

DATE IN 1/14/09	SUSPENSE	ENGINEER D. Brooks	LOGGED IN 1/14/09	TYPE NSL	APP NO. PKAA09014-49905
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ABOVE THIS LINE FOR DIVISION USE ONLY

RECEIVED

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

2009 JAN 14 PM 1 26 1220 South St. Francis Drive, Santa Fe, NM 87505



B.F. Harrison B#29  
Chevron USA  
4323

## ADMINISTRATIVE APPLICATION CHECKLIST

5890

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.

Casey R. Mobley  
Print or Type Name

Signature

*Casey R. Mobley*

Project Manager / Geologist  
Title

1/12/2009  
Date

Casey.Mobley@chevron.com  
e-mail Address



Casey R. Mobley  
Project Manager / Geologist

North America Upstream  
Midcontinent Business Unit  
11111 S. Wilcrest, Rm S1037  
Houston, Texas 77099  
Tel (281) 561-4830  
Fax (281) 561-3576  
casey.mobley@chevron.com

January 12, 2009

Request for Administrative Approval of  
Unorthodox Oil Well Location

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

Dear Mr. Fesmire:

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

**B.F. Harrison B #29**  
1380' FNL & 440' FWL, SW/4 NW/4 of  
Section 9, T23S, R37E, Unit Letter E  
Lea County, New Mexico

The proposed well will be an infill Grayburg producer in the Langlie-Mattix, Seven Rivers/Queen/Grayburg Pool [Pool Code 37240] which is an oil pool spaced on 40 acres. This well is a continuation of our three year Grayburg infill drilling program in the same Pool. Chevron's technical analysis of the reservoir still supports the contention that typical Grayburg wells cannot drain 40 acres.

The SW/4 NW/4 of Section 9 will be dedicated in the Langlie-Mattix, Seven Rivers/Queen/Grayburg Pool to the proposed well. One other well has produced from this pool in Unit Letter E; the Skelly Penrose B Unit #51 was drilled pre-1970 by the Skelly Oil Company as a Langlie-Mattix, Seven Rivers-Queen producer. This well is currently inactive. The proposed well location is located 680' northwest from the Skelly Penrose B Unit #51.

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. The proposed well will be located northwest of the Skelly Penrose B Unit #51 well and 440' off the lease line. Based on drainage calculations, Chevron 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 NW/4 of Section 9 is covered by a single Chevron U. S. A. Inc. fee lease and has common royalty and working interest ownership. Chevron U. S. A. owns a 100% working interest as to all depths below 3663' in the NW/4 of Section 9 and the entire Grayburg formation is found below 3,663' at this location. The proposed location encroaches upon Unit Letter A of Section 8. The NE/4 of Section 8 is covered by a single

January 12, 2009

Page 2

Chevron U. S. A. Inc. fee lease and has common royalty and working interest ownership. Chevron U. S. A. Inc. owns a 100% working interest as to all depths below 3663' in the NE/4 of Section 8 and the entire Grayburg formation is found below 3,663' at this location. For the reasons set forth above and the proposed location of the infill well, there are no adversely affected interest owners and no one has been notified of this application.

If you have any questions concerning this application or need additional information, please contact me by phone at (281) 561-4830 or by email at [casey.mobley@chevron.com](mailto:casey.mobley@chevron.com). If I am not available, you can also reach Meilin Du by phone at (281) 561-3564 or by email at [meilin.du@chevron.com](mailto:meilin.du@chevron.com). Thank you for consideration of this matter.

Sincerely,

A handwritten signature in black ink, reading "Casey R. Mobley". The signature is fluid and cursive, with the first name "Casey" and last name "Mobley" clearly legible.

Casey R. Mobley  
Project Manager / Geologist

Attachments

cc: NMOCD District 1 – Hobbs, NM  
Casey Mobley  
Meilin Du  
Ed Van Reet  
Well File

## **NOTIFICATION LIST**

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

**B.F. Harrison B #29**

1380' FNL & 440' FWL, SW/4 NW/4 of  
Section 9, T23S, R37E, Unit Letter E  
Lea County, New Mexico

**Offset Operators, Working Interest Owners, NW/4 Section 9 & NE/4 of Section 8:**

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

## **EXHIBIT 1**

### **ENGINEERING AND GEOLOGICAL JUSTIFICATION**

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

**B.F. Harrison B #29**

1380' FNL & 440' FWL, SW/4 NW/4 of  
Section 9, T23S, R37E, Unit Letter E  
Lea County, New Mexico

**PRIMARY OBJECTIVE: GRAYBURG**

**SUPPORTING DATA:**

1. Chevron U.S.A. Inc. (Chevron) is the operator of the proposed B.F. Harrison B #29 well (Exhibit 3). The proposed total depth is 4300' in the San Andres formation.
2. The completion will be in the Langlie-Mattix, Seven Rivers – Queen - Grayburg Oil Pool within the Grayburg Formation ONLY, and the proposed location encroaches toward the following Grayburg wells (Exhibit 4).

