9-30-03 DATE IN	10-20-03 SUSPENSE	ENGINEER MES	LOGGED IN	TYPE NSL	pMES0- APP NO. 328843404

ABOVE THIS LINE FOR DIVISION USE ONLY

RECEIVED

SEP 30 2003

OIL CONSERVATION DIVISION

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☑ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

James Bruce	James Bruce	Attorney for Applicant	9/28/03
Print or Type Name	Signature	Title	Date

jamesbruc@aol.com
e-mail Address

JAMES BRUCE
ATTORNEY AT LAW

POST OFFICE BOX 1056
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(505) 982-2043 (PHONE)
(505) 982-2151 (FAX)

jamesbruc@aol.com

September 28, 2003

Michael E. Stogner
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Dear Mr. Stogner:

Pursuant to Division Rule 104.F(2), Apache Corporation applies for administrative approval of an unorthodox oil well location for the following well:

Well:	Hawk B-1 Well No. 36
Location:	1310 feet FSL & 1310 feet FEL
Well Units:	SE¼SE¼ (oil) and SE¼ (gas) of Section 9, Township 21 South, Range 37 East, N.M.P.M., Lea County, New Mexico

The well will be drilled to test the Grayburg formation (Penrose Skelly (Grayburg) Pool) and the deeper San Andres formation (Undesignated Hare-San Andres Gas Pool). The Penrose Skelly (Grayburg) Pool is an oil pool spaced on 40 acres, and the Hare-San Andres Gas Pool is spaced on 160 acres. The location is unorthodox in the Grayburg, but orthodox in the San Andres.

The SE¼SE¼ of Section 9 will be **simultaneously dedicated** in the Grayburg formation to the proposed well and to the Hawk B-1 Well Nos. 27, and applicant requests approval of the simultaneous dedication. (The proposed well is the first San Andres well in the quarter section.)

The application is based on geologic and engineering reasons. A complete discussion, with appropriate exhibits, is attached as Exhibit A.[1] There are several existing Grayburg wells in the SE¼ of Section 9, and the proposed well will be located in the

[1]Exhibit 1 to the attachment, the Form C-102, is missing, and will be supplied later.

approximate center of those wells. Based on drainage calculations and the variable permeability in the reservoir, applicant believes that drilling the infill well will recover reserves which will not be recovered by the existing Grayburg wells. Applicant desires to complete in both the Grayburg and the San Andres to enhance project economics.

Attached as Exhibit B is a land plat, highlighting the proposed well's location. The S½ of Section 9 (and other acreage) is covered by a single federal lease (NM 90161), which has **common royalty, overriding royalty, and working interest ownership**. Therefore, there are no offset interest owners or adversely affected parties to notify of this application.

Please call me if you need any further information on this matter.

Very truly yours,

James Bruce

Attorney for Apache Corporation

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

40 acres – 1310' FSL & 1310' FEL
Section 9, Township 21 South, Range 37 East, NMPM
Lea County, New Mexico

PRIMARY OBJECTIVE: SAN ANDRES

SECONDARY OBJECTIVE: GRAYBURG

In support:

1. Apache Corporation (Apache) is the operator of the proposed **Hawk B-1 #36** well (**Exhibit 1**). The proposed total depth is 4750' in the San Andres formation.

2. The location is a standard location as to the San Andres (Hare; San Andres Gas Pool). However, it encroaches toward the following Penrose Skelly; Grayburg Oil wells (**Exhibit 2**).

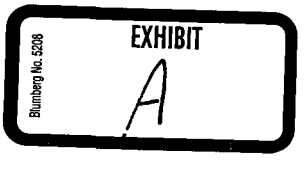
OPER	WELL	LOC	RESERVOIR	CUM O/G/W	DAILY O/G/W
Apache	Hawk B-1 #25	09-J	Grayburg	16/113/19	28/249/34
Apache	Hawk B-1 #30	09-I	Grayburg	8/30/26	24/75/42
Apache	Hawk B-1 #27	09-P	Grayburg	17/47/20	20/84/26
Apache	Hawk B-1 #28	09-O	Grayburg	30/54/22	75/109/33

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

3. The proposed **Hawk B-1 #36** unorthodox Grayburg location of 1310' from south line and 1310' from east line is based on drainage considerations:

   a) **Grayburg Reservoir**

   The Grayburg is a series of alternating subtidal and supratidal dolomites, with the subtidal rock having porosity and hydrocarbons and the supratidal rock being tight. The Grayburg environments varied rapidly so that porous and tight intervals do not necessarily correlate well-to-well. Tight dolomite and/or anhydrite intervals within the Grayburg additionally create vertical hydraulic barriers between different zones of porosity. Average porosity of the Grayburg is less than 10%, and average



permeability is less than 1 millidarcy. Grayburg wells are thus not capable of draining the 40 Acre proration unit.

