of delivery. . . . . c  
 RESTRICTED DELIVERY  
 Show to whom and date delivered. . . . . c  
 RESTRICTED DELIVERY.  
 Show to whom, date, and address of delivery. \$ \_\_\_\_

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:  
 Southland Royalty  
 1000 74 Worth Club Tower  
 Ft. Worth, TX 76102

3. ARTICLE DESCRIPTION:  
 REGISTERED NO. CERTIFIED NO. INSURED NO.  
 419767

(Always obtain signature of addressee or agent)

I have received the article described above.  
 SIGNATURE  Addressee  Authorized agent

4. DATE OF DELIVERY: 2/3/73

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE:

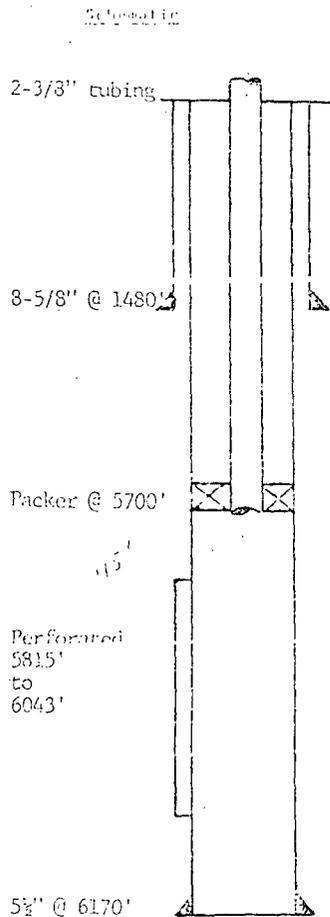
POSTMARK: FT. WORTH TX GPO SIA FEB 3 1973

RETURN RECEIPT REGISTERED, INSURED AND CERTIFIED MAIL

GPO : 1973 268-8-8

U.S. GOVERNMENT PRINTING OFFICE

CONOCO, INC. WELL NO. 80 LOCATION 1980' FNL. & 1980' FEL. CURRENT DEPTH 33 FEET DATE 208 YEAR 38E



**Logbook Data**

**Surface Casing**  
 Size 8-5/8 " Cemented with 790 gr.  
 TOC SURFACE feet determined by CIRCULATION  
 Hole size 12 1/2

**Intermediate Casing**  
 Size NONE " Cemented with \_\_\_\_\_ gr.  
 TOC \_\_\_\_\_ feet determined by \_\_\_\_\_  
 Hole size \_\_\_\_\_

**Long string**  
 Size 5 1/2 " Cemented with 2010 gr.  
 TOC SURFACE feet determined by CIRCULATION  
 Hole size 7-7/8"  
 Total depth 6170'

**Injection Interval**  
5815 feet to 6043 feet  
 (perforated or otherwise indicate which)

tubing size 2-3/8" lined with PLASTIC set in a  
(material)  
BAKER MODEL AD-1 packer at 5700 feet  
(brand and model)  
 (or describe any other casing tubing seal).

- Other Data**
- Name of the injection formation BLINEBRY
  - Name of field or pool (if applicable) BLINEBRY OIL AND GAS POOL
  - Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled?  
OIL AND GAS PRODUCTION.
  - Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (mud or cement or bridge plug(s) etc.)  
NO
  - Give the depth to and name of any overlying and/or underlying oil and gas zones (pools) in this area.  
NONE

BEFORE EXAMINER STAMETS  
SIL CONSERVATION DIVISION

EXHIBIT NO. 4

CASE NO. 7466

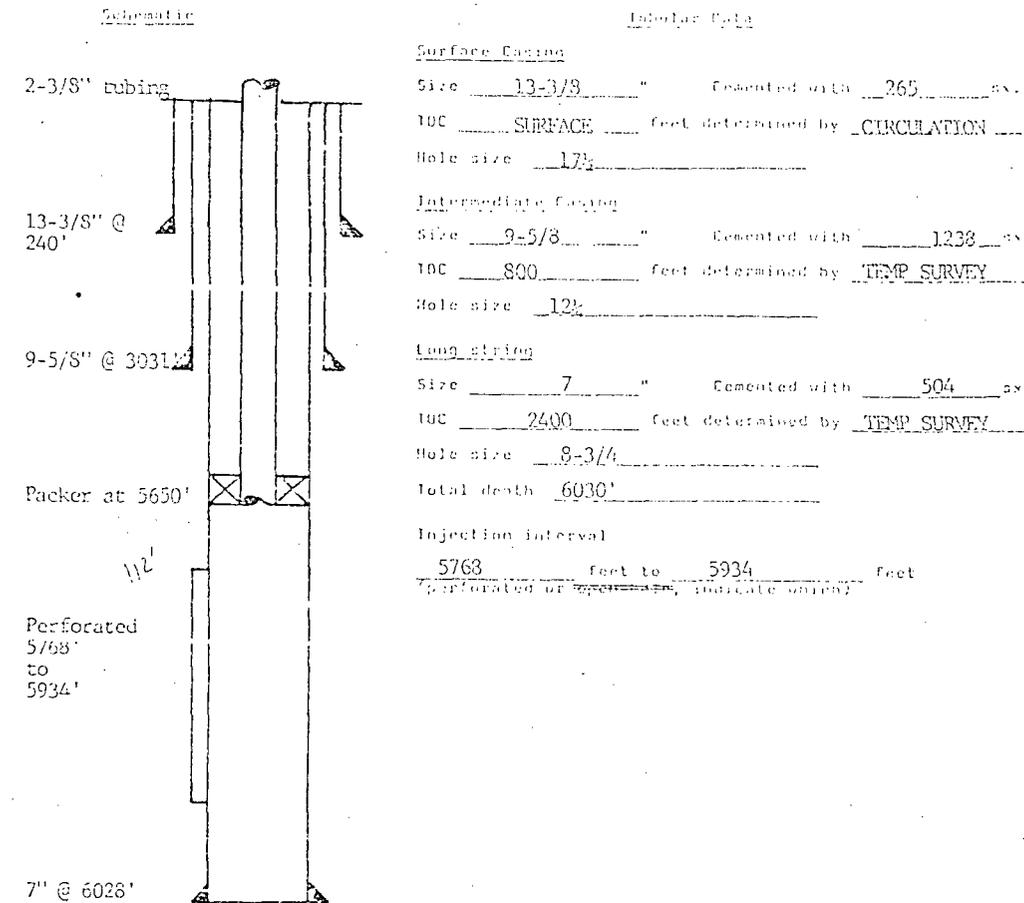
Submitted by Conoco Inc.

Hearing Date 1-22-82



INJECTION WELL DATA SHEET

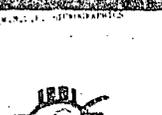
OPERATOR CONOCO, INC. FIELD WARREN UNIT  
 WELL NO. 20 TOTAL DEPTH 1980' FML & 660' FML DATE 34 LOCATION 20S 38E



Surface Casing  
 Size 13-3/8 " Cemented with 265 #  
 TOC SURFACE feet determined by CIRCULATION  
 Hole size 17 1/2  
Intermediate Casing  
 Size 9-5/8 " Cemented with 1238 #  
 TOC 800 feet determined by TEMP SURVEY  
 Hole size 12 1/2  
Long string  
 Size 7 " Cemented with 504 #  
 TOC 2400 feet determined by TEMP SURVEY  
 Hole size 8-3/4  
 Total depth 6030'  
Injection Interval  
5768 feet to 5934 feet  
 (Perforated or ~~plugged~~, indicate orient)

Tubing size 2-3/8" lined with PLASTIC in a  
BAKER MODEL AD-1 packer at 5650 feet  
 (Brand and model)  
 (or describe any other casing-tubing seal).

- Other Data
1. Name of the injection formation BLINERRY
  2. Name of field or Pool (if applicable) BLINERRY OIL & GAS POOL
  3. Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled?  
OIL AND GAS 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), depth)  
NO
  5. Give the depth to and name of any existing and/or suspected oil or gas zones (pools) in this area.  
NONE



BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

EXHIBIT NO. 5

CASE NO. 7464

Submitted by Conoco Inc.

Hearing Date 1-22-82



CONOCO INC.

