

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
_____ e-mail Address			

Permian Business Unit  
North America Upstream  
15 Smith Road  
Midland, Texas 79705  
Tel (432) 687 7516  
MAHO@chevrontexaco.com

May 5, 2004

**ChevronTexaco**

Request For Administrative Approval  
Of Unorthodox Oil Well Location And  
Simultaneous Dedication

**RECEIVED**

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

MAY 12 2004

Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

Dear Mr. Stogner:

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

**Harry Leonard (NCT-E) # 7**  
1330' FNL & 1070' FEL, SE/4 NE/4 of  
Section 16, T21S, R37E, Unit Letter H  
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 recent similar infill drilling by Apache Corporation in the same Pool. ChevronTexaco is a working interest partner in several of their recent infill wells and supports their contention that typical Grayburg wells cannot drain 40 acres. ChevronTexaco's technical analysis of the reservoir revealed similar results to Apache's.

The SE/4 NE/4 of Section 16 will be simultaneously dedicated in the Penrose Skelly; Grayburg Pool to the proposed well and to the existing Harry Leonard (NCT-E) # 5. ChevronTexaco also requests approval of the simultaneous dedication.

This application is based on geological and engineering analysis. That analysis and justification for this request is attached as Exhibit 1, along with other supporting documentation. There are four wells that have produced or are producing the Grayburg Formation in the NE/4 of Section 16. 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 the existing Grayburg wells.

A land plat highlighting the proposed well's location is attached as Exhibit 2. The NE/4 of Section 16 is covered by a single State lease and has **common royalty and working interest ownership**. 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.

May 5, 2004  
Page 2

If you have any questions concerning this application or need additional information, please contact me by telephone at (432) 687-7516 or by e-mail at [MAHO@chevrontexaco.com](mailto:MAHO@chevrontexaco.com). Thank you for your consideration of this matter.

Sincerely,

A handwritten signature in black ink that reads "Mike Howell". The signature is written in a cursive style with a long horizontal flourish at the end.

Mike Howell  
Advisor Petroleum Engineer

Attachments

cc: NMOCD District 1 – Hobbs, NM  
Mike Howell  
Well File

**NOTIFICATION LIST**

Application Of Chevron U.S.A. Inc. For Administrative Approval Of An Unorthodox Oil Well Location And Simultaneous Dedication:

**Harry Leonard (NCT-E) # 7**  
1330' FNL & 1070' FEL  
Section 16, T21S, R37E, Unit Letter H  
Lea County, New Mexico

**Offset Operators, Working Interest Owners, NE/4 Section 16:**

1. Chevron U.S.A. Inc. Operator/100% WI  
15 Smith Road  
Midland, TX 79705

DATE IN	SUSPENSE	ENGINEER	LOGGED	TYPE
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ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
- Engineering Bureau -

**ADMINISTRATIVE APPLICATION COVERSHEET**

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

**Application Acronyms:**

- [NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]  
 [DD-Directional Drilling] [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 - Directional Drilling  
 NSL      NSP      DD       SD

Check One Only for [B] and [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

[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] **INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding**

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

A. M. Howell		Advisor Petro. Engineer	4/12/2004
Print or Type Name	Signature	Title	Date

## 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:

**Harry Leonard (NCT-E) # 7**

1330' FNL & 1070' FEL

Section 16, T21S, R37E, Unit Letter H

Lea County, New Mexico

**PRIMARY OBJECTIVE: GRAYBURG**

**SUPPORTING DATA:**

1. Chevron U.S.A. Inc. (Chevron) is the operator of the proposed Harry Leonard (NCT-E) # 7 well (Exhibit 3). The proposed total depth is 4000' 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	Harry Leonard E # 1	16-G	Grayburg	18	78	15	76	Producing
Chevron	Harry Leonard E # 3	16-B	Grayburg	19	61	52	337	Producing
Chevron	Harry Leonard E # 5	16-H	Grayburg	23	117	22	103	Producing
Chevron	Harry Leonard E # 6	16-A	Grayburg	30	127	34	180	Producing

3. The proposed Harry Leonard (NCT-E) # 7 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 and the supratidal rock being 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 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 analyzed by mapping 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 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.

