

Application of Apache Corporation for administrative
approval of an unorthodox well location:

40 acres – 1210' FNL & 1470' FEL
Section 9, Township 21 South, Range 37 East, NMPM
Lea County, New Mexico

PRIMARY OBJECTIVE: Blinebry, Tubb and Drinkard

In support:

1. Apache Corporation (Apache) is the operator of the proposed **Southland Royalty A #16** well (**Exhibit 1**).
2. The proposed unorthodox location encroaches toward the following wells which are, or have been productive from various combinations of the Blinebry, Tubb, and Drinkard (**Exhibit 2**). All four units are contained within one oil and gas lease, with common working and revenue interest owners. The unit in which it is proposed has a noncommercial Blinebry, Tubb, and/or Drinkard well.

OPER	WELL	LOC	RESRVR	CUM B-T-D O/G/W	DAILY B-T-D O/G/W	CURRENT POOL
Apache	Southland Royalty A #7	9-A	B-T-D	202/1699/48	0/0/0	Penrose Skelly: Grayburg
Apache	Southland Royalty A #2	9-B	B-T-D	471/4953/77	0/3/0	Blinebry Oil and Gas AND Tubb Oil and Gas, AND Drinkard
Apache	Southland Royalty A #1	9-G	B-T-D	287/4272/22	5/138/3	Blinebry Oil and Gas AND Tubb Oil and Gas, AND Drinkard AND Wantz Abo
Apache	Southland Royalty A #6	9-H	B-D	270/6294/52	4/74/1	Blinebry Oil and Gas AND Drinkard

Oil in MBO
Gas in MMCFG
Water in MBW

BOPD
MCFGPD
BWPD

3. The proposed **Southland Royalty A #16** unorthodox Blinebry, Tubb, and Drinkard location of 1210' from north line and 1470' from east line is necessitated by geological and drainage considerations, as well as to prevent waste:

a. Blinebry, Tubb and Drinkard

The Blinebry, Tubb, and Drinkard Formations are members of the Yeso Group, Permian Leonardian in age. Portions of the Eunice area were



unitized by Shell in 1987 into the Northeast Drinkard Unit for waterflood operations. The unit is governed by the North Eunice Blinebry-Tubb-Drinkard Field Rules. The stratigraphic relationships, specifically top of Blinebry being 75' above the Blinebry Marker, and fluid contacts, specifically Blinebry GOC at -2255 and Drinkard OWC at -3225, employed by Shell have also been used here.

All three formations are shallow marine carbonates, consisting primarily of dolomite. The Tubb can have appreciable clastic content and the Drinkard becomes limey toward its base. Anhydrite can occur throughout the interval. Structure is significant in that it controls the fluid distribution. Any oil water contacts in these formations occur miles from this location.

Apache approached its evaluation by mapping the following on each of the four major reservoirs (Blinebry Gas Cap, Blinebry Oil Leg, Tubb, and Drinkard):

1. Structure (primarily to locate fluid contacts on logs and cross sections),
2. Clean carbonate (less than 40 APIU gamma ray),
3. Net to gross ratio using only modern logs from which a cross plotted porosity could be calculated,
4. Net pay (h) which was either picked from modern logs or calculated by multiplying the clean carbonate grid by the net to gross ratio grid (thus estimating net pay for wells without modern logging suites),
5. Average porosity (PhiA), using only modern logs from which a average porosity could be calculated,
6. Porosity*Feet (PhiH) which was either calculated from modern logs or calculated by multiplying the net pay (h) grid by the average porosity (PhiA) grid.

Reservoir engineering used the four PhiH maps to estimate drainage of each offsetting well in each reservoir. Recoverable reserves for this location are calculated as the volumetrics under a 20 A radius (less if the direct offsets were not capable of draining 20 A) with reduced reservoir pressure where drainage has occurred. Drainage offsetting this location is as follows:

SEC	LEASE NAME	WELL	PROD ZONE NAME	EUR			DRAINED
				OIL	WATER	GAS	ACRES
9	SOUTHLAND ROYALTY A	1	BLINEBRY GAS CAP	96,377	10,048	1,039,642	16
9	SOUTHLAND ROYALTY A	2	BLINEBRY GAS CAP	77,263	23,302	587,096	5
9	SOUTHLAND ROYALTY A	6	BLINEBRY GAS CAP	179,988	35,325	5,267,507	110
9	SOUTHLAND ROYALTY A	7	BLINEBRY GAS CAP	119,219	13,566	1,042,548	8
9	SOUTHLAND ROYALTY A	1	BLINEBRY OIL LEG	96,377	10,048	1,039,642	21
9	SOUTHLAND ROYALTY A	2	BLINEBRY OIL LEG	77,263	23,302	587,096	17
9	SOUTHLAND ROYALTY A	6	BLINEBRY OIL LEG	179,988	35,325	5,267,507	26

9	SOUTHLAND ROYALTY A	7	BLINEBRY OIL LEG	119,219	13,566	1,042,548	25
9	SOUTHLAND ROYALTY A	1	TUBB	6,387	1,071	683,573	45
9	SOUTHLAND ROYALTY A	2	TUBB	38,101	19,031	3,423,424	166
9	SOUTHLAND ROYALTY A	7	TUBB	931	656	12,444	1
9	SOUTHLAND ROYALTY A	1	DRINKARD	184,617	8,870	2,552,272	48
9	SOUTHLAND ROYALTY A	2	DRINKARD	302,112	34,523	943,428	106
9	SOUTHLAND ROYALTY A	6	DRINKARD	90,933	16,735	1,031,126	21
9	SOUTHLAND ROYALTY A	7	DRINKARD	81,770	8,811	913,742	27

Volumetrics for the proposed location are as follows:

			RESERVOIR	DRAINAGE	EUR	
		PROD ZONE NAME	PRESSURE	ACRES	OIL	GAS
SOUTHLAND ROYALTY A	16	BLINEBRY GAS CAP	900	20	960	96
		BLINEBRY OIL LEG	2200	20	104,148	677
		TUBB	700	20	340	34
		DRINKARD	900	20	22,318	145
		TOTAL			127,766	952

Exhibit 3 is a stratigraphic cross section, hung on the top of the Blinebry, trending north to south; passing near several wells Apache is considering drilling. It illustrates several critical points:

1. Wireline logging suites vary greatly. Many wells do not have reliable gamma ray or porosity logs.
2. Tops are easily correlated, but the presence of tight dolomite/anhydrite and shale **compartmentalizes** the reservoir.
3. All the reservoirs are low porosity.

