

April 4, 1986

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

RE: Reddy-Gulf State #3
State Lease No. LG-2417
Unit E: 1650' FNL & 330' FWL
Section 18-T19S-R35E
Lea County, New Mexico

Gentlemen:

Fred G. Yates, Inc., as operator of the captioned new well, hereby makes application for exception to Statewide Rule 303-A for the captioned well, and requests authorization to commingle production in the well-bore from the following oil zones:

Penrose "B"	5068'-5079'
Grayburg	5646'-5692'

In support of this request, and in compliance with Rule 303-C, we have attached the following:

1. Acreage plat of the well proration unit and surrounding acreage
2. Form C-116 showing the amount of production from each zone
3. Completion history of the well, including treating and testing reports for each zone.

We estimate bottom-hole pressure from the Grayburg zone to be 1285 psi, and from the Penrose to be 1070 psi. This relatively small difference in pressure should cause no problems since both zones will be produced by artificial lift with intended low producing fluid level(s). Both zones are productive of similar gravity oil and the salt content of the water produced is approximately the same for both zones. Therefore, the fluids from the two zones should be compatible in the well-bore.

Future computation for the allocation of production to each of the commingled zones will be based on the initial (separate) swab and pump tests. We estimate from these tests, that the Grayburg will initially tend to level out to produce 8 BOPD and 25 BWPD when the water capability levels out so that "flush" water is somewhat depleted, and the Penrose zone has levelled out to only minor fluctuations on extended pumping test to 9 BOPD and 17 BWPD. Neither zone produces a significant amount of gas. From all indications and performance curves, these two zones together will likely rapidly decline to ten to twelve barrels of oil per day and less than 40 barrels of water per day early in their producing life.

Operators of all offsetting acreage have been notified in writing of the application to commingle production from the Grayburg and Penrose zones.

**Fred G. Yates
Inc.**

Sunwest Centre, Suite 1010

Roswell, N.M. 88201 (505) 623-4935

Oil Conservation Commission

April 1, 1986

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We request that this application be approved due to the fact that neither of the two zones will be economical to produce individually, nor do either of them produce in sufficient quantities to warrant a dual completion. If we are allowed to commingle production from the two zones, the value of the production will be identical to the estimated value if the well is dually completed. No gravity penalty or quality changes will affect the oil price. The ownership of both zones is the same.


However, if we have to dually complete the well to produce both zones, the cost of completion will be prohibitive. It would be necessary to plug and abandon the well to forego the cost of the equipment and the labor to install same to avoid future losses. Relatively short-lived dual pumping equipment would make the well costly to maintain. No secondary possibilities exist at this time.

Please consider the need to commingle down-hole for early administrative approval. If your rules and regulations do not allow such approval, or if you have not seen fit to "bend" (relax) your requirements to fit (match) the present low price of oil, especially in marginal cases, please place this application in line for hearing at the earliest possible date.

We respectfully request that you grant administrative approval in this matter.

Sincerely,

FRED G. YATES, INC.


John R. McMinn
Engineer

JRM/fm

Enclosures

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P.O. BOX 2013
SANTA FE, NEW MEXICO 87501

Form C-116
Revised 10-1-78

GAS-OIL RATIO TESTS

Owner Fred G. Yates, Inc.		Pool Penrose/Grayburg		County Lea											
Sunwest Centre, Suite 1010, Roswell, NM 88201				TYPE OF TEST - (X)	Scheduled <input type="checkbox"/> Special <input type="checkbox"/>										
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW. ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST				GAS - OIL RATIO CU. FT/ BBL	
		U	S	T						R	WATER BBL'S.	CRUD. OIL BBL'S.	GAS M.C.F.		TSTM
Reddy-Gulf State Penrose	3	E	18	19S	35E	3/31/86	P	----	N/A	24	17	33°	9	TSTM	N/A
Reddy-Gulf State Grayburg	3	E	18	19S	35E	2/24/86	S	----	N/A	10	51**	33.2°	3.5	TSTM	N/A

** Lacked 61 bbls load water equivalent when moved up hole to complete Penrose zone.

NOTE: We have pumped the Penrose zone isolated from the Grayburg with a retrievable bridge plug ever since leaving the Grayburg 2/25/86 (no later Grayburg tests to date).