WARREN UNIT

17

1980' FSL & 660' FHL

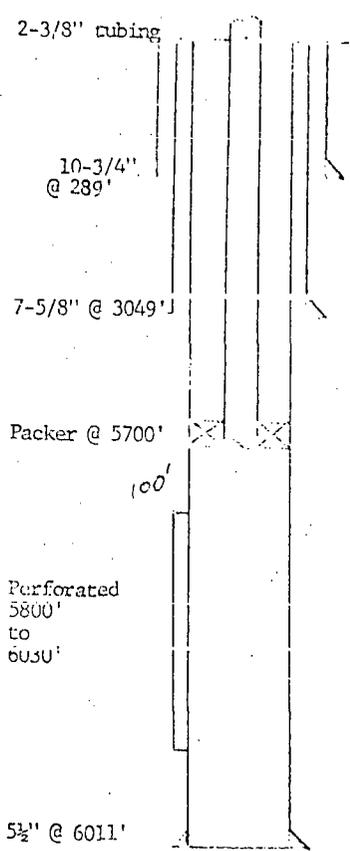
33

203

38E

Tubing

Injection Data



Surface Casing

Size 10-3/4 " Cemented with 250  
 100 SURFACE feet determined by CIRCULATION  
 Hole size 12%

Intermediate Casing

Size 7-5/8 " Cemented with 1045  
 100 800 feet determined by TEMP SURVEY  
 Hole size 9-7/8

Long string

Size 5 1/2 " Cemented with 730  
 100 SURFACE feet determined by CIRCULATION  
 Hole size 6-3/4

Total depth 6012

Injection interval

5800 feet to 6030' feet  
 (perforated                      indicate which)

NOTE: ON CONVERSION, THIS WELL WILL BE DEEPEMED TO A TD OF 6050' AND PERFORATED 5986'-6030'.

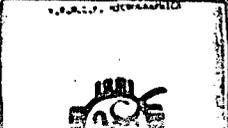
Tubing size 2-3/8 lined with PLASTIC (material) set in a  
 BAKER MODEL AD-1 packer at 5700 feet  
 (brand and model)  
 (or describe any other casing tubing seal).

Other Data

- Name of the injection formation BLINEBRY
- Name of field or pool (if applicable) BLINEBRY OIL & GAS POOL
- Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled? \_\_\_\_\_

OIL AND GAS PRODUCTION

- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (mucks of cement or bridge plug(s) used):  
NO
- Give the depth to and name of any overlying and/or underlying oil or gas zone(s) to this area.  
NONE



BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

EXHIBIT NO. 6

CASE NO. 7466

Submitted by Comoco Inc.

Hearing Date 1-22-82

V. S. M. C. P. MICROGRAPHICS



OPERATOR

FIELD

CONOCO, INC.

WARREN UNIT

WELL NO.

1980' FSL & 1980' FWL

34

20S

38E

75

1980' FSL & 1980' FWL

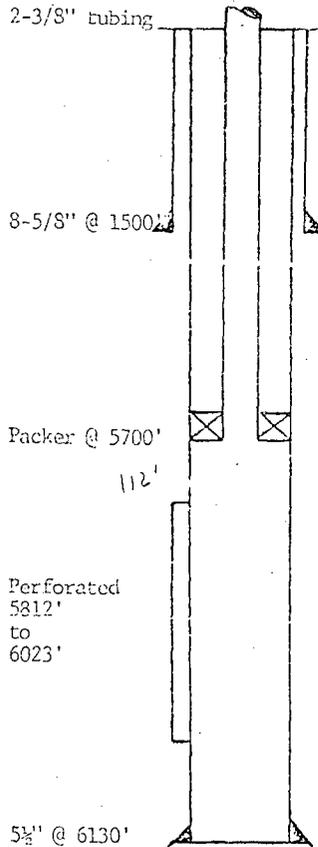
34

20S

38E

Schematic

Injection Data



Surface Casing

Size 8-5/8 " Cemented with 730 gr.

TOC SURFACE feet determined by CIRCULATION

Hole size 12 1/2

Intermediate Casing

Size NONE " Cemented with \_\_\_\_\_ gr.

TOC \_\_\_\_\_ feet determined by \_\_\_\_\_

Hole size \_\_\_\_\_

Long string

Size 5 1/2 " Cemented with 577 gr.

TOC SURFACE feet determined by CIRCULATION

Hole size 7-7/8

Total depth 6130'

Injection interval

5812 feet to 6023 feet  
(perforated or ~~plugged~~, indicate which)

Tubing size 2-3/8" lined with PLASTIC (material) set in a

BAKER MODEL AD-1 (brand and model) packer at 5700 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation BLINEBRY

2. Name of field or pool (if applicable) BLINEBRY OIL & GAS POOL

3. Is this a new well drilled for injection?  Yes  No

If no, for what purpose was the well originally drilled? \_\_\_\_\_

OIL AND GAS 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)

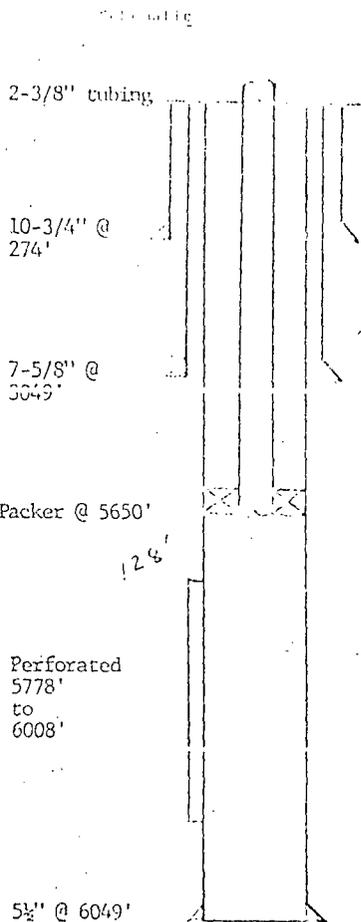
NO

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

NONE



CONOCO INC. WARRIEN UNIT  
 16 660' FSL & 1980' FEL 33 208 388



Surface casing  
 Size 10-3/4" Cased with 250  
 100 SURFACE Feet determined by CIRCULATION  
 Hole size 12 1/2"  
 Intermediate casing  
 Size 7-5/8" Cased with 1111  
 100 250 Feet determined by TEMP SURVEY  
 Hole size 9-7/8"  
 Log casing  
 Size 7 1/2" Cased with 541  
 100 SURFACE Feet determined by CIRCULATION  
 Hole size 6-3/4"  
 Total depth 6050'  
 Injection interval  
 5778 feet to 6008 feet  
 (perforated ~~5778~~ indicate which)

tubing size 2-3/8" lined with PLASTIC (material) set in a  
 BAKER MODEL AD-1 packer at 5650 feet  
 (brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation BLINEBRY
2. Name of field or pool (if applicable) BLINEBRY OIL AND GAS POOL
3. Is this a new well drilled for injection?  Yes  No  
 if no, for what purpose was the well originally drilled?

OIL AND GAS 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
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.  
 NONE

CONOCO INC. WARREN UNIT  
 WELL NO. 14 660' FSL & 660' FWL 34 20S 38E

Schematic

Logging Data

2-3/8" tubing

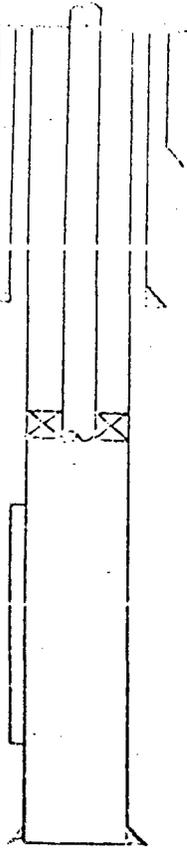
10-3/4" @ 256'

7-5/8" @ 3051'

Packer @ 5650'

Perforated 5778' to 6006'

5 1/2" @ 6019'



Surface Casing

Size 10-3/4" Cemented with 250  
 TOC SURFACE feet determined by CIRCULATION  
 Hole size 12 1/2"

Intermediate Casing

Size 7-5/8" Cemented with 1150  
 TOC 1290 feet determined by TEMP SURVEY  
 Hole size 9-7/8"

Long string

Size 5 1/2" Cemented with 336  
 TOC 3350 feet determined by TEMP SURVEY  
 Hole size 6-3/4"

Total depth 6020'

Injection interval

5778 feet to 6006 feet  
 (perforated ~~at 5778' and 6006'~~ indicate which)

tubing size 2-3/8" lined with PLASTIC not in a (material)

BAKER MODEL AD-1 packer at 5650 feet (brand and model)

(or describe any other casing tubing seal)

Other Data

1. Name of the injection formation BLINERY

2. Name of field or pool (if applicable) BLINERY OIL & GAS POOL

3. Is this a new well drilled for injection?  Yes  No

If no, for what purpose was the well originally drilled?

