

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**

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.

Print or Type Name \_\_\_\_\_ Signature \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

*Chevron Texaco*

\_\_\_\_\_  
e-mail Address

North America Upstream  
Midcontinent Business Unit  
11111 S. Wilcrest, Rm S1052  
Houston, Texas 77099  
Tel (281) 561-3659  
Fax (281) 561-3576  
mrvillalva@chevrontexaco.com

Michael R. Villalva  
Petroleum Engineer

RECEIVED

MAR 02 2005

Oil Conservation Division

March 2, 2005

**ChevronTexaco**

Request for Administrative Approval of  
Unorthodox Oil Well Location and  
Simultaneous Dedication

Mr. Michael E. Stogner  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Dear Mr. Stogner:

ChevronTexaco respectfully requests administrative approval of an unorthodox oil well location for the following well:

**V.M. Henderson #19**  
1300' FNL & 2280' FWL, NE/4 NW/4 of  
Section 30, T21S, R37E, Unit Letter C  
Lea County, New Mexico

The proposed well will be as an infill producer in the Penrose Skelly, Grayburg Pool, which is an oil pool spaced on 40 acres. This well is a follow-up to our recent infill drilling in the same Pool which recently concluded. ChevronTexaco's technical analysis of the reservoir still supports the contention that typical Grayburg wells cannot drain 40 acres.

The NE/4 NW/4 of Section 30 will be simultaneously dedicated in the Penrose Skelly, Grayburg Pool to the proposed well and to the V.M. Henderson #6. The V.M. Henderson #6 was drilled in 1961 and is currently completed as a Blinebry and Paddock producer. ChevronTexaco has plans to complete the Henderson #6 in only the Penrose Skelly, Grayburg, within the next few months. ChevronTexaco also requests approval of the simultaneous dedication.

This application is based on geological and engineering analysis. The analysis and justification for this request is attached as Exhibit 1, along with other supporting documentation. There are six wells that have produced the Grayburg formation in the E/2 NW/4 and the W/2 NE/4 of Section 30. The proposed well will be located in the approximate center of those wells. Based on drainage calculations, ChevronTexaco believes that drilling the infill well will recover reserves that would not be recovered by existing Grayburg producers.

A land plat highlighting the proposed well's location is attached as Exhibit 2. The N/2 of Section 30 is covered by two fee leases which have common royalty and working interest ownerships. For that reason and the proposed location of the infill well, there are no adversely affected interest owners and no one has been notified of this application.

March 2, 2005

Page 2

If you have any questions concerning this application or need additional information, please contact me by phone at (281) 561-3659 or by email at [mrvallalva@chevrontexaco.com](mailto:mrvallalva@chevrontexaco.com). If I am not available, you can also reach George Pritchard by phone at (281) 561-4918 or by email at [GPritchard@chevrontexaco.com](mailto:GPritchard@chevrontexaco.com). Thank you for consideration of this matter.

Sincerely,

A handwritten signature in cursive script that reads "Michael R. Villalva".

Michael R. Villalva  
Petroleum Engineer

Attachments

cc: NMOCD District 1 – Hobbs, NM  
Michael R. Villalva  
George Pritchard  
Well File

**NOTIFICATION LIST**

Application of Chevron U.S.A. Inc. for Administrative Approval of an Unorthodox Oil Well Location and Simultaneous Dedication:

**V.M. Henderson #19**  
1300' FNL & 2280' FWL  
Section 30, T21S, R37E, Unit Letter C  
Lea County, New Mexico

**Offset Operators, Working Interest Owners, N/2 Section 30:**

- |    |   |                  |
|----|---|------------------|
| 1. | Chevron U.S.A. Inc.<br>11111 S. Wilcrest<br>Houston, TX 77099 | Operator/100% WI |
|----|---|------------------|

DATE IN	SUSPENSE	ENGINEER	LOGGED IN	TYPE	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



