

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB NO. 1004-0135  
Expires July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.**5. Lease Serial No  
NMLC029415A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No

8 Well Name and No  
PUCKETT 13 FEDERAL COM 8H9. API Well No.  
30-015-3965810. Field and Pool, or Exploratory  
FREN; GLORIETA-YESO,EAST11. County or Parish, and State  
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1 Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2 Name of Operator  
COG OPERATING LLCContact. KANICIA CASTILLO  
E-Mail: kcastillo@concho.com3a Address  
550 WEST TEXAS AVE, STE 100  
MIDLAND, TX 797013b Phone No (include area code)  
Ph: 432-685-4332

4. Location of Well (Footage, Sec, T, R, M., or Survey Description)

Sec 12 T17S R31E Mer NMP 232FSL 459FEL  
32.842463 N Lat, 103.815494 W Lon**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Drilling Operations
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

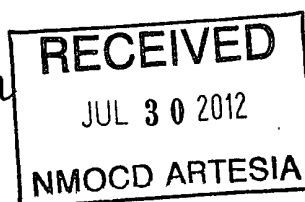
13 Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG Operating LLC respectfully requests to drill a second lateral as follows:  
Puckett 13 Federal #8H MIDDLE LATERAL PROGRAM

1. Estimated Tops of Important Geologic Markers  
Yeso Group +/- 5323'

2. Estimated Depths of Anticipated Fresh Water, Oil, and Gas  
Yeso Group +/- 5323'

This deepening originates in the Yeso and will finish in the Yeso. The entire Yeso group is an oil and gas bearing interval.

Accepted for record  
NMOCDAccepted for record  
NMOCD

14 I hereby certify that the foregoing is true and correct

**Electronic Submission #142753 verified by the BLM Well Information System  
For COG OPERATING LLC, sent to the Carlsbad**

Name (Printed/Typed) KANICIA CASTILLO

Title PREPARER

Signature (Electronic Submission)

Date 07/11/2012

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By	Title	Date
Conditions of approval, if any, are attached. Approval of this notice 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	Office	

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.

**\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\***

## Additional data for EC transaction #142753 that would not fit on the form

### 32. Additional remarks, continued

#### 3. Casing Program

Hole Size Interval OD Casing Weight Grade\*\* Jt./Condition Burst/collapse/tension  
6-1/8" 5688 211084 4.5 13.5# L-80 LTC/New 3.98/4.09/3.21 (L80)

#### 4. Cement Program

4.5" Liner: No cement planned; external packers will be used for stimulation isolation.

NOTE: COG OPERATING LLC REQUESTS A VARIANCE TO THE LINER TOP FLUID ENTRY OR PRESSURE TEST BECAUSE THE NEW LATERAL WILL BE COMPLETED IN THE SAME ZONE AS THE CURRENT PERFS AND THE ENTIRE INTERVAL IS RECOGNIZED BY THE OCD AS ONE INTERVAL (YESO). AS PER ONSHORE ORDER NO. 2 SECT III: REQUIREMENTS, PART B. CASING AND CEMENTING REQUIREMENTS, SUBPART b NO TEST SHALL BE REQUIRED FOR LINERS THAT DO NOT INCORPORATE OR NEED A SEAL MECHANISM. COG BELIEVES WE MEET THE CRITERIA TO NOT BE REQUIRED TESTING THE LINER TOP BECAUSE THERE IS NO NEED FOR A SEAL MECHANISM.

NOTE: COG OPERATING LLC REQUESTS A VARIANCE TO THE 200' MINIMUM TIE BACK TO THE PRODUCTION CASING BECAUSE THE BOTTOM LATERAL IS PRODUCTIVE FROM THE YESO BELOW THIS PROPOSED LATERAL, COG DESIRES TO NOT COVER THAT OR MAKE IT INACCESSIBLE WITH A LINER OVERLAP.

#### 5. Minimum Specifications for Pressure Control

The BOP equipment will be a 2000 psi double ram type manually operated preventer. This equipment will be nipped up to a 7-1/16" 3K flange. The pipe rams are located above blind rams.

The BOP is tested to 1000 psi prior to drilling new formation. Access to the annulus will be through the valves on the 7-1/16" casing head.

#### 6. Types and Characteristics of the Proposed Mud System

This well will be drilled from the window that is cut in the 7" casing to TD with FW/CBW drilling mud

#### 7. Auxiliary Well Control and Monitoring Equipment

A. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

#### 8. Logging, Testing, and Coring Program

A. The electric logging program will consist of MWD GR, which will be run from TD to 7" production casing sidetrack.

B. No drill stem tests.

C. No conventional coring anticipated.

Continued on attachment.

## Puckett 13 Federal #8H MIDDLE LATERAL PROGRAM

### 1. Estimated Tops of Important Geologic Markers

Yeso Group +/- 5323'

### 2. Estimated Depths of Anticipated Fresh Water, Oil, and Gas

Yeso Group +/- 5323'

This deepening originates in the Yeso and will finish in the Yeso. The entire Yeso group is an oil and gas bearing interval.

### 3. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade**	Jt./Condition	Burst/collapse/tension
6-1/8"	5688'-11084'	4.5"	13.5#	L-80	LTC/New	3.98/4.09/3.21 (L80)

### 4. Cement Program

4.5" Liner: No cement planned; external packers will be used for stimulation isolation.

