

64.30.2007 DATE IN	4/30/07 SUSPENSE	O. Catorach ENGINEER	65.61.2607 LOGGED IN	NSL TYPE	PCLP6712144642 APP NO.
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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



5621

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]

2007 APR 30 PM 2 03

[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
 Signature

Attorney for Applicant
 Title Date

jamesbruc@aol.com
 e-mail Address

4/30/07

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

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>	Weatherly 21 Well No. 9
<u>Well Location:</u>	1090 feet FNL & 1670 FEL
<u>Well Unit:</u>	NW¼NE¼ of Section 21, 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 several 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 Weatherly (fee) Lease, which has common ownership in the Grayburg formation, covers the NW¼ and W½NE¼ of Section 21. 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,

A handwritten signature in cursive script, appearing to read "James Bruce". The signature is written in dark ink and is positioned above the printed name.

James Bruce

Attorney for Apache Corporation

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

40 acres – 1090' FNL & 1670' FEL
Section 21, 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 **Weatherly 21 #09 (Exhibit 1)**. The proposed total depth is 4125' to test the Grayburg formation.
2. The proposed location encroaches toward the following wells in the ^{affected} Penrose Skelly; Grayburg Pool (**Exhibit 2**). There are no active or inactive Grayburg wells in Units A or H.

API					Daily	Cum
30-025-	Op.	Well	Loc	Pool	O/G/W	O/G/W
35523	Apache	Weatherly 21 02	21-B	Penrose Skelly; Grayburg	4/36/9	3/24/8
26453	Apache	Weatherly 21 03	21-G	Penrose Skelly; Grayburg	4/64/124	9/144/191
35173	Apache	Weatherly 21 01	21-G	Penrose Skelly; Grayburg	4/9/24	22/47/40

BOPD MBO
MCFPD MMDFG
BWPD MBW

3. The proposed **Weatherly 21 #09** unorthodox Grayburg location at 1090' from north line and 1670' 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.

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:

EXHIBIT

A

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	Weatherly 21 02	21-B	Grayburg	2.84	2.5	5	95
Apache	Weatherly 21 03	21-G	Grayburg	4.03	4.0	11	240
Apache	Weatherly 21 01	21-G	Grayburg	4.08	8.0	23	47

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 **Weatherly 21 #09** were calculated by planimentering 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
Weatherly 21 #09	21-B	3.37	12.6	30	323

OK

DISTRICT I

1225 N. FRENCH DR., HOHES, NM 86240

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

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.

Santa Fe, New Mexico 87505

DISTRICT III

1000 Rio Brazos Ed., Axtec, 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 WEATHERLY 21	Well Number 9
GRID No.	Operator Name APACHE CORPORATION	Elevation 3440'

