

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

HOBBS OCD

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014

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.

MAY 12 2014

SUBMIT IN TRIPLICATE - Other Instructions on page 2.

RECEIVED

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM97153
2. Name of Operator BTA Oil Producers LLC		6. If Indian, Allottee, or Tribe Name ---
3a. Address 104 S Pecos Midland, TX 79701	3b. Phone No. (include area code) 432-682-3753	7. If Unit or CA, Agreement Name and/or No. ---
4. Location of Well (Frontage, Sec., T., R., M., or Survey Description) 190' FNL & 2310' FEL Unit Letter B (NWNE) Sec 10-25S-33E		8. Well Name and No. 9418 JV-P Vaca Draw #3H
Lat. Long.		9. API Well No. 30-025-41622
		10. Field and Pool, or Exploratory Area Red Hills; Upper Bone Spring Shale
		11. County or Parish, State Lea County NM

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-off
☐ Subsequent Report	☐ Altering Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ Change Plans	☐ Plug and abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug back	☐ 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 or pertinent markers and sands. Attach the Bond under which the work will performed or provide the Bond No. on file with the 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 Notice 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.)

BTA Oil Producers LLC respectfully requests approval for the following changes to the original approved APD.

Kick off and drill 7-7/8" curve & lateral to 15,706' MD/11,100' TVD (see attached directional plan)

Run 5-1/2" 17# P-110 csg to TD LTL

Cmt in 1 stage with:

Lead: 1000 sx 36:65:6 H + Salt + Gilsonite + CF + CFR-3 @ 10.4 ppg/2.85 yield

Tail: 950 sx 50:50:2 H + Salt + GasStop + CFR-3 @ 14.4 ppg/1.25 yield

35% excess on OH

Designed to circulate cement to surface

14. I hereby certify that the foregoing is true and correct.

Name (Printed/ Typed)

Pam Inskeep

Title: Regulatory Administrator

Signature: Pam Inskeep

Date: 5/6/14

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by:

Title:

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 any deposition, statement, or representation as to any matter within its jurisdiction.

(Instructions on page 2)

APPROVED

MAY 6 2014

Chris Walls

BUREAU OF LAND MANAGEMENT

CARLSBAD FIELD OFFICE

MAY 14 2014



COG Operating LLC

Lea County, NM (NAD27 NME)

9418 JV-P Vaca Draw

3H

OH

HOBBS OCD

MAY 12 2014

Plan: Plan #2

RECEIVED

Standard Planning Report

05 May, 2014



Wellplanning Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 3H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3440.2usft (Original Well Elev)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	WELL @ 3440.2usft (Original Well Elev)
Site:	9418 JV-P Vaca Draw	North Reference:	Grid
Well:	3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Project	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	9418 JV-P Vaca Draw		
Site Position:		Northing:	419,780.50 usft
From:	Map	Easting:	741,734.30 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 9' 6.058 N
		Longitude:	103° 33' 8.114 W
		Grid Convergence:	0.42 °

Well	3H		
Well Position	+N/-S	-12.2 usft	Northing:
	+E/-W	-1,979.9 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	
		Latitude:	32° 9' 6.079 N
		Longitude:	103° 33' 31.144 W
		Ground Level:	3,422.2 usft

Wellbore:	OH		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/24/2013	7.29	60.07	48,346

Design	Plan #2		
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Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°)
			178.96

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,662.5	0.00	0.00	10,662.5	0.0	0.0	0.00	0.00	0.00	0.00	
11,417.0	90.53	172.00	11,140.0	-477.2	67.1	12.00	12.00	0.00	172.00	
11,738.8	90.53	180.04	11,137.0	-798.0	89.4	2.50	0.00	2.50	89.93	
15,706.9	90.53	180.04	11,100.0	-4,765.9	86.3	0.00	0.00	0.00	0.00	PBHL 9418 JV-P Vaca



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Site:	9418 JV-P Vaca Draw	North Reference:	Grid
Well:	3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00



