PLAINS
PETROLEUM
OPERATING
COMPANY

July 12, 1995

New Mexico Oil Conservation District
P. O. Box 1980
Hobbs, New Mexico 88240

Re: Application for Authorization to Inject

Baylus Cade #5
985' FSL & 1650' FWL, Unit N
Sec 35, T23S, R37E
Lea County, New Mexico

E. C. Hill 'B' Federal #13
947' FSL & 1361' FEL (SHL)
1120' FSL & 1380' FEL (BHL)
Sec 34, T23S, R37E
Lea County, New Mexico

Dear Sirs:

Please find enclosed an Application for Authorization to Inject for the subject wells. These wells will initiate the Teague Simpson (McKee) Waterflood Project that was originally approved by the Oil Conservation Commission on March 25, 1965, order no. R-2883, case no. 3214 (Carter Foundation was Operator). Should you have any questions in regard to this application, please call 915/683-4434.

Sincerely yours,
PLAINS PETROLEUM OPERATING COMPANY

Dominic, J. Bazile, P. E.
Area Engineer

Enclosure: Legal Notice

cc: Well File
Reading File

WFX-299

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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

FORM C-108
Revised 7-1-81

Case 11368

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Plains Petroleum Operating Company

Address: 415 West Wall, Suite 1000, Midland, TX 79701

Contact party: Dominic J. Bazile Phone: 915/683-4434

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? [X] yes [ ] no
If yes, give the Division order number authorizing the project R-2883.

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: Dominic J. Bazile Title Area Engineer

Signature: Dominic J. Bazile Date: 7-14-95

* 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.

III. WELL DATA

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

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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

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

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

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

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

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

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

APPLICATION FOR AUTHORIZATION TO INJECT

In addition to Form C-108, Application for Authorization to Inject for the subject wells, Plains Petroleum Operating Company submits the following typical well data in accordance with NMOCD requirements.

I. Purpose: See C-108, Application for Authorization to Inject

II. Operator: See C-108, Application for Authorization to Inject

III. Well Data: See the Attached Well Data Sheets

IV. Expansion Project: See C-108, Application for Authorization to Inject.

See also an attached copy of Case No. 3214, Order No. R-2883.

V. Map: See Attached Map

VI. Tabulation of Offsetting Well Data

The attached data sheet provides a description of all of the wells within a 1/2 mile radius around the subject wells that penetrate the Teague Simpson (McKee) interval. Also attached are schematics of the two plugged wells.

VII. Proposed Operating Conditions:

1. Average and Maximum Daily Rate:	500, 1000 BWPD
2. Water Injection System Configuration:	Closed
3. Average and Maximum Injection Pressure:	1500, 2500 psig
4. Sources of Injection Fluids:	Produced and Fresh water
5. Water Injection Purpose:	Secondary Oil Recovery

VIII. Geological Data:

Data was previously supplied for a hearing on an unorthodox location which was submitted with the Application to Drill on the E. C. Hill 'B' Federal #13, hearing Case No. 11276, Order No. 10370.

IX. Proposed Stimulation Program:

The two proposed injection wells have already been stimulated. See attached Sundry Notices.

X. Logging or Test Data:

Logs and completion data have been filed for the subject wells being completed as producers. Sundry Notices and appropriate injectivity profiles will be submitted after the subject wells are converted to injectors.

APPLICATION FOR AUTHORIZATION TO INJECT
(Continued)

XI. Analysis of Fresh Water:

Attached is a chemical analysis of the fresh water produced from the E. C. Hill 'B' No. 7 WSW located 990' FNL & 330' FWL of Section 35-T23S-R37E. The well is currently producing from the Santa Rosa formation with perforations between 580' to 681'. Also attached is a water analysis on the combined produced formation water samples to be injected.

XII. Affirmation statement:

The attached seismic data demonstrates that there are no open faults or any other hydrologic connection between the injection zone and any underground source of drinking water.

XIV. Proof of Notice:

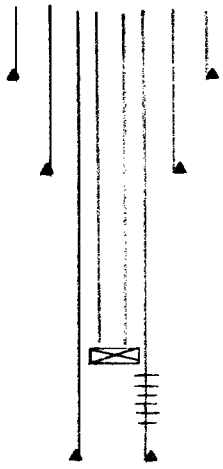
Attached are copies of the certified mail receipts to the surface owner and offsetting leasehold operators within the 1/2 mile radii of the subject wells. In addition, a proof of publication is attached to show that a public advertisement has been published in the Hobbs News Sun on July 12, 1995.

INJECTION WELL DATA SHEET

Plains Petroleum Operating Company	Baylus Cade Federal			
Operator	Lease			
5	985' FSL & 1650 FWL	35 Unit N	T23S	R37E
Well No.	Footage Location	Section	Township	Range

Lea County, New Mexico
County, State

Schematic



Tabular Data

Surface Casing

Size 13-3/8 " Cemented w/ 375 sx

TOC Surface ' determined by Circ'd

Hole Size 17-1/2"

Intermediate Casing

Size 8-5/8 " Cemented w/ 650 sx

TOC Surface ' determined by Circ'd

Hole Size 11"

Long String

Size 5-1/2 " Cemented w/ 1875 sx

TOC 2136 ' determined by CBL

Hole Size 7-7/8"

Injection Interval

9408' to 9536'

(perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with Seal Tite Plastic Coating (Material) set in a

2-3/8" x 5-1/2" Arlington-Elder Nickel Coated Lokset packer at 9300' feet

(Brand and Model)

(or describe any other casing-tubing seal)

Other Data

1. Name of the injection formation Simpson McKee Sand

2. Name of field or pool (if applicable) Teague Simpson

3. Is this a new well drilled for injection? ____ Yes X No
   If no, for what purpose was the well originally drilled? Originally drilled as a producer

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) CIBP 9800' 3-1/2 sx cmt on top Ellnbgr perfs 9842' - 9858'

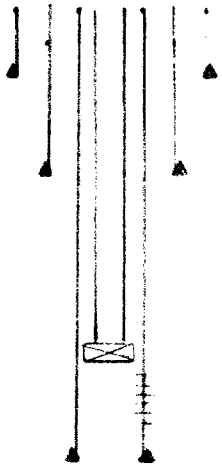
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools in this area)
   Below - Ellenburger 9842' - 9858' Above - Fusselman 8323', Devonian 7243'

INJECTION WELL DATA SHEET

Plains Petroleum Operating Company	E. C. Hill 'B' Federal			
Operator	Lease			
13	947' FSL & 1361 FEL	34 Unit O	T23S	R37E
Well No.	Footage Location	Section	Township	Range

