

10-26-04 DATE IN	11-15-04 SUSPENSE	Stogner ENGINEER	10-27-04 LOGGED IN	TYPE NSL	APPROV PSEM 0430130609
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ABOVE THIS LINE FOR DIVISION USE ONLY

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.

JAMES BRUCE
 PO BOX 1056
 SANTA FE, NM 87504

Print or Type Name

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

Signature

Title

Date

e-mail Address

2004 OCT 26 PM 3 59

JAMES BRUCE
ATTORNEY AT LAW

POST OFFICE BOX 1056
SANTA FE, NEW MEXICO 87504

369 MONTEZUMA, NO. 213
SANTA FE, NEW MEXICO 87501

(505) 982-2043 (Phone)
(505) 660-6612 (Cell)
(505) 982-2151 (Fax)

jamesbruc@aol.com

October 26, 2004

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:

<u>Well:</u>	Southland Royalty A Well No. 20
<u>Location:</u>	1330 feet FNL & 2310 feet FEL
<u>Well Unit:</u>	SW $\frac{1}{4}$ NE $\frac{1}{4}$ 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 Blinebry formation (Blinebry Oil & Gas Pool), Tubb formation (Tubb Oil & Gas Pool), and Drinkard formation (Drinkard Pool). The Blinebry Oil & Gas Pool and Tubb Oil & Gas Pool are prorated pools, and the special rules of each pool provide for (1) oil well units of 40 acres, (2) gas well units of 160 acres, and (3) a well unit may not be simultaneously dedicated to an oil well and a gas well. The Drinkard Pool is spaced on statewide rules.

The SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 9 will be **simultaneously dedicated** to the proposed well and to the Southland Royalty A Well No. 1, and applicant requests approval of the simultaneous dedication.

The application is based on geologic and engineering reasons. A complete discussion, with appropriate exhibits, is attached as Exhibit A. Existing wells in the NE $\frac{1}{4}$ of Section 9 are located in the approximate center of each quarter-quarter section. The reservoirs in the three pools are compartmentalized, and applicant believes that drilling the infill wells will recover reserves which will not be recovered by existing wells. This theory has been tested in applicant's Northeast Drinkard Unit, located to the east of the proposed well. In addition, applicant desires to complete

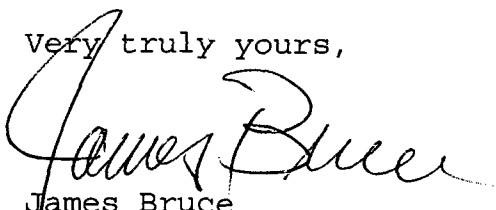
in all three zones to enhance project economics.

Exhibit A contains a listing of the Blinebry/Tubb/Drinkard wells offsetting the proposed well. It shows that the existing wells are oil wells. Thus, the infill well will not violate the special pool rules for the Blinebry Oil & Gas Pool and Tubb Oil & Gas Pool.

Attached as Exhibit B is a land plat, highlighting the proposed well's location. The NE $\frac{1}{4}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$, and S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 4 (and the NE $\frac{1}{4}$ of Section 9) are covered by a single fee lease, 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,

A handwritten signature in cursive script, appearing to read "James Bruce".

James Bruce

Attorney for Apache Corporation

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

40 acres – 1330' FNL & 2310' FEL
Section 9, Township 21 South, Range 37 East, NMPM
Lea County, New Mexico

PRIMARY OBJECTIVES: Blinebry, Tubb, and Drinkard

In support:

1. Apache Corporation (Apache) is the operator of the proposed **Southland Royalty A #20** well (**Exhibit 1**).
2. The proposed unorthodox location is offset by the following wells which are, or have been productive from various combinations of the Blinebry, Tubb, and Drinkard (**Exhibit 2**).

OPER	WELL	LOC	RESRVR	CUM B-T-D O/G/W	DAILY B-T-D O/G/W	CURRENT POOL
Apache	Hawk B-1 #3	9-C	B-T	264/4135/18	1/17/3	Blinebry Oil and Gas AND Tubb Oil and Gas
Apache	Southland Royalty A #2	9-B	B-T-D	419/4975/89	3/52/26	Blinebry Oil and Gas AND Tubb Oil and Gas AND Drinkard
Apache	Southland Royalty A #16	9-B	DKRD	4/26/1	41/282/16	Drinkard
Apache	Southland Royalty A #1	9-G	B-T-D and Abo	290/4306/21	6/93/0	Blinebry Oil and Gas AND Tubb Oil and Gas AND Drinkard AND Wantz; Abo
Apache	Hawk B-1 A/C #1	9-F	B-D	364/5680/16	4/49/2	Blinebry Oil and Gas AND Drinkard

MBO
MMCFG
MBW

BOPD
MCFGPD
BWPD

3. The proposed **Southland Royalty A #20** unorthodox Blinebry, Tubb, and Drinkard location of 1330' from north line and 2310' from east line is predicated by geological and drainage considerations:

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 in the unitization hearings have been used here.

