

ABOVE THIS LINE FOR DIVISION USE ONLY

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



Apache Corp.  
 Lockhart A 35#5  
 5821

**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

*Reply 4/15*

RECEIVED  
 2008 MAR 25 PM 7 53

[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  
 P.O. Box 1056  
 Santa Fe, New Mexico 87504

*James Bruce*  
 \_\_\_\_\_  
 Signature

Attorney for Applicant  
 \_\_\_\_\_  
 Title Date

*3/24/08*

jamesbruc@aol.com  
 \_\_\_\_\_  
 e-mail Address

**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](mailto:jamesbruc@aol.com)

March 24, 2008

Hand Delivered

Mark E. Fesmire, P.E.  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Dear Mr. Fesmire:

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 Name:</u>	Lockhart A 35 Well No. 5
<u>Well Location:</u>	1330 feet FNL & 1650 feet FWL
<u>Well Unit:</u>	SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 35, Township 21 South, Range 37 East, N.M.P.M., Lea County, New Mexico

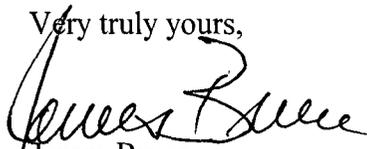
The well will test the Blinebry (Blinebry Oil and Gas Pool), Tubb (Tubb Oil and Gas Pool), and Drinkard (Drinkard Pool) formations, and applicant requests unorthodox location approval in all three zones. The Blinebry, Tubb, and Drinkard zones are expected to be oil productive, and thus are spaced on 40 acres.

The application is based on geological and engineering reasons. A complete discussion, with exhibits, is attached as Exhibit A. The well is in the approximate center of existing Blinebry, Tubb, and Drinkard wells, and the proposed location will drain additional undrained reserves.

Exhibit B is a land plat. The N $\frac{1}{2}$  of Section 35, except the SW $\frac{1}{4}$ NW $\frac{1}{4}$ , is a single fee lease operated by ConocoPhillips Company. Applicant is a co-working interest owner with the operator, but will be drilling the well before turning over operations. Nonetheless, ConocoPhillips Company has been notified of this application. Exhibit C. (The well does not encroach on the SW $\frac{1}{4}$ NW $\frac{1}{4}$  of Section 35, so the operator (John H. Hendrix Corp.) has not been notified.)

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 - 1330' FNL & 1650' FWL  
Section 35, Township 21 South, Range 37 East, NMPM  
Lea County, New Mexico

PRIMARY OBJECTIVES:                      Blinebry, Tubb, and Drinkard

In support:

1. ConocoPhillips is operator and Apache Corporation (Apache) is acting as interim operator of the proposed **Lockhart A-35 #5** 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**). **Exhibit 2** displays wells with a total depth equal to, or greater than, 5500', sufficient to penetrate at least part of the Blinebry, Tubb, and Drinkard interval
3. Production from the three reservoirs is assigned to individual Blinebry Oil and Gas, Tubb Oil and Gas, and Drinkard Pools, but downhole commingling is pre-approved pending submission of allocations to the Hobbs District Office. The cumulative and daily production values displayed on **Exhibit 2** are only for the Blinebry, Tubb, and Drinkard reservoirs.