Operator	Well	API #	Location	Formation	Cum Prod		Current Prod		Status
					MBO	MMCF	BOPD	MCFPD	
Chevron	B F HARRISON B #11	30025321070001	9C 23S 37E	Grayburg ONLY	11.9	20.5	9	16	Active
Chevron	B F HARRISON B #7	30025317940002	9D 23S 37E	Grayburg ONLY	4.9	21.1	8	39	Active
Chevron	B F HARRISON B #6	30025315390000	9F 23S 37E	Grayburg ONLY	3.9	4.7	30	56	Active

3. The proposed B.F. Harrison B #29 unorthodox Langlie-Mattix 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 the product of gross pay and 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	API #	Location	Formation	Drainage Acres	EUR	
						MBO	MMCF
Chevron	B F HARRISON B #11	30025321070001	9C 23S 37E	Grayburg ONLY	12	35	66
Chevron	B F HARRISON B #7	30025317940002	9D 23S 37E	Grayburg ONLY	4	13	65
Chevron	B F HARRISON B #6	30025315390000	9F 23S 37E	Grayburg ONLY	10	30	65

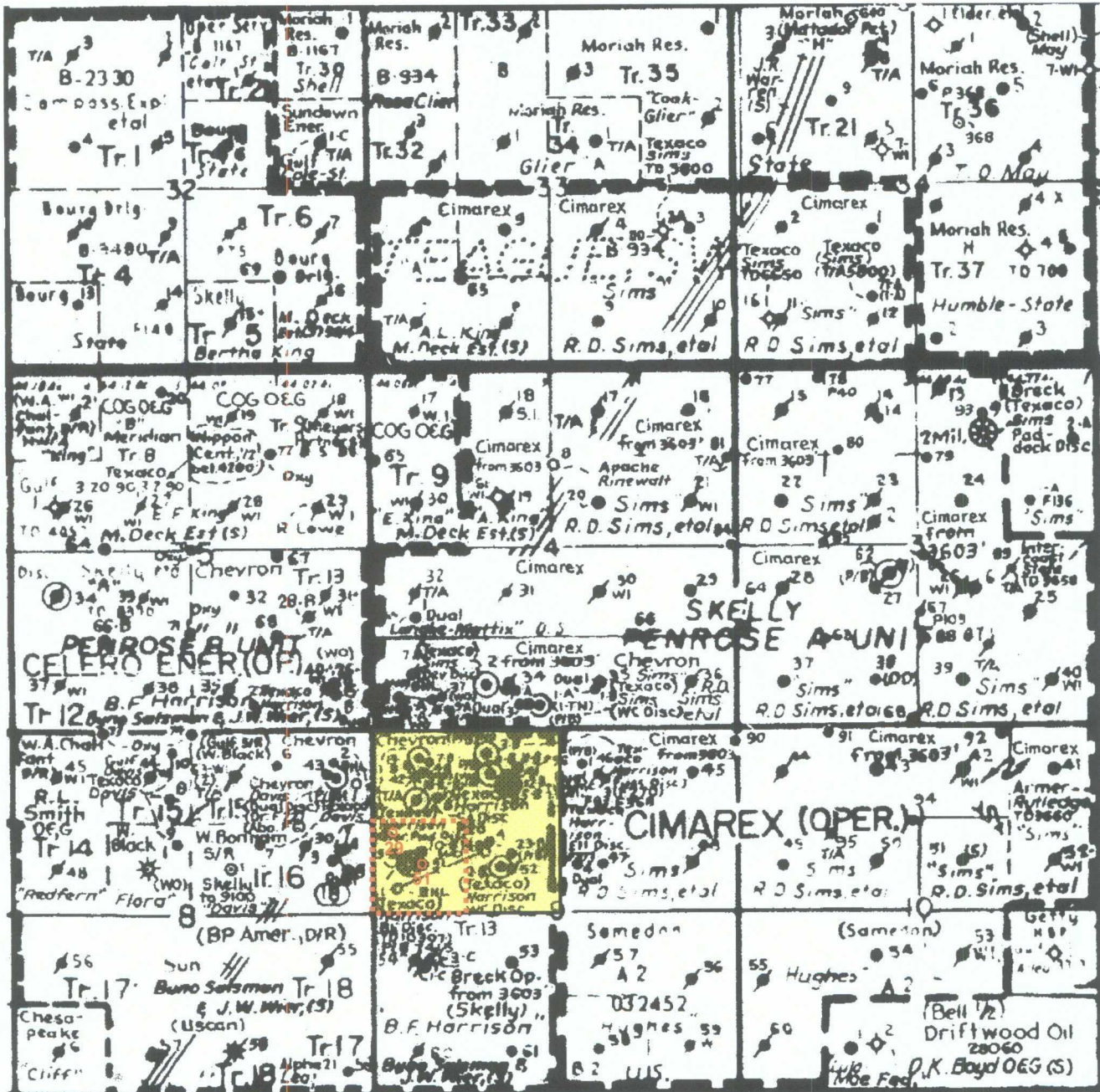
As seen above, the average drainage area of the offsetting locations is only 9 acres, and additional reserves can be recovered by drilling the proposed infill well at an approximate equidistant location from the existing offsetting producers. Reserves for the proposed location were calculated using the HCPV map, a 9 acre drainage area, and a 15% recovery factor. The results are as follows:

Operator	Well	Location	HCPV	Drainage Acres	EUR	
					MBO	MMCF
Chevron	B.F. Harrison B #29	9E 23S 37E	4.25	9	26	65

4. A land plat highlighting the proposed well's location is attached as Exhibit 2. The NW/4 of Section 9 is covered by a single Chevron U. S. A. Inc. fee lease and has common royalty and working interest ownership. Chevron U. S. A. owns a 100% working interest as to all depths below 3663' in the NW/4 of Section 9 and the entire Grayburg formation is found below 3,663' at this location. The proposed location encroaches upon Unit Letter A of Section 8. The NE/4 of Section 8 is covered by a single Chevron U. S. A. Inc. fee lease and has common royalty and working interest ownership. Chevron U. S. A. Inc. owns a 100% working interest as to all depths below 3663' in the NE/4 of Section 8 and the entire Grayburg formation is found below 3,663' at this location. For the reasons set forth above and the proposed location of the infill well, there are no adversely affected interest owners and no one has been notified of this application.

5. The proposed B.F. Harrison B #29 will be dedicated as a Langlie-Mattix, Grayburg producer in Section 9, Unit Letter E.
6. Approval of this application will allow for the recovery of oil and gas reserves which would not otherwise be recovered.

## Exhibit 2



BF Harrison B #29 (proposed)  
1380 FNL & 440 FWL  
Skelly Penrose B Unit #51  
1980 FNL & 760 FWL  
Section 9, T23S-R37E  
Lea County, New Mexico

BF Harrison B Lease

40 Acre Proration Unit

Scale: 1"=2000' Approx.



DISTRICT I  
1625 N. FRENCH DR., BOBBS, NM 88240

State of New Mexico  
Energy, Minerals and Natural Resources Department

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 Rd., Aztec, NM 87410

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

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 B.F. HARRISON B		Well Number 29
OGRID No.	Operator Name CHEVRON USA INC.		Elevation 3316'

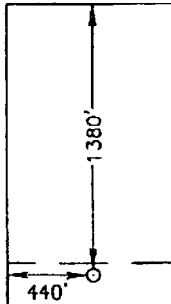
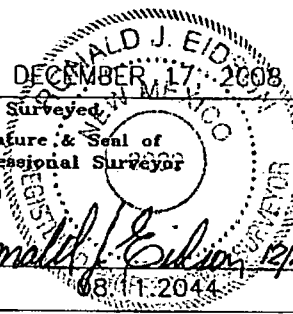
Surface Location

