

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit to appropriate District Office

AMENDED REPORT

APPLICATION FOR PERMIT TO **DRILL**, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

<sup>1</sup> Operator Name and Address Parallel Petroleum Corp. 1004 N. Big Spring Street, Suite 400, Midland, TX. 79701		<sup>2</sup> Well ID Number 230387
<sup>3</sup> Property Code 36279	<sup>4</sup> Property Name Hope Unit 1821-16 State	<sup>5</sup> API Number 30-015-35377
<sup>6</sup> Proposed Pool 1 Wildcat		<sup>7</sup> Proposed Pool 2 Wolfcamp

<sup>7</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
P	16	18S	21E		778	South	200'	East	Eddy

<sup>8</sup> Proposed 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
M	16	18S	21E		778'	South	660'	West	Eddy

Additional Well Information

<sup>11</sup> Work Type Code N	<sup>12</sup> Well Type Code O & G	<sup>13</sup> Cable/Rotary R	<sup>14</sup> Lease Type Code P	<sup>15</sup> Ground Level Elevation 4223'
<sup>16</sup> Multiple No	<sup>17</sup> Proposed Depth 8758MD, 4549TVD	<sup>18</sup> Formation Wolfcamp	<sup>19</sup> Contractor NA	<sup>20</sup> Spud Date NA
Depth to Groundwater 690'		Distance from nearest fresh water well 6000'		Distance from nearest surface water 800'
<sup>21</sup> Pit: Liner: Synthetic X 12_mils thick Clay <input type="checkbox"/> Pit Volume: 25,000 bbls Drilling Method: Closed-Loop System <input type="checkbox"/> Fresh Water X Brine <input type="checkbox"/> Diesel/Oil-based <input type="checkbox"/> Gas/Air <input type="checkbox"/>				

<sup>21</sup> Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
11"	8-5/8"	24#	1500'	325	Surface
7-7/8"	5-1/2"	17#	TVD 4549'	NA	* Tie back to
			MD 8758'		Surface casing
Verify by CBL & Temp Survey					

<sup>22</sup> Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

**Well to be Drilled as a Horizontal Wolfcamp test. The attached drilling plan will be utilized for this test and contains details on the cement and mud programs as well as the directional information. The following is a summary of this plan.**

1. Prepare surface location. Move in and rig up drilling rig, spud well and drill and set conductor. Install and test BOP's.
2. Drill 11" Surface hole to a minimum depth of 1500'. Set 8 5/8" casing and cement.
3. Drill 7 7/8" production hole to 5500' TD and evaluate running mud logs as well as DLL/CNL/LDT/CAL/GR to TD.
4. Plug back hole and set kickoff point at 4080' drill and advance 7-7/8" hole to a Wolfcamp penetration point at approximately 778' FSL and 660' FEL of the section and continue drilling to BHL. (8758' MD & 4549' TVD)
5. Set 5 1/2" to TD and tie cement back to the surface casing. Perforate porosity and stimulate as necessary (specific procedure to be determined).
6. Place well on test.
7. No H2S if anticipated during the drilling of this well.

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOC guidelines X, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Printed name: Deane Durham

Title: Drilling Engineer

E-mail Address: ddurham@plll.com

Date: 1-16-07

Phone: 432-684-3727

OIL CONSERVATION DIVISION

Approved by:

**BRYAN G. ARANT**  
DISTRICT II GEOLOGIST

Title:

Approval Date: JAN 19 2007

Expiration Date: JAN 19 2008

Conditions of Approval Atta

**NOTIFY OCD OF SPUD & TIME  
TO WITNESS CEMENTING OF  
SURFACE CASING**

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

State of New Mexico  
Energy, Minerals & 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. Frances Dr.  
Santa Fe, NM 87505

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

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 97489	Pool Name Wildcat; Wolfcamp
Property Code	Property Name HOPE UNIT 1821-16 STATE	Well Number 1
OGRID No.	Operator Name PARALLEL PETROLEUM CORPORATION	Elevation 4223'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	16	18 S	21 E		778	SOUTH	200	EAST	EDDY

