



ARCO Permian
600 North Marienfeld
Midland TX 79701-4373
Post Office Box 1610
Midland TX 79702-1610
Telephone 915 688 5570

Elizabeth A. Casbeer
Regulatory/Compliance Analyst

SWD

4/28/98

710

13

April 9, 1998

New Mexico Oil Conservation Division
ATTN: David Catanach
2040 S. Pacheco Street
Santa Fe, New Mexico 87505

RE: Application for Authorization to Inject
Washington 34 Well No. 1-SWD
Section 34, T17S, R28E
Eddy Co., NM

Mr. Catanach:

ARCO Permian respectfully requests approval for the enclosed Application for Authorization to Inject (Form C-108) for the Washington 34 Well No. 1-SWD, located in Section 34, T17S, R28E, Eddy County, New Mexico. This wellbore was formerly the Galileo 34 State Com No. 1. Enclosed are the required attachments.

If you have any questions, please contact me at 915/688-5570. Please send the permit to:

ARCO Permian
ATTN: Elizabeth A. Casbeer, Room 959-54
P. O. Box 1610
Midland, TX 79702

Yours very truly,

Elizabeth A. Casbeer
Regulatory Compliance Analyst

xc: Larry Henson - EUN
Donald Knipe - 61323/MIO
Central Files - 41/MIO
R/C Files

| | | | | |
|------|----------|------------|----------|------|
| DATE | APPROVED | SUPERVISOR | LOCATION | TIME |
|------|----------|------------|----------|------|

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
 [DD-Directional Drilling] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling

☐ NSL ☐ NSP ☐ DD ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement

☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

[] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

[C] ☒ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO

U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I further verify that all applicable API Numbers are included. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Elizabeth A. Casbeer

Print or Type Name

Elizabeth A. Casbeer
Signature

Regulatory Compliance Analyst

Title

April 9, 1998

Date

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: ARCO PERMIAN Well: WASHINGTON '34' No. 1
Contact: ELIZABETH CASBER Title: REGULATORY Phone: 915-688-5570
DATE IN 4-13-98 RELEASE DATE 4-28-98 DATE OUT 5-22-98

Proposed Injection Application is for: ☐ WATERFLOOD ☐ Expansion ☐ Initial

Original Order: R- ☐ Secondary Recovery ☐ Pressure Maintenance

SENSITIVE AREAS

☒ SALT WATER DISPOSAL ☐ Commercial Well

☐ WIPR ☐ Capitan Reef

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

AREA of REVIEW WELLS

☒ Total # of AOR

☐ # of Plugged Wells

☐ Tabulation Complete

☐ Schematics of P & A's

☐ Cement Tops Adequate

☐ AOR Repair Required

INJECTION FORMATION

Injection Formation(s) WOLF CAMP / CISCO

Compatible Analysis YES

Source of Water or Injectate ARLA PRODUCTION

PROOF of NOTICE

☒ Copy of Legal Notice

☒ Information Printed Correctly

☒ Correct Operators

☒ Copies of Certified Mail Receipts

☒ Objection Received

☐ Set to Hearing _____ Date

NOTES:

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

COMMUNICATION WITH CONTACT PERSON:

| | | | | |
|--------------|-------------------------------------|---------------------------------|------------|----------------------------|
| 1st Contact: | <input type="checkbox"/> Telephoned | <input type="checkbox"/> Letter | _____ Date | Nature of Discussion _____ |
| 2nd Contact: | <input type="checkbox"/> Telephoned | <input type="checkbox"/> Letter | _____ Date | Nature of Discussion _____ |
| 3rd Contact: | <input type="checkbox"/> Telephoned | <input type="checkbox"/> Letter | _____ Date | Nature of Discussion _____ |

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: ARCO Permian
Address: PO Box 1610, Midland, TX 79702
Contact party: Elizabeth A. Casbeer Phone: (915) 688-5570
- 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: Elizabeth A. Casbeer Title: Regulatory Compliance Analyst
Signature: Elizabeth A. Casbeer Date: April 9, 1998
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. _____