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Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00
9,500.0	0.00	0.00	9,500.0	0.0	0.0	0.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,600.0	0.0	0.0	0.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,700.0	0.0	0.0	0.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,800.0	0.0	0.0	0.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,900.0	0.0	0.0	0.0	0.00	0.00	0.00
10,000.0	0.00	0.00	10,000.0	0.0	0.0	0.0	0.00	0.00	0.00
10,100.0	0.00	0.00	10,100.0	0.0	0.0	0.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,200.0	0.0	0.0	0.0	0.00	0.00	0.00
10,300.0	0.00	0.00	10,300.0	0.0	0.0	0.0	0.00	0.00	0.00
10,400.0	0.00	0.00	10,400.0	0.0	0.0	0.0	0.00	0.00	0.00
10,500.0	0.00	0.00	10,500.0	0.0	0.0	0.0	0.00	0.00	0.00
10,600.0	0.00	0.00	10,600.0	0.0	0.0	0.0	0.00	0.00	0.00
10,662.5	0.00	0.00	10,662.5	0.0	0.0	0.0	0.00	0.00	0.00



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Wellbore:	OH		
Design:	Plan #2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
KOP - 10662.5 MD, 0.00° INC, 0.00° AZI										
10,675.0	1.50	172.00	10,675.0	-0.2	0.0	0.2	12.00	12.00	0.00	
10,700.0	4.50	172.00	10,700.0	-1.5	0.2	1.5	12.00	12.00	0.00	
10,725.0	7.50	172.00	10,724.8	-4.0	0.6	4.1	12.00	12.00	0.00	
10,750.0	10.50	172.00	10,749.5	-7.9	1.1	7.9	12.00	12.00	0.00	
10,775.0	13.50	172.00	10,774.0	-13.1	1.8	13.1	12.00	12.00	0.00	
10,800.0	16.50	172.00	10,798.1	-19.5	2.7	19.5	12.00	12.00	0.00	
10,825.0	19.50	172.00	10,821.9	-27.1	3.8	27.2	12.00	12.00	0.00	
10,850.0	22.50	172.00	10,845.2	-36.0	5.1	36.1	12.00	12.00	0.00	
10,875.0	25.50	172.00	10,868.1	-46.1	6.5	46.2	12.00	12.00	0.00	
10,900.0	28.50	172.00	10,890.3	-57.3	8.1	57.4	12.00	12.00	0.00	
10,925.0	31.50	172.00	10,912.0	-69.7	9.8	69.8	12.00	12.00	0.00	
10,950.0	34.50	172.00	10,932.9	-83.1	11.7	83.3	12.00	12.00	0.00	
10,975.0	37.50	172.00	10,953.2	-97.7	13.7	97.9	12.00	12.00	0.00	
11,000.0	40.50	172.00	10,972.6	-113.3	15.9	113.5	12.00	12.00	0.00	
11,025.0	43.49	172.00	10,991.2	-129.8	18.2	130.1	12.00	12.00	0.00	
11,050.0	46.49	172.00	11,008.8	-147.3	20.7	147.7	12.00	12.00	0.00	
11,075.0	49.49	172.00	11,025.6	-165.7	23.3	166.1	12.00	12.00	0.00	
11,100.0	52.49	172.00	11,041.3	-185.0	26.0	185.4	12.00	12.00	0.00	
11,125.0	55.49	172.00	11,056.0	-205.0	28.8	205.5	12.00	12.00	0.00	
