

Submit 1 Copy To Appropriate District
Office

District I

1625 N. French Dr, Hobbs, NM 88240

District II

1301 W. Grand Ave, 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 and Natural Resources

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

Form C-103

October 13, 2009

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-015-37255
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator COG Operating LLC		6. State Oil & Gas Lease No.
3. Address of Operator 2208 W. Main Street, Artesia, NM 88210		7. Lease Name or Unit Agreement Name Down South State Com
4. Well Location Unit Letter <u>I</u> : <u>2180</u> feet from the <u>South</u> line and <u>330</u> feet from the <u>East</u> line Section <u>19</u> Township <u>26S</u> Range <u>28E</u> NMPM <u>Eddy</u> County		8. Well Number 3
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3030		9. OGRID Number 229137
		10. Pool name or Wildcat Hay Hollow; Bone Spring

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

OTHER: ☒ APD Extension & Casing and Cement Program Change

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

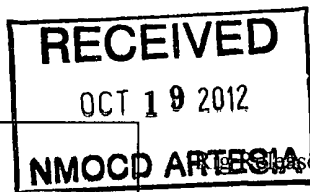
OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

COG Operating LLC respectfully requests approval for a 6 month extension, and a change on the proposed casing and cement program on the above referenced APD.

See attached.

Spud Date:



Release Date:

EXTENSION GRANTED. NEW
EXPIRATION DATE 3/2/2013

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Mayte Reyes TITLE: Regulatory Analyst DATE: 10/19/2011

Type or print name: Mayte Reyes E-mail address: mreyes1@conchoresources.com PHONE: (575) 748-6945

For State Use Only

APPROVED BY: J.C. Shepard TITLE: Geologist DATE: 10/19/2012

Conditions of Approval (if any):



COG Operating LLC

Eddy County, NM

Down South State Com

#3H

OH

Plan: Plan #1

Standard Planning Report

19 October, 2012



Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #3H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3047 5usft (Silver Oak #7 - 17.5' KB)
Project:	Eddy County, NM	MD Reference:	WELL @ 3047 5usft (Silver Oak #7 - 17.5' KB)
Site:	Down South State Com	North Reference:	Grd
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Eddy County, NM		
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	Down South State Com				
Site Position:		Northing:	374,555 85 usft	Latitude:	32° 1' 46 512 N
From:	Map	Easting:	566,529.67 usft	Longitude:	104° 7' 7 137 W
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0 11 °

Well	#3H					
Well Position	+N/-S	-1,042 8 usft	Northing:	373,513 10 usft	Latitude:	32° 1' 36.192 N
	+E/-W	2 2 usft	Easting:	566,531 90 usft	Longitude:	104° 7' 7 135 W
Position Uncertainty		2 0 usft	Wellhead Elevation:		Ground Level:	3,030 0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/19/2012	7 66	59 88	48,305

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0 0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0 0	0 0	265.76	

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	
7,322 8	0 00	0 00	7,322.8	0 0	0 0	0 00	0 00	0 00	0 00	
8,086 4	91 65	265.76	7,800 0	-36 3	-489 8	12 00	12 00	0 00	265 76	
12,245.9	91 65	265 76	7,680 2	-343 7	-4,636 2	0 00	0.00	0 00	0 00	PBHL (DS#3H)

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #3H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3047.5usft (Silver Oak #7 - 17 5' KB)
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Site:	Down South State Corn	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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