**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.**

Michael R. Villalva  
 Print or Type Name

*Michael R. Villalva*  
 Signature

Petroleum Engineer  
 Title

Mar 2, 2005  
 Date

mrvillalva@chevrontexaco.com  
 e-mail Address

## EXHIBIT 1

### ENGINEERING AND GEOLOGICAL JUSTIFICATION

Application of Chevron U.S.A. Inc. for Administrative Approval of an Unorthodox Oil Well Location and Simultaneous Dedication:

**V.M. Henderson #19**

1300' FNL & 2280' FWL

Section 30, T21S, R37E, Unit Letter C

Lea County, New Mexico

**PRIMARY OBJECTIVE: GRAYBURG**

**SUPPORTING DATA:**

1. Chevron U.S.A. Inc. (Chevron) is the operator of the proposed V.M. Henderson #19 well (Exhibit 3). The proposed total depth is 4300' in the top of the San Andres formation.
2. The completion will be in the Penrose Skelly, Grayburg Oil Pool and the proposed location encroaches toward the following wells (Exhibit 4).

Operator	Well	Location	Formation	Cum Prod		Current Prod		Status
				MBO	MMCF	BOPD	MCFPD	
Chevron	Henderson #4	30-C	Grayburg	24	85			Recompleted to Y7RQ
Chevron	Henderson #5	30-B	Grayburg	22	210	18	470	Producing
Chevron	Henderson #6	30-C	Grayburg	0	0			In progress - Grybg plugback
Chevron	Henderson #7	30-F	Grayburg	11	82			Recompleted to Drinkard
Chevron	Henderson #9	30-G	Grayburg	14	21			P&A
Chevron	Henderson #18	30-F	Grayburg	0	0			In progress - #7 replacement

3. The proposed V.M. Henderson #19 unorthodox Grayburg location is based primarily 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 while the supratidal rock is tight. The Grayburg depositional environments varied rapidly so that many porous and tight intervals are not continuous from well to well on 40-acre spacing. Tight dolomite and/or anhydrite intervals within the Grayburg create vertical and horizontal flow barriers between different zones of porosity. Additionally, average porosity of the Grayburg is less than 10%, and the average permeability is less than 1 millidarcy. For all of these reasons, Grayburg wells are not usually capable of draining a 40-acre proration unit.

## EXHIBIT 1

### ENGINEERING AND GEOLOGICAL JUSTIFICATION

Application of Chevron U.S.A. Inc. for Administrative Approval of an Unorthodox Oil Well Location and Simultaneous Dedication:

**V.M. Henderson #19**

1300' FNL & 2280' FWL

Section 30, T21S, R37E, Unit Letter C

Lea County, New Mexico

**PRIMARY OBJECTIVE: GRAYBURG**

**SUPPORTING DATA:**

1. Chevron U.S.A. Inc. (Chevron) is the operator of the proposed V.M. Henderson #19 well (Exhibit 3). The proposed total depth is 4300' in the top of the San Andres formation.
2. The completion will be in the Penrose Skelly, Grayburg Oil Pool and the proposed location encroaches toward the following wells (Exhibit 4).

Operator	Well	Location	Formation	Cum Prod		Current Prod		Status
				MBO	MMCF	BOPD	MCFPD	
Chevron	Henderson #4	30-C	Grayburg	24	85			Recompleted to Y7RQ
Chevron	Henderson #5	30-B	Grayburg	22	210	18	470	Producing
Chevron	Henderson #6	30-C	Grayburg	0	0			In progress - Grybg plugback
Chevron	Henderson #7	30-F	Grayburg	11	82			Recompleted to Drinkard
Chevron	Henderson #9	30-G	Grayburg	14	21			P&A
Chevron	Henderson #18	30-F	Grayburg	0	0			In progress - #7 replacement

3. The proposed V.M. Henderson #19 unorthodox Grayburg location is based primarily 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 while the supratidal rock is tight. The Grayburg depositional environments varied rapidly so that many porous and tight intervals are not continuous from well to well on 40-acre spacing. Tight dolomite and/or anhydrite intervals within the Grayburg create vertical and horizontal flow barriers between different zones of porosity. Additionally, average porosity of the Grayburg is less than 10%, and the average permeability is less than 1 millidarcy. For all of these reasons, Grayburg wells are not usually capable of draining a 40-acre proration unit.

