



T. D. Autry
Division Production Manager

OIL CONSERVATION DIVISION

Amoco Production Company

Southern Division
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

RECEIVED

'91 FEB 19 AM 9 13

February 7, 1991

New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504

File: KJK - 67 - WF

Pritchard SWD No. 1
Request for Injection Pressure Increase
NW/4, Section 34, T31N, R9W

Per Administrative Order SWD No. 405, the injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 1500 psi. Amoco requests that the pressure limitation be increased to 1670 psi. The requested pressure is based on the current perforated Entrada interval of 8382 to 8600 feet and 0.2 psi per foot. In our original permit application Amoco had intended to also complete the Bluff and Morrison formations which would have resulted in the lower permitted pressure of 1500 psi. However, at this time Amoco does not intend to complete the Bluff or the Morrison formations.

In addition Order SWD No. 405 requires that prior to commencing injection operations the operator shall obtain a formation water analysis from the completed disposal horizon and send the results to the Santa Fe Division office. An Entrada formation water sample was taken while swabbing immediately following perforating and prior to fracture stimulation. The water analysis from the Entrada formation showed a total dissolved solids (TDS) level of 11,735 parts per million (ppm). Find attached the documented water analysis.

Should you have any questions please contact Brooke Bell at (303) 830-5341 in Denver.

Sincerely,

T. D. Autry /k/c

Attachment

cc: New Mexico Oil Conservation Division w/ attachment
1000 Rio Brazos Road
Aztec, NM 87410
Attention: Ernie Bush

Buddy Shaw - San Juan Operation Center w/ attachments
J. W. Hawkins - Building w/ attachments

API WATER ANALYSIS REPORT FORM

| | | | | | | | |
|---|--|-------------------|--|------------------|--|----------------------|--|
| Laboratory No. 25-910124-4 | | Company AMOCO | | Sample No. | | Date Sampled 1-24-91 | |
| Field | | Legal Description | | County or Parish | | State | |
| Lease or Unit | | Well | | Depth | | Formation | |
| PZ 12-4000 | | BWD #1 | | | | Water, B/D | |
| Type of Water (Produced, Supply, etc.) | | Sampling Point | | Sampled By | | | |
| Entrada (Swab after perforating, prior to frac) | | | | | | | |

DISSOLVED SOLIDS

OTHER PROPERTIES

| CATIONS | mg/l | me/l | pH |
|--------------------|------|-------|-------|
| Sodium, Na (calc.) | 3771 | 173.5 | 7.13 |
| Calcium, Ca | 128 | 6.4 | 1.000 |
| Magnesium, Mg | 39 | 3.2 | 0.604 |
| Barium, Ba | | | |
| | | | |
| | | | |
| | | | |

WATER PATTERNS — me/l

ANIONS

| | | |
|-------------------------------|------|-------|
| Chloride, Cl | 4520 | 127.5 |
| Sulfate, So ₄ | 1227 | 25.6 |
| Carbonate, CO ₃ | 1830 | 30 |
| Bicarbonate, HCO ₃ | | |
| | | |
| | | |
| | | |

Total Dissolved Solids (calc.)

11735

Iron, Fe (total)

Sulfide, as H₂S

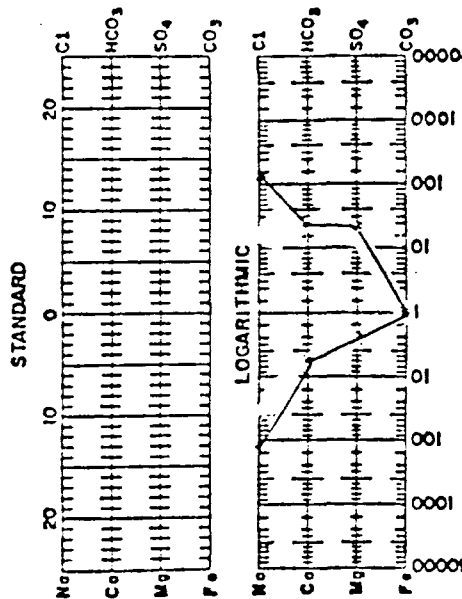
REMARKS & RECOMMENDATIONS:

Ans: Jim Binger
SAMPLE HEAVILY DISCOLORED

| | | | |
|---------------|-----------|---------------|-------------|
| Date Received | Preserved | Date Analyzed | Analyzed By |
| 1-24-91 | | 1-24-91 | MLL |



TECH, Inc.
333 East Main
Farmingington
New Mexico
87401
505/327-3311



APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: Amoco Production Company
Address: P.O. Box 800 Denver CO 80201
Contact party: Brocke Bell Phone: (303) 830-5341
- 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: Brooke S. Bell Title: Sr. Petroleum Engineer
Signature: Brooke S. Bell Date: 9/14/90
- XV. 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.

Pritchard SWD No. 1

III. A. See Injection Well Data Sheet

- B.1. Names of injection formations are Morrison, Bluff, and Entrada.

(No field or pool name for these formations.)

2. The injection intervals of 7500' to 8400' will be selected from logs run at total depth. Intervals will be perforated with 4 spf.
3. This well will be drilled for the purpose of water disposal.
4. No remedial cement work is anticipated.
5. The Dakota formation, top 7280', is the next higher formation known to produce gas in this area; there is no known lower oil or gas producing formation.