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Site:	Down South State Corn	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)
5,200.0	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
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
7,322.8	0.00	0.00	7,322.8	0.0	0.0	0.0	0.00	0.00	0.00
KOP - 7322.8' MD, 7322.8' TVD, 0.00° INC, 0.00° AZI, 0.0' VS									
7,325.0	0.26	265.76	7,325.0	0.0	0.0	0.0	12.00	12.00	0.00
7,350.0	3.26	265.76	7,350.0	-0.1	-0.8	0.8	12.00	12.00	0.00
7,375.0	6.26	265.76	7,374.9	-0.2	-2.8	2.9	12.00	12.00	0.00
7,400.0	9.27	265.76	7,399.7	-0.5	-6.2	6.2	12.00	12.00	0.00
7,425.0	12.27	265.76	7,424.2	-0.8	-10.9	10.9	12.00	12.00	0.00
7,450.0	15.27	265.76	7,448.5	-1.2	-16.8	16.8	12.00	12.00	0.00
7,475.0	18.27	265.76	7,472.4	-1.8	-24.0	24.1	12.00	12.00	0.00
7,500.0	21.27	265.76	7,496.0	-2.4	-32.4	32.5	12.00	12.00	0.00
7,525.0	24.27	265.76	7,519.0	-3.1	-42.1	42.2	12.00	12.00	0.00
7,550.0	27.27	265.76	7,541.5	-3.9	-52.9	53.1	12.00	12.00	0.00
7,575.0	30.27	265.76	7,563.4	-4.8	-64.9	65.1	12.00	12.00	0.00
7,600.0	33.27	265.76	7,584.7	-5.8	-78.0	78.2	12.00	12.00	0.00
7,625.0	36.27	265.76	7,605.2	-6.8	-92.2	92.5	12.00	12.00	0.00
7,650.0	39.27	265.76	7,625.0	-8.0	-107.5	107.8	12.00	12.00	0.00
7,675.0	42.27	265.76	7,643.9	-9.2	-123.8	124.1	12.00	12.00	0.00
7,700.0	45.27	265.76	7,662.0	-10.5	-141.0	141.4	12.00	12.00	0.00
7,725.0	48.27	265.76	7,679.1	-11.8	-159.2	159.6	12.00	12.00	0.00
7,750.0	51.27	265.76	7,695.2	-13.2	-178.2	178.7	12.00	12.00	0.00
7,775.0	54.27	265.76	7,710.3	-14.7	-198.1	198.6	12.00	12.00	0.00
7,800.0	57.27	265.76	7,724.4	-16.2	-218.7	219.3	12.00	12.00	0.00
7,825.0	60.27	265.76	7,737.4	-17.8	-240.0	240.7	12.00	12.00	0.00
7,850.0	63.27	265.76	7,749.2	-19.4	-262.0	262.7	12.00	12.00	0.00
7,875.0	66.27	265.76	7,759.8	-21.1	-284.5	285.3	12.00	12.00	0.00
7,900.0	69.27	265.76	7,769.3	-22.8	-307.6	308.4	12.00	12.00	0.00
7,925.0	72.27	265.76	7,777.5	-24.5	-331.1	332.0	12.00	12.00	0.00
7,950.0	75.27	265.76	7,784.5	-26.3	-355.1	356.0	12.00	12.00	0.00
7,975.0	78.27	265.76	7,790.2	-28.1	-379.3	380.4	12.00	12.00	0.00
8,000.0	81.28	265.76	7,794.7	-29.9	-403.9	405.0	12.00	12.00	0.00