Lea County, New Mexico
County, State

Schematic



Tabular Data

Surface Casing

Size 13-3/8 " Cemented w/ 375 sx

TOC Surface ' determined by Circ'd

Hole Size 17-1/2"

Intermediate Casing

Size 8-5/8 " Cemented w/ 625 sx

TOC Surface ' determined by Circ'd

Hole Size 11"

Long String

Size 5-1/2 " Cemented w/ 1350 sx

TOC 3200 ' determined by CBL

Hole Size 7-7/8"

Injection Interval

9475' ' to 9641' '

(perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with Seal Tite Plastic Coating (Material) set in a

2-3/8" x 5-1/2" Arlington-Elder Nickel Coated Lokset packer at 9375' feet

(Brand and Model)

(or describe any other casing-tubing seal)

Other Data

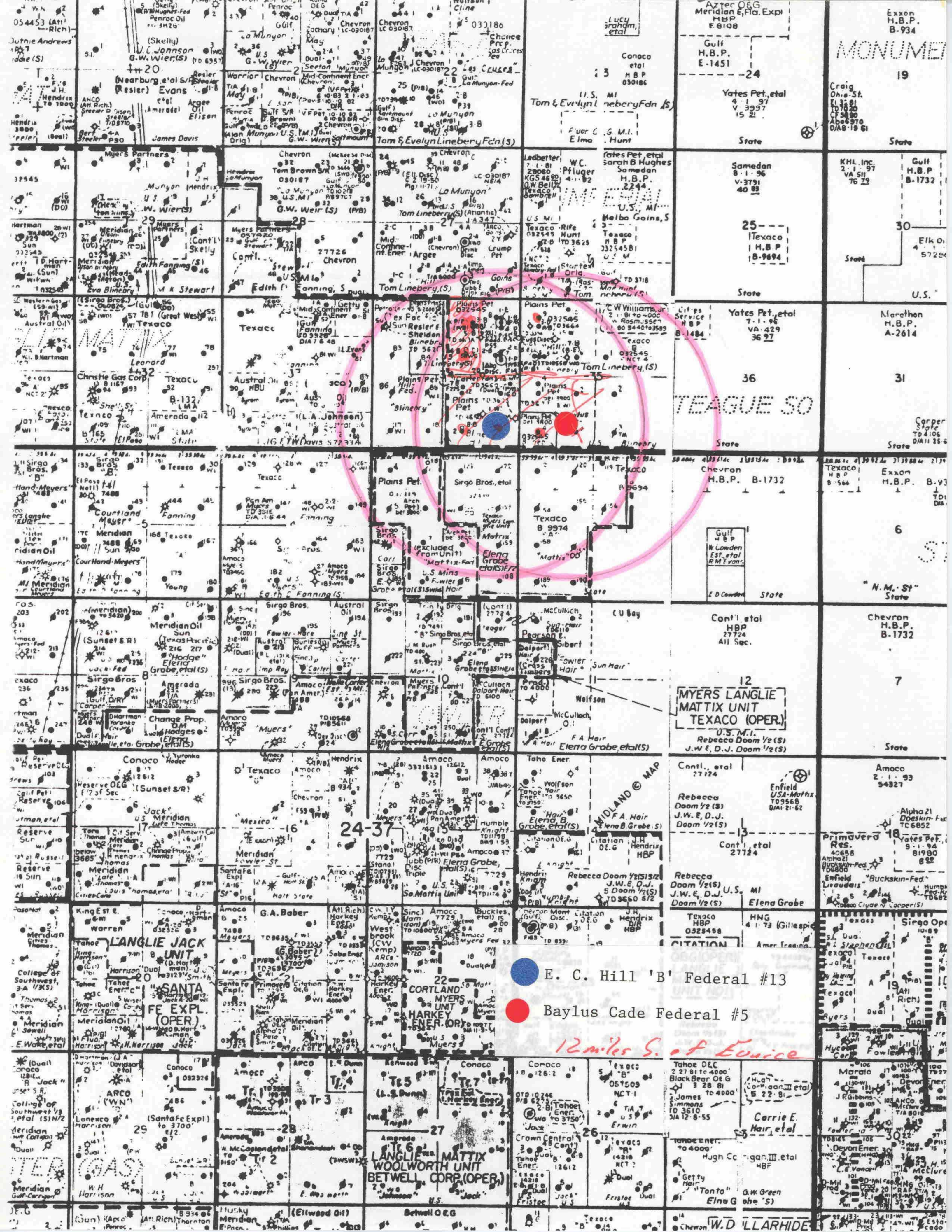
1. Name of the injection formation Simpson McKee Sand

2. Name of field or pool (if applicable) Teague Simpson

3. Is this a new well drilled for injection? ____ Yes X No
   If no, for what purpose was the well originally drilled? Originally drilled as a producer

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).
   Above - Montoya 8801' Devonian 7276'
   Fusselman 8434'