API	Op.	Well	Loc	Pool	Cum O/G/W	Daily O/G/W
07032	ConocoPhillips	Lockhart A-35 #3	35-C	Blinebry Oil (06660)	49/1617/8	1/26/1
07032	ConocoPhillips	Lockhart A-35 #3	35-C	Tubb Oil (60240)	23/2715/4	0/13/0
07032	ConocoPhillips	Lockhart A-35 #3	35-C	Drinkard (19190)	170/2954/9	0/4/0
07030	ConocoPhillips	Lockhart A-35 #1	35-D	Blinebry Oil (06660)	38/3251/51	2/14/13
07030	ConocoPhillips	Lockhart A-35 #1	35-D	Drinkard (19190)	211/888/2	0/0/0
07036	Hendrix Corp	EM Elliott #1	35-E	Blinebry Oil (06660)	52/5048/16	0.5/42/1
07036	Hendrix Corp	EM Elliott #1	35-E	Drinkard (19190)	226/2029/16	0.5/167/1
07031	ConocoPhillips	Lockhart A-35 #2	35-F	Blinebry Oil (06660)	74/677/19	0.8/7/1
07031	ConocoPhillips	Lockhart A-35 #2	35-F	Tubb Oil (60240)	6/243/3	0.8/27/2
07031	ConocoPhillips	Lockhart A-35 #2	35-F	Drinkard (19190)	192/0/0	0/0/0
07031	ConocoPhillips	Lockhart A-35 #2	35-F	Wantz Abo	64/562/10	0/0/0

MBO                      BOPD  
MMCFG                  MCFGPD  
MBW                      BWPD

3. The proposed **Lockhart A-35 #5** location of 1330' from north line and 1650' from west line is based upon drainage considerations. It was designed to be a "true" 20 Acre infill location, but moved due to lease line considerations.

EXHIBIT 

## a. Geology

The Blinebry, Tubb, and Drinkard Formations are members of the Yeso Group, Permian Leonardian in age. All three formations are shallow marine carbonates, consisting primarily of dolomite. The Tubb has appreciable clastic content and the Drinkard can become limey toward its base. Anhydrite can occur throughout the interval. Pay zones are thin, erratically distributed, and separated by thick impermeable intervals. Porosity and permeability are low.

The geological environment of deposition of the Blinebry, Tubb, and Drinkard was prone to the creation of compartmentalized reservoirs. Cross section analysis and mapping of "continuous pay" also indicates lack of reservoir continuity between 40 A wellbores. Volumetric calculations indicate that wells do not usually drain a full 40 Acre spacing unit. In fact, drainage is often less than 20 Acres.

Apache routinely fracture stimulates perforations in each of the three formations then produces them commingled and allocates production based upon well tests. At this stage in the history of all three pools, economics do not generally permit development of individual reservoirs. Thus, pay from all three reservoirs must be considered for well proposals. A combined Blinebry, Tubb, Drinkard map extracted from a larger area map is, therefore, presented (**Exhibit 3**).

The reservoir was analyzed by mapping the product of pay zone thickness (H) times average porosity ( $\Phi_A$ ) (**Exhibit 3**) of the entire Blinebry, Tubb, and Drinkard interval. This value ( $\Phi_H$ ) was obtained as follows:

1. Thickness (H) was read from modern neutron-density logs from which cross-plotted porosity can be calculated ( $X\Phi$ ).
2. A subtidal environment of deposition fraction of porosity was identified using a minimum of 5% to a maximum of 20% porosity and gamma ray from 0 APIU to a maximum 35 APIU.
3. The Tubb was deposited in a more tidal flat environment, so H in this formation only also includes that fraction of porosity with a minimum 10% to maximum 30% and gamma ray from a minimum 35 APIU to a maximum 75 APIU.
4. These values were then added to arrive at an H value for the entire Blinebry, Tubb, and Drinkard interval.

This analysis requires modern neutron-density logs. Use of older total count gamma ray neutron logs or sonic logs produced isopach maps that were not geologically reasonable.  $\Phi_H$  isopach lines were modeled after cumulative production isopach lines where new well control is lacking. This procedure has proved successful for Apache in recent drilling in the area.

## b. Drainage

The following table provides drainage areas calculated from the PhiH map and reserves of the offsetting wells. PhiH values are either from modern logs, or estimated from the grid. Wells with values determined from modern logs are in **bold**.