All three formations are shallow marine carbonates, consisting primarily of dolomite. The Tubb has appreciable clastic content and the Drinkard becomes limey toward its base. Anhydrite can occur throughout the interval. Porosity and permeability are low. Distribution and continuity of individual zones of porosity and permeability are erratic. Wells are not capable of draining a full 40 Acre Spacing Unit. In fact, Apache's calculations indicate drainage area is approximately 20 Acres.

Structure is significant in that it controls the fluid distribution and amount of pay above and below the Blinebry and Drinkard oil-gas contacts.

Apache approached its evaluation by mapping log derived SoPhiH for each of the four major reservoirs (Blinebry Gas Cap, Blinebry Oil Leg, Tubb, and Drinkard). This analysis required modern neutron-density and resistivity logs for any well to be used. Many wells thus had to be excluded from analysis because of the vintage of downhole logs or lack of a full suite of logs. Sufficient new well control exists in and near the Northeast Drinkard Unit to allow this interpretation.

Reservoir engineering used the four SoPhiH 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 ACRES
				OIL	WATER	GAS	
9	Hawk B-1	3	BLINEBRY GAS CAP	2	5	206	10
9	Southland Royalty A	2	BLINEBRY GAS CAP	1	5	119	5
9	Southland Royalty A	16	BLINEBRY GAS CAP	6	6	597	5
9	Southland Royalty A	1	BLINEBRY GAS CAP	4	4	407	16
9	Hawk B-1	A/C 1	BLINEBRY GAS CAP	35	20	3508	180
9	Hawk B-1	3	BLINEBRY OIL LEG	51	7	329	12
9	Southland Royalty A	2	BLINEBRY OIL LEG	74	18	483	17
9	Southland Royalty A	16	BLINEBRY OIL LEG	50	6	326	15
9	Southland Royalty A	1	BLINEBRY OIL LEG	93	20	604	21
9	Hawk B-1	A/C 1	BLINEBRY OIL LEG	20	5	132	5
9	Hawk B-1	3	TUBB	24	20	2398	103
9	Southland Royalty A	2	TUBB	34	19	3415	166

9	Southland Royalty A	16	TUBB	6	6	597	25
9	Southland Royalty A	1	TUBB	7	1	682	45
9	Hawk B-1	3	DRINKARD	187	4	1217	62
9	Southland Royalty A	2	DRINKARD	304	35	1973	106
9	Southland Royalty A	16	DRINKARD	190	50	597	60
9	Southland Royalty A	1	DRINKARD	182	9	1186	48
9	Hawk B-1	A/C 1	DRINKARD	308	11	2002	68

Volumetrics for the proposed location are as follows:

			RESERVOIR	DRAINAGE	EUR	
		PROD ZONE NAME	PRESSURE	ACRES	OIL	GAS
SOUTHLAND ROYALTY A	20	BLINEBRY GAS CAP	500	0	0	0
		BLINEBRY OIL LEG	1900	20	61	399
		TUBB	500	0	0	0
		DRINKARD	500	0	0	0
		TOTAL			61	399

b. Blinebry Gas Cap (Exhibit 3)

Thickness of the Blinebry Gas Cap is partially related to the subsea top of the Blinebry. The higher the top, the thicker the gas cap can be. Using a 5% threshold, porosity averages 10.5% and water saturation averages 29% in 92 wells selected for analysis. SoPhiH at this location is expected to be 3.6'.

c. Blinebry Oil Leg (Exhibit 4)

Thickness of the Blinebry Leg is partially related to the subsea top of the Blinebry, the higher the top, the thinner the oil leg might be. Using a 5% threshold, porosity averages 8.7% and water saturation averages 32% in 92 wells selected for analysis. SoPhiH at this location is expected to be 6.5'.

d. Tubb (Exhibit 5)

The Tubb is generally considered to be a gas reservoir. No gas-oil or gas water contact has been suggested. Using a 5% porosity threshold and a 50 APIU Gamma ray threshold because of the greater amount of clastic material, porosity averages 8.4% and water saturation averages 30% in 91 wells selected for analysis. SoPhiH at this location is expected to be 6.3'.

e. Drinkard (Exhibit 6)

The thickness of the Drinkard is also related to its subsea position, the higher the top, the thicker it can be. Using a 5% threshold, porosity averages 9.1% and water saturation averages 25% in 82 wells selected for analysis. SoPhiH at this location is expected to be 10.0'.