SEE ADDITIONAL NOTE ATTACHED

No well will be assigned an allowable greater than the amount of oil produced on the official test.
During test well tests, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.
Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.
Report casing pressure in lieu of tubing pressure for any well producing through casing.
Well original and one copy of this report to the district office of the New Mexico Oil Conservation Division in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

[Signature]

(Signature)

Engineer
4/4/86
(Date)

(Duty)

NOTE: After observing the water rate fall off in our Penrose "B" pumping tests and after studying the Grayburg production from Read & Stevens, Inc. Quail State #4 well located 660' FSL & 660' FEL of Section 11, Township 19 South, Range 34 East, we wish to state that the water rate was undoubtedly overstated on Form C-103, a copy of which is enclosed herewith, for the Grayburg zone in our well. Our Grayburg zone calculated tighter and treated tighter than that of the Read & Stevens, Inc. Quail Queen #4 well. We lacked 61 barrels having equivalent volume of the load water back out of the Grayburg on our last swab test, when we moved up to the Penrose "B" zone. We now feel that the Grayburg zone will level off in a few days to approximately 25 barrels of water per day under stabilized pumping conditions.

OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-78

NO. COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.O.B.	
LAND OFFICE	
OPERATOR	

5a. Indicate Type of Lease	
State <input checked="" type="checkbox"/>	Fee <input type="checkbox"/>
5. State Oil & Gas Lease No. LG-2417	
7. Unit Agreement Name N/A	
8. Farm or Lease Name Reddy-Gulf State	
9. Well No. 3	
10. Field and Pool, or Wildcat Lea San Andres	
12. County Lea	

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO OPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT - 1" (FORM C-101) FOR SUCH PROPOSALS.)

OIL WELL ☒ GAS WELL ☐ OTHER ☐

Name of Operator
Fred G. Yates, Inc.

Address of Operator
Sunwest Centre, Suite 1010, Roswell, NM 88201

Location of Well
UNIT LETTER E 1650 FEET FROM THE North LINE AND 330 FEET FROM
THE West LINE, SECTION 18 TOWNSHIP 19S RANGE 35E N.M.P.M.

15. Elevation (Show whether DF, RT, GR, etc.)

3937' GR

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF:

REPAIR REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
REPAIR OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB Completion <input type="checkbox"/>	
OTHER <input type="checkbox"/>			

Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

- 18/86: MIRU Pulling Unit. Nipped up 5½" casing head and BOP. Ran bond log, casing collar and Gamma Ray. Bond acceptable. TOC 3750'. Pressure tested casing head and BOP and casing to 1200 psig - held OK. Perforated w/ Hyperjet 2 to 22 gram loads, .46" entry hole, 5646-53 w/ 1 shot per foot; 5673 w/ 2 shots; 5678-92, 1 shot per foot, for total of 23 holes.
- 19/86: Ran into casing w/ 176 joints 2-7/8" OD 6.50# J-55 EUE 8rd tubing to 5717'. Displaced tubing w/ 2% KCL water. Spotted 150 gallons 7½% Spearhead acid. Put 1500# on annulus. Pressured up to 2200#, formation broke. Displaced 1350 gallons remaining acid & 36 7/8" ball sealers. Began swabbing. Swabbed dry.
- 20/86: Swabbing; preparing to frac
- 21/86: Frac 5646-5692, 20,000 gallons 50/50 CO2 & 60# quality gelled water, 2% KCL base & 31,000# 20/40 sand - 52 tons CO2, 893,000 std. cubic feet, PAD 5,000 gallons 4 ball stages, 1#/gal., 2, 2½, 3#/gal. Left SI 2 hours for gel to break. Turned to pit on 1" choke, started swabbing.
- 22/86: Swabbing.
- 23/86: Shut down for Sunday
- 24/86: Perforate Penrose B w/ 2 Hyperjet 3 jet shots per foot. 5068-79 (22 shots). RIH w/ RBP on 163 joints. Spotted 150 gallons 15% NEFE triple inhibited acid. Opened well to pit. Started swabbing

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED [Signature] TITLE Engineering DATE 3/3/86

ORIGINAL SIGNED BY JERRY TEXTON

APPROVED BY [Signature] TITLE DISTRICT SUPERVISOR DATE MAR 17 1986

CONDITIONS OF APPROVAL, IF ANY:

RECEIVED	
DISTRIBUTION	
DATE	
BY	
OFFICE	
OPERATOR	

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-78

5a. Indicate Type of Lease	
State <input checked="" type="checkbox"/>	Fee <input type="checkbox"/>
5. State Oil & Gas Lease No.	
LG-2417	
7. Unit Agreement Name	
N/A	
8. Farm or Lease Name	
Reddy-Gulf State	
9. Well No.	
3	
10. Field and Pool, or Wildcat	
Lea San Andres	
12. County	
Lea	

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. <input checked="" type="checkbox"/> OIL WELL	2. <input type="checkbox"/> GAS WELL	3. <input type="checkbox"/> OTHER
4. Name of Operator		
Fred G. Yates, Inc.		
5. Address of Operator		
West Centre, Suite 1010, Roswell, NM 88201		
6. Location of Well		
7. Direction of Well		
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100. Direction of Well		

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

SUBSEQUENT REPORT OF:

1. REMEDIAL WORK	<input type="checkbox"/>	2. PLUG AND ABANDON	<input type="checkbox"/>	3. REMEDIAL WORK	<input type="checkbox"/>	4. ALTERING CASING	<input type="checkbox"/>
5. PARTIAL ABANDON	<input type="checkbox"/>	6. CHANGE PLANS	<input type="checkbox"/>	7. COMMENCE DRILLING OPER.	<input type="checkbox"/>	8. PLUG AND ABANDONMENT	<input type="checkbox"/>
9. ALTER CASING	<input type="checkbox"/>	10. OTHER	<input type="checkbox"/>	11. CASING TEST AND CEMENT JOB	<input type="checkbox"/>	12. OTHER	<input type="checkbox"/>
13. OTHER	<input type="checkbox"/>	14. OTHER	<input type="checkbox"/>	15. OTHER	<input type="checkbox"/>	16. OTHER	<input type="checkbox"/>

Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work.) SEE RULE 1103.

5/86: Swabbing.
6/86: Swabbing. Tripped packer and tubing, hydro test in the hole. Had 6 collar leaks, corrected by breaking and doping. Pressure tested annulus above packer (@ 4978') to 2000 psi, held OK. Preparing to frac.
7/86: Frac perfs 5068-79 thru 2-7/8" tubing w/ 20,000 gal. 50 quality gel, 2% KCL base water and 39,000# of 20/40 mesh sand and 23 tons CO2. Prepare to swab.
8/86 through 3/3/86: Swabbing.

On extended swab test, Grayburg perfs (5646-5692) produced 8 BOPD and 122 BWPD.
On extended swab test, Penrose perfs (5068-5079) produced 7 BOPD and 53 BWPD.

either zone is economical alone, and the well can only be produced, if at all, by our being allowed to commingle both zones down-hole. Therefore on an economic or hardship basis, we request your early consideration and eventual approval to commingle downhole from these zones. In the event there is some formal action we need to take, please inform us by collect call at (505)623-4935.

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I hereby certify that the information above is true and complete to the best of my knowledge and belief.

[Signature] TITLE Engineer DATE 3/4/86

ORIGINAL SIGNED BY JERRY SEXTON

DISTRICT I SUPERVISOR

DATE MAR 17 1986

CONDITIONS OF APPROVAL, IF ANY:

Fred G. Yates, Inc.
Sunwest Centre, Suite 1010
Roswell, NM 88201
(505) 623-4935

South Scharb/Penrose Prospect
Reddy-Gulf State #3
Section 18, T19S, R35E
1650' FNL & 330' FWL
Lea County, New Mexico

