

RECEIVED

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

AUG 04 2003

OIL CONSERVATION DIVISION

40 acres – 150' FNL & 160' FWL
Section 10, 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 Northeast Drinkard Unit (NEDU) #419 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). The unit in which it is proposed does not have a currently productive Blinebry, Tubb, and/or Drinkard well.

Table with 8 columns: OPER, WELL, LOC, RESRVR, CUM B-T-D O/G/W, DAILY B-T-D O/G/W, WELL CLASS, CURRENT POOL. Rows include Apache Southland Royalty A #7, Apache Southland Royalty A #6, Apache NEDU #401, Lewis Burleson State 10 #1, and Apache NEDU #402.

Oil in MBO BOPD
Gas in MMCFG MCFGPD
Water in MBW BWPD

- 3. The proposed Northeast Drinkard Unit (NEDU) #419 unorthodox Blinebry, Tubb, and Drinkard location of 150' from north line and 160' from east line is based on drainage considerations:

a. Blinebry, Tubb and Drinkard

The Blinebry, Tubb, and Drinkard Formations are members of the Yeso Group, Permian Leonardian in age. In the Eunice area, they were all unitized by Shell in 1987 into the Northeast Drinkard Unit. 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 | AREA |
| 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 |
| 10 | State 10 | 1 | BLINEBRY GAS CAP | 71,499 | 93 | 749,402 | 8 |
| 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 |
| 10 | State 10 | 1 | BLINEBRY OIL LEG | 71,499 | 93 | 749,402 | 9 |
| 9 | SOUTHLAND ROYALTY A | 7 | TUBB | 931 | 656 | 12,444 | 1 |
| 10 | NEDU | 401 | | 105,549 | 12,502 | 3,122,963 | 141 |
| 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 |
| 10 | NEDU | 402 | | 95,521 | 5,024 | 643,201 | 15 |

Volumetrics for the proposed location are as follows:

| | | PROD ZONE NAME | RESERVOIR | DRAINAGE | EUR | |
|-------------|------------|------------------|-----------|----------|----------------|--------------|
| | | | PRESSURE | ACRES | OIL | GAS |
| NEDU | 419 | BLINEBRY GAS CAP | 1000 | 20 | 1,740 | 174 |
| | | BLINEBRY OIL LEG | 2200 | 20 | 166,638 | 1,083 |
| | | TUBB | 700 | 20 | 450 | 45 |
| | | DRINKARD | 1900 | 20 | 61,001 | 397 |
| | | TOTAL | | | 229,829 | 1,699 |

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 15.6'.

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 3.0'.

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 5.5'.