				<b>PhiH</b>	<b>Area</b>	<b>EUR</b>	<b>EUR</b>
<b>Op.</b>	<b>Well</b>	<b>Loc</b>	<b>Reservoir</b>	<b>FT</b>	<b>A</b>	<b>MBO</b>	<b>MMCFG</b>
ConocoPhillips	Lockhart A-35 #3	35-C	BTD	36.00	16.12	242	7430
ConocoPhillips	Lockhart A-35 #1	35-D	BTD	21.38	27.91	249	4150
Hendrix Corp	EM Elliott #1	35-E	BTD	30.86	21.58	278	7425
ConocoPhillips	Lockhart A-35 #2	35-F	BTD	17.30	13.71	99	1050

The proposed **Lockhart A-35 #5** was planned as a "true" 20 Acre infill location between existing Blinebry, Tubb, and Drinkard producers. The location was placed in the center of the vacant area between the existing wells, and then moved due to lease line considerations.

Reserves for the proposed location were calculated by planimetry of the undrained area of the PhiH 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:

				<b>PhiH</b>	<b>Area</b>	<b>EUR</b>	<b>EUR</b>
<b>Op.</b>	<b>Well</b>	<b>Loc</b>	<b>Reservoir</b>	<b>Ft</b>	<b>A</b>	<b>MBO</b>	<b>MMCFG</b>
<b>Apache</b>	<b>Lockhart A-35 #5</b>	<b>35-F</b>	<b>BTD</b>	<b>21.65</b>	<b>16.33</b>	<b>147.5</b>	<b>1475</b>

**4. Notice**

**Lockhart A-35 #5** encroaches toward wells operated by ConocoPhillips and John H Hendrix Corporation. Parties to be notified of this application are:

ConocoPhillips Company  
 600 N. Dairy Ashford, 3WL-14066  
 Houston, Texas 77079  
 Attn: Tom Scarbrough

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

OK

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 12, 2005

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number		Pool Code		Pool Name	
Property Code		Property Name LOCKHART A-35			Well Number 5
OGRID No.		Operator Name APACHE CORPORATION			Elevation 3381'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	35	21 S	37 E		1330	NORTH	1650	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

