

ATS-07-361

OCD-ARTESIA

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

S

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM NM 103570
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Parallel Petroleum Corporation		7. If Unit or CA Agreement, Name and No.
3a. Address 1004 North Big Spring, Suite 400 Midland, Texas		8. Lease Name and Well No. Box Cars 1921-13 Federal #1
3b. Phone No. (include area code) 432/684-3727		9. API Well No. 30-015-35585
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface SHL 710' FSL and 200' FEL, 14-19S-21E At proposed prod. zone BHL 710' FSL and 660' FEL, 13-19S-21E		10. Field and Pool, or Exploratory Wolfcamp SW
11. Sec., T. R. M. or Blk. and Survey or Area Roswell Controlled Water Basin		12. County or Parish Eddy
13. State NM		14. Distance in miles and direction from nearest town or post office* 9 miles south of Hope, New Mexico
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 710'	16. No. of acres in lease 2,560.00	17. Spacing Unit dedicated to this well 320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2000' west	19. Proposed Depth 5500'	20. BLM/BIA Bond No. on file NMB000265
21. Elevations (Show whether DF, KDB, RT, GL, etc.) GL 4180'	22. Approximate date work will start* 05/15/2007	23. Estimated duration 30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature <i>Deane Durham</i>	Name (Printed/Typed) Deane Durham	Date 3-8-07
Title Drilling Engineer, Parallel Petroleum Corporation		

Approved by (Signature) <i>James Stovall</i>	Name (Printed/Typed) James Stovall	Date APR 30 2007
Title ACTING FIELD MANAGER		
Office CARLSBAD FIELD OFFICE		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

APPROVAL FOR 1 YEAR

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*(Instructions on page 2)

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Subject to  
Like Approval  
By State

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

If earthen pits are used in  
association with the drilling of this  
well, an OCD pit permit must be  
obtained prior to pit construction.

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 & Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Frances Dr.  
Santa Fe, NM 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 9-7553	Pool Name Four mile Draw Wolfcamp, SW
Property Code	Property Name BOX CARS 1921-13 FEDERAL	Well Number 1
OGRID No.	Operator Name PARALLEL PETROLEUM CORPORATION	Elevation 4180'

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	14	19 S	21 E		710	SOUTH	200	EAST	EDDY

Bottom Hole Location If Different From Surface

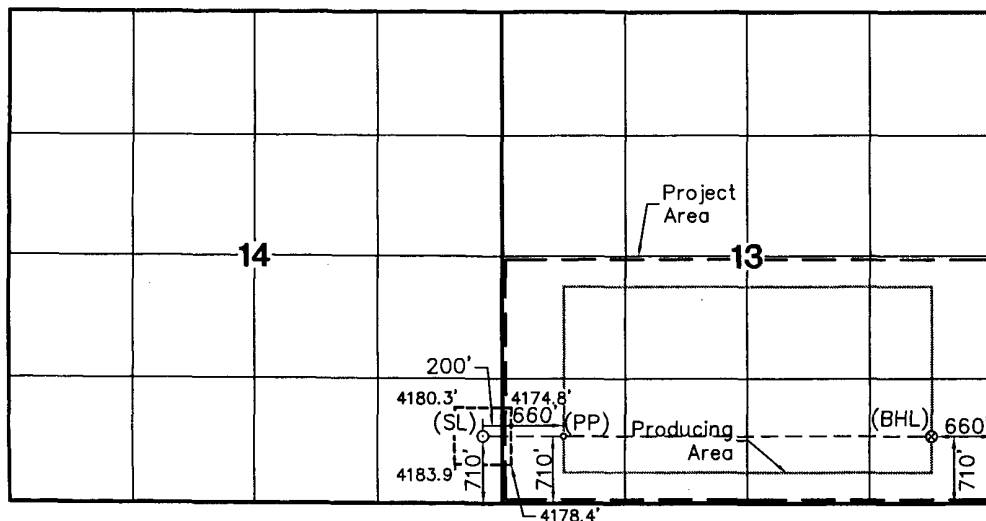
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	13	19 S	21 E		710	SOUTH	660	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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

NOTE:

- 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.



Coordinate Table	
Description	Plane Coordinate
Box Cars 1921-13 Federal #1	X = 369,799.4
Surface Location	Y = 602,265.6
Box Cars 1921-13 Federal #1	X = 370,659.1
Penetration Point	Y = 602,264.3
Box Cars 1921-13 Federal #1	X = 374,625.3
Bottom Hole Location	Y = 602,266.2

OPERATOR CERTIFICATION

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 undivided 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.

*Deane Durham* 3-8-07  
Signature Date  
Deane Durham  
Printed Name

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 belief.

