

COMMINGLING DATA FOR THE PAULINE ALB STATE #6

1> Name and Address of the Operator:

Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
ATTN: Brian Collins

2> Lease Name, Well Number, Well Location, Name of the Pools to be Commingled:

Pauline ALB St. #6
Unit J Sec 32-T23S-R31E
1980' FSL & 1980' FEL
Pools:

3> A plat of the area showing the acreage dedicated to the well and the ownership of all offsetting leases.

See Attachment A (map)

4> A current (within 30 days) 24-hour productivity test on Division Form C-116 showing the amount of oil, gas, and water produced from each zone.

Bone Spring

8037'-8045'

See attached workover summary (Attachment B). Bone Spring swab tested 1.5 BFPH with 40% oil cut. Calculated daily production is:

Oil: $1.5 \text{ BFPH} \times .40 \times 24 = 14.4 \text{ BOPD}$
14 BOPD

Water: $1.5 \text{ BFPH} \times .60 \times 24 = 21.6 \text{ BWPD}$
22 BWPD

Delaware

7511'-7936'

See attached workover summary (Attachment B). Bone Spring + Delaware pump tested 202 BOPD/ 200 BWPD. Calculated Delaware production is:

Oil: $202 - 14 = 188 \text{ BOPD}$

Water: $200 - 22 = 178 \text{ BWPD}$

5> A production decline curve for both zones showing that for a period of at least one year a steady rate of decline has been established for each zone which will permit a reasonable allocation of the commingled production to each zone for statistical purposes. (This requirement may be dispensed with in the case of a

3

newly completed or recently completed well which has little or no production history. However, a complete description of treating testing, etc., of each zone, and a prognostication of future production from each zone shall be submitted.)

See Attachment B (workover history)

Prognostication of Bone Spring reserves derived by assuming an exponential decline rate of 70%/yr. for 1 year followed by 20%/yr. (best engineering estimate).

$Q_i = 14$ BOPD
 $Q, 1 \text{ yr} = 4$ BOPD
 $Q_{el} = 1$ BOPD
 $d = 70\%/yr.$ first year
 $d = 20\%/yr.$ thereafter

$$N \text{ oil} = \frac{365 (Q_{el} - Q_i)}{\ln(1-d)} = \frac{365 (4-14)}{\ln(1-.7)} + \frac{365 (1-4)}{\ln(1-.2)} = 3032 + 4907 = 7939 \text{ BO}$$

Prognostication of Delaware reserves derived by assuming an exponential decline rate of 70% / yr. for first year followed by a 20% / yr. (best engineering estimate).

$Q_i = 188$ BOPD
 $Q, 1 \text{ yr.} = 56$ BOPD
 $Q_{el} = 5$ BOPD
 $d = 70\%/yr.$ first year
 $d = 20\%/yr.$ thereafter

$$N = \frac{365 (56-188)}{\ln(1-.7)} + \frac{365 (5-56)}{\ln(1-.2)} = 40,018 + 83,422 = 123,440 \text{ BO}$$

Best engineering estimate of gas reserves assumes same GOR for both Bone Spring and Delaware.

- 6> Estimated bottom-hole pressure for each artificially lifted zone. A current (within 30 days) measured bottom-hole pressure for each zone capable of flowing.

Estimated original BHP of Bone Spring = 2914 psi at 8040' based on direct BHP measurement performed in DST on 3-23-88.

Estimated BHP of Delaware = 2800 psi at 7724' from pressure gradient of Bone Spring.

$$\frac{(2914 \text{ psi}) (7724 \text{ ft.})}{(8040 \text{ ft.})} = 2800 \text{ psi}$$

- 7> A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the well-bore.

Both zones produce sweet oil and gas. There are no incompatibility problems.

- 8> A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams.

Both zones produce sweet oil and gas. The value of the commingled production will not be less than the sum of the values of the individual streams.

- 9> A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such formula.