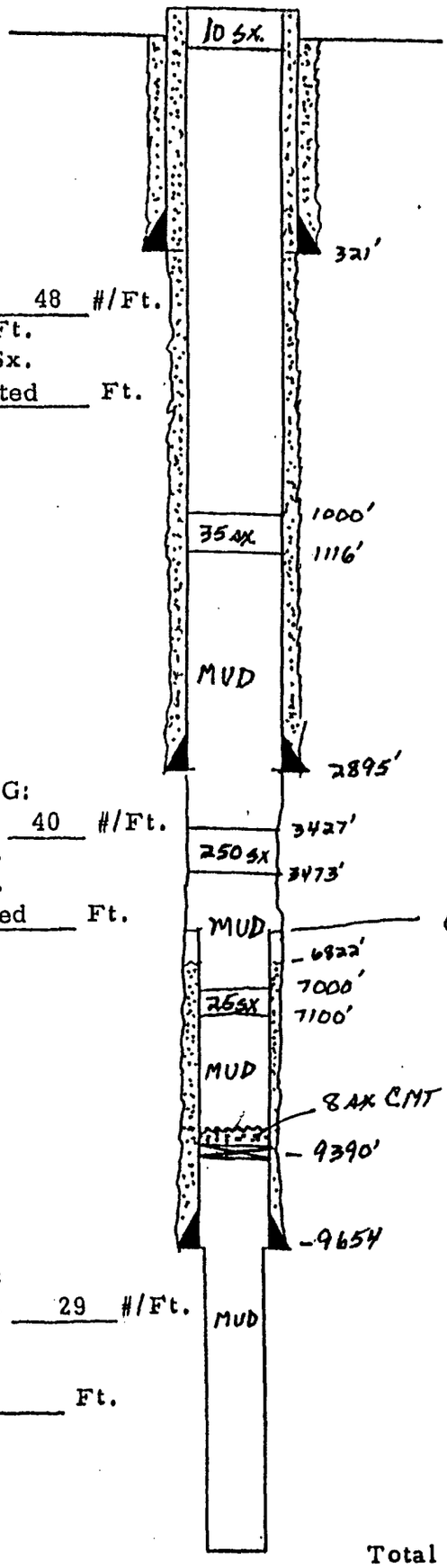

MONUMENT
MATTIX
TEAGUE SO
MYERS LANGLIE
MATTIX UNIT
TEXACO (OPER.)
LANGLIE JACK
UNIT
SANTA
FE EXPL.
(OPER.)
CORTLAND
MYERS
UNIT
HARKEY
ENER.(OR)
LANGLIE MATTIX
WOOLWORTH UNIT
BETWELL CORP.(OPER.)
MIDLAND © MAP
24-37
E. C. Hill 'B' Federal #13
Baylus Cade Federal #5
12 miles S. of Eunice

Well Name	Well No.	UL	Well Location Sec	Twn	Rng	Casing Size	Depth	No. of Sacks of Cement	Top of Cement	TD	Completion Interval	Date Drilled	Well Type
E. C. Hill 'D'	1	H	34	23S	37E	13-3/8" 9-5/8" 7"	331' 2919' 9100'	300 1400 650	Surface 70' 5900'	9290'	7184' - 7256' Devonian	08-13-52	Oil Producer
E. C. Hill 'D'	4	A	34	23S	37E	13-3/8" 9-5/8" 7"	323' 2902' 9399'	300 2000 265	Surface 500' 6200'	9399'	7148' - 7206' Devonian	01-12-54	Oil Producer
E. C. Hill 'D'	5	E	35	23S	37E	13-3/8" 9-5/8" 7"	316' 2908' 9729'	300 1500 650	Surface Surface 5650'	9734'	7265' - 7295' Devonian	10-23-53	Oil Producer
E. C. Hill 'E'	1	A	34	23S	37E	13-3/8" 9-5/8" 7"	321' 2895' 9654'	450 1600 500	Surface Surface 6822'	9733'		11-28-51	P&A'd 01/75
E. C. Hill 'E'	2	H	34	23S	37E	13-3/8" 9-5/8" 7"	317' 2914' 9577'	250 1400 650	Surface 900' 5772'	9730'		05-14-52	P&A'd 01/75
Melba Goins	1	P	27	23S	37E	13-3/8" 8-5/8" 5-1/2"	306' 2900' 9723'	325 2000 400	Surface Surface 7471' (all calc'd)	9825'	3382' - 3466' 7RvsQnPnrs	08-18-80	Oil Producer
E. C. Hill 'B'	4	G	34	23S	37E	13-3/8" 7-5/8" 7"	329' 2917' 9510'	300 1500 650	Surface 450' 6100'	9827'	5287' - 5794' Blinebry	07-10-53	Oil Producer
E. C. Hill 'B'	5	B	34	23S	37E	13-3/8" 7-5/8" 5-1/2"	322' 2918' 9582'	300 1500 500	Surface 750' 5350'	9737'	4912' - 5058' Paddock- Glorietta	01-16-53	Oil Producer
E. C. Hill 'B'	6	D	35	23S	37e	13-3/8" 9-5/8" 7"	320' 2906' 9348'	300 1600 403	Surface Surface 6350'	9351'	5298' - 5740' Blinebry	01-12-54	Oil Producer
E. C. Hill 'B'	10	M	35	23S	37E	13-3/8" 8-5/8" 5-1/2"	354' 3008' 9943'	375 600 2475	Surface Surface 2800'	9943'	9359' - 9484' McKee	10-27-93	Oil Producer
E. C. Hill 'B'	12	P	34	23S	37E	13-3/8" 8-5/8" 5-1/2"	362' 2996' 9978'	375 675 1390	Surface Surface 3050' CBL	9978'	9479' - 9536' McKee	12-23-94	Oil Producer
E. C. Hill 'B'	13	O	34	23S	37E	13-3/8" 8-5/8" 5-1/2"	355' 3008' 9734'	375 625 1350	Surface Surface 3200' CBL	9740'	9475' - 9537' McKee		Oil Producer Proposed Injector
Baylus Cade	5	N	35	23S	37E	13-3/8" 8-5/8" 5-1/2"	362' 3001' 9980'	375 650 1875	Surface Surface 2136' CBL	9980'	9408' - 9536' McKee	12-28-94	Oil Producer Proposed Injector
Baylus Cade	6	K	35	23S	37E	13-3/8" 8-5/8" 5-1/2"	350' 3000' 9904'	375 725 1725	Surface Surface 560' CBL	9926'	9365' - 9519' McKee		Oil Producer

SURFACE CASING:
Size: 13-3/8" Wt. 48 #/Ft.
Set at 321 Ft.
Cement: 450 Sx.
Top Cement: Circulated Ft.

INTERMEDIATE CASING:
Size: 9-5/8" Wt. 40 #/Ft.
Set at 2895 Ft.
Cement: 1600 Sx.
Top Cement: Circulated Ft.

LONG STRING CASING:
Size: 7" Wt. 29 #/Ft.
Set at 9654 Ft.
Cement: 500 Sx.
Top Cement: 6822 Ft.



Total Well Depth 9733 Ft.

DATE: 8-9-72

FIELD Teague Ellenburger COUNTY Lea ~~RRC DIST~~ New Mexico

OPERATOR Carter Foundation Production Company LEASE E.C. Hill Fed. "E" ~~WELL~~ NO. 1

P&A
(1/75)

Arch Petroleum Inc.

(WAS #2)

Well History Summary Sheet

Operator ARCH Well Name & # E.C. HILL #2E Lease #

RRC District NMOCC Made By DAVID MILLER Date 4/28/89

Location 1831 FNL & 660 FEL, SEC 34, T23S, R37E, LEA CO., N.M.