October 26, 2006  
Date of Survey  
Signature & Seal of Professional Surveyor

*W.O. Nurn*  
W.O. Nurn, 2006-1059  
Certificate No. MACON McDONALD 12185

ATTACHMENT TO FORM 3160-3  
BOX CARS 1921-13 FEDERAL #1  
Surface Hole Location  
710 FSL AND 200 FEL, SEC 14, 19S, 21E  
Bottom Hole Location  
710 FSL AND 660 FEL, SEC 13, 19S, 21E  
EDDY COUNTY, NEW MEXICO

**DRILLING PROGRAM**

**This well is designed as a horizontal test in the Wolfcamp formation.**

1. GEOLOGIC NAME OF SURFACE FORMATION

San Andres

2. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS

Glorieta 1739'(+2441')  
Tubb 2745'(+1435')  
Yeso 2885' (+1295')  
Abo Shale 3385' (+795')  
Abo Carbonate 3499' (+681')  
Wolfcamp 4330' (-150')  
Wolfcamp Shale 4430'(-250')

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL, OR GAS

Fresh water                790'  
Oil and Gas                Wolfcamp 4330' (-150')  
No H<sub>2</sub>S gas should be encountered

4. CASING AND CEMENTING PROGRAM

<u>Casing Size</u>	<u>From</u> <u>To</u>	<u>Weight</u>	<u>Grade</u>	<u>Joint</u>
16" conductor	0'-120'			
8 5/8"	0' - 1500'	24#	J-55	STC
5 1/2"	0' - TOTAL DEPTH	17#	N-80	LTC

Equivalent or adequate grades and weights of casing may be substituted at time casing is run, depending on availability.

**BOX CARS 1921-13 FEDERAL #1**

**Page 2**

8-5/8" slurry: Lead: 225 sacks (50:50) Poz (Fly Ash): Class C + 5% bwow Sodium Chloride + 10% bwoc Bentonite + 151.7% fresh water. Tail: 235 sacks Class C + 1% bwoc Calcium Chloride + 56.3% fresh water

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

Note: 5-1/2" Acid-soluble cement per completion procedure.

**Drilling Procedure**

- See  
COA
- a. Set 16" conductor pipe as deep as possible up to 120' with a rathole unit.
  - b. Drill 11" surface hole to an approximate depth of 1500', using fresh water and viscous sweeps for hole cleaning. Set 8 5/8", 24# J-55 casing with 460 sx, Class C cement (lead will be 50/50 Poz, circulate to surface, 1" if necessary).
  - c. Set slips on 8 5/8" CSG. Cut 8 5/8" CSG and NU & test BOP.
  - d. Drill 7 7/8" production hole to kick off point at approximately 3,470'.
  - e. Build angle at 7.6 degrees per 100' to 90 degrees and hold.
  - f. Drill 7 7/8" horizontal drain hole to a terminus of 660' FEL approximately 9,030'.
  - g. Run 5 1/2" 17# N-80 CSG to TD. Cement with 750 sx Class C Acid Soluble
  - h. Circulate to surface or run temperature survey to verify tie in to surface casing.
  - i. Rig Down Rotary Tools

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL

The BOP stack will consist of a 3,000 psi working pressure, dual ram type preventer and annular.

A BOP sketch is attached.

6. TYPES AND CHARACTERS OF THE PROPOSED MUD SYSTEM

- a. Spud and drill to 1,500' with 8.3 ppg Fresh Water system and viscous sweeps for hole cleaning.
- c. The production section from 1,500' to 3,300' will utilize a cut brine mud system from 8.8 to 9.2 ppg.
- d. The remaining production section from 3,300' to TD will be a polymer mud system with mud weight (8.8 – 9.6) sufficient to control formation pressure anticipated to be approximately 1,900 psi.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT

None required.

8. LOGGING, TESTING, AND CORING PROGRAM

Mud logs are planned. This is the second well on a dual pad, so no open-hole logs are planned, however, additional open-hole logs, drill stem tests, cores and sidewall cores are possible.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES & POTENTIAL HAZARDS

None anticipated.

BHP expected to be 1,900 psi.

10. ANTICIPATED STARTING DATE:

It is planned that operations will commence around third quarter of 2007 with drilling and completion operation lasting about 35 days.

