

Submit 1 Copy To Appropriate District Office

District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
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
Revised August 1, 2011

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. 30-015-43305
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 One Concho Center - 600 W Illinois Ave Midland, TX 79701		7. Lease Name or Unit Agreement Name Bone Yard 11 Fee
4. Well Location Unit Letter <u>N</u> : <u>170</u> feet from the <u>SOUTH</u> line and <u>1460</u> feet from the <u>WEST</u> line Section <u>2</u> Township <u>20S</u> Range <u>25E</u> NMPM County <u>EDDY</u>		8. Well Number 12H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3398'		9. OGRID Number 229137
		10. Pool name or Wildcat N Seven Rivers; Glorieta Yeso 97565

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 ☐

SUBSEQUENT REPORT OF:
REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: **Change TVD** ☒

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 permission to change the MD:

FROM: 2810' TVD, 7829' MD
TO: 2810' TVD, 7868' MD

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 09 2015

A revised directional plan is attached for your review.

Spud Date:

Rig Release Date:

RECEIVED

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

SIGNATURE [Signature] TITLE Permitting Tech DATE 10/06/2015

Type or print name Kelly J. Holly E-mail address: kholly@concho.com PHONE: 432-685-4384

For State Use Only

APPROVED BY: [Signature] TITLE Dist R Supervisor DATE 10/14/2015

Conditions of Approval (if any):



NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 09 2015

RECEIVED

COG Operating LLC

Eddy County, NM (NAD27 NME)

Bone Yard 11 Fee

#12H

OH

Plan: Plan #3 09-28-15

Surface: 170' FSL, 1460' FWL, Sec 2, T20S, R25E, Unit N

PP: 330' FNL, 1656' FWL, Sec 11, T20S, R25E, Unit C

BHL: 330' FNL, 1660' FWL, Sec 11, T20S, R25E, Unit N

Standard Planning Report

28 September, 2015





Phoenix Technology Services LP
Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well #12H
Company:	COG Operating LLC	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site:	Bone Yard 11 Fee	North Reference:	Grid
Well:	#12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 09-28-15		

Project	Eddy 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	Bone Yard 11 Fee		
Site Position:		Northing:	574,918.70 usft
From:	Map	Easting:	460,173.20 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 34' 49.76860 N
		Longitude:	104° 27' 45.46885 W
		Grid Convergence:	-0.07 °

Well	#12H		
Well Position	+N/-S	5,515.10 usft	Northing:
	+E/-W	1,174.30 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level:
			3,398.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	9/28/2015	7.68
			Dip Angle
			(°)
			60.42
			Field Strength
			(nT)
			48,415

Design	Plan #3 09-28-15		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			178.26

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,329.80	0.00	0.00	2,329.80	0.00	0.00	0.00	0.00	0.00	0.00	
3,152.53	90.50	159.00	2,850.65	-490.52	188.29	11.00	11.00	0.00	159.00	
3,928.01	90.50	182.27	2,843.82	-1,250.39	313.64	3.00	0.00	3.00	89.91	
7,868.15	90.50	182.27	2,809.75	-5,187.30	157.90	0.00	0.00	0.00	0.00	BHL(Bone Yard 11 Fe