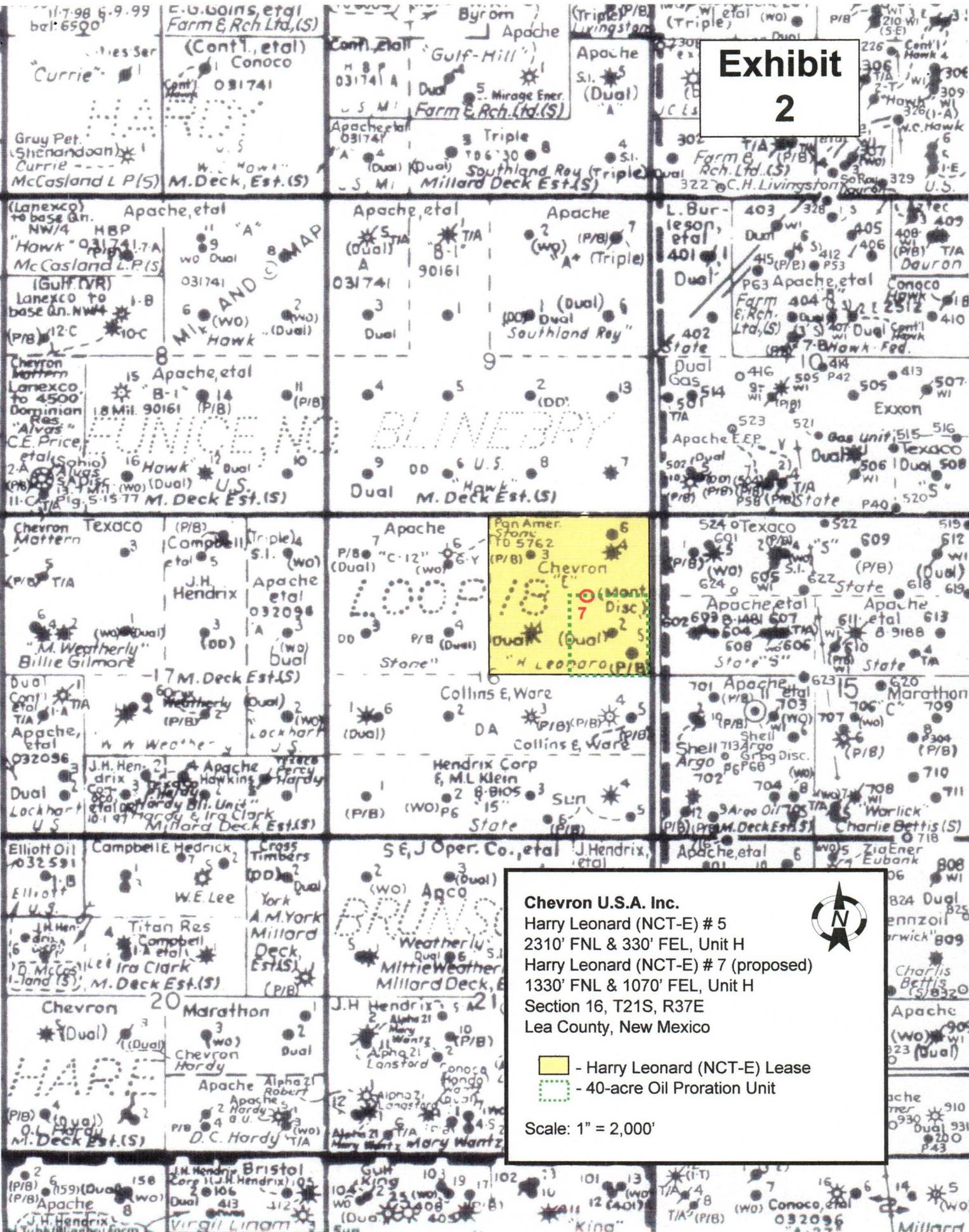
Operator	Well	Location	Formation	Drainage Acres	EUR	
					MBO	MMCF
Chevron	Harry Leonard E # 1	16-G	Grayburg	24	86	233
Chevron	Harry Leonard E # 3	16-B	Grayburg	16	63	268
Chevron	Harry Leonard E # 5	16-H	Grayburg	19	62	247
Chevron	Harry Leonard E # 6	16-A	Grayburg	16	55	327

As can be seen above, the average drainage area of the offsetting wells is only 19 acres, and additional reserves can be recovered by drilling the proposed well, Harry Leonard (NCT-E) # 7, at an infill location approximately equidistant from the offsetting Grayburg producers. Reserves for the proposed location were calculated using the HCPV map, a 19 acre drainage area, and a 15% recovery factor. The results are as follows:

Operator	Well	Location	HCPV	Drainage Acres	EUR	
					MBO	MMCF
Chevron	Harry Leonard E # 7	16-H	3.94	19	65	262

4. The NE/4 of Section 16 is covered by a single State lease which has common royalty and working interest ownership. 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 Harry Leonard (NCT-E) # 7 will share a 40-acre proration unit and be simultaneously dedicated with the Harry Leonard (NCT-E) # 5, a current Penrose Skelly; Grayburg producer in Section 16, Unit Letter H.
6. Approval of this application will allow for the recovery of oil and gas reserves which would not otherwise be recovered.