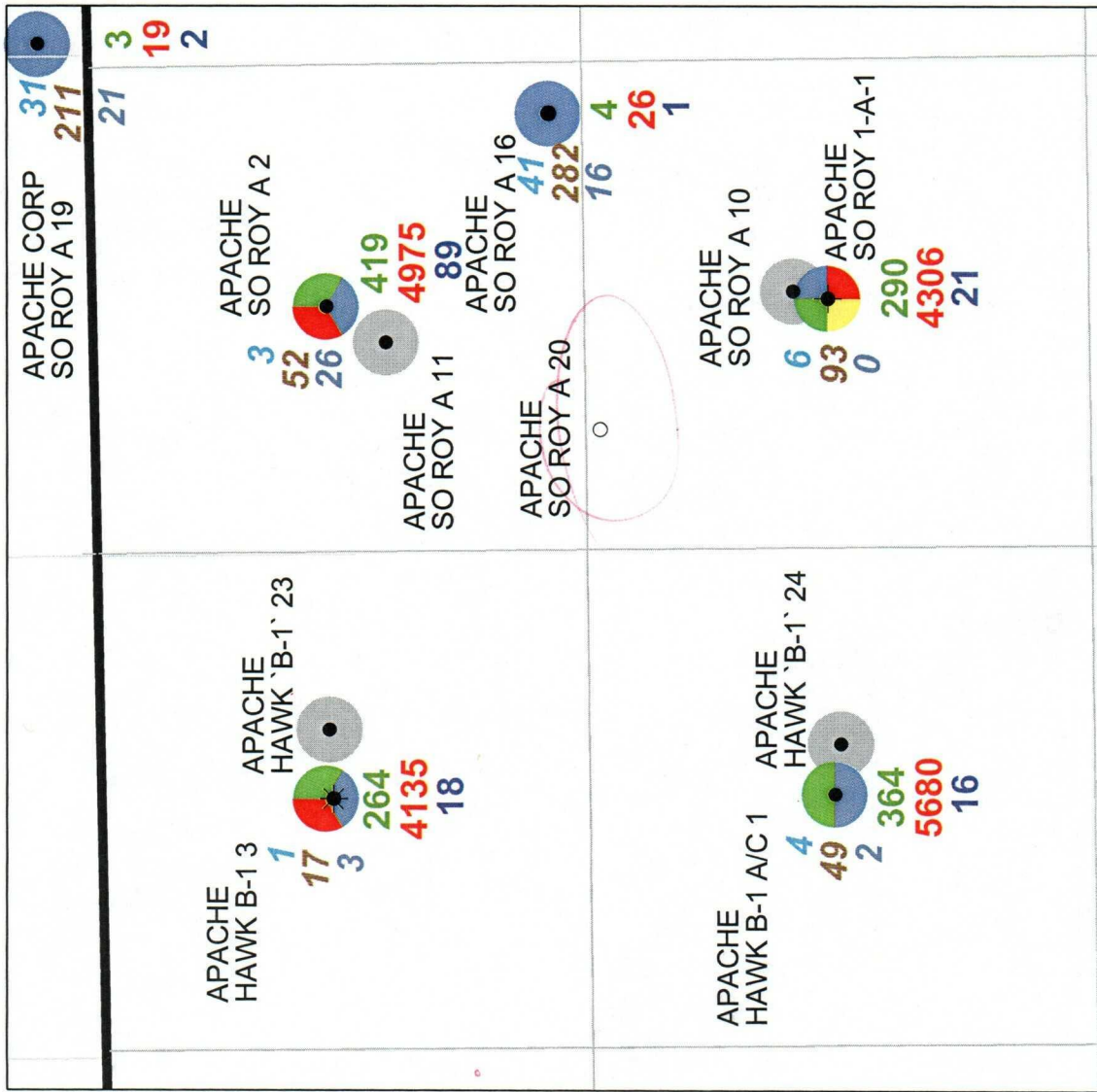
f. Drainage

The proposed **Southland Royalty A #20** location is designed to approximate a 20 Acre infill location. It is approximately equidistant from the Southland Royalty A #1 and #2 wells and a standard 330' off the lease line with the Hawk B-1 lease.

4. Notice

a. Apache is the operator of the Blinbry, Tubb, and Drinkard wells toward which the proposed well will encroach, being the Southland Royalty A #1 and #2, and is also the only working interest owner. Additionally, all three reservoirs are contained within one oil and gas lease (Southland Royalty A, which includes all of NE¼, §9) with common working and revenue interest owners. Therefore, there are no adversely affected parties and no one was notified of the application.

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.