OIL AND GAS PRODUCTION

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (such as cement or bridge plug(s) used).  
 NO

5. Give the depth to and name of any overlying and/or underlying oil- or gas zones (pools) in this area.

NONE

CONOCO INC.

WARREN UNIT

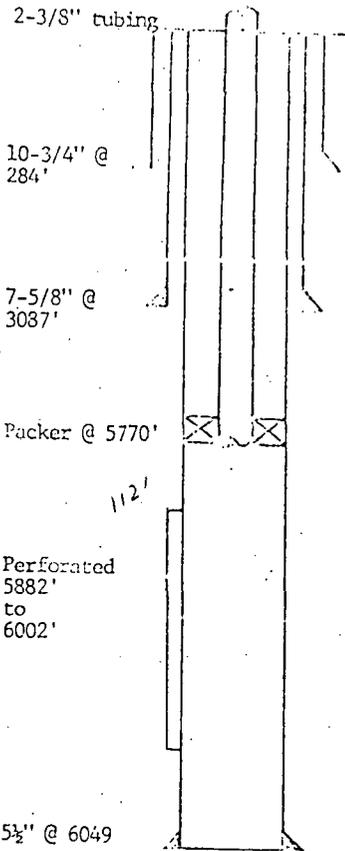
13

660' FSL & 1980' FEL

34

20S

38E



Surface casing  
 Size 10-3/4" Cemented with 250  
 IBC SURFACE feet determined by CIRCULATION  
 Hole size 12 1/2  
 Intermediate casing  
 size 7-5/8" Cemented with 1255  
 IBC 30 feet determined by TEMP SURVEY  
 Hole size 9-7/8  
 Long string  
 size 5 1/2" Cemented with 466  
 IBC 3355 feet determined by TEMP SURVEY  
 Hole size 6-3/4  
 Total depth 6050'  
 Injection interval  
 5882 feet to 6002 feet  
 (perforated ~~interval~~ indicate which)

Tubing size 2-3/8" lined with PLASTIC (material) set in a  
 BAKER MODEL AD-1 (brand and model) packer at 5770 feet  
 (or describe any other casing-tubing seal).

- Other Data
- Name of the injection formation BLINEBRY
  - Name of field or Pool (if applicable) BLINEBRY OIL & GAS POOL
  - Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled? \_\_\_\_\_

OIL AND GAS PRODUCTION

- 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
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.  
 NONE



CONOCO INC.

WASK B-3

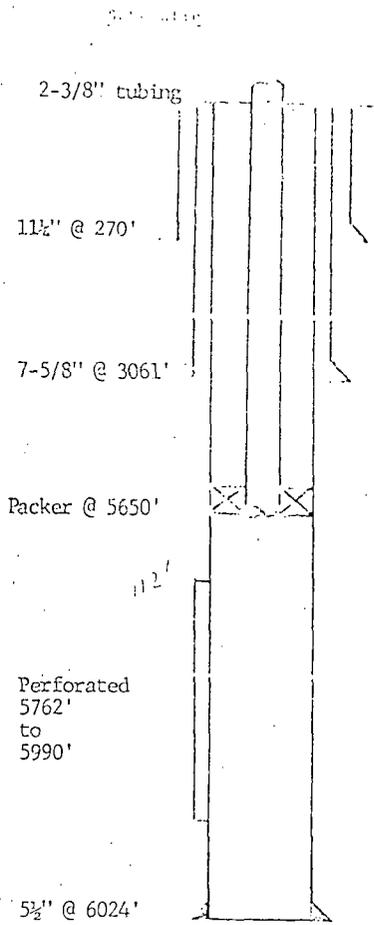
15

660' FNL & 1980' FEL

3

21S

37E



Perforated casing

Size 11- $\frac{1}{2}$ " Cased with 375  
 SURFACE feet determined by CIRCULATION  
 Hole size 17 $\frac{1}{2}$ "

Intermediate casing

Size 7-5/8" Cased with 920  
 1515 feet determined by TEMP SURVEY  
 Hole size 9-7/8"

Long string

Size 5 $\frac{1}{2}$ " Cased with 389  
 3190 feet determined by TEMP SURVEY  
 Hole size 6-3/4"

Total depth 6025'

Injection interval

5762 feet to 5990 feet  
 (perforated ~~interval~~ indicate which)

Tubing size 2-3/8" lined with PLASTIC set in a  
 (material)  
 BAKER MODEL AD-1 packer at 5650 feet  
 (brand and model)  
 (or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation BLINEBRY
2. Name of field or pool (if applicable) BLINEBRY OIL AND GAS POOL
3. Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled? \_\_\_\_\_

OIL AND GAS PRODUCTION

4. Has the well ever been perforated in any other zone(s)? YES List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used). NO
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. NONE

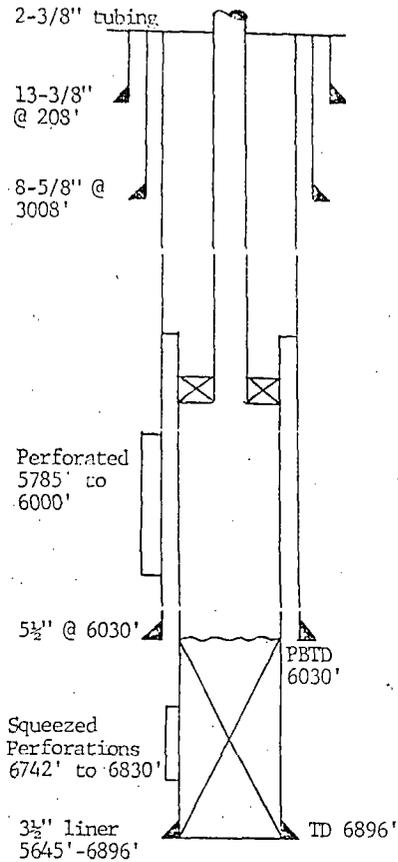


INJECTION WELL DATA SHEET

OPERATOR: SOUTHLAND ROYALTY STATE: TX  
 WELL NO.: 6 FIELD LOCATION: 906' FNL & 660' FNL SECTION: 2 TOWNSHIP: 21S RANGE: 37E

Schematic

Tabular Data



Surface Casing  
 Size 13-3/8 " Cemented with 240 sx.  
 TOC SURFACE feet determined by CIRCULATION  
 Hole size 17 1/2"

Intermediate Casing  
 Size 8-5/8 " Cemented with 1750 sx.  
 TOC SURFACE feet determined by CIRCULATION  
 Hole size 11"

Long string  
 Size 5 1/2 " Cemented with 250 sx.  
 TOC 4780 feet determined by TEMP SURVEY  
 Hole size 7-7/8"

Total depth 6030 (original)  
 Injection interval  
5785 feet to 6000 feet  
 (perforated or ~~perforated~~ indicate which)

LINER- HOLE DEEPEINED AND LINER SET FOR RECOMPLETION TO DRINKARD.  
 Size 3 1/2 " Cemented with 100 SX.  
 TOC 5645 feet determined by CIRCULATION  
 Hole Size 4-3/4  
 Total Depth 6896

NOTE: ON CONVERSION, THIS WELL WILL BE PLUGGED BACK TO 6030' AND REPERFORATED FROM 5785'-6000'.

Tubing size 2-3/8" lined with PLASTIC set in a  
(material)  
BAKER MODEL AD-1 packer at 5650 feet  
(brand and model)  
 (or describe any other casing-tubing seal).