b. Blinebry Gas Cap (Exhibit 4)

Thickness of the Blinebry Gas Cap is related to the subsea top of the Blinebry. The higher the top, the thicker the gas cap. Using a 5% threshold, porosity averages 10.2% in 118 wells selected for analysis. PhiH at this location is expected to be 5.0'.

c. Blinebry Oil Leg (Exhibit 5)

Thickness of the Blinebry Leg is related to the subsea top of the Blinebry, the higher the top, the thinner the gas cap. Using a 5% threshold, porosity averages 8.4% in 146 wells selected for analysis. PhiH at this location is expected to be 10.9'.

c. Tubb (Exhibit 6)

Thickness of the Tubb varies little in the area, ranging mostly from 300' to 360'. Using a 5% threshold, porosity averages 8.4% in 145 wells selected for analysis. PhiH at this location is expected to be 3.6'.

d. Drinkard (Exhibit 7)

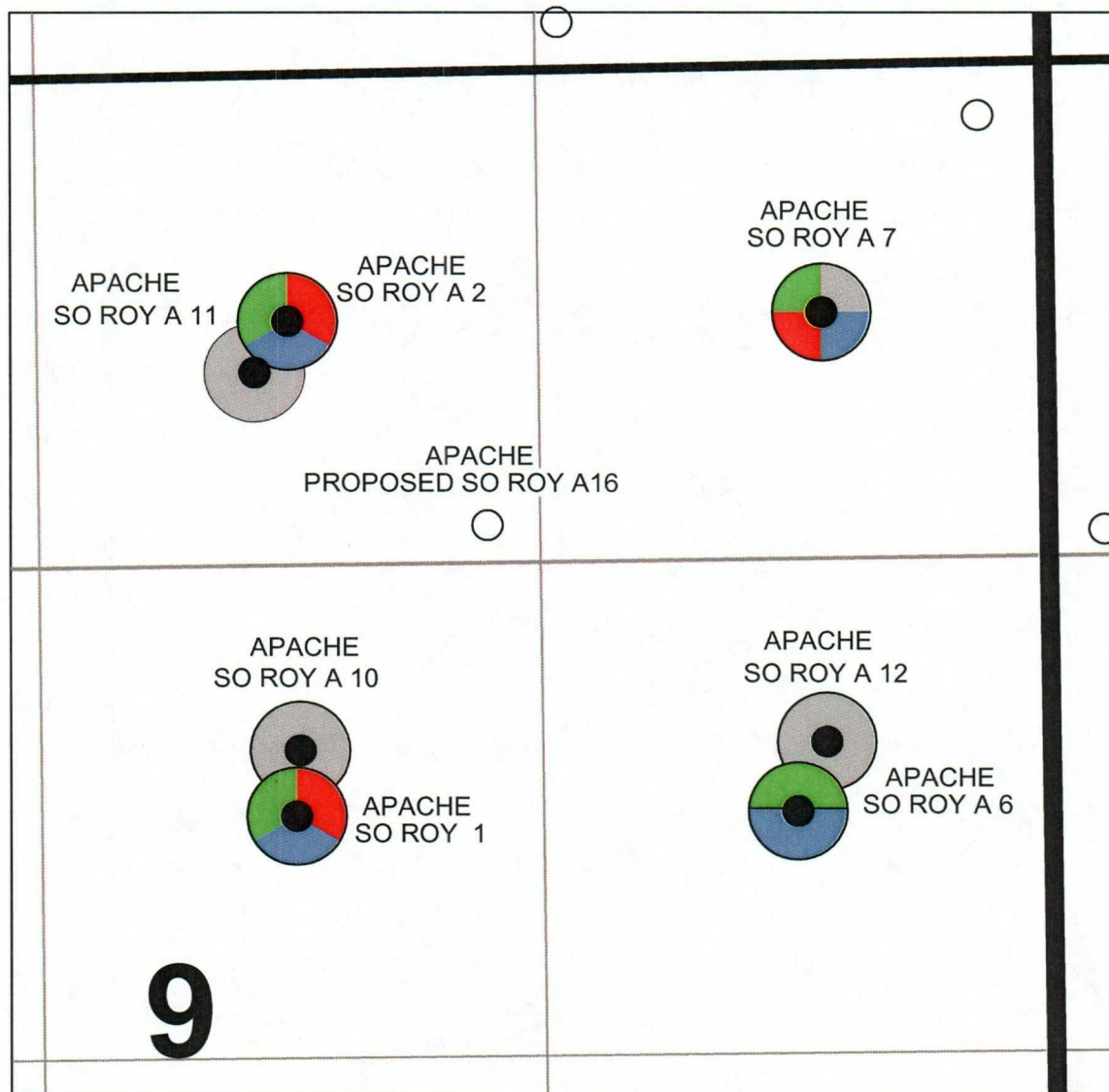
The thickness of the Drinkard is also related to its subsea position, the higher the top, the thicker the interval. Using a 5% threshold, porosity averages 9.3% in 128 wells selected for analysis. PhiH at this location is expected to be 6.1'.

e. B-T-D (Exhibit 8)

The expected PhiH in the combined interval is 25.7'.

4. Notice

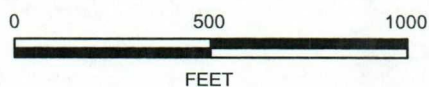
5. Approval of this application will afford the interest owners in this spacing unit an opportunity to recover oil and gas which would not otherwise be recovered and to do so without violating correlative rights.