**NOTE: COG OPERATING LLC REQUESTS A VARIANCE TO THE LINER TOP FLUID ENTRY OR PRESSURE TEST BECAUSE THE NEW LATERAL WILL BE COMPLETED IN THE SAME ZONE AS THE CURRENT PERFS AND THE ENTIRE INTERVAL IS RECOGNIZED BY THE OCD AS ONE INTERVAL (YESO). AS PER ONSHORE ORDER NO. 2 SECT III: REQUIREMENTS, PART B. CASING AND CEMENTING REQUIREMENTS, SUBPART b. "NO TEST SHALL BE REQUIRED FOR LINERS THAT DO NOT INCORPORATE OR NEED A SEAL MECHANISM." COG BELIEVES WE MEET THE CRITERIA TO NOT BE REQUIRED TESTING THE LINER TOP BECAUSE THERE IS NO NEED FOR A SEAL MECHANISM.**

**NOTE: COG OPERATING LLC REQUESTS A VARIANCE TO THE 200' MINIMUM TIE BACK TO THE PRODUCTION CASING BECAUSE THE BOTTOM LATERAL IS PRODUCTIVE FROM THE YESO BELOW THIS PROPOSED LATERAL, COG DESIRES TO NOT COVER THAT OR MAKE IT INACCESSIBLE WITH A LINER OVERLAP.**

### 5. Minimum Specifications for Pressure Control

The BOP equipment will be a 2000 psi double ram type manually operated preventer. This equipment will be nipped up to a 7-1/16" 3K flange. The pipe rams are located above blind rams.

The BOP is tested to 1000 psi prior to drilling new formation. Access to the annulus will be through the valves on the 7-1/16" casing head.

### 6. Types and Characteristics of the Proposed Mud System

This well will be drilled from the window that is cut in the 7" casing to TD with FW/CBW drilling mud.

### 7. Auxillary Well Control and Monitoring Equipment

- A. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

### 8. Logging, Testing, and Coring Program

- A. The electric logging program will consist of MWD GR, which will be run from TD to 7" production casing sidetrack.
- B. No drill stem tests.
- C. No conventional coring anticipated.

- D. Further testing procedures will be determined after the 4-1/2" casing has been run to TD, based on drill shows and log evaluation.

#### **9. Abnormal Conditions, Pressure, Temperatures, and Potential Hazards**

No abnormal pressures or temperatures are anticipated. The estimated bottomhole temperature at TD is 110 degrees and the estimated maximum bottomhole pressure is 2300 psig. The drilling starts in the Yeso and ends in the Yeso. The section of Yeso being drilled has very low permeability (less than 1 md).

#### **10. Anticipated Starting Date and Duration of Operations**

There will be no road or location work required as this is an existing well location. Once commenced, drilling operations should be finished in approximately 20 days. If the well is productive, an additional 30-90 days will be required for completion and testing before a decision is made to remove the whipstock and RBP separating the laterals, to commingle the production from the two laterals.

#### **11. Centralizer Program**

Centralizers will not be run or required due to the lack of cement and the centralizing nature of the external casing packers.

#### **12. Summary Drilling and Completion Program**

##### **Preparatory/2<sup>ND</sup> Lateral Procedure**

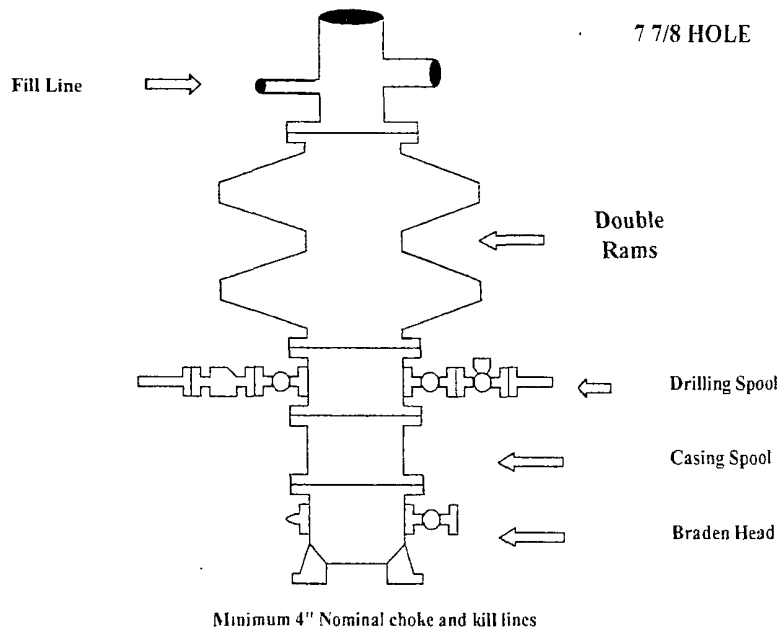
1. Pull test anchors. MIRU pulling unit.
2. TOH with production equipment (tally and stand back tubing) and LD.
3. PU 6-1/8" bit and scraper, TIH to 5900'. TOH.
4. RU wireline. Run GR/CCL correlation log from 5900' to 5200'.
5. Set RBP at +/- 5775'. RU pump truck, test casing and RBP to 1000 psi for 30 minutes. TIH OE, spot 15' sand on RBP. TOH, LD tubing, RD BOPE, RD pulling unit.
6. MIRU Key or Basic workover rig & horizontal package. NU hydraulic 6" 3M double BOP w/2-7/8" pipe rams on top & blind rams on bottom. Wellhead has 6" 900 series flanged connection. Move in and rig up pumps, closed loop solids control equipment, power swivel, frac tanks, generators, pipe racks, and other equipment. Use rig pump to test BOP, casing & RBP to 500 psi for 30 minutes, close blind rams in BOP and test BOP above rams to 1000/200 psi for 30 minutes and document on report.
7. PU & TIH w/spacer, anchor, retrievable whipstock (3° slide), starting mill, & UBHO on workstring. (Line up UBHO & whipstock face on surface. Gyro stinger should be inserted into UBHO to check for compatibility and orientation.) TIH to within 20' of setting depth. Pull up to next connection & RU Gyro. Take check shot & orient whipstock while working out all torque.
8. If orientation is satisfactory, set anchor (bottom of anchor 2' above casing collar, at approximately 5675'). Pull 5,000# upstrain to check anchor set, then set down 20-30,000# weight to shear running bolt. RD Gyro.