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- 01/17/86 First report: Location, pit and road completed. Reserve pit to be lined today. Preparing to move in, rig up rotary rig. Cost to follow after spud date.
- 01/21/86 Plan to move in, rig up rotary rig tomorrow, 1/22/86.
- 01/22/86 Contractor delayed getting released from previous job. Plan to move in, rig up 1/23/86.
- 01/23/86 Moving in, rigging up rotary rig.
- 01/24/86 Drilling @ 1,015'. Spudded @ 5:15 p.m. 1/23/86 with 12 1/4" bit using fresh water. Deviation 1/2° @ 304', 3/4° @ 775'. Bit #1 12 1/4".
- 01/25/86 Drilling @ 1,493. Prog. 478'. Tripped for new bit, wash to bottom. Deviation 0° @ 1,234'.
- 01/26/86 Drilling @ 1,811', prog. 318' in shale. MW 9.6, vis. 33.
- 01/27/86 Drilling @ 2,043, shale and salt. Prog. 232', MW 9.7 //Drld. 11" hole to 1,876'. Survey 1,876' - 3/4°. Ran 45 jts. 8-5/8" casing, set @ 1,876'. Western Co. cemented with 700 sacks P.S. lite and 200 sacks Class "C" neat. Good cement returns. WOC @ 4:00 p.m. 1/26/86. (Score before the game - nothing to nothing).
- 01/28/86 Drilling @ 3,320, salt. Prog. 1,277'. MW 10, vis. brine, PH 10. Deviation: 3/4° @ 2197', 1° @ 2667', 1 1/4° @ 3126'.
- 01/29/86 Drilling @ 3690, anhydrite and shale, prog. 370'. MW 10, vis. brine, PH 10. Deviation: 1 1/2° @ 3620. On Bit #4 for 51-3/4 hrs, has made 1874' and is still drilling. Geological report: 100% anhydrite, no drilling breaks.
- 02/04/86 Drilling at 5463 in lime and dolomite, prog. 276'. MW 9.9, vis. brine, PH 10.
- 02/05/86 Drlg. 5796 dolo. & sand, prog. 333'. MW 10, vis. brine, PH 9.5, Dev. 1° @ 5556'.
- 02/06/86 Drilled to 5950', dolomite and lime, prog. 154'. MW 10, vis. 38, PH 10. Deviation: 1 1/4° @ 5950. Now logging. Loggers tagged TD @ 5950'.
- 02/07/86 Schlumberger logged well with DLL MSFL and LDT CML CST and produced computer processed log, Cyberlook Log. Completed logging at 2:30 p.m., 02/06/86. Schlumberger TD 5950', 8-5/8" casing @ 1873'. Rigging down, TD 5950'. Ran 139 jts. (5815') 5 1/2" 15.50# J-55 8rd casing cemented @ 5815' w/400 sacks Class "C" 10% salt. 10% thixad. PD @ 2:00 a.m., 02/07/86. WOC. Rig released 4:30 a.m., 2/7/86. MODR. Details later.

Fred G. Yates, Inc.
Sunwest Centre, Suite 1010
Roswell, NM 88201
(505) 623-4935

South Scharb/Penrose Prospect
Reddy-Gulf State #3
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02/17/86 Preparing to weld bell nipple on 5 1/2" casing and set anchors. Plan to move in to complete 02/18/86.

02/18/86 Prep to move in pulling unit and all equipment & tubing. Set anchors, welded 5 1/2" bell nipple. Levelled location with a drag. DCC \$900 (since casing & cementing).

02/19/86 Moved in and rigged up pulling unit. Rigged up Schlumberger. Schlumberger had short in shaft takeoff line at swivel and short in collar locator. Repaired same. Received 124 joints 2-7/8" used tubing from Reddy-Gulf State #2 on transfer and 56 joints new 2-7/8" tubing. Received and nipped up 5 1/2" casing head and rental BOP. Received test tank. Schlumberger ran bond log, casing collar and Gamma Ray. Bond acceptable. Sonde set down at 5755, 150' shallow - no additional hole needed for this completion. Top of cement 3750' Pressure tested casing head and BOP and casing to 1200# psig after bond log was run - held OK. Schlumberger, w/4" casing gun (hollow carrier), perfed w/Hyperjet "2" to 22 gram loads to make .46" entry hole - 16.1' penetration in Berea Sandstone:

5646 - 53	1 per ft.	7 shots
5673	2 per ft.	2 shots
5678 - 92	1 per ft.	14 shots
		<u>23 shots</u>

Picked up rental Baker Model R packer, pump seating nipple and 70 joints used 2-7/8" 6.5# per foot J55, EUE 8 rd. thread tubing and shut down for night.

