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

7	THIS CHECKLIST IS M	ANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISIO WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE	N RULES AND REGULATIONS
Appli	[DHC-Dowi		se Commingling] easurement] nsion]]
[1]	TYPE OF AP [A]	PLICATION - Check Those Which Apply for [A] Location - Spacing Unit - Simultaneous Dedication NSL NSP SD	2006
	Check [B]	One Only for [B] or [C] Commingling - Storage - Measurement DHC CTB PLC PC OLS OL	MAR
	[C]	Injection - Disposal - Pressure Increase - Enhanced Oil Recovery WFX PMX SWD IPI EOR PF	70
	[D]	Other: Specify	<u>ယ</u> *
[2]	(A) (B) (C) (D) (E)		ached, and/or,
[3]		CURATE AND COMPLETE INFORMATION REQUIRED TO ATION INDICATED ABOVE.	PROCESS THE TYPE
applio	oval is accurate a cation until the re Note:	FION: I hereby certify that the information submitted with this applied and complete to the best of my knowledge. I also understand that no a quired information and notifications are submitted to the Division. Statement must be completed by an individual with managerial and/or supervisor.	ection will be taken on this ory capacity. $\sum_{i=1}^{n} \left(c_{i} \left(c_{i} \right) \right) $
	es Bruce or Type Name	Signature Attorney for Title jamesbruc@aol e-mail Address	Date

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) (5050 982-2151 (Fax)

jamesbruc@aol.com

March 6, 2006

Hand Delivered

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:

Well Name:

H. Corrigan Well No. 17

Well Location:

1500 feet FNL & 2280 feet FEL

Well Unit:

SW1/4NE1/4 of Section 4, Township 22 South, Range 37 East,

N.M.P.M., Lea County, New Mexico

The well will test the Grayburg formation (Penrose Skelly Pool) and San Andres formation (Eunice-San Andres Pool), and applicant requests unorthodox location approval in both zones. Both pools are developed on statewide rules, with 40 acre spacing, and wells to be located no closer than 330 feet to a quarter-quarter section line.¹

The application is based on geological and engineering reasons. A complete discussion, with exhibits, is attached as Exhibit A (including a Form C-102). As to the Grayburg formation, the well is located midway between Grayburg wells to the north and south. As to the San Andres formation, the well is located midway between San Andres wells to the northeast and southwest. In addition, the well data shows that wells in both zones drain considerably less than 40 acres. Therefore, the proposed location will recover undrained reserves in both zones.

The limiting GOR in the Eunice-San Andres Pool is 5000:1 under Order No. R-4940.

There has been no San Andres production from the SW¼NE¼ of Section 4, and applicant's data indicates that San Andres production is marginal. Thus, using the well to test both the Grayburg and the San Andres will prevent waste.

Exhibit B is a land plat. The Corrigan fee lease covers Lots 1, 2, and the S½NE¼ (the NE¼) of Section 4, and no offset owner is adversely affected by the application. Therefore, notice has not been provided to anyone.

Please call me if you need any further information on this matter.

Veryjtruly yours,

ames Bruce

Attorney for Apache Corporation

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

40 acres – 1500' FNL & 2280' FEL Section 4, Township 22 South, Range 37 East, NMPM Lea County, New Mexico

PRIMARY OBJECTIVE: GRAYBURG

SECONDARY OBJECTIVE: SAN ANDRES

In support:

1. Apache Corporation (Apache) is the operator of the proposed **H Corrigan #17** (Exhibit 1). The proposed total depth is 4350' in the San Andres formation.

2. The proposed location encroaches toward the following wells in the affected Penrose Skelly; (Grayburg) and Eunice; San Andres Pools (Exhibit 2). This location is a standard distance from the west unit boundary, so Grayburg and San Andres wells in Units C and F will not be encroached upon. There is no current productive Grayburg or San Andres well in the wellsite unit, Unit G.