The reservoir was analyzed by mapping Hydrocarbon Pore Volume (HCPV) (**Exhibit 3**). HCPV is the product of feet of pay (h) times average porosity (PhiA) times oil saturation (So). The map is the arithmetic product of grids interpreted from those values. The values were obtained as follows:

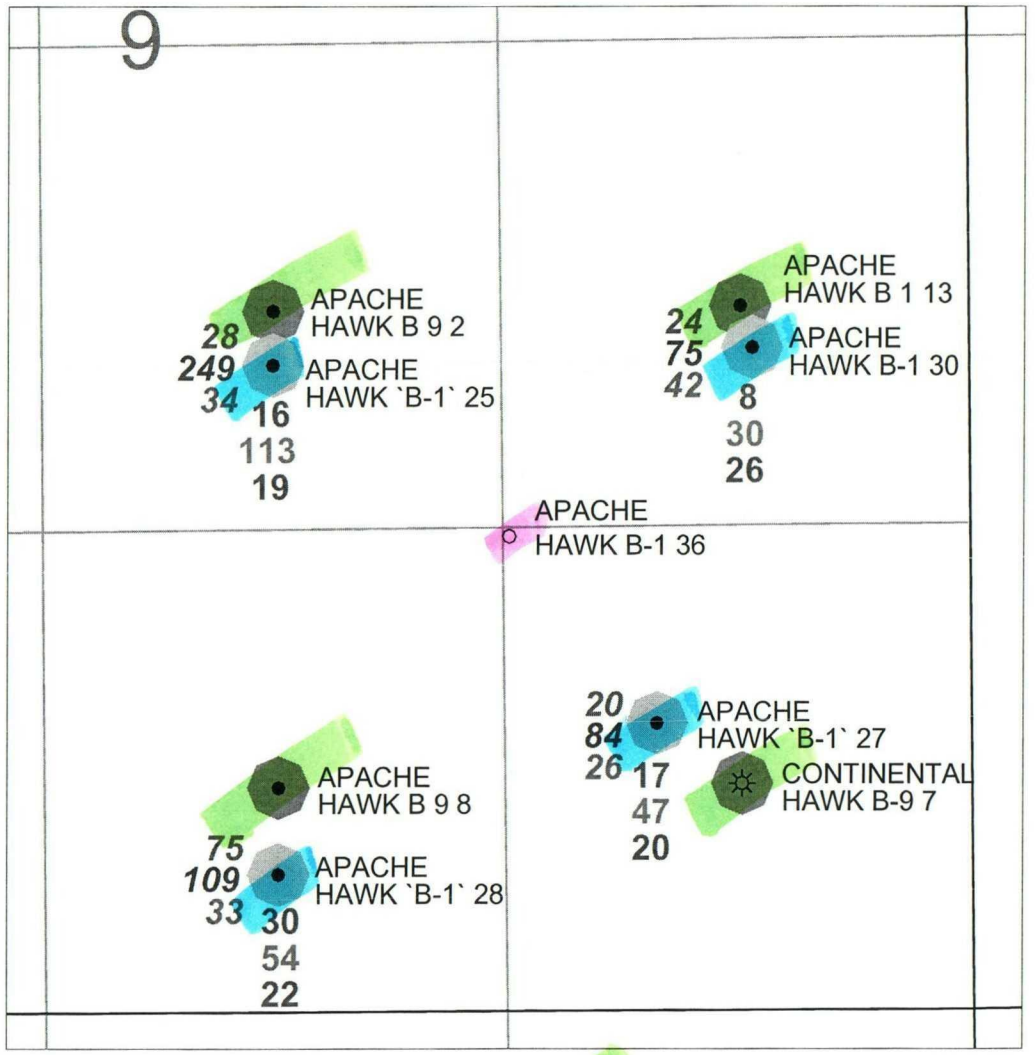
1. Net Pay was read either from modern neutron-density logs or estimated from a map developed from gross pay (clean dolomite) times net to gross ratio.
2. Average Porosity was calculated from modern well logs using a minimum of 6% crossplot porosity and a maximum of 20%.
3. Oil Saturation was calculated from a fractional flow curve using recent water cut values.

The following table provides drainage areas calculated from the HCPV map and reserves of the offsetting wells.