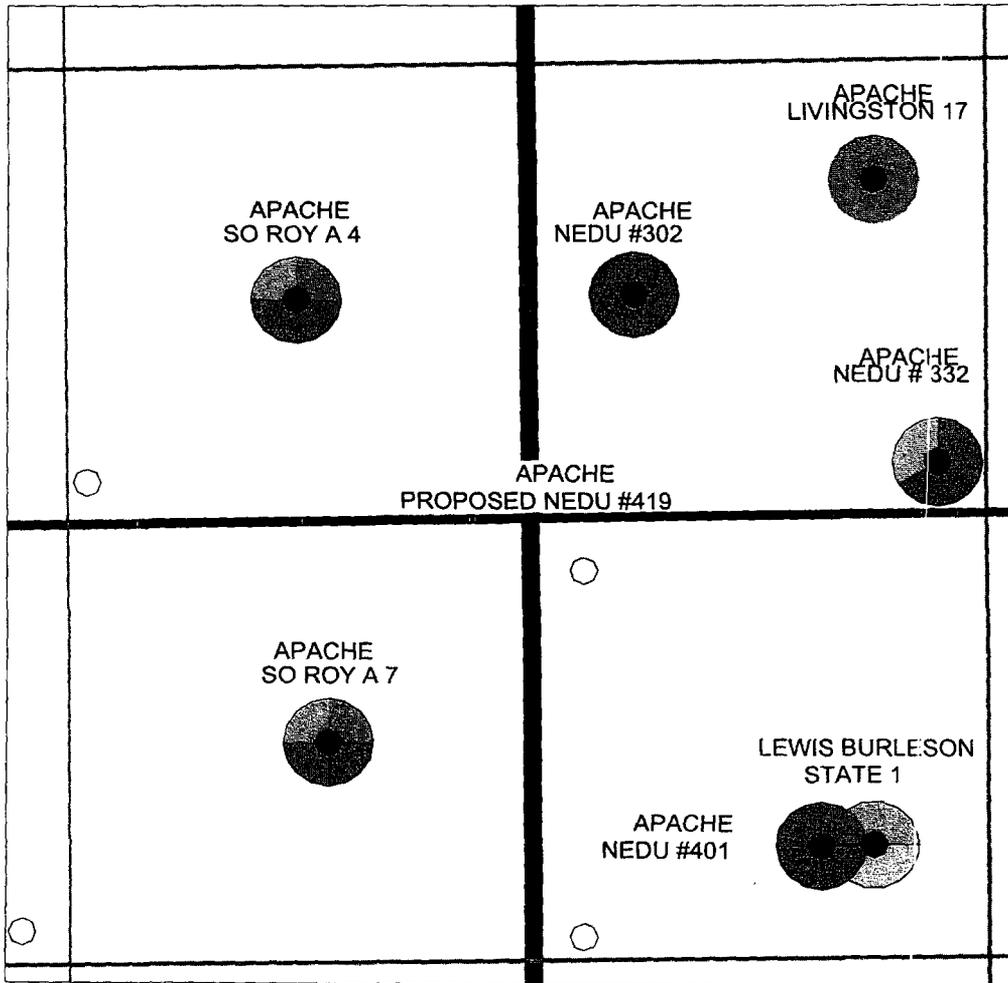
e. B-T-D (Exhibit 8)

The expected PhiH in the combined interval is 34.1'.

4. Notice

N/A

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. Correlative rights of the offsetting unit will be protected by a sharing agreement set forth in a letter agreement.



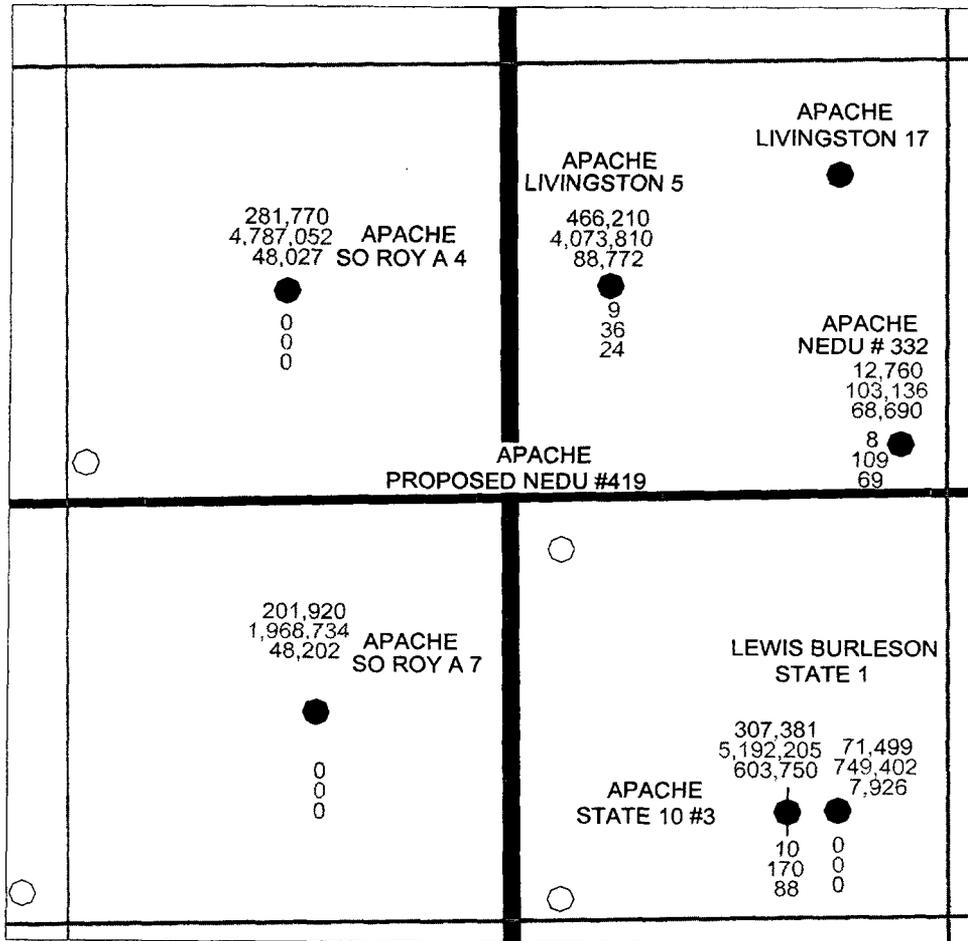
- BLINEBRY PRODUCER
- TUBB PRODUCER
- DRINKARD PRODUCER
- GRAYBURG PRODUCER
- ABO PRODUCER