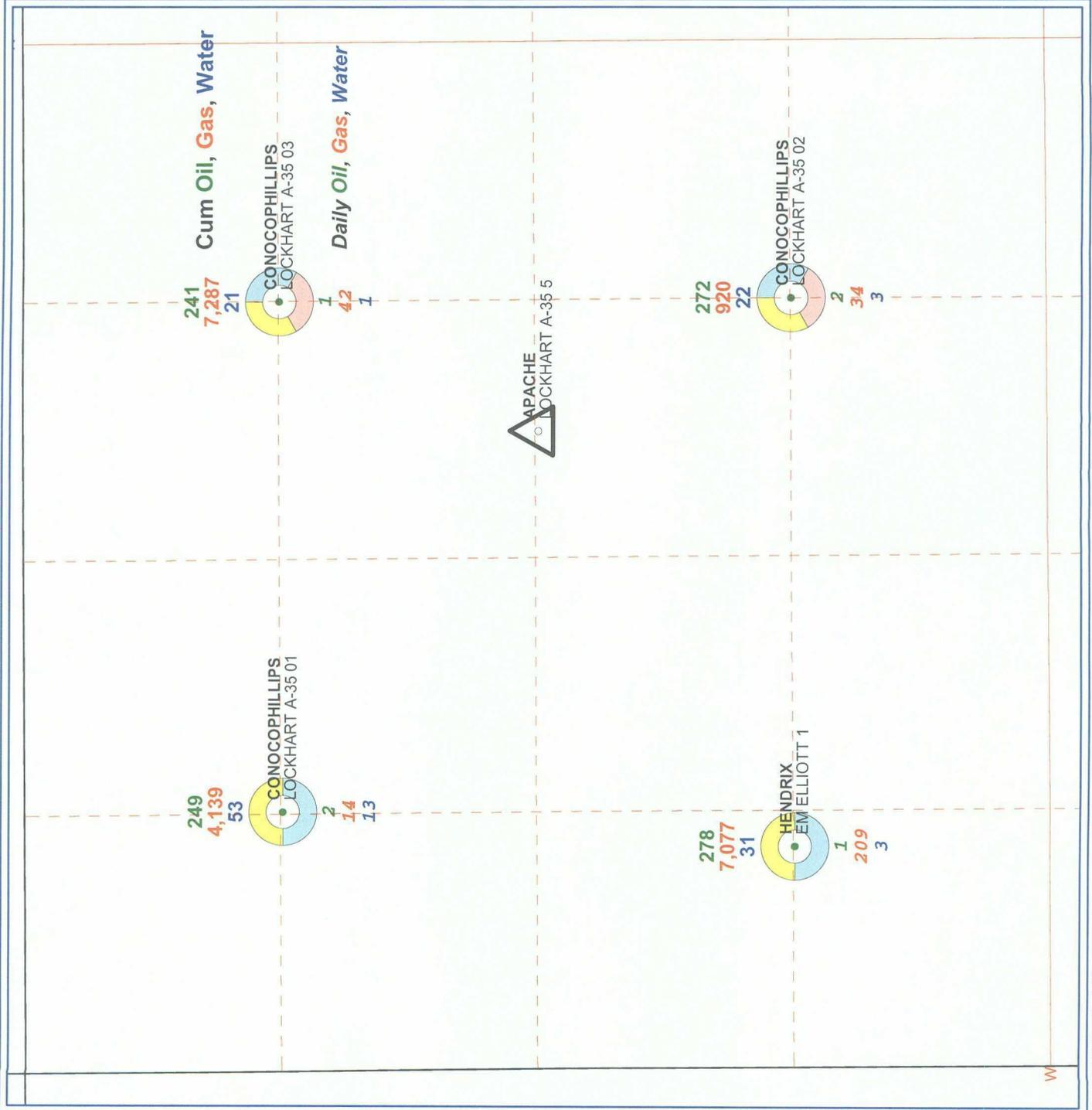
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>Lot - N32°26'20.41" Long - W103°08'13.09" SPC- N.: 525502.398 E.: 910434.913 (NAD-83)</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature _____ Date _____</p> <p>Printed Name _____</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p>
	<p>JANUARY 2, 2008</p> <p>Date Surveyed _____</p> <p>Signature &amp; Seal of Professional Surveyor _____</p>
	<p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS</p>