Oil: Bone Spring - $\frac{7939 \text{ BO}}{131,379 \text{ BO}} = 6.04\%$, say 6%

Delaware - $\frac{123,440 \text{ BO}}{131,379 \text{ BO}} = 93.96\%$, say 94%

Gas: Bone Spring - 6%

Delaware - 94%

- 10> A statement that all offset operators and, in the case of a well on federal land, the US BLM, have been notified in writing of the proposed commingling.

The offset operators for this area were notified of the proposed commingling of the Pauline ALB State #6. See attached notification/waiver letters (Attachment C). The BLM has also been notified since the Pauline lease has Federal surface ownership.

9-3-92

PAULINE "ALB" STAGE #6

MOVE IN & RIG UP PULLING UNIT - TOH WITH RODS & PUMP - RIG UP
KILL TRUCK & PUMP 20 BBLs OF 2% KCL WATER DOWN ANNULUS - UNSET
TUBING ANCHOR - NIPPLE UP BOP - TOH WITH 2 7/8" TUBING - TIH WITH
2 7/8" TUBING + PER. SET PER AT 7999' - RIG UP SWAB - SWAB WITH
THE FOLLOWING RESULTS: FL 4500'

Time	FL	WATER	OIL	GAS
2:45pm - 3:45pm	3000'	20 BBLs	40%	STRONG
3:45pm - 4:45pm	6000'	14 BBLs	40%	STRONG
4:45pm - 5:45pm	7991	4 BBLs	40%	STRONG
5:45pm - 6:45pm	7991	0	0	STRONG
6:45pm - 7:45pm	7800 SCATTERED	1 BBLs	40%	STRONG
7:45pm - 8:45pm	7700 SCATTERED	1 1/2 BBLs	40%	STRONG

TOTAL RECOVERED. 25 BW - 15 1/2 BO - RIG DOWN SWAB - UNSET PER AT
7999' - TOH WITH 2 7/8" TUBING & PER - TIH WITH TUBING ANCHOR & 2 7/8"

TUBING - SEATING NIPPLE SET AT 7610' - TUBING ANCHOR SET AT 5990' -

NIPPLE DOWN BOP - TIH WITH PUMP & RODS - TURN PUMP ON AT 4:00 AM

9-4-92

D.C. 7053

Bone Spring only.