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Site:	Down South State Com	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)
8,025.0	84.28	265.76	7,797.8	-31.8	-428.6	429.8	12.00	12.00	0.00
8,050.0	87.28	265.76	7,799.7	-33.6	-453.5	454.7	12.00	12.00	0.00
8,075.0	90.28	265.76	7,800.2	-35.5	-478.4	479.7	12.00	12.00	0.00
8,086.4	91.64	265.76	7,800.0	-36.3	-489.8	491.1	12.00	12.00	0.00
EOC - 8086.4' MD, 7800.0' TVD, 91.64° INC, 265.76° AZI, 491.1' VS									
8,100.0	91.65	265.76	7,799.6	-37.3	-503.3	504.7	0.04	0.04	0.00
8,200.0	91.65	265.76	7,796.7	-44.7	-603.0	604.7	0.00	0.00	0.00
8,300.0	91.65	265.76	7,793.9	-52.1	-702.7	704.6	0.00	0.00	0.00
8,400.0	91.65	265.76	7,791.0	-59.5	-802.4	804.6	0.00	0.00	0.00
8,500.0	91.65	265.76	7,788.1	-66.9	-902.1	904.5	0.00	0.00	0.00
8,600.0	91.65	265.76	7,785.2	-74.3	-1,001.7	1,004.5	0.00	0.00	0.00
8,700.0	91.65	265.76	7,782.3	-81.7	-1,101.4	1,104.4	0.00	0.00	0.00
8,800.0	91.65	265.76	7,779.5	-89.0	-1,201.1	1,204.4	0.00	0.00	0.00
8,900.0	91.65	265.76	7,776.6	-96.4	-1,300.8	1,304.4	0.00	0.00	0.00
9,000.0	91.65	265.76	7,773.7	-103.8	-1,400.5	1,404.3	0.00	0.00	0.00
9,100.0	91.65	265.76	7,770.8	-111.2	-1,500.2	1,504.3	0.00	0.00	0.00
9,200.0	91.65	265.76	7,767.9	-118.6	-1,599.8	1,604.2	0.00	0.00	0.00
9,300.0	91.65	265.76	7,765.1	-126.0	-1,699.5	1,704.2	0.00	0.00	0.00
9,400.0	91.65	265.76	7,762.2	-133.4	-1,799.2	1,804.2	0.00	0.00	0.00
9,500.0	91.65	265.76	7,759.3	-140.8	-1,898.9	1,904.1	0.00	0.00	0.00
9,600.0	91.65	265.76	7,756.4	-148.2	-1,998.6	2,004.1	0.00	0.00	0.00
9,700.0	91.65	265.76	7,753.5	-155.6	-2,098.3	2,104.0	0.00	0.00	0.00
9,800.0	91.65	265.76	7,750.7	-163.0	-2,198.0	2,204.0	0.00	0.00	0.00
9,900.0	91.65	265.76	7,747.8	-170.3	-2,297.6	2,303.9	0.00	0.00	0.00
10,000.0	91.65	265.76	7,744.9	-177.7	-2,397.3	2,403.9	0.00	0.00	0.00
10,100.0	91.65	265.76	7,742.0	-185.1	-2,497.0	2,503.9	0.00	0.00	0.00
10,200.0	91.65	265.76	7,739.1	-192.5	-2,596.7	2,603.8	0.00	0.00	0.00
10,300.0	91.65	265.76	7,736.3	-199.9	-2,696.4	2,703.8	0.00	0.00	0.00
10,400.0	91.65	265.76	7,733.4	-207.3	-2,796.1	2,803.7	0.00	0.00	0.00
10,500.0	91.65	265.76	7,730.5	-214.7	-2,895.8	2,903.7	0.00	0.00	0.00
10,600.0	91.65	265.76	7,727.6	-222.1	-2,995.4	3,003.7	0.00	0.00	0.00
10,700.0	91.65	265.76	7,724.7	-229.5	-3,095.1	3,103.6	0.00	0.00	0.00
10,800.0	91.65	265.76	7,721.9	-236.9	-3,194.8	3,203.6	0.00	0.00	0.00
10,900.0	91.65	265.76	7,719.0	-244.2	-3,294.5	3,303.5	0.00	0.00	0.00
11,000.0	91.65	265.76	7,716.1	-251.6	-3,394.2	3,403.5	0.00	0.00	0.00
11,100.0	91.65	265.76	7,713.2	-259.0	-3,493.9	3,503.5	0.00	0.00	0.00
11,200.0	91.65	265.76	7,710.3	-266.4	-3,593.5	3,603.4	0.00	0.00	0.00
11,300.0	91.65	265.76	7,707.5	-273.8	-3,693.2	3,703.4	0.00	0.00	0.00
11,400.0	91.65	265.76	7,704.6	-281.2	-3,792.9	3,803.3	0.00	0.00	0.00
11,500.0	91.65	265.76	7,701.7	-288.6	-3,892.6	3,903.3	0.00	0.00	0.00
11,600.0	91.65	265.76	7,698.8	-296.0	-3,992.3	4,003.2	0.00	0.00	0.00
11,700.0	91.65	265.76	7,696.0	-303.4	-4,092.0	4,103.2	0.00	0.00	0.00
11,800.0	91.65	265.76	7,693.1	-310.8	-4,191.7	4,203.2	0.00	0.00	0.00
11,900.0	91.65	265.76	7,690.2	-318.1	-4,291.3	4,303.1	0.00	0.00	0.00
12,000.0	91.65	265.76	7,687.3	-325.5	-4,391.0	4,403.1	0.00	0.00	0.00
12,100.0	91.65	265.76	7,684.4	-332.9	-4,490.7	4,503.0	0.00	0.00	0.00
12,200.0	91.65	265.76	7,681.6	-340.3	-4,590.4	4,603.0	0.00	0.00	0.00
12,245.9	91.65	265.76	7,680.2	-343.7	-4,636.2	4,648.9	0.00	0.00	0.00
TD @ 12245.9' MD, 7680.2' TVD									