Spud Date 2-11-52 Compl. Date 5-14-52 TD 9730 PBTD

Type Well: Oil ✓ Gas Other Field TEAGUE

IP F 1037 180 + 0 BW Zone ELLENBURGER

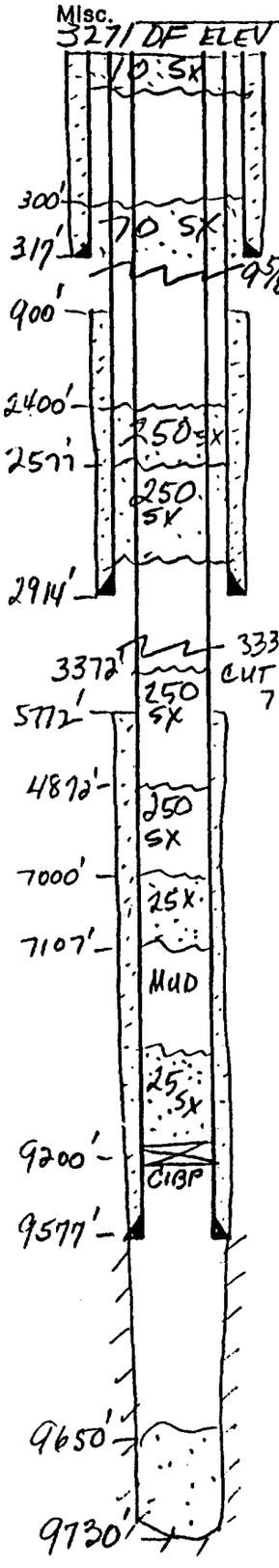
Perfs.: OH Total Holes OH

Stimulation

Cumul. Oil MCF Water

Recent Test Lift Equipment

Misc.



Drive or Conductor

" @

Surface: 13 3/8" 48 # Gr. H-40 @ 317 Cmt. w/ 250 Sx. TOC SURF. Hole Size " Max Mud Wt.

CUT & PULL 386'

Intermediate: 9 5/8" 32,36 # Gr H-40, J-55 @ 2914 Cmt w/ 1400 Sx. TOC @ 900 X T.S., Hole Size ', Max Mud Wt. #/G

Production: 7" 23,26,29 #, N-80 Gr. @ 9577 , Cmt. w/ 650 Sx, TOC @ 5772 X T.S., Hole Size Mx Mud Wt. #/G

Liner: #, Gr. @ , Cmt. w/ Hanger

Hole Mx Mud Wt.

TD ' PBTD x 9650'.

Pump:

Rods:

Tubing

Tubing

Packer (TAC) @

WELL HISTORY

CGD TO #2E 10/53
6/58 PUT ON PUMP TEST 51 BO + 115 BW + 36 MCFD
3/59 TEST 11.6 BO + 83 BW
7/64 DRILLED OUT 9690 - 9772, ACED W/1000 GALS 15%, RAN REDA PMP 8/64 @ 9000', TEST 86 BO + 1252 BW + 22 MCFG
6/1/66 TBG STUCK @ 3708 - AND VARIOUS PIECES DOWN TO 5260. RAN FREE-PT @ 3713, SHOT OFF TBG @ 3690 POOH W/2500' TBG & REDA CABLE CABLE BROKE @ SURF. AND STARTED BACK IN HOLE. 1200-1500' LOST IN HOLE, FN. PULLING TBG. FISH AND WASH. TOP OF TBG FISH @ 3994
DR PLUG OUT @ 3977' HIT TIGHT SPOT @ 5095, & ANOTHER @ 5221, SHOT OFF 2 7/8" tbg @ 6526
FISHED FOR REDA CABLE - RECV.
7/66 DR & PUSH PLUG IN 2 7/8" TBG FROM 6715' to 7011', SHOT OFF TBG @ 8767. POOH FISH REDA CABLE. LOST IMPRESSION BLK IN HOLE RECV. BLK, TD @ 8710 (57' OF BANDS ABOVE FISH @ 8767). STRING SHOT @ 9422. POOH. RECV. TBG & ALL OF REDA PMP. TD @ 9650
RAN REDA PMP @ 9551
8/67 ACID W/5000 GALS 28% (15 MGAL WTR AHEAD & FLUSH) VIA CSG.
3/69 15 MGALS WTR, 5000 GALS 28% ACID VIA CSG.
9/70 FISHED, SPOT 1100 GALS 7½% ACID
CHEM CUT @ 6338 POOH. RECV CABLE
POOH W/REDA PMP & CABLE
5/74 PULL TBG. SI WELL.
11/74 PROPOSE TO P&A
1/75 SET BP @ 9200', DISP. FLUID IN HOLE W/ MUD, PUT 25 SX CMT ON TOP OF BP. PMP 25 SX @ 7107 - 7000
CUT 7" CSG @ 3333 & PULLED, PMP 250 SX PLUG @ 3417 CMT WENT DOWN HOLE TO 4872. CMT W/ 250 SX TOP @ 3372 CMT W/ 250 SX TOP @ 2577 CMT W/ 250 SX TOP @ 2400.
CUT & PULLED 386' OF 9 5/8" CSG, PMP 70 SX 403 - 300. 10 SX PLUG @ SURF. SET MARKER.

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: LC 034711

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.: Baylus Cade Federal #5

2. Name of Operator: PLAINS PETROLEUM OPERATING COMPANY

9. API Well No.: 30-025-32486

3. Address and Telephone No.: 415 WEST WALL, SUITE 1000, MIDLAND, TEXAS 79701

10. Field and Pool, or Exploratory Area: Teague Simpson

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
985' FSL & 1650' FWL
Sec 35, T23S, R37E, Unit N

11. County or Parish, State: Lea Co., NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

11-18-94 **DST #1 @ 7538'.**

Surface Action: Open tool for 10 min preflow w/weak blow. Increase to bottom bucket in 20 sec. Open 1/4" choke, 5 psi 5 min, 5 psi 10 min. Close in tool for 1 hr initial shut-in. GTS in 13 min. Reopen tool for 60 min. final flow w/good blow. Increase to bottom bucket in 15 sec. Open 1/4" choke, 15 psi 5 min 39.2 MCF, 14 psi 10 min 37 MCF, 11 psi 15 min 32 MCF, 10 psi 20-30 min, 31 MCF, 8 psi 40 min 27 MCF, 7 psi 50-60 min 25 MCF. Close for 2 hrs SI.

Recovery: 847' 6 BBL, 4 BBL 463' heavy gas cut oil, 1 BBL 192' drill mud, 1 bbl 192' water.

Sample Chamber: 2000 cc 3.45 cu ft gas, 500 cc water, trace oil, 1100 psi, 57000 PPM Chl, Rw .089, BHT 135°F.

Pressure: IHP 3460 psi, FHP 3398 psi, PFP 145 - 103 psi, 10 min ISIP 2545 psi, FFP 145-145 psi 30 min, FSIP 2587 psi 120 min.