9. After obtaining free torque, record Pick-Up & Slack-Off weights. Make starting cut through casing wall (approximately 30" total). Sweep with high viscosity polymer pills (if needed) to clean hole. Install two (2) or more ditch magnets at flowline. TOH.
10. TIH with window mill, watermelon mill, & string mill on workstring. Mill window from 5661' to 5670', plus 5' of open hole (KOP - +/-5675')(or depth required by directional company). Circulate hole clean. TOH. (Trip & ream through finished window several times to make sure it is fully open. Check mill gauges after laying down.) Fax in the fisherman's diagram of the window. Verify that the depths on the diagram match the depths on the morning report.
11. PU 6-1/8" bit, downhole motor, muleshoe (UBHO sub), (2) monel drill collars (Install MWD probe inside NMDC and obtain offset), XO flow sub, & muleshoe sub f/gyro on workstring. Surface test motor and MWD. TIH to btm filling pipe as necessary.
12. PU swivel and establish circulation (130 gpm). RU Gyro. Time drill away from casing using continuous readout gyro for checking well path and tool face. Magnetic interference may occur, particularly while motor is in the window. If necessary, use gyro single shots for drilling away from casing. Once MWD readouts can function without magnetic influence from casing, RD Gyro & drill remaining curve at 164-200 GPM to EOC ( $\pm 6,432'$  MD 6,150' TVD) using MWD.
13. Build curve at  $12.0^\circ/100'$  BUR to planned inclination of  $91.0^\circ$  and azimuth (after gyro correction) of  $178.07^\circ$ . Survey as needed to ensure curve is built according to plan. Sweep hole with high viscosity polymer pills (if needed) for good hole cleaning. Sweep hole at least once per day.
14. At EOC, TOH. PU & TIH w/6-1/8" **PDC** bit, downhole motor, muleshoe (UBHO sub), (2) monel drill collars (Install MWD probe inside NMDC and obtain offset) & XO flow sub on 3-1/2" drill pipe or PH-6 workstring. TIH very carefully with bit through the casing window to prevent bit damage. Ream curve as necessary to remove any severe "kinks" or doglegs.
15. Drill the lateral section with the angle hold motor in the oriented and rotary mode as necessary. Drill at  $91.0^\circ$  inclination,  $178.07^\circ$  azimuth for a total of 5181' vertical section at lease line (estimated to be at 11,084' MD, 6,069' TVD). Take surveys every 30' or as needed to maintain inclination and direction.
16. At TD, circ hole clean. Make reamer runs as required. TOH, LD DP and tools.
17. Run 4.5", 13.5# L-80 EUE 8rd LTC casing. With external casing packers for zonal stage treatment isolation (+/-15 stages), open hole liner hanger/packer at +/-5688', J-latch at +/-5685'; casing to surface. Set packers and liner hanger.
18. ND BOPE, NU WH w/cap.
19. RDMO rig.