11,150.0	58.49	172.00	11,069.6	-225.7	31.7	226.3	12.00	12.00	0.00	
11,175.0	61.49	172.00	11,082.1	-247.2	34.7	247.8	12.00	12.00	0.00	
11,200.0	64.49	172.00	11,093.5	-269.2	37.8	269.9	12.00	12.00	0.00	
11,225.0	67.49	172.00	11,103.6	-291.9	41.0	292.5	12.00	12.00	0.00	
11,250.0	70.49	172.00	11,112.6	-315.0	44.3	315.7	12.00	12.00	0.00	
11,275.0	73.49	172.00	11,120.3	-338.5	47.6	339.3	12.00	12.00	0.00	
11,300.0	76.49	172.00	11,126.8	-362.4	50.9	363.3	12.00	12.00	0.00	
11,325.0	79.49	172.00	11,132.0	-386.6	54.3	387.5	12.00	12.00	0.00	
11,350.0	82.49	172.00	11,135.9	-411.1	57.8	412.1	12.00	12.00	0.00	
11,375.0	85.49	172.00	11,138.5	-435.7	61.2	436.7	12.00	12.00	0.00	
11,400.0	88.49	172.00	11,139.9	-460.4	64.7	461.5	12.00	12.00	0.00	
11,417.0	90.53	172.00	11,140.0	-477.2	67.1	478.4	12.00	12.00	0.00	
EOC - 11417.0 MD, 90.53° INC, 172.00° AZI										
11,500.0	90.53	174.07	11,139.2	-559.6	77.1	560.9	2.50	0.00	2.50	
11,600.0	90.53	176.58	11,138.3	-659.3	85.3	660.7	2.50	0.00	2.50	
11,700.0	90.53	179.08	11,137.4	-759.2	89.1	760.7	2.50	0.00	2.50	
11,738.8	90.53	180.04	11,137.0	-798.0	89.4	799.4	2.50	0.00	2.50	
11,800.0	90.53	180.04	11,136.4	-859.2	89.3	860.7	0.00	0.00	0.00	
11,900.0	90.53	180.04	11,135.5	-959.2	89.2	960.6	0.00	0.00	0.00	
12,000.0	90.53	180.04	11,134.6	-1,059.2	89.2	1,060.6	0.00	0.00	0.00	
12,100.0	90.53	180.04	11,133.6	-1,159.2	89.1	1,160.6	0.00	0.00	0.00	
12,200.0	90.53	180.04	11,132.7	-1,259.2	89.0	1,260.6	0.00	0.00	0.00	
12,300.0	90.53	180.04	11,131.8	-1,359.2	88.9	1,360.6	0.00	0.00	0.00	
12,400.0	90.53	180.04	11,130.8	-1,459.2	88.9	1,460.5	0.00	0.00	0.00	
12,500.0	90.53	180.04	11,129.9	-1,559.2	88.8	1,560.5	0.00	0.00	0.00	
12,600.0	90.53	180.04	11,129.0	-1,659.2	88.7	1,660.5	0.00	0.00	0.00	
12,700.0	90.53	180.04	11,128.0	-1,759.1	88.6	1,760.5	0.00	0.00	0.00	
12,800.0	90.53	180.04	11,127.1	-1,859.1	88.6	1,860.4	0.00	0.00	0.00	
12,900.0	90.53	180.04	11,126.2	-1,959.1	88.5	1,960.4	0.00	0.00	0.00	
13,000.0	90.53	180.04	11,125.2	-2,059.1	88.4	2,060.4	0.00	0.00	0.00	
13,100.0	90.53	180.04	11,124.3	-2,159.1	88.3	2,160.4	0.00	0.00	0.00	
13,200.0	90.53	180.04	11,123.4	-2,259.1	88.2	2,260.4	0.00	0.00	0.00	
13,300.0	90.53	180.04	11,122.4	-2,359.1	88.2	2,360.3	0.00	0.00	0.00	
13,400.0	90.53	180.04	11,121.5	-2,459.1	88.1	2,460.3	0.00	0.00	0.00	