Continued on page 2

14. I hereby certify that the foregoing is true and correct

Signed Dominic J. Bazile Title Area Engineer Date February 2, 1995

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

11-30-94 **DST #2, 9390' - 9463'.**

Surface Action: Open tools for 15 min pre-flow w/weak blow, 2" @ 5 min, 3" @ 10 min, 5" @ 15 min. SI for 60 min initial SI. Open for 60 min final flow w/good blow , btm bucket in 20 sec, open on 1/4" choke, 1" @ min, 1/2" @ 10 min, 13" @ 15 min, 11" @ 20 - 35 min, 14" @ 40 min, flow line plugged. 20" @ 45 min, 28" @ 50 min, 34" @ 60 min. SI for 120 min final SI.

Pull tools loose at 6:00 a.m. 12/1/94 and started out of hole.

12-01-94 **DST #3, 9390' - 9463'.**

Surface Action: Open tools for 15 min pre-flow w/weak blow, 2" @ 5 min, 3" @ 10 min, 5" @ 15 min. SI for 60 min initial SI. Open for 60 min final flow w/good blow , btm bucket in 20 sec, open on 1/4" choke, 1" @ 5 min, 1/2" @ 10 min, 13" @ 15 min, 11" @ 20 - 35 min, 14" @ 40 min, 20" @ 45 min, 28" @ 50 min, 34" @ 60 min. Valve on ground plugged during final flow.

Recovery: 4600' GIDP plus 405' of HO&GCDM (1.98 BBL), oil & gas cut mud, Chlor 4000 psi, Rw 1.1 @ 60°F, No free oil.

Sample Chamber: 2000 cc, 75 psi, .1 cu ft gas, 1150 cc drilling mud, 50 cc oil, BHT 146°F @ 9372'.

Pressures: IHP 4368 psi, FHP 4286 psi, IPF 124 - 124 15 @ min, FFP 145 - 146 @ 60 min, ISIP 2295 pis @ 60 min (pressure still building, pressure had not broke over), FSIP 2525 psi @ 120 min (pressure starting to break over).

12-02-94 **DST #4, 9475' - 9545'.**

Surface Action: Open tools for 10 min pre-flow w/weak blow, btm bucket in 45 sec. Open on 1/4" choke, 10 psi @ 5 min, GTS in 8 min, 14 psi @ 10 min - 37.6 MCF. SI for 60 min initial SI. Open on 1/4" choke for 65 min final flow. Flare still burning during SI. 2 psi @ 5 min - 11 MCF, 6 psi @ 10 min - 23 MCF, 5 psi @ 15 min - 20.7 MCF, 3 psi @ 25 min - 15.7 MCF, 10" @ 30 min - 5.3 MCF, 3 psi @ 35 min - 15.7 MCF, 3.5 psi @ 40 - 45 min - 17.1 MCF, 2 psi on 1/2" choke @ 50 min - 47.7 MCF, 1 psi @ 55 min - 33.9 MCF, 3" on 1" choke @ 60 min - 44 MCF.

Recovery: Reversed out 21.5 BBL, 20.5 BBLS 1443' oil, 41.7° @ 60°F, 1 BBL 70' mud, chlor 4000 ppm, Rw 1.1 @ 60°F.

Sample Chamber: 2000 cc, 1200 psi, 4.45 cu ft gas, 175 cc water, chlor 16,000 ppm, Rw .28 @ 60°F, 200 cc mud, chlor 4000, Rw 1.1 @ 60 °F, 650 cc oil.

Pressures: IHP 4430 psi, FHP 4368 psi, PFP 518 - 518 psi 10 min, FFP 560 - 705 psi @ 65 min, ISIP 2129 psi @ 60 min, FSIP 1752 psi @ 143 min, BHT 145°F @ 9457'.

12-07-94 **Rig released @ 11:00 p.m. TD @ 9980'.** Ran 5-1/2" casing detail as follows: 1 - 5-1/2" Float Shoe (9979'), 1 - 5-1/2" 17# N-80 LTC, 1 - 5-1/2" Float Collar (9933'), 14 - 5-1/2" 17# N-80 LTC, 51 - 5-1/2" 17# J-55 LTC, 1 - 5-1/2" 17# J-55 Marker JT (7059' - 7081'), 24 - 5-1/2" 15.5# J-55 LTC, 1 DV tool (6010' - 6112'), 148 - 5-1/2" 15.5# J-55 LTC, Set & Cmt'd @ 9980.00'. Set slips w/150,000#. Ran 20 centralizers, one on every 3rd joint & one above & below DV tool. Ran cmt basket above & below DV. Cmt w/10 BFW, 30 BBL mud flush, 10 BFW. Lead w/450 sx 'C' lite + 6% gel + 9#/sx salt + .2% AF-11 + .8% CF14 + 1/4#/sx Cello-seal. Tail w/650 sx 50:50 poz 'C' + 2% gel + 4#/sx salt + .2% AF-11 + .6% CF14. Displace w/91 BBLS 2% KCl, 143 BBLS mud @ 10 BPM, 2000 psi. Bump plug 4:00 p.m. w/2000 psi. Floats held. Drop bomb. Open DV tool w/1000 psi. Circ 2-1/2 hrs between stages. Circ 187 sx on DV tool to surface. Cmt 2nd stage w/225 sx 'C' lite + 6% gel + 5#/sx salt + 1/4/sx Cello seal. Tail w/550 sx 50:50 poz 'C' + 2% gel + 4#/sx salt + .2% AF-11 + .6% CF-14. Displace w/143 BBLS 2% KCl at 10 BPM, 1500 psi. Bump plug w/3000 psi 7:30 p.m. 12-7-94. Close DV tool w/3000 psi.

12-10-94 Drill out DV tool, TIH to PBTD (9930'). Circ hole w/2% KCl water & test to 1000 psi.

12-11-94 RIH & log **w/CBL-CCL-GR from PBTD (9933') to 7900', & 6000' to 4000'. Find TOC @ 2136'.** PU full bore 2-7/8" x 5-1/2" Arrowset I. TIH.

12-12-94 Finish RIH **w/295 jts 2-7/8" J-55 6.5# tbg (EOT 9758)**, SN, 2-7/8" x 5-1/2" Arrowset I pkr. ND BOP, **set pkr (9758')** w/10K tension, test to 500 psi. Swab down to 6500'. RIH & perf as directed w/180° phased tbg gun. **Perf 9842' - 9858' w/2 JSPF (34 total)**. Swab well dry, recover 24 BBL H_2O, very little entry, no oil. **Acidize w/500 gal 15% NEFE HCl.** Well communicated w/1400 psi on tbg. Pump 1 BBL down backside & finish acid job. Increased pressure to 2900 psi. Before perfs broke down. AIR 1/4 BPM, max 3000 psi, ISIP vac. Pressure up backside & finish acid job. Flush to top perf. Unflange WH & check pkr, still set & packed off. Drop SV & check tbg for leak. Appears there is a HIT. NU BOP, fish SV (too much weight). Unset pkr, flush backside w/110 BBL 2% KCl water.