LOCATION: 1980' FSL, FEL J- 32- 23s- 31e Eldy NM

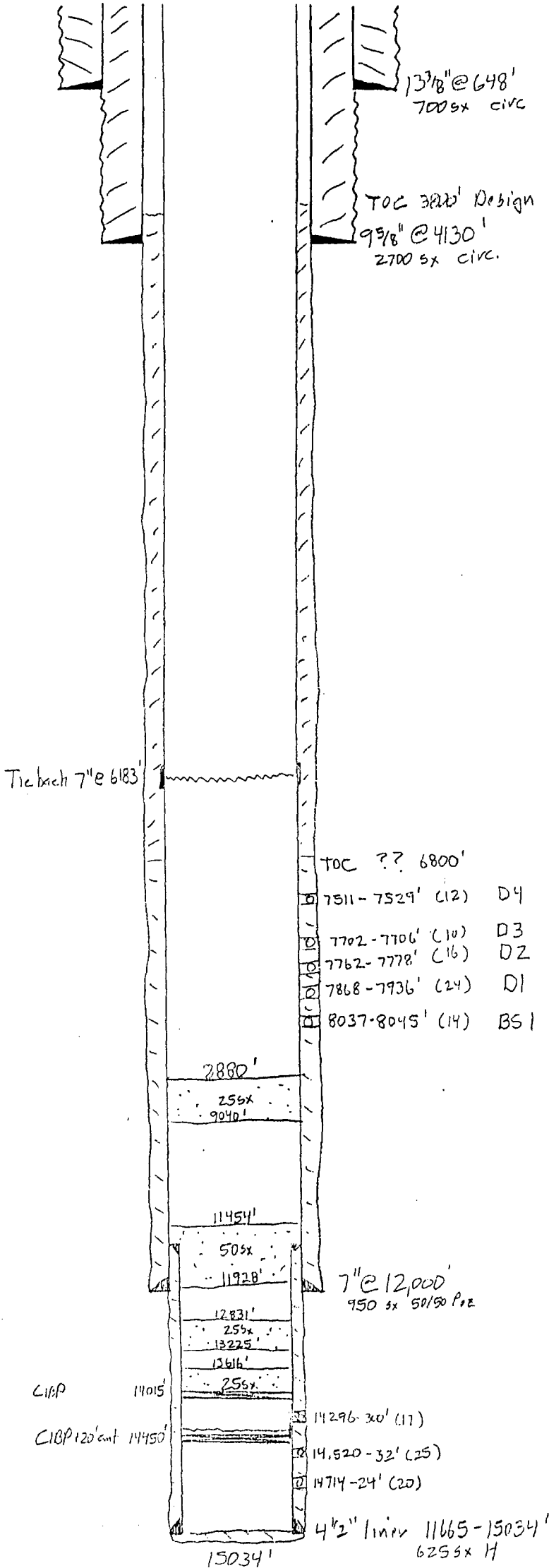
GL: 3370' ZERO: 25' AGL: _____

KB: 3395' ORIG. DRLG./COMPL. DATE: _____

COMMENTS: _____

CASING PROGRAM:

SIZE/WT./GR./CONN.				DEPTH SE
13 3/8	48	H4D	STC	648'
9 5/8	40	K55	LTC	4130'
7"	29		LTC	12,000'
4 1/2	13.5	S95	LTC	15034'
Liner 11665-				
7"	23	J55	LTC Tieback	5400'
	26	J55	LTC Tieback	6183'



Proposed Wellbore Schematic
(Attachment D)

"AFTER"
Z

REVISED: Brian Collins

YATES PETROLEUM CORPORATION
CHRONOLOGICAL DRILLING REPORT
Pauline "ALB" State #6
Unit J
32-23S-31E
Eddy County, New Mexico

7

RE-ENTRY

Location: 1980' FSL & 1980' FEL of Section 32-23S-31E, Eddy County, New Mexico. API No.: 30-015-25886. PTD: 9000' Bone Spring. Lease No.: V-3589. Elevation: 3370.5' GR. Yates Petroleum Corporation proposes to re-enter this well which was drilled by Santa Fe Energy Operating Partners in May of 1988 as their Sterling Silver 32 #1 well and P & A in November 1988.

7-28-92 Cleaned location and dug cellar. Set and tested anchors and markers. Moved in and rigged up pulling unit. Cut off 9-5/8" casing and welded on wellhead. Nippled up BOP. Rigged up working pits. Shut down. Prep to finish rigged up and drill cement plugs. DC \$9381

7-29-92 Finished rigging up pits and flow line. Picked up 8-1/2" bit, crossover sub, 1 drill collar. Rigged up power swivel and drilled cement plug #1 from 5' down to 75'. Rigged down power swivel. Picked up and TIH with 13 drill collars, crossover sub and 2-7/8" N-80 tubing down to 634'. Rigged up power swivel. Drilled cement plug #2 from 634-730'. Rigged down power swivel. TIH with 2-7/8" N-80 tubing to 4060'. Rigged up power swivel. Drilled cement plug #3 and CIBP from 4060-4093'. Washed and reamed old hole to 4249'. Bit was torquing up. Could not make any hole. TOH with 2-7/8" tubing, drill collar and bit. TIH with bit, 14 - 4-3/4" drill collars and 2-7/8" tubing. MW 9.5, Vis 36, WL 9, Cl 126000, pH 10. DC \$3738; CC \$13,119