The reservoir was also analyzed by mapping the Hydrocarbon Pore Volume (HCPV) (Exhibit 5). HCPV is the product of feet of net pay (h) times average porosity ( $\phi$ ) times oil saturation ( $S_o$ ). The attached map is the arithmetic product of grids interpreted from those values. The values were obtained as follows:

1. Net pay was read from either modern neutron-density logs or estimated from a map developed from gross pay times net-to-gross ratio (Exhibit 4).
2. Average porosity was calculated from modern well logs using a minimum of 6% crossplot porosity and a maximum of 20%.
3. Oil saturation was calculated from a fractional flow curve using representative water cut values.

The following table provides drainage areas calculated from the HCPV map and reserves of the offsetting wells.

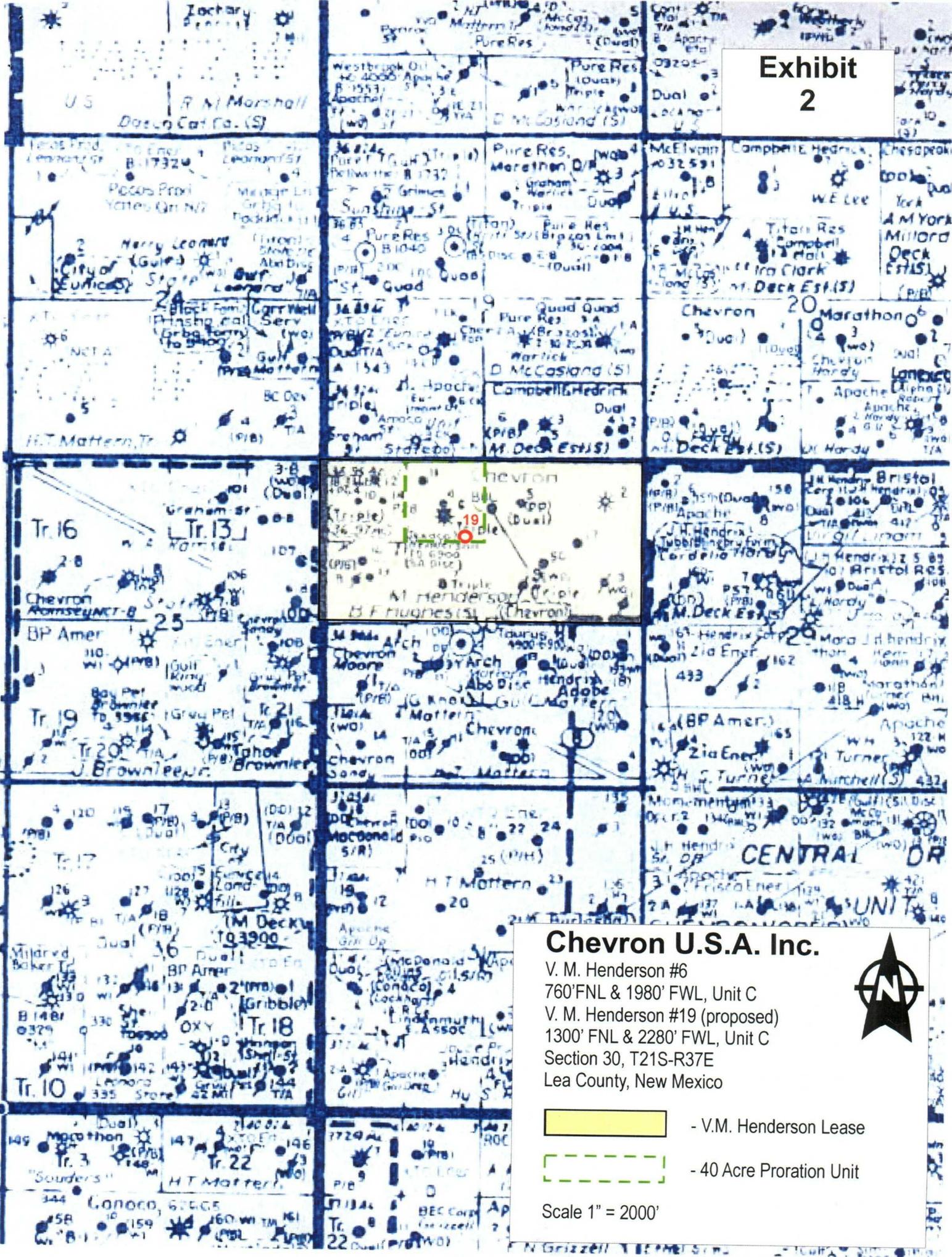
Operator	Well	Location	Formation	Drainage Acres	EUR	
					MBO	MMCF
Chevron	Henderson #4	30-C	Grayburg	4	24	85
Chevron	Henderson #5	30-B	Grayburg	9	48	709
Chevron	Henderson #6	30-C	Grayburg	9	60	304
Chevron	Henderson #7	30-F	Grayburg	2	11	82
Chevron	Henderson #9	30-G	Grayburg	3	14	21
Chevron	Henderson #18	30-F	Grayburg	11	60	304