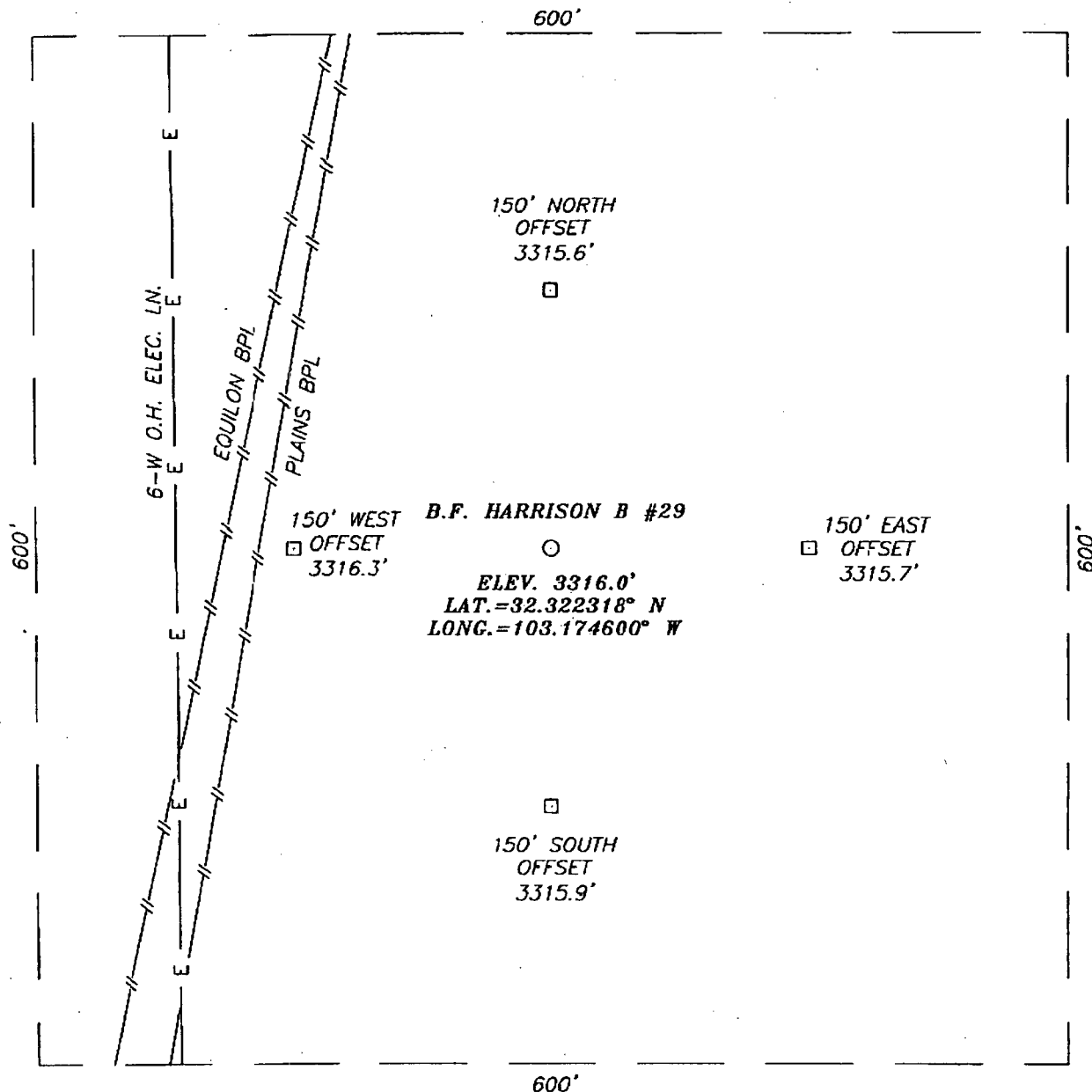
UL or lot No. E	Section 9	Township 23-S	Range 37-E	Lot Idn	Feet from the 1380	North/South line NORTH	Feet from the 440	East/West line WEST	County LEA
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Bottom Hole Location If Different From Surface

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.					

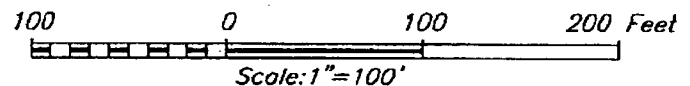
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	GEODETC COORDINATES NAD 27 NME  Y=482911.3 N X=857949.3 E  LAT.=32.322318° N LONG.=103.174600° W		
<b>OPERATOR CERTIFICATION</b> <i>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.</i>  Signature _____ Date _____  Printed Name _____			
<b>SURVEYOR CERTIFICATION</b> <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>   Date Surveyed _____ AR Signature & Seal of Professional Surveyor <i>Ronald J. Eidson</i> 12/19/08 Certificate No. GARY EIDSON 12641 RONALD J. EIDSON 3239			



## DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST. HWY. #18 AND SUMMIT ROAD, GO SOUTHWEST ON ST. HWY. #18 APPROX. 1.4 MILES TO LEASE ROAD. TURN LEFT AND GO EAST ON LEASE ROAD APPROX. 0.1 MILE. THIS LOCATION IS APPROX. 640 FEET SOUTH OF LEASE ROAD.



