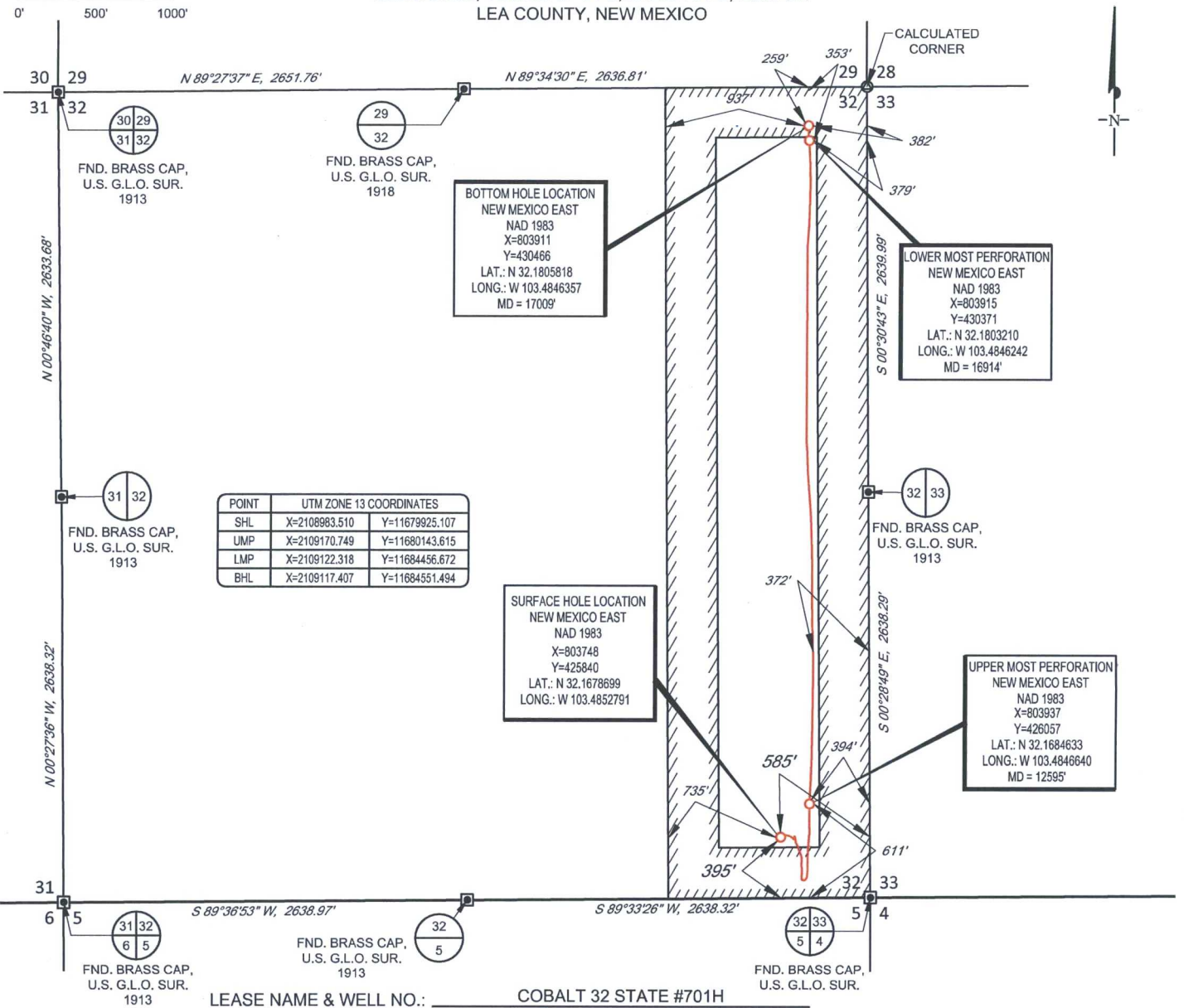


SCALE: 1" = 1000'

SECTION 32, TOWNSHIP 24-S, RANGE 34-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



POINT	UTM ZONE 13 COORDINATES
SHL	X=2108983.510 Y=11679925.107
UMP	X=2109170.749 Y=11680143.615
LMP	X=2109122.318 Y=11684456.672
BHL	X=2109117.407 Y=11684551.494

SURFACE HOLE LOCATION
NEW MEXICO EAST
NAD 1983
X=803748
Y=425840
LAT.: N 32.1678699
LONG.: W 103.4852791

LOWER MOST PERFORATION
NEW MEXICO EAST
NAD 1983
X=803915
Y=430371
LAT.: N 32.1803210
LONG.: W 103.4846242
MD = 16914'

UPPER MOST PERFORATION
NEW MEXICO EAST
NAD 1983
X=803937
Y=426057
LAT.: N 32.1684633
LONG.: W 103.4846640
MD = 12595'