WELL SYMBOLS

- Location Only
- Oil Well



| | |
|---|--|
|  CORPORATION CENTRAL REGION | TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224 |
| | <p style="text-align: center;">NEDU #419</p> <p style="text-align: center;">T21S-R137E LEA COUNTY, NEW MEXICO</p> |
| <p>EXHIBIT 1</p> <p>WELL INFORMATION</p> | |
| DATE: 6-5-03 | DWG: NEDU 419 EX1 (CURTIS) |



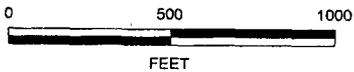
POSTED WELL DATA

CUM OIL
CUM GAS
CUM WATER

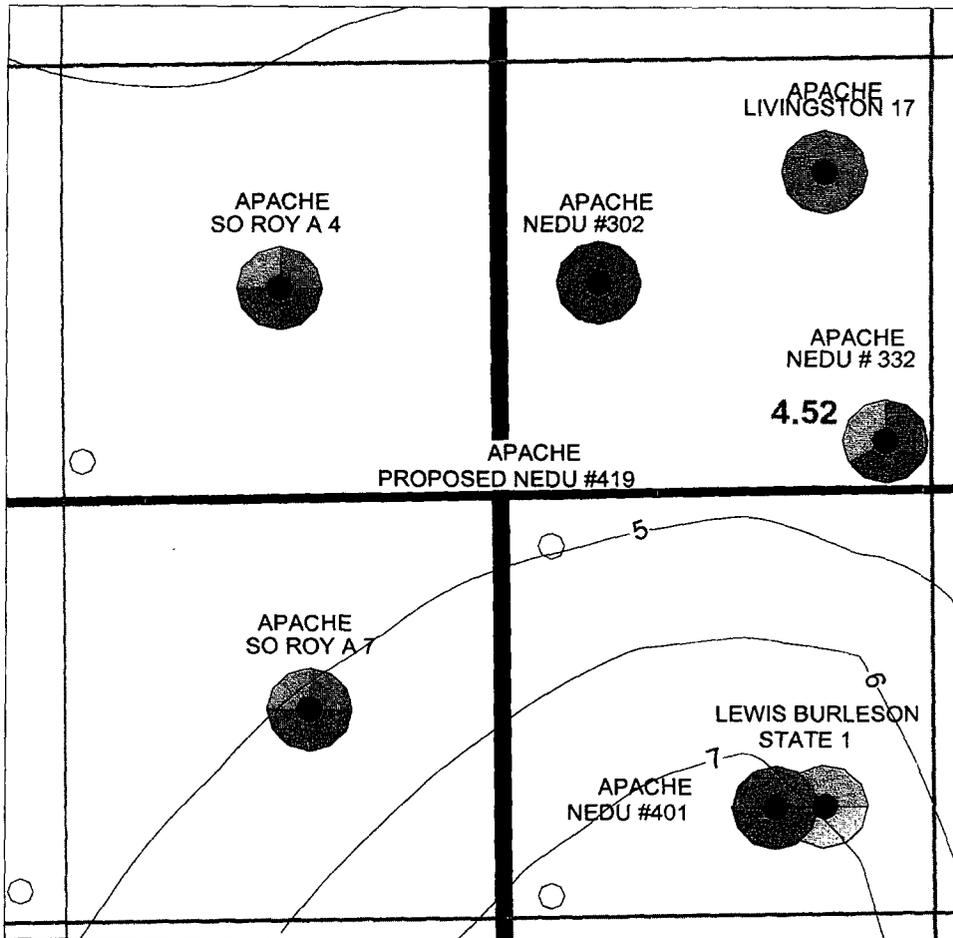
DAILY OIL
DAILY GAS
DAILY WATER

WELL SYMBOLS

- Location Only
- Oil Well
- ☀ Gas Well



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|--|--|
|  | TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224 |
| | <p style="text-align: center;">NEDU # 419</p> <p style="text-align: center;">T21S-R37E LEA COUNTY, NEW MEXICO</p> |
| <p>EXHIBIT 2</p> <p>PRODUCTION</p> | |
| DATE: 6-5-03 | DWG: NEDU 419 EX2 (CURTIS) |