Surface Location

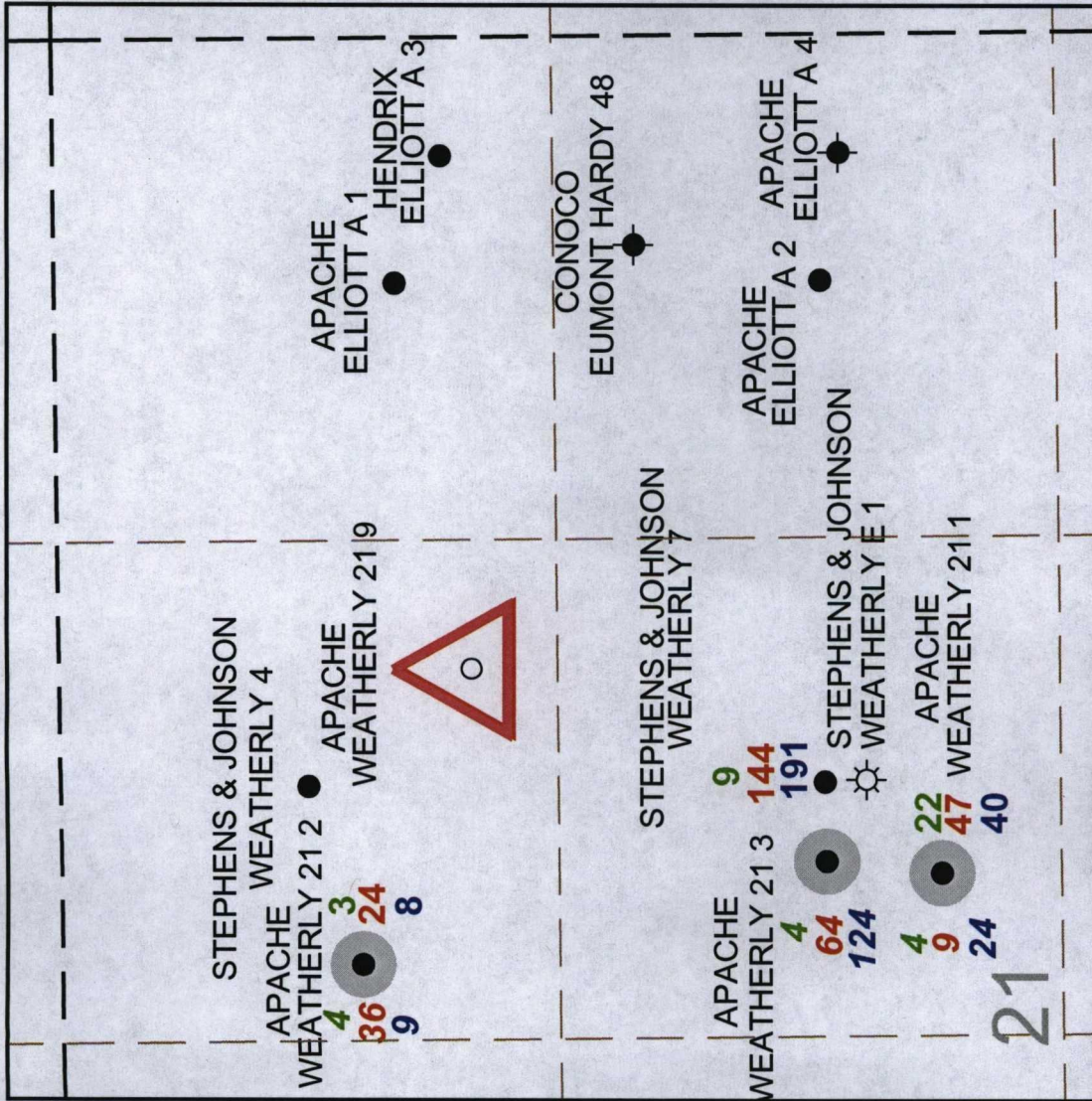
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	21	21-S	37-E		1090	NORTH	1670	EAST	LEA

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=536142.8' N X=860525.9' E</p> <p>LAT.=32.468540' N LONG.=103.164378' 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 16, 2007</p> <p>Date Surveyed _____ AR</p> <p>Signature & Seal of Professional Surveyor</p> <p><i>Ronald J. Eidson</i> 3/27/07</p> <p>07.11.0320</p>
	<p>Certificate No. GARY EIDSON 12841</p> <p>RONALD J. EIDSON 3239</p>