7-30-92 Finish TIH with bit, drill collar and 2-7/8" tubing to 4219'. Rigged up power swivel and drilled from 4219-4223'. Rigged down power swivel. TOH with 2-7/8" tubing, drill collar and bit. Tested BOP and casing at 3183' to 1500 psi for 15 min, OK. TIH with 8-3/8" OD shoe extension, top bushing, drill collar and 2-7/8" tubing 4223'. Rigged up power swivel. Washed from 4223-4234'. TOH with 2-7/8" tubing, drill collar, top bushing, and extension shoe. TIH with 8-1/2" bit, drill collar and 2-7/8" tubing. Rigged up power swivel. Drill from 4234-4239'. TOH with 2-7/8" tubing, drill collar and bit. TIH with 8-3/8" OD shoe, extension, top bushing, drill collar and 2-7/8" tubing down to 4239'. Rigged up power swivel. Washed from 4239-5100'. MW 9.5, Vis 32, WL 10, Cl 119,000, pH 11. DC \$9929; CC \$23,048

7-31-92 MW 9.4, Vis 34, WL 9, pH 10, Cl 119,000. Continue washing with shoe from 4722-5841'. TOH with 2-7/8" tubing, drill collar, crossover sub, top bushing, extension and shoe. TIH with bit, drill collar, and 2-7/8" tubing to 5841'. Washed and reamed from 5841-6175'. Tagged top of 7" casing stub at 6175'. TOH with 2-7/8" tubing, drill collar and 8-1/2" bit. Starting to TIH with 6" bit, drill collar and 2-7/8" tubing. DC \$9639; CC \$32,687

8-1-92 TIH with 6" bit. Could not get into 7" stub. TIH with 8-1/2" bit to 6175'. Drilled cement and junk to 6183'. TIH with impression block. Still have junk on top of stub.

8-2-3-92 TIH with 8-3/16" concave mill to 6183'. Milled 13". TOH with mill. Mill face indicated junk in hole. TIH with 8-3/4" flat bottom mill. Milled 3' to 6187'. Mill still torquing up. TOH. TIH with new 8-3/4" flat bottom mill. Milled 18" to 6188.5'. TOH. TIH with 5-3/4" bit and sting mill. Drilled cement indside 7" stub from 6188.5' to 6270'. Washed down to 6323'. Worked mill inside 7" stub. TOH. TIH with 6" bit. Prep to drill remaining plugs inside 7" casing. MW 9.6, Vis 35, WL 12, pH 10, Cl 119,000

DRILLING REPORT

Page 2

Yates - Pauline "ALB" State #6 (Unit J) 32-23S-31E Eddy Co., NM

8-4-92 Rigged up power swivel. Worked 6" bit inside 7" casing. Washed and reamed 188' to 6814'. Drilled cement and junk 6814-6819'. Getting wire tape and metal in returns. TOH with 2-7/8", drill collars and 6" bit. Left 1 cone in hole. TIH with 5-3/4" globe basket, drill collars and 2-7/8" tubing to 6819'. Rigged up power swivel. Had 3-1/2" of core in globe basket. TOH with 2-7/8" tubing, drill collars and globe basket. Did not recovery anything. Prep to TIH with 6" shoe and junk basket. MW 9.6, Vis 40, WL 12, Cl 119,000, pH 10. DC \$9169

8-5-92 TIH with 6" shoe extension, top bushing, drill collars and 2-7/8" tubing to 6822'. Rigged up power swivel and drilled cement from 6822-6945'. Washed and reamed from 6945-8940'. MW 9.6, Vis 40, pH 10, WL 12, Cl 110,000. DC \$8329

8-6-92 Circulated hole clean. TOH with 2-7/8" tubing, drill collars, top bushing, extension and 6" shoe. Recovered bit cone and piece of 3-1/2" OD pipe 5' long. TIH with 6" bit, 2 drill collars, stabilizer, drill collars, skirted dress off mill, top bushing, 12 drill collars and 2-7/8" tubing to 6188'. Rigged up power swivel. Worked skirted dress off mill over 7" casing stabilizer. Dressed top of casing stub. Circ clean. TOH with 2-7/8" tubing, 12 drill collars, top bushing, skirted dress off mill, drill collar, stabilizer, 2 drill collars, and 6" bit. Changed out tubing rams to 7" casing rams. Rigged up casing crew. Ran 7" casing. MW 9.6, Vis 40, WL 14, Cl 110,000, pH 10. DC \$8729

8-7-92 No report.