12-16-94 Swab, testing Ellenburger recovering only salt water. Water analysis confirmed to be formation water. Release pkr set @ 9758' & POOH w/2-7/8" tbg, SN & pkr, re-dress Arrowset I pkr. GIH w/5-1/2" CIBP w/Baker 20 setting tool & charge. **Set CIBP @ 9800'**. RU dump bailer, mix and **dump 3-1/2 sx cmt on top of CIBP as recommended by BLM**. NOTE: **Shannon Shaw w/BLM approved abandonment of Ellenburger perfs 9842' - 9858', via phone conversation w/Dominic Bazile, 9:30 a.m. CST 12-16-94.** POOH w/dump bailer. RD

12-17-94 PU Arrowset I **pkr, TIH to 9692', set w/10K comp. EOP 9196'**. Test CIBP to 2000 psi. POOH to 9556'. Displace well w/oil **spotting 100 gal 7-1/2% mud acid.** PU to 9196' & set pkr. Test BS to 500 psi. **Perf 9474' - 9536' 2 JSPF, 40 total shots. Flush acid into perfs.** Swab, IFL surface, swab 3 hrs, to SN, no fluid last run. FFL - 9196'. **Breakdown: 2450 psi, ISIP 2150 psi, 1500 psi @ 5 min, 1250 psi @ 10 min, 1100 psi @ 15 min.**

12-18-94 SITP 40 psi, IFL 6200'. Make 1 run. **Acidize perfs 9474' - 9536' w/3000 gal 7-1/2% mud acid & 60 ball sealers, excellent ball action.** IFL surface, swab 9-1/2 hrs, recovered 100 BBL total fluid, 30% oil cut after 60 BBLS were recovered. 2500' entry per hour when swabbed to SN. IFL surface. FFL - SN (9196'). **ISIP 1700 psi, 1100 psi @ 5min, 750 psi @ 10 min, 500 psi @ 15 min. Rate 5 BPM, PMAX 3800 psi, PMIN 2400 psi, PAVG 2700 psi.**

12-21-94 SITP 190 psi. **Well SI** for BHPBU test.

12-22-94 POOH w/bomb, try to run static. RIH w/2" tbg gun, cannot get below 8,549'. POOH & RD Wedge. Unset pkr, POOH w/tbg, LD 79 jts & remove pkr. **Perf 2JSPF w/0° phasing from 9476'-9534'**. RIH w/production string, ND BOP, set TAC, pack off. 3-1/2 Mutha Hubbard, EOT - 7016.26', 2-7/8" x 2-3/8" X-over, TAC- 6918.10', 2-3/8" SN, Set w/18K tension, 2-7/8" x 2-3/8" X-over, 2-7/8" 6.5# EUE 8rd tbg J-55, 2-7/8" 5-1/2" Baker TAC, set @ 6915.30'

12-23-94 PU pump, 20-150 - RHBC - Pump w/20' GA, 1" Pony Rod, 1" Sucker Rods w/MORGS, 3/4" Sucker Rods w/MORGS, 3/4" Steel Sucker Rods, 7/8" Steel Sucker Rods. 1" Steel Sucker Rods, 1" Pony Rod , 1-1/2", Polish Rod w/16' Liner.

12-28-94 Unseat pump, POOH w/rods & pump. No sand found in GA. ND WH. NU BOP. Unset TAC, POOH w/tbg. RU Sandline bailer. RIH w/same, **tag PBTD @ 9780'**. POOH w/bailer. Recover 51 frac balls.

12-29-94 RIH w/production tbg. ND BOP, set TAC w/15K tension, checked FL w/swab, 4000' FS, NU WH. RIH w/rods, PU 1000' more, hang on, space out. Started well pumping @ 6:00 p.m. 12-28-94. 24 BLOYTR + 25 BLWYTR. 3-1/2" Mutha Hubbard, EOT @ 8004.16', 2-7/8" x 2-3/8" X-Over, 2-3/8" SN, 2-7/8" x 2-3/8" X-Over, 2-7/8" 6.5# J-55 EUE 8rd tbg, 2-7/8" x 5-1/2" Baker TAC, 2-7/8" 6.5# J-55 EUE 8rd tbg. 20-150 RHBC pump w/20' GA, 1" Pony Rod, 1" Sucker Rods w/MORGS, 3/4" Sucker Rods w/MORGS, 3/4" Sucker Rods (KD), 7/8" Sucker Rods (KD), 1" Sucker Rods (KD), 1-1/2" Polish Rod w/1-3/4" Liners.

01-10-95 Pumped 11 BO, 1 BW, & 10 MCF in 24 hrs. FL 239 JFS = 7872', TP 150 psi, CP 165 psi. MIRU X-pert (9:20). RIH w/5-1/2" wireline, set RBP, set plug @ 9465'. POOH w/wireline. PU 2-7/8" x 5-1/2" Arrow Set I pkr, 1 jt, SN & start in hole w/pkr.

01-13-95 Pump 150 BBLS McKee oil, **150 gal 7-1/2% HCl mud acid + 52 BBL Mckee oil. Flush, spotting acid across area to be perfed, 9408' - 9440'**. RD XL, PU pkr to 9190', set pkr. Pressure test csg to 1000 psi. RIH w/2-1/8" tbg gun, 0° phasing, 2 JSPF, mag decentralized & **perf as directed 9408' - 9440' (9408', 9409', 9411', 9413', 9414', 9419', 9423', 9428', 9429', 9432', 9435', 9436', 9439' 26 holes total)**. Displace acid into perfs. Avg pressure 2200 psi @ .8 BPM. ISIP 2000 psi, 5 min 400 psi, 10 min 50 psi, 15 min vac. Swab. IFL 500' FS, 1st hour recovered 18 BO, FFL 4500'. 2nd hr recovered 15 BO, FL 6200', 3rd hr recovered 24 BO. Swabbing from SN, FL 8800'. Wait 30 min, FL 8800', recovered 3 BBL, 60% water. Recovered a total of 58 BO, 2 BW, **150 BLOYTR.**

01-14-95 **Acidize McKee sand perfs 9408' - 9409' w/3000 gal 7-1/2% HCl mud acid.** Dropping 40 density matched ball sealers, 8 per 12 BBL. Flush w/2% KCl to top perf (58.3 BBL). Pmin 2000 psi, Pmax 3000 psi, Pavg 2500 psi, AIR 4 BPM. excellent ball action from 2000 to 3000 psi. Did not ball out. ISIP 1700 psi, 5 min @ 900 psi, 10 min @ 200 psi, 12 min @ 0 psi. IFL 650', first 3 hrs. Swab back 56 BW. FL @ 6800', 4th hr FL 6800'. Recovered 13 BBL TF, 6 BW, 7 BO. FL 8800'. Make one more run. Recovered 1 BO. SD for 1 hr. FL 8800'. Swab from SN. Recovered 2-1/2 BO, 2 BW, FL @ SN. Next 2 runs, wait 1 hr each. FL 9000', recovered 1 BW & 2 BO each run.