Phoenix Technology Services LP
Planning Report



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Company:	COG Operating LLC	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site:	Bone Yard 11 Fee	North Reference:	Grid
Well:	#12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 09-28-15		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8 5/8"									
2,329.80	0.00	0.00	2,329.80	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Start 11°/100' Build									
2,400.00	7.72	159.00	2,399.79	-4.41	1.69	4.46	11.00	11.00	0.00
2,500.00	18.72	159.00	2,496.99	-25.73	9.88	26.02	11.00	11.00	0.00
2,600.00	29.72	159.00	2,588.04	-63.97	24.56	64.69	11.00	11.00	0.00
2,700.00	40.72	159.00	2,669.61	-117.73	45.19	119.06	11.00	11.00	0.00
2,800.00	51.72	159.00	2,738.69	-185.04	71.03	187.11	11.00	11.00	0.00
2,900.00	62.72	159.00	2,792.75	-263.41	101.11	266.37	11.00	11.00	0.00
3,000.00	73.72	159.00	2,829.79	-349.97	134.34	353.90	11.00	11.00	0.00
3,100.00	84.72	159.00	2,848.46	-441.54	169.49	446.50	11.00	11.00	0.00
3,152.53	90.50	159.00	2,850.65	-490.52	188.29	496.02	11.00	11.00	0.00
LP, Begin 3°/100' Turn									
3,164.81	90.50	159.37	2,850.54	-502.00	192.66	507.63	3.00	0.00	3.00
PP(Bone Yard 11 Fee #12H) v3									
3,200.00	90.50	160.42	2,850.24	-535.04	204.75	541.02	3.00	0.00	3.00
3,300.00	90.51	163.42	2,849.36	-630.09	235.77	636.98	3.00	0.00	3.00
3,400.00	90.51	166.42	2,848.47	-726.64	261.78	734.27	3.00	0.00	3.00
3,500.00	90.51	169.42	2,847.58	-824.41	282.70	832.63	3.00	0.00	3.00
3,600.00	90.51	172.42	2,846.70	-923.14	298.47	931.80	3.00	0.00	3.00
3,700.00	90.51	175.42	2,845.81	-1,022.57	309.05	1,031.49	3.00	0.00	3.00
3,800.00	90.50	178.42	2,844.93	-1,122.41	314.41	1,131.45	3.00	0.00	3.00
3,900.00	90.50	181.42	2,844.06	-1,222.39	314.54	1,231.39	3.00	0.00	3.00
3,928.01	90.50	182.27	2,843.82	-1,250.38	313.64	1,259.35	3.00	-0.01	3.00
Begin 90.5° Inc Hold, 182.27° Azm									
4,000.00	90.50	182.27	2,843.20	-1,322.32	310.80	1,331.16	0.00	0.00	0.00
4,100.00	90.50	182.27	2,842.33	-1,422.23	306.84	1,430.91	0.00	0.00	0.00
4,200.00	90.50	182.27	2,841.47	-1,522.15	302.89	1,530.66	0.00	0.00	0.00
4,300.00	90.50	182.27	2,840.60	-1,622.07	298.94	1,630.41	0.00	0.00	0.00
4,400.00	90.50	182.27	2,839.74	-1,721.99	294.99	1,730.17	0.00	0.00	0.00
4,500.00	90.50	182.27	2,838.87	-1,821.91	291.03	1,829.92	0.00	0.00	0.00
4,600.00	90.50	182.27	2,838.01	-1,921.82	287.08	1,929.67	0.00	0.00	0.00
4,700.00	90.50	182.27	2,837.14	-2,021.74	283.13	2,029.42	0.00	0.00	0.00
4,800.00	90.50	182.27	2,836.28	-2,121.66	279.18	2,129.17	0.00	0.00	0.00
4,900.00	90.50	182.27	2,835.41	-2,221.58	275.22	2,228.92	0.00	0.00	0.00
5,000.00	90.50	182.27	2,834.55	-2,321.50	271.27	2,328.68	0.00	0.00	0.00
5,100.00	90.50	182.27	2,833.69	-2,421.41	267.32	2,428.43	0.00	0.00	0.00
5,200.00	90.50	182.27	2,832.82	-2,521.33	263.36	2,528.18	0.00	0.00	0.00
5,300.00	90.50	182.27	2,831.96	-2,621.25	259.41	2,627.93	0.00	0.00	0.00
5,400.00	90.50	182.27	2,831.09	-2,721.17	255.46	2,727.68	0.00	0.00	0.00
5,500.00	90.50	182.27	2,830.23	-2,821.09	251.51	2,827.43	0.00	0.00	0.00
5,600.00	90.50	182.27	2,829.36	-2,921.01	247.55	2,927.19	0.00	0.00	0.00
5,700.00	90.50	182.27	2,828.50	-3,020.92	243.60	3,026.94	0.00	0.00	0.00
5,800.00	90.50	182.27	2,827.63	-3,120.84	239.65	3,126.69	0.00	0.00	0.00
5,900.00	90.50	182.27	2,826.77	-3,220.76	235.70	3,226.44	0.00	0.00	0.00
6,000.00	90.50	182.27	2,825.90	-3,320.68	231.74	3,326.19	0.00	0.00	0.00
6,100.00	90.50	182.27	2,825.04	-3,420.60	227.79	3,425.94	0.00	0.00	0.00
6,200.00	90.50	182.27	2,824.17	-3,520.51	223.84	3,525.69	0.00	0.00	0.00
6,300.00	90.50	182.27	2,823.31	-3,620.43	219.88	3,625.45	0.00	0.00	0.00
6,400.00	90.50	182.27	2,822.44	-3,720.35	215.93	3,725.20	0.00	0.00	0.00
6,500.00	90.50	182.27	2,821.58	-3,820.27	211.98	3,824.95	0.00	0.00	0.00
6,600.00	90.50	182.27	2,820.72	-3,920.19	208.03	3,924.70	0.00	0.00	0.00