02/20/86 Ran on into casing w/176 joints 2-7/8" OD 6.5#pf J-55 EUE 8rd thread tubing to 5717' (124 used, 52, jts. new). Displaced tubing and 5 1/2" casing annulus w/2% KCL water. Pulled one jt. to 5686. Spooted 150 gal. Western 7 1/2% Spearhead acid. Pulled 3 joints to 5586, packer rubber 5584. PSN 5576. Set packer, opened bypass. Reversed acid from annulus above packer. Closed bypass. Put 1500# on annulus. Worked up to breakdown pressure in 40 min. to 2200 psi. Formation broke. Opened bypass. Displaced 1350 gal. remaining acid and 36 7/8" rubber-covered nylon ball sealers - (1.3 sp. gr., first 6 - 2 per bbl. and then one per bbl. thereafter) to bottom of tubing. Closed bypass. Acidized total 1500 @ 4 bbl. per minute at 1800#. ISDP 1200#, 5 min., 1180#, 7 min., 1175#. Job complete at 11:55 a.m. 2-19-86. Fair ball action. Balled out with 23 bbl. acid and 29 balls. Finished job without flowing back. Toal load 71 bbls. Turned to pit without choke. In 15 min. flowed estimated 15 bbls. of flush. Swabbed 19 bbl. flush. Swabbed dry by 1:45 p.m. Total recovery 60 bbl, estimated. Fluid level at 3:30 p.m. and 5:30 p.m. 600' above PSN, approx. 5000' from surface. Recovered 2 bbl. load water each run. 64 recovered. Lack estimated 7 bbl. load. No combustible gas, no oil. SDFN.

Fred G. Yates, Inc.
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Roswell, NM 88201
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02/21/86	<u>Time</u>	<u>Fluid level</u>	<u>Fluid in hole</u>	<u>Est. over load</u>
	7:30	4,000'	1600'/8 Bbl.	1
	9:30	5,600'	2 Bbl/oil skim	3 1/2
	11:30	5,200'	5 1/2 Bbl/oil skim	5
	1:30	5,100	1 1/2/no comb. gas	6 1/2

Water sample correlates w/formation water - 15 Bbl. per day. Last pull 1-2% oil. Shut down. Preparing to frac.

ADDITIONAL INFORMATION: Last swab on 2/18/86 from Lower Grayburg Sands - water analysis: specific gravity 1.1 @ 76°, pH 6.5, Calc. 21819, mag. 11708 (indicates dolomite was dissolved), sodium & potassium 19653, sulfate 1673, bicarb 832, chl. 62727, H2S 0, iron, very strong trace - correlates w/area premier formation water and some acid water. Last swab on 2-21-86: specific gravity 1.150 @ 76°. pH 6.8, calc. 12174, mag. 12678, sodium and potassium, h2S 0, iron, very strong trace, correlation - less spent acid water.

02/22/86 Lower Grayburg frac job 5646 - 5692, 20,000 gals. 50/50 CO2 & 60# quality gelled water, 2% KCL base and 31,000# 20/40 sand - 52 tons CO2, 893,000 std. cubic feet, PAD 5,000 gal. 4 ball stages, 1# per gal, 2, 2 1/2, 3# per gal. No significant break during treatment. Max 14 bpm, max. pressure 3600, average rate 12 bpm, average pressure 3400. Restricted rate in attempt to stay in zone. Total load 257 bbl. Job completed 8:41 a.m. 2/21/86. ISDP 1650, 5, 10 and 15 min 1650. Left SI 2 hrs for gel to break. Turned to pit on 1" choke at 10:41 a.m. Flowed 34 bbls
Flushed 35 bbls. load until 3:30 p.m.
Flowed 69 bbls. estimated
Started swabbing - F.L. 1500' from surface. Solid fluid @ 4600'. Swabbed down to 4600', estimated swabbed volume 50 bbls. Started cutting 1 to 2% oil @ end - 119 bbls. total. Swabbed to P.S.V. in 1 1/2 hrs, 1200' fluid in hole, about 7 bbls., 126 bbls. total. Remaining load estimated 131 bbls. to recover.

02/23/86 Starting fluid level 1600' from surface. Swabbed dry - lifted 50 bbls. in 1 1/2 hrs., 1200' fluid in hole. Swabbed 6 bbls. load water. 1 - 2 % oil. Total today - 26 bbls., no combustible gas. Lack 105 bbls. load, shut down at 2:00 p.m. Left well open to pit.