01-17-95 SITP - 210 psi. IFL - 6200', 2800' rise in 42 hrs. First run 99% oil. Swab well 6 hrs. Recover 27-1/2 bbls TF, 14 oil - 13-1/2 H_2O. FFL - 9000'. **Acidize McKee perfs 9408'-9439' w/2000 gal AC-1 diesel blend**, tag job w/Iridium for 36 bbls. Flush to btm perf plus 1 bbl w/lease oil. P-Max - 3000, P-Avg - 3000, rate avg. - 3 BPM, ISIP 2300 psi 5 min - 1800 psi, 10 min - 1300 psi, 15 min - 900 psi. Run temp survey & Gamma Ray across perfs (TD to 9000').

01-18-95 SITP - vacuum, IFL - 3500', swab well 10 hrs, FL rises to 6800' in 1 hr after swabbed down to SN. Recover 71 bbls total fluid - 100% oil. FFL - 9000'.

01-20-95 RIH w/242 jts 2-7/8" 6.5# J-55 EUE tbg, EOT 8004.16'. ND BOP, set TAC @ 7906' w/16K tension, NU WH. PU 20-150 RHBC pump w/20' GA, RIH w/pump & rods, hang on, space out.

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
LC 064118

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
E. C. Hill 'B' Federal #13

2. Name of Operator
PLAINS PETROLEUM OPERATING COMPANY

9. API Well No.
30-025-32962

3. Address and Telephone No.
415 WEST WALL, SUITE 1000, MIDLAND, TEXAS 79701

10. Field and Pool, or Exploratory Area
Teague Simpson

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
947' FSL & 1361' FEL (SHL)
1120' FSL & 1380' FEL (BHL)
Sec 34, T23S, R37E, Unit O

11. County or Parish, State
Lea Co., NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

5-22-95 SPUD 17-1/2" HOLE @ 5:00 P.M. 05-22-95. TD @ 355'. Ran 8 jts 13-3/8" 48# H-40 ST&C & set @ 355'. Ran 3 centralizers one per jt. RU Western/BJ & cmt w/375 sx 'C' +2% $CaCl_2$. Displace w/48 BFW. Bump plug @ 2:00 a.m. 05-23-95. Circ'd 30 sx to reserve pit. Contacted BLM prior to spud & to witness surface cmt job. No BLM witness present.

5-26-95 Run csg as follows: 1 8-5/8" float shoe (1.5'), 1 8-5/8" WC50 32# STC (42.65'), 1 8-5/8" float collar (1.2'), 20 8-5/8" 32# WC50 STC (844.08'), 44 8-5/8" 24# J-55 STC (1948.11'), 4 8-5/8" 32# WC50 STC (176.14'), total pipe ran 3013.68', set & cmt'd @ 3008'. Called BLM to notify for cmt job. No one present. RU Western/BJ, ran 5 centralizers, one in middle of 1st jt then every collar. Cmt w/625 Pacesetter Lite 'C'. Tail 100 sx 'C' neat displace w/85 BFW @ 7 BPM 850 psi. Bump plug @ 8:15 a.m. 05/27/95 w/1350 psi. Release pressure, floats held OK. Circ'd 105 sx to pit.

ontinued on Page 2 Attached

14. I hereby certify that the foregoing is true and correct
Signed Dominic J. Bazile Title Area Engineer Date June 22, 1995

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

06-18-95 **DST #1** **9591' - 9639' (48') Lower McKee Porosity**

Surface Action: Open w/weak blow - increased to btm bucket in 90 seconds, 20 oz - 5 mins, open 1/4" choke 14 oz. 10 min 10 oz. SI for 1 hr ISI. Surface read out after 1 hr SI 1612.4 psi. Open for 1 hr final flow w/weak blow. Increased to BTM bucket in 4 min, 5 min 9 oz, 10 min 11 oz, 15 min 12 oz, 15-45 min 15 oz, 50 min 14 oz, 60 min 13 oz. SI for 2 hr final SI. Surface readout after 2 hr SI 1421.5 psi. Pulled pkrs free TOOH w/43 stds & single. Rig broke down.

Recovery: 1650' - 18.6 BBL, 200' - 2.84 BBL, slightly oil & gas cut mud. 1450' - 15.16 BW, Chlor 145,000 ppm, Rw .05 @ 60°F.

Sample Chamber: 1950 cc water, .052 cuft gas @ 400 psi, Rw .05 @ 60°F, Chlor 145,000 ppm, BHT 139°F @ 9568'.

Pressure: IHYD 4465 psi, I Pre Flow, 376 - 406 psi, ISIP 1648 psi 60 min, FF 662 - 858 psi. FSIP 1380 psi. 120 min FHYD, 4580 psi. Btm 5 DC's were plugged w/formation sand.

06-20-95 TD @ 9740', 7-7/8" hole @ 3:00 p.m. 06/20/95. RU Computa-Log, loggers TD 9742'.

06-21-95 Run Spectral Density Compensated Neutron Spectral Gamma Ray, Borehole Compensated Sonic. RD Computalog. RU Numar, run Numar Magnetic Resonance Imaging log from 9740' - 9400' McKee, 8650' - 8400' Fusselman, 7670' - 7260' Devonian, 7090' - 6680' Abo, 6600' - 5920' Drinkard, Vivian, Upper Abo.

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 2

To	From
MARK NIEBERDING	RITA DICKEY
Co. PLAINS PETROLEUM	Co. DICKEY ANA. LAB
Dept.	Phone # 687-2240
Fax # 683-8046	Fax # 682-6830

Dickey
Analytical Laboratory, Inc.