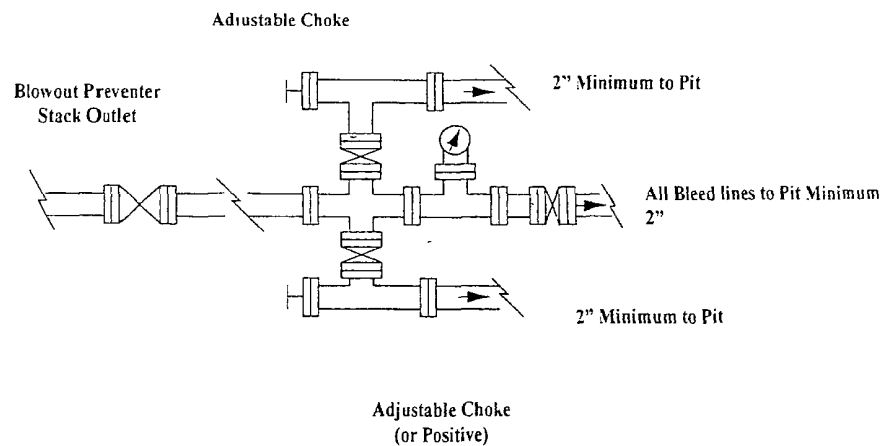
# COG Operating LLC

## Exhibit #9

### BOPE and Choke Schematic



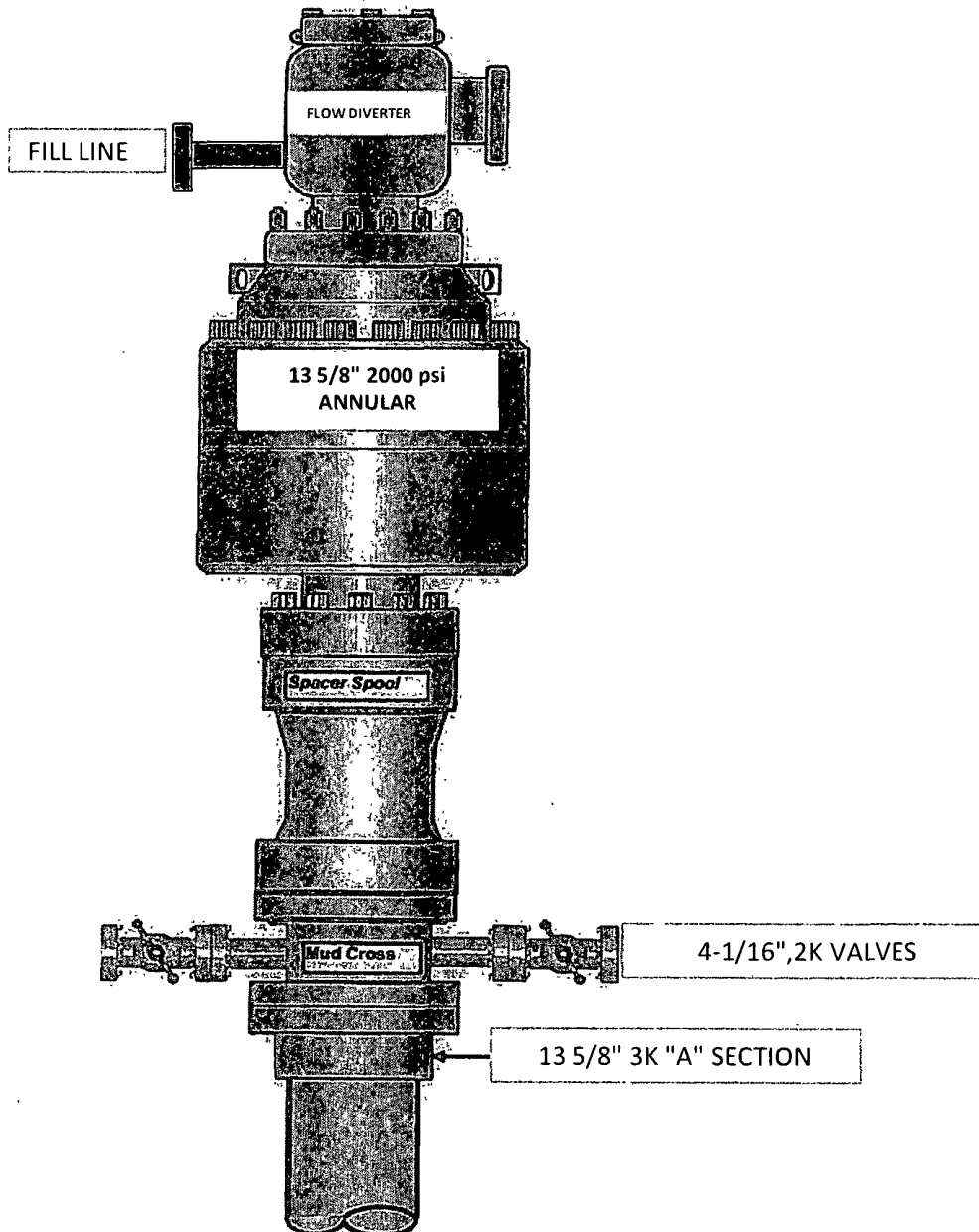
Choke Manifold Requirement (2000 psi WP)  
No Annular Required



**NOTES REGARDING THE BLOWOUT PREVENTERS**  
**Master Drilling Plan**  
**Eddy County, New Mexico**

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore
2. Wear ring to be properly installed in head
3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum
4. All fittings to be flanged.
5. Safety valve must be available on rig floor at all times with proper connections valve to be full 2000 psi WP minimum.
6. All choke and fill lines to be securely anchored especially ends of choke lines
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through
8. Kelly cock on Kelly
9. Extension wrenches and hands wheels to be properly installed
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications

**13 5/8" 2K ANNULAR**





## Completion Procedure

1. RU frac valve. Frac as per Completion Engineer's design, pumping down balls to open frac sleeves to treat zones isolated between open-hole packers. Rig down frac company.
2. After frac, rig up coiled tubing unit. Drill out sleeves.
3. Flow well back until fluid recovery reduces to 10 barrel/hour. Test well, including running pumping equipment as required for long-term lateral production testing.
4. Rig up Pulling unit. NU BOPE.
5. Release frac string from liner hanger. TOH. PU work string and TIH.
6. Retrieve whipstock. Retrieve RBP at +/-5775'.
7. Run production equipment & place on pump with both laterals commingled.
8. Report test results.