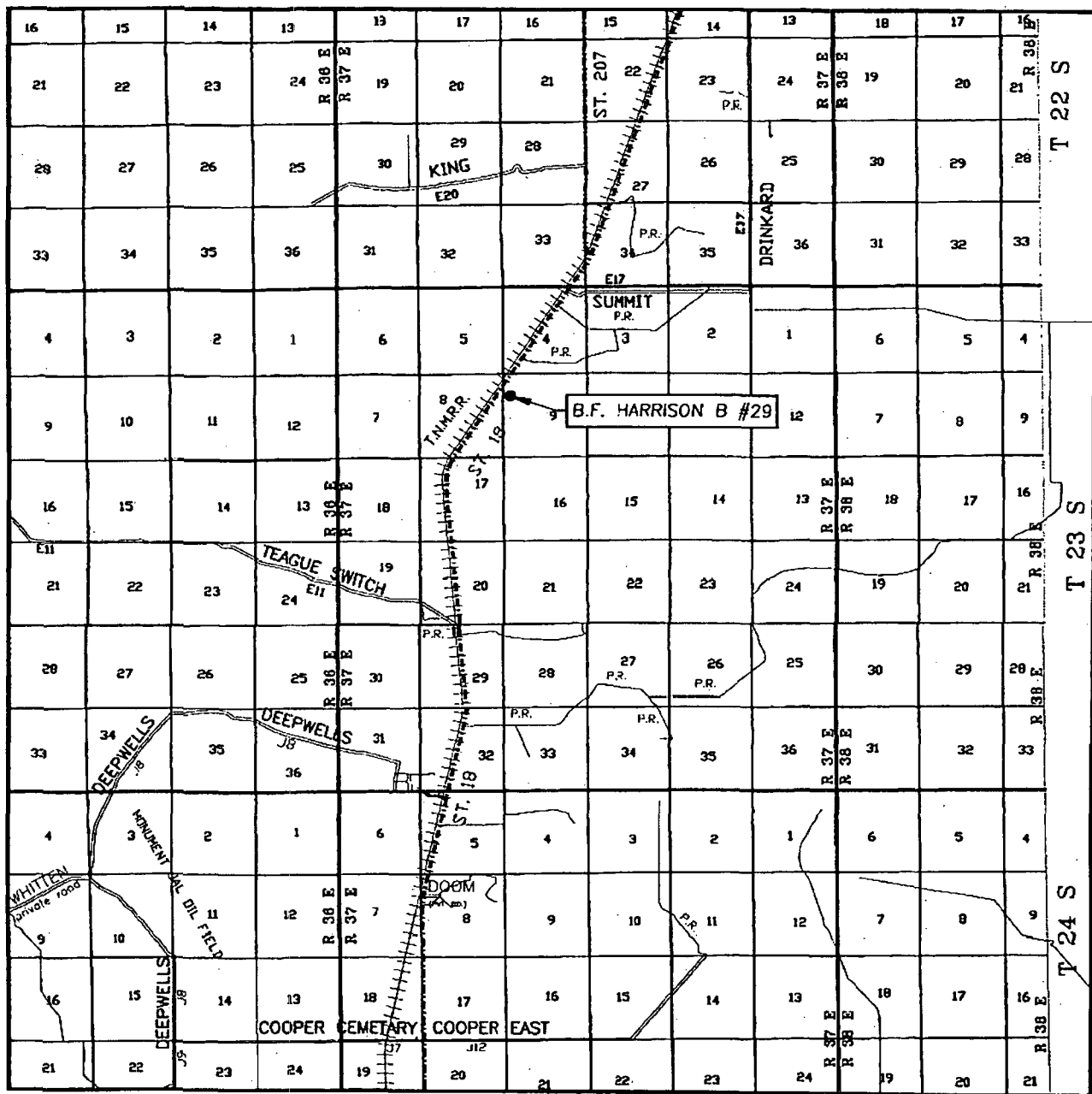
## CHEVRON USA INC.

B.F. HARRISON B #29 WELL  
LOCATED 1380 FEET FROM THE NORTH LINE  
AND 440 FEET FROM THE WEST LINE OF SECTION 9,  
TOWNSHIP 23 SOUTH, RANGE 37 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.

Survey Date: 12/17/08	Sheet 1 of 1 Sheets
W.O. Number: 08.11.2044	Dr By: AR
Date: 12/19/08	08112044
	Scale: 1"=100'

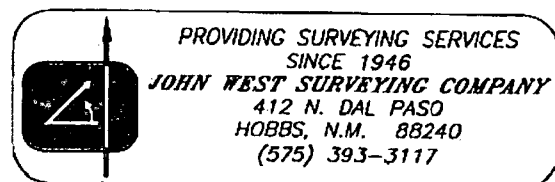
PROVIDING SURVEYING SERVICES  
SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO  
HOBBS, N.M. 88240  
(575) 393-3117