P.O. Box 2163
Midland, Texas 79702
915 - 687-2240

Plains Petroleum Operating Company
Fresh Water Station
Teague Field
Lea County, NM

Date of Analysis: September 28, 1992
Date of Sample: September 24, 1992
Sample Source: Header
Reference Number: DL-13489

E.C. HILL 'B' No. 7 WSW
SEC. 36-T23S-R37E
LEA CO., NM

A P I W A T E R A N A L Y S I S

DISSOLVED SOLIDS		
CATIONS	mg/l	me/l
Sodium, Na	272	12
Calcium, Ca	92	5
Magnesium, Mg	73	6
ANIONS		
Chloride, Cl	389	11
Sulfate, SO4	340	7
Carbonate, CO3	0	0
Bicarbonate, HCO3	268	4
Total Dissolved Solids	1434	
Specific Gravity	1.000	
pH	7.8	
Hardness as CaCO3, mg/l	531	
Resistivity, ohm-meters @ 75'F	4.6	
Sulfate as H2S	none detected	

R.S. Dickey
Dickey Analytical Laboratory, Inc.

Dickey
Analytical Laboratory, Inc.

P.O. Box 2163
Midland, Texas 79702
915 - 687-2240

Plains Petroleum Operating Company
SWD Injection System
Teague Field
Lea County, NM

Date of Analysis: September 28, 1992
Date of Sample: September 24, 1992
Sample Source: Header
Reference Number: DL-13488
EVA BLINEBRY SWD
SEC. 34-T23S-R37E
LEA CO., NM.

A P I W A T E R A N A L Y S I S

DISSOLVED SOLIDS		
CATIONS	mg/l	me/l
Sodium, Na	18028	784
Calcium, Ca	3008	150
Magnesium, Mg	1458	120
ANIONS		
Chloride, Cl	34435	971
Sulfate, SO4	3207	67
Carbonate, CO3	0	0
Bicarbonate, HCO3	976	16
Total Dissolved Solids	61112	
Specific Gravity	1.044	
pH	7.6	
Hardness as CaCO3, mg/l	13514	
Resistivity, ohm-meters @ 75'F	0.120	
Sulfate as H2S	present	

R.S. Dickey
Dickey Analytical Laboratory, Inc.

SEP-28-92 MON 05:30

PETROLITE

Petrolite Corporation
5624 Lovington Highway
Hobbs, NM 88240-9143

TRETOLITE DIVISION

(505) 392-6711
Fax (505) 392-3759

WATER ANALYSIS REPORT

Company : Plains Petroleum
Address : Jal NM
Lease : Teague Water Inj. Station
Well : Injection Pump
Sample Pt. : Pump Discharge

Date : 06-20-95
Date Sampled : 06-19-95
Analysis No. : 86

	ANALYSIS		mg/L		* meq/L
1.	pH	7.4			
2.	H2S	150 ppm			
3.	Specific Gravity	1.038			
4.	Total Dissolved Solids		70681.8		
5.	Suspended Solids		23.8		
6.	Dissolved Oxygen		0.1 ppm		
7.	Dissolved CO2		70 ppm		
8.	Oil In Water		65 ppm		
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)		765.0		
11.	Bicarbonate	HCO3	933.3	HCO3	15.3
12.	Chloride	Cl	40123.4	Cl	1131.8
13.	Sulfate	SO4	3400.0	SO4	70.8
14.	Calcium	Ca	2725.4	Ca	136.0
15.	Magnesium	Mg	1541.3	Mg	126.8
16.	Sodium (calculated)	Na	21958.5	Na	955.1
17.	Iron	Fe	0.0		
18.	Barium	Ba	NR		
19.	Strontium	Sr	NR		
20.	Total Hardness (CaCO3)		13151.8		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter

136	*Ca <----- *HCO3	15
	/------->	
127	*Mg -----> *SO4	71
	<---------/	
955	*Na -----> *Cl	1132

Saturation Values Dist. Water 20 C

CaCO3	13	mg/L
CaSO4 * 2H2O	2090	mg/L
BaSO4	2.4	mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	15.3	1240
CaSO4	68.1	70.8	4819
CaCl2	55.5	49.9	2769
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	126.8	6036
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	955.1	55818

REMARKS: Dominic Bazile / Rodney Long / Shannon Willis
Greg Archer / file (RapidChek II - 10/3rd)

Petrolite Oilfield Chemicals Group

Respectfully submitted,
Greg Archer

PETROLITE

SCALE TENDENCY REPORT

Company	: Plains Petroleum	Date	: 06-20-95
Address	: Jal NM	Date Samplod	: 06-19-95
Lease	: Teague Water Inj. Station	Analysis No.	: 86
Well	: Injection Pump	Analyst	: Greg Archer
Sample Pt.	: Pump Discharge		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. =	1.4	at	60 deg. F	or	16 deg. C
S.I. =	1.5	at	80 deg. F	or	27 deg. C
S.I. =	1.6	at	100 deg. F	or	38 deg. C
S.I. =	1.7	at	120 deg. F	or	49 deg. C
S.I. =	1.8	at	140 deg. F	or	60 deg. C

****

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	4414	at	60 deg. F	or	16 deg C
S =	4709	at	80 deg. F	or	27 deg C
S =	4882	at	100 deg. F	or	38 deg C
S =	4946	at	120 deg. F	or	49 deg C
S =	4984	at	140 deg. F	or	60 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
Greg Archer

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE

ILLEGIBLE

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
ARCO
P.O. Box 1610
Midland, TX 79702

4a. Article Number
P 428 546 546

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form **3811**, November 1990 ☆U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Chevron USA
P.O. Box 1150
Midland, TX 79702

4a. Article Number
P 428 546 547

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form **3811**, November 1990 ☆U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

SENDER:
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2. ☐ Restricted Delivery

Consult postmaster for fee.

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Chevron USA
P.O. 1150
Midland, TX 79702

4a. Article Number
P 428 546 548

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)

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

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I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Arch Petroleum
10 Desta Drive, Ste 420E
Midland, TX 79705

4a. Article Number
P 428 546 551

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

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

6. Signature (Agent)

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I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
OXY USA Inc.
P.O. Box 50250
Midland, TX 79702

4a. Article Number
P 428 546 550

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

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

6. Signature (Agent)

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I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Sirgo Oper.
P.O. Box 3531
Midland, TX 79702

4a. Article Number
P 428 546 549

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

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

6. Signature (Agent)

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I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
NM OCD
P.O. Box 1980
Hobbs, NM 88240

4a. Article Number
P 428 546 554

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)

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

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I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
BLM
P.O. Box 1778
Carlsbad, NM 88221

4a. Article Number
P 428 546 553

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)

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

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I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Texaco E+P
P.O. Box 3109
Midland, TX 79702

4a. Article Number
428 546 639

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form **3811**, November 1990 ☆U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

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Thank you for using Return Receipt Service.