02/24/86 Off Sunday.

Fred G. Yates, Inc.
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Roswell, NM 88201
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- 02/25/86 Water analysis from last pull 2-22-86 @ 1:30 p.m. from Lower Grayburg: Sp. gr. 1.135 @ 77°, pH 7.0, iron trace, H₂S 0, calc. 11982, mag. 5995, sod. & pot. 43854, sul. 916, bicarb 1236, chl. 83700, resistivity .05 @ 78° correlates w/formation water. Well open to atmosphere from 2:00 p.m. 2-22-86.
Starting fluid level 1900' from surface - swabbed 2 BO, and est. 44 BW. Swabbed to PSN. Made approx. 6 bbl. fluid per hour. Last sample approx. 6% oil cut. Remaining load 61 bbl. estimated. Plan to move up hole to Penrose B zone. POH. Layed down Baker Model R rental packer. Schlumberger perfed Penrose B zone w/2 Hyperjet "3" jet shots per foot 5068 - 5079 - 22 shots. Picked up Baker packer-type retrievable BP and replacement Model R packer. Ran in hole w/RBP at 5300' on 163 jts. tubing. Pulled up to 5079' Western spotted 150 gals 15% NEFE triple inhibited acid. Pulled packer to 5010', 154 jts. Started to break down formation. Had minimum amount of communication. Pulled packer to 4978', 153 jts. Held satisfactorily. Broke down perfs at 3600#. Took 4 bpm at 1800#. Displaced remaining acid 1,050 gals (total 1200) same acid to above packer. Closed bypass. Acidized using 28 7/8" RCN ball sealers. While pumping acid, rate was 2 bpm @ 1750# and during 30-bbl. flush, 3 bpm @ 2100#. Zone appeared tight. Job completed @ 4:25 p.m. 2-24-86. Very little ball action - did not ball out. ISDP 1750, 5 min. 1700, 10 min. 1650. Average injection rate on flush was 3 bpm @ 2100#, overall average pressure 2000#. Total load to recover 60 bbl. Opened well to pit. After 20 min. SI, flowed very weakly. Started swabbing. Swabbed down to PSN recovering 30 bbl. (load) flush. SDFN @ dark. Last pull only 400' of fluid in hole. Will continue swabbing.
- 02/26/86 Starting fluid level 3400' from surface. First pull had 30' fluid, .2 bbl. oil. Swab dry in 3 pulls. Made 8 bbls. load water. Swab every 2 hrs. By 2:00 p.m. shut down had 200' of fluid. Entry each 2 hrs. About 1/2 bbl. per hr. Recovered 2 additional bbls. Total this date 10. Remaining 20 to recover. Last pull cut 6% oil
- 02/27/86 Starting fluid level 3600' from surface. Swabbed to PSN. Recovered 7 bbl. 20% oil or approx. 2 BO, 5 BW. Fluid entry 200' in 2 hrs. Swabbed 2 BW w/small oil cut. Total recovery today 7 bbl. Lack 13 bbl. Tripped packer and tubing, hydro test in the hole. Had 6 collar leaks, corrected by breaking and doping on the field side. Testing to 4900#. Set packer at 4978'. Pressure tested annulus above packer to 2000 psi, held OK. Swabbed to PSN. Shut down. Prep to frac 1-27-86.