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
M	16	18 S	21 E		778	SOUTH	660	WEST	EDDY

Dedicated Acres 320	Joint or Infill	Consolidation Code	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

<b>NOTE:</b> 1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.			
<u>Bottom Hole Location</u> <u>Plane Coordinate</u> X = 354,827.7 Y = 634,163.8 <u>Geodetic Coordinate</u> Lat. 32°44'33.08" N Long. 104°48'19.73" W (NAD '27)		<u>Penetration Point</u> <u>Plane Coordinate</u> X = 358,763.7 Y = 634,152.1 <u>Geodetic Coordinate</u> Lat. 32°44'33.13" N Long. 104°47'33.65" W (NAD '27)	<u>Surface Location</u> <u>Plane Coordinate</u> X = 359,223.6 Y = 634,150.8 <u>Geodetic Coordinate</u> Lat. 32°44'33.14" N Long. 104°47'28.26" W (NAD '27)
<b>OPERATOR CERTIFICATION</b> I hereby certify the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.  Signature _____ Date 1-16-07 Printed Name <u>Deane D. Ham</u>			
<b>SURVEYOR CERTIFICATION</b> 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. January 5, 2007 Date of Survey _____ Signature & Seal of Professional Surveyor W.O. Num. 2006-1285 Certificate No. MACON McDONALD 12185			

**PARALLEL PETROLEUM CORPORATION**  
**HOPE UNIT 1821-16 STATE #1**  
**SL: 778' FSL AND 200' FEL, BHL: 778' FSL AND 660' FWL**  
**SL: SEC 16, T18S, R21E, BHL: SEC 16, T18S, R21E**  
**EDDY COUNTY, NEW MEXICO**

**Objective**

Drill a horizontal in the Wolfcamp.

**Expected Geologic Tops**

GL: 4223', KB 4235'.  
Glorieta 1825'  
Tubb 2835'  
Abo Shale 3425'  
Wolfcamp 4550'  
Wolfcamp Shale 4740'

**Well Geometry**

- 8 5/8" casing at 1500'
- kick-off at 4080' for horizontal zone of interest
- 5 1/2" casing through the horizontal Wolfcamp; Cement per completion.

**Casing Program**

<u>Hole</u>	<u>MD</u> <u>(ft)</u>	<u>Casing</u>	<u>Weight</u>	<u>Grade</u>	<u>Coupling</u>	<u>COMMENT</u>
11"	0 – 1500	8-5/8"	24	J55	ST&C	
7-7/8"	0 – 8758'	5-1/2"	17	N80	LT&C	Run through the horizontal lateral.

### **Casing Cementing Program**

8-5/8" slurry: Lead: 125 sacks (50:50) Poz (Fly Ash): Class C + 5% bwow Sodium Chloride + 10% bwoc Bentonite + 151.7% fresh water. Tail: 200 sacks Class C + 1% bwoc Calcium Chloride + 56.3% fresh water

Note: If cement does not circulate to surface, notify OCD. A temperature survey will be required. Top out to surface with 1" pipe in the annulus.

Note: 5-1/2" Cement with acid-soluble CMT per completion procedure. Top of cement should be a tied-back to surface casing.

### **Mud Program**

<u>Depth</u>	<u>Hole</u>	<u>MW</u>	<u>Visc.</u>	<u>WL</u>	<u>Synopsis</u>
0 - 1500	11"	8.4 – 8.6	28 - 29	No control	FRESH WATER mud only to 1500 ft. Severe loss potential. Circulate inner reserve. LCM: paper, fiber, cotton seed hulls.
1500 – 3400	7-7/8"	8.6 – 9.2	28 -29	No control	Cut brine. Start w/existing & add brine t/50K- 60K chlorides
3400 – KOP	7-7/8"	8.9 – 9.5	38 - 45	12-14	XCD/polymer as req'd for hole cleaning. Lubricants.
KOP – TD Horizontal	7-7/8"	8.9 – 9.5	38 - 45	12-14	XCD/polymer as req'd for hole cleaning. Lubricants.