As seen above, the average drainage area of the offsetting locations is 10 acres, and additional reserves can be recovered by drilling the proposed infill well. The new well was moved from the approximate center location of the existing offsetting producers due to surface related issues. Reserves for the proposed location were calculated using the HCPV map, a 10 acre drainage area, and a 15% recovery factor. The results are as follows:

Operator	Well	Location	HCPV	Drainage Acres	EUR	
					MBO	MMCF
Chevron	Henderson #19	30-C	6.5	10	55	329

4. The N/2 of Section 30 is covered by two fee leases which have common royalty and working interest ownerships. Chevron is the operator and 100% working interest owner of the Grayburg wells toward which the proposed well will encroach. Therefore, there are no offset interest owners or adversely affected parties to notify of this application.
5. The proposed V.M. Henderson #19 will share a 40-acre proration unit and will be simultaneously dedicated with the Henderson #6 as a Penrose Skelly, Grayburg producer in Section 30, Unit Letter C.
6. Approval of this application will allow for the recovery of oil and gas reserves which would not otherwise be recovered.

# Exhibit 2



## Chevron U.S.A. Inc.

V. M. Henderson #6  
 760' FNL & 1980' FWL, Unit C  
 V. M. Henderson #19 (proposed)  
 1300' FNL & 2280' FWL, Unit C  
 Section 30, T21S-R37E  
 Lea County, New Mexico



- V.M. Henderson Lease
- 40 Acre Proration Unit

Scale 1" = 2000'

# Exhibit 3

**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

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

Form C-102  
Revised JUNE 10, 2003  
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 <b>VM HENDERSON</b>	
OGRID No.	Operator Name <b>CHEVRON U.S.A., INC.</b>	
		Well Number <b>19</b>
		Elevation <b>3493'</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
C	30	21-S	37-E		1300	NORTH	2280	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 style="text-align: center;"><b>GEODETIC COORDINATES NAD 27 NME</b></p> <p style="text-align: center;">Y=530534.9 N X=848793.3 E</p> <p style="text-align: center;">LAT.=32°27'12.51" N LONG.=103°12'09.38" W</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><b>OPERATOR CERTIFICATION</b></p> <p style="font-size: small; text-align: center;">I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p>Signature _____</p> <p>Printed Name _____</p> <p>Title _____</p> <p>Date _____</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>SURVEYOR CERTIFICATION</b></p> <p style="font-size: small; text-align: center;">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 style="text-align: center; font-weight: bold;">JANUARY 11, 2005</p> <p>Date Surveyed _____ JR</p> <p>Signature &amp; Seal of Professional Surveyor  </p> <p style="text-align: center;">Certificate No. <b>GARY EIDSON</b> 12841</p> </div>
---	--