Phoenix Technology Services LP
Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well #12H
Company:	COG Operating LLC	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site:	Bone Yard 11 Fee	North Reference:	Grid
Well:	#12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 09-28-15		

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)
6,700.00	90.50	182.27	2,819.85	-4,020.10	204.07	4,024.45	0.00	0.00	0.00
6,800.00	90.50	182.27	2,818.99	-4,120.02	200.12	4,124.20	0.00	0.00	0.00
6,900.00	90.50	182.27	2,818.12	-4,219.94	196.17	4,223.96	0.00	0.00	0.00
7,000.00	90.50	182.27	2,817.26	-4,319.86	192.22	4,323.71	0.00	0.00	0.00
7,100.00	90.50	182.27	2,816.39	-4,419.78	188.26	4,423.46	0.00	0.00	0.00
7,188.90	90.50	182.27	2,815.62	-4,508.60	184.75	4,512.14	0.00	0.00	0.00
TL, 2855' TVD @ 0 VZ, 90.5° Inc									
7,200.00	90.50	182.27	2,815.53	-4,519.70	184.31	4,523.21	0.00	0.00	0.00
7,300.00	90.50	182.27	2,814.66	-4,619.61	180.36	4,622.96	0.00	0.00	0.00
7,400.00	90.50	182.27	2,813.80	-4,719.53	176.40	4,722.71	0.00	0.00	0.00
7,500.00	90.50	182.27	2,812.93	-4,819.45	172.45	4,822.47	0.00	0.00	0.00
7,600.00	90.50	182.27	2,812.07	-4,919.37	168.50	4,922.22	0.00	0.00	0.00
7,700.00	90.50	182.27	2,811.20	-5,019.29	164.55	5,021.97	0.00	0.00	0.00
7,800.00	90.50	182.27	2,810.34	-5,119.20	160.59	5,121.72	0.00	0.00	0.00
7,868.15	90.50	182.27	2,809.75	-5,187.30	157.90	5,189.70	0.00	0.00	0.00
TD at 7868.15' MD - BHL(Bone Yard 11 Fee #12H)									

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									
BHL(Bone Yard 11 Fee #1)	-90.40	0.07	2,809.75	-5,187.30	157.90	575,246.50	461,505.40	32° 34' 53.02819 N	104° 27' 29.90353 W
- plan hits target center									
- Point									
PP(Bone Yard 11 Fee #1)	0.00	0.00	2,850.54	-502.00	192.66	579,931.80	461,540.16	32° 35' 39.39330 N	104° 27' 29.56158 W
- plan hits target center									
- Point									

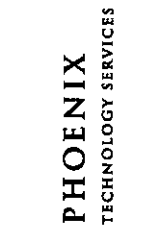
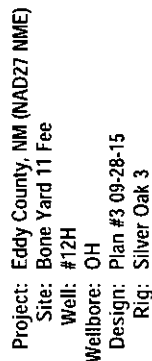
Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,100.00	1,100.00	8 5/8"	8-5/8	11