# **PARALLEL** SURVEY CALCULATION PROGRAM PETROLEUM CORPORATION

OPERATOR:	Parallel Petroleum Corporation	Supervisors:	
WELL:	Hope Unit 1821-16 State #1		
SURF. LOCATION:	778 FSL, 200 FEL Sec. 16 T-18-S R-21-E		
BH LOCATION:	778 FSL, 660 FWL Sec. 16 T-18-S R-21-E		
COMMENTS:			
		MAG DEC. (-/+)	
		GRID CORR. (-/+)	
		TOTAL CORR. (-/+)	0.0

DATE: 01/12/07 TIME: 9:29 AM TRUE TO GRID

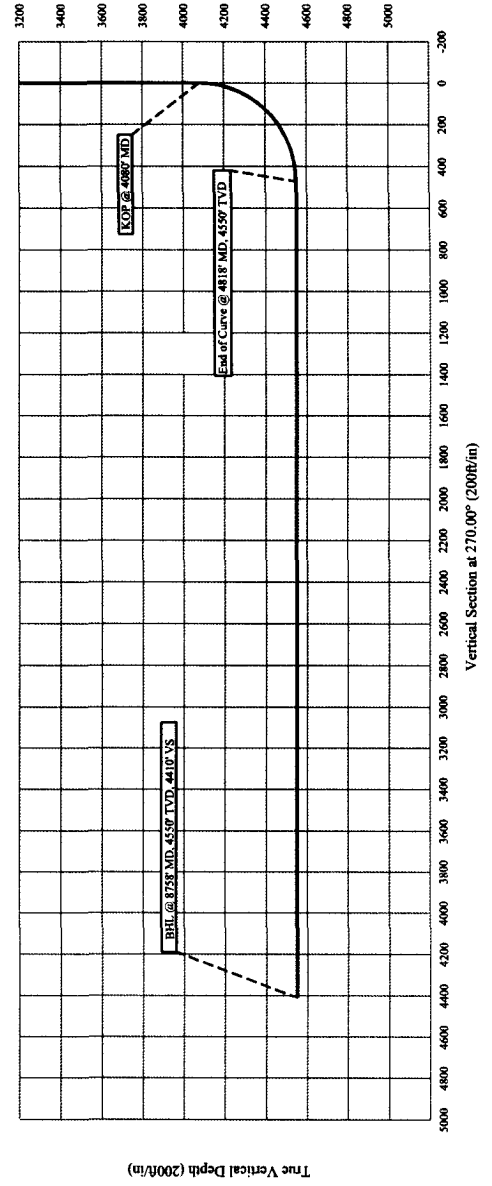
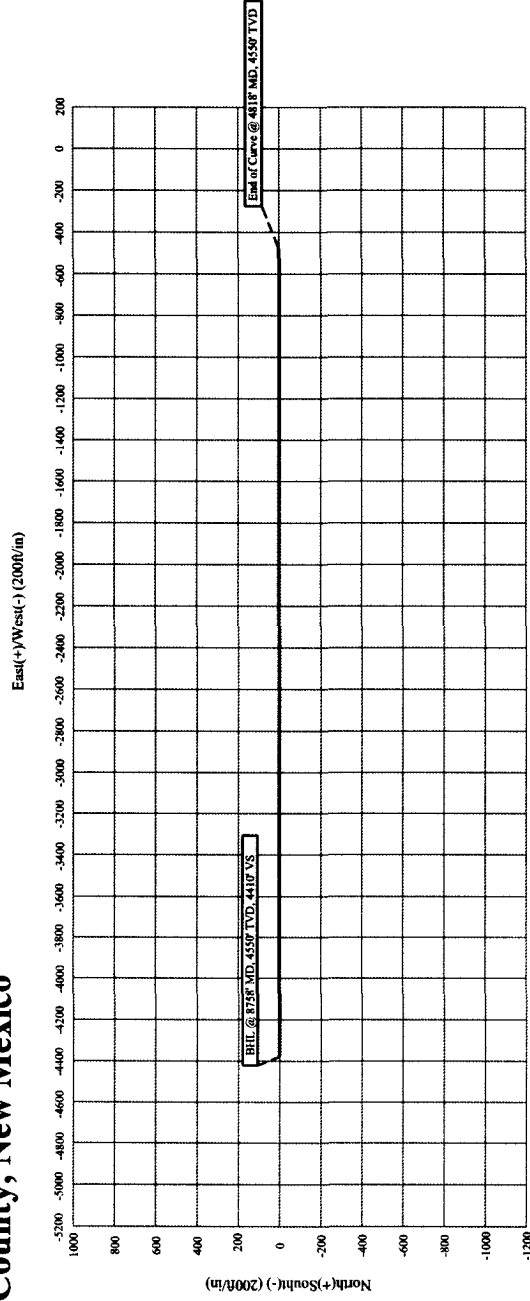
MINIMUM CURVATURE CALCULATIONS(SPE-3362)						PROPOSED DIRECTION		270.0	TARGET TRACKING TO CENTER	
SVY NUM	MD	INC	GRID AZM	TVD	VERT SECT	N-S	E-W	DLS/ 100	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)
TIE	0	0.0	0.0	0.0	0.0	0.0	0.0			
1	4080	0.0	0.0	4080.0	0.0	0.0	0.0	0.0	470.0	0.0
2	4090	1.2	270.0	4090.0	0.1	0.0	-0.1	12.2	460.0	0.0
3	4100	2.4	270.0	4100.0	0.4	0.0	-0.4	12.2	450.0	0.0
4	4818	90.0	270.0	4549.8	469.8	0.0	-469.8	12.2	0.2	0.0
5	8758	90.0	270.0	4549.8	4409.8	0.0	-4409.8	0.0	0.2	0.0