VI. No wells within the area of review penetrate the proposed injection horizon.

- VII. 1. Rate of disposal will be determined by a step rate injection test. The primary use of the facility will be for disposal of produced water from area Fruitland coal development wells. The amount of water to be injected will depend on this development.
2. The proposed injection system will be designed as a closed system.
 3. Maximum injection pressure will be determined by a step rate injection test. Average injection pressure will be kept below this maximum pressure.
 4. Disposal water will be produced from area Fruitland coal wells. Below are water analyses representative of the water which will be disposed of in the subject well.

| | Na | Ca | Mg | K | Cl | HCO3 | SO4 | CO3 | TDS |
|-----------------|------|----|----|----|------|-------|-----|-----|-------|
| Florance D-1 | 6350 | 20 | 47 | - | 2609 | 11578 | 0 | 528 | 21150 |
| Florance K-3 | 6430 | 80 | 15 | 10 | 1560 | 14700 | 0 | 0 | 22800 |
| Riddle B-1 | 7121 | 52 | 53 | - | 1705 | 16378 | 0 | 0 | 25300 |
| Schwerdtfeger 1 | 7484 | 32 | 44 | - | 994 | 18544 | 0 | 0 | 27100 |

Pritchard SWD No. 1

Compatibility - Attached is a copy of the results of an Amoco scaling tendency program which supports the source water is compatible with the injection zone water.

5. Attached are analyses of water samples from the Blackwood Nichols NEBU # 501, NW 1/4, Section 20, T30N, R7W, Rio Arriba County, New Mexico.

VIII. The closest overlying aquifers are the Ojo Alamo, Animas, San Jose, and Nacimiento. The Ojo Alamo should be encountered in this well from 1600' to 1710'. There are no known aquifers below the Entrada.

The proposed injection zones are the sandy and porous portions of the Morrison, Bluff, and Entrada formations. At the proposed Pritchard SWD No. 1 location the zones could be described as follows:

Morrison - light gray to gray, fine grained to medium grained, well rounded and slightly calcareous sandstones. Individual sandstone bodies are expected to be 50' thick separated by shales and siltstones. Some sandstones may be slightly arkosic, but generally are quartzitic with some friable sands. Overall depth is estimated at 7529' with overlying unit being Burro Canyon and the underlying unit being type Bluff member. A possible thickness of 400' sand is anticipated.

Bluff - light red to pink to gray, fine grained to medium grained sandstones. Clean, slightly friable, sorted. Individual sandstones are expected to be 10' to 20' thick and separated by shales and siltstones. Overall depth of zone is estimated at 7929' with approximately 300' of porous sandstone. Rests on top of Todilto.

Entrada - gray to white, hard, fine to medium grained sandstone. Well sorted and well rounded. Depth of zone is estimated at 8377' with the upper 250' being porous sandstone. Rests on Chinle.

- IX. Stimulation will consist of perforating selected porous intervals in the Morrison, Bluff, and Entrada. These intervals will be stimulated using a sand water frac treatment. Details will be provided to the District NMOCD office prior to stimulation.

Pritchard SWD No.1

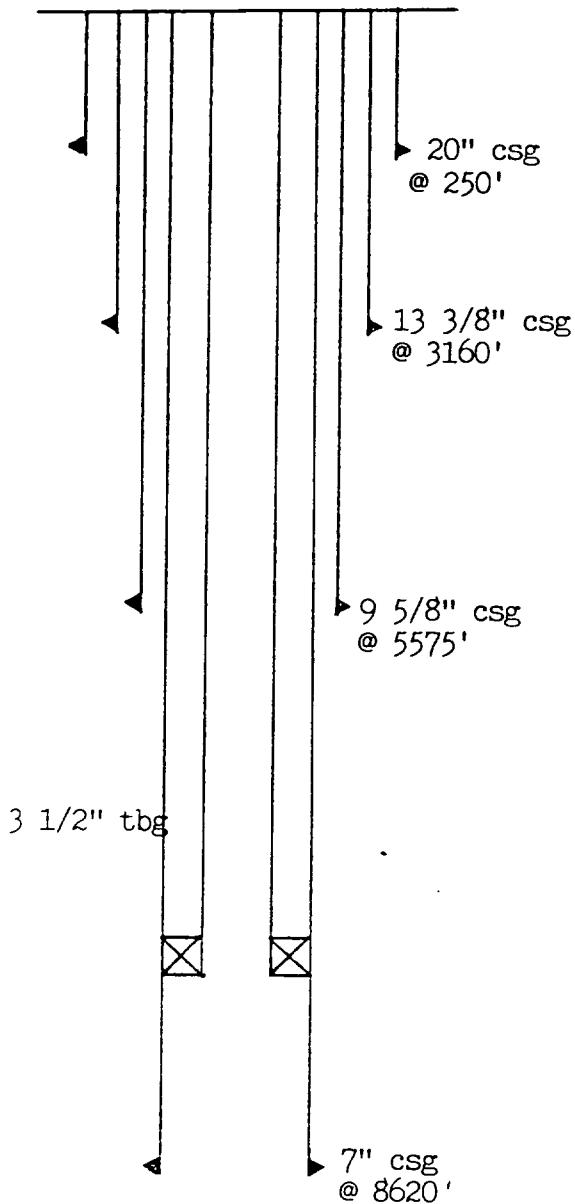
- X. Test information and logs will be provided to the District NMOCD office as available.
- XI. A search of records at the State Engineers Office shows no fresh water wells permitted within a one-mile radius of the proposed location. In addition, a field search of the surrounding area revealed no fresh water wells.
- XII. I hereby certify that I have examined available geologic and engineering data and can find no evidence of connection between the disposal zone and underground drinking water sources.
- 9/14/90
Date
- Brooke S. Bell
Brooke S. Bell
Sr Petroleum Engineer
- XIII. Proof of notice is attached. Copies of the executed receipts for certified mail will be forwarded once Amoco receives the receipts from the postal service. Find attached a copy of the Public Notice published in the local newspaper.