8-8-92 Finished running 7" casing to stub at 6161'. Circulated well clean. Had good returns. RIH with 5-3/4" bit, 4 - 4-3/4" drill collars and 2-7/8" tubing to 6375'. TOH with tubing, collars and bit.

8-9-10-92 Ran GR/CCL/CBL from 8100' to 6000'. Set cement retainer at 6100'. Tested annulus to 500 psi, OK. Circulated through retainer. Cemented with 500 gals mud flush + 500 gals Surebond + 975 sacks Class "H" with 8#/sx CSE, .5% CF-14, .035% Thrifty Lite, 5#/sx Gilsonite (weight 13.57, yield 1.75). Circulated 30 bbls of mud flush. Stung out of retainer. Reversed tubing clean. TOH with tubing. WOC. Ran Temperature Survey in 13 hrs. Top of cement 1200'. Prep to drill out on 8-11-92.

8-11-92 WOC. Prep to cut off 7" casing and nipple up tubinghead and BOP. TIH and drilled out cement retainer. DC \$105

8-12-92 Made 7" cut off on casing. Nippled up tubinghead. Installed BOP. TIH with 6" bit, 6 - 4-3/4" drill collars and 2-7/8" tubing to cement retainer at 6100'. Rigged up power swivel and drilled out cement retainer and cement. Tested casing stub to 900 psi for 15 mins, OK. TOH with 2-7/8" tubing, drill collars and 6" bit. TIH with 6" bit, scraper, drill collars and 2-7/8" tubing. DC \$8579

8-13-92 Finished TIH with 6" bit, scraper, drill collars and 2-7/8" tubing to 8889'. Circulated hole with 2% KCL water. TOH. TIH with 6-1/8" bit and tubing to 6165' to casing splice. TOH. Rigged up wireline and perforated 8037', 38', 39', 40', 43', 44', 45' with 4" casing gun (14 - .45" holes). TOH with guns. Prep to GIH with packer and frac Bone Spring 8037-45'.

8-14-92 TIH with packer and 2-7/8" tubing. Set packer at 7961'. Loaded annulus with 2% KCL water. Acidized perfs 8037-45' with 750 gals 7-1/2% NEFE acid + 16 ball sealers. Breakdown 1680 psi. Avg 3-1/2 BPM at 2000#. Good ball action. ISDP 1000#. Surged balls and frac'd perfs 8037-45' with 1600 gals linear gel, 10,700 gals crosslink gel + 25,500# 20/40 resin coated sand. Avg 6.6 BPM at 2200#. ISDP 1330#, 15 mins 1110#. Total load to recover 439 bbls. Shut in for 2 hours. Opened well with 1000 psi and bled down to pit. Unset packer. TOH with 2-7/8" tubing and packer. Shut down. Prep to perforate and acidize Zone D1 7868-7936'. DC \$15,253

DRILLING REPORT

Page 3

Yates - Pauline "ALB" State #6 (Unit J) 32-23S-31E Eddy Co., NM

8-15-17-92 TIH with 4" casing gun. Perforated D1 as follows: 7868', 70', 72', 74', 82', 84', 86', 92', 93', 7932', 34', 36'.
 TIH with RBP, packer and 2-7/8" tubing. Set RBP at 7961' and tested to 2000#. Pulled up and set packer at 7809'.