BLINEBRY PRODUCER
 TUBB PRODUCER
 DRINKARD PRODUCER
 GRAYBURG PRODUCER

WELL SYMBOLS

- Location Only
- Oil Well



TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

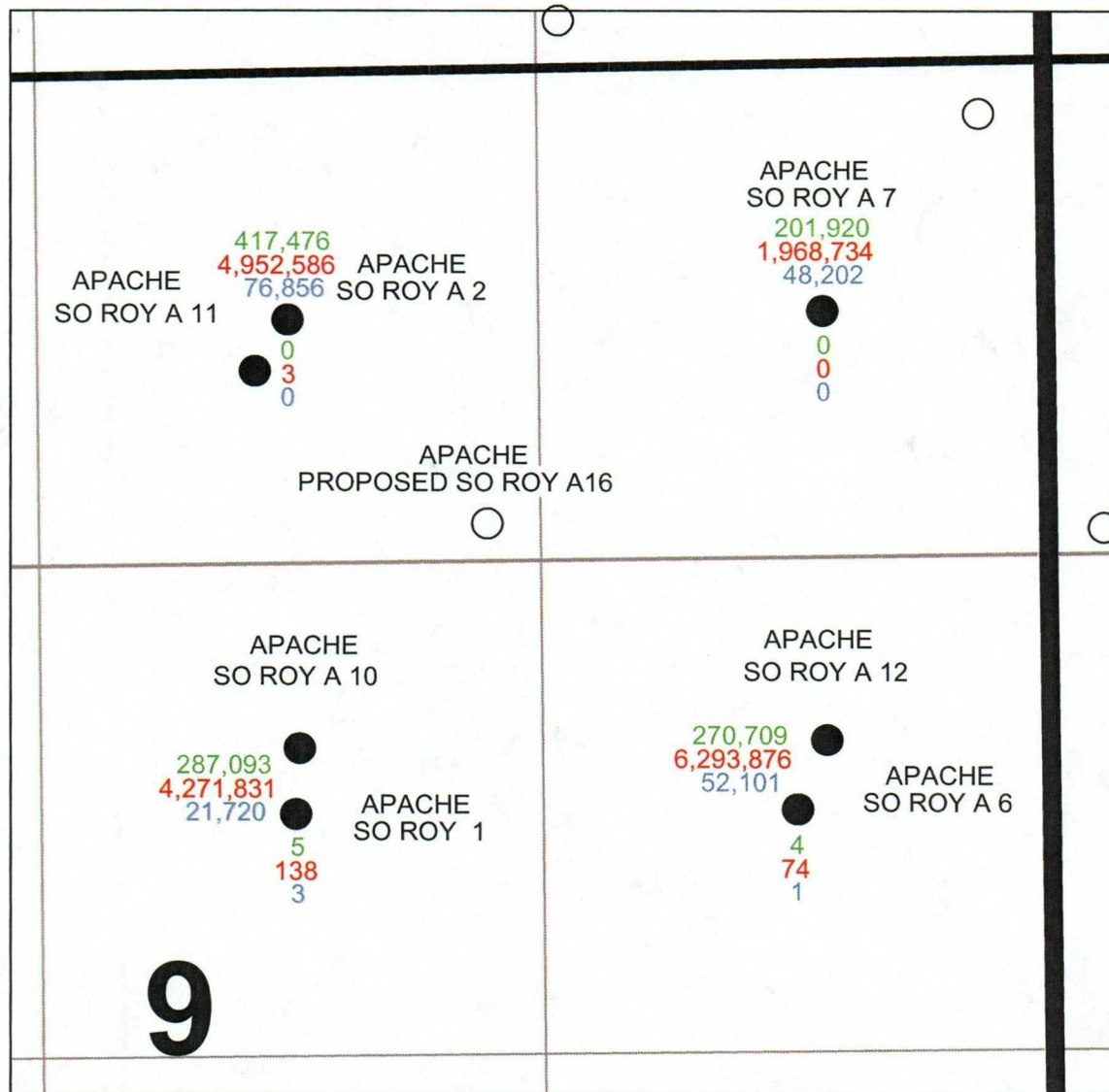
SO. ROYALTY A 16

SEC. 9-T21S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 1 WELL INFORMATION

DATE: 4-16-03

DWG: SO ROY A16 EX1 (CURTIS)