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Form C-108
Application For Authorization To Inject
ARCO Permian, Operator
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API: 30-015-29344
Section 34, T17S, R28E, Eddy County, New Mexico

- I. The purpose of the well is as a disposal well for area Grayburg/San Andres produced water.
- II. Operator: ARCO Permian
P. O. Box 1610
Midland, Texas 79702-1610
Contact: Donald L. Knipe, P.E. (915) 688-5316
- III. Well Data: See Attachment A, B, and C.
- IV. This is not an expansion of an existing project.
- V. Map of wells and leases within 2 miles and 1/2 mile radius: See Attachment D.
- VI. Data on wells within 1/2 mile area of review: See Attachment E.
- VII.
 1. Proposed average daily injection volume: 10,000 BWPD
Proposed maximum daily injection volume: 10,000 BWPD
Attachment F
 2. This will be a closed system.
 3. Proposed average daily injection pressure: 1640 psi
Proposed maximum daily injection pressure: 1640 psi
Attachment F
 4. Sources of injection water will be produced water from area Grayburg/San Andres wells that are scheduled to be drilled in Section 33, T17S, R28E.
Attachment G
 5. Chlorides in all of the source well is expected to be similar to the water analysis in Attachment H.

- VIII. The proposed injection zone is the Wolfcamp interval 7378'-7780' and Cisco interval 8010'-9150'. The Wolfcamp is Permian age carbonate and the Cisco is Pennsylvanian age carbonate. Possible fresh drinking water zones overlie the proposed injection formations at depths to approximately 544'. No drinking water sources are found underlying the proposed injection zone.
- IX. The proposed injection interval may be acidized with 15% HCL acid and sand fractured as needed.
- X. All well logs and test data available have been previously submitted to the NMOCD. Once the well is recompleted, a copy of any additional logs run will be forwarded to the NMOCD.
- XI. One fresh water well exist within a mile of the proposed injection well. The well is owned by ARCO Permian in the NW/NW of Section 3, T18S, R28E. Attachment L.
- XII. The applicant has examined geological and engineering data and find there is no evidence of open faults or other hydrologic connection between the proposed disposal zone and any underground source of drinking water. Attachment I.
- XIII. Proof of Notice
- A. A copy of the application has been sent by certified mail to the surface owner and offset operators of leases within 1/2 mile (see list attached - Attachment J).
- B. A copy of the legal advertisement is attached (Attachment K). Proof of publication in an Eddy County newspaper will be forwarded once available.
- XIV. Certification: See signature on form C-108.

ARCO Permian
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API: 30-015-29344
1017' FSL & 1379' FWL (N)
Section 34, 17S, 28E
Eddy County, New Mexico

Attachment A

III. Well Data

Section A:

1. Lease Name: Washinton 34 No. 1-SWD

Location: 1017' FSL & 1379' FWL, Sec. 34, T17S, R28E, Eddy County, NM

2. Casing and Cement

EXISTING

| <u>Casing Size</u> | <u>Setting Depth</u> | <u>Sacks Cement</u> | <u>Hole Size</u> | <u>Top of Cement</u> |
|--------------------|----------------------|---------------------|------------------|----------------------|
| 13-3/8" | 535' | 600 | 17-1/2" | circ. to surface |
| 9-5/8" | 2556' | 925 | 12-1/4" | circ. to surface |
| 7" | 9723' | 575 | 8-3/4" | TOC @ 8600' by TS |

PROPOSED

| <u>Casing Size</u> | <u>Setting Depth</u> | <u>Sacks Cement</u> | <u>Hole Size</u> | <u>Top of Cement</u> |
|--------------------|----------------------|---------------------|------------------|----------------------|
| 13-3/8" | 535' | 600 | 17-1/2" | circ. to surface |
| 9-5/8" | 2556' | 925 | 12-1/4" | circ. to surface |
| 7" | 9723' | ±500 | 8-3/4" | circ. to surface |

NOTE: It is proposed to perforate 7" casing ±15' above current top of cement and circulate cement back to surface.