Other Data

- Name of the injection formation BLINEBRY
- Name of field or pool (if applicable) BLINEBRY OIL AND GAS POOL
- Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled? OIL AND GAS PRODUCTION
- 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).  
YES, DRINKARD FORMATION: PERFORATED 6742'-6830' & CURRENTLY PRODUCING 1.5 BOPD AND 10 MCF/GPD FROM THE DRINKARD (7-81)
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.  
DRINKARD: TOP OF PAY AT 6742'



WELLS WHICH PENETRATE THE PROPOSED INJECTION ZONE

COMPANY, WELL AND LOCATION	TYPE WELL	DATE DRILLED	T.D.	SIZE CSG.	DEPTH	CONSTRUCTION		TOP OF CEMENT	INTERVAL	RECORD OF TREATMENTS	
						NO. CEMENT USED	NO. SY OF CEMENT			ACIDIZE NO. GALLONS	SALT PAC NO. LB. SYP
CONOCO INC. Hawk B-3 No. 2 0-3-21S-37E	0	1-53	8114'	13 3/8 9 5/8 7	250 3133 8113	250 1370 940	Surface Surface 2950	7795-8090 (Sqzd) 5796-6079	1250 2000	12,600 10,600	
Hawk B-3 No. 3 P-3-21S-37E	0	1-52	8010'	10 3/4 7 5/8 5 1/2	265 3149 8009	250 1045 573	Surface 585 Surface	7677-7848	500	-	
Hawk B-3 No. 5 R-3-21S-37E	0	3-52	8025'	16 3/4 7 5/8 5 1/2	274 3147 8024	225 1150 625	Surface 650 3200	7700-7856 (Sqzd) 5646-5997	500 7000	12,600 72,000	
Hawk B-3 No. 8 P-3-21S-37E	0	6-51	8191'	10 3/4 7 5/8 5 1/2	265 3149 8187	250 1210 650	Surface 975 3115	8062-8172 (Sqzd) 6360-6420 (Sqzd) 6265-6337	9500 1000 1000	6,000 6,000	
Hawk B-3 No. 10 0-3-21S-37E	0	10-52	8302'	13 3/8 9 5/8 7	269 3149 8301	260 1408 940	Surface 600 3125	8166-8260 (Sqzd) 6660-6760	12000 7000	10,000 20,000	
Hawk B-3 No. 12 R-3-21S-37E	0	3-50	6747'	13 3/8 9 5/8 7	199 2969 6746	250 1525 875	Surface 725 3000	6625-6689 5670-5860	1000 4000	-	
Hawk B-3 No. 14 A-3-21S-37E	0	12-54	6020'	10 3/4 7 5/8 5 1/2	290 3038 6019	300 1150 310	Surface 650 3650	5738-84 5826-76 5960-82	1000 1000 1000	5,000 5,000 6,000	
Hawk B-3 No. 15 B-3-21S-37E	0	11-55	6025'	11 3/4 7 5/8 5 1/2	270 3061 6024	375 920 389	Surface 1515 3190	5762-5990	3000	13,000	

EXHIBIT 13

EXHIBIT 13

COMPANY, WELL AND LOCATION	WELL TYPE	DATE DRILLED	T.D.	SIZE CSG.	CONSTRUCTION		RECORD OF TREATMENTS			
					DEPTH	NO. SX. CEMENT USED	TOP OF CEMENT	INTERVAL	NO. GALLONS ACIDIZED	NO. LBS. SAND
Hawk B-3 No. 16 C-3-21S-37E	0	11-56	6440	10 3/4 7 5/8 5 1/2 4	265 3049 6479 6237-6920	265 903 503 34	Surface 1740 2903 6234	5770-5886 (Sqzd) 6343-6406 (Sqzd) 6697-6741	2000 2000 1250	12,000 10,000 40,000
Hawk B-3 No. 17 D-3-21S-37E	0	4-57	6010	10 3/4 7 5/8 5 1/2	259 3154 6010	253 1503 353	Surface 1525 3025	5750-5966	4000	21,000
Hawk B-3 No. 18 C-3-21S-37E	0	4-57	5913	10 3/4 7 5/8 5 1/2	268 3119 5974	253 1153 403	Surface 1150 400	5700-5925 5754-5941 (Sqzd) 5824-5956	250 3000 2000	12,000 40,000
Hawk B-3 No. 19 H-3-21S-37E	0	5-58	6810	13 3/8 9 5/8 7	211 3029 6829	250 1210 776	Surface 820 3038	5753-5980 6338-6428 (Sqzd) 6610-6782 (Sqzd)	2000 2500 15,500	15,000 10,000
Hawk B-3 No. 20 P-3-21S-37E	0	11-49	6782	13 3/8 9 5/8 7	222 2819 6781	250 650 675	Surface 875 3272	5783-6042 6642-6708 (Sqzd)	3000 2000	18,000
Hawk B-3 No. 22 L-3-21S-37E	G	11-62	6800	9 5/8 7	1310 6800	625 650	Surface 2200	5607-6039 6149-6471 (Sqzd) 6526-6686 (Sqzd)	4000 1500 13,500	47,500 20,000 13,000
Hawk B-3 No. 23 A-4-21S-37E	0	6-57	5950	10 3/4 7 5/8 5 1/2	270 3149 5950	250 1150 400	Surface 1425 3100	5758-5902	2000	11,250
Hawk B-3 No. 24 G-3-21S-37E	0	4-80	6875	8 5/8 5 1/2	1395 6875	674 2782	Surface Surface	6541-6782	21,672	-
Warren Unit No. 12 N-34-20S-38E	0	9-54	6198	10 3/4 7 5/8 5 1/2	252 3049 6197	250 1120 415	Surface 600 2885	5814-6160	10,000	18,000
Warren Unit No. 13 O-34-20S-38E	0	10-54	6056	10 3/4 7 5/8 5 1/2	284 3087 6049	250 1255 466	Surface 30 3355	5862-6002	2000	8,000



COMPANY, WELL AND LOCATION	WELL DEPTH	T.D.	SIZE COS.	DEPTH	CONSTRUCTION		TOP OF CEMENT	INTERVAL	RECORD OF TREATMENTS	
					NO. SK. CEMENT USE	FEET			NO. GALLONS ACIDIZED	NO. LBS. SOD
Warren Unit No. 12 N-14-20S-38E	0	12-54	10 3/4 7 5/8 5 1/2	256 3051 6919	256 1156 336	Surface 1299 3359	5778-6006	2006	10,000	
Warren Unit No. 15 P-33-20S-38E	0	2-55	10 3/4 7 5/8 5 1/2	249 3049 6049	256 1136 684	Surface Surface Surface	5780-6014 (Squad) 5806-6010	1500 2006	10,000 21,000	
Warren Unit No. 16 O-33-20S-38E	0	3-55	10 3/4 7 5/8 5 1/2	274 3049 6049	256 1111 541	Surface 239 Surface	5778-6005	1500	28,000	
Warren Unit No. 17 I-33-20S-38E	0	6-55	10 3/4 7 5/8 5 1/2	289 3049 6011	256 1045 706	Surface 800 Surface	5800-5965	2000	-	
Warren Unit No. 18 L-34-20S-38E	0	9-55	13 3/8 9 5/8 7	263 3049 6007	256 954 540	Surface 1459 2890	5796-5999	3000	18,000	
Warren Unit No. 19 H-33-20S-38E	0	10-55	13 3/8 9 5/8 7	266 3049 5984	250 1225 511	Surface 750 2035	5784-5942	7000	18,000	
Warren Unit No. 20 E-34-20S-38E	0	11-55	13 3/8 9 5/8 7	240 3031 6028	265 1238 504	Surface 800 2400	5768-5934	3000	-	
Warren Unit No. 21 B-33-20S-38E	0	11-55	13 3/8 9 5/8 7	274 3049 6099	300 1500 400	Surface 1225 4825	5816-5952	2000	2,000	
Warren Unit No. 26 M-27-20S-38E	0	4-58	6 5/8 9 3/4 7	257 3132 6579	300 2000 240	Surface 900 4200	5786-6202 6345-6788 6679-6800	3900	-	