INJECTION WELL DATA SHEET

Amoco Production Company

Pritchard SWD

| | | | | |
|-----------------------------|----------------------|-------------|----------|-------|
| Operator 1 | 615' FNL X 1840' FWL | Lease 34 | 31N | 9W |
| Well No. | Footage Location | Section | Township | Range |
| San Juan County, New Mexico | | | | |

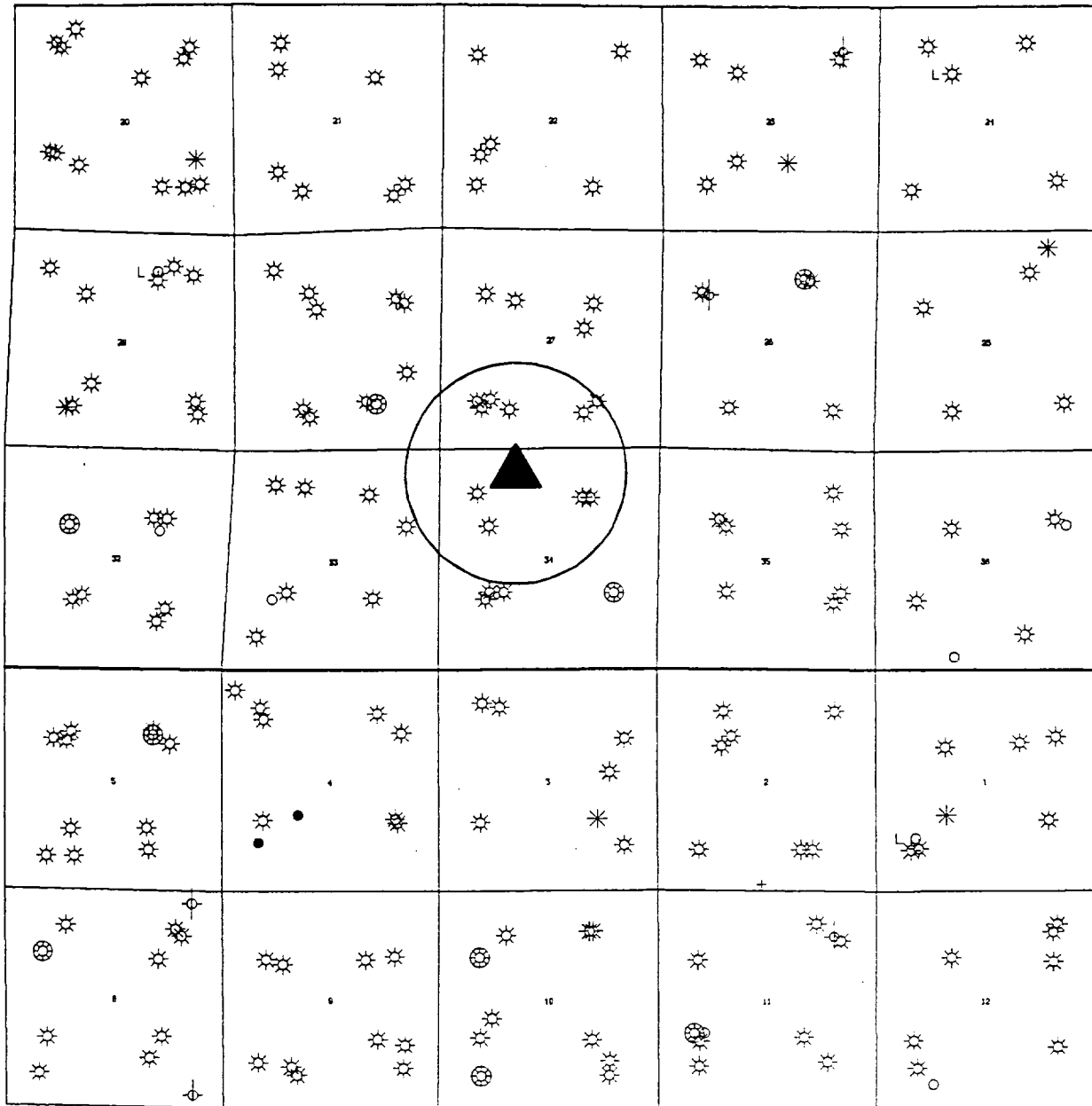
SchematicTabular DataSurface CasingSize 20 " Cemented with 500 sx.TOC Surface feet determined by circulationHole size 26"Intermediate CasingSize 13 3/8 " Cemented with 1700 sx.TOC surface feet determined by circulationHole size 17 1/2Long String Intermediate CasingSize 9 5/8 " Cemented with 1400 sx.TOC 2800 feet determined by bond logHole size 12 1/4"Total depth 5575'Injection interval
(will perforate selected intervals)7500 feet to 8400 feetLiner Long StringSize 7 " Cemented with 700 sx.TOC 5000 feet determined by bond logHole size 8 1/2"Total depth 8620'