3. Tubing: 3-1/2", 9.3# internally plastic coated set at ±7200'.
4. Packer: Baker Lok-Set or Guiberson UNI-VI nickel plated or plastic coated set at ±7200'.

ARCO Permian
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API: 30-015-29344
1017' FSL & 1379' FWL (N)
Section 34, 17S, 28E
Eddy County, New Mexico

Attachment A-Continued

III. Well Data - Continued

Section B:

1. Injection Formation: Wolfcamp and Cisco

Field or Pool Name: Undesignated

2. Injection Interval:

| <u>Formation</u> | <u>Top</u> | <u>Porosity Interval</u> |
|------------------|------------|--------------------------|
| Wolfcamp | 7200' | 7378'-7780' |
| Cisco | 8000' | 8010'-9150' |

3. Original purpose of well: Drilled to test Morrow Formation.

4. Other perforated intervals, bridge plugs, cement plugs:

CIBP @ 9,258' w/35' cement on top
Cement Plug 10,080' - 10,250'

- 5 Next higher oil and gas zone: Abo (oil)
Next lower oil and gas zone: Morrow (gas)

See current and proposed wellbore schematic (Attachment B and C)

CURRENT WELLBORE SCHEMATIC

Galileo "34" State Com No. 1

13-3/8" 48# J-55 Casing
cmt'd w/ 600 sx cmt to surface
Shoe @ 535'

1017' FSL & 1379' FWL (N)
Sec. 34, T-17S, R-28-E
Eddy County, NM
API: 30-015-29344
Spudded 02\06\97
Completed 03\19\97 (T&A'd)

KB: 3675' GL: 3660'

9-5/8" 36# J-55 Casing
cmt'd w/ 925 sx cmt to surface
Shoe @ 2556'

ATTACHMENT B

7" 26/23# L-80/K-55 Casing
cmt'd w/ 575 sx cmt to 8600 by Temp Survey
Shoe @ 9723'

CIBP @ 9258' w/35' cmt on top
Top of plug @ 9223'

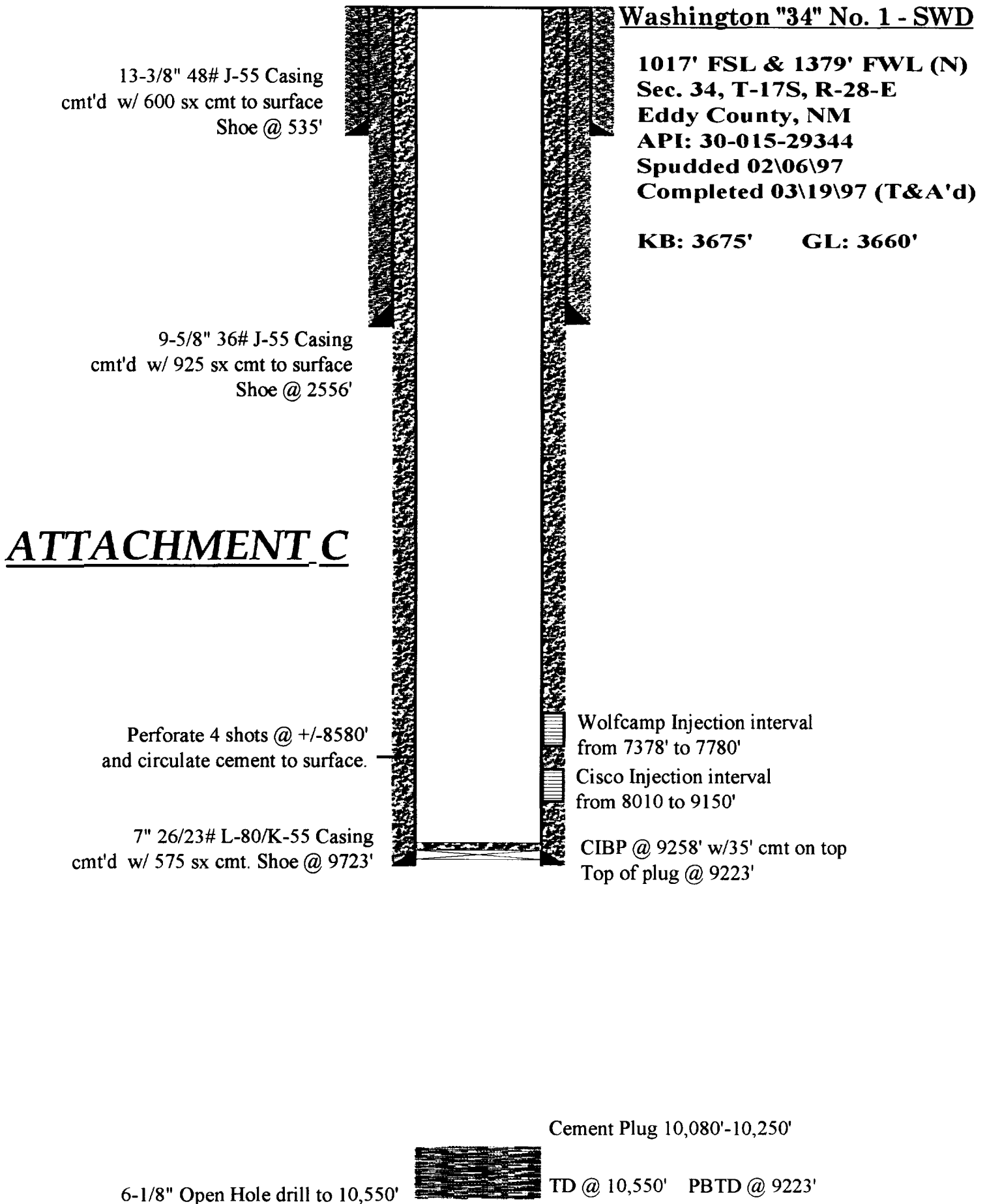
Cement Plug 10,080'-10,250'