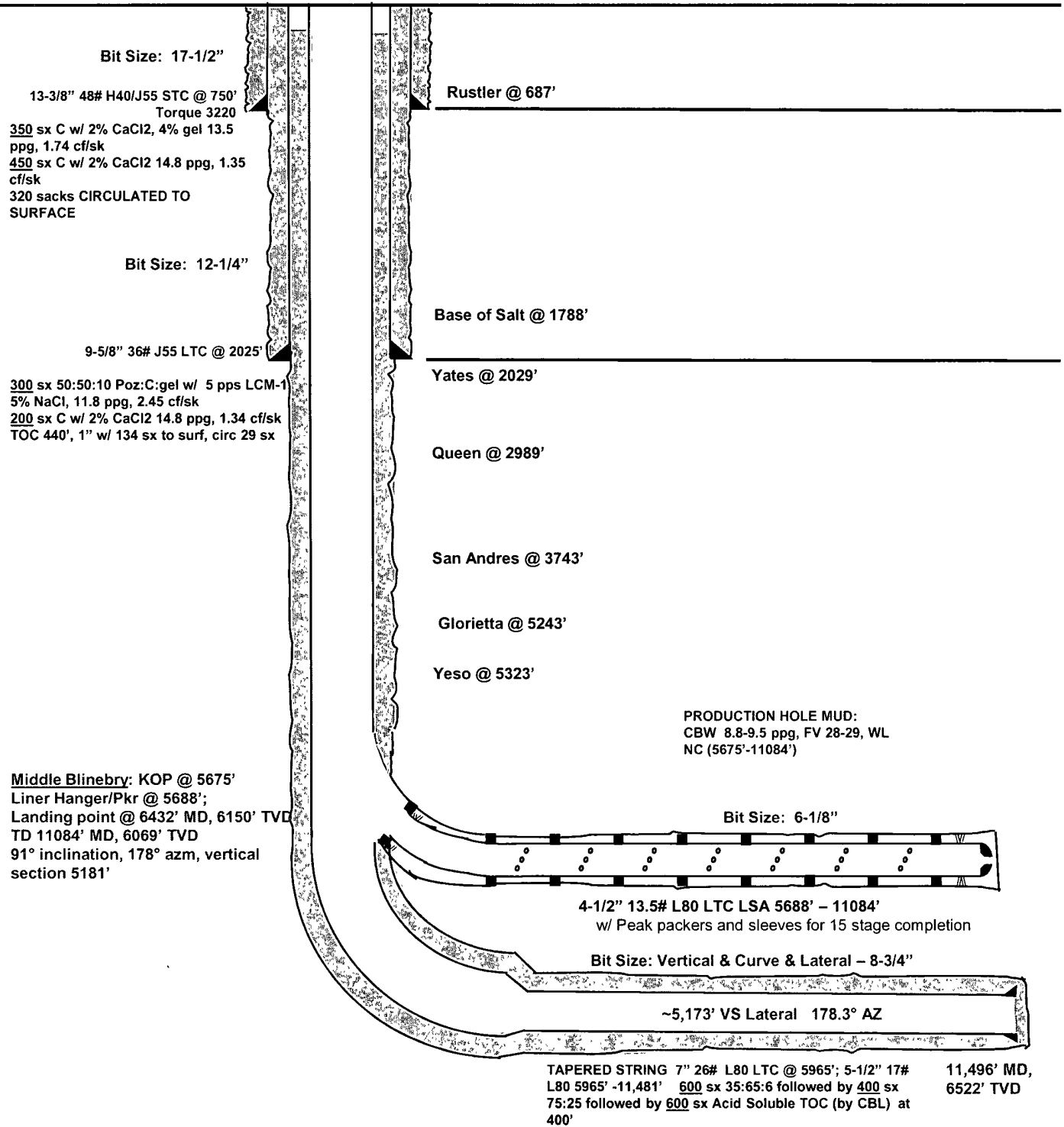
**Puckett 13 Federal #8H  
Blinebry/Paddock Horizontal  
Eddy County, New Mexico**

<u>Surface</u>	<u>Lateral Terminus</u>
232' FSL	330' FSL
459' FEL	330' FEL
S-12	S-13
T17S, R31E	

**Proposed Wellbore**

**API: 30-015-39658**

**KB: 14'  
GL: 3967'**



Bird: 7/2/12

# **COG Operating LLC**

**Eddy County, NM**

**Puckett 13 Federal Com 8H**

**Puckett 13 Federal Com 8H**

**Middle Horizontal - Upper Blinebry**

**Plan: ML Plan #1**

Surface: 232' FSL, 459' FEL, Sec 12, T17S, R31E, Unit P

BHL: 330' FSL, 330' FEL, Sec 13, T17S, R31E, Unit P

## **Standard Planning Report**

**15 June, 2012**

# Planning Report

<b>Database:</b>	Houston R5000 Database	<b>Local Co-ordinate Reference:</b>	Site Puckett 13 Federal Com 8H
<b>Company:</b>	COG Operating LLC	<b>TVD Reference:</b>	WELL @ 3981 00ft (United #40)
<b>Project:</b>	Eddy County, NM	<b>MD Reference:</b>	WELL @ 3981 00ft (United #40)
<b>Site:</b>	Puckett 13 Federal Com 8H	<b>North Reference:</b>	Grid
<b>Well:</b>	Puckett 13 Federal Com 8H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Middle Horizontal - Upper Blinebry		
<b>Design:</b>	ML Plan #1		

<b>Project</b>	Eddy County, NM		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