Tubing size 3 1/2" lined with plastic set in a
 Baker Inverted Lok-Set (material)
 (brand and model) packer at 7450 (approx) feet
 (or describe any other casing-tubing seal).

Other Data

- Name of the injection formation Morrison, Bluff, and Entrada
- Name of Field or Pool (if applicable) NA
- Is this a new well drilled for injection? ☒ Yes ☐ No
 If no, for what purpose was the well originally drilled? _____
- Has the well ever been perforated in any other zone(s)? List all such intervals and give plugging detail (sacks or 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. 2600' - Fruitland, 2912' - Pictured Cliffs, 4680' - Mesaverde, 7280' - Dakota.

R 9 W



T
31
N

T
30
N

AMOCO PRODUCTION COMPANY
Sec 34-T31N-R9W
San Juan County
New Mexico
Scale: 2640 Ft/Inch Sept 11, 1990

4. SCALE PREDICTIONS, MIXTURE NO. 1: 90.0 PERCENT FRUITLAND
5.0 PERCENT ENTRADA
5.0 PERCENT MORRISON

ATTACHMENT VII

CALCULATED COMPOSITION OF MIXTURE NO. 1 IN MG/L:

(NA) = 4810. (CL) = 2423.
(CA) = 136. (SO4) = 192.
(MG) = 31. (HCO3) = 9697.
(BA) = 0. (CO3) = 0.
(SR) = 0. PH = 5.3

MOLAL IONIC STRENGTH = 0.229
SPECIFIC GRAVITY = 1.012

SCALING TENDENCIES(MG/L):

| TEMP(F) | P(PST) | CO2(PST) | CASO4 | BASO4 | SRSO4 | CACO3 |
|---------|--------|----------|--------|-------|-------|-------|
| 80. | 4000.0 | 0.000 | -4515. | 0. | -335. | 292. |
| 110. | 4000.0 | 0.000 | -3342. | -1. | -354. | 301. |
| 140. | 4000.0 | 0.000 | -2544. | -1. | -297. | 309. |
| 170. | 4000.0 | 0.000 | -1964. | -1. | -141. | 315. |
| 200. | 4000.0 | 0.000 | -1521. | -1. | -82. | 321. |

SCALE INDEX = ANALYZED CONCENTRATION - EQUILIBRIUM SOLUBILITY

A POSITIVE SCALE INDEX INDICATES SCALE PRECIPITATION CAN OCCUR WITH
THE MAGNITUDE OF THE SCALE INDEX INDICATING THE MAXIMUM AMOUNT WHICH
COULD PRECIPITATE. A NEGATIVE SCALE INDEX INDICATES THE WATER IS
UNSATURATED AND NO SCALE PRECIPITATION WILL OCCUR.

75 SUITE STREET

PO BOX 2605

DURANGO, CO 81302

(303) 247-4220

ATTEN: LL CLARK

PO BOX 1237

DURANGO, CO 81302

(303) 247-0728

DATE SAMPLED: 8/1/88

WELL NAME: NEBU UNIT 501

LOCATION:

FORMATION: ENTRADA WATER

SAMPLED FROM:

WELL ON/OFF:

ATTACHMENT VII 5.

CDS ID #: 1119

| CONSTITUENT | | ppm | epm |
|-------------|--------------|------|-------|
| Sodium | Na + | 4760 | 207.1 |
| Potassium | K + | 169 | 4.3 |
| Calcium | Ca ++ | 1310 | 65.4 |
| Magnesium | Mg ++ | 29.4 | 2.4 |
| Iron Total | Fe++ & Fe+++ | 164 | 8.0 |

Item 2A
SWD-339

| | | |
|--------------------|--------|----------|
| POSITIVE SUB-TOTAL | 6432.4 | 287.9779 |
|--------------------|--------|----------|

| | | | |
|-------------|-------|------|-------|
| Chloride | Cl - | 8280 | 233.5 |
| Carbonate | CO3 = | 0 | 0.0 |
| Bicarbonate | HCO3- | 152 | 2.5 |
| Hydroxide | OH - | 0 | 0.0 |
| Sulfate | SO4 = | 2100 | 43.7 |

| | | |
|--------------------|-------|-----------|
| NEGATIVE SUB-TOTAL | 10532 | 279.70728 |
|--------------------|-------|-----------|

| | |
|------------------------|--------------|
| Total Dissolved Solids | 19000 ppm. |
| pH | 5.07 units |
| Specific Gravity | 1.01 @ 73 F. |
| Resistivity | 45 ohm-cm |

APPROVED BY:

DR. JOE BOWDEN, DIRECTOR

This Laboratory report may not be published or used for advertising or in connection with advertising of any kind without prior written permission from CDS Laboratories.