DOUBLE HOESHOE RESERVE PIT

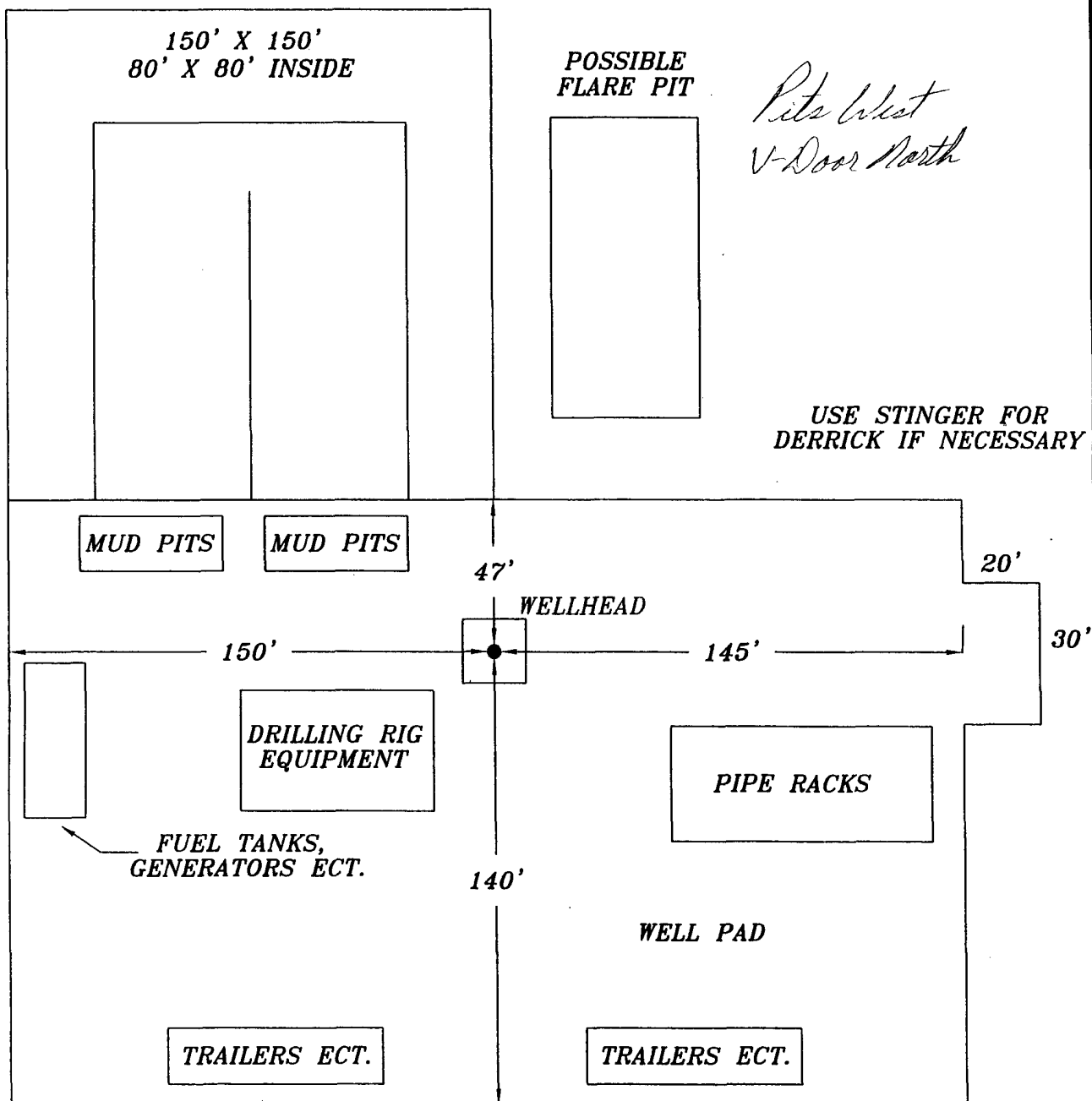
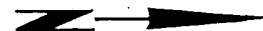