Formations				
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)
7,188.90	2,815.62	TL, 2855' TVD @ 0 VZ, 90.5° Inc		-0.50
				178.26



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well #12H
Company:	COG Operating LLC	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site:	Bone Yard 11 Fee	North Reference:	Grid
Well:	#12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 09-28-15		

Plan Annotations					
	Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
			+N/-S (usft)	+E/-W (usft)	
	2,329.80	2,329.80	0.00	0.00	KOP, Start 11°/100' Build
	3,152.53	2,850.65	-490.52	188.29	LP, Begin 3°/100' Turn
	3,928.01	2,843.82	-1,250.38	313.64	Begin 90.5° Inc Hold, 182.27° Azm
	7,868.15	2,809.75	-5,187.30	157.90	TD at 7868.15' MD



Inmuths to Grid North
 True North: 0.07°
 Magnetic North: 7.75°
 Magnetic Field
 Strength: 48414.7 nT
 Dip Angle: 60.42°
 Date: 9/28/2015
 Model: HDGM

WELL DETAILS

North-South	East-West	Northing	Easting	Ground Level	Latitude	Longitude
0 00	0 00	580433.86	461347.50	3398.00	32° 35' 44.35873 N	104° 27' 31.82050 W

SECTION DETAILS

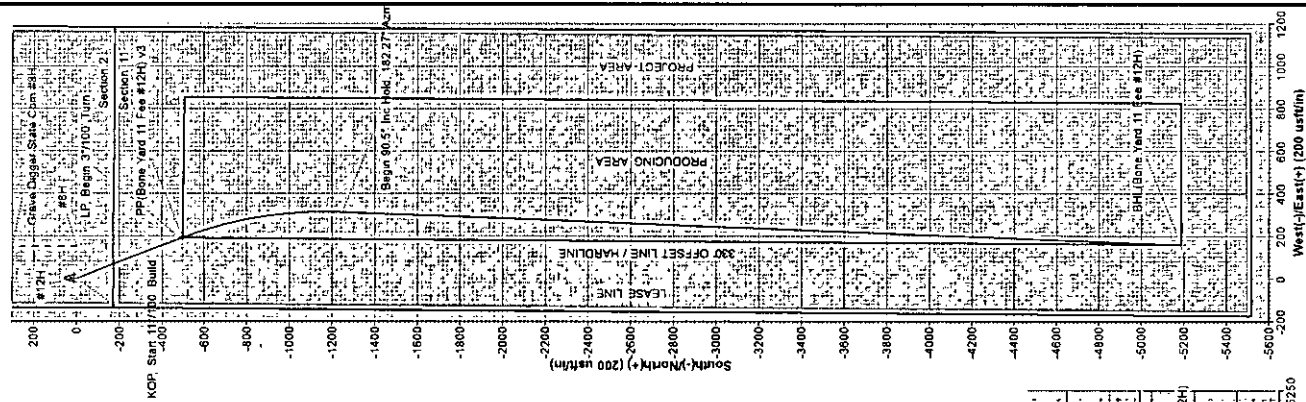
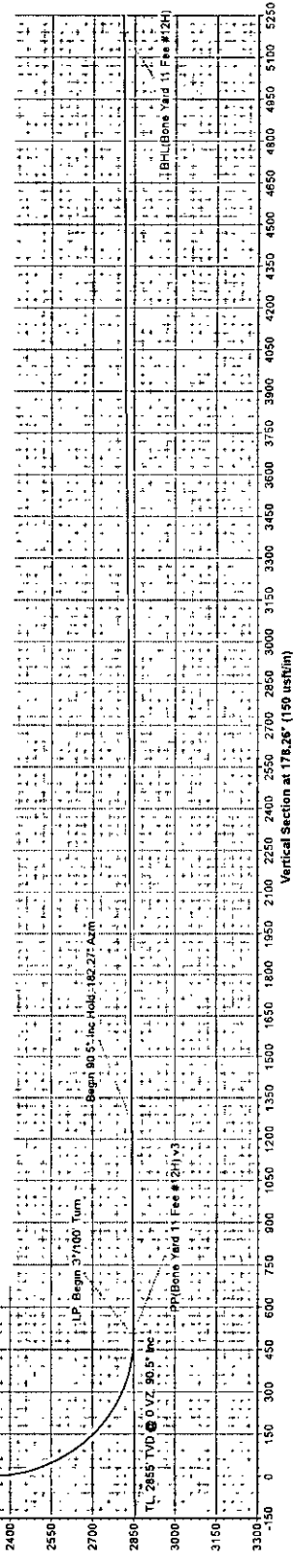
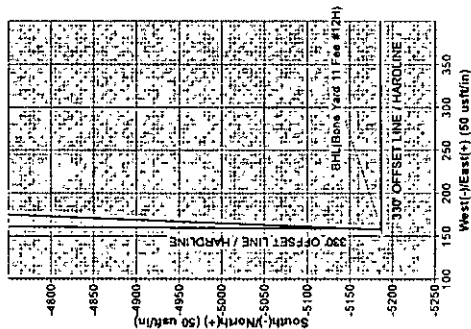
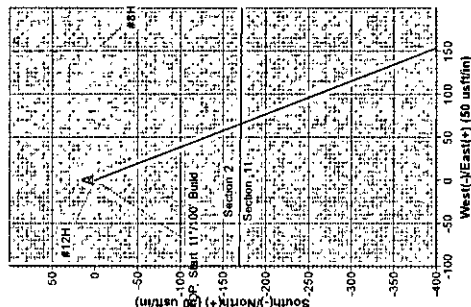
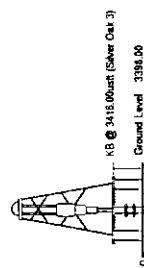
Sec	MO	Inc	Kn	TVD	MS	-5W	Diag	Trace	VSet	Target	Annotation
1	2332	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2	2332	8.0	0.0	2239.30	0.0	0.0	0.0	0.0	0.0	0.0	LP Set Start 11:00:00 Build
3	3152	9.50	159.0	2550.65	-430.57	188.29	11.00	159.00	586.02	0.0	LP Beam 7:10:00 Turn
4	3323.01	96.50	182.27	2443.82	-1576.30	313.84	3.00	81.91	93.75	0.0	Beam 96.5° Set 182.27 Azim
5	7468.15	96.50	182.27	2309.75	-1260.38	157.90	0.00	0.00	1578.70	0.0	Beam 96.5° Set 182.27 Azim
											BillGore Yard 11 Fee #1041 DTD 7/8/83 15 MD