**District I**  
1625 N. French Dr., Hobbs, NM 88240

**State of New Mexico**  
**Energy, Minerals & Natural Resources Department**

Form C-102  
Revised June 10, 2003

**District II**  
1301 W. Grand Avenue, Artesia, NM 88210

**OIL CONSERVATION DIVISION** Submit to Appropriate District Office

**Exhibit 3.1**  
 AMENDED REPORT

**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410

1220 South St. Francis Dr.  
Santa Fe, NM 87505

**District IV**  
1220 South St. Francis Dr., Santa Fe, NM 87505

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number 30-025-06912	<sup>2</sup> Pool Code 50350	<sup>3</sup> Pool Name Penrose Skelly; Grayburg
<sup>4</sup> Property Code	<sup>5</sup> Property Name V.M. Henderson	<sup>6</sup> Well Number 6
<sup>7</sup> OGRID No. 4323	<sup>8</sup> Operator Name Chevron U.S.A., Inc.	<sup>9</sup> Elevation 3496' GL

<sup>10</sup> Surface Location

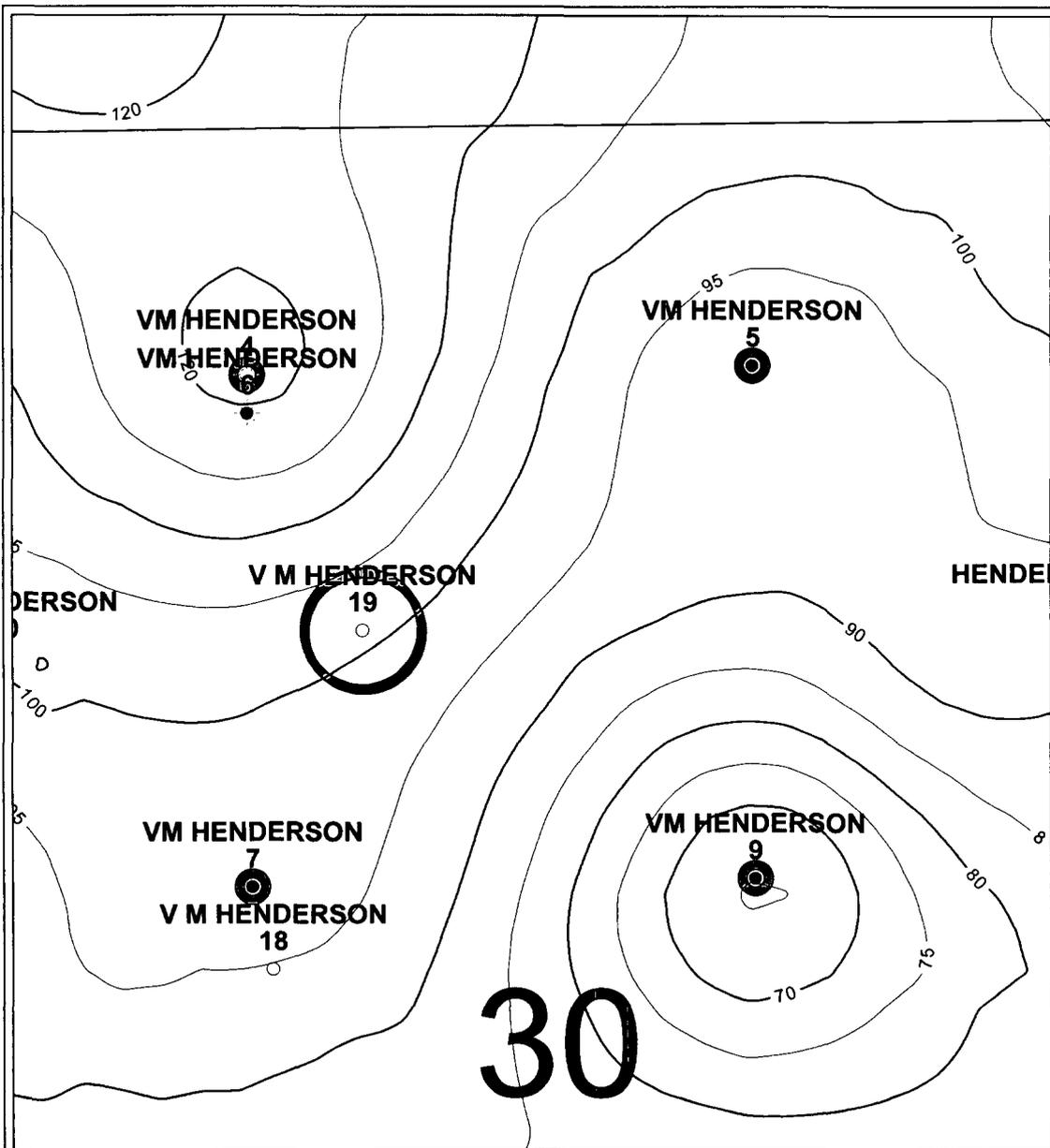
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	30	21S	37E		760	North	1980	West	Lea