Page 4 COMPANY, WELL AND LOCATION	TYPE WELL DRILLER	DATE	T.D.	SIZE CSG.	DEPTH	CONSTRUCTION			INTERVAL	RECORD OF TREATMENTS	
						NO. SX. CEMENT USED	TOP OF CEMENT	NO. GALLONS		SAND FRAC NO. LBS SAND	
Warren Unit No. 34 C-34-20S-38E	0	8-75	6975	9 5/8 7	1470 6975	600 1225	Surface 2425	5815-79 6538-6625	- -	- -	
Warren Unit No. 38 F-34-20S-38E	0	12-75	7045	9 5/8 7	1500 7040	600 900	Surface 2500	5805-92 6504-6663 (Sqzd)	1350 1800	40,000 40,000	
Warren Unit No. 75 K-34-20S-38E	0	8-79	6130	8 5/8 5 1/2	1500 6130	730 577	Surface Surface	5812-6023 5734-73 (Sqzd)	4800 -	35,000 -	
Warren Unit No. 76 J-33-20S-38E	0	6-79	6150	6 5/8 5 1/2	1425 6150	700 1693	Surface Surface	5815-6080	5000	132,000	
Warren Unit No. 80 G-33-20S-38E	0	6-80	6173	8 5/8 5 1/2	1480 6170	790 2010	Surface Surface	5815-6043	2100	146,000	
Warren Unit No. 84 C-33-20S-38E	0	10-81	6170	8 5/8 5 1/2	1447 6170	700 1100	Surface 3800	5792-6078	1500	111,000	
GULF OIL CORPORATION Harry Leonard F No. 10 G-2-21S-37E	0	5-54	5950	13 3/8 8 5/8 5 1/2	375 3024 5844	425 1550 560	Surface 317 3100	5844-5950	7000	80,000	
SHELL OIL COMPANY Livingston No. 8 N-3-21S-37E	0	9-52	8030	13 3/8 8 5/8 5 1/2	215 3153 4336-7000	250 1600 810	Surface Surface 4330	6500-6686 5655-5854	19,600 18,000	63,000 20,000	
State Sec. 2 No. 2 L-2-21S-37E	0	10-49	6760	13 3/8 8 5/8 5 1/2	224 2936 6660	300 2000 600	Surface Surface Surface	6660-6760 6592-6639	1500 2000	- 23,392	
State Sec. 2 No. 8 L-2-21S-37E	0	11-51	8156	13 3/8 8 5/8 5 1/2	219 3149 2969-8018	250 2000 875	Surface Surface 2950	5691-5945 8018-8156 (Sqzd)	9000 1000	49,700 -	



COMPANY, WELL AND LOCATION	WELL TYPE	DATE DRILLED	T.D.	CONSTRUCTION				RECORD OF TREATMENTS			
				SIZE CSG.	DEPTH	NO. SX CEMENT USED	TOP OF CEMENT	INTERVAL	ACIDIZE NO. GALLONS	SAND FRAC. NO. LBS. SAND	
State Sec. 2 No. 11 L-2-215-37E	0	1-52	8015	13 3/8 8 5/8 5 1/2	211 3140 2926-8014	250 2000 850	Surface Surface 2400	6408-6562 7698-7850 (Sqzd)	2000	15,000	
State Sec. 2 No. 15 K-2-215-37E	0	6-52	8147	13 3/8 8 5/8 5 1/2	728 3148 2950-8010	250 1600 870	Surface Surface 2900	8010-8147 (Sqzd) 7048-7255 6381-6500	5500 29,700 6800	8,500 25,000	
State Sec. 2 No. 17 K-2-215-37E	0	7-54	5952	13 3/8 8 5/8 5 1/2	250 3126 5816	250 1500 100	Surface Surface 5101	5721-5952	15,500	70,000	
Taylor Glenn No. 1 R-3-215-37E	0	9-47	8590	13 3/8 8 5/8 5 1/2	301 3879 8060	250 3000 675	Surface Surface 2915	5649-5850 6491-6730	17,600 10,700	25,000 43,000	
Taylor Glenn No. 2 I-3-215-37E	0	2-50	6780	13 3/8 8 5/8 5 1/2	222 2920 6665	300 2200 600	Surface Surface 6620	6147-6436 6574-6780	1250 5800	85,000 40,000	
Taylor Glenn No. 3 I-3-215-37E	0	11-51	8224	13 3/8 8 5/8 5 1/2	219 3150 2960-8102	250 3000 800	Surface Surface 2960	5800-6045 8102-8224	12,000 1500	29,000	
Taylor Glenn No. 4 I-3-215-37E	0	5-52	8119	13 3/8 8 5/8 5 1/2	200 3147 2999-8115	250 2200 875	Surface Surface 2950	7804-8082	2000	48,000	
Taylor Glenn No. 5 J-3-215-37E	0	10-52	8361	13 3/8 8 5/8 5 1/2	225 3147 2965-8355	250 2200 850	Surface Surface 2960	6583-6809 7905-75 8042-8291 (Sqzd)	13,000 1000 1900	57,000 10,000	
Taylor Glenn No. 6 J-3-215-37E	0	7-52	6707	13 3/8 8 5/8 5 1/2	225 3147 2920-6660	250 2000 600	Surface Surface 2900	5663-6093 6660-6707	9000 6000	55,000	



CONTRACT WELL AND LOCATION	TYPE	MILL DRILLED	T.D.	SIZE CSG.	CONSTRUCTION			TOP OF CEMENT	INTERVAL	RECORD OF TREATMENTS	
					DEPTH	HO. SX CEMENT USED	CEMENT			NO. GALLONS ACIDIZED	NO. LBS. SAND
Taylor Glenn No. 7 E-2-215-37E	0	9-56	5935	13 3/8 8 5/8 5 1/2	306 3150 5935	350 1400 150	Surface Surface 4951	5682-5862	10,700	90,000	
Taylor Glenn No. 8 E-3-215-37E	0	11-56	5930	13 3/8 8 5/8 5 1/2	307 3150 5810	300 1200 200	Surface Surface 4512	5638-5930	4600	20,000	
Taylor Glenn No. 9 E-3-215-37E	C	1-63	6000	7 5/8 4 1/2	272 6000	275 375	Surface Surface	5655-5933	14,750	53,500	
Taylor Glenn No. 10 E-3-215-37E	0	2-75	6805	8 5/8 5 1/2	1361 6805	600 1025	Surface 3300	6182-6394 6574-6758	2100 6300	49,000 49,000	
Taylor Glenn No. 11 E-3-215-37E	0	9-75	6870	8 5/8 5 1/2	1380 6870	400 860	Surface Surface	6575-6752	9000	42,000	
<b>SOUTHWESTERN FERTILITY</b>											
State No. 2 E-2-215-37E	0	8-51	8620	13 3/8 9 5/8 5 1/2	171 3004 8519	165 1600 550	Surface Surface 4255	6525-6795 6627-7562 (Sqzd)	20,700	-	
State No. 5 E-2-215-37E	0	2-53	6850	13 3/8 8 5/8 5 1/2 3 1/2	200 3015 5980 5955-6850	225 1625 225 75	Surface Surface 4715 5955	5375-5439 (Sqzd) 5805-5945 (Sqzd) 6746-6832	3000 10,000 6000	- - 23,000	
State No. 6 E-2-215-37E	0	3-54	6030	13 3/8 8 5/8 5 1/2 3 1/2	208 3008 6030 5645-6896	240 1750 250 100	Surface Surface 4780 5645	5785-6000 (Sqzd) 6742-6830	6000 6500	97,000	



COMPANY, WELL AND LOCATION	TYPE	DRIILLED	I.D.	SIZE CSG.	CONSTRUCTION			TOP OF CEMENT	INTERVAL	STRENGTH OF TREATMENT	
					DEPTH	NO. SE GEMENT	FEED			NO. GALLONS	NO. GALLONS
State No. 7 C-2-215-37E	0	6-54	1061	13 3/8 8 5/8 5 1/2 3 1/2	215 3030 6030 5703-6945	150 1500 225 100	Surface 2100 4930 5708	5760-5952 4358-4556 5708	16,000 6,000 55,000	- - -	
State No. 8 E-2-215-37E	0	1-56	5010	13 3/8 8 5/8 5 1/2	218 3092 6010	200 2200 200	Surface Surface 4200	5578-5958	6,000	13,000	
State No. 9 F-2-215-37E	0	7-62	5780	13 3/8 4 1/2	329 5682	325 570	Surface Surface	5652-5760	13,000	13,000	