API					Cum	Daily
30-025-	Op.	Well	Loc	Pool	O/G/W	O/G/W
10048	Gulf	So. Penrose Skelly U. #101	04-B	Penrose Skelly; Grayburg	81/68/0	0/0/0
35137	Apache	H Corrigan #13	04-B	Penrose Skelly; Grayburg	5/121/102	3/74/73
35137	Apache	H Corrigan #13	04-B	Eunice; San Andres	1/107/44	1/40/29
10007	Gulf	So. Penrose Skelly U. #118	04-G	Penrose Skelly Grayburg	99/338/0	0/0/0

MBO BOPD MMCFG MCFGPD MBW BWPD

3. The proposed **H Corrigan #17** unorthodox Grayburg-San Andres location of 1500' from north line and 2280' 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. 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. Average porosity of the Grayburg is less than 10% and average permeability is less than 1 millidarcy. Grayburg wells are thus 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:

- Net Pay was read from modern neutron-density logs which have contractor calculated cross-plotted porosity (XPhi) using a minimum of 6% and a maximum of 18%. 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 pool name.

				SoPhiH	Area	EUR	EUR
Op.	Well	Loc	Pool		Α	МВО	MMCFG
Gulf	So. Penrose Skelly U. #101	04-B	Penrose Skelly; Grayburg	7.6	12	81	68
Apache	H Corrigan #13	04-B	Penrose Skelly; Grayburg*	8.4	2	16	346
Gulf	So. Penrose Skelly U. #118	04-G	Penrose Skelly Grayburg	13.2	8	99	338

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 **H Corrigan #17** were calculated by planimetering 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
H Corrigan #17	04-G	10.3	7.3	68	544

b) San Andres Reservoir

The San Andres is the secondary objective of the **H Corrigan #17**. Like the super-adjacent Grayburg, it is a shallow shelf carbonate. The upper 200'-300' is tighter and tends to be oil productive, whereas the lower part

of the formation is much more porous and generally productive of water and gas. Apache is targeting only the upper, oil prone interval.

Testing of and production from the upper San Andres to date by Apache, suggest that it is only marginally commercial. Reserves from the upper interval will not support drilling a well targeting only this interval. Testing and production further suggest that the wells will not drain an entire 40 Acre Drilling and Spacing Unit.

San Andres potential was evaluated using the Net Pay map (Exhibit 4), analyzing the interval above a drill depth of 4200'. Petrophysical parameters are:

- 1. Gamma Ray less than 40 APIU
- 2. XPhi between 5% and 15%
- 3. LLD between 50 ohm*m and 500 ohm*m.

The following table provides drainage areas calculated from the Net Pay map and reserves of the offsetting wells. Values determined from modern logs will have an asterisk after the pool name.

					Area	EUR	EUR
Op.	Well	Loc	Pool	Net Pay	Α	MBO	MMCFG
Apache	H Corrigan #13	04-B	Eunice – San Andres Oil*	63	12	8	320

Reserves for the proposed **H Corrigan #17** were calculated by planimetering the undrained area of the Net Pay 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	Pay	AREA	EUR	EUR
			A	мво	MMCFG
H Corrigan #17	04-G	69	12	9	351

4. Notice

Apache is the operator and only working interest owner of the Grayburg and San Andres wells toward which the proposed **H Corrigan #17** 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.

State of New Mexico

DISTRICT I 1625 N. FRENCE DR., BOSES, NW 88240

Snergy, Minerals and Natural Besources Department

Form C-102

Revised JUNE 10, 2003 Submit to Appropriate District Office

DISTRICT II
1301 V. GRAND AVENUR, ARTESIA. NM 00210

DISTRICT IV

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

State Lease - 4 Copies
Pee Lease - 3 Copies

DISTRICT III 1000 Rio Brazos Rd., Axtec. NW 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

C AMENDED REPORT

API Number	Pool Cade	Pool Name
Property Code	Property Name H. CORRIGAN	Well Number
OCRID No.	Operator Name APACHE CORPORATION	Elevation 3455'