# Exhibit 2



- Harry Leonard (NCT-E) Lease
- 40-acre Oil Proration Unit

Scale: 1" = 2,000'

DISTRICT I  
P. O. Box 1980, Hobbs, NM 88240

DISTRICT II  
P. O. Drawer DD, Artesia, NM 88210

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

DISTRICT IV  
P. O. Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
Energy, Minerals and Natural Resources Department

**EXHIBIT**  
**3**

**OIL CONSERVATION DIVISION**  
PO Box 2088  
Santa Fe, NM 87504-2088

Submit to Appropriate District Office

State Lease-4 copies  
Fee Lease-3 copies

AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number		<sup>2</sup> Pool Code		<sup>3</sup> Pool Name <b>Penrose Skelly (Grayburg)</b>					
<sup>4</sup> Property Code		<sup>5</sup> Property Name <b>HARRY LEONARD (NCT-E)</b>						<sup>6</sup> Well Number <b>7</b>	
<sup>7</sup> OGRID No. <b>22351</b>		<sup>8</sup> Operator Name <b>CHEVRON USA, Inc.</b>						<sup>9</sup> Elevation <b>3482'</b>	
<sup>10</sup> <b>Surface Location</b>									
UL or lot no. <b>H</b>	Section <b>16</b>	Township <b>21-S</b>	Range <b>37-E</b>	Lot Idn	Feet from the <b>1330'</b>	North/South line <b>North</b>	Feet from the <b>1070'</b>	East/West line <b>East</b>	<sup>7</sup> County <b>Lea</b>
<sup>11</sup> <b>Bottom Hole Location If Different From Surface</b>									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	<sup>7</sup> County
<sup>12</sup> Dedicated Acres <b>40</b>		<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.

	<sup>16</sup> OPERATOR CERTIFICATION
	I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.
	Signature
	Printed Name <b>Ted Tipton</b>
	Position <b>Manager of Drilling Department</b>
	Company <b>Chevron USA, Inc.</b>
	Date <b>May 1, 2004</b>
	<sup>18</sup> SURVEYOR CERTIFICATION
	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 knowledge and belief.
	Date Surveyed <b>April 22, 24, 26 &amp; 27, 2004</b>
Signature & Seal of Professional Surveyor 	
Certificate No. <b>7254 John S. Piper</b>	
Sheet <b>1 of 1</b>	

○ = Staked Location ● = Producing Well = Injection Well ∞ = Water Supply Well ⊕ = Plugged & Abandon Well  
⊙ = Found Section Corner, 2 or 3" Iron Pipe & GLO B.C. ○ = Found 1/4 Section Corner, 1" Iron Pipe & GLO B.C.

**ADDITIONAL INFORMATION ON THE LOCATION**

State Plane Coordinates			
Northing	<b>541248.59 (1927= 541189.23)</b>	Easting	<b>902252.26 (1927= 861068.20)</b>
Latitude	<b>32°28'57.043" (1927= 32°28'56.615")</b>	Longitude <b>103°09'46.480" (1927= 103°09'44.785")</b>	
Zone	<b>North American Datum</b>	Combined Grid Factor	Coordinate File
East	<b>1983</b>	<b>0.9998912</b>	<b>Weathly.cr5</b>
Drawing File	Field Book		
<b>Chevron-Eunice.Dwg</b>	<b>Lea #23, Pg.44</b>		

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

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

Form C-102  
Revised March 17, 1999

**District II**  
811 South First, Artesia, NM 88210

**OIL CONSERVATION DIVISION** Submit

**EXHIBIT**  
**3.1**

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

2040 South Pacheco  
Santa Fe, NM 87505

AMENDED REPORT

**District IV**  
2040 South Pacheco, Santa Fe, NM 87505

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number 30-025-06624	<sup>2</sup> Pool Code 50350	<sup>3</sup> Pool Name Penrose Skelly; Grayburg
<sup>4</sup> Property Code 2669	<sup>5</sup> Property Name Harry Leonard (NCT-E)	<sup>6</sup> Well Number 5
<sup>7</sup> OGRID No. 4323	<sup>8</sup> Operator Name Chevron U.S.A., Inc.	<sup>9</sup> Elevation 3481'

<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
H	16	21S	37E		2310	North	330	East	Lea