10-81  
JS



EXHIBIT 14

UNICHEM INTERNATIONAL  
 401 NORTH LEECH P.O. BOX 1499  
 HOBBS, NEW MEXICO 88240

COMPANY : CONOCO  
 DATE : 11-02-81  
 FIELD LEASE/WELL : WARREN BLINBRY  
 SAMPLING POINT :  
 DATE SAMPLED : 10-29-81

SPECIFIC GRAVITY = 1.091  
 TOTAL DISSOLVED SOLIDS = 135176  
 PH = 7.25

CATIONS		ME/L	MG/L
CALCIUM			
MAGNESIUM	(CA) <sup>+2</sup>	306.	4145.
SODIUM	(MG) <sup>+2</sup>	173.	2107.
	(NA).CALC.	1871.	43022.
ANIONS			
BICARBONATE	(HCO <sub>3</sub> )-1		
CARBONATE	(CO <sub>3</sub> )-2	3.6	219.
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO <sub>4</sub> )-2	0	0
CHLORIDES	(CL)-1	35.3	1700.
		2312.	81981.
DISSOLVED GASES			
CARBON DIOXIDE	(CO <sub>2</sub> )	NOT RUN	
HYDROGEN SULFIDE	(H <sub>2</sub> S)	0.1	
OXYGEN	(O <sub>2</sub> )	NOT RUN	17.0
IRON(TOTAL)			
BARIUM	(BB)	NOT RUN	
STRONTIUM	(BA) <sup>+2</sup> (SR) <sup>+2</sup>	NOT RUN	5.6

SCALING INDEX	TEMP
CARBONATE INDEX	30C
CALCIUM CARBONATE SCALING	86F
	.919
	LIKELY
SULFATE INDEX	
CALCIUM SULFATE SCALING	-.07
	UNLIKELY

BEFORE EXAMINER STAMETS  
 OIL CONSERVATION DIVISION  
 EXHIBIT NO. 14  
 CASE NO. 7466  
 Submitted by Conoco Inc.  
 Hearing Date 1-22-82

EXHIBIT 14



EXHIBIT 16

INTECH INTERNATIONAL

701 NORTH IRLBY

3000 ALBU

MOORE, NEW MEXICO 88240

COMPANY : CONOCO  
 DATE : 11-2-81  
 FIELD LEASEWELL : SEWAGE EFFLUENT PLUS BRINE  
 SAMPLING POINT:  
 DATE SAMPLED : 11-2-81

SPECIFIC GRAVITY = 1.029  
 TOTAL DISSOLVED SOLIDS = 43350  
 PH = 6.95

		MG/L	MG/L
<b>CATIONS</b>			
CALCIUM	(CA)+2	155	3042
MAGNESIUM	(MG)+2	33.3	105
SODIUM	(NA), CALC.	564	17969
<b>ANIONS</b>			
BICARBONATE	(HCO3)-1	6.9	278
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	12.7	610
CHLORIDES	(CL)-1	733	25974
<b>DISSOLVED GASES</b>			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	0	0
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)		33
BARIUM	(BA)+2	NOT RUN	
STRONTIUM	(SR)+2	NOT RUN	

SCALING INDEX

TEMP

30C  
 86F  
 CARBONATE INDEX  
 CALCIUM CARBONATE SCALING  
 261  
 LIKELY  
 SULFATE INDEX  
 CALCIUM SULFATE SCALING  
 -1.8  
 UNLIKELY

ESFORE EXAMINER STAMETS  
 OIL CONSERVATION DIVISION  
 EXHIBIT NO. 16  
 CASE NO. 7466  
 Submitted by Conoco class  
 Hearing Date 1-22-82

EXHIBIT 16

MINERALS ANALYSIS UNIT  
OF NORTH DAKOTA  
BOZEMAN, NEW MEXICO 71140

COMPANY CONOCO  
DATE 11-2-81  
FIELD LEASEWELL 50% WARREN BLINERBY WDR SEWAGE EFFLUENT  
SAMPLING POINT  
DATE SAMPLED 11-2-81

SPECIFIC GRAVITY 1.04  
TOTAL DISSOLVED SOLIDS 2.89461  
PH 7.22

CATIONS		MG/L	MG/L
CALCIUM	(CA)*2	130	2600.
MAGNESIUM	(MG)*2	210	4200.
SODIUM	(NA), CALC.	1720	34400.
ANIONS			
BICARBONATE	(HCO3)-1	2	100.
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	17.5	350.
CHLORIDES	(CL)-1	1551	31020.
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	0	0
OXYGEN	(O2)	NOT RUN	
IRON(TOTAL)	(FE)		2.7
BARIUM	(BA)*2	NOT RUN	
STRONTIUM	(SR)*2	NOT RUN	

SCALING INDEX	TEMP
CARBONATE INDEX	50C
CALCIUM CARBONATE SCALING	66%
	LIKELY
SULFATE INDEX	47.4
CALCIUM SULFATE SCALING	UNLIKELY

BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

EXHIBIT NO. 17

CASE NO. 7466

Submitted by CONOCO INC

Hearing Date 1-22-82

7-2-1

WATER ANALYSIS

STANDARD LABORATORY

REPORT NUMBER 89-10

COMPANY - CONOCO  
 DATE 11-3-81  
 FIELD/LEASEWELL 50% WARREN ENERGY 50% SEWAGE EFFLUENT FINE BRINE  
 SAMPLING POINT  
 DATE SAMPLED 11-2-81

SPECIFIC GRAVITY = 1.072  
 TOTAL DISSOLVED SOLIDS 1107800  
 PH = 7.2

CATIONS		MG/L	MG/L
CALCIUM	(CA) <sup>+2</sup>	103	2072
MAGNESIUM	(MG) <sup>+2</sup>	193	1300
SODIUM	(NA), CALC.	1037	30389
ANIONS			
BICARBONATE	(HCO3) <sup>-1</sup>	49	198
CARBONATE	(CO3) <sup>-2</sup>	0	0
HYDROXIDE	(OH) <sup>-1</sup>	0	0
SULFATE	(SO4) <sup>-2</sup>	24.1	1750
CHLORIDES	(CL) <sup>-1</sup>	1833	64985
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	0	0
OXYGEN	(O2)	NOT RUN	
IRON (TOTAL)	(FE)		65
BARIUM	(BA) <sup>+2</sup>	NOT RUN	
STRONTIUM	(SR) <sup>+2</sup>	NOT RUN	

SCALING INDEX

TEMP

30C

86F

510

LIKELY

CARBONATE INDEX

CALCIUM CARBONATE SCALING

SULFATE INDEX

CALCIUM SULFATE SCALING

1.5

UNLIKELY

BEFORE EXAMINER STAMETS  
 OIL CONSERVATION DIVISION

EXHIBIT NO. 18

CASE NO. 2166

Submitted by Conoco Inc.