Loaded annulus with 2% KCL water. Acidized perfs 7868-7936' with 1500 gals 7-1/2% NEFE acid + 36 balls. Breakdown 2480#. Avg 4 BPM at 1300#. ISDP 630#, 15 mins 360#. Balled out. Total load to recover 86 bbls. Rigged down Western and rigged up swab. Swabbed as follows:

TIME	F.L.	WATER	OIL
2:00-3:00 PM	Surf-1200'	25	0
3:00-4:00 PM	1200-2200'	30	0
4:00-5:00 PM	2200-3500'	30	20%
scatt			
5:00-5:30 PM	3500-5200'	12	35%
scatt			

Total recovered 87 bbls water and 10 bbls oil, 1 bbl water over load. Frac'd perfs 7868-7936' with 2400 gals linear prepad, 11000 gals crosslink gel and 24000# 20/40 resin coated sand. Pressure started climbing on 5 ppg 20/40. Cut sand and went to flush. Avg 7 BPM at 1000#. ISDP 1100#, 15 mins 150#. Total load to recover 370 bbls. Shut in. Prep to TOH with 2-7/8" tubing and packer and perforate D2 7762-7778'. DC \$18,617

8-18-92 TOH with 2-7/8" tubing and packer. TIH with 4" casing guns. Could not go down 7070' with 4" casing guns. TOH with 4" casing guns and rigged down wireline. TIH with 2-7/8" tubing to 7809'. Rigged up swivel and Western. Washed sand from 7809' down to 7870'. Circulated hole clean. TOH with 2-7/8" tubing. TIH with 4" casing guns. Perforated Zone D2 & D3, 2 SPF, with 26 holes as follows: D2 - 7762', 64', 66', 68', 72', 7774', 76', 78' and D3 - 7702', 03', 04', 05', 06'. TOH with casing guns. TIH with RBP, packer and 2-7/8" tubing. Set RBP at 7809' and tested to 1500#. Spot 2 bbls of acid across perfs. Pulled up and set packer at 7587'. Acidized Zone D2 7762-7778' and Zone D3 7703-7706' with 1500 gals 7-1/2% NEFE acid + 40 balls. Breakdown 3600#. Avg 4 BPM at 1400#. Ball action very good. Had 600# increase. ISDP 500#, 5 mins 500#, 10 mins 450#, 15 mins 425#. Total load to recover 103 bbls. Rigged down Western. Rigged up swab. Swabbed as follows:

TIME	F.L.	FLUID (bbls)	OIL (%)
12 AM-1 AM	300'	24	0
1 AM-2 AM	600'	27	0
2 AM-3 AM	800'	25	0
3 AM-4 AM	600'	25	0
4 AM-5 AM	Surf	26	10%
5 AM	Well started flowing		
5 AM-6 AM	100# 3/4" Ch	25	50%
6 AM-7 AM	150# 1/2" Ch	25	50%

Total recovered 157 bbls water and 20 bbls oil, 74 bbls water over load. DC \$8094

8-19-92 Continued flowing as follows:

TIME	PSI/CHOKE	FLUID	% OIL
7-8:00 AM	125#-1/2"	25 bbls	60%
8-9:00 AM	125#-1/2"	10	60%
9-10:00 AM	140#-1/2"	15	50%
10-11:00 AM	140#-1/2"	9	50%
11-12:00 PM	125#-1/2"	13	60%
12-1:00 PM	140#-1/2"	10	60%
1-2:00 PM	125#-1/2"	15	60%
2-3:00 PM	140#-1/2"	9	70%
3-4:00 PM	140#-1/2"	14	70%

Total recovered 207 bbls water + 90 bbls oil. Over load 194 bbls. Shut down. Prep to frac D2 & D3. DC \$2482

8-20-92 Frac'd perfs 7702-7706' and 7762-7778' with 10000 gals 35# linear prepad, 22000 gals 35# crosslink + 38000# 20/40 resin coated sand. Max 3100#, Min 1950#, Avg 2800# at 10 BPM. ISDP 800#, 5 mins 700#, 10 mins 600#, 15 mins 600#. Shut in for 4 hours. Bled pressure off. Unset packer at