<sup>11</sup> 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
<sup>12</sup> Dedicated Acres 40	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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>16</p> <p>1980'</p> <p>760'</p> <p>6</p> <p>40-acre proration unit</p> <p>19</p> <p>30</p> <p>V.M. Henderson Lease</p>	<p><sup>1</sup> OPERATOR CERTIFICATION</p> <p><i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i></p> <p align="center"><i>Michael R. Villalva</i></p> <p>Signature <b>Michael R. Villalva</b></p> <p>Printed Name <b>Petroleum Engineer</b></p> <p>Title <b>February 21, 2005</b></p>
	<p><sup>1</sup> SURVEYOR CERTIFICATION</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>Signature and Seal of Professional Surveyor:</p> <p align="right">Certificate Number</p>



PETRA 3/2/2005 10:57:03 AM

# ChevronTexaco

## EXHIBIT 4

### PENROSE-SKELLY FIELD V M HENDERSON #19

Sec. 30, T21S-R37E, Lea Co, New Mexico

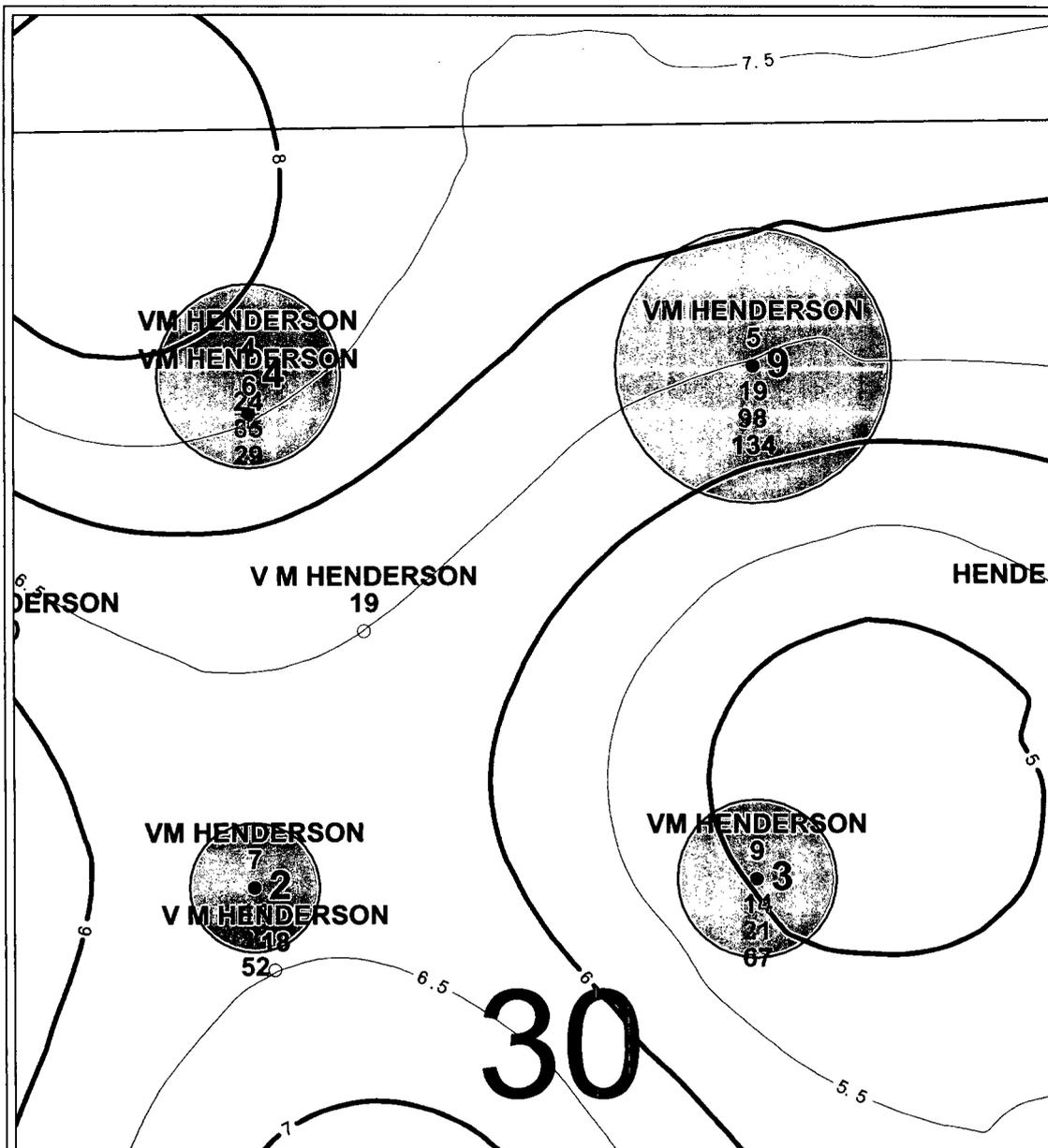