EXHIBIT B

DATE:  
11/3/05  
DWN. BY:  
JJ  
FILE:  
C:\PROMAL\2429\DRILLING RIG LAYOUT-2

PARALLEL PETROLEUM  
DRILLING RIG LAYOUT

HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS

NOT TO SCALE

# MINIMUM BOP SCHEMATIC

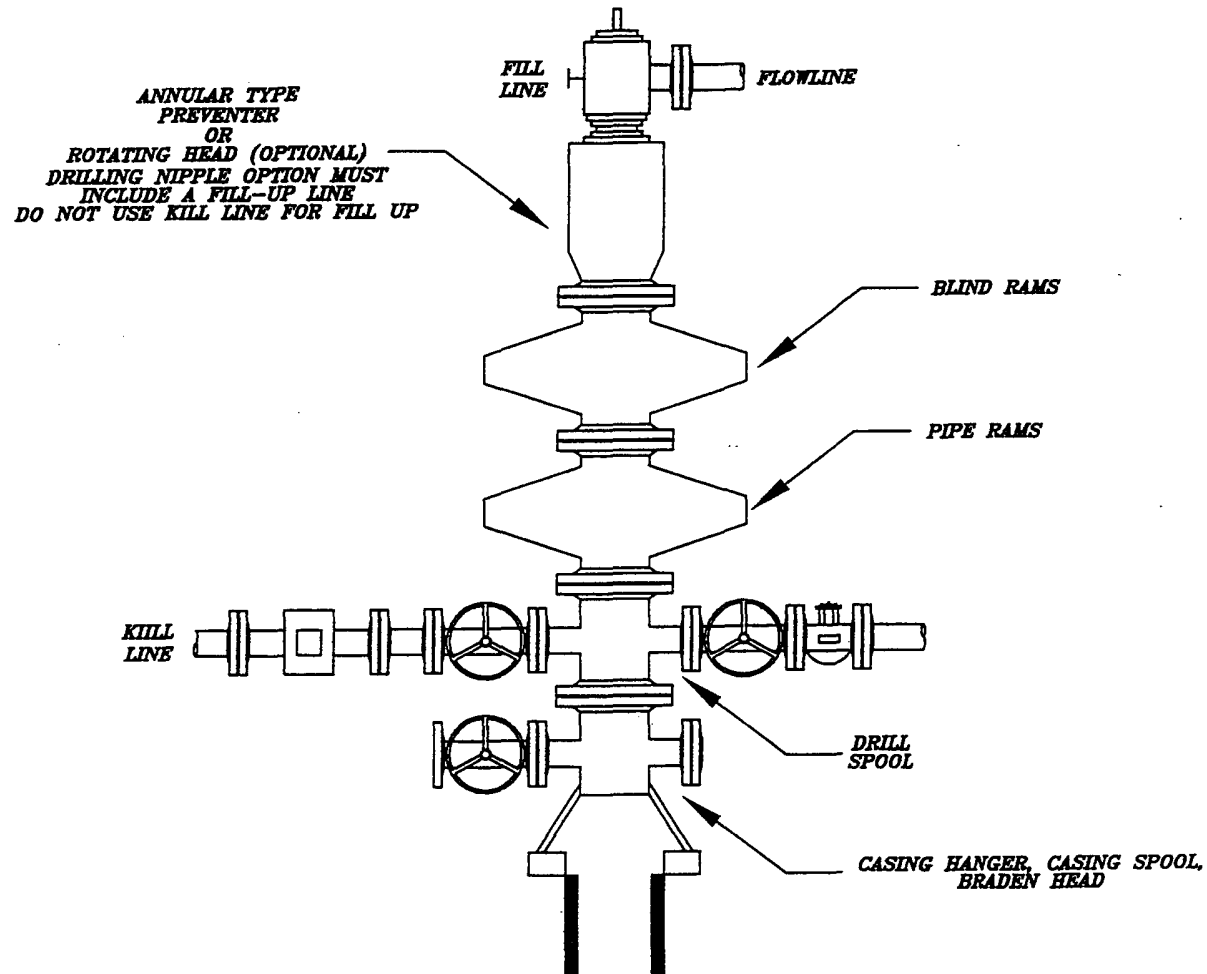


EXHIBIT I

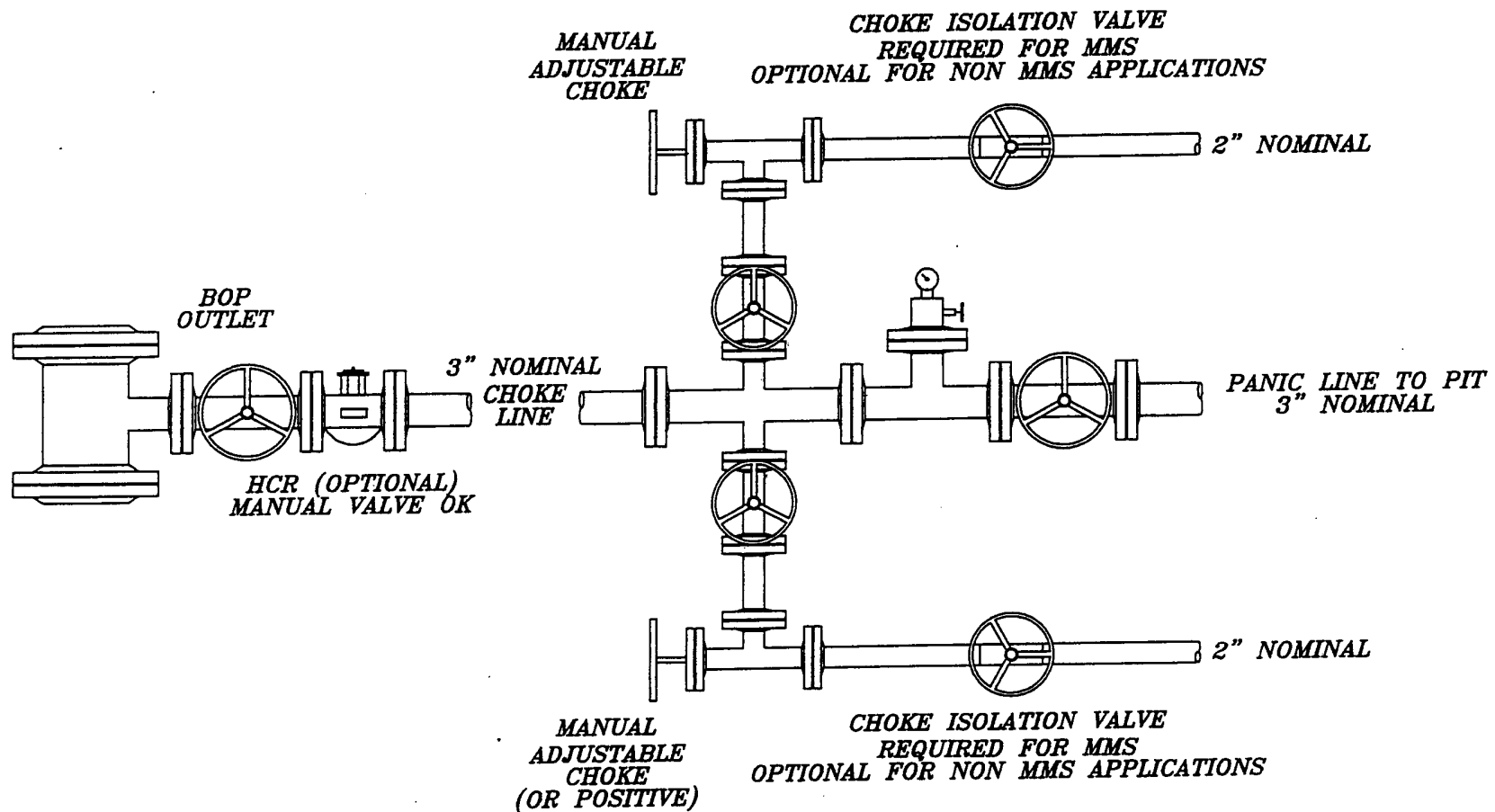
PARALLEL PETROLEUM  
BOP SCHEMATIC

HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS

DATE:  
7/26/05  
DWG. BY:  
JJ  
FILE:  
C:\PARALLEL\BOP\BOP SCHEMATIC

NOT TO SCALE

# **CHOKE MANIFOLD 5M SERVICE**



NOT TO SCALE

DATE:	8/17/05
OWN. BY:	JJ
FILE:	C:\P\PARALLEL\5M\5M CHOKE MANIFOLD

EXHIBIT J

**PARALLEL PETROLEUM  
CHOKE MANIFOLD**

**HIGHLANDER ENVIRONMENTAL CORP.  
MIDLAND, TEXAS**



## BOX CARS 1921-13 FEDERAL #1

Page 2

### EXHIBITS:

- A. Area Road Map
- B. Drilling Rig Layout
- C. Pad Elevation Plat
- D. Vicinity Map
- E. Area Production Map
- F. Topographic & Location Verification Map
- G. Well Location & Acreage Dedication Map (NMOCD Form C-102)
- H. NMOCD Form C-144, Pit Registration (Original forwarded to NMOCD)
- I. Blow Out Preventer (BOP) Schematic
- J. Choke Manifold Schematic
- K. Estimated Horizontal Survey Calculation Program
- L. Estimated Wellbore Plot

#### 1. EXISTING ROADS

- A. Exhibits A and D are area road maps showing existing roads in the vicinity of the site.
- B. Exhibit F is a topographic map of the location showing existing roads and the proposed new access road.

#### 2. ACCESS ROADS

- A. Length and Width  