DESIGN TARGET DETAILS

Name	TVD	N-TS	-E-W	Northing	Easting	Latitude	Longitude	Shape
pp1(Bone Yard 11 Fee #124)	-2069.75	-5187.30	157.90	575246.50	461506.40	32° 34' 53.02819 N	104° 27' 29.50353 W	Pent
plan link target center								
pp2(Bone Yard 11 Fee #124) v3	-2650.54	-502.00	192.86	579931.80	461540.16	32° 35' 39.38330 N	104° 27' 29.56158 W	Pent
plan link target center								

LEGEND

-----#3H, OH, Plan #1 09-21-15 V0
-----Plan #3 09-28-15



Created By Juho Piha Date 16 04 September 28 2015



NM OIL CONSERVATION

ARTESIA DISTRICT

OCT 09 2015

RECEIVED

COG Operating LLC

Eddy County, NM (NAD27 NME)

Bone Yard 11 Fee

#12H

OH

Plan #3 09-28-15

Anticollision Report

28 September, 2015



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services LP
Anticollision Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #12H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Reference Site:	Bone Yard 11 Fee	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#12H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Compass 5000 GCR
Reference Design:	Plan #3 09-28-15	Offset TVD Reference:	Offset Datum

Reference	Plan #3 09-28-15		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	2,387.00 to 2,431.00usft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999,999,999.00	Error Surface:	Circular Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	9/28/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	7,867.35	Plan #3 09-28-15 (OH)	PHX+MWD+HDGM	PHX+MWD+HDGM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Grave Digger State Com						
#8H - OH - Plan #1 09-21-15	2,400.00	2,388.79	148.64	131.92	8.887	CC, ES, SF

Offset Design	Grave Digger State Com - #8H - OH - Plan #1 09-21-15												Offset Site Error:	0.00 usft
Survey Program:	0-PHX+MWD+HDGM												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance										
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
2,387.00	2,386.89	2,375.89	2,375.89	8.33	8.31	-69.78	-1.20	150.30	149.19	132.55	16.64	8.968		
2,400.00	2,399.79	2,388.79	2,388.79	8.37	8.35	-70.40	-1.20	150.30	148.64	131.92	16.72	8.887	CC, ES, SF	



Phoenix Technology Services LP
Anticollision Report

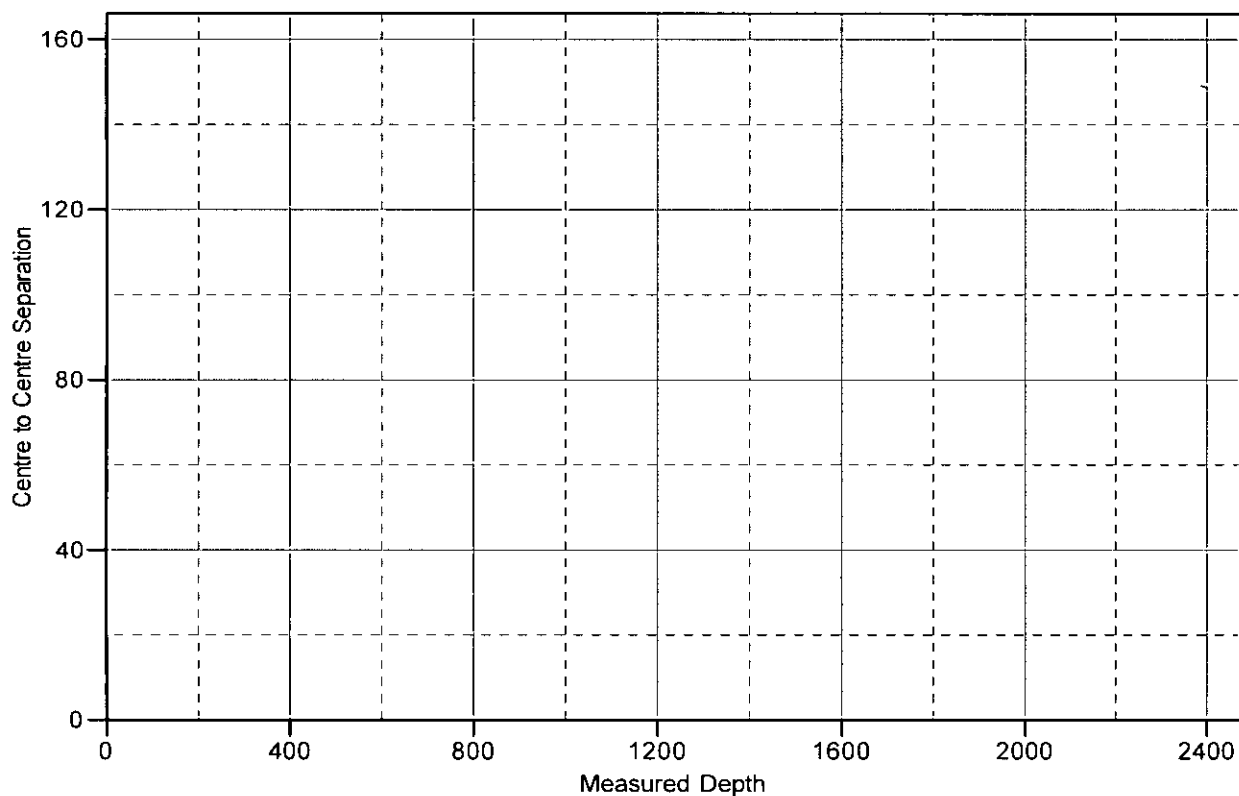


Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #12H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Reference Site:	Bone Yard 11 Fee	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#12H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Compass 5000 GCR
Reference Design:	Plan #3 09-28-15	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3416.00usft (Silver Oak 3)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: #12H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: -0.07°