6-1/8" Open Hole drill to 10,550'

TD @ 10,550' PBTD @ 9223'

DLK 01-20-98

SWD WELLBORE SCHEMATIC



ARCO Permian
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API: 30-015-29344
1017' FSL & 1379' FWL (N)
Section 34, 17S, 28E
Eddy County, New Mexico

Attachment E

VI. Data on wells within the 1/2 mile area of review:

The are no wells within 1/2 mile of the Washington 34 No. 1-SWD that penetrate the zones of injection.

ARCO Permian
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API: 30-015-29344
1017' FSL & 1379' FWL (N)
Section 34, 17S, 28E
Eddy County, New Mexico

Attachment F

Proposed Operation:

1. Plans are to inject 10,000 barrels of produced water per day.
2. The injection system will be a closed system.
3. The proposed injection pressure is 1640 psig.
4. The injection fluid will be Grayburg/San Andres produced water.
5. See attached water analysis taken from an offset operator's Grayburg/San Andres producing well. Attachment H.

ARCO Permian
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API: 30-015-29344
1017' FSL & 1379' FWL (N)
Section 34, 17S, 28E
Eddy County, New Mexico

Attachment G

VII. Item 4.

List of Proposed Produced Water Source Wells:

| | |
|----------------------------|-----------------------------|
| Washington 33 State No. 1 | Washington 33 State No. 16 |
| Washington 33 State No. 2 | Washington 33 State No. 17 |
| Washington 33 State No. 3 | Washington 33 State No. 18 |
| Washington 33 State No. 4 | Washington 33 State No. 19 |
| Washington 33 State No. 5 | Washington 33 State No. 20A |
| Washington 33 State No. 6 | Washington 33 State No. 21 |
| Washington 33 State No. 7 | Washington 33 State No. 22 |
| Washington 33 State No. 8 | Washington 33 State No. 23 |
| Washington 33 State No. 9 | Washington 33 State No. 24 |
| Washington 33 State No. 10 | Washington 33 State No. 25 |
| Washington 33 State No. 11 | Washington 33 State No. 26 |
| Washington 33 State No. 12 | Washington 33 State No. 27 |
| Washington 33 State No. 13 | Washington 33 State No. 28 |
| Washington 33 State No. 14 | Washington 33 State No. 29 |
| Washington 33 State No. 15 | Washington 33 State No. 30 |