- WELL SYMBOLS**
- Location Only
 - Oil Well
 - ☼ Gas Well
 - ⊖ Dry

POSTED WELL DATA

CURRENT BOPD
CURRENT MCFD
CURRENT BWPD

● OPERATOR WELL LABEL
MBO
MMCFG
MBW

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

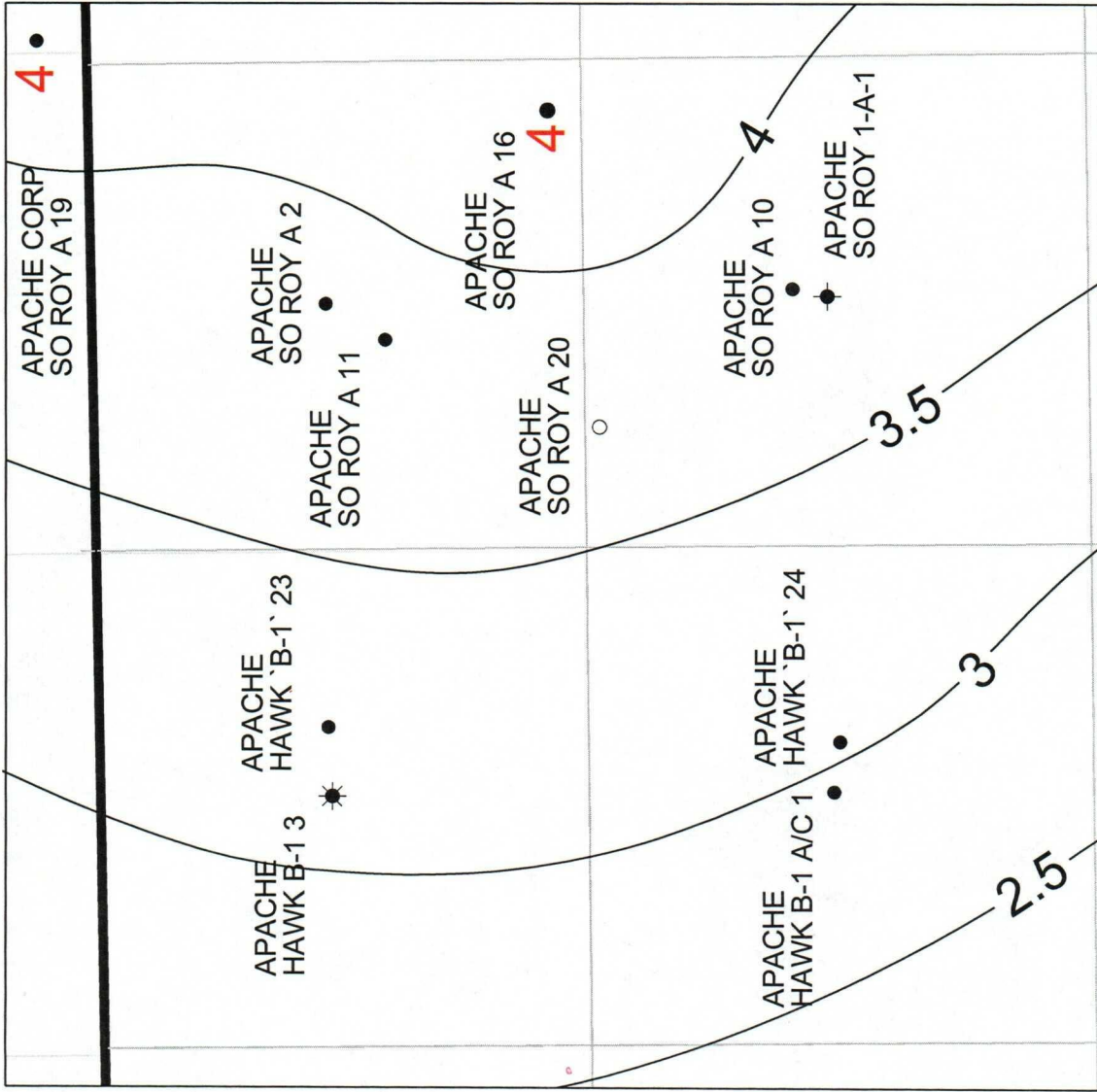
SO. ROY. A #20

SEC 9-T21S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 2
WELL INFORMATION

DATE: 7/22/04

DWG: PROD (CURTIS)OCD-NM(2004 BTD)