Results are based on analysis made at the time samples are received at the laboratory.

75 SUTILE STREET
PO BOX 2605
DURANGO, CO 81302
(303) 247-4220

ATTEN: J. CLARK
PO BOX 1237
DURANGO, CO 81302
(303) 247-0728

DATE SAMPLED: 8/1/88
WELL NAME: NE20 UNIT 501
LOCATION:
FORMATION: MORRISON PERFS.
SAMPLED FROM:
WELL ON/OFF:

CDS ID #: 1120

| CONSTITUENT | | ppm | ppm |
|-------------|--------------|-------|-------|
| Sodium | Na + | 10600 | 461.1 |
| Potassium | K + | 1810 | 46.3 |
| Calcium | Ca ++ | 685 | 34.2 |
| Magnesium | Mg ++ | 65.9 | 5.4 |
| Iron Total | Fe++ & Fe+++ | 230 | 12.4 |

Item 3A
SWD-339

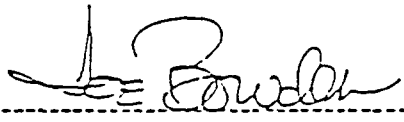
POSITIVE SUB-TOTAL 13390.9 557.3565

| | | | |
|-------------|-------|-------|-------|
| Chloride | Cl - | 18200 | 513.2 |
| Carbonate | CO3 = | 0 | 0.0 |
| Bicarbonate | HCO3- | 537 | 8.8 |
| Hydroxide | OH - | 0 | 0.0 |
| Sulfate | SO4 = | 1750 | 36.4 |

NEGATIVE SUB-TOTAL 20487 558.47643

Total Dissolved Solids 35100 ppm
pH 6.71 units
Specific Gravity 1.023 @ 73 F.
Resistivity 24 ohm-cm

APPROVED BY:


DR. JOE BOWDEN, DIRECTOR

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Results are based on analysis made at the time samples are received at the laboratory.

Gorbachev if he were Soviet leader.

During the question-and-answer

session at Moscow State, Reagan also said he believes "Germany has rejoined the civilized world" and will not repeat Nazi atrocities.

Reagan, in the Soviet Union at Gorbachev's invitation, said, "We should be teaching our students the languages of each others' countries so that we can really cement the friendship."

"If young people like you, in the world, could get to know each other, there would never be another war," he said in the conference room of the university's mammoth administration building.

Thatcher proposes code

PRAGUE, Czechoslovakia (AP) — In a speech to Parliament today, British Prime Minister Margaret Thatcher proposed that a 35-nation summit this fall adopt a universal code of rights for Europe and North America.

She also urged that the 12-nation European Community offer full membership to Czechoslovakia and Eastern Europe's other new democracies as soon as they have introduced Western-style economies.

Mrs. Thatcher also apologized for the 1938 Munich Treaty, in which Britain endorsed Adolf Hitler's division of this Central European nation.

"We failed you in 1938, when a disastrous policy of appeasement allowed Hitler to extinguish your independence," she said.

M&Ms yanked

HONG KONG (AP) — Authorities ordered all packets of M&Ms candy withdrawn from Hong Kong stores today after an anonymous letter claimed one bag of the candy had been poisoned to punish the U.S. manufacturer for co-sponsoring the Asian Games in Beijing.

The letter, delivered to several newspapers late Monday, says one packet of M&Ms had been laced with sodium cyanide, a deadly poison.

The letter condemns Mars, Inc. of Hackettstown, N.J., which makes M&Ms, for sponsoring the games, which open in Beijing on Saturday.

It criticizes China's Communist leaders for their bloody crackdown on a movement for democracy in China in June 1989. Hundreds of unarmed civilians were killed when the military cleared central Beijing of protesters.

101

Notice

Notice is hereby given that Amoco Production Company, 200 Amoco Court, Farmington, New Mexico 87401, 505-326-9200, Attn: Buddy Shaw, intends to drill the Riddle SWD No. 1 for use as a water disposal well. Application will be filed with the New Mexico Oil Conservation Division.

Riddle SWD No. 1 will be located in the SE 1/4 NE 1/4 of Section 18, Township 30 North, Range 9 West, N.M.P.M. The well will be drilled to a total depth of 8410 and the injection zone will be in the Morrison, Bluff, and Entrada formations. Rate of disposal will be determined by a step-rate injection test.

Any persons, firm, association, or corporation, of the United States of America, deeming that the granting of the above application will impair or be detrimental to their water rights may protest in writing the proposal set forth in said application. The protest shall set forth in writing all protestant's reasons why the application should not be approved and must be filed with the Oil and Gas Conservation Division, P.O. Box 2086, Santa Fe, New Mexico 87501, within 15 days of the date of the last publication of this notice.

Legal No. 26476 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, September 18, 1990.

Notice

Notice is hereby given that Amoco Production Company, 200 Amoco Court, Farmington, New Mexico 87401, 505-326-9200, Attn: Buddy Shaw, intends to drill the Florence SWD No. 2 for use as a water disposal well. Application will be filed with the New Mexico Oil Conservation Division.