POSTED WELL DATA

CUM OIL
CUM GAS
CUM WATER

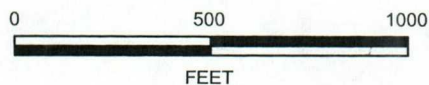
DAILY OIL
DAILY GAS
DAILY WATER

WELL SYMBOLS

○ Location Only

● Oil Well

☼ Gas Well



TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

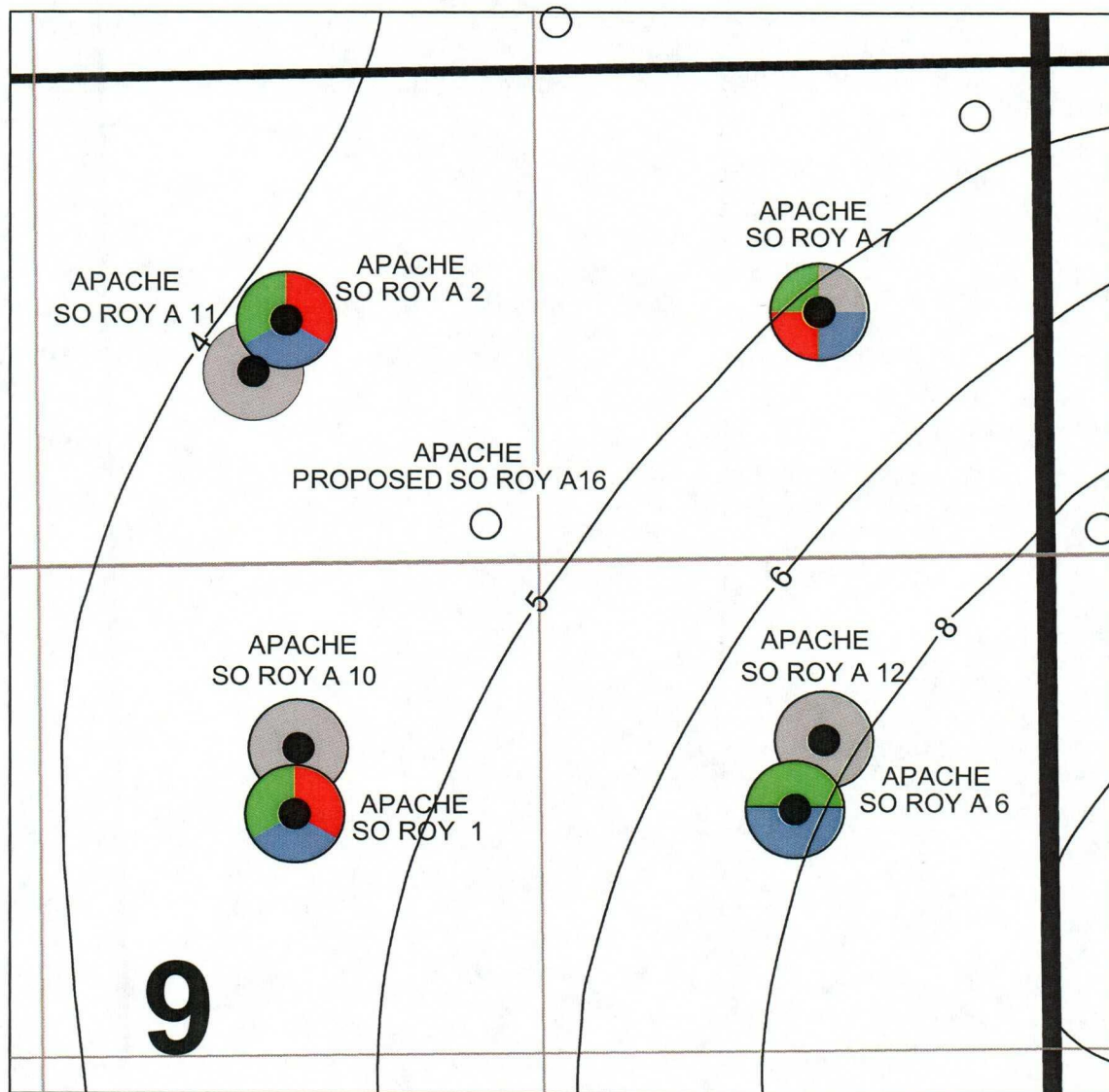
SO. ROYALTY A 16

SEC 9-T21S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 2
PRODUCTION

DATE: 4-16-03

DWG: SO ROY A16 EX2



POSTED WELL DATA

PHIH ●

WELL SYMBOLS

- Location Only
- Oil Well



- BLINEBRY PRODUCER
- TUBB PRODUCER
- DRINKARD PRODUCER
- GRAYBURG PRODUCER



TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

SO. ROYALTY A 16

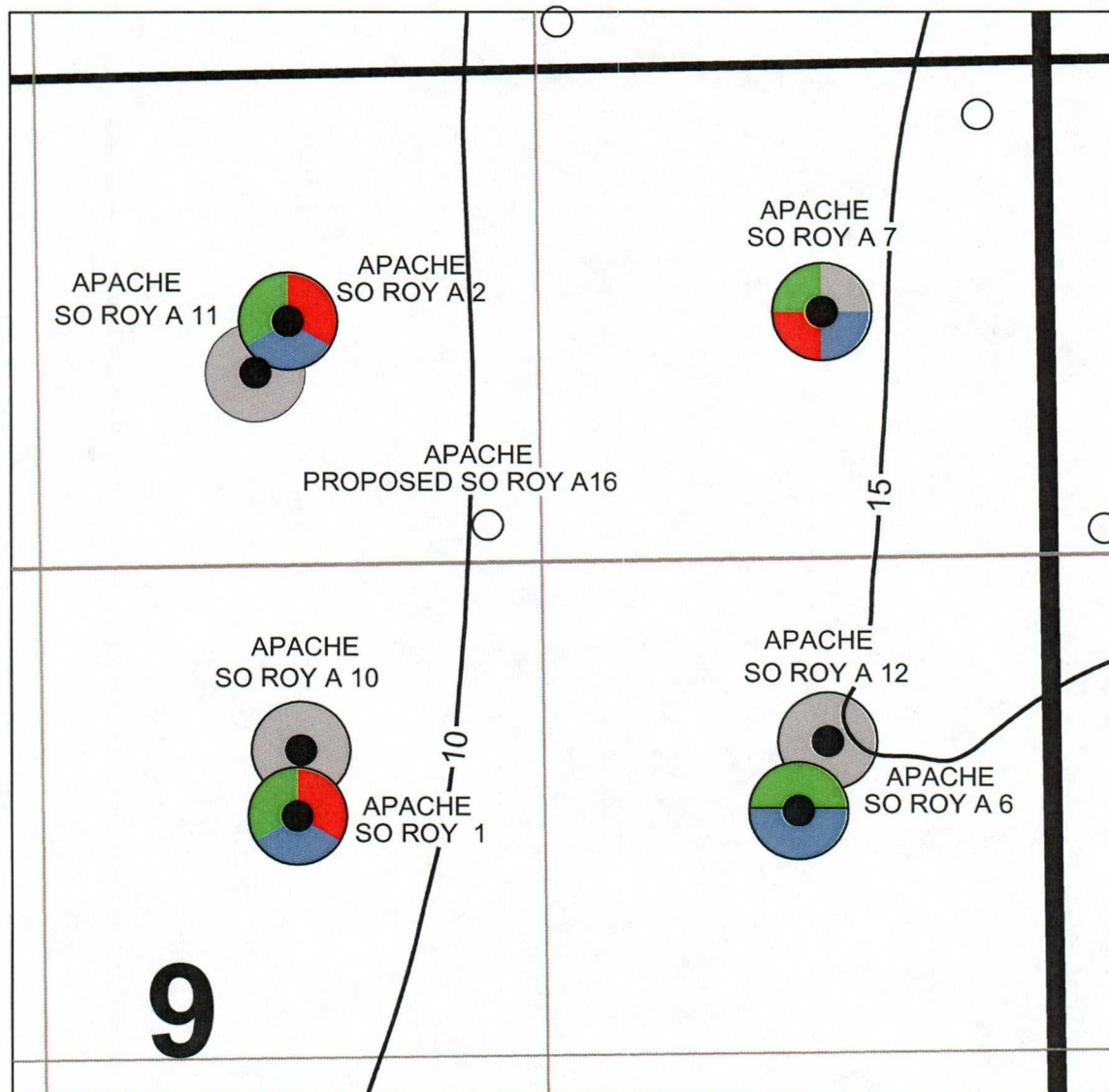
SEC. 9-T21S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 4

BLBY GAS CAP
CUTOFF: 5% DOLOMITE

DATE: 4-16-03

DWG: SO ROY A16 EX1 (CURTIS)