# VICINITY MAP

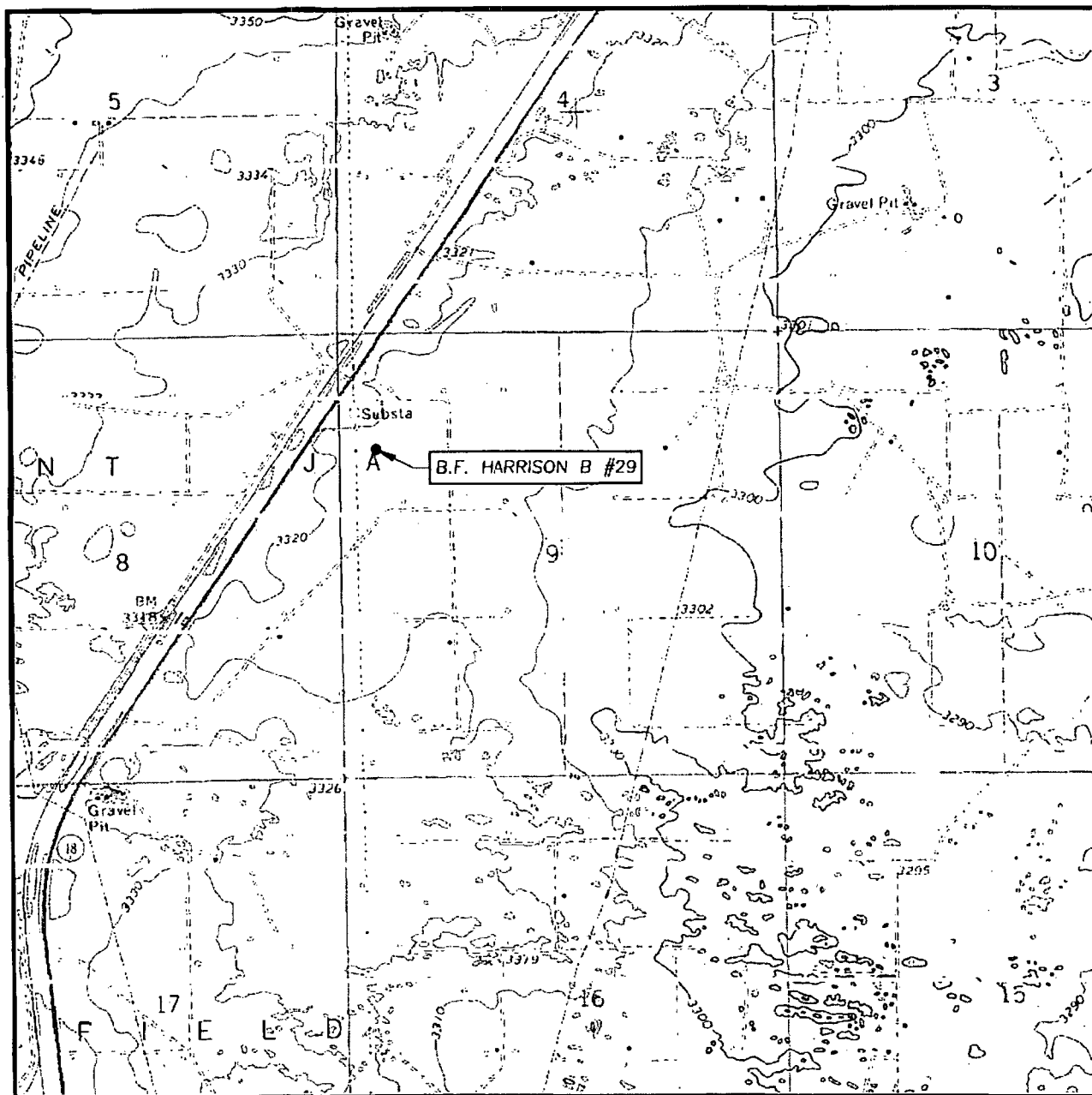


SCALE: 1" = 2 MILES

SEC. 9 TWP. 23-S RGE. 37-E  
 SURVEY N.M.P.M.  
 COUNTY LEA STATE NEW MEXICO  
 DESCRIPTION 1380' FNL & 440' FWL  
 ELEVATION 3316'  
 OPERATOR CHEVRON USA INC.  
 LEASE B.F. HARRISON B



# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
RATTLESNAKE CANYON, N.M. - 10'

SEC. 9 TWP. 23-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

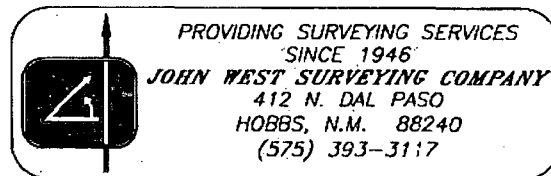
DESCRIPTION 1380' FNL & 440' FWL

ELEVATION 3316'

OPERATOR CHEVRON USA INC.

LEASE B.F. HARRISON B

U.S.G.S. TOPOGRAPHIC MAP  
RATTLESNAKE CANYON, N.M.