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #3H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3047 5usft (Silver Oak #7 - 17.5' KB)
Project:	Eddy County, NM	MD Reference:	WELL @ 3047 5usft (Silver Oak #7 - 17.5' KB)
Site:	Down South State Corn	North Reference:	Grid
Well:	#3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets

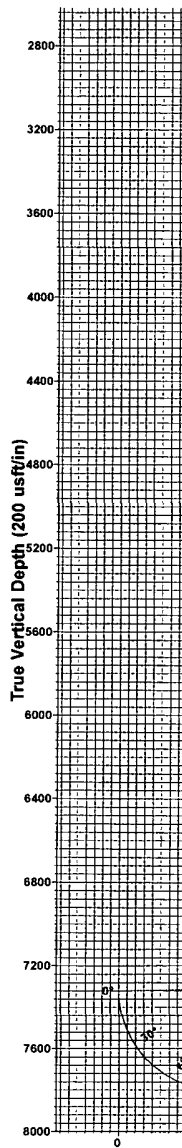
Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (DS#3H)	0 00	0 00	7,680 0	-343 7	-4,636 2	373,169 40	561,895 70	32° 1' 32 879 N	104° 8' 0 998 W
- plan misses target center by 0 2usft at 12245 9usft MD (7680 2 TVD, -343 7 N, -4636 2 E)									
- Point									