DRILLING REPORT

Page 4

Yates - Pauline "ALB" State #6 (Unit J) 32-23S-31E Eddy Co., NM

 7587'. Dropped down to 7809'. Reverse circulated tubing clean. Unset RBP at 7809'. Pulled up hole to 7565'. Set RBP at 7565' and tested to 1500#, OK. Pulled up and set packer at 7433'. TOH with through tubing guns. Perforated 2 SPF 12 holes with Enterjet through tubing guns as follows: 7511', 13', 15', 23', 25', 29'. TOH with tubing guns. Rigged up Western. Loaded annulus. Acidized perfs 7511-7529' with 1000 gals 7-1/2% NEFE acid. Broke down 4000#. Max 3500#, Min 2600#, Avg 3000# at 3 BPM. Ball action very good. ISDP 500#, 5 mins 450#, 10 mins 425#, 15 mins 425#. Total load to recover 79 bbls water. Swabbed as follows:

TIME	F.L.	WATER	OIL
10-11 PM	2000'	20 bbls	0
11 PM-12 AM	4000'	18 bbls	0
12-1 AM	5000'	16 bbls	0
1-2 AM	6000'	10 bbls	0
2-3 AM	6500'	5 bbls	0
3-4 AM	7420' (SN)	3 bbls	10%
4-5 AM	7420' (SN)	2 bbls	20%
5-6 AM	7420' (SN)	1 bbl	30%

Total recovered 74 bbls water and 1 bbl oil. Load left 48 bbls water. DC \$26,165; CC \$28,647

8-21-92

Continued swabbing as follows:

TIME	FLUID LEVEL	WATER	OIL
6 AM-7 AM	7420' (SN)	1.5 bbls	30%
7 AM-8 AM	7420' (SN)	1 bbl	35%
8 AM-9 AM	7420' (SN)	1 bbl	35%
9 AM-10 AM	7420' (SN)	1 bbl	35%

Total recovered 77 bbls water & 2-1/2 bbls oil. Over load 1/2 bbl. Rigged up Western. Frac'd perfs 7511-7529' with 6000 gals 35# linear prepad, 4000 gals 35# crosslink and 22,000# 20/40 resin-coated sand. Max 4200#, Min 2400#, Avg 3300# at 8.6 BPM. ISDP 650#, 5 mins 650#, 10 mins 625#, 15 mins 600#. Shut in. Flowed back. Unset packer at 7433'. Washed sand down to RBP. Unset RBP at 7565'. TOH with 2-7/8" tubing, packer and RBP. Shut down. Prep to unset RBP at 7961'. DC \$20,145; CC \$48,792

8-22-92

TIH with retrieving tool and 2-7/8" tubing. Washed 130' sand off top of RBP at 7961'. Unset RBP at 7961'. TOH with 2-7/8" tubing, retrieving tool and RBP. TIH with 2-7/8" N-80 tubing to 8250'. Rigged up Western and circulated 230 bbls 2% KCL. TOH and laid down 2-7/8" N-80 tubing. Shut down. Prep to TIH with 2-7/8" J-55 tubing and tubing anchor. Turned over to production to run rod pump (SN at 7610' & anchor at 5990'). DC \$2797; CC \$51,589

8-23-24-92

No report.

8-24-92

Pumped 296 bbls oil, 414 bbls water and 454 MCF in 21 hours.

8-25-92

Pumped 330 bbls oil, 220 bbls water and 461 MCF.

8-26-92

Pumped 294 bbls oil, 205 bbls water and 453 MCF.

8-27-92

Pumped 292 bbls oil, 288 bbls water and 420 MCF.

8-28-92

Pumped 276 bbls oil, 200 bbls water and 420 MCF.

8-29-92

Pumped 273 bbls oil, 210 bbls water and 420 MCF.

8-30-92

Pumped 231 bbls oil, 173 bbls water and 420 MCF.

8-31-92

Pumped 222 bbls oil, 202 bbls water and 468 MCF.

9-1-92

Pumped 202 bbls oil, 200 bbls water and 448 MCF.

9-2-92

Pumped 23 bbls oil and 240 bbls water.

Bone Spring + Delaware.

BEFORE EXAMINER CATANACH

OIL CONSERVATION DIVISION

Yates Petroleum EXHIBIT NO. 1

CASE NO 10620