Hearing Date 1-22-82

EXHIBIT 19  
401 NORTH BEECH  
DALLAS, TEXAS 75246

COMPANY - CONOCO  
DATE 11-01-81  
FIELD - LEAVELL  
BARRELING POINT  
DATE SAMPLED 10-29-81  
*Water Sample*  
*Water Sales from Washline*  
*1 day 10-29-81*

SPECIFIC GRAVITY @ 1.001  
TOTAL DISSOLVED SOLIDS = 2120  
PH = 6.93

		MG/L	MG/L
<b>CATIONS</b>			
CALCIUM	(CA) <sup>++</sup>	11.6	186
MAGNESIUM	(MG) <sup>++</sup>	14.7	196
SODIUM	(NA) <sup>+</sup> CALC.	7.8	181
<b>ANIONS</b>			
BICARBONATE	(HCO <sub>3</sub> ) <sup>-</sup>	4.7	186
CARBONATE	(CO <sub>3</sub> ) <sup>-2</sup>	0	0
HYDROXIDE	(OH) <sup>-</sup>	0	0
SULFATE	(SO <sub>4</sub> ) <sup>-2</sup>	7.0	450
CHLORIDES	(CL) <sup>-</sup>	12.1	763
<b>DISSOLVED GASES</b>			
CARBON DIOXIDE	(CO <sub>2</sub> )	NOT RUN	
HYDROGEN SULFIDE	(H <sub>2</sub> S)	0	0
OXYGEN	(O <sub>2</sub> )	NOT RUN	
IRON (TOTAL)	(FE)		7
BARIUM	(BA) <sup>++</sup>	NOT RUN	
STRONTIUM	(SR) <sup>++</sup>	NOT RUN	

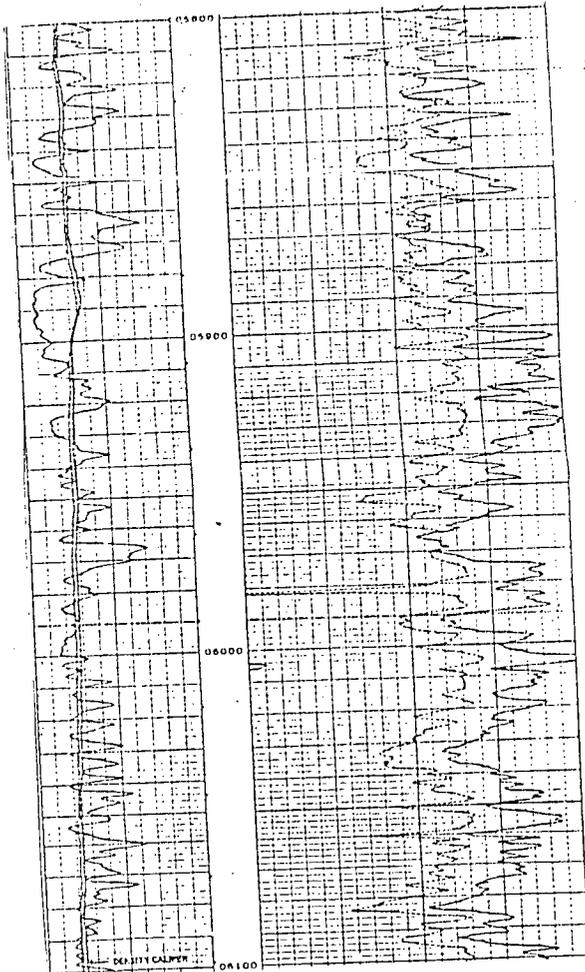
SCALING INDEX	TEMP
	39C
CARBONATE INDEX	86F
CALCIUM CARBONATE SCALING	186
	LIKELY
SULFATE INDEX	11.0
CALCIUM SULFATE SCALING	UNLIKELY

BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION  
EXHIBIT NO. 19  
CASE NO. 7460  
Submitted by Conoco - Inc.  
Hearing Date 1-22-82

2 7 6 3

EXHIBIT 20

7		STATE OF TEXAS	
COUNTY		STATE	
CITY		COUNTY	
DATE		FILE	



BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

EXHIBIT NO. 20

CASE NO. 7466

Submitted by Conoco & Co.

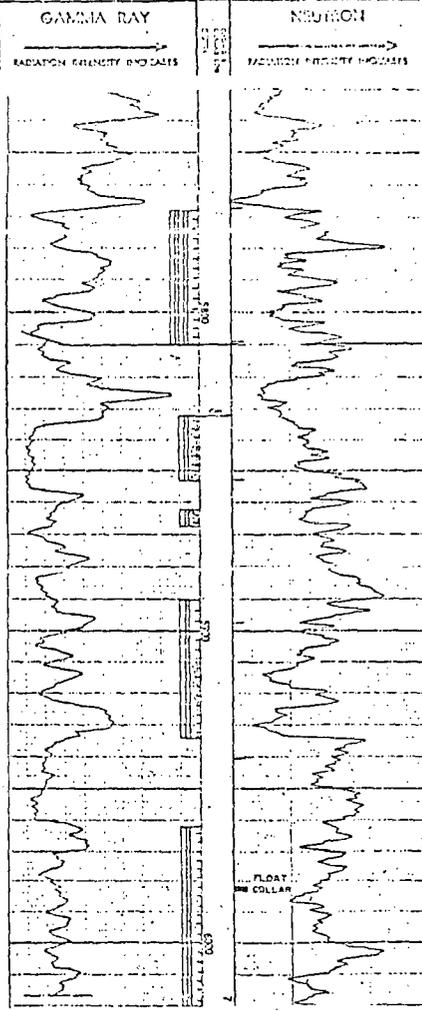
Hearing Date 1-22-82

EXHIBIT 20

RADIOACTIVITY LOG  
WELCH DET SERVICES, INC.

COMPANY: OILFIELD SERVICE UNIT  
 WELL: W-14 (WELL NO. 14)  
 FIELD: TERRY FIELD  
 COUNTY: DMA STATE: TEXAS  
 LOCATION: 15201 F.M. 6001 FIDLER, INC.  
 N. 7 - 00 - 2 R. 35 - 8

LOG MEAS FROM: 11' ABOVE BARGE ROAD FLOOR (ELEV. 1050')  
 ORIG. MEAS FROM: (ELEV. 1050')  
 CORR. DATE: (ELEV. 1050')

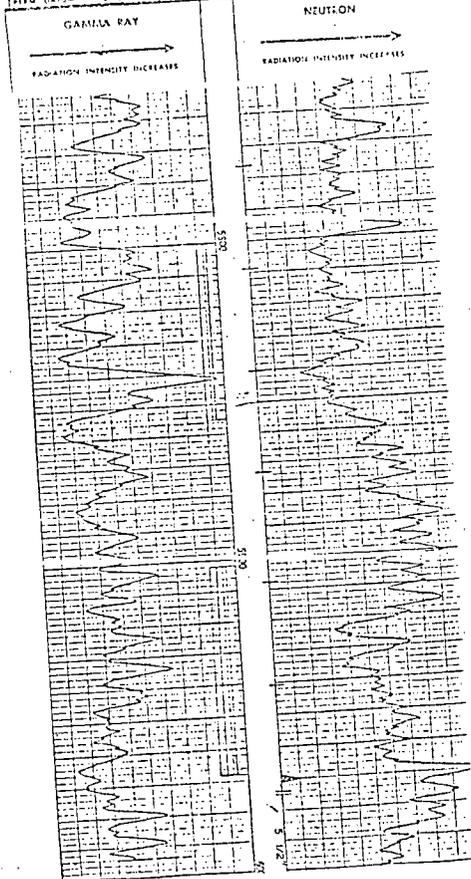


BEFORE EXAMINER STAMETS  
 OIL CONSERVATION DIVISION  
 EXHIBIT NO. 21  
 CASE NO. 7466  
 Submitted by Conoco Inc.  
 Hearing Date 1-22-82

**THE OREGON OIL COMPANY**  
**LABORATORY**  
*Investigating Department*

DATE: \_\_\_\_\_  
 TIME: \_\_\_\_\_  
 COUNTY: USA STATE: N.Y.  
 LOCATION: 10701 F.M. 600, N.Y.  
 SEC. 33, 200 37E

LOG HEAD FROM: 14 1/2" I.D. N.T. REV. 2222  
 CRIG HEAD FROM: 17" I.P.O.N. N.T. REV. 2122  
 FROM DATUM: TOP SHIP LANDING FLANGE REV. 2510