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- 02/28/86 Frac. Penrose "B" perforations 5068-79 thru 2-7/8" tubing w/20,000 gal. 50 quality gel, 2% KCl base water and 39,000# of 20/40 mesh sand and 23 tons CO₂. Average treating pressure 3500#, average rate 15 bpm. ISDP 2200 psig, 5 min. SI 2150, 10 min. SI 2100, 15 min. SI 2050. Job complete @ 7:45 a.m. 2-27-86. Total load 384 BW. Left SI 2 hrs. Opened on 1" positive choke at 9:45 a.m. Flowed for 1-3/4 hrs., estimated 50 bbls. load, remaining load 334 bbls. Started in hole w/ swab. Sand in well effluent at 40' and could not get into tubing with swab. Waited 30 min. Got swab down tubing a few hundred feet and sand was tending to stick same. Pulled out of hole. Shut down til morning. Prep to swab.
- 03/01/86 Fluid level 1100' from surface. Swabbed estimated 60 bbl. load fluid, estimated remaining load 274 bbls. Swabbed dry -- 1000' fluid rise each 2 hrs. Swabbed 5 bbl/2 hrs. Last well head cut 6% oil.
- 03/02/86 Fluid level 2300' from surface. Swabbed down making 5 bbl/2 hrs, cutting 10% oil. Shut down at noon - total today 31 BLW, 2 BO., estimated load remaining 243 bbls.
- 03/03/86 Off Sunday.
- 03/04/86 Starting fluid level 2300' from surface. Swabbed 24 bbls fluid - first 2 runs over 50% oil. Swabbed to PSN. One 2-hr. pull 1000' fluid in hole, swabbed 5 bbls. 15% oil, total 25 BW, 4 BO. Lack 218 bbls. to recover. Unset packer, went in hole to 5000', no sand. Pulled out of hole, layed down rental Model "R" & RBP retrieving head. Picked up new Trico tubing (tension) anchor - ran into casing with 152 joints 2-7/8" tubing. Set anchor in tension @ 4947'. Nippled up tubing head, installed transfer gate. Shut down. Will run BHP and rods to pump test.
- 03/05/86 Setting pumping unit, running electric lines for pump unit, ran 1 1/2" bore rerun pump from #2 well and rerun rods from #2 well.
- 03/06/86 Penrose "B" perfs (only) 5068 - 79, put on pump and pumped up at 5:30 p.m. 3-5-86. Morning calls will be made for one week but will be one day late due to late calling time from pumper.
- 03/07/86 5:30 p.m. to 9:30 a.m., 3-6-86, (16 hrs.) produced 5 bbls. oil, 95 bbls. water, 5 mcf gas estimated. Remaining load water 123 bbls. plus 83 bbls. dumped from annulus above packer, therefore, 206 bbls. remaining load. Well head cut 20%. Pumping 12 strokes per minute on 1 1/2" bore pump, 123" stroke.
- 03/08/86 Produced 16 BO, 36 BW in 24 hrs. Well head cut 16%. Total load remaining to recover 170 BW.

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03/08/86 Produced 16 BO, 36 BW in 24 hrs. Well head cut 16%. Total load remaining to recover 170 BW.

03/09/86 Pumped 10 BO, 18 BW. Total load to recover 152 BW.

03/10/86 Pumped 10 BO, 28 BW. Total load to recover 124 BW.

03/11/86 Pumped 0 BO, 2 BW. Total load to recover 122 BW. Electric motor off - automatic thermal shutoff. Pumping unit out of balance - heavy on rods. Ruthco rebalanced and started pumping.

03/12/86 Pumped 10 BO, 36 BW.

03/13/86 Rods parted, preparing to repair same.

03/14/86 Well not pumped last 24 hours. Found rods not parted - unseated pump. Changed 4' pony rod for 8' pony rod to give more polish rod up. Seated pump. Plan to shorten stroke and rebalance pump on unit.

03/15/86 Pumped 18 BO, 26 BW in 24 hours

03/16/86 Pumped 9 BO, 20 BW in 24 hours

03/17/86 Pumped 11 BO, 14 BW in 24 hours

03/18/86 Pumped 10 BO, 15 BW in 24 hours

03/19/86 Pumped 5 BO, 13 BW in 24 hours

03/20/86 No oil gauge, cleaning up test tank oil and changing to battery @ #2 well by laying flowline, for extended production testing of Penrose and, later, Grayburg perms. and possibly commingling production.

03/21/86 Shut down at 11:30 a.m. Manifolded casing & tubing @ wellhead. Layed 1537' of 2" S.D.R. 11 polyethylene (plastic) flowline to #2 well battery with 160' of 2-3/8" tubing, line-pipe quality flowline across #3 location and 5 joints of existing 2" line-pipe flowline across location at #3 well. Started pumping to battery at 3:30 p.m. 3/20. Fluid & gas to battery & filling treater @ 4:00 p.m. Turned over to pumper.

03/22/86 Filling Treater.

03/23/86 9 BO. Filling water section of treater with produced water.

03/24/86 9 BO, 10 BW

03/25/86 10 BO, 6 BW

03/30/86 Averaging 11 BOPD, 7 BWPD

