

ABOVE THIS LINE FOR DIVISION USE ONLY

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



5622

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

James Bruce Attorney for Applicant
 Signature Title Date
jamesbruc@aol.com
 e-mail Address

2007 APR 30 PM 2 03

JAMES BRUCE
ATTORNEY AT LAW

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jamesbruc@aol.com

April 30, 2007

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>	Southland Royalty A Well No. 27
<u>Well Location:</u>	1185 feet FNL & 1650 FEL
<u>Well Unit:</u>	NW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 9 Township 21 South, Range 37 East, N.M.P.M., Lea County, New Mexico

The well will test the Grayburg formation (Penrose Skelly Pool). The pool is developed on statewide rules, with 40 acre spacing, and wells to be located no 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 (which includes a Form C-102). The well is located approximately equidistant from five existing Grayburg wells. The well data shows that wells in the Grayburg drain less than 40 acres. Therefore, the proposed location will recover undrained reserves in the Grayburg.

Exhibit B is a land plat. The Southland Royalty A (fee) Lease, which has common ownership in the Grayburg formation, covers, among other acreage, the NE $\frac{1}{4}$ of Section 9. No offset owner is adversely affected by the application, and notice has not been provided to anyone.

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 – 1185' FNL & 1650' FEL
 Section 9, Township 21 South, Range 37 East, NMPM
 Lea County, New Mexico

PRIMARY OBJECTIVE: GRAYBURG

In support:

1. Apache Corporation (Apache) is the operator of the proposed **Southland Royalty A #27 (Exhibit 1)**. The proposed total depth is 4150' to test the Grayburg formation.
2. The proposed location encroaches toward the following wells in the effected Penrose Skelly; Grayburg Pool (**Exhibit 2**). This location is a standard distance from the east boundary of Unit B, so Grayburg wells in Unit A will not actually be encroached upon.

API	Op.	Well	Loc	Pool	Daily O/G/W	Cum O/G/W
35766	Apache	So. Royalty A 11	B-09	Penrose Skelly; Grayburg	3/25/13	27/157/59
38054	Apache	So. Royalty A 25	A-09	Penrose Skelly; Grayburg	30/80/100	6/19/16
06445	Apache	So. Royalty A 07	A-09	Penrose Skelly; Grayburg	3/12/10	11/56/46
35767	Apache	So. Royalty A 12	H-09	Penrose Skelly; Grayburg	1/5/4	11/52/45
35514	Apache	So. Royalty A 10	G-09	Penrose Skelly; Grayburg	7/138/18	27/200/65

BOPD MBO
 MCFPD MMCFG
 BWPD MBW

3. The proposed **Southland Royalty A #27** unorthodox Grayburg location at 1185' from north line and 1650' 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. Average porosity of the Grayburg is less than 10% and average permeability is less than 1 millidarcy. 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. Grayburg wells are not capable of draining an entire 40 Acre Spacing Unit.

EXHIBIT A

The reservoir was analyzed by mapping hydrocarbon pore volume (SoPhiH) (Exhibit 3). SoPhiH is the product of feet of net pay (H) times average porosity (PhiA) times oil saturation (So). The values were obtained as follows:

1. Net Pay was read from modern neutron-density logs from which cross-plotted porosity (XPhi) can be calculated, using a minimum of 5% and a maximum of 20%. Additionally, gamma ray (40 APIU) and water saturation (10% - 50%, using a standard equation with a=1 and m=n=2) cutoffs were also employed.
2. Average Porosity was calculated for intervals meeting those criteria.
3. Oil Saturation is the additive inverse of water saturation.

The following table provides drainage areas calculated from the SoPhiH map and reserves of the offsetting wells. Values determined from modern logs will have an asterisk after the value; others are estimates from the grid.

Op.	Well	Loc	Reservoir	SoPhiH Ft	Area A	EUR MBO	EUR MMCFG
Apache	Southland Royalty A 11	09-B	Grayburg	4.06	13	38	170
Apache	Southland Royalty A 25	09-A	Grayburg	3.58*	22	55	314
Apache	Southland Royalty A 07	09-A	Grayburg	2.91	6	12	60
Apache	Southland Royalty A 12	09-H	Grayburg	1.52	11	12	52
Apache	Southland Royalty A 10	09-G	Grayburg	3.34*	25	59	575

The intent of the well is to recover reserves that cannot be recovered by the existing wells. The location was placed in the center of the vacant area between the existing wells and then moved due to surface conditions and cultural obstructions.

Reserves for the proposed **Southland Royalty A #27** were calculated by planimetry of the undrained area of the SoPhiH 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	SoPhiH	AREA A	EUR MBO	EUR MMCFG
Southland Royalty A #27	09-B	3.10	14	30	322

4. Notice

Apache is the operator and only working interest owner of the Grayburg wells toward which the proposed **Southland Royalty A #27** will encroach.

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.