The access road will be built as shown on Exhibit D. The new access road will come off an existing access road to the Jack in the Box Federal #1. From this point the road will go east 4428' to the Parallel Petroleum, Box Cars 1921-13 Federal #1 well site. The new access road will be 16' to 24' wide.
- B. Surface Material  
Caliche from a commercial source.
- C. Maximum Grade  
Less than five percent.
- D. Turnouts  
No turnouts are planned on the access road.

# SECTION 14, TOWNSHIP 19 SOUTH, RANGE 21 EAST, N.M.P.M.

EDDY COUNTY

4428 L.F. OF NEW  
ACCESS ROAD

NEW MEXICO

L-2006-1059-A

4180.3'

600'

4174.8'

150' NORTH  
OFFSET  
Elev. 4179.8'

BOX CARS 1921-13 FEDERAL #1

Gr. El. 4179.8'

Lat. 32°39'18.06" N

Long. 104°45'22.95" W

(NAD '27)

150' WEST  
OFFSET  
Elev. 4181.6'

150' EAST  
OFFSET  
Elev. 4177.9'

150' SOUTH  
OFFSET  
Elev. 4180.4'

SECTION 14  
SECTION 13

4183.9'

600'

4178.4'

2052 L.F. OF NEW  
ACCESS ROAD

100 0 100 200

Graphic Scale in Feet

## DRIVING DIRECTIONS

FROM THE INTERSECTION OF U.S. HIGHWAY 82 AND STATE HIGHWAY 449 IN HOPE, NM GO SOUTH ON SAID STATE HIGHWAY 449 2.2 MILES TO THE END OF SAID STATE HIGHWAY 449 AND THE BEGINNING OF COUNTY ROAD 12, THEN CONTINUE SOUTH ANOTHER 4.8 MILES (6.9 TOTAL) TO A FORK IN THE ROAD, THE INTERSECTION OF SAID COUNTY ROAD 12 AND A LEASE ROAD HEADING SOUTHWEST (RIGHT FORK), THEN GO SOUTHWEST ALONG SAID LEASE ROAD 4.2 MILES TO AN ACCESS ROAD ON EAST (LEFT) SIDE OF ROAD, THEN GO EAST ALONG SAID ACCESS ROAD 0.7 MILE TO A NEW ACCESS ROAD ON THE EAST (LEFT) SIDE OF ROAD, THEN GO EAST AND SOUTH 0.8 MILE TO THE PROPOSED LOCATION.