Surface Location

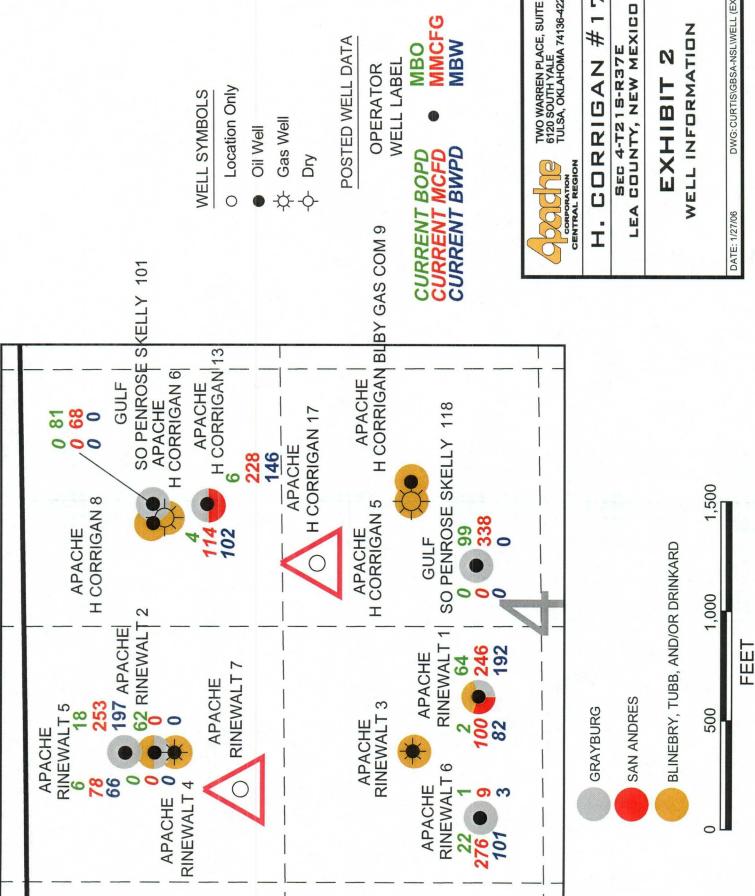
UL or lot No.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
G	4	22 - S	37 - E		1500	NORTH	2280	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot Na.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
		L	<u> </u>						
Dedicated Acre	loint o	r Infill Co	nsolidation	Code	der No.				1

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

LOT 4	FOL 3	LOT 2	(07 1	OPERATOR CERTIFICATION I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.
39.91 AC	39.86 AC	39.80 AC	39.75 AC	Signature
		+-		Title Date
GEODETIC CO NAD 27 Y=51988 X=86008 LAT.=32*25*. LONG.=103*09	NME 7.3 N 12.3 E 25.96" N	Corp.	operated April, 1961 Pil Corp. in May 198 Persona Skelly Unit	on this plat was plotted from field notes of actual surveys made by me or under my supervison and that the same is true and correct to the best of my belief. JANUARY 3, 2006 Date Surveyed
		99347/3	b	Professional Surveyor 1/13/05 Divide As Laboratory 1/13/05 Certificate No. CARY EDSON 12841 CERTIFICATION 3239



DWG: CURTIS\GBSA-NSL\WELL (EX2)