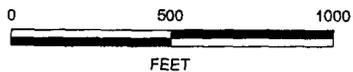
POSTED WELL DATA
PHIH ●

WELL SYMBOLS

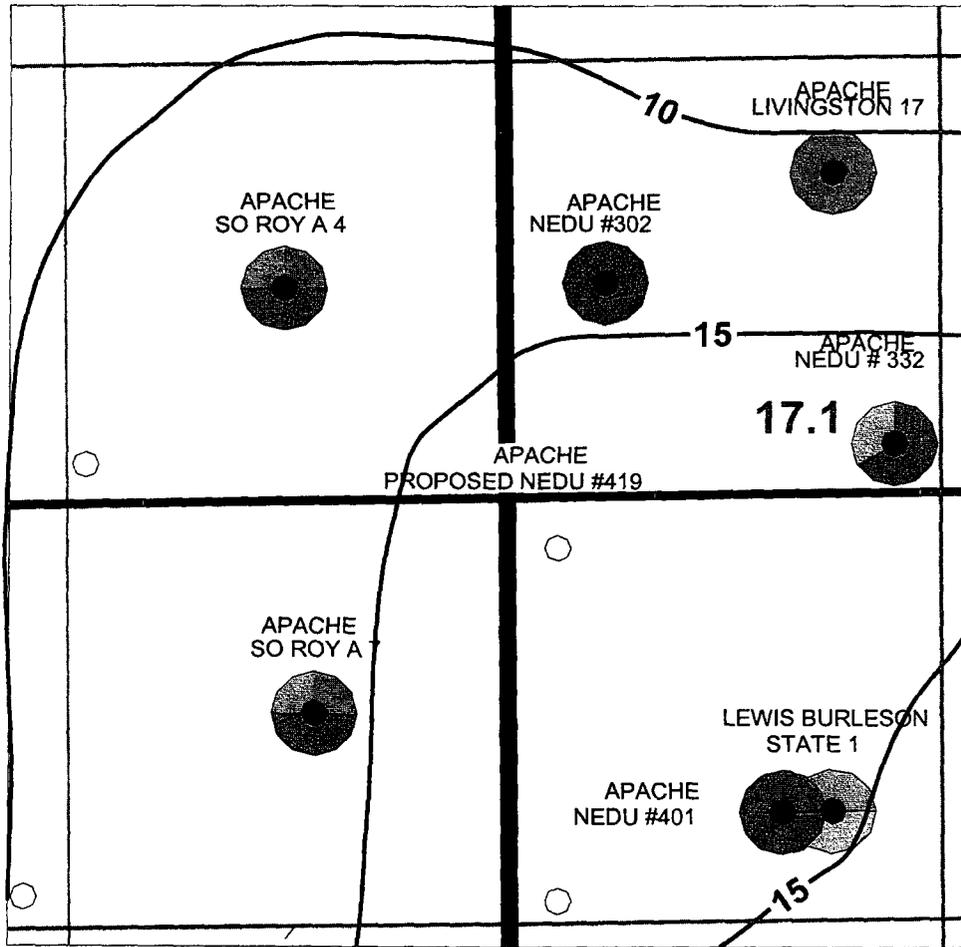
- Location Only
- Oil Well



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



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| | TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224 |
| | CORPORATION CENTRAL REGION |
| NEDU # 419 | |
| T21S-R37E LEA COUNTY, NEW MEXICO | |
| EXHIBIT 4 BLBY GAS CAP CUTOFF: 5% DOLOMITE | |
| DATE: 6-5-03 | DWG: NEDU 419 EX4 (CURTIS) |