ATTACHMENT H

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : Devon Energy
 Lease : West Red Lake Unit
 Well No.: Free-Water Knock-Out
 Salesman:

Sample Loc. :
 Formation : GRAYBURG - SAN ANDRES
 Date Analyzed: 17-June-1996

ANALYSIS

1. pH 6.820
 2. Specific Gravity 60/60 F. 1.091
 3. CaCO₃ Saturation Index @ 80 F. +0.731
 @ 140 F. +1.611

Dissolved Gasses

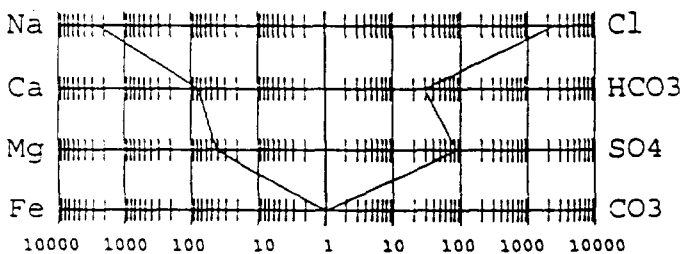
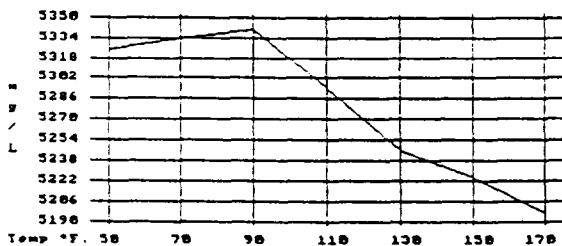
| | MG/L | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | 275 | | |
| 5. Carbon Dioxide | 200 | | |
| 6. Dissolved Oxygen | Not Determined | | |

Cations

| | | | |
|---------------------|---------------------|----------|----------|
| 7. Calcium (Ca++) | 1,503 | / 20.1 = | 74.78 |
| 8. Magnesium (Mg++) | 486 | / 12.2 = | 39.84 |
| 9. Sodium (Na+) | (Calculated) 55,071 | / 23.0 = | 2,394.39 |
| 10. Barium (Ba++) | Not Determined | | |

Anions

| | | | |
|--|------------|----------|----------|
| 11. Hydroxyl (OH ⁻) | 0 | / 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ⁼) | 0 | / 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁻) | 1,713 | / 61.1 = | 28.04 |
| 14. Sulfate (SO ₄ ⁼) | 4,100 | / 48.8 = | 84.02 |
| 15. Chloride (Cl ⁻) | 84,981 | / 35.5 = | 2,393.83 |
| 16. Total Dissolved Solids | 147,854 | | |
| 17. Total Iron (Fe) | 2 | / 18.2 = | 0.11 |
| 18. Total Hardness As CaCO ₃ | 5,755 | | |
| 19. Resistivity @ 75 F. (Calculated) | 0.042 /cm. | | |

LOGARITHMIC WATER PATTERN
*meq/L.Calcium Sulfate Solubility Profile

| COMPOUND | EQ. WT. | X | *meq/L = mg/L. |
|-------------------------------------|---------|----------|----------------|
| Ca (HCO ₃) ₂ | 81.04 | 28.04 | 2,272 |
| CaSO ₄ | 68.07 | 46.74 | 3,182 |
| CaCl ₂ | 55.50 | 0.00 | 0 |
| Mg (HCO ₃) ₂ | 73.17 | 0.00 | 0 |
| MgSO ₄ | 60.19 | 37.28 | 2,244 |
| MgCL ₂ | 47.62 | 2.56 | 122 |
| NaHCO ₃ | 84.00 | 0.00 | 0 |
| NaSO ₄ | 71.03 | 0.00 | 0 |
| NaCl | 58.46 | 2,391.27 | 139,794 |
| *Milli Equivalents per Liter | | | |

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

ARCO Permian
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API: 30-015-29344
1017' FSL & 1379' FWL (N)
Section 34, 17S, 28E
Eddy County, New Mexico