POSTED WELL DATA

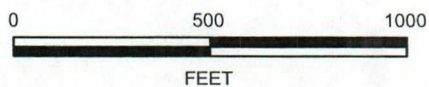
PHIH •

WELL SYMBOLS

- Location Only
- Oil Well



- BLINEBRY PRODUCER
- TUBB PRODUCER
- DRINKARD PRODUCER
- GRAYBURG PRODUCER



TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

SO. ROYALTY A 16

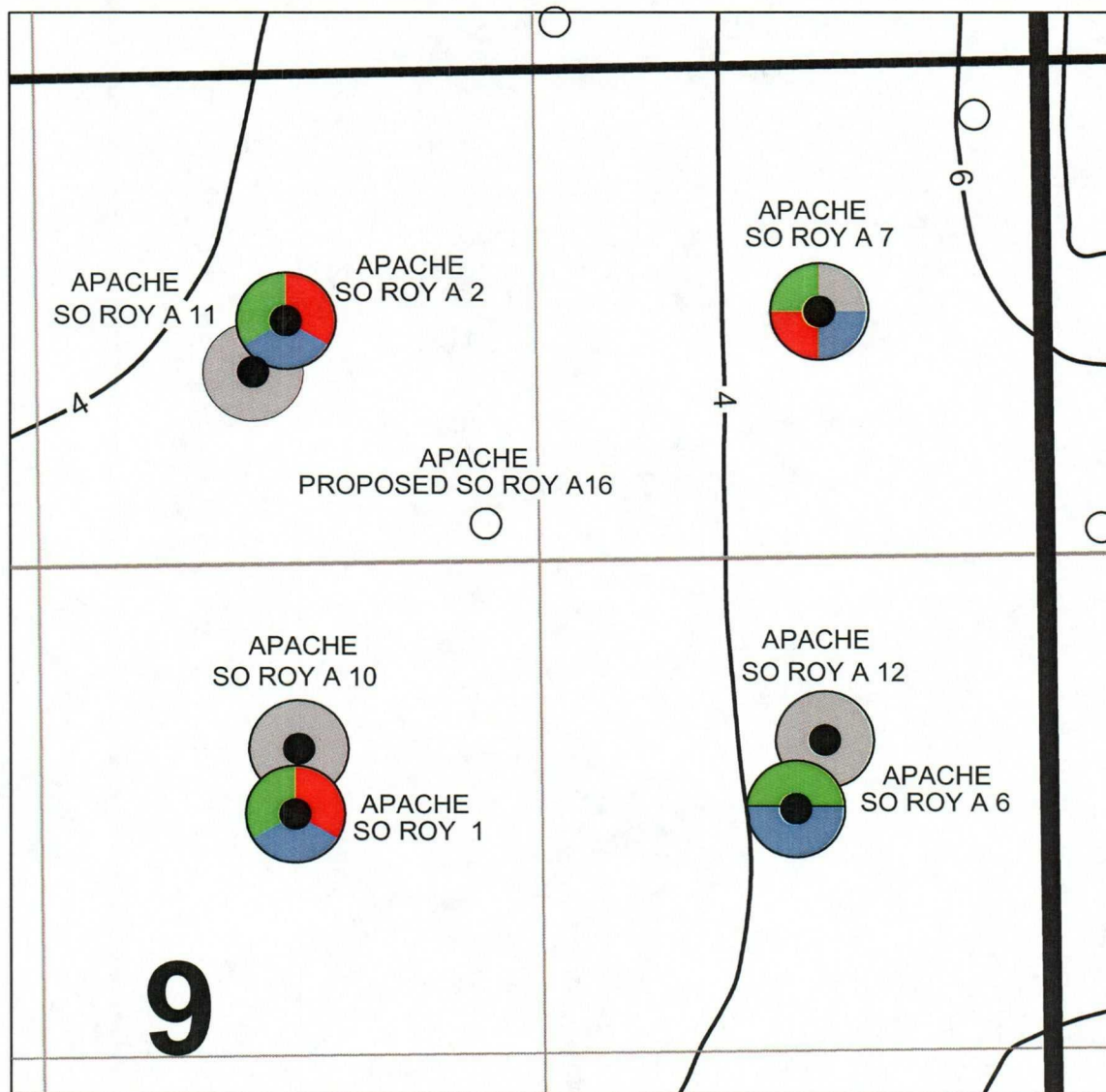
**SEC. 9-T21S-R37E
LEA COUNTY, NEW MEXICO**

EXHIBIT 5

**BLBY OIL LEG
CUTOFF: 5% DOLOMITE**

DATE: 4-16-03

DWG: SO ROY A16 EX1 (CURTIS)



POSTED WELL DATA

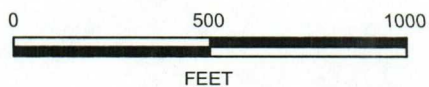
PHIH ●

WELL SYMBOLS

- Location Only
- Oil Well



- BLINEBRY PRODUCER
- TUBB PRODUCER
- DRINKARD PRODUCER
- GRAYBURG PRODUCER



TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

SO. ROYALTY A 16

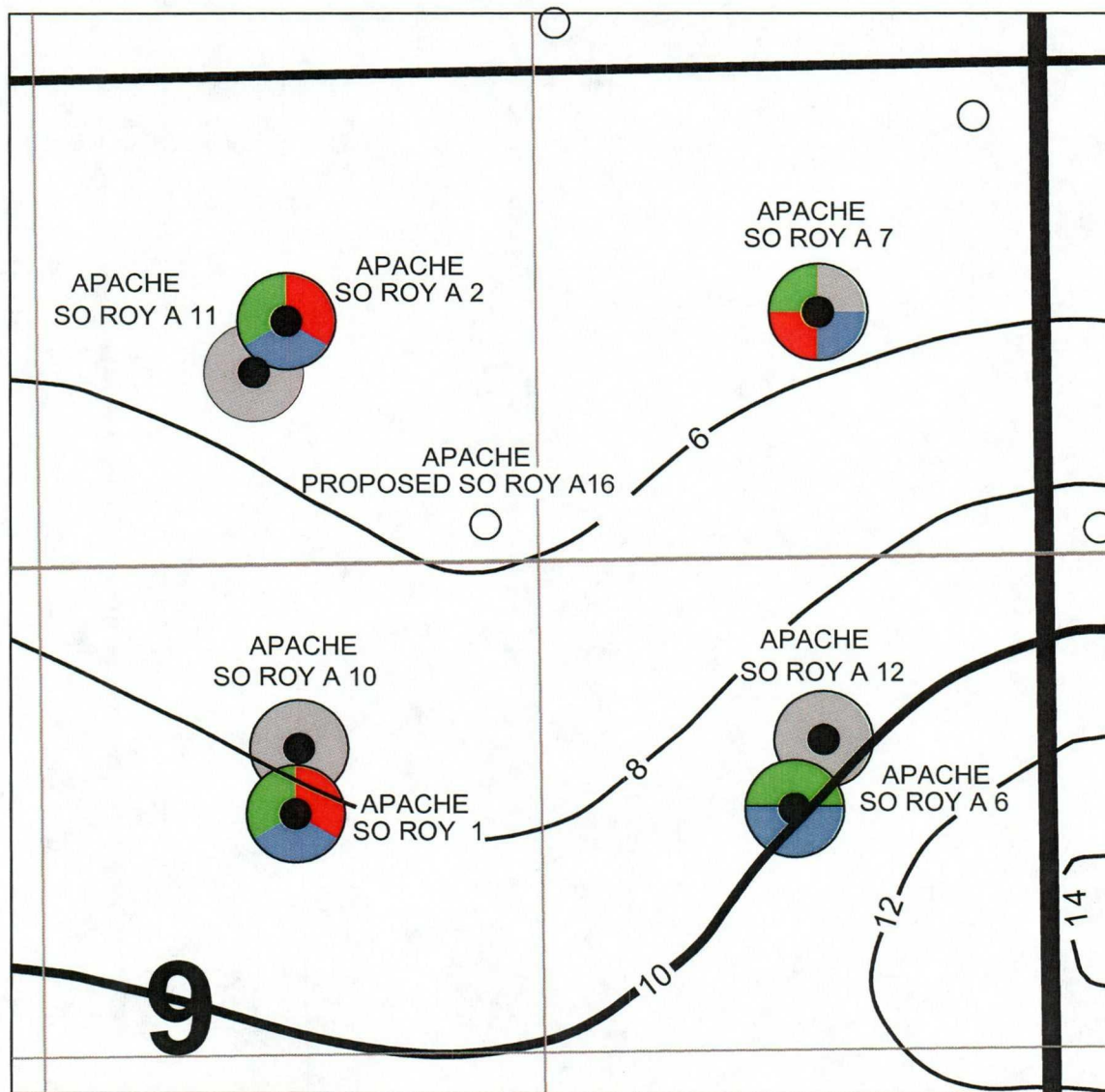
**SEC. 9-T21S-R37E
LEA COUNTY, NEW MEXICO**