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

MMCFG

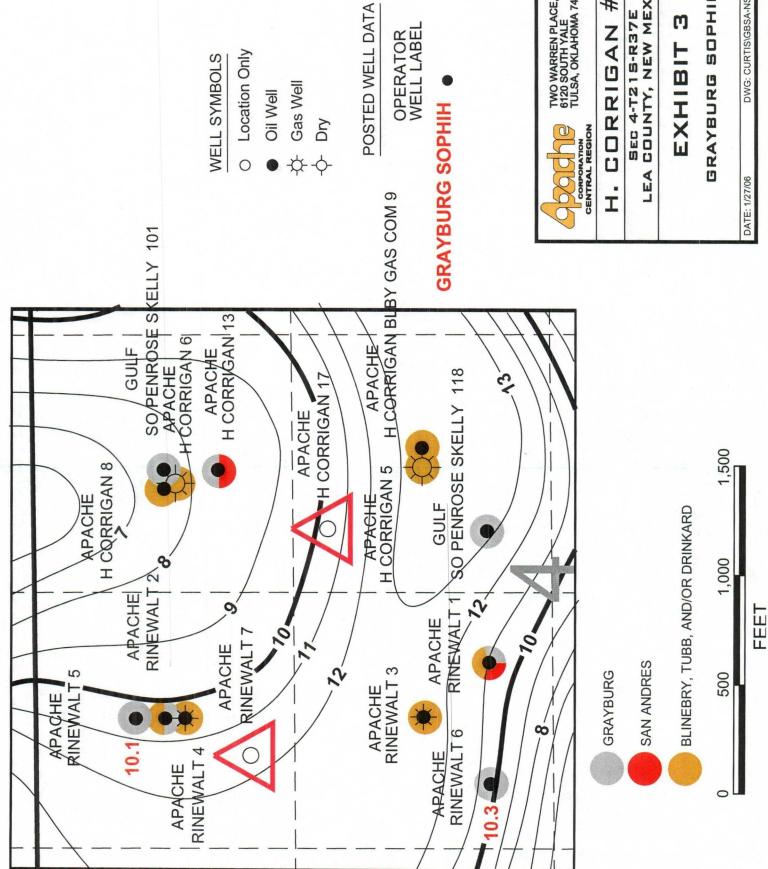
MBO

WELL LABEL

OPERATOR

MBW

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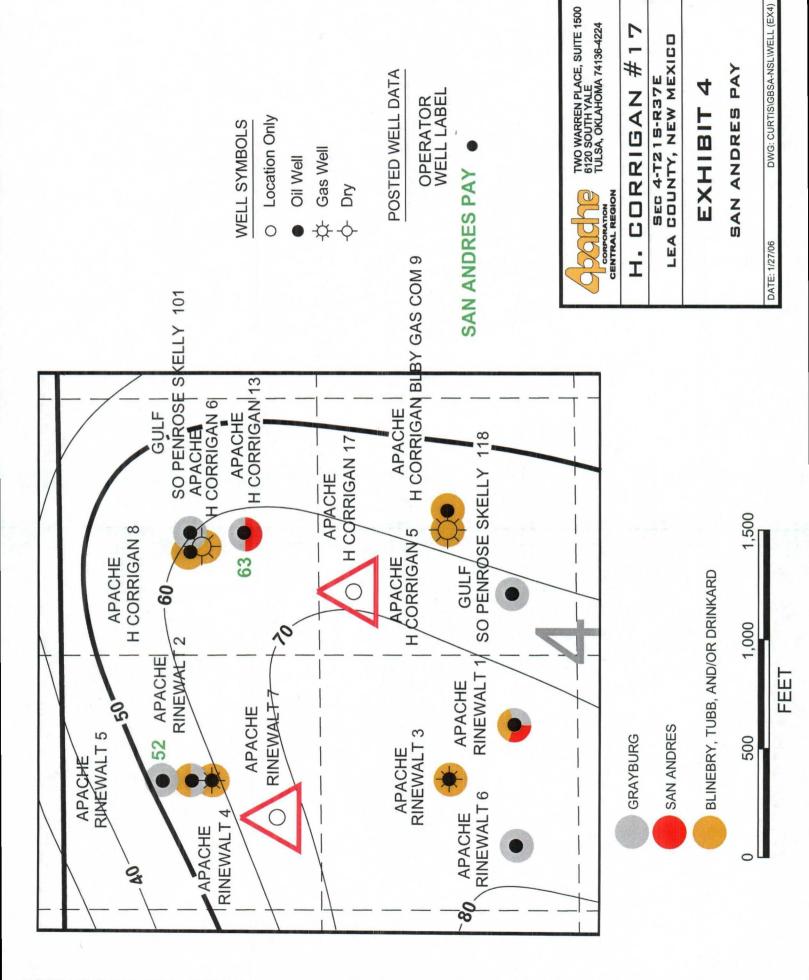