WELL SYMBOLS

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

POSTED WELL DATA

OPERATOR
WELL LABEL
CURRENT BOPD MBO
CURRENT MCFD MMCFG
CURRENT BWPD MBW



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

WEATHERLY 21 9

SEC 21-T21S-R37E

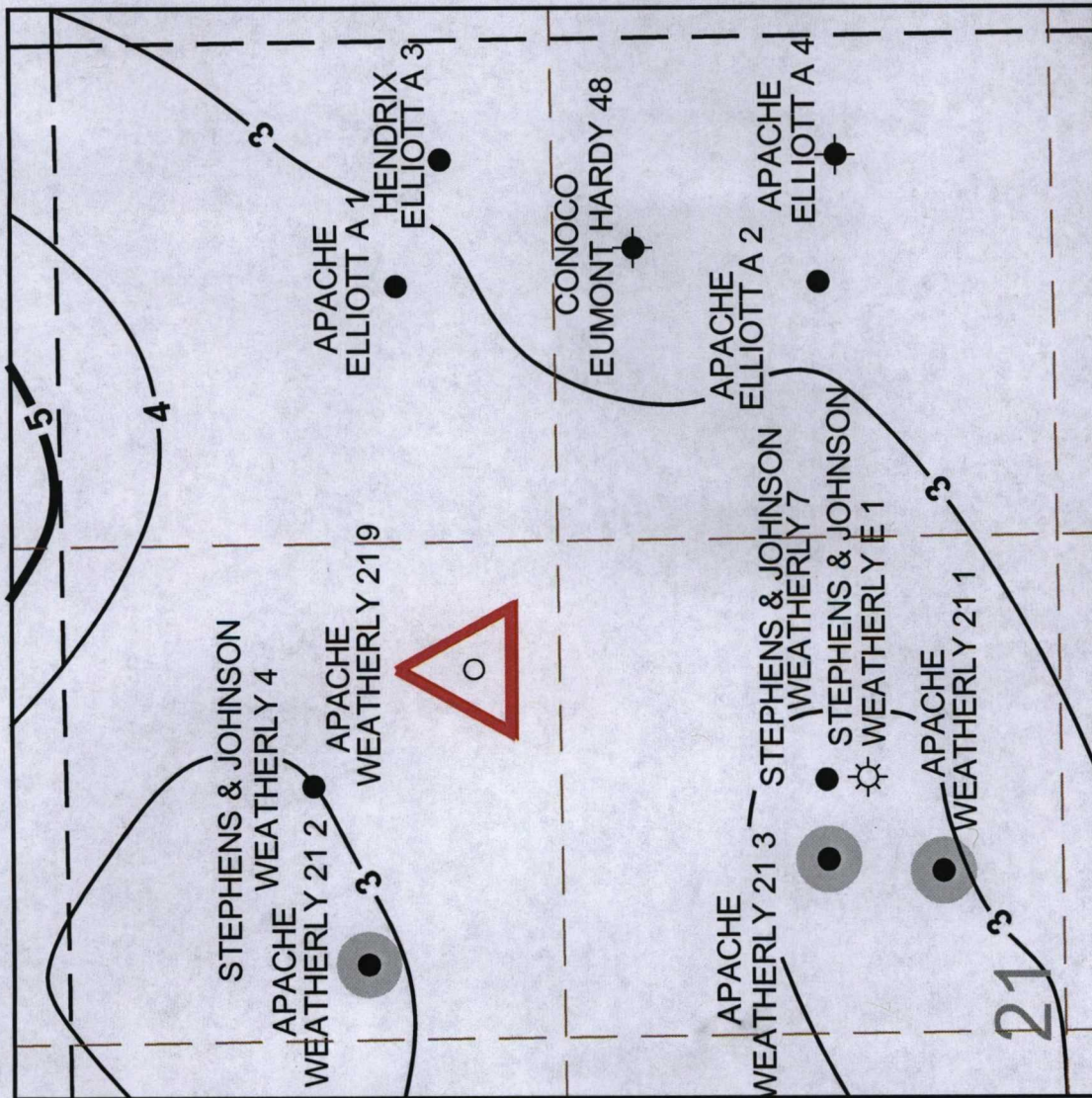
LEA COUNTY, NEW MEXICO

EXHIBIT 2

WELL INFORMATION

DATE: 4/16/07

DWG: CURTIS GRAYBURG NSLWELL (EX2)



WELL SYMBOLS

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

POSTED WELL DATA

OPERATOR
WELL LABEL

GRAYBURG SOPHIH ●

Apache CORPORATION CENTRAL REGION	TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224
WEATHERLY 21 9	
SEC 21-T21S-R37E LEA COUNTY, NEW MEXICO	
EXHIBIT 3	
GRAYBURG SOPHIH	
DATE: 4/16/07	DWG: CURTISGRAYBURG NSLWELL (EX3)

B