KOP @ 4080' MD  
 BUR = 12.2 DEG per 100 FT  
 End Curve @ 4818' MD, 4550' TVD  
 BHL @ 8758' MD, 4550' TVD, 4410' VS

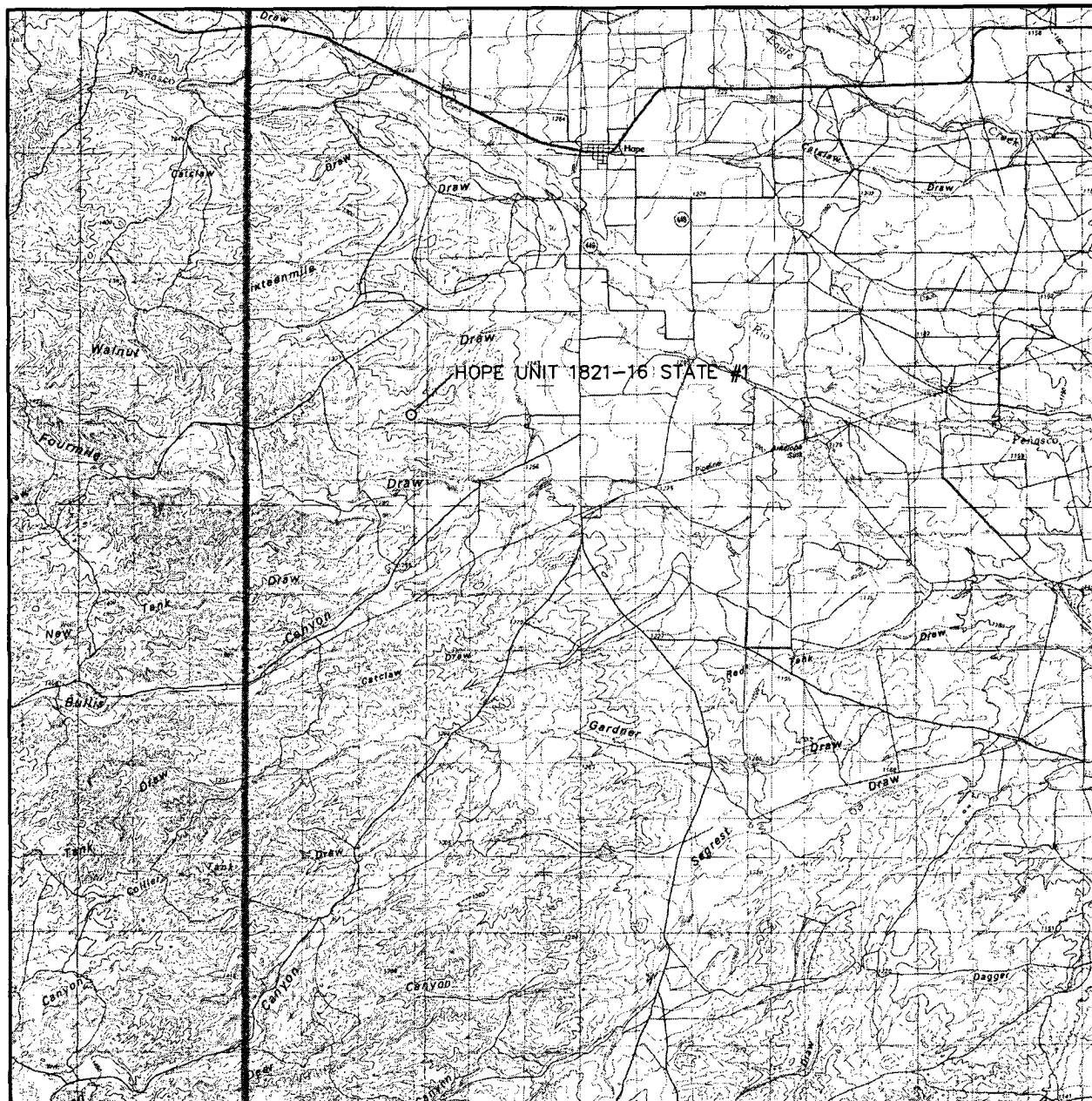
# Parallel Petroleum Corp.