SEC 4-TZ1S-R37E LEA COUNTY, NEW MEXICO GRAYBURG SOPHIH CORRIGAN EXHIBIT

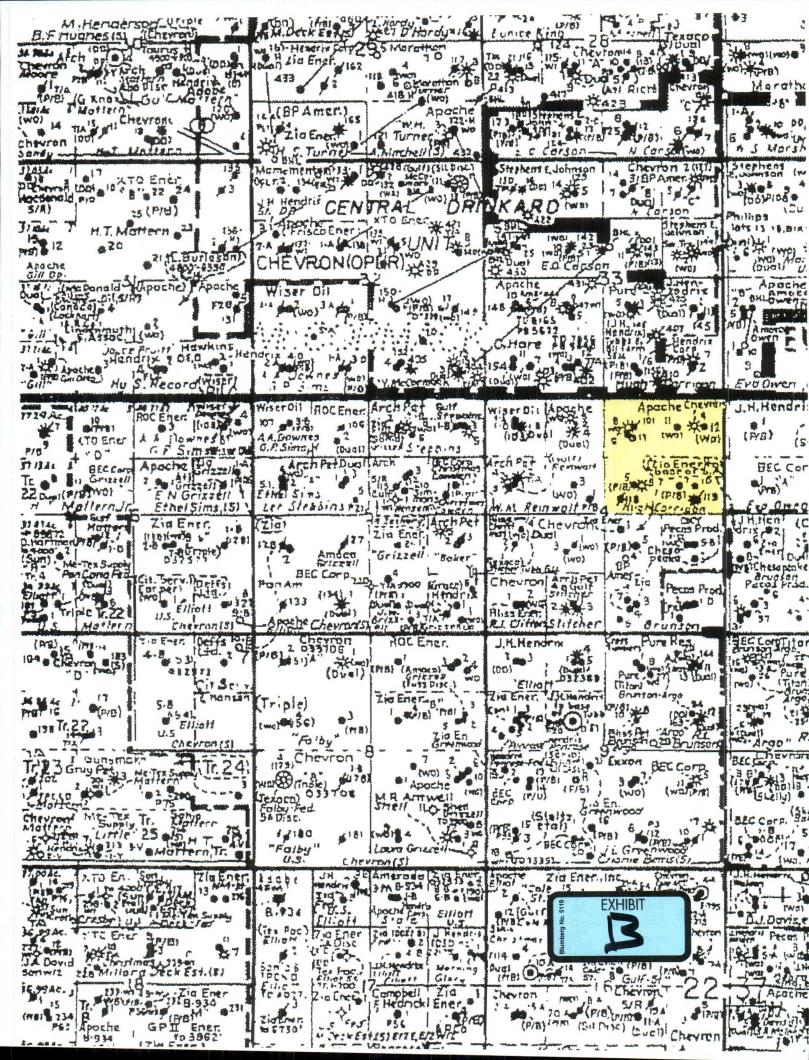
TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224

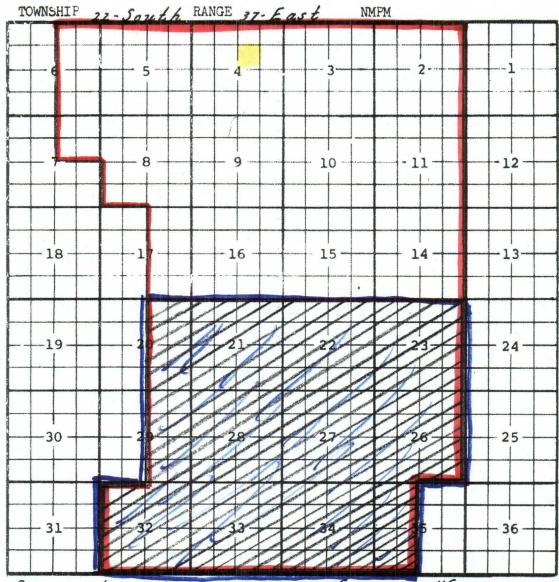
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DWG: CURTIS\GBSA-NSL\WELL (EX3)



#17





Description: All Secs. 2,3,4,45; 1/2 Sec. 6; NE/4 Sec. 7; All Sees 8,9,10,11,14,15 416; 5/2 Sec. 17; 5/2 Sec. 20; A11 Sees 21,22,23,26,27,428; \$\frac{\pi}{2} Sec. 29; \A11 Secs. 32, 33, 34; \frac{\pi}{2} Sec. 35. Deletion: 1/2 Sec. 20; All Secs. 21,22,23,26,27428; 5/2 Sec. 29; All Secs. 32, 33, 34; 1/2 Sec. 35; a/so Vertical limits redefined to delete Queen formation leaving Grayburg, (R-767-A, 4-1-56).