<b>Site</b>	Puckett 13 Federal Com 8H			
<b>Site Position:</b>		<b>Northing:</b>	670,589 00 ft	<b>Latitude:</b> 32 84245928
<b>From:</b>	Map	<b>Easting:</b>	659,043 10 ft	<b>Longitude:</b> -103 81549897
<b>Position Uncertainty:</b>	0 00 ft	<b>Slot Radius:</b>	13 200 in	<b>Grid Convergence:</b> 0 28 °

<b>Well</b>	Puckett 13 Federal Com 8H			
<b>Well Position</b>	<b>+N/-S</b>	0 00 ft	<b>Northing:</b>	670,589 00 ft
	<b>+E/-W</b>	0 00 ft	<b>Easting:</b>	659,043 10 ft
<b>Position Uncertainty</b>		0 00 ft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 3,967 00 ft

<b>Wellbore</b>	Middle Horizontal - Upper Blinebry				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2010	6/15/2012	7 62	60 69	48,858

<b>Design</b>	ML Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	5,675 60
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0 00	0 00	0 00	178 24

<b>Plan Sections</b>										
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>	<b>TFO</b>	<b>Target</b>
<b>Depth</b>	(°)	(°)	<b>Depth</b>	(ft)	(ft)	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
5,675 60	0 45	231 97	5,674 85	-46 49	-11 55	0 00	0 00	0 00	0 00	
6,431 66	91 00	178 07	6,150 00	-532 06	1 76	12 00	11 98	-7 13	-53 90	
11,084 25	91 00	178 07	6,069 20	-5,181 30	158 80	0 00	0 00	0 00	0 00	PBHL (Puckett 13 Fec

# Planning Report

<b>Database:</b>	Houston R5000 Database	<b>Local Co-ordinate Reference:</b>	Site Puckett 13 Federal Com 8H
<b>Company:</b>	COG Operating LLC	<b>TVD Reference:</b>	WELL @ 3981 00ft (United #40)
<b>Project:</b>	Eddy County, NM	<b>MD Reference:</b>	WELL @ 3981 00ft (United #40)
<b>Site:</b>	Puckett 13 Federal Com 8H	<b>North Reference:</b>	Grid
<b>Well:</b>	Puckett 13 Federal Com 8H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Middle Horizontal - Upper Blinberry		
<b>Design:</b>	ML Plan #1		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,675 60	0 45	231 97	5,674 85	-46 49	-11 55	46 11	0 00	0 00	0 00
<b>KOP - Start Build @ 12.00°/100'</b>									
5,700 00	3 22	184 61	5,699 23	-47 23	-11 68	46 85	12 00	11 32	-194 11
5,800 00	15 20	179 42	5,797 77	-63 19	-11 77	62 80	12 00	11 98	-5 19
5,900 00	27 20	178 79	5,890 83	-99 28	-11 16	98 89	12 00	12 00	-0 64
6,000 00	39 20	178 52	5,974 36	-153 92	-9 85	153 54	12 00	12 00	-0 26
6,100 00	51 20	178 37	6,044 69	-224 71	-7 92	224 36	12 00	12 00	-0 15
6,200 00	63 20	178 26	6,098 77	-308 58	-5 44	308 26	12 00	12 00	-0 11
6,300 00	75 20	178 17	6,134 22	-401 84	-2 53	401 57	12 00	12 00	-0 09
6,400 00	87 20	178 09	6,149 50	-500 43	0 69	500 21	12 00	12 00	-0 08
6,431 66	91 00	178 07	6,150 00	-532 06	1 76	531 87	12 00	12 00	-0 08
<b>Landing Point - Hold @ 90.99° INC, 178.07° AZ</b>									
6,500 00	91 00	178 07	6,148 82	-600 35	4 06	600 19	0 00	0 00	0 00
6,600 00	91 00	178 07	6,147 08	-700 28	7 44	700 18	0 00	0 00	0 00
6,700 00	91 00	178 07	6,145 34	-800 21	10 81	800 16	0 00	0 00	0 00
6,800 00	91 00	178 07	6,143 61	-900 13	14 19	900 15	0 00	0 00	0 00
6,900 00	91 00	178 07	6,141 87	-1,000 06	17 56	1,000 13	0 00	0 00	0 00
7,000 00	91 00	178 07	6,140 13	-1,099 99	20 94	1,100 12	0 00	0 00	0 00
7,100 00	91 00	178 07	6,138 40	-1,199 92	24 31	1,200 10	0 00	0 00	0 00
7,200 00	91 00	178 07	6,136 66	-1,299 85	27 69	1,300 08	0 00	0 00	0 00
7,300 00	91 00	178 07	6,134 92	-1,399 77	31 07	1,400 07	0 00	0 00	0 00
7,400 00	91 00	178 07	6,133 19	-1,499 70	34 44	1,500 05	0 00	0 00	0 00
7,500 00	91 00	178 07	6,131 45	-1,599 63	37 82	1,600 04	0 00	0 00	0 00
7,600 00	91 00	178 07	6,129 71	-1,699 56	41 19	1,700 02	0 00	0 00	0 00
7,700 00	91 00	178 07	6,127 97	-1,799 49	44 57	1,800 01	0 00	0 00	0 00
7,800 00	91 00	178 07	6,126 24	-1,899 41	47 94	1,899 99	0 00	0 00	0 00
7,900 00	91 00	178 07	6,124 50	-1,999 34	51 32	1,999 98	0 00	0 00	0 00
8,000 00	91 00	178 07	6,122 76	-2,099 27	54 69	2,099 96	0 00	0 00	0 00
8,100 00	91 00	178 07	6,121 03	-2,199 20	58 07	2,199 94	0 00	0 00	0 00
8,200 00	91 00	178 07	6,119 29	-2,299 13	61 44	2,299 93	0 00	0 00	0 00
8,300 00	91 00	178 07	6,117 55	-2,399 05	64 82	2,399 91	0 00	0 00	0 00
8,400 00	91 00	178 07	6,115 82	-2,498 98	68 20	2,499 90	0 00	0 00	0 00
8,500 00	91 00	178 07	6,114 08	-2,598 91	71 57	2,599 88	0 00	0 00	0 00
8,600 00	91 00	178 07	6,112 34	-2,698 84	74 95	2,699 87	0 00	0 00	0 00
8,700 00	91 00	178 07	6,110 61	-2,798 77	78 32	2,799 85	0 00	0 00	0 00
8,800 00	91 00	178 07	6,108 87	-2,898 69	81 70	2,899 84	0 00	0 00	0 00
8,900 00	91 00	178 07	6,107 13	-2,998 62	85 07	2,999 82	0 00	0 00	0 00
9,000 00	91 00	178 07	6,105 40	-3,098 55	88 45	3,099 80	0 00	0 00	0 00
9,100 00	91 00	178 07	6,103 66	-3,198 48	91 82	3,199 79	0 00	0 00	0 00
9,200 00	91 00	178 07	6,101 92	-3,298 40	95 20	3,299 77	0 00	0 00	0 00
9,300 00	91 00	178 07	6,100 19	-3,398 33	98 57	3,399 76	0 00	0 00	0 00
9,400 00	91 00	178 07	6,098 45	-3,498 26	101 95	3,499 74	0 00	0 00	0 00
9,500 00	91 00	178 07	6,096 71	-3,598 19	105 32	3,599 73	0 00	0 00	0 00
9,600 00	91 00	178 07	6,094 98	-3,698 12	108 70	3,699 71	0 00	0 00	0 00
9,700 00	91 00	178 07	6,093 24	-3,798 04	112 08	3,799 70	0 00	0 00	0 00
9,800 00	91 00	178 07	6,091 50	-3,897 97	115 45	3,899 68	0 00	0 00	0 00
9,900 00	91 00	178 07	6,089 77	-3,997 90	118 83	3,999 66	0 00	0 00	0 00
10,000 00	91 00	178 07	6,088 03	-4,097 83	122 20	4,099 65	0 00	0 00	0 00
10,100 00	91 00	178 07	6,086 29	-4,197 76	125 58	4,199 63	0 00	0 00	0 00
10,200 00	91 00	178 07	6,084 56	-4,297 68	128 95	4,299 62	0 00	0 00	0 00
10,300 00	91 00	178 07	6,082 82	-4,397 61	132 33	4,399 60	0 00	0 00	0 00
10,400 00	91 00	178 07	6,081 08	-4,497 54	135 70	4,499 59	0 00	0 00	0 00
10,500 00	91 00	178 07	6,079 35	-4,597 47	139 08	4,599 57	0 00	0 00	0 00
10,600 00	91 00	178 07	6,077 61	-4,697 40	142 45	4,699 56	0 00	0 00	0 00