POSTED WELL DATA

PHIH ●

WELL SYMBOLS

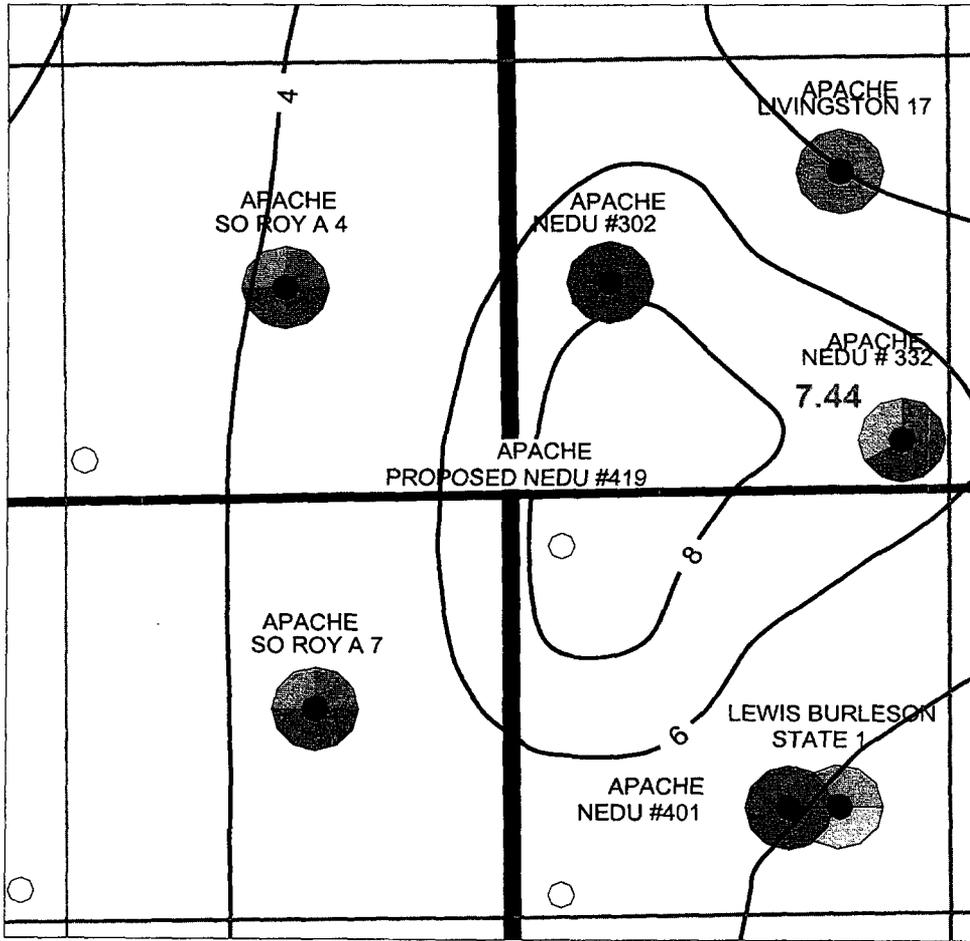
- Location Only
- Oil Well



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



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| | TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224 |
| | CORPORATION CENTRAL REGION |
| NEDU # 419 | |
| T21S-R37E LEA COUNTY, NEW MEXICO | |
| EXHIBIT 5 BLBY OIL LEG CUTOFF: 5% DOLOMITE | |
| DATE: 6-5-03 | DWG: NEDU 419 EX5 (CURTIS) |