OPER	WELL	LOC	AREA A	EUR MBO	EUR MMCFG
Apache	Hawk B-1 #25	09-J	31	75	480
Apache	Hawk B-1 #30	09-I	11	55	319
Apache	Hawk B-1 #27	09-P	27	70	400
Apache	Hawk B-1 #28	09-O	24	100	600

Reserves for the proposed location were calculated by planimetering the undrained area of the HCPV isopach which lies under a drainage circle (the size of which is the average of the direct offset drainage areas) centered on the proposed location. Any competitive drainage is shared between the proposed well and the existing offset wells. The results are as follows:

WELL	LOC	HCPV	AREA A	EUR MBO	EUR MMCFG
Hawk B-1 #36	09-P	4.04	14.5	67	804



YATES-SEVEN RIVERS-QUEEN

GRAYBURG

SAN ANDRES

BLINEBRY-TUBBS-DRINKARD

ABO

LOWER PALEOZOIC

0 500 1,000 1,500

FEET

WELL SYMBOLS

- Location Only
- Oil Well
- Gas Well
- Dry

POSTED WELL DATA

SPUD DATE
COMP DATE

CURRENT BOPD
CURRENT MCFD
CURRENT BWPD

OPERATOR
WELL LABEL

MBO
MMCFG
MBW

Apache Corporation
CENTRAL REGION

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

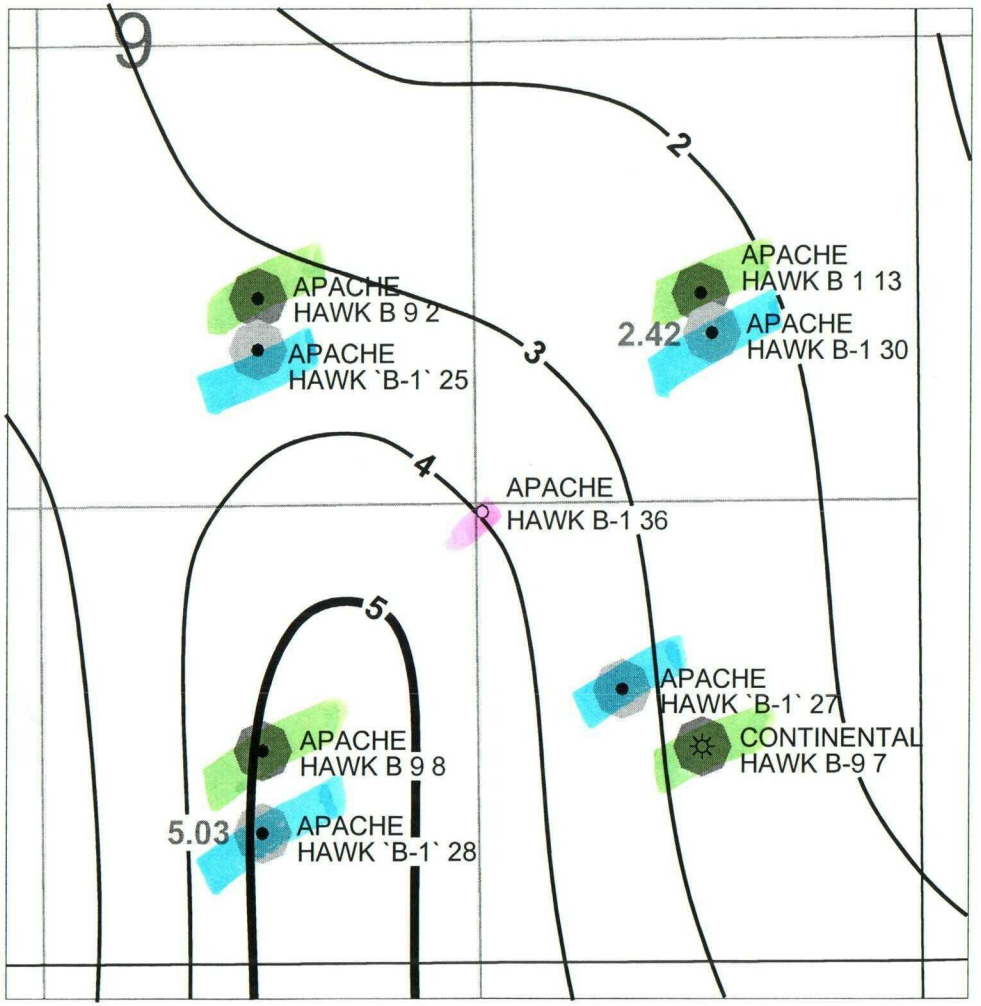
HAWK B-1 #36

SEC 9-T21S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 2

WELL INFORMATION

DATE: 8-25-03 DWG:PROD (CURTIS\OCD-NM\2004 GRYBRG)