Plan Annotations

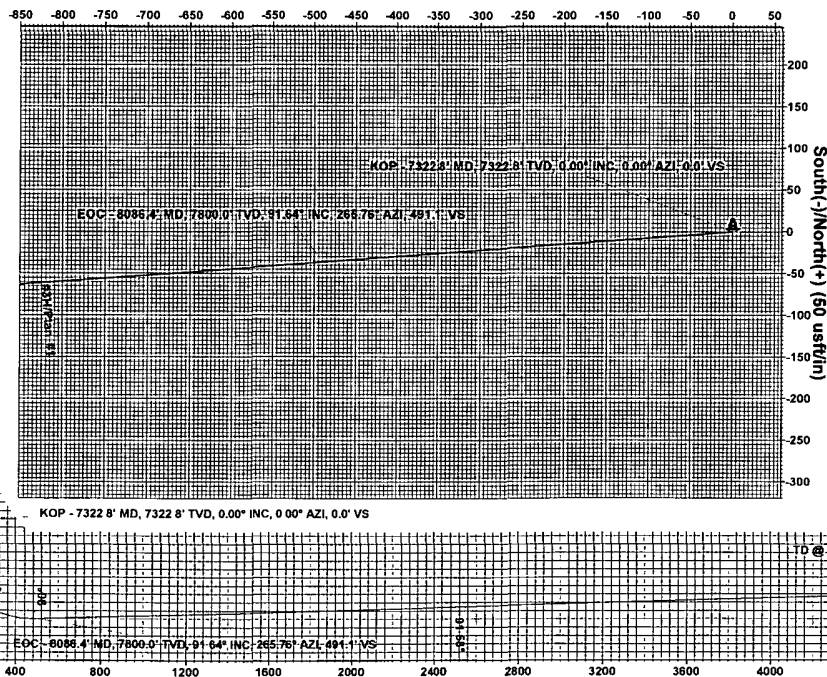
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,322 8	7,322 8	0 0	0 0	KOP - 7322 8' MD, 7322 8' TVD, 0.00° INC, 0.00° AZI, 0 0' VS
8,086.4	7,800 0	-36 3	-489.8	EOC - 8086.4' MD, 7800 0' TVD, 91.64° INC, 265 76° AZI, 491 1' VS
12,245 9	7,680 2	-343 7	-4,636 2	TD @ 12245 9' MD, 7680.2' TVD

COG Operating LLC
 Project: Eddy County, NM
 Site: Down South State Com
 Well: #3H
 Wellbore: OH
 Plan: Plan #1 (#3H/OH)



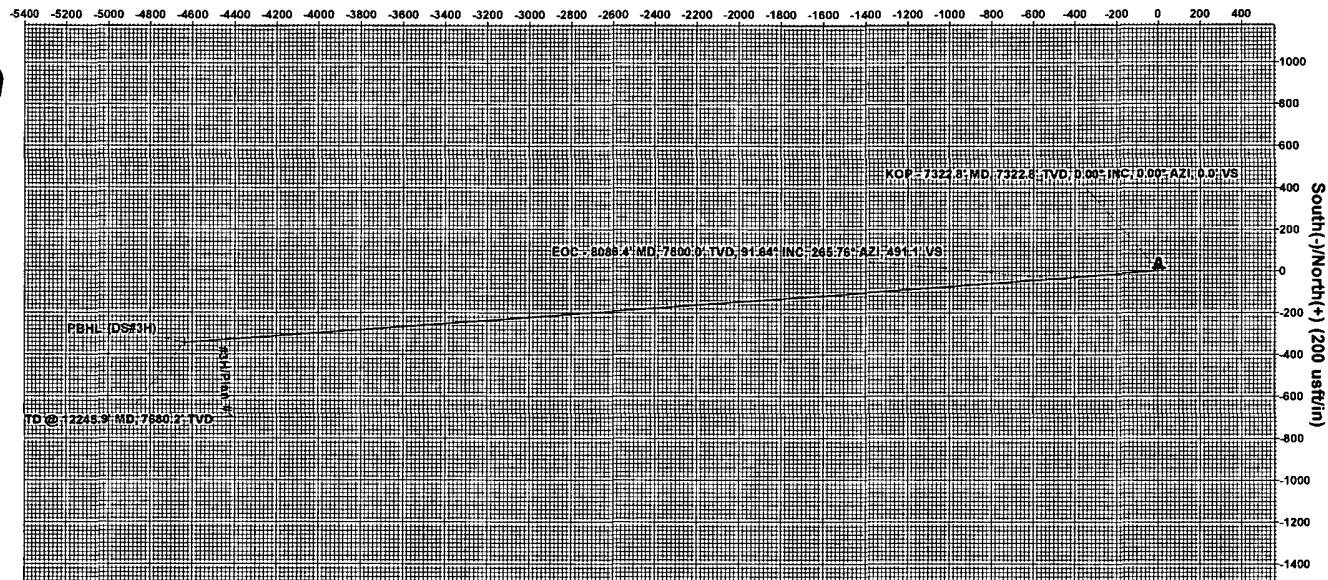
Azimuths to Grid North
 True North: -0.11°
 Magnetic North: 7.54°
 Magnetic Field
 Strength: 48304.8snT
 Dip Angle: 59.88°
 Date: 10/19/2012
 Model: IGRF2010