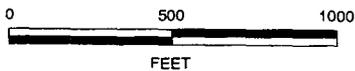
POSTED WELL DATA
PHIH ●

WELL SYMBOLS

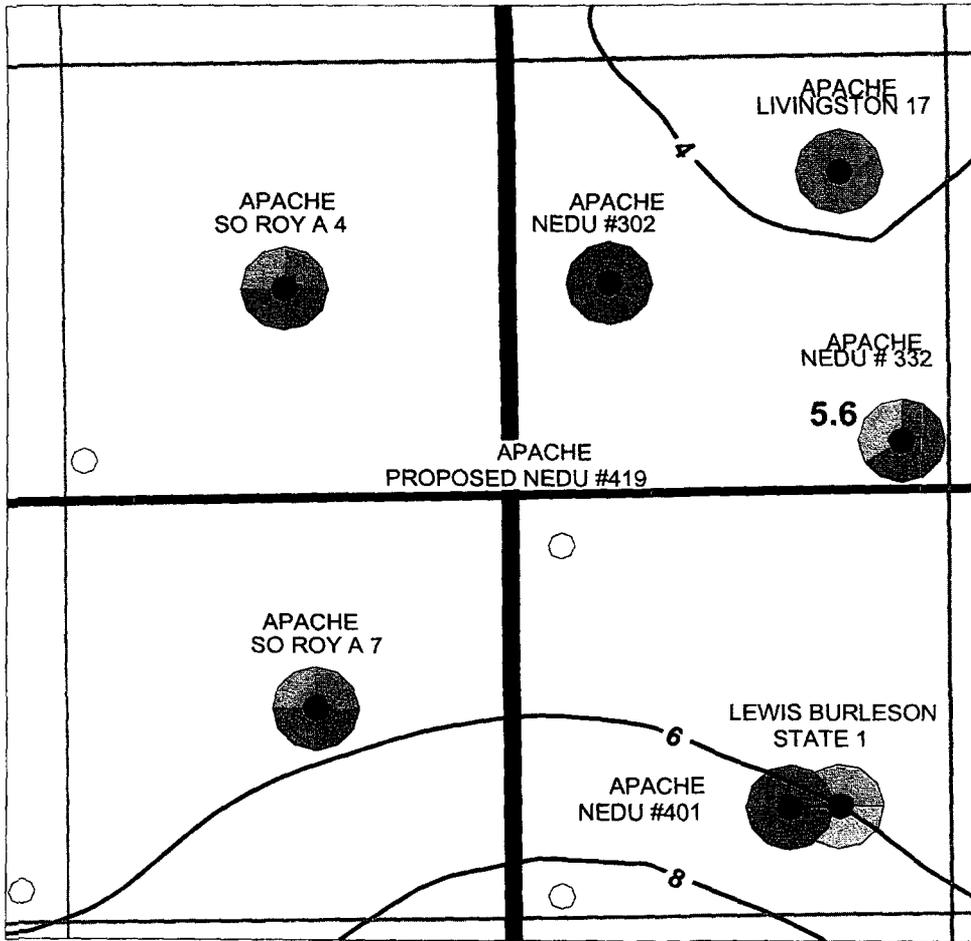
- Location Only
- Oil Well



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



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| | TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224 |
| | CORPORATION CENTRAL REGION |
| NEDU # 4 1 9 | |
| T21S-R37E LEA COUNTY, NEW MEXICO | |
| EXHIBIT 6 TUBB PHIH CUTOFF: 5% DOLOMITE | |
| DATE: 6-5-03 | DWG: NEDU 419 EX6 (CURTIS) |