Grayburg Net Pay CI=5.' [Gr<40, Por>6%]

#### POSTED WELL DATA

Well Name  
Well Number



March 2, 2005



PETRA 3/2/2005 10:50:38 AM

# ChevronTexaco

## EXHIBIT 5

### PENROSE-SKELLY FIELD V M HENDERSON #19

Sec. 30, T21S-R37E, Lea Co, New Mexico

Grayburg HCPV CI=0.5 & EUR - Drainage

#### POSTED WELL DATA

Well Name  
Well Number

● GFP\_GRAYBURG - EUR-GRAYBURG-ACRES[GFP]

WELL - GRAYBURG-CUM\_OIL\_(MBO)  
WELL - GRAYBURG-CUM\_GAS\_(MMCF)  
WELL - GRAYBURG-CUM\_WATER\_(MBW)



March 2, 2005

CMD :  
OG5SECT

ONGARD  
INQUIRE LAND BY SECTION

04/04/05 11:51:42

Sec : 30 Twp : 21S Rng : 37E Section Type : NORMAL

OGOMES -TPGW  
PAGE NO: 1

1 36.95 Federal owned A A A	C 40.00 Fee owned A A A	B 40.00 Fee owned A	A 40.00 Fee owned A A
2 36.97 Federal owned A A	F 40.00 Fee owned A A	G 40.00 Fee owned A A	H 40.00 Fee owned A A
3 36.99 Fee owned A	K 40.00 Fee owned A A A	J 40.00 Fee owned A A	I 40.00 Fee owned U A A
4 37.01 Federal owned A	N 40.00 Fee owned A A	O 40.00 Fee owned A A	P 40.00 Fee owned U A P