Attachment I

Geology and Lithology:

Injection zones are dolomite and limestone porosity zones within the Wolfcamp and Cisco formations. Specifically they are:

| <u>Formation</u> | <u>Top</u> | <u>Porosity Interval</u> |
|------------------|------------|--------------------------|
| Wolfcamp | 7200' | 7378'-7780' |
| Cisco | 8000' | 8010'-9150' |

Fresh Water Zones:

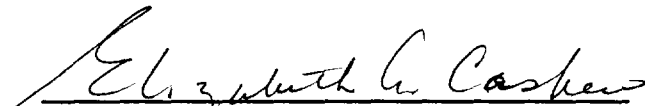
Base of near surface aquifer is at the top of the Yates Sand at 544'. No fresh water zones exist below the proposed injection interval.

STATE OF TEXAS

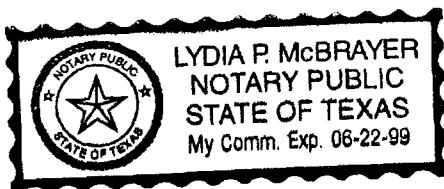
COUNTY OF MIDLAND

BEFORE ME, the undersigned authority on this day personally appeared Elizabeth A. Casbeer, an Regulatory Compliance Analyst with **ARCO Permian**, who being by me duly sworn, deposes and states that the persons listed on the foregoing attached list have been sent a copy on April 9, 1998, of the New Mexico Oil Conservation Division form C-108 entitled, "Application For Authorization To Inject" for the Washington 34 Well No. 1-SWD, located in Section 34, T17S, R28E, Eddy County New Mexico.

ARCO Permian


Elizabeth A. Casbeer

SUBSCRIBED AND SWORN TO before me on April 9, 1998, to certify which witness my hand and seal of office.




NOTARY PUBLIC, STATE OF TEXAS

ARCO Permian
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API: 30-015-29344
1017' FSL & 1379' FWL (N)
Section 34, 17S, 28E
Eddy County, New Mexico

Attachment J

XIII. Item A.

Proof of Notice

List of Surface Owners within 2 Miles:

State of New Mexico
P. O. Box 1148
Santa Fe, New Mexico 87504-1148

Bureau of Land Management
620 East Greene Street
Carlsbad, New Mexico 88220

Pulitzer Broadcasting Corporation
P. O. Box 25982
Albuquerque, New Mexico 87107

Bogle, Ltd.
P. O. Box 460
Dexter, New Mexico 88230

ARCO Permian
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API No. 30-015-29344
1017' FSL & 1379' FWL (N)
Section 34, T17S, R28E
Eddy County, New Mexico

Attachment K

XIII. Item B.

LEGAL NOTICE

ARCO PERMIAN, P. O. Box 1610, Midland, Texas 79702, has filed form C-108 (Application For Authorization To Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Washington 34 No. 1-SWD is located 1017' FSL, 1379' FWL (N), Section 34, Township 17 South, Range 28 East, Eddy County, New Mexico. Disposal water will be sourced from area wells producing from the Grayburg/San Andres formations. The disposal water will be injected into the Wolfcamp and Cisco formations at a depth of 7200'-9150', a maximum surface pressure of 1640 psi, and a maximum rate of 10,000 BWPD.

All interested parties opposing the action must file objections or requests for hearing with the Oil Conservation Division, 2040 S. Pacheco Street, Santa Fe, New Mexico 87505, within 15 days. Additional information can be obtained by contacting Elizabeth A. Casbeer, Regulatory Compliance Analyst, at P. O. Box 1610, Midland, Texas 79702, or (915) 688-5570.

Affidavit of Publication

No 18532

State of New Mexico,
County of Eddy, ss.

April 4, 1998

LEGAL NOTICE

ARCO PERMIAN, P.O. Box 1610, Midland, Texas 79702, has filed form C-108 (Application For Authorization To Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Washington 34 No. 1-SWD is located 1017' FSL, 1379' FWL (N), Section 34, Township 17 South, Range 28 East, Eddy County, New Mexico. Disposal water will be sourced from area wells producing from the Grayburg/San Andres formations. The disposal water will be injected into the Wolfcamp and Cisco formations at a depth of 7200'-9150', a maximum surface pressure of 1640 psi, and a maximum rate of 10,000 BWPD.