OK

DISTRICT I
1025 N. FRENCH DR., BOHRS, NM 88240

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

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

Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number	Pool Code	Pool Name
Property Code	Property Name SOUTHLAND ROYALTY A	Well Number 27
OGRID No.	Operator Name APACHE CORPORATION	Elevation 3471'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	9	21-S	37-E		1185	NORTH	1650	EAST	LEA

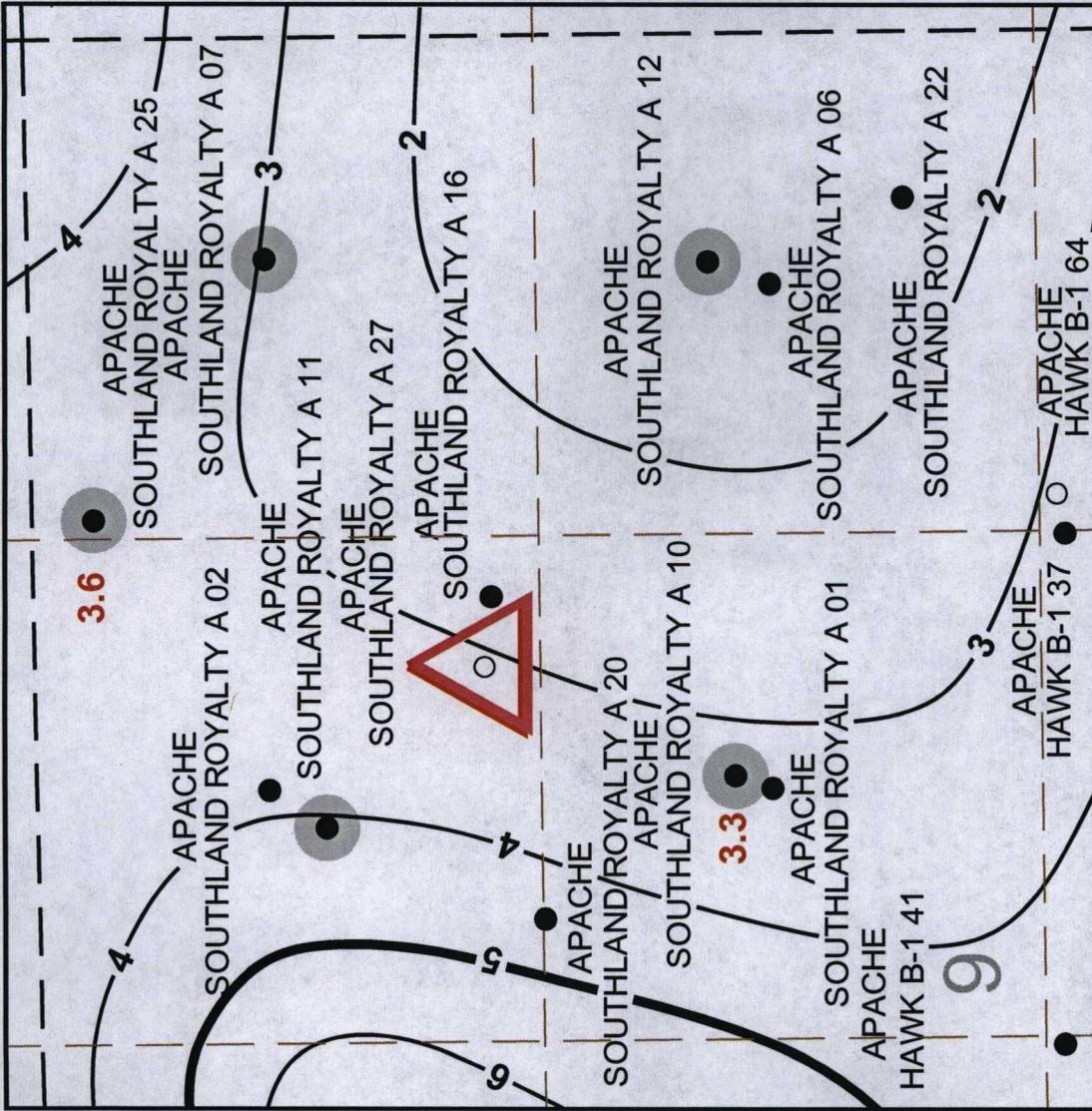
Bottom Hole Location If Different From Surface

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>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=546609.2' N X=860424.7' E</p> <p>LAT.=32.497308° N LONG.=103.164334° W</p>		<p>OPERATOR CERTIFICATION</p> <p>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.</p> <p>Signature _____ Date _____</p> <p>Printed Name _____</p>
		<p>SURVEYOR CERTIFICATION</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>MARCH 19, 2007</p> <p>Date Surveyed _____ AR</p> <p>Signature & Seal of Professional Surveyor</p> <p><i>Ronald J. Eidson</i> 3/27/07 07.11.0322</p> <p>Certificate No. GARY EIDSON 12841 RONALD J. EIDSON 3239</p>



WELL SYMBOLS

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

POSTED WELL DATA

OPERATOR
WELL LABEL

GRAYBURG SOPHIH ●

	TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224
	SOUTHLAND ROY. A 27 SEC 9-T21 S-R37E LEA COUNTY, NEW MEXICO
EXHIBIT 3 GRAYBURG SOPHIH	
DATE: 4/16/07	DWG: CURTIS/GRAYBURG NSL/WEILL (EX3)