Wellplanning Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 3H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3440.2usft (Original Well Elev)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	WELL @ 3440.2usft (Original Well Elev)
Site:	9418 JV-P Vaca Draw	North Reference:	Grid
Well:	3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,500.0	90.53	180.04	11,120.6	-2,559.1	88.0	2,560.3	0.00	0.00	0.00	
13,600.0	90.53	180.04	11,119.6	-2,659.1	87.9	2,660.3	0.00	0.00	0.00	
13,700.0	90.53	180.04	11,118.7	-2,759.1	87.9	2,760.2	0.00	0.00	0.00	
13,800.0	90.53	180.04	11,117.8	-2,859.1	87.8	2,860.2	0.00	0.00	0.00	
13,900.0	90.53	180.04	11,116.9	-2,959.1	87.7	2,960.2	0.00	0.00	0.00	
14,000.0	90.53	180.04	11,115.9	-3,059.1	87.6	3,060.2	0.00	0.00	0.00	
14,100.0	90.53	180.04	11,115.0	-3,159.1	87.5	3,160.2	0.00	0.00	0.00	
14,200.0	90.53	180.04	11,114.1	-3,259.1	87.5	3,260.1	0.00	0.00	0.00	
14,300.0	90.53	180.04	11,113.1	-3,359.1	87.4	3,360.1	0.00	0.00	0.00	
14,400.0	90.53	180.04	11,112.2	-3,459.1	87.3	3,460.1	0.00	0.00	0.00	
14,500.0	90.53	180.04	11,111.3	-3,559.1	87.2	3,560.1	0.00	0.00	0.00	
14,600.0	90.53	180.04	11,110.3	-3,659.1	87.2	3,660.0	0.00	0.00	0.00	
14,700.0	90.53	180.04	11,109.4	-3,759.1	87.1	3,760.0	0.00	0.00	0.00	
14,800.0	90.53	180.04	11,108.5	-3,859.1	87.0	3,860.0	0.00	0.00	0.00	
14,900.0	90.53	180.04	11,107.5	-3,959.1	86.9	3,960.0	0.00	0.00	0.00	
15,000.0	90.53	180.04	11,106.6	-4,059.0	86.8	4,060.0	0.00	0.00	0.00	
15,100.0	90.53	180.04	11,105.7	-4,159.0	86.8	4,159.9	0.00	0.00	0.00	
15,200.0	90.53	180.04	11,104.7	-4,259.0	86.7	4,259.9	0.00	0.00	0.00	
15,300.0	90.53	180.04	11,103.8	-4,359.0	86.6	4,359.9	0.00	0.00	0.00	
15,400.0	90.53	180.04	11,102.9	-4,459.0	86.5	4,459.9	0.00	0.00	0.00	
15,500.0	90.53	180.04	11,101.9	-4,559.0	86.5	4,559.8	0.00	0.00	0.00	
15,600.0	90.53	180.04	11,101.0	-4,659.0	86.4	4,659.8	0.00	0.00	0.00	
15,706.9	90.53	180.04	11,100.0	-4,765.9	86.3	4,766.7	0.00	0.00	0.00	
TD at 15706.9 - PBHL 9418 JV-P Vaca Draw #3H										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
PBHL 9418 JV-P Vaca C	0.00	0.00	11,100.0	-4,765.9	86.3	415,002.40	739,840.70	32° 8' 18.911 N	103° 33' 30.539 W	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,662.5	10,662.5	0.0	0.0	KOP - 10662.5 'MD, 0.00° INC, 0.00° AZI	
11,417.0	11,140.0	-477.2	67.1	EOC- 11417.0 'MD, 90.53° INC, 172.00° AZI	
15,706.9	11,100.0	-798.0	89.4	TD at 15706.9	