## PARALLEL PETROLEUM CORPORATION

### BOX CARS 1921-13 FEDERAL #1

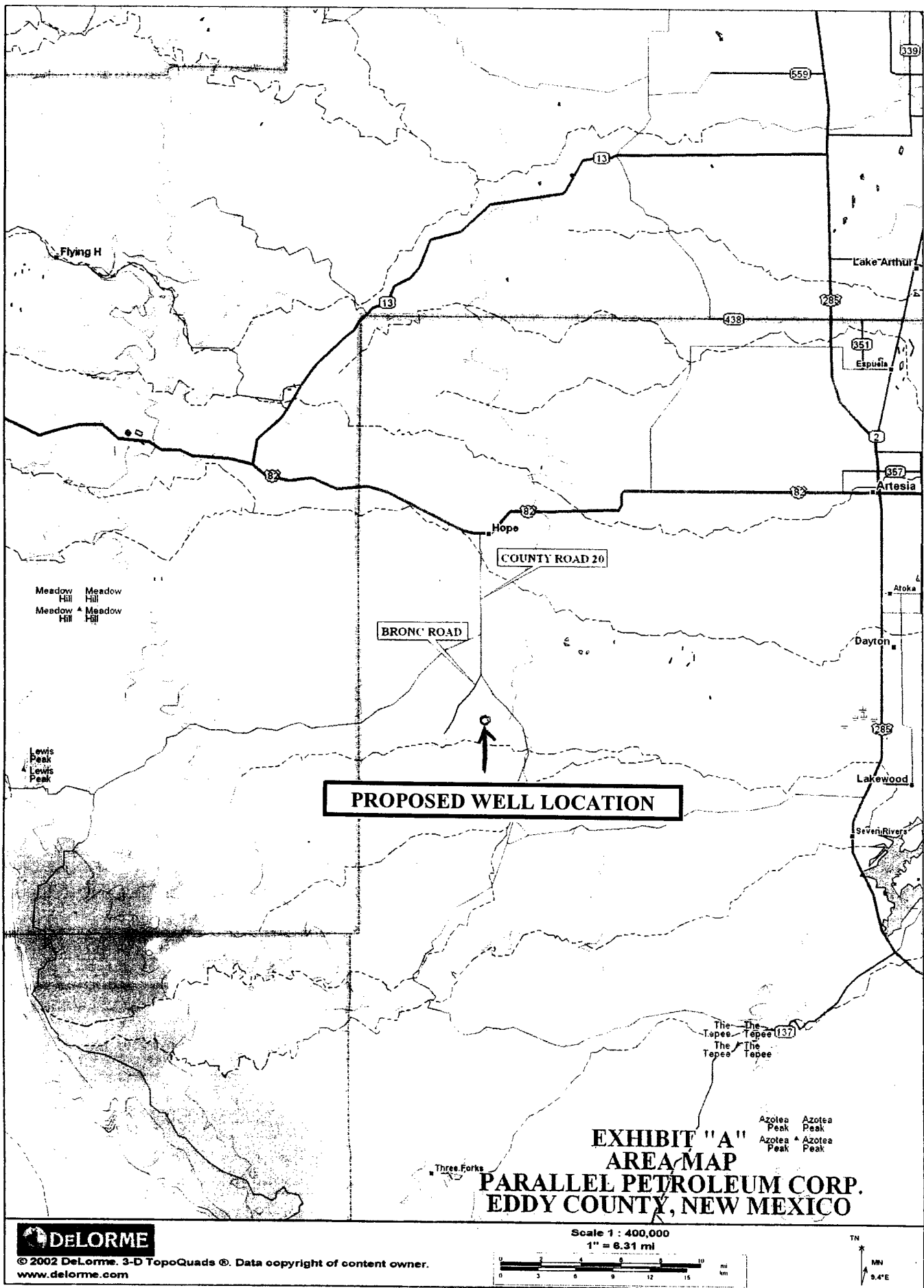
Located 710' FSL & 200' FEL, Section 14  
Township 19 South, Range 21 East, N.M.P.M.  
Eddy County, New Mexico

Drawn By: LVA	Date: November 20, 2006
Scale: 1"=100'	Field Book: 348 / 32-38
Revision Date:	Quadrangle: Holt Tank
W.O. No: 2006-1059	Dwg. No.: L-2006-1059-A