BEFORE EXAMINER STAMETS  
 OIL CONSERVATION DIVISION

EXHIBIT NO. 22

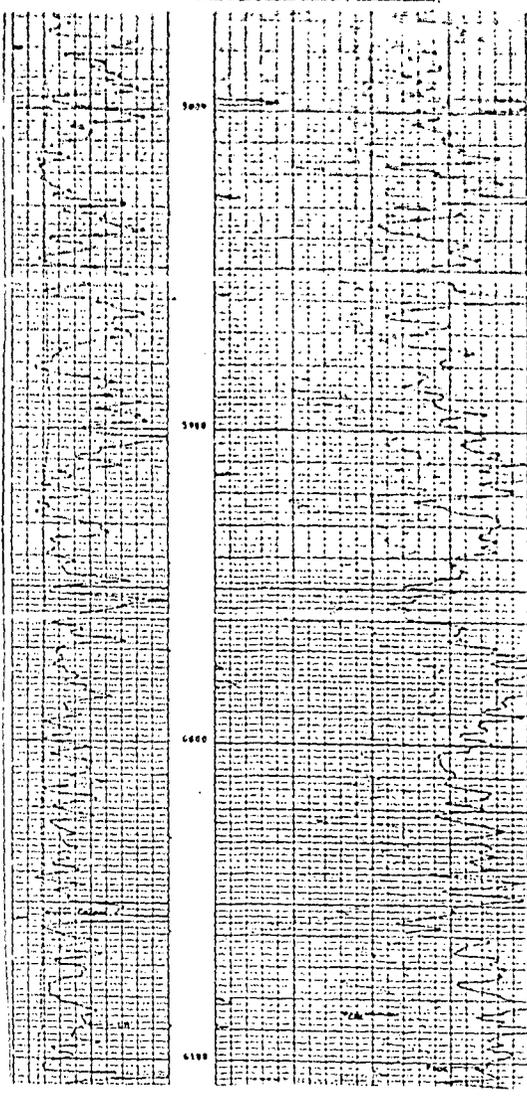
CASE NO. 7466

Submitted by Conoco Inc.

Hearing Date 1-22-82

657488 83

RECEIVED JAN 22 1982 OIL CONSERVATION DIVISION	
CASE NO. 1466 EXHIBIT NO. 23	DATE 1-22-82



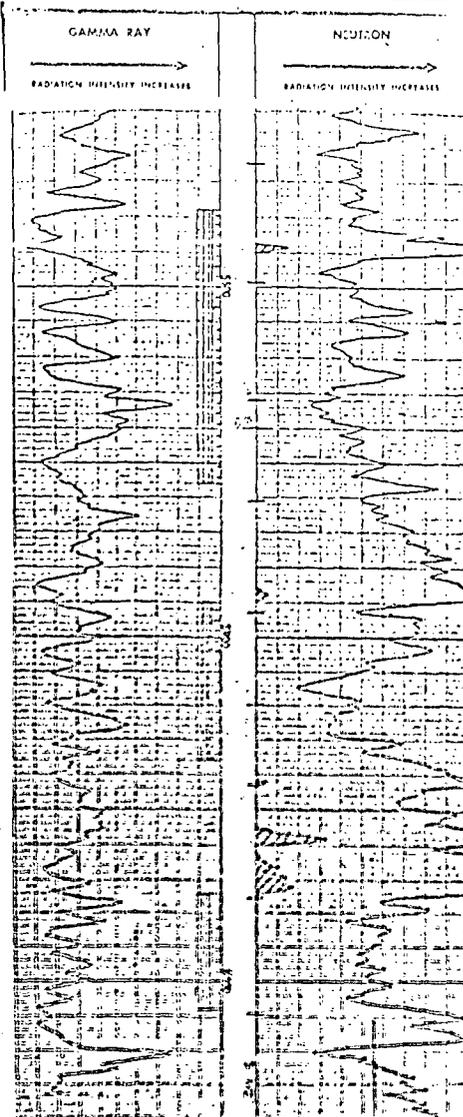
BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION	
EXHIBIT NO. <u>23</u>	
CASE NO. <u>1466</u>	
Submitted by <u>Comaco Inc.</u>	
Hearing Date <u>1-22-82</u>	

EXHIBIT 23

**THE WESTERN COMPANY**  
**CONSERVATION**  
*Conservation and Environmental Services, Inc.*

LOCATION: COMPANY: INDUSTRIAL OIL COMPANY  
WELL: WYOMING STATE 200000000000  
FIELD: TRINITY BLINDETT  
COUNTY: USA STATE: OK  
LOCATION: CONCRETE WOODRUFF, OKLAHOMA  
LOG NO: 41111  
LOG MEAS FROM: 11. 10000 R.R.  
LOG MEAS FROM: 11. ABOVE R.R.  
SEAM DATUM: 3. 1/2 LANDING PLANCE

SCALE: \_\_\_\_\_  
DATE: \_\_\_\_\_  
BY: \_\_\_\_\_



BEFORE EXAMINER STAMPS  
ON CONSERVATION DIVISION

EXHIBIT NO. 24

CASE NO. 7466

Submitted by Leona Hol

Hearing Date 1-22-52

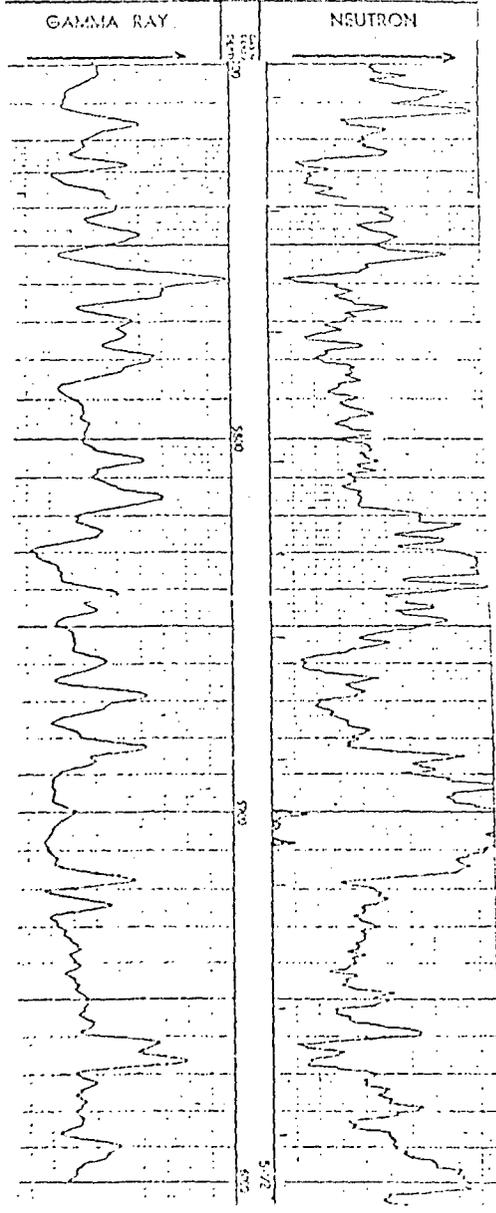




RADIOACTIVITY LOG  
WELEX JET SERVICES, Inc.

COMPANY CASE NO. 15  
 WELL NO. 15  
 FIELD NO. 15  
 COUNTY LA STATE LA  
 LOCATION WPT 4 15.07 15.07  
 SEC. 3 21-0 37-0

LOG MEAS FROM 11' TO 1 1/2' TO 100' DEPTH  
 DEPT MEAS FROM 11' TO 1 1/2' TO 100' DEPTH  
 FROM DATUM 1 1/2' TO 100' DEPTH



BEFORE EXAMINER STAMETS  
 OIL CONSERVATION DIVISION

EXHIBIT NO. 27

CASE NO. 7466

Submitted by Cenoco & Inc.

Hearing Date 1-22-82



CONOCO, INC.  
P. O. Box 460  
Hobbs, N. M. 88240

Attention: Mr. M. K. Mosley

Re: Application for approval to  
initiate a waterflood project.  
Warren Unit Area  
Lea County, N. M.

Gentlemen:

Southland Royalty Company is familiar with Conoco's Case No. 7466 on NMOCD Examiner Docket No. 3-82, scheduled for January 20, 1982. We support your application and hereby authorize the NMOCD to include Southland's State Well #6, located in Unit D, Section 2, T-21-S, R-37-E, Lea County, NM in their authorization of this project.

Yours very truly,



R. W. Harbin  
District Production Manager

KWH/ga

1100 WALL TOWERS WEST (915) 682-8641 MIDLAND, TEXAS 79701

BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION	
EXHIBIT NO.	<u>29</u>
CASE NO.	<u>7466</u>
Submitted by	<u>Conoco Inc</u>
Hearing Date	<u>1-22-82</u>