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NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor

Joanna Prukop

Cabinet Secretary

March 3, 2006

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

H. L. Brown Operating, L.L.C. c/o Holland & Hart, LLP P. O. Box 2208 Santa Fe, New Mexico 87504-2208

Attention:

Ocean Munds-Dry

omundsdry@hollandhart.com

Administrative Order NSL-5245-A

Dear Ms. Munds-Dry:

Reference is made to the following: (i) your application that was submitted to the New Mexico Oil Conservation Division ("Division") in Santa Fe, New Mexico on February 9, 2006 (administrative application reference No. pTDS0-604140167) on behalf of the operator, H. L. Brown Operating, L.L.C. ("HLB"); and (ii) the Division's records in Santa Fe, including the files in Division Cases No. 9270, 10769, and 10900 and on Division Administrative Order NSL-5245: all concerning HLB's request to amend Division Order NSL-5245.

Said Division Administrative Order NSL 5245, dated July 28, 2005, authorized HLB to drill its proposed Federal "27" Well No. 4 within a standard 80-acre lay-down oil spacing and proration unit for the Undesignated North Bluitt Siluro-Devonian Pool (6910) comprising the N/2 SW/4 (Units K and L) of Section 27, Township 7 South, Range 37 East, NMPM, Roosevelt County, New Mexico, at an unorthodox oil well location 2415 feet from the South line and 287 feet from the West line (Unit L) of Section 27.

Your application for HLB has been duly filed under the provisions of: (i) Rule 5 of the "Special Rules and Regulations for the North Bluitt Siluro-Devonian Pool," as promulgated by Division Order No. R-8586, as amended; (ii) Division Rules 104.F; and (iii) Rule 1210.A (2) [formerly Division Rule 1207.A (2), see Division Order No. R-12327-A, issued by the New Mexico Oil Conservation Commission in Case No. 13482 on September 15, 2005].

The geologic interpretation submitted with this application indicates that moving the proposed location of this well 1,359 feet east by north will be at a more favorable geologic position within the oil bearing Siluro-Devonian interval underlying the N/2 SW/4 of Section 27, thereby increasing the likelihood of encountering commercial quantities of oil from this zone.

By the authority granted me under the provisions of the applicable rules governing the North Bluitt Siluro-Devonian Pool and Division Rule 104.F (2), the above-described amended unorthodox oil well location for HLB's proposed Federal "27" Well No. 4 is hereby approved.

Lo a new location 2540 754 - 1640 'xax

Oil Conservation Division * 1220 South St. Francis Drive * Santa Fe, New Mexico 87505 Phone: (505) 476-3440 * Fax (505) 476-3462 * http://www.emnrd.state.nm.us

"K" of Sec

Further, the aforementioned well and spacing unit will be subject to all existing rules, regulations, policies, and procedures applicable to this pool.

Division Administrative Order NSL-5245 dated July 28, 2005 is hereby placed in abeyance until further notice.

Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary

Sincerely,

Mark E. Fesmire, P. E.

Director

MEF/ms

cc: New Mexico Oil Conservation Division - Hobbs

U. S. Bureau of Land Management - Roswell

File: Case No. 9270

Case No. 10769

Case No. 10900

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03/08/06 15:26:19 OGOMES -TQ1L PAGE NO: 1

Sec : 04 Twp : 22S Rng : 37E Section Type : NORMAL

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Pool Identifier : 28509 GRAYBURG JACKSON; SR-Q-G-SA

OGKID Identifier: 14049 MARBOB ENERGY CORP

OS\SS\00 14:33:17

. ONGARD BY POOL/WELL INQUIRE PRODUCTION BY

OCCIBED :

-3-Case No. 6342 Order No. R-5858

- (2) That the applicant, during completion operations on the subject well, shall conduct productivity and pressure tests on said well, and shall consult with the supervisor of the Division's Aztec office to determine a formula for allocation of production to each of the commingled zones.
- That the operator of the subject well shall immediately notify the Division's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.
 - (4) That Division Order No. MC-1795 is hereby superseded.
- (5) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem $\frac{1}{2}$ necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

> STATE OF NEW MEXICO OIL CONSERVATION DIVISION

JOE D. RAMEY, Director

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: 58209 GRAYBURG JACKSON; SR-Q-G-SA Pool Identifier

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Page No: 1 OCOWEZ -LOWI