# Planning Report

<b>Database:</b>	Houston R5000 Database	<b>Local Co-ordinate Reference:</b>	Site Puckett 13 Federal Com 8H
<b>Company:</b>	COG Operating LLC	<b>TVD Reference:</b>	WELL @ 3981 00ft (United #40)
<b>Project:</b>	Eddy County, NM	<b>MD Reference:</b>	WELL @ 3981 00ft (United #40)
<b>Site:</b>	Puckett 13 Federal Com 8H	<b>North Reference:</b>	Grid
<b>Well:</b>	Puckett 13 Federal Com 8H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Middle Horizontal - Upper Blinebry		
<b>Design:</b>	ML Plan #1		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,700 00	91 00	178 07	6,075 87	-4,797 32	145 83	4,799 54	0 00	0 00	0 00
10,800 00	91 00	178 07	6,074 14	-4,897 25	149 21	4,899 52	0 00	0 00	0 00
10,900 00	91 00	178 07	6,072 40	-4,997 18	152 58	4,999 51	0 00	0 00	0 00
11,000 00	91 00	178 07	6,070 66	-5,097 11	155 96	5,099 49	0 00	0 00	0 00
11,084 25	91 00	178 07	6,069 20	-5,181 30	158 80	5,183 73	0 00	0 00	0 00
TD @ 11084.25' MD, 6069.20' TVD - PBHL (Puckett 13 Federal Com 8H ML Plan 1)									

## Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL (Puckett 13 Feder	0 00	0 00	6,069 20	-5,181 30	158 80	665,407 70	659,201 90	32 82821578	-103 81506468
- plan hits target center									
- Point									

## Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,675 60	5,674 85	-46 49	-11 55	KOP - Start Build @ 12 00°/100'
6,431 66	6,150 00	-532 06	1 76	Landing Point - Hold @ 90 99° INC, 178 07° AZ
11,084 25	6,069 20	-5,181 30	158 80	TD @ 11084.25' MD, 6069 20' TVD