Florence SWD No. 2 will be located in the NE 1/4 NW 1/4 of Section 11, Township 30 North, Range 9 West, N.M.P.M. The well will be drilled to a total depth of 8600 and the injection zone will be in the Morrison, Bluff, and Entrada formations. Rate of disposal will be determined by a step-rate injection test.

Any persons, firm, association, or corporation, of the United States of America, deeming that the granting of the above application will impair or be detrimental to their water rights may protest in writing the proposal set forth in said application. The protest shall set forth in writing all protestant's reasons why the application should not be approved and must be filed with the Oil and Gas Conservation Division, P.O. Box 2086, Santa Fe, New Mexico 87501, within 15 days of the date of last publication of this notice.

Legal No. 26476 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, September 18, 1990.

LEGAL NOTICE

Meridian Oil Inc. on behalf of Southland Royalty Company, hereby gives notice to the public that under the provisions of the Natural Gas Policy Act of 1978 (NGPA) it is filing applications for "new Onshore Production and High Cost-Coal Seam Gas" determinations (Section 105 and 107) for the following wells located in San Juan County, New Mexico:

Grewer #101, NE 1/4 of SW 1/4 of Section 7, T. 31N, R. 11W, East Com #105, NE

101

Legal

Notice

Notice is hereby given that Amoco Production Company, 200 Amoco Court, Farmington, New Mexico 87401, 505-327-9200, Attn: Buddy Shaw, intends to drill the Pritchard SWD No. 1 for use as a water disposal well. Application will be filed with the New Mexico Oil Conservation Division.

Pritchard SWD No. 1 will be located in the NE 1/4 NW 1/4 of Section 34, Township 31 North, Range 9 West, N.M.P.M. The well will be drilled to a total depth of 8620 and the injection zone will be in the Morrison, Bluff, and Entrada formations. Rate of disposal will be determined by a step-rate injection test.

Any persons, firm, association, or corporation, of the United States of America, deeming that the granting of the above application will impair or be detrimental to their water rights may protest in writing the proposal set forth in said application. The protest shall set forth in writing all protestant's reasons why the application should not be approved and must be filed with the Oil and Gas Conservation Division.

Application will be filed with the New Mexico Oil Conservation Division, P.O. Box 2086, Santa Fe, New Mexico 87501, within 15 days of the date of the last publication of this notice.

Legal No. 26477 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, September 18, 1990.

LEGAL NOTICE

Meridian Oil, Inc. hereby gives notice to the public that under the provisions of the Natural Gas Policy Act of 1978 (NGPA) it is filing an application for "new Onshore Production and High Cost-Coal Seam Gas" determinations (Section 105 and 107) for the following wells located in San Juan County, New Mexico:

Lewis Park #100, SW 1/4 of NE 1/4 of Section 13, T. 31N, R. 6W

Written comments by the public will be accepted by District Manager, Bureau of Land Management, 435 Montano Road, Albuquerque, NM, for a 15-day period beyond the date the BLM determines the application to be complete.

Legal No. 26438 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, September 18, 1990.



Amoco Production Company

Southern Division
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

T. D. Autry
Division Production Manager

September 14, 1990

(See Attached Addressee List)

File: KJK-132-WF

Proposed Water Disposal Well
Pritchard SWD No. 1

Dear Sir:

This is to advise you that Amoco Production Company is requesting approval from the Division Director of the New Mexico Oil Conservation Division to drill a water disposal well:

Pritchard SWD No. 1
615' FNL x 1840' FWL
Section 34, T31N, R9W
San Juan County, New Mexico

Find attached a copy of the application that is being submitted. Please note that you have 15 days from the date this application is received to file any objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, NM 87501.

Very truly yours,

T.D. Autry /kjk

Attachment

Well Name: Pritchard SWD #1
Location: NE 1/4 NW 1/4 - 34-T31N-R9W
San Juan County, New Mexico

Parties to be Noticed:

| <u>Land</u> | <u>Surface Owner</u> | <u>Working Interest</u> |
|----------------------|---|---|
| <u>T31N-R9W</u> | | |
| Sec 27: S 1/2 | Dewey Sexton County Road 2930 Aztec, NM 87410 | Amoco Production Company P. O. Box 800 Denver, CO 80201 Conoco Inc. 3817 Northwest Expressway Oklahoma City, OK 73112-1400 |
| Sec 28: N 1/2 SE 1/4 | Dewey Sexton | El Paso Production Company c/o Meridian Oil Inc. P. O. Box 4289 Farmington, NM 87499-4289 Tom Bolack 3901 N. Bloomfield Highway Farmington, NM 87401 |
| Sec 28: S 1/2 SE 1/4 | U.S.A. | El Paso Production Company Tom Bolack |
| Sec 33: NE 1/4 | U.S.A. | Union Texas Petroleum Corp. P. O. Box 2120 Houston, TX 77252 ORYX Energy Company P. O. Box 2880 Dallas, TX 75221 Anderson Pritchard Oil Co. Liberty Bank Building Oklahoma City, OK Texas Pacific Oil Company 1700 One Main Place Dallas, TX 75221 |
| Sec 34: All | U.S.A. | Amoco Production Company Conoco Inc. |

Receipts for Certified
Mail, page 4

SENDER: Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery
†(Extra charge)† †(Extra charge)†

3. Article Addressed to:
UNION TEXAS PETROLEUM CORP.
P.O. BOX 2120
HOUSTON, TX. 77252

4. Article Number
P533509961

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED**.