EXHIBIT 6

**TUBB PHIH
CUTOFF: 5% DOLOMITE**

DATE: 4-16-03

DWG: SO ROY A16 EX1 (CURTIS)



POSTED WELL DATA

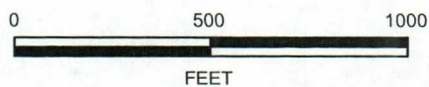
PHIH ●

WELL SYMBOLS

- Location Only
- Oil Well



- BLINEBRY PRODUCER
- TUBB PRODUCER
- DRINKARD PRODUCER
- GRAYBURG PRODUCER



TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

SO. ROYALTY A 16

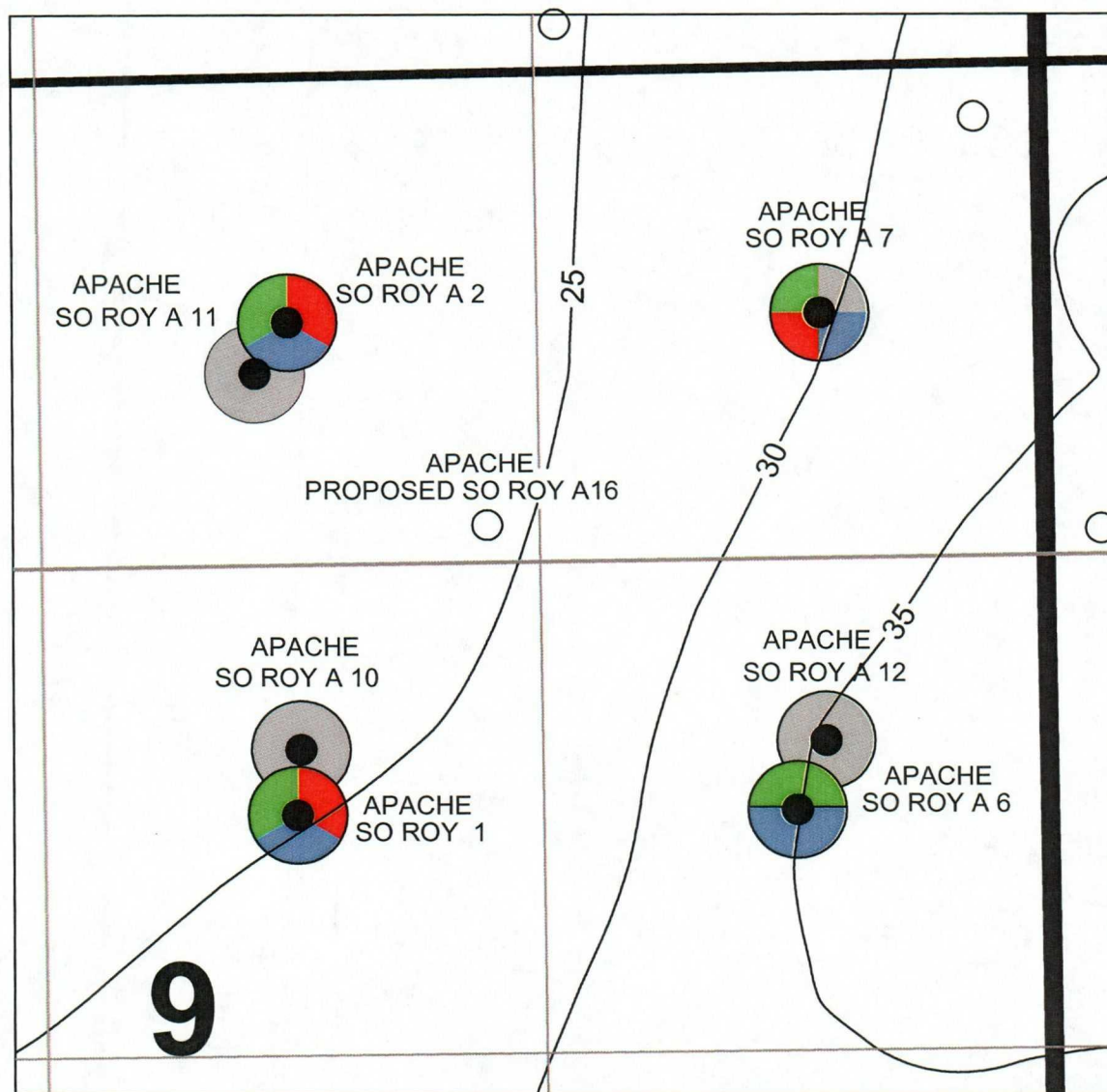
**SEC. 9-T21S-R37E
LEA COUNTY, NEW MEXICO**

EXHIBIT 7

**DRKD PHIH
CUTOFF: 5% DOLOMITE**

DATE: 4-16-03

DWG: SO ROY A16 EX1 (CURTIS)



POSTED WELL DATA

PHIH ●

WELL SYMBOLS

- Location Only
- Oil Well



- BLINEBRY PRODUCER
- TUBB PRODUCER
- DRINKARD PRODUCER
- GRAYBURG PRODUCER



TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

SO. ROYALTY A 16

**SEC. 9-T21S-R37E
LEA COUNTY, NEW MEXICO**

EXHIBIT 8

**B-T-D PHIH
CUTOFF: 5% DOLOMITE**

DATE: 4-16-03

DWG: SO ROY A16 EX1 (CURTIS)

ATTENTION: KEVIN MAYES
 FROM: DEBBIE MCKELVEY

The current well classification according to the OGD's ONGRD system is listed below.