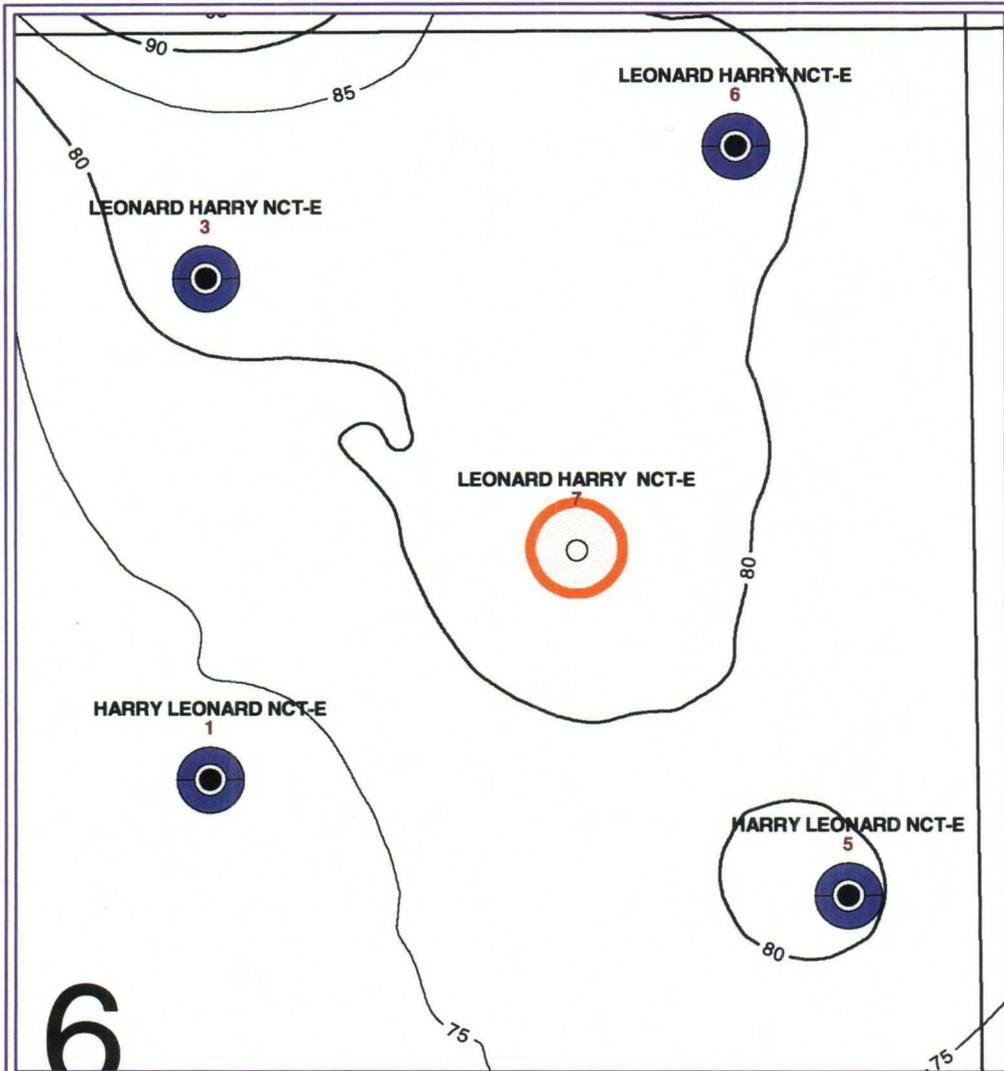
<sup>11</sup> Bottom Hole Location If Different From Surface

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.
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**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**

16	Harry Leonard (NCT-E) Lease		<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>A. M. Howell</i></p> <p>Signature <b>A. M. Howell</b></p> <p>Printed Name <b>Advisor Petr. Engineer</b></p> <p>Title <b>May 5, 2004</b></p>
			<p><sup>1</sup> SURVEYOR</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>



PETRA 5/6/2004 12:31:54 PM

ChevronTexaco

## EXHIBIT 4

21S-37E-16 NE/4 Lea County, New Mexico

Grayburg Net Pay CI=5'

Cutoffs: Gr  $\leq$  40 API, Porosity  $\geq$  6%

### ATTRIBUTE MAP



■ Zone: PRODUCTION - O\_453GRBG IS PRESENT  
 ■ Zone: PRODUCTION - G\_453GRBG IS PRESENT



FEET

May 6, 2004



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ChevronTexaco

## EXHIBIT 5

21S-37E-16 NE/4 Lea County, New Mexico

Grayburg HCPV CI=.5 & EUR-Drainage

### POSTED WELL DATA

Well Name  
Well Number

● EUR-GRAYBURG-ACRES

Grayburg Cum Oil (MBO)  
Grayburg Cum Gas (MMCF)  
Grayburg Cum Water (MBW)



FEET

May 6, 2004