GAMMA RAY LTE 40 APIU
 XPHI GTE 5%
 SW LTE 50%

WELL SYMBOLS

- Location Only
- Oil Well
- ☼ Gas Well
- ⊖ Dry

POSTED WELL DATA

BLBY GAS CAP
SOPHIH ● OPERATOR
 WELL LABEL



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

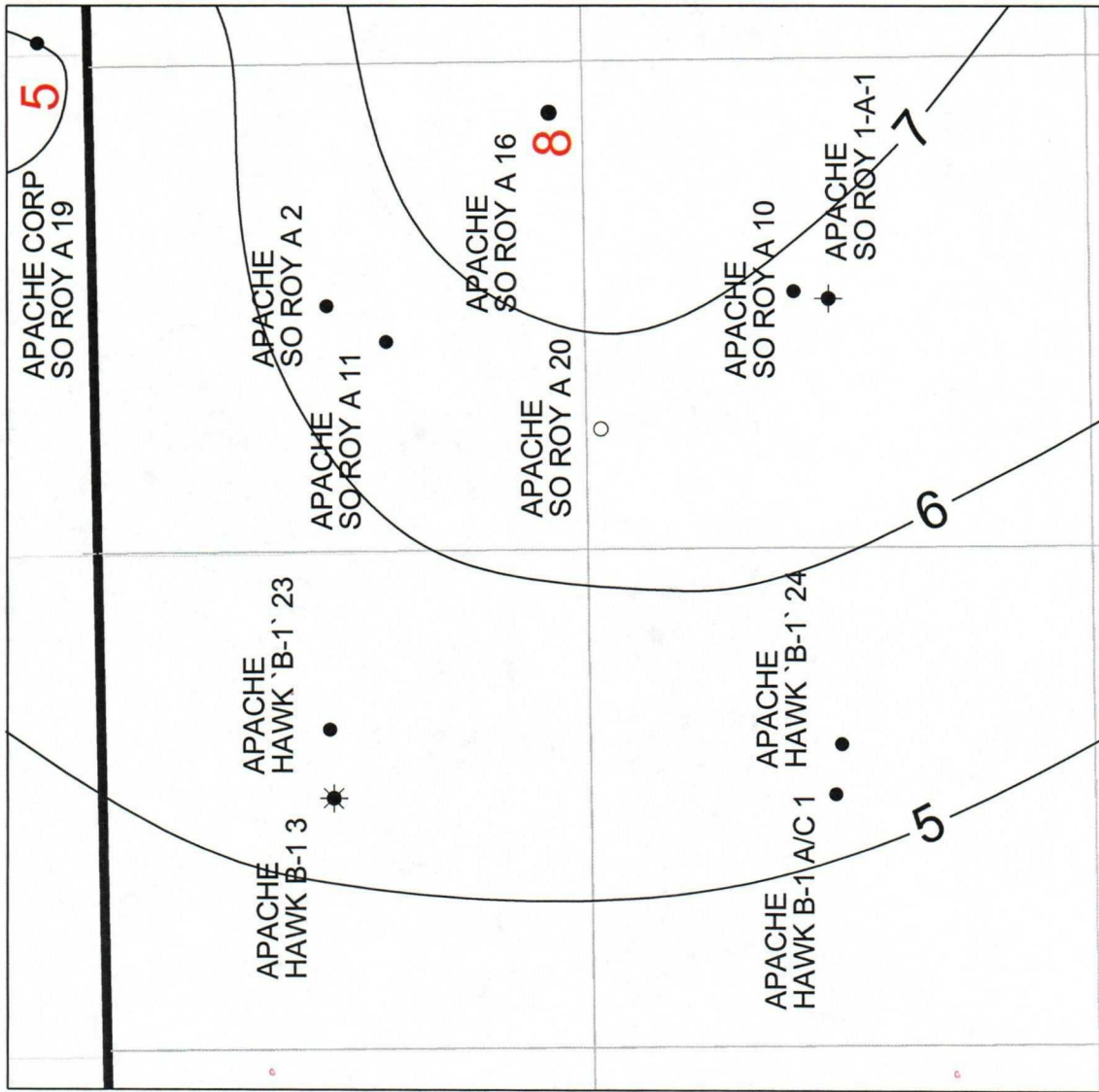
SO. ROY. A #20

SEC 9-T21S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 3

BLBY GAS CAP SOPHIH





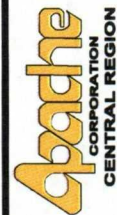
GAMMA RAY LTE 40 APIU
XPHI GTE 5%
SW LTE 50%