NEXUS

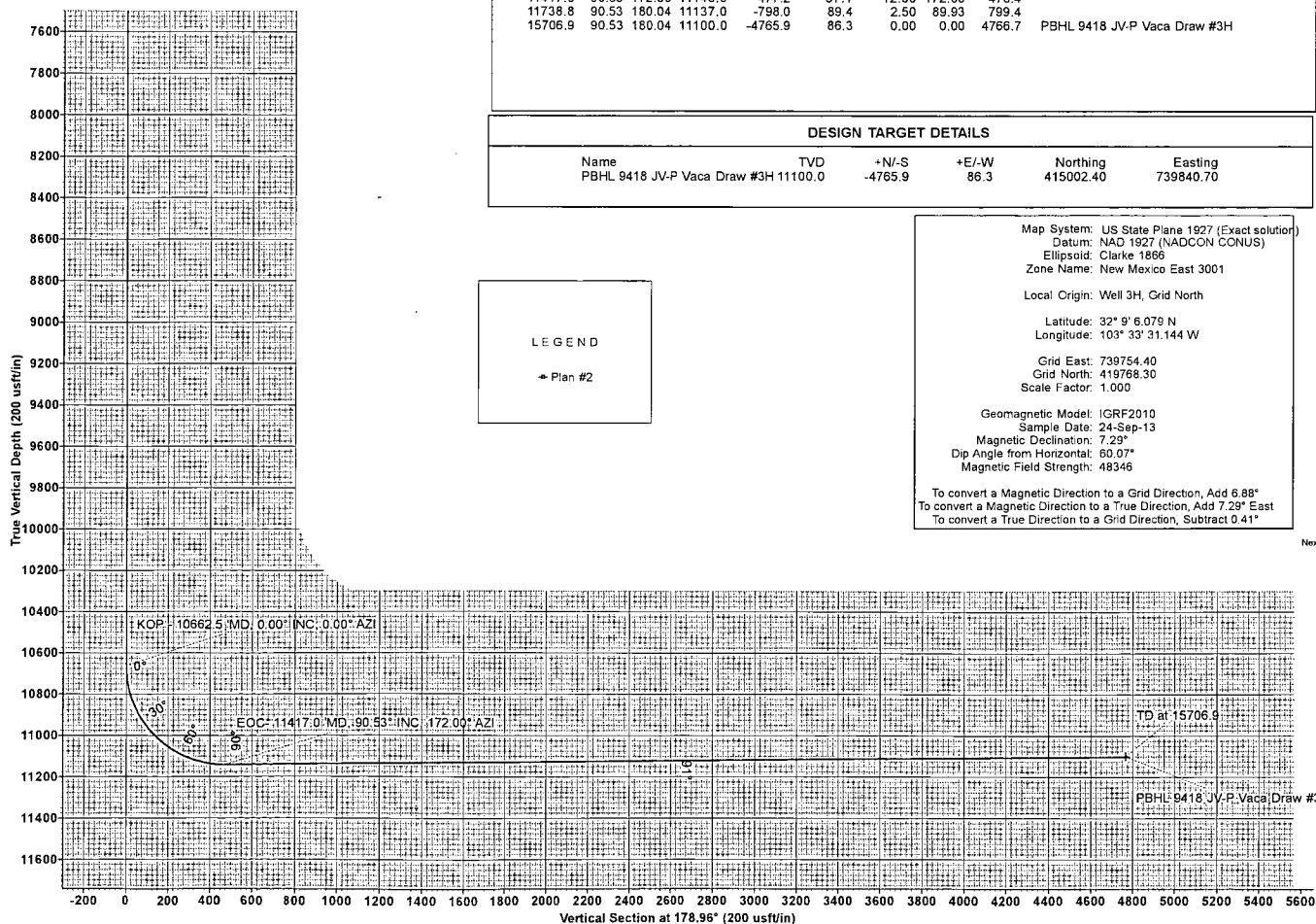
DIRECTIONAL SOLUTIONS, L.P.

9418 JV-P Vaca Draw 3H
Lea County, NM (NAD27 NME)
Northing: (Y) 419768.30
Easting: (X) 739754.40
Plan #2

HOBBS OCD

MAY 12 2014

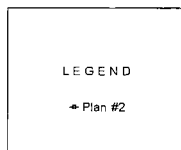
RECEIVED



WELL DETAILS:						
WELL @ 3440.2usft (Original Well Elev)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	419768.30	739754.40	32° 9' 6.079 N	103° 33' 31.144 W	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
10662.5	0.00	0.00	10662.5	0.0	0.0	0.00	0.00	0.0	
11417.0	90.53	172.00	11140.0	-477.2	67.1	12.00	172.00	478.4	
11738.8	90.53	180.04	11137.0	-798.0	89.4	2.50	89.93	789.4	
15706.9	90.53	180.04	11100.0	-4765.9	86.3	0.00	0.00	4766.7	PBHL 9418 JV-P Vaca Draw #3H