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

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised June 10, 2003

**OIL CONSERVATION DIVISION**

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

Submit to \_\_\_\_\_

**Exhibit 3.1**

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number	<sup>2</sup> Pool Code 37240	<sup>3</sup> Pool Name Langlie-Mattix Seven Rivers/Queen/Grayburg
<sup>4</sup> Property Code	<sup>5</sup> Property Name B.F. Harrison B	<sup>6</sup> Well Number 29
<sup>7</sup> OGRID No.	<sup>8</sup> Operator Name Chevron U.S.A., Inc.	<sup>9</sup> Elevation 3316'

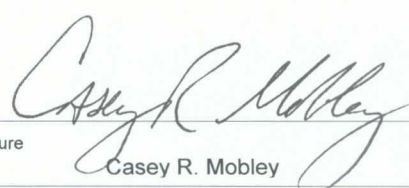
<sup>10</sup> Surface Location

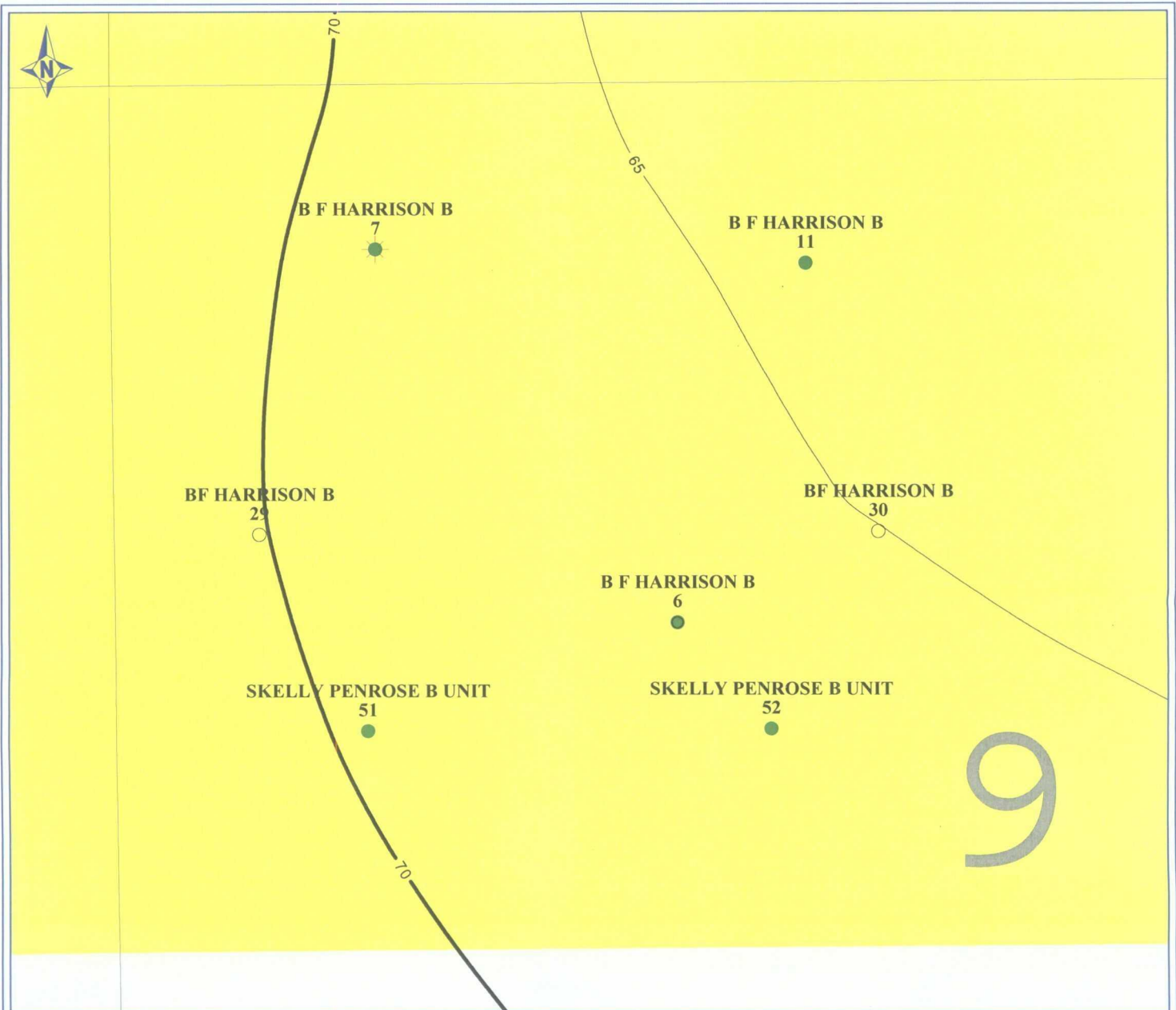
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	9	23S	37E		1380	North	440	West	Lea

<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

<div><p>16</p><p>BF Harrison B Lease</p><p>1380'</p><p>380'</p><p>29</p><p>51</p><p>40-acre proration unit</p></div>	<div><p>17</p><p><b>OPERATOR CERTIFICATION</b></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></p><p>Signature _____</p><p>Printed Name <b>Casey R. Mobley</b></p><p>Title <b>Geologist</b></p><p><b>January 12, 2009</b></p></div>
	<div><p>18</p><p><b>SURVEYOR CERTIFICATION</b></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>Certificate Number _____</p></div>