WELL SYMBOLS

- Location Only
- Oil Well
- ☼ Gas Well
- ⊖ Dry

POSTED WELL DATA

BLBY OIL LEG
SOPHIH ● OPERATOR
WELL LABEL



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

SO. ROY. A #20

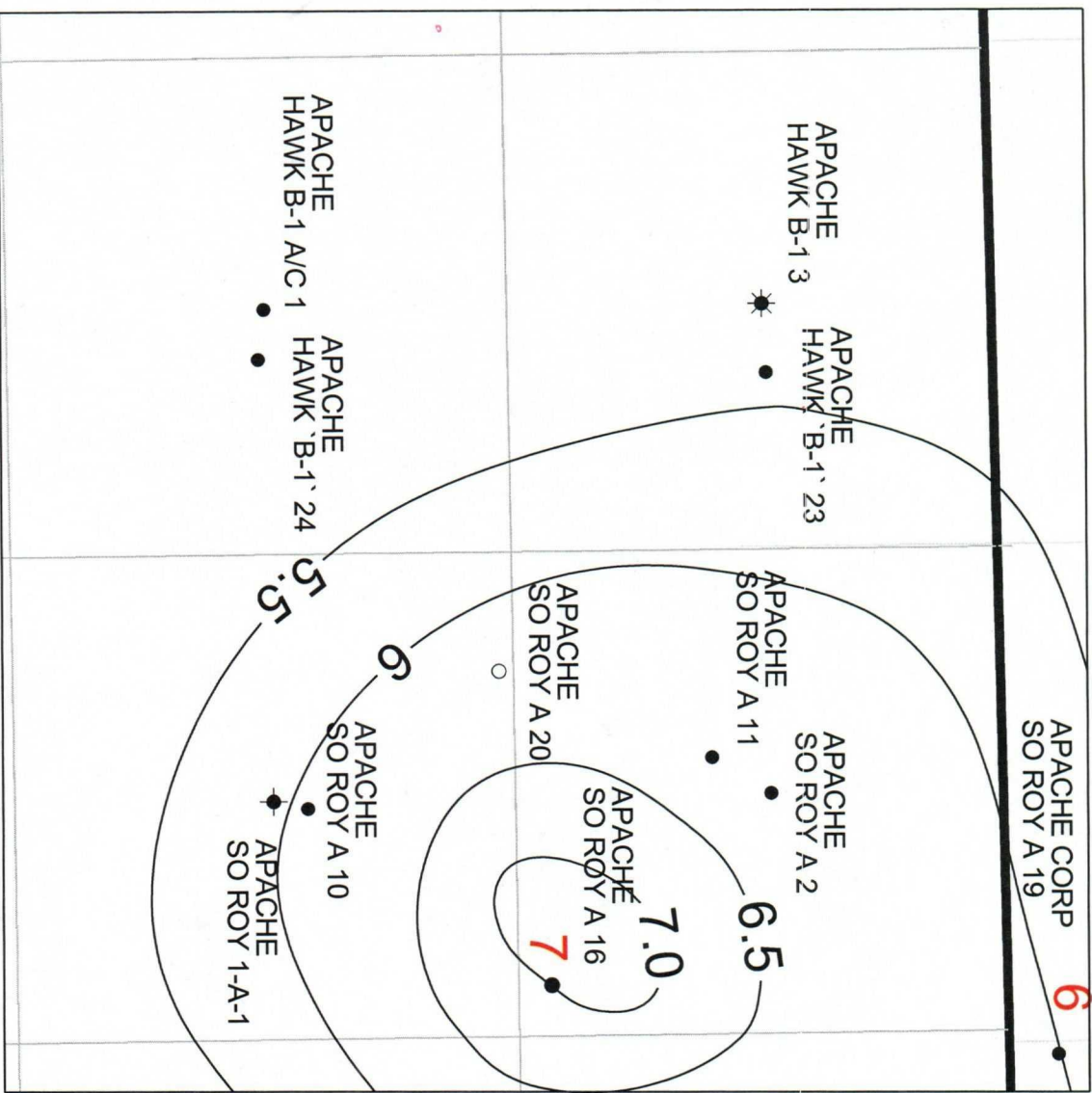
SEC 9-T21S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 4

BLBY OIL LEG SOPHIH

DATE: 7/22/04

DWG: PROD (CURTIS/OCD-NM/2004 LTD)