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

EXHIBIT C



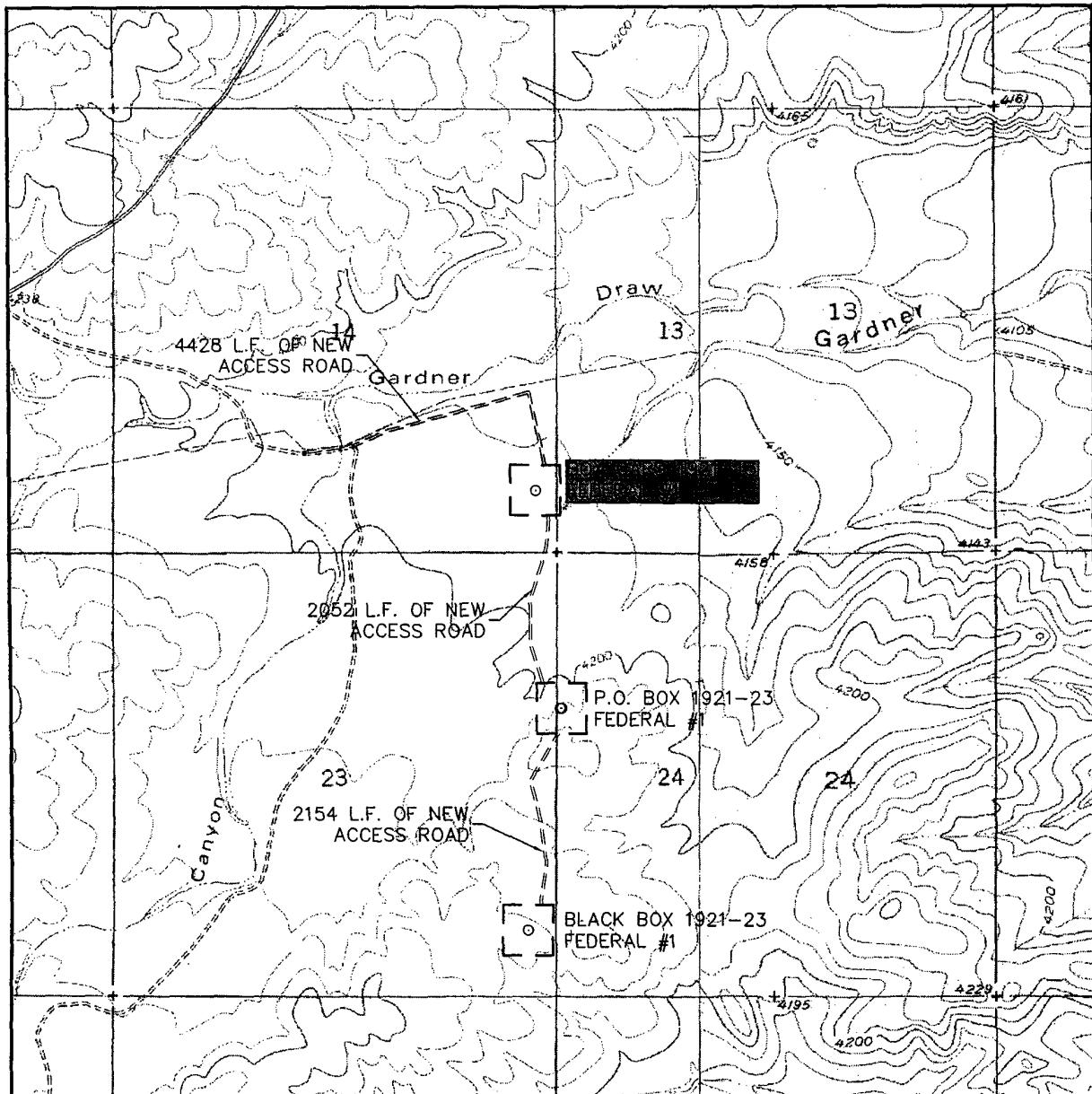
**DeLORME**

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www.delorme.com

Scale 1 : 400,000  
1" = 6.31 mi



# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
HOLT TANK - 20'

SEC. 14 TWP. 19-S RGE. 21-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 710' FSL & 200' FEL

ELEVATION 4180'

OPERATOR PARALLEL PETROLEUM CORPORATION

LEASE BOX CARS 1921-13 FEDERAL

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



**WEST  
COMPANY**  
of Midland, Inc.

EXHIBIT F

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

# **PARALLEL** SURVEY CALCULATION PROGRAM PETROLEUM CORPORATION

OPERATOR:	Parallel Petroleum Corporation	Supervisors:	
WELL:	Box Cars 1921-13 Federal #1		
LOCATION:	S/2 Sec. 13 T-19-S R-21-E		
COMMENTS:			
		MAG DEC. (-/+)	
		GRID CORR. (-/+)	
		TOTAL CORR. (-/+)	0.0
DATE: 02/22/07		TIME: 1:25 PM	TRUE TO GRID <input type="checkbox"/>

MINIMUM CURVATURE CALCULATIONS(SPE-3362)									PROPOSED DIRECTION		90.0	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	3470	0.0	0.0	3470.0	0.0	0.0	0.0	0.0				860.0	0.0
2	3480	0.7	90.0	3480.0	0.1	0.0	0.1	6.7				850.0	0.0
3	3490	1.3	90.0	3490.0	0.2	0.0	0.2	6.7				840.0	0.0
4	4821	90.0	90.0	4330.0	860.1	0.0	860.1	6.7				0.0	0.0
5	9030	90.0	90.0	4330.0	5069.1	0.0	5069.1	0.0				0.0	0.0