Ladder Plot



LEGEND

▲ #8H, OH, Plan #1 09-21-15 V0



Phoenix Technology Services LP
Anticollision Report

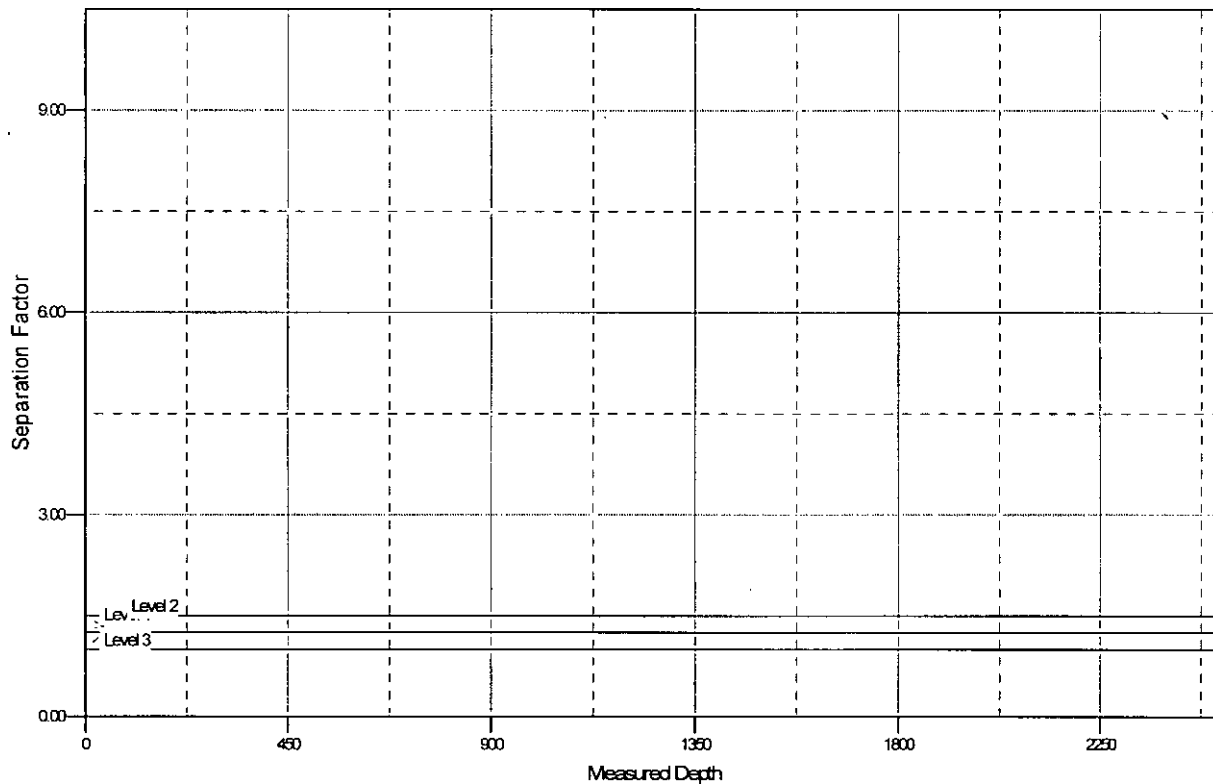


Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #12H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3416.00usft (Silver Oak 3)
Reference Site:	Bone Yard 11 Fee	MD Reference:	KB @ 3416.00usft (Silver Oak 3)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#12H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH	Database:	Compass 5000 GCR
Reference Design:	Plan #3 09-28-15	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3416.00usft (Silver Oak 3)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: #12H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: -0.07°

Separation Factor Plot



LEGEND

▲ #8H, OH, Plan #1 09-21-15 V0