5. Signature - Addressee
X

6. Signature - Agent
X *B. Pritchard*

7. Date of Delivery
SEP 25 1990

8. Addressee's Address (ONLY if requested and fee paid)
1102

PS Form 3811, Mar. 1987

* U.S.G.P.O. 1987-175-265

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1
Note: Anderson
Pritchard Oil Co.
became
Union Texas Petroleum
Corp.

SENDER: Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery
†(Extra charge)† †(Extra charge)†

3. Article Addressed to:
ORYX ENERGY CO.
P.O. BOX 2880
DALLAS, TX 75221

4. Article Number
P533509962

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED**.

5. Signature - Addressee
X

6. Signature - Agent
X *B. Pritchard*

7. Date of Delivery
SEP 25 1990

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, Mar. 1987

* U.S.G.P.O. 1987-175-265

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1
Note: Texas Pacific
Oil Company
became Sun Co Inc.
then ORYX

OCT 16 '90 10:49 AMOCO PROD DENY

Receipts for Certified
Mail, page 5

SENDER: Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery
↑(Extra charge)↑

3. Article Addressed to:
DEWEY SEXTON
COUNTY ROAD 2930
AZTEC, NM 87410

4. Article Number
PS33 509 963

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X

6. Signature - Agent
X *Wm Sexton*

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)
44
1990
P.O. 3.

PS Form 3811, Mar. 1987 * U.S.G.P.O. 1987-178-268 DOMESTIC RETURN RECEIPT

Pritchard SWD No.1

SENDER: Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery
↑(Extra charge)↑

3. Article Addressed to:
TOM BOLACK
3901 N. BLOOMFIELD HWY.
FARMINGTON, NM 87401

4. Article Number
PS33 509 960

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X *Tom Sullivan*

6. Signature - Agent
X *9/24/90*

7. Date of Delivery
9-24-90

8. Addressee's Address (ONLY if requested and fee paid)
FE

Form 3811, Mar. 1987 * U.S.G.P.O. 1987-178-268 DOMESTIC RETURN RECEIPT

Pritchard SWD No.1

Receipts for Certified
Mail, page 6

SENDER: Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery
†(Extra charge)† †(Extra charge)†

| | |
|--|---|
| 3. Article Addressed to: <i>Total Mine time Corp. P.O. Box 4326 Houston TX 77210-4326</i> | 4. Article Number <i>1533 509 964</i> |
| | Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail |
| 5. Signature - Addressee <i>X</i> | Always obtain signature of addressee or agent and DATE DELIVERED . |
| 6. Signature - Agent <i>X [Signature]</i> | 8. Addressee's Address (ONLY if requested and fee paid) |
| 7. Date of Delivery <i>SEP 25 1990</i> | |

PS Form 3811, Mar. 1987

+ U.S.G.P.O. 1987-178-288

DOMESTIC RETURN RECEIPT

} Florance SWD No.2
Riddle SWD No.1

9.2

| | |
|--|---|
| SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4. | |
| Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested. 1. <input checked="" type="checkbox"/> Show to whom delivered, date, and addressee's address. 2. <input type="checkbox"/> Restricted Delivery ↑(Extra charge)† ↑(Extra charge)† | |
| 3. Article Addressed to: | 4. Article Number |
| Oil Conservation Div 310 Old Santa Fe Trl Santa Fe N.M. 9750 | D533 509 954 |
| 5. Signature - Addressee | Type of Service: <input checked="" type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> COD <input type="checkbox"/> Express Mail |
| X | Always obtain signature of addressee or agent and DELIVERED . |
| 6. Signature - Agent | 8. Addressee's Address ONLY if requested and feasible |
| X | USPO 1990 FEB 2 NM |
| 7. Date of Delivery | |
| | |

PS Form 3811, Mar. 1987

* U.S.G.P.O. 1987-178-380

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1
Florance SWD No.2
Riddle SWD No.1

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery
 †(Extra charge)† †(Extra charge)†

| | |
|---|---|
| 3. Article Addressed to: Coroco Inc 3817 NW Expressway OKlahoma City, 73112-1400 OK | 4. Article Number P 533-509-953 Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail |
| 5. Signature - Addressee X [Signature] | Always obtain signature of addressee or agent and RATE DELIVERED. |
| 6. Signature - Agent X [Signature] 7. Date of Delivery 09-25-90 | 8. Addressee's Address (ONLY if requested and fee paid) SHALE |

PS Form 3811, Mar. 1987

U.S.G.P.O. 1967-173-204

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1
Florance SWD No.2
Riddle SWD No.1

OCT 15 1990 12:47 PM U.S. MAIL

Receipts for Certified
Mail, page 2

SENDER: Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery
†(Extra charge)† †(Extra charge)†

| | |
|--|--|
| 3. Article Addressed to: Oil Conservation Div. 1000 Rio Brazos Rd Aztec NM 87410 | 4. Article Number PS33 509 957 Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input checked="" type="checkbox"/> Express Mail Always obtain signature of addressee or agent and DATE DELIVERED. |
| 5. Signature - Addressee <input checked="" type="checkbox"/> <i>[Signature]</i> | 8. Addressee's Address (ONLY if requested and fee paid) |
| 6. Signature - Agent <input checked="" type="checkbox"/> | |
| 7. Date of Delivery 9/24/90 | |