COG Operating LLC  
Puckett 13 Federal Com 8H  
Eddy County, NM  
ML Plan #1



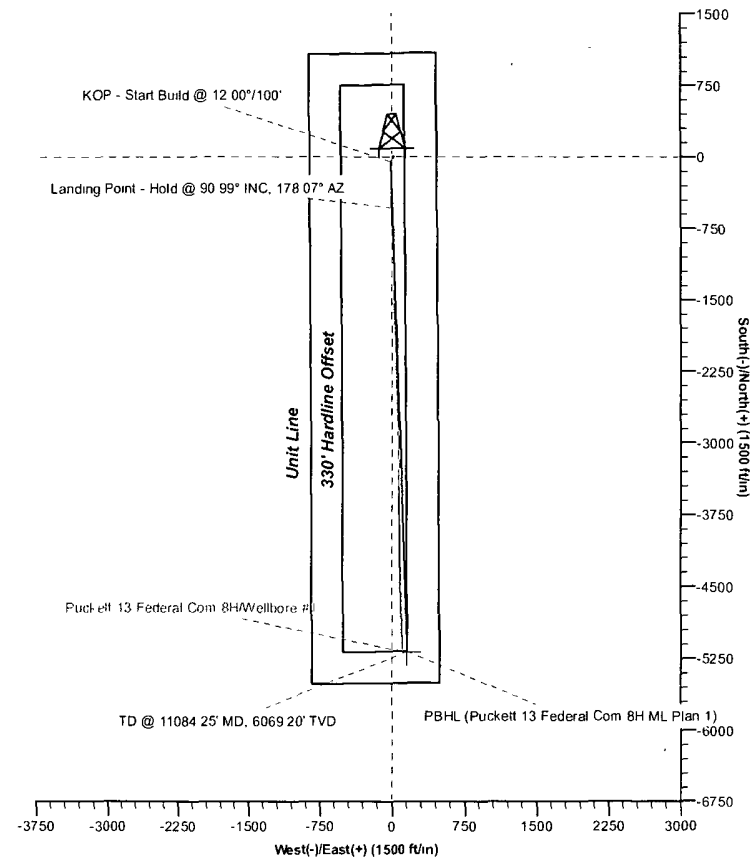
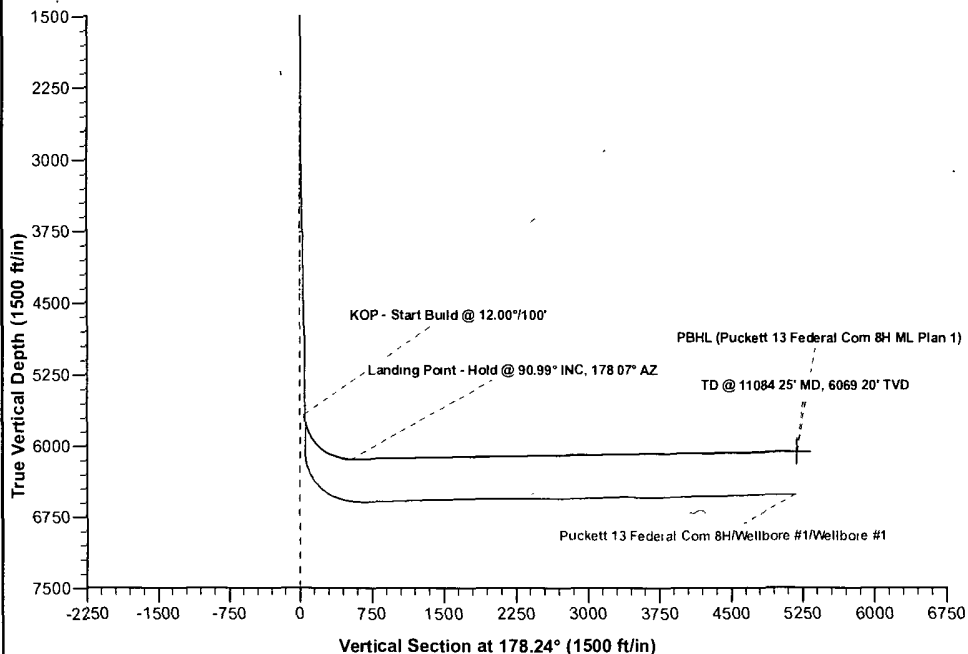
Surface Location		Ground Elev: 3967.00 WELL @ 3981.00ft (United #40)			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	670589.00	659043.10	32.84245928	-103.81549896

TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (Puckett 13 Federal Com 8H ML Plan 1)	6069.20	-5181.30	158.80	665407.70	659201.90	32.82821578	-103.81506468



Azimuths to Grid North  
True North -0.28°  
Magnetic North 7.34°

Magnetic Field  
Strength 48857.6snT  
Dip Angle 60.69°  
Date 6/15/2012  
Model IGRF2010



SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Annotation	
1	5675.60	0.45	231.97	5674.85	-46.49	-11.55	0.00	0.00	46.11	KOP - Start Build @ 12.00°/100°	
2	6431.66	91.00	178.07	6150.00	-532.06	1.76	12.00	-53.90	531.87	Landing Point - Hold @ 90.99° INC, 178.07° AZ	
3	11084.25	91.00	178.07	6069.20	-5181.30	158.80	0.00	0.00	5183.73	TD @ 11084.25' MD, 6069.20' TVD	