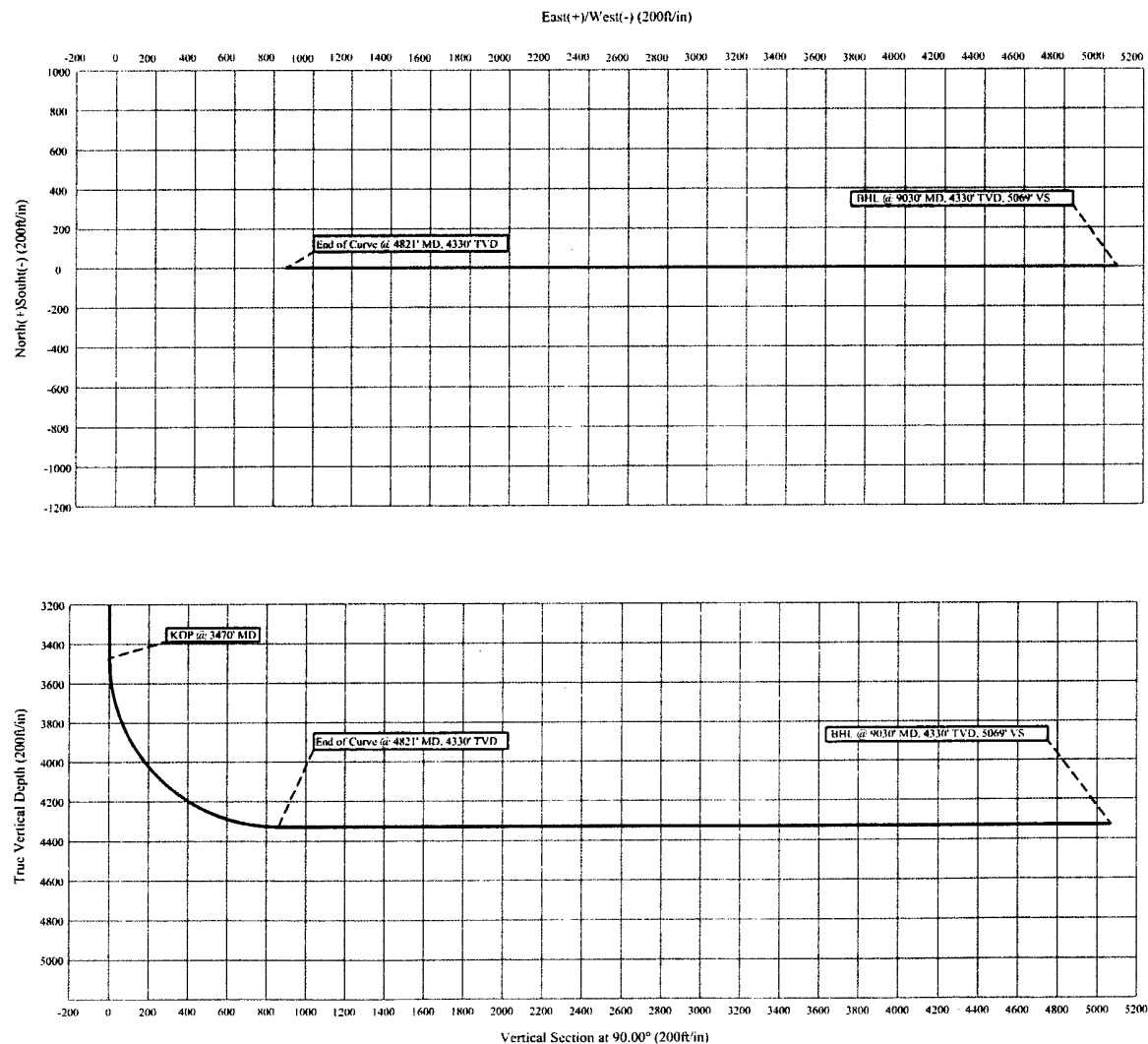
KOP @ 3470' MD  
 BUR = 6.7 DEG per 100 FT  
 End Curve @ 4821' MD, 4330' TVD  
 BHL @ 9030' MD, 4330' TVD, 5069' VS

# Parallel Petroleum Corp.

Box Cars 1921-13 Federal #1  
S/2 Sec. 13, T-19-S, R-21-E  
Eddy County, New Mexico

## COMPANY DETAILS

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



## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Parallel Petroleum Corp.  
Well Name & No. Box Cars 1921-13 Federal # 1  
Location: 710'FSL, 200'FEL, SEC14, T19S, R21E, Eddy County, NM  
BHL: 710'FSL, 660'FEL, SEC13, T19S, R21E, Eddy County, NM  
Lease: NM-103570

### I. DRILLING OPERATIONS REQUIREMENTS:

A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance, at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 - for wells in Eddy County, in sufficient time for a representative to witness:

1. Spudding
2. Cementing casing: 16 inch 8.625 inch 5.5 inch
3. BOP tests

B. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan is N/A.

C. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

D. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

E. If floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

### II. CASING:

A. The 8.625 inch surface casing shall be set at 1500 feet and cement circulated to the surface.

1. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
2. Wait on Cement (WOC) time for a primary cement job will be a minimum of 12 hours for a non-water basin, 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, which ever is greater. (This is to include the lead cement)
3. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds of compression strength, which ever is greater.
4. If cement falls back, Remedial cementing shall be completed prior to drilling out that string.

B. The minimum required fill of cement behind the 5.5 inch production casing is cement shall extend upward a minimum of 200 feet above the base of the intermediate casing string. If circulation is lost on the surface casing well bore, cement will be circulated to the surface.

D. If hard band drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

### **III. PRESSURE CONTROL:**

A. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2.

B. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the 8.625 inch casing shall be 2000 psi.

C. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

1. The tests shall be done by an independent service company.
2. The results of the test shall be reported to the appropriate BLM office.
3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of the independent service company test will be submitted to the appropriate BLM office.
4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi in accordance with API RP 53. The test will be held for a minimum of 10 minutes if the test is done with a test plug and 30 minutes without a test plug.
5. A variance to test the \_\_\_\_\_ to the reduced pressure of \_\_\_\_psi with the rig pumps is approved the BOP/BOPE must be tested by an independent service company.

### **IV. Hazards:**

1. Our geologist has indicated that there is potential for lost circulation in the San Andres, Glorieta and Wolfcamp formations.
2. Our geologist has indicated that there is potential for high pressure in the Wolfcamp.
3. Our geologist has indicated that there is medium potential for Cave / Karst features

**Engineering may be contacted at 505-706-2779 for variances if necessary.**

**FWright 3/16/07**