PS Form 3811, Mar. 1987 * U.S.G.P.O. 1987-178-288 DOMESTIC RETURN RECEIPT

Pritchard SWD No.1
Florance SWD No.2
Riddle SWD No.1

SENDER: Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery
†(Extra charge)† †(Extra charge)†

| | |
|---|--|
| 3. Article Addressed to: El Paso Prod. Co c/o Meridian Oil Inc PO Box 4289 Farmington NM 87499 | 4. Article Number PS33 509 956 Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input checked="" type="checkbox"/> Express Mail Always obtain signature of addressee or agent and DATE DELIVERED. |
| 5. Signature - Addressee <input checked="" type="checkbox"/> | 8. Addressee's Address (ONLY if requested and fee paid) |
| 6. Signature - Agent <input checked="" type="checkbox"/> <i>[Signature]</i> | |
| 7. Date of Delivery 9-24-90 | |

PS Form 3811, Mar. 1987 * U.S.G.P.O. 1987-178-288 DOMESTIC RETURN RECEIPT

Pritchard SWD No.1
Florance SWD No.2
Riddle SWD No.1

Receipts for Certified
Mail, page 3

● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery
(Extra charge) (Extra charge)

| | |
|--|--|
| 3. Article Addressed to: <i>Bureau of Land Management 1235 La Plata Hwy Farmington NM Bill Blackard 87491</i> | 4. Article Number <i>PS33 509 955</i> Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail Always obtain signature of addressee or agent and DATE DELIVERED. |
| 5. Signature - Addressee <i>X D. Crow</i> | 8. Addressee's Address (ONLY if requested and fee paid) <i>Same</i> |
| 6. Signature - Agent <i>X</i> | |
| 7. Date of Delivery <i>9-24-90</i> | |

PS Form 3811, Mar. 1987

★ U.S.G.P.O. 1987-178-268

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1
Florance SWD No.2
Riddle SWD No.1

● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery
(Extra charge) (Extra charge)

| | |
|--|--|
| 3. Article Addressed to: <i>Bill Blackard 87491</i> | 4. Article Number <i>PS33 509 955</i> Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail Always obtain signature of addressee or agent and DATE DELIVERED. |
| 5. Signature - Addressee <i>X Mike</i> | 8. Addressee's Address (ONLY if requested and fee paid) <i>Same</i> |
| 6. Signature - Agent <i>X</i> | |
| 7. Date of Delivery <i>9-24-90</i> | |

PS Form 3811, Mar. 1987

Riddle SWD No.1
(Post Office damaged receipt)



T. D. Autry
Division Production Manager

October 10, 1990

New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504
Attention: David Catanach

File: KJK-141-WF

New Mexico UIC Permit Applications
Florance SWD No.1, Pritchard SWD No. 1, Riddle SWD No. 1
T30N and T31N, R9W, San Juan County

You are in receipt of three underground injection control (UIC) permit applications for the subject wells. The applications outline Amoco's intent to complete the Morrison, Bluff and Entrada sandstones for the purpose of water disposal. As a result of a recent discussion with Tom Hawkins with Meridian Oil, Amoco offers the following information and in exchange Meridian will not object to the approval of the UIC permits.

Amoco intends to complete the Entrada, Bluff and Morrison sandstones that are at least 100 feet below the base of the Dakota Formation. The base of the Dakota Formation will be picked from open hole wireline logs. The pick for the base of the Dakota will be the stratigraphic equivalent to that identified by Meridian in their Pump Canyon SWD No. 1 located in Section 7, T30N, R9W. Meridian has submitted to the NMOCD a depth of 7388 feet for a ground level elevation of 5972 feet above sea level as the base of the Dakota or top of the Morrison. Amoco will review with Meridian the open hole logs and the chosen depth for the base of the Dakota prior to completing Morrison sandstones for the purpose of water disposal.

Meridian had no other objections to the approval of the pending UIC permit applications.

Please contact Brooke Bell in Denver at (303) 830-5341 should you have any questions.

T.D. Autry /kjk

cc: Meridian Oil
3535 East 30th Street
Farmington, NM 87499
Attention: Tom Hawkins

OIL CONSERVATION

NEW MEXICO
DIVISION

RECEIVED

'90 OCT 15 AM 9 01

Amoco Production Company

Southern Division
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040



STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

AZTEC DISTRICT OFFICE

RECEIVED

GARREY CAPRUTHERS
GOVERNOR

'90 OCT 5 AM 9 30

10000 HAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-0170

Date: 10-3-90

Attn: D. Catnach

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

Re: Proposed MC _____
Proposed DMC _____
Proposed NSL _____
Proposed SWD X _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated 9-24-90
for the Amoco Production Co. Rutledge SED #1
Operator Lease & Well No.

C-34-3/N-90 and my recommendations are as follows:
Unit, S-T-R

Approval

Recommend a Division approved cement bond log on any
pipe except surface casing before an intermediate
casing string is set in place.

Yours truly,

David Catnach