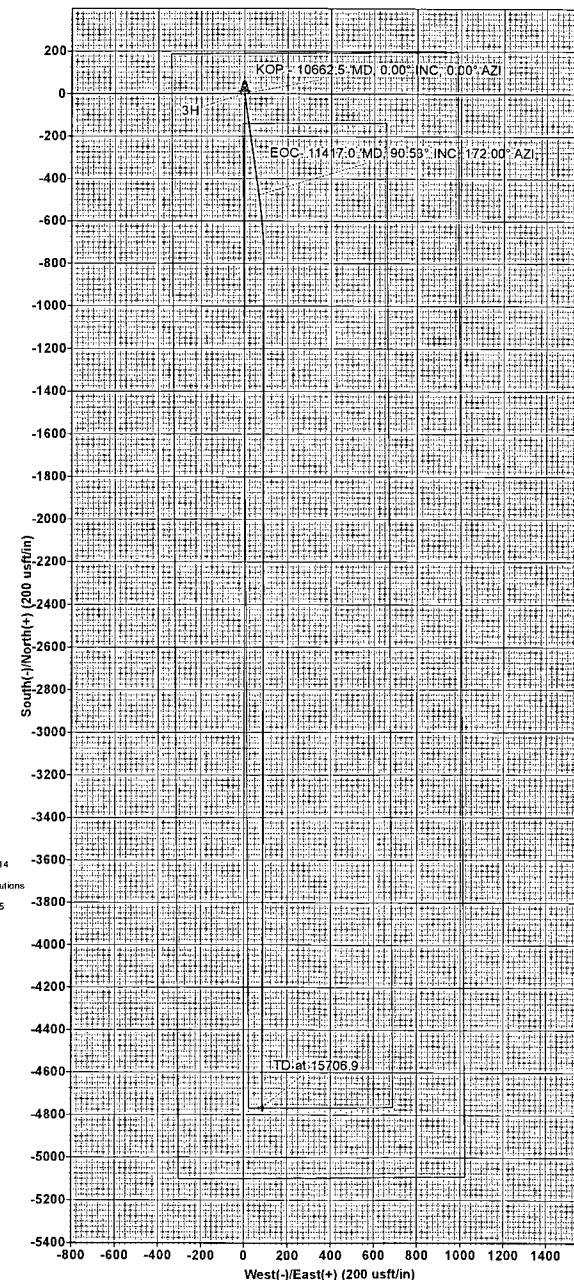
DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL 9418 JV-P Vaca Draw #3H	11100.0	-4765.9	86.3	415002.40	739840.70



Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well 3H, Grid North
Latitude: 32° 9' 6.079 N
Longitude: 103° 33' 31.144 W
Grid East: 739754.40
Grid North: 419768.30
Scale Factor: 1.000
Geomagnetic Model: IGRF2010
Sample Date: 24-Sep-13
Magnetic Declination: 7.29°
Dip Angle from Horizontal: 60.07°
Magnetic Field Strength: 48346
To convert a Magnetic Direction to a Grid Direction, Add 6.88°
To convert a Magnetic Direction to a True Direction, Add 7.29° East
To convert a True Direction to a Grid Direction, Subtract 0.41°



Azimuths to Grid North
True North: -0.41°
Magnetic North: 6.88°
Magnetic Field
Length: 48346.35nT
Dip Angle: 60.07°
Date: 9/24/2013
Model: IGRF2010
To convert a Magnetic Direction to a Grid Direction, Add 6.88°
To convert a True Direction to a Grid Direction, Subtract 0.41°



Matt Shipp
16.02, May 05 2014
Nexus Directional Solutions
3925 CR 1285
Odessa TX 79765