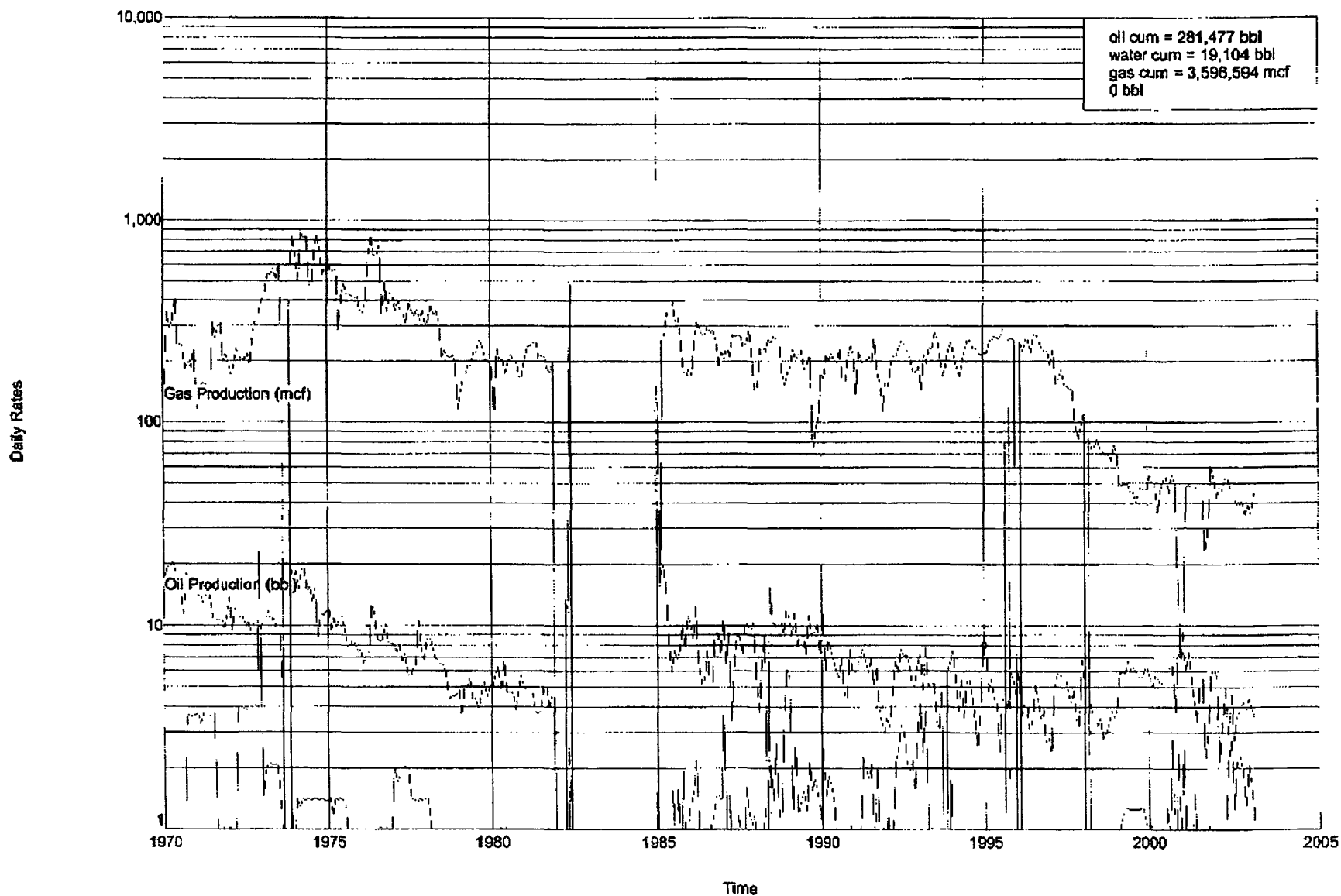
API	Well	Section	Unit	Original Well Classific	Current Well Classific	Comments
3002506629	State C Tract 12 #7	16	D		OIL	
3002506627	State C Tract 12 #6	16	C		OIL	Not currently producing
3002506628	State C Tract 12 #6 X&Y	16	C		OIL	
3002506626	State C Tract 12 #4	16	F		OIL	
3002506625	State C Tract 12 #3	16	E		OIL	
3002509910	Hawk B-1 #4	9	L		OIL	
3002509908	Hawk B-1 #5	9	K		OIL	
3002509907	Hawk B-1 #6	9	N		OIL	Not currently producing
3002506441	Hawk B-1 #9	9	M		OIL	
3002526967	Hawk A #8	8	A		OIL	
3002521225	Hawk A #5	9	D		OIL	Not currently producing
3002506440	Hawk A #9	9	E		OIL	
3002506432	Hawk A #2	8	H		OIL	
3002506445	Southland Royalty A #7	9	A		OIL	
3002506443	Southland Royalty A #2	9	B		OIL	
3002506396	Southland Royalty A #4	4	X		OIL	Not currently producing
3002520069	Southland Royalty A #8	4	W		OIL	
3002506442	Southland Royalty A #1	9	G		GAS	
3002506444	Southland Royalty A #6	9	H		OIL	

Dual completion
 B-T-D is oil
 (See Attachment)



