

|                 |          |                    |                      |             |                           |
|-----------------|----------|--------------------|----------------------|-------------|---------------------------|
| 3/25/08<br>DATE | SUSPENSE | Brooks<br>ENGINEER | 3/25/08<br>LOGGED IN | NSL<br>TYPE | PKURO808539398<br>APP NO. |
|-----------------|----------|--------------------|----------------------|-------------|---------------------------|

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

West Indian Basin Unit

#6

## ADMINISTRATIVE APPLICATION CHECKLIST

5820

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

Signature

Attorney for Applicant  
 Title Date

jamesbruc@aol.com  
 e-mail Address

2008 MAR 25 AM 7 53

RECEIVED

Rip 4/15

3/24/08

**JAMES BRUCE**  
ATTORNEY AT LAW

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[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 gas well location for the following well:

|                       |   |
|-----------------------|---|
| <u>Well Name:</u>     | West Indian Basin Unit Well No. 6   |
| <u>Well Location:</u> | 1925 feet FNL & 760 FWL   |
| <u>Well Unit:</u>     | All of Section 17, Township 21 South, Range 23 East,<br>N.M.P.M., Eddy County, New Mexico |

The well will test the Upper Pennsylvanian formation (Indian Basin-Upper Pennsylvanian Gas Pool). Under Order No. R-8170, as amended, the pool has 640 acre spacing, and wells to be located no closer than 1650 feet to the outer boundary of a section or closer than 330 feet to a quarter-quarter section line.

The application is based on geologic and engineering reasons. A complete discussion, with exhibits, is attached as Exhibit A. The well data shows that wells in the Upper Pennsylvanian drain less than 640 acres. Therefore, the proposed location will recover undrained reserves.

Applicant operates offsetting Section 18, so the other working interest owners in that section have been notified of this application. Exhibit B.

Very truly yours,

  
James Bruce

Attorney for Apache Corporation

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

640 Acres - 1925' FNL & 760' FWL  
Section 17, Township 21 South, Range 23 East, NMPM  
Eddy County, New Mexico

PRIMARY OBJECTIVE: Upper Pennsylvanian

In support:

1. Apache Corporation (Apache) is the operator of the proposed **West Indian Basin Unit #6** well (**EXHIBIT 1**).
2. The proposed unorthodox location encroaches toward Upper Pennsylvanian wells in Sections 18. Production from all wells in the contiguous sections is displayed on **EXHIBIT 2** and detailed production from wells in Sections 17 and 18 is in the table below. **EXHIBIT 2** displays only those wells with TD greater than 6000'.

| API   |             |                        |      |                              | Cum           | Daily   |
|-------|-------------|------------------------|------|------------------------------|---------------|---------|
| 30015 | Op.         | Well                   | Loc  | Pool                         | O/G/W         | O/G/W   |
| 30945 | Apache Corp | West Indian Basin #1-Y | 17-N | Indian Basin Up Penn (79040) | 6/3545/1682   | 1/403/0 |
| 10209 | Kerr-McGee  | West Indian Basin# 1   | 17-N | Indian Basin Up Penn (79040) | 219/40396/118 | 0/0/0   |
| 10483 | RN Enfield  | Bunnel Federal #1      | 18-J | Indian Basin Up Penn (79040) | 23/5032/1     | 0/0/0   |
| 25007 | Apache Corp | Bunnel Federal #2      | 18-J | Indian Basin Up Penn (79040) | 11/9322/17    | 0/400/0 |
| 30701 | Apache Corp | Bunnel Federal #3      | 18-P | SWD-Devonian (96101)         | 0/0/0         | 0/0/0   |

MBO  
MMCFG  
MBW  
BOPD  
MCFGPD  
BWPD

3. The proposed **West Indian Basin Unit #6** location of 1925' from north line and 760' from west line is based upon geological considerations.

**a. Geology**

The Upper Pennsylvanian (Cisco-Canyon) was deposited as agal limestone banks and bars along the shelf edge. Later diagenesis converted the limestone to dolomite and rearranged the pore system. The dominant hydrocarbon storage is now in large and only occasionally connected vugs. Preserved intergranular and secondary intercrystalline porosity as well as solution enhanced fractures are most important for permeability. The dolomite lithology and vugular nature of porosity creates the likelihood of compartmentalized reservoirs. Older wireline logs do not accurately reflect vugular porosity because of the physics of the acoustic wave and even modern litho-density/neutron logs can miss porosity if it is not near the wellbore.

EXHIBIT

**A**

**EXHIBIT 3** is the Upper Pennsylvanian net pay, using 3%-5% porosity and 50 APIU gamma ray as cutoffs. The varying porosity cutoff was necessitated because of the differing vintages of wireline logs and differing physics controlling the porosity measurement. Apache expects over 150' of pay using those criteria, realizing this estimate may be conservative because of the limitations of the logging tools.