West(-)/East(+) (50 usf/in)



Vertical Section at 265.76° (200 usf/in)

West(-)/East(+) (200 usf/in)



Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	7322.8	0.00	0.00	7322.8	0.0	0.0	0.00	0.00	0.0	
3	8086.4	91.65	265.76	7800.0	-36.3	-489.8	12.00	265.76	491.1	
4	12245.9	91.65	265.76	7680.2	-343.7	-4636.2	0.00	0.00	4648.9	PBHL (DS#3H)

WELL DETAILS: #3H

Ground Elevation:: 3030.0
 RKB Elevation: WELL @ 3047.5usft (Silver Oak #7 - 17.5' KB)
 Rig Name: Silver Oak #7 - 17.5' KB

Surface Hole Location	Northing	Easting	Latitude	Longitude
	373513.10	566531.90	32° 1' 36.192 N	104° 7' 7.135 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (DS#3H)	7680.0	-343.7	-4636.2	373169.40	561895.70

PROJECT DETAILS: Eddy County, NM
 Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico East 3001
 System Datum: Mean Sea Level
 Local North: Grid



Crescent Directional Drilling
 7715 West Industrial Ave. Midland, Tx 79706
 Phone: 432-618-1135

Plan: Plan #1 (#3H/OH)
 Created By: Matt Higgins Date: 11:32, October 19 2012

Eddy County, NM
S19, T26S, R28E

Down South State Com 3H
2nd Bone Spring Sand

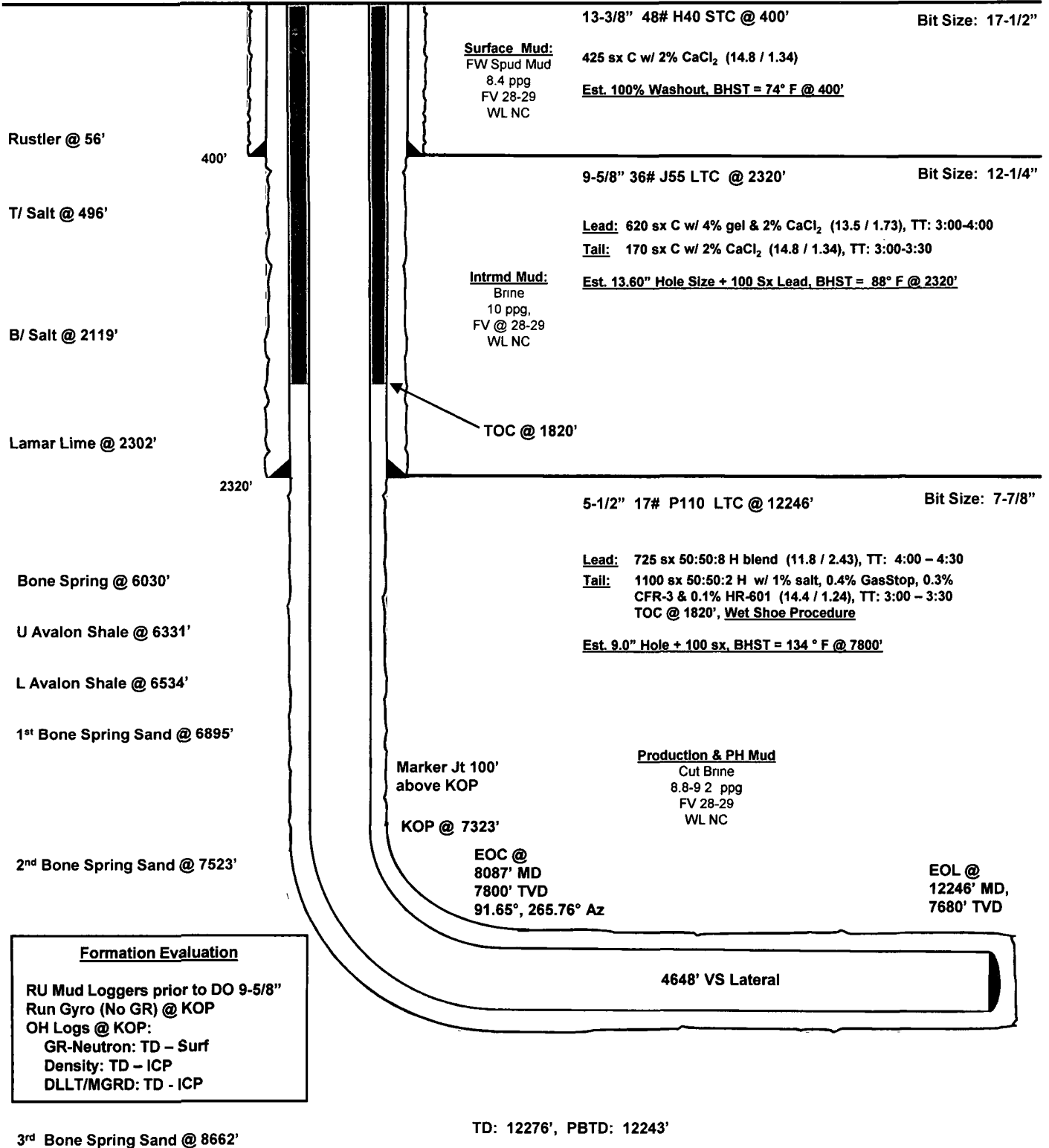
Proposed Wellbore

API: 30-015-37255

Rig:	Silver Oak 7
Cmt:	Howco
Mud:	Nova
Dir Drlg:	Crescent
Casing:	Sooner
Wellhead:	AFS

<u>SHL</u>	<u>BHL</u>
2180' FSL	1980' FSL