**Well Highlights**

Blinebry Production: Yellow  
 Tubb Production: Red  
 Drinkard Production: Blue



**Apache** APACHE CORPORATION

**EXHIBIT 2**

Apache Lockhart A-35 #5

Well Data

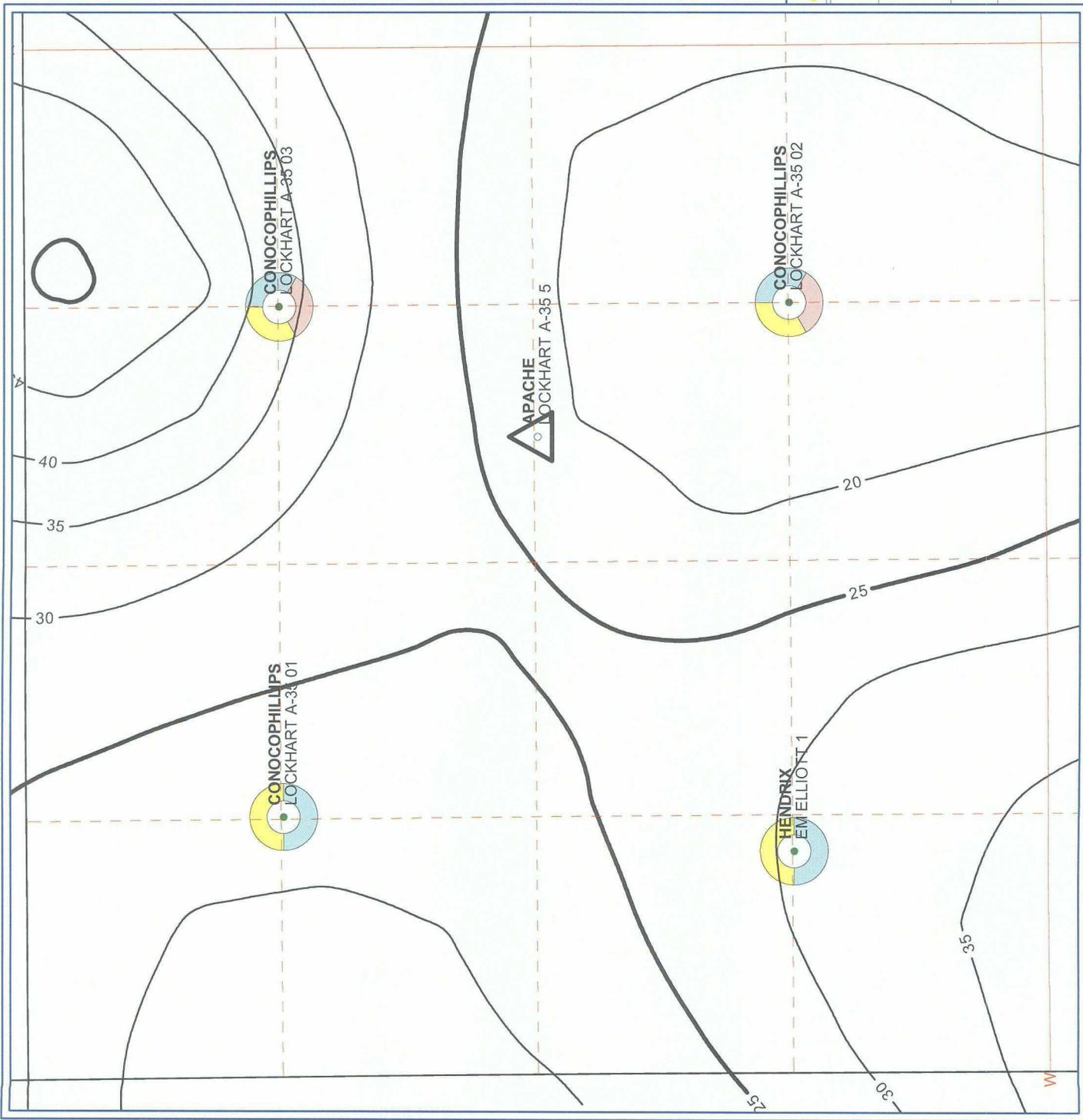
0 415  
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EXHIBIT 3

Apache Lockhart A-35 #5

BTD PhilH

REMARKS  
Contour Interval: 5'





**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](mailto:jamesbruc@aol.com)

March 24, 2008

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

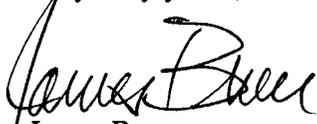
ConocoPhillips Company  
600 North Dairy Ashford  
Houston, Texas 77079

Attention: Tom Scarborough  
3WL-14066

Ladies and gentlemen:

Apache Corporation has filed an application with the New Mexico Oil Conservation Division seeking an unorthodox oil well location in the Blinebry, Tubb, and Drinkard formations in the SE $\frac{1}{4}$ NW $\frac{1}{4}$  of Section 35, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. A copy of the application is enclosed. If you object to the application, you must notify the Division in writing no later than Monday, April 14, 2008 (the Division's address is 1220 South St. Francis Drive, Santa Fe, New Mexico 87505). Failure to object will preclude you from contesting this matter at a latter date.

Very truly yours,

  
James Bruce

Attorney for Apache Corporation

EXHIBIT           

**C**