YATES-SEVEN RIVERS-QUEEN

GRAYBURG

SAN ANDRES

BLINEBRY-TUBBS-DRINKARD

ABO

LOWER PALEOZOIC

0 500 1,000 1,500

FEET

WELL SYMBOLS

- Location Only
- Oil Well
- Gas Well
- Dry

POSTED WELL DATA

SPUD DATE
COMP DATE

GRAYBURG HCPV ● OPERATOR WELL LABEL

Apache CORPORATION
CENTRAL REGION

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

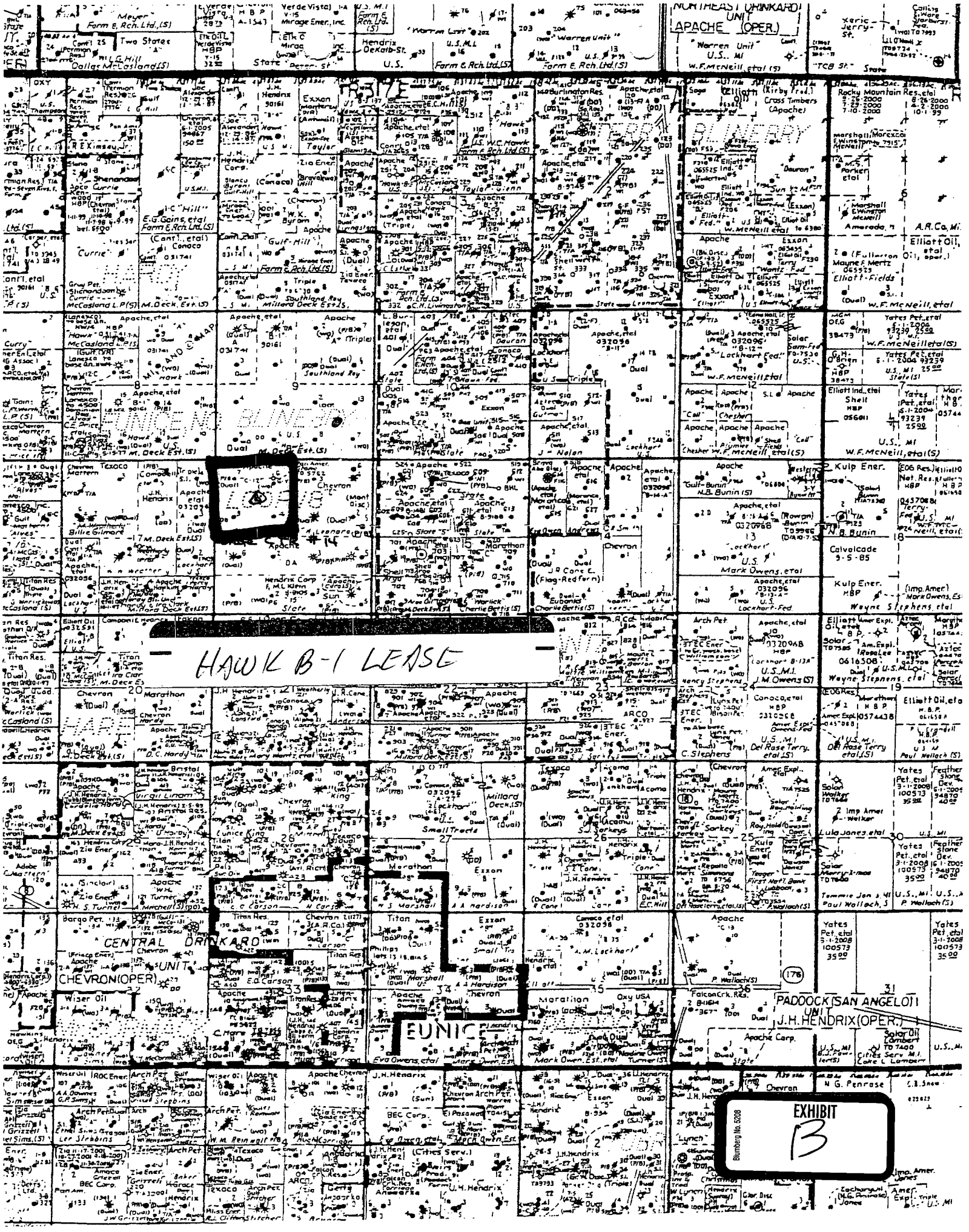
HAWK B-1 #36

SEC 9-T21S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 3

GRTAYBURG
HCPV

DATE: 8-25-03 DWG:HCPV (CURTIS\OCD-NM\2004 GRYBRG


HAWK B-1 LEASE
EXHIBIT
B
Blumberg No. 6208