LEASE NAME & WELL NO.: COBALT 32 STATE #701H
SECTION 32 TWP 24-S RGE 34-E SURVEY N.M.P.M.
COUNTY LEA STATE NM ELEVATION 3416'
DESCRIPTION 395' FSL & 585' FEL



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM



Michael Blake Brown, P.S. No. 18329
MARCH 20, 2018



COBALT 32 STATE #701H
AS COMPLETED

REVISION:

NOTES:

1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. THIS WELL LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

DATE: 03/20/2018

FILE:AD_COBALT32STATE_701H

DRAWN BY: IMU

SHEET: 1 OF 1



EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Cobalt 32 State

#701H

OH

Design: OH

PVA Report

02 March, 2018

HOBBS OCD
APR 20 2018
RECEIVED



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3441.0usft (HP 444)
Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Cobalt 32 State		
Site Position:		Northing:	425,645.00 usft
From:	Map	Easting:	803,691.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 2.406 N
		Longitude:	103° 29' 7.689 W
		Grid Convergence:	0.45 °

Well	#701H		
Well Position	+N/-S 0.0 usft	Northing:	425,840.00 usft
	+E/-W 0.0 usft	Easting:	803,748.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 10' 4.331 N
		Longitude:	103° 29' 7.008 W
		Ground Level:	3,416.0 usft

Wellbore	OH		
----------	----	--	--

Magnetics	Model Name	Sample Date	Declination (")	Dip Angle (")	Field Strength (nT)
	IGRF2015	12/7/2017	6.86	60.02	47,865.17420546

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (")
			2.28



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3441.0usft (HP 444)
Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey Program		Date 3/2/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
173.0	1,183.0	Olebrook MWD (OH)	MWD	OWSG MWD - Standard
1,241.0	17,010.0	Sprerry MWD (OH)	MWD	OWSG MWD - Standard

MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
173.0	0.88	101.77	173.0	-0.3	1.3	0.51	0.51	0.00	-1.3	0.0
265.0	0.44	275.79	265.0	-0.4	1.6	1.43	-0.48	189.15	1.7	0.2
390.0	0.18	124.79	390.0	-0.4	1.3	0.48	-0.21	-120.80	-1.3	0.4
485.0	0.35	242.22	485.0	-0.7	1.2	0.49	0.18	123.61	0.7	1.1
580.0	0.09	106.95	580.0	-0.8	1.0	0.44	-0.27	-142.39	-1.2	-0.5
674.0	1.14	334.50	674.0	0.0	0.7	1.28	1.12	-140.90	0.3	-0.6
768.0	1.23	349.09	768.0	1.8	0.1	0.33	0.10	15.52	-1.8	-0.4
862.0	0.44	307.69	862.0	3.0	-0.4	1.01	-0.84	-44.04	-2.2	-2.2
956.0	1.06	12.29	955.9	4.1	-0.5	1.02	0.66	68.72	-3.9	1.4
1,083.0	1.06	9.31	1,082.9	6.4	-0.1	0.04	0.00	-2.35	-6.3	1.1
1,183.0	0.35	359.02	1,182.9	7.6	0.1	0.72	-0.71	-10.29	-7.6	-0.2
1,241.0	0.75	348.52	1,240.9	8.2	0.0	0.71	0.69	-18.10	-8.0	-1.6
1,429.0	0.57	335.16	1,428.9	10.2	-0.6	0.13	-0.10	-7.11	-9.6	-3.7
1,617.0	0.40	336.48	1,616.9	11.7	-1.3	0.09	-0.09	0.70	-11.2	-3.5
1,804.0	0.35	338.06	1,803.9	12.8	-1.8	0.03	-0.03	0.84	-12.6	-3.2
1,992.0	0.75	309.41	1,991.9	14.1	-2.9	0.25	0.21	-15.24	-11.2	-9.1
2,180.0	0.18	272.93	2,179.9	14.9	-4.2	0.33	-0.30	-19.40	-4.9	-14.7
2,367.0	0.09	251.23	2,366.9	14.9	-4.6	0.05	-0.05	-11.60	0.4	-15.6
2,556.0	0.00	334.99	2,555.9	14.9	-4.7	0.05	-0.05	0.00	-14.9	4.7
2,743.0	0.26	92.06	2,742.9	14.8	-4.3	0.14	0.14	0.00	4.8	14.7