Hope Unit 1821-16 State #1  
778 FSL, 200 FEL Sec. 16, T-18-S, R-21-E  
778 FSL, 660 FWL Sec. 16, T-18-S, R-21-E  
Eddy County, New Mexico

COMPANY DETAILS  
Parallel Petroleum Corp.  
1004 N. Big Spring, Ste 400  
Midland, Texas 79701



# VICINITY MAP



SCALE: 1" = 3 MILES

SEC. 16 TWP. 18-S RGE. 21-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 778' FSL & 200' FEL

ELEVATION 4223'

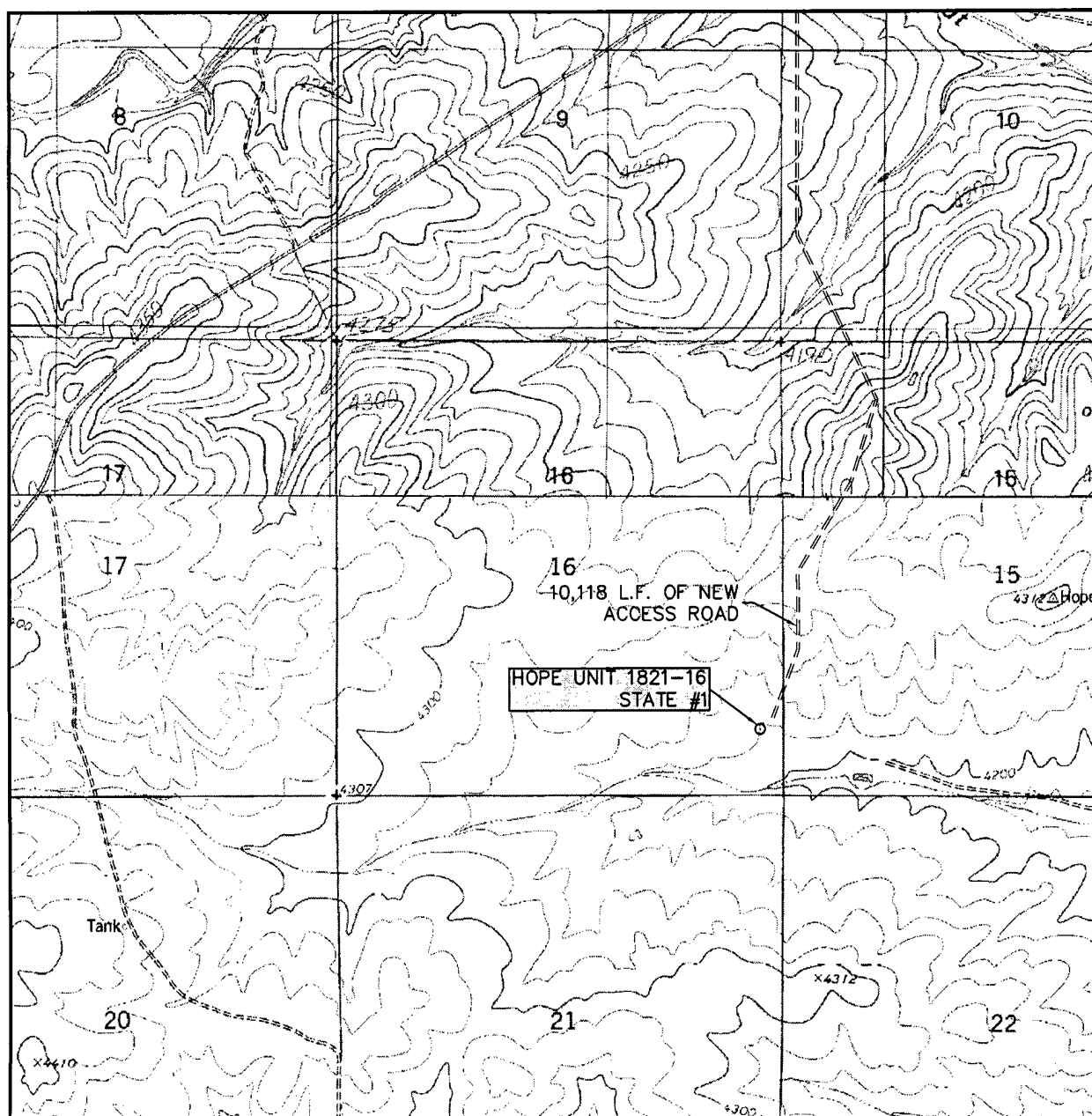
OPERATOR PARALLEL PETROLEUM CORPORATION

LEASE HOPE UNIT 1821-16 STATE



110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
HOLT TANK - 20'

SEC. 16 TWP. 18-S RGE. 21-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 778' FSL & 200' FEL

ELEVATION 4223'

OPERATOR PARALLEL PETROLEUM CORPORATION

LEASE HOPE UNIT 1821-16 STATE

U.S.G.S. TOPOGRAPHIC MAP  
HOLT TANK, N.M.



110 W. LOUISIANA, STE. 110  
MIDLAND TEXAS, 79701  
(432) 687-0865 - (432) 687-0868 FAX



**PARALLEL**  
Petroleum Corporation

1004 North Big Spring, Suite 400 • Midland, TX 79701 • Ph: 432-684-3727 • Fax: 432-685-6580

June 12, 2006

Mr. Bryan Arrant  
New Mexico Oil Conservation Division  
1301 W. Grand Ave.  
Artesia, New Mexico 88210

Re: Hydrogen Sulfide Potential  
South Hope Area Wolfcamp Program  
SW Chaves and Eddy Counties, New Mexico

Dear Mr. Arrant:

Parallel Petroleum Corporation operates the Boxtop 1921-1 Federal #1 well located in Section 1, T-19-S, R-21-E. The well which was tested in the Wolfcamp formation did not have any indications of hydrogen sulfide from this formation. We believe the potential for it on locations in this area are negligible. There are no occupied dwellings in the area of these new drilling locations.

Should you need any additional information regarding this issue, please contact me at the address or phone number listed or email at [ddurham@ppll.com](mailto:ddurham@ppll.com).

Sincerely,



A. Deane Durham  
Senior Engineer