GAMMA RAY LTE 50 APIU
 XPHI GTE 5%
 SW LTE 50%

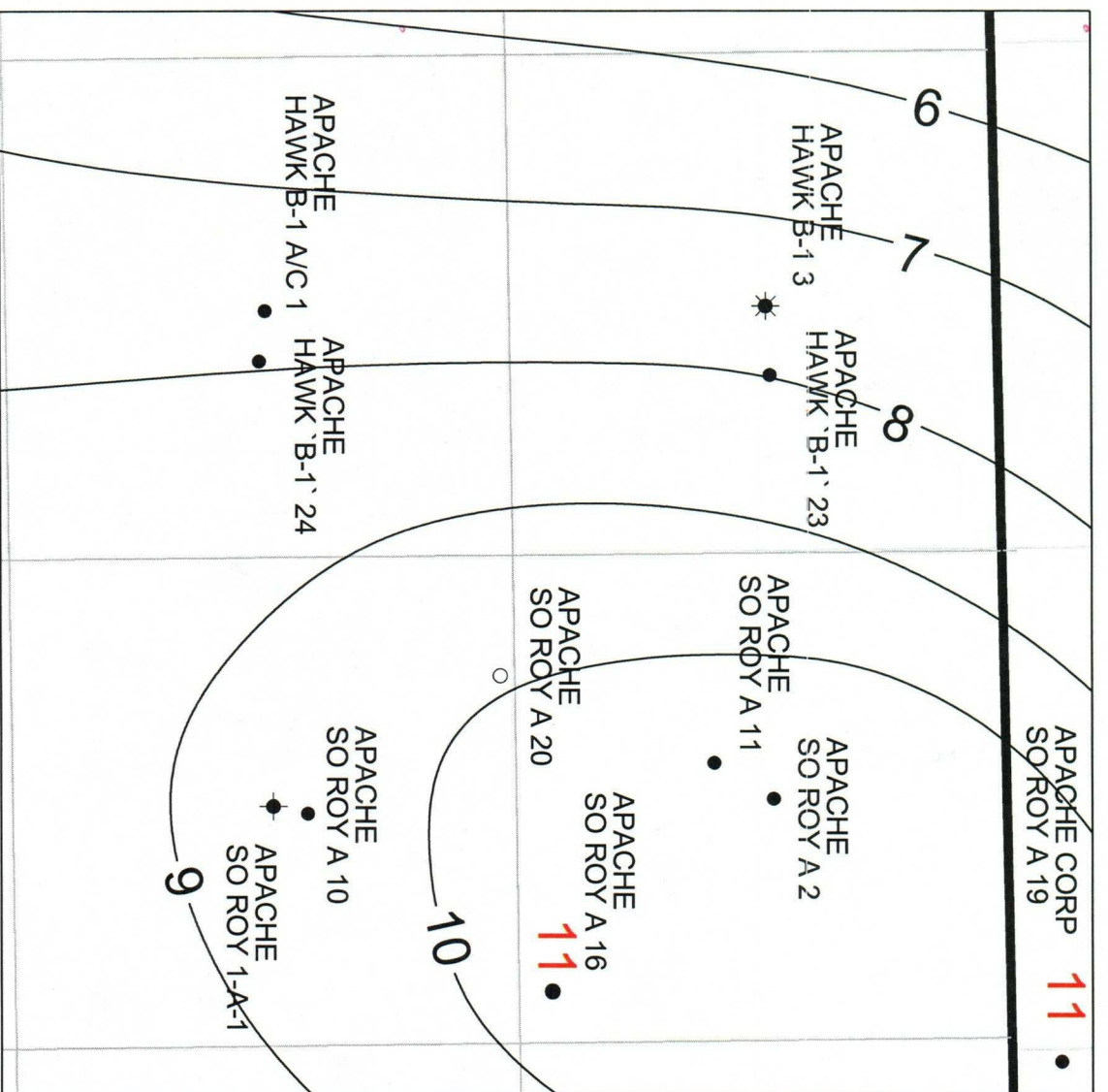
WELL SYMBOLS

- Location Only
- Oil Well
- ☀ Gas Well
- ☉ Dry

POSTED WELL DATA

TUBB
SOPHH ● OPERATOR
 WELL LABEL

 <p>APACHE CORPORATION CENTRAL REGION</p>		<p>TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224</p>	
<p>SO. ROY. A #20</p>			
<p>SEC 9-T21S-R37E LEA COUNTY, NEW MEXICO</p>			
<p>EXHIBIT 5</p>			
<p>TUBB SOPHH</p>			
DATE: 7/22/04	DWG: PROD (CURTIS/OCD-NM2004 BTD)		