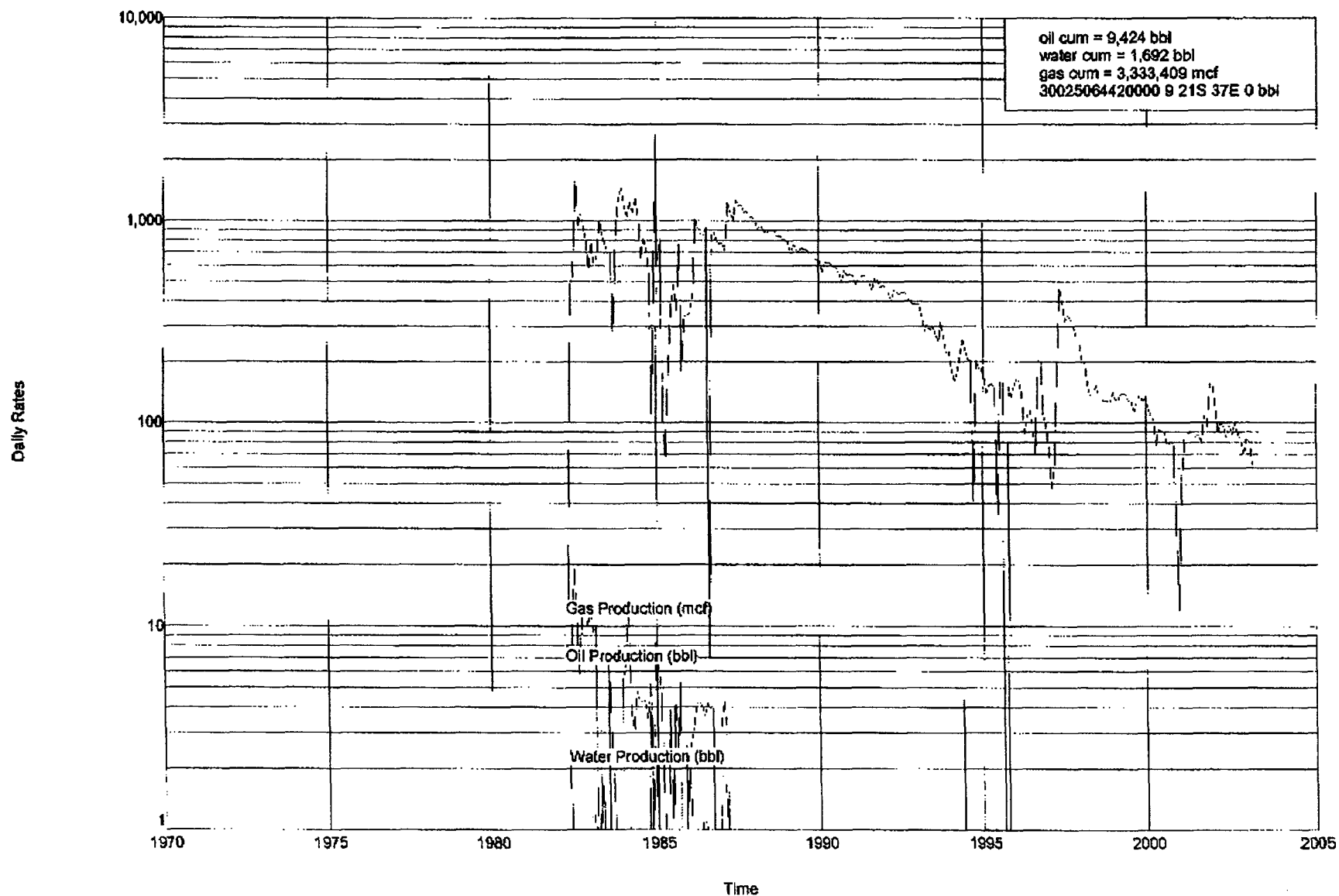
Lease Name: SOUTHLAND ROYALTY A
County, State: LEA, NM
Operator: APACHE CORPORATION
Field: MULTIPLE
Reservoir: MULTIPLE
Location:

Southland Royalty A #1 - Blinebry, Tubb & Drinkard



Lease Name: SOUTHLAND ROYALTY A
County, State: LEA, NM
Operator: APACHE CORPORATION
Field: WANTZ
Reservoir: ABO
Location: 9 21S 37E

SOUTHLAND ROYALTY A #1 - ABO /SH/





**NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT**

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

ADMINISTRATIVE ORDER DHC-2477

RECEIVED

OCT 18 1999

**WESTERN REGION
PRODUCTION DEPT**

Apache Corporation
2000 Post Oak Blvd.
Suite 100
Rm. 365A
Houston, Texas 77056-4400

Attention: Ms. Debra J. Anderson

*Southland Royalty "A" No. 1
API No. 30-025-06442
Unit G, Section 9, Township 21 South, Range 37 East, NMPM,
Lea County, New Mexico.
Blinebry Oil & Gas (Oil - 06660),
Tubb Oil & Gas (Oil - 60240),
Drinkard (Oil - 19190) and
Wantz-Abo (Oil - 62700) Pools*

Dear Ms. Anderson:

Reference is made to your recent application for an amendment to Division Order No. R-7537, which order authorized the downhole commingling of Blinebry Oil & Gas, Tubb Oil & Gas, and Drinkard Pool production within the Southland Royalty "A" Well No. 1. It is our understanding that the Wantz-Abo Pool is proposed to be added as the fourth commingled zone within the wellbore.

It appearing that the subject well qualifies for approval for such amendment pursuant to the provisions of Rule 303.C., and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion and required separation of the zones is hereby placed in abeyance.

In accordance with the provisions of Rule 303.C., the daily allowable producing rates from the well are hereby established as follows:

Oil 107 B/D

Gas 428 MCF/D

Water 214 B/D

Assignment of allowable to the well and allocation of production from the well shall be on the following basis:

Administrative Order DHC-2477

Apache Corporation

October 12, 1999

Page 2

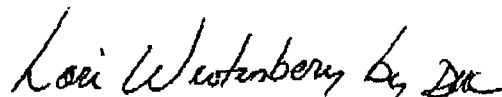
Blinebry Oil & Gas Pool	Oil-44%	Gas-15%
Tubb Oil & Gas Pool	Oil-13%	Gas-12%
Drinkard Pool	Oil-43%	Gas-7%
Wantz-Abo Pool	Oil-0%	Gas-66%

REMARKS: The operator shall notify the Hobbs District Office of the Division upon implementation of the commingling process.

Pursuant to Rule 303.H., the commingling authority granted herein may be rescinded by the Division Director if conservation is not being best served by such commingling.

Approved at Santa Fe, New Mexico on this 12th day of October, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



LORI WROTENBERY
Director

SEAL

LW/DRC

cc: Oil Conservation Division - Hobbs

The figure is a detailed geological map of the Apache and Central Drinkard units. It displays a grid of land parcels, each labeled with its owner's name and the type of lease or ownership. Key labels include 'Apache', 'Central Drinkard', 'Eunice', 'Paddock', 'Wiser Oil', 'Southland Royalty A lease', and 'EXHIBIT B'. The map is oriented with North at the top and includes a scale bar in the upper left corner. The map is divided into sections by dashed lines, and the labels are arranged in a grid-like pattern. The map is a complex representation of land ownership and geological features, with numerous small labels and a large 'EXHIBIT B' label.