**EXHIBIT 4** is a three well cross section including Bunnel Federal #2, West Indian Basin #1, and West Indian Basin #1-Y. It demonstrates the compartmentalization of the Upper Pennsylvanian reservoir. Porosity is spread over an interval of more than 400'. It is developed at different levels in the different wells, even wells like West Indian Basin #1 and #1-Y, which are less than 200' apart, and it is developed to different degrees. Additionally, the wells have perforated different intervals and have not perforated all apparent porosity. If the two older West Indian Basin wells encounter different, compartmentalized reservoirs, there is a strong likelihood that **West Indian Basin Unit #6** will encounter different reservoirs than other wells in Sections 17 and 18. Volumetric analysis is misleading because of both logging tool responses and compartmentalized reservoirs.

#### **b. Drainage**

Apache Corporation staked the location at 1925' from north line and 760' from west line to be in the north half of the section away from Indian Basin #1 and #1-Y wellbores that have produced almost 44 BCFG combined (**EXHIBIT 2**), yet "on trend" with the high production in West Indian Basin #1-Y (§17-N) and Yates West Indian Basin #2 (§20-G). Moving east to a standard location would be moving off trend of the best production toward thinner pay.

The volume of hydrocarbons contained by the Upper Pennsylvanian is evidenced by high cumulative production from multiple wells in small areas. For example see Marathon North Indian Basin Unit #8, #5, #1, #36, #9, and #4 which have cumulative production of 131 BCFG from little more than 640 A in Sections 9, 10, 15, and 16 and Kerr-McGee West Indian Basin #1 and Apache West Indian Basin #1-Y which have cumulative production of 44 BCFG from twin wellbores in Section 17, Unit N (**EXHIBIT 2**).

The proposed **West Indian Basin Unit #6** location of 1925' from north line and 760' from west line is not expected to adversely impact the still productive West Indian Basin #1-Y in Section 17 or any future location in Section 18.

#### **4. Notice**

**West Indian Basin Unit #6** only encroaches toward Section 18 which Apache also operates. Other working interest owners in Section 18 who will be notified are:

J. Hiram Moore, Ltd.  
310 West Wall, Suite 404  
Midland, TX 79701

Occidental Petroleum Ltd.  
Attn: Oxy Permian Joint Interest  
P.O. Box 4294  
Houston, TX 77210-4294

Yates Petroleum Corporation  
Attn: Secretary – Land Department  
105 S. Fourth Street  
Artesia, NM 88210

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.

## DISTRICT I

1825 N. FRENCH DR., HOBBS, NM 88240

## DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

## DISTRICT III

1000 Rio Brazos Rd., Artec, NM 87410

## DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

## State of New Mexico

Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.  
Santa Fe, New Mexico 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

|               |  |                           |
|---------------|--|---------------------------|
| API Number    | Pool Code                                      | Pool Name                 |
| Property Code | Property Name<br><b>WEST INDIAN BASIN UNIT</b> | Well Number<br><b>6</b>   |
| OGRID No.     | Operator Name<br><b>APACHE CORPORATION</b>     | Elevation<br><b>4030'</b> |

## Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| E             | 17      | 21-S     | 23-E  |         | 1925          | NORTH            | 760           | WEST           | EDDY   |

## 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>1925'</p> <p>760'</p> <p>SEE DETAIL</p> <p>4059.5' 4064.5'</p> <p>600'</p> <p>4027.1' 4016.0'</p> <p>GEODETIC COORDINATES<br/>NAD 27 NME</p> <p>Y=538674.6 N<br/>X=408507.5 E</p> <p>LAT.=32.480578° N<br/>LONG.=104.630033° W</p> <p>LAT.=32°28'50.08" N<br/>LONG.=104°37'48.12" W</p> | <p><b>OPERATOR CERTIFICATION</b></p> <p><i>I hereby certify that the information 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 or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i></p> <p>Signature _____ Date _____</p> <p>Printed Name _____</p> <p><b>SURVEYOR CERTIFICATION</b></p> <p><i>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.</i></p> <p>FEBRUARY 11, 2008</p> <p>Date Surveyed _____ DSS</p> <p>Signature &amp; Seal of Professional Surveyor 3239</p> <p><i>Ronald J. Eidson</i></p> <p>08-11-0208</p> <p>Certificate No. GARY EIDSON 12841<br/>RONALD J. EIDSON 3239</p> |
|--|---|