GAMMA RAY LTE 40 APIU
XPHI GTE 5%
SW LTE 50%


WELL SYMBOLS

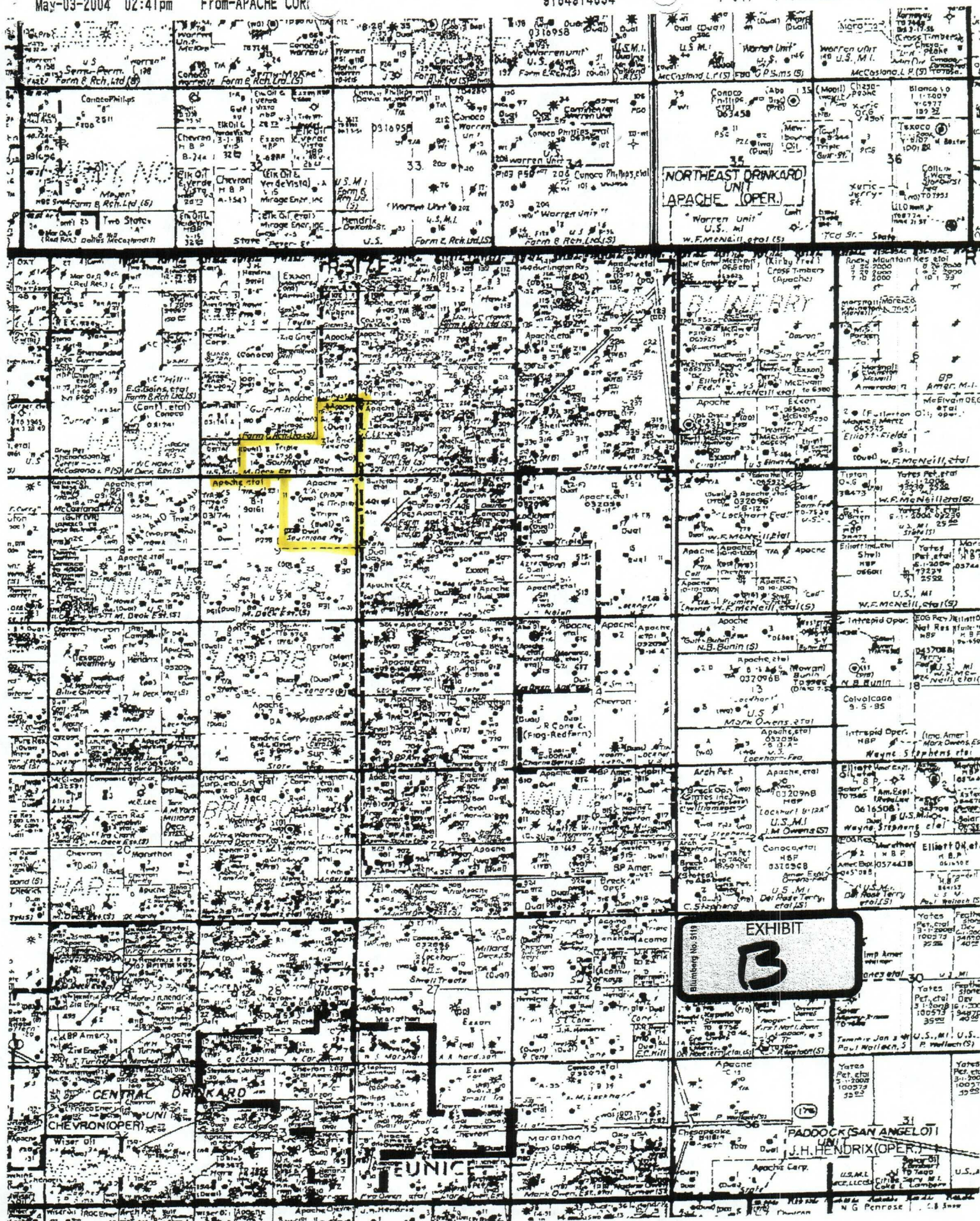
- Location Only
- Oil Well
- ☼ Gas Well
- ☉ Dry

POSTED WELL DATA

DRKD
SOPHIH

● OPERATOR
WELL LABEL

 <p>APACHE CORPORATION CENTRAL REGION</p>		<p>TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224</p>
<p>SO. ROY. A #20</p>		
<p>SEC 9-T21S-R37E LEA COUNTY, NEW MEXICO</p>		
<p>EXHIBIT 6</p>		
<p>DRKD SOPHIH</p>		
DATE: 7/22/04	DWG: PROD (CURTIS/OCD-NM2004 BITD)	



Stogner, Michael

From: Stogner, Michael
Sent: Friday, December 03, 2004 8:13 AM
To: 'JamesBruc@aol.com'
Cc: Ezeanyim, Richard
Subject: RE: Apache Corp./NSL applications in 21S-37E

Your request is duly noted and I will make every effort to accommodate Apache's needs.

-----Original Message-----

From: JamesBruc@aol.com [mailto:JamesBruc@aol.com]
Sent: Friday, December 03, 2004 7:41 AM
To: mstogner@state.nm.us
Subject: Apache Corp./NSL applications in 21S-37E

Mike: I know you have approximately one billion other things on your desk, but Apache is really bothering me for another NSL approval, so they can drill this month. I think there are three pending. As always, anything you can do will help. Thanks.

If you want to call and scream at me to relieve the pressure, I'm at your service (982-2043).

Jim

This email has been scanned by the MessageLabs Email Security System.
For more information please visit <http://www.messagelabs.com/email>

12/3/2004