330' FEL	330' FWL

KB: 3047.5'
GL: 3030.0'



MEE: 10/19/2012

Down South State Com 3H

Casing and Cement

<u>String</u>	<u>Hole Size</u>	<u>Csg OD</u>	<u>PPF</u>	<u>Depth</u>	<u>Sx Cement</u>	<u>TOC</u>
Surface	17-1/2"	13-3/8"	48#	400'	425	0'
Intermediate	12-1/4"	9-5/8"	36#	2320'	990	0'
Production	7-7/8"	5-1/2"	17#	12246'	1825	1820'

Well Plan

Drill 17-1/2" hole to ~400' w/ fresh water spud mud. Run 13-3/8" 48# H40 STC casing to TD and cement to surface in one stage. Will use 1" tubing and Class C w/ 2% CaCl₂ to cement to surface, if necessary.

Drill 12-1/4" hole to ~2320' with saturated brine water. Run 9-5/8" 36# J55 LTC casing to TD and cement to surface in one stage.

Drill 7-7/8" vertical hole, curve, and lateral to 12246' with cut brine. Run 5-1/2" 17# P110 LTC casing to TD and cement to 1820' (500' overlap) in one stage.

Well Control

After setting 13-3/8" casing and installing 3000 psi casing head, NU Shaffer 2000 psi double ram BOP and Shaffer 2000 psi annular BOP. Test annular to 1000 psi and other BOP equipment to 2000 with clear fluid using 3rd party testers.

After setting 9-5/8" casing and installing 5000 psi casing spool, NU Shaffer 3000 psi double ram BOP and Shaffer 3000 psi annular BOP. Test annular to 1500 psi and other BOP equipment to 3000 with clear fluid using 3rd party testers.