POSTED WELL DATA

PHIH ●

WELL SYMBOLS

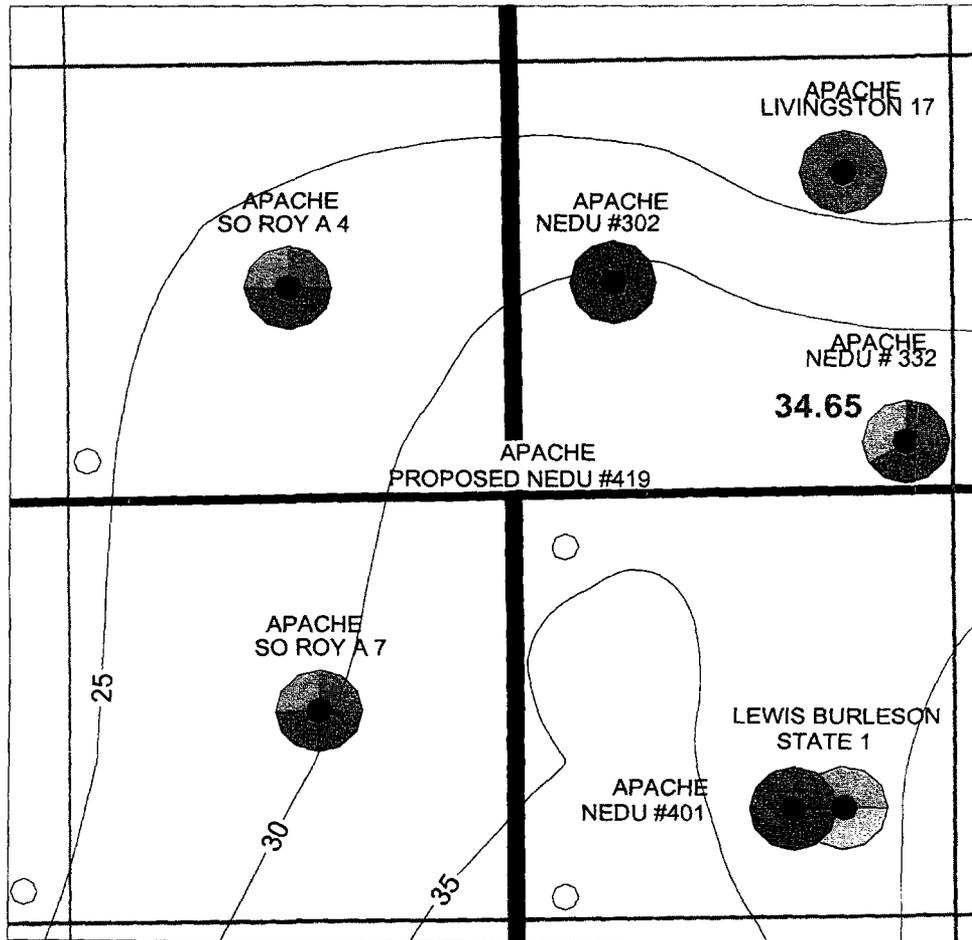
- Location Only
- Oil Well



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



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|--|---|
| APACHE CORPORATION CENTRAL REGION | TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74138-4224 |
| | NEDU # 419 T21S-R37E LEA COUNTY, NEW MEXICO |
| EXHIBIT 7 DRKD PHIH CUTOFF: 5% DOLOMITE | |
| DATE: 6-5-03 | DWG: NEDU 419 EX7 (CURTIS) |



POSTED WELL DATA

PHIH ●

WELL SYMBOLS

- Location Only
- Oil Well



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



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|---|---|
| | TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224 |
| | CORPORATION CENTRAL REGION |
| NEDU # 419 | |
| T21S-R37E LEA COUNTY, NEW MEXICO | |
| EXHIBIT 8 B-T-D PHIH CUTOFF: 5% DOLOMITE | |
| DATE: 6-5-03 | DWG: NEDU 419 EX8 (CURTIS) |