All interested parties opposing the action must file objections or requests for hearing with the Oil Conservation Division, 2040 S. Pacheco Street, Santa Fe, New Mexico 87505, within 15 days. Additional information can be obtained by contacting Elizabeth A. Casbeer, Regulatory Compliance Analyst, at P.O. Box 1610, Midland, Texas 79702, or (915) 688-5570.

Amy McKay,
being first duly sworn, on oath says:

That she is Business Manager of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the state wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

April 4, 19 98
_____, 19 ____
_____, 19 ____
_____, 19 ____
_____, 19 ____
_____, 19 ____

That the cost of publication is \$ 26.31,
and that payment thereof has been made and will
be assessed as court costs.

Amy McKay

Subscribed and sworn to before me this

7th day of April, 19 98

Donna Crump

My commission expires 8/1/98
Notary Public

ARCO Permian
Washington 34 No. 1-SWD
(formerly: Galileo 34 State Com No. 1)
API: 30-015-29344
1017' FSL & 1379' FWL (N)
Section 34, 17S, 28E
Eddy County, New Mexico

Attachment J – Continued

XIII. Item A – Continued.

List of Surface Owners Within ½ Mile:

Altura Energy, Ltd
Attn: Mr. Jerry D. West
PO Box 4294
Houston, TX 77210-4294

Devon Energy Corp.
Attn: Mr. Ken Gray
20 North Broadway #1500
Oklahoma City, OK 73102

The Moore Trust
Attn: Ms. Cynthia L. Bennett
310 W Wall, #404
Midland, TX 79701

Nearburg Exploration Company, L.L.C.
Attn: Mr. Robert G. Shelton
3300 North A Street, Bldg 2, Ste 120
Midland, TX 79705

Mewbourne Oil Company
Attn: Mr. D. Paul Haden
500 W Texas, #1020
Midland, TX 79701

Kaywall, Inc.
PO Box 1060
Roswell, NM 88202

Yates Petroleum Company
Attn: Mr. Russell R. Waters
105 South Fourth Street
Artesia, NM 88210

Oxy USA Inc.
Attn: Mr. T. Kent Woolley
PO Box 50250
Midland, TX 79710-0250

Louis Dreyfus Gas Holdings, Inc.
Attn: Mr. Russell R. Waters
1400 Quail Springs Pkwy, #600
Oklahoma City, OK 73134

Marathon Oil Company
Attn: Mr. Tim Robertson
PO Box 552
Midland, TX 79702-0552

Conoco
Attn: Mr. Warren Richardson
10 Desta Drive West
Midland, TX 79705

Fina Oil & Chemical
6 Desta Drive, #4400
Midland, TX 79705



ARCO Permian
600 North Marienfeld
Midland TX 79701-4373
Post Office Box 1610
Midland TX 79702-1610
Telephone 915 688 5570

Elizabeth A. Casbeer
Regulatory Compliance Analyst

April 23, 1998

New Mexico Oil Conservation Division
Attn: David Catanach
2040 S Pacheco Street
Santa Fe, NM 87505

RE: Application for Authorization to Inject
Washington 34 Well No. 1-SWD
Section 34, T17S, R28E
Eddy Co., NM

Mr. Catanach:

Inadvertently the list of surface owners was left out of the application for injection sent on April 9, 1998

I have attached the list of all surface owners within ½ mile. All surface owners have been notified.

If you have any questions, please contact me at 915/688-5570. Please send the permit to:

ARCO Permian
Attn: Elizabeth A. Casbeer, Room 959-54
PO Box 1610
Midland, TX 79702

Yours very truly,

Elizabeth A. Casbeer
Regulatory Compliance Analyst

EAC/sle

xc: Larry Henson – EUN
Donald Knipe – 61323/MIO
Central Files – 41/MIO
R/C Files