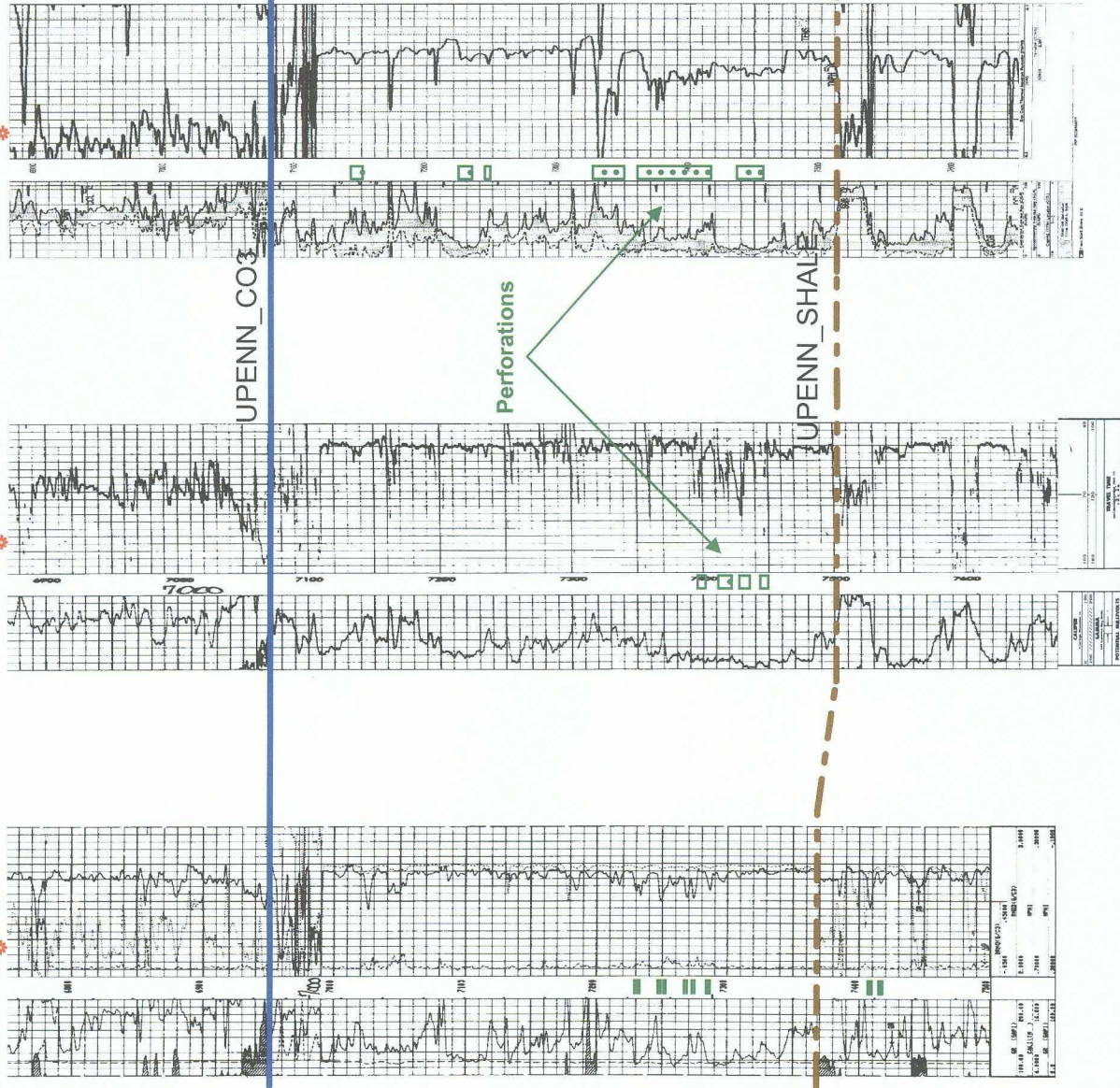




APACHE CORP  
BUNNEL FEDERAL 2

KERR-MCGEE CORP  
WEST INDIAN BASIN 1

APACHE CORP  
WEST INDIAN BASIN 1-Y



**JAMES BRUCE**  
ATTORNEY AT LAW

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

March 24, 2008

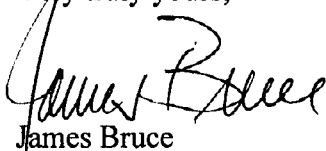
CERTIFIED MAIL – RETURN RECEIPT REQUESTED

To: Persons on Exhibit A

Ladies and gentlemen:

Apache Corporation has filed an application with the New Mexico Oil Conservation Division seeking an unorthodox gas well location in the Upper Pennsylvanian formation in Section 17, Township 21 South, Range 23 East, NMPM, Eddy 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 later date.

Very truly yours,



James Bruce

Attorney for Apache Corporation

EXHIBIT **B**

EXHIBIT A

Occidental Petroleum Ltd.  
Attn: Oxy Permian Joint Interest  
P.O. Box 4294  
Houston, TX 77210-4294

Yates Petroleum Corporation  
Attn: Secretary – Land Department  
105 S. Fourth Street  
Artesia, NM 88210

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