PETRA 1/6/2009 2:13:26 PM



**Chevron U.S.A. Inc.**

## EXHIBIT 4

BF HARRISON B #29

Sec 9, T23S-R37E, Lea Co., New Mexico

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

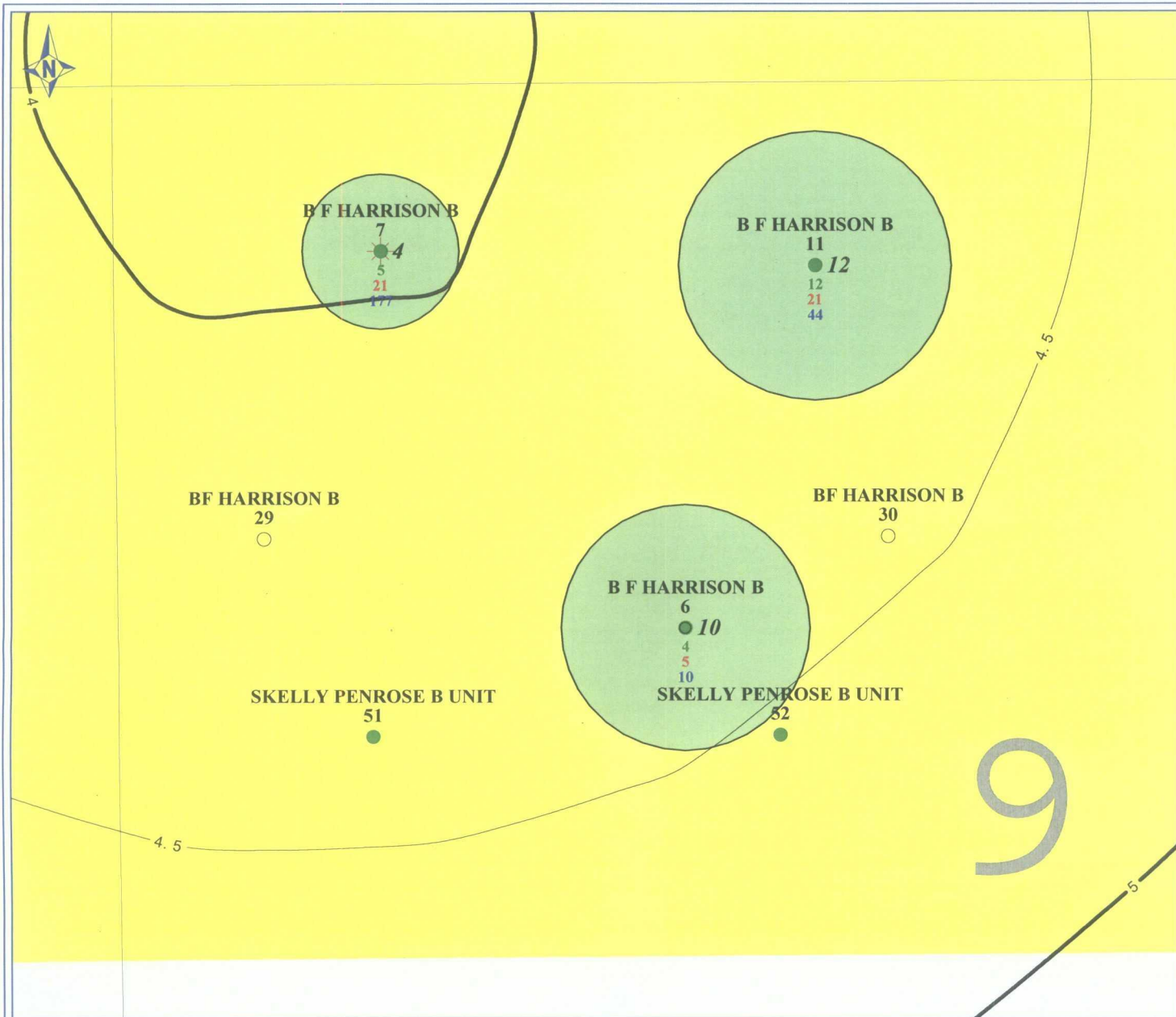
### POSTED WELL DATA

Well Name  
Well Number



January 6, 2009





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**Chevron U.S.A. Inc.**

## EXHIBIT 5

**BF HARRISON B #29**

Sec 9, T23S-R37E, Lea Co., New Mexico

Grayburg HCPV CI=0.5 & EUR - Drainage

### POSTED WELL DATA

Well Name  
Well Number

● GRBG Drained Area (ACRES)

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



January 6, 2009