PVA Report

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Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
2,931.0	0.62	92.76	2,930.9	14.8	-2.9	0.19	0.19	0.37	3.6	14.6	
3,118.0	0.92	88.19	3,117.8	14.8	-0.4	0.16	0.16	-2.44	-0.1	14.8	
3,306.0	1.27	86.34	3,305.8	15.0	3.2	0.19	0.19	-0.98	-4.2	14.7	
3,495.0	1.98	88.01	3,494.7	15.2	8.6	0.38	0.38	0.88	-9.1	14.9	
3,683.0	2.15	90.74	3,682.6	15.3	15.3	0.10	0.09	1.45	-15.1	15.5	
3,871.0	2.02	87.93	3,870.5	15.3	22.2	0.09	-0.07	-1.49	-22.7	14.5	
4,059.0	1.76	92.06	4,058.4	15.4	28.4	0.16	-0.14	2.20	-27.8	16.4	
4,246.0	1.54	93.64	4,245.3	15.1	33.8	0.12	-0.12	0.84	-32.7	17.2	
4,435.0	1.19	93.81	4,434.3	14.8	38.3	0.19	-0.19	0.09	-37.2	17.3	
4,623.0	2.11	100.23	4,622.2	14.1	43.6	0.50	0.49	3.41	-40.4	21.6	
4,810.0	2.33	108.84	4,809.0	12.2	50.6	0.21	0.12	4.60	-43.9	27.9	
4,997.0	2.95	114.03	4,995.8	9.0	58.6	0.36	0.33	2.78	-49.8	32.1	
5,091.0	3.03	118.25	5,089.7	6.9	63.0	0.25	0.09	4.49	-52.2	35.9	
5,272.0	2.59	122.82	5,270.5	2.4	70.6	0.27	-0.24	2.52	-58.0	40.3	
5,460.0	1.54	127.21	5,458.4	-1.4	76.2	0.56	-0.56	2.34	-61.6	45.0	
5,647.0	1.58	133.98	5,645.3	-4.7	80.1	0.10	0.02	3.62	-60.9	52.2	
5,835.0	2.33	151.21	5,833.2	-9.9	83.8	0.50	0.40	9.16	-49.0	68.7	
6,021.0	1.14	75.18	6,019.1	-12.7	87.4	1.25	-0.64	-40.88	-81.2	-34.7	
6,209.0	0.84	77.20	6,207.1	-12.0	90.5	0.16	-0.16	1.07	-85.6	-31.7	
6,396.0	0.92	354.06	6,394.1	-10.2	91.7	0.63	0.04	-44.46	19.6	-90.2	
6,584.0	0.79	355.46	6,582.1	-7.4	91.5	0.07	-0.07	0.74	14.6	-90.6	
6,771.0	0.79	357.66	6,769.0	-4.8	91.3	0.02	0.00	1.18	8.5	-91.0	
6,959.0	1.10	357.31	6,957.0	-1.7	91.2	0.16	0.16	-0.19	6.0	-91.0	
7,147.0	0.97	355.46	7,145.0	1.7	91.0	0.07	-0.07	-0.98	5.5	-90.8	
7,335.0	0.79	349.93	7,333.0	4.6	90.6	0.11	-0.10	-2.94	11.4	-90.0	
7,523.0	0.26	20.86	7,521.0	6.2	90.5	0.31	-0.28	16.45	-38.1	-82.4	
7,710.0	0.31	78.26	7,707.9	6.7	91.2	0.15	0.03	30.70	-90.6	-12.0	



PVA Report

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Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
7,898.0	0.18	114.73	7,895.9	6.7	91.9	0.10	-0.07	19.40	-80.7	44.6	
8,086.0	0.79	153.23	8,083.9	5.4	92.8	0.35	0.32	20.48	-36.9	85.3	
8,273.0	0.83	159.56	8,270.9	3.0	93.8	0.05	0.02	3.39	-29.9	89.0	
8,461.0	0.92	156.83	8,458.9	0.3	94.9	0.05	0.05	-1.45	-37.0	87.4	
8,649.0	1.27	154.11	8,646.9	-2.9	96.4	0.19	0.19	-1.45	-44.7	85.5	
8,837.0	0.75	182.76	8,834.8	-6.0	97.3	0.38	-0.28	15.24	-1.3	97.4	
9,025.0	1.14	186.80	9,022.8	-9.1	97.0	0.21	0.21	2.15	2.4	97.4	
9,118.0	1.14	193.22	9,115.8	-10.9	96.7	0.14	0.00	6.90	11.5	96.6	
9,211.0	2.24	173.71	9,208.8	-13.6	96.7	1.32	1.18	-20.98	-24.1	94.6	
9,305.0	2.73	169.75	9,302.7	-17.7	97.3	0.55	0.52	-4.21	-32.9	92.0	
9,399.0	3.03	177.13	9,396.5	-22.3	97.8	0.51	0.32	7.85	-21.1	93.6	
9,493.0	4.31	164.48	9,490.3	-28.2	98.9	1.60	1.36	-13.46	-39.0	84.3	
9,555.0	4.57	154.02	9,552.2	-32.7	100.6	1.37	0.42	-16.87	-51.3	75.2	
9,587.0	5.89	151.82	9,584.0	-35.3	101.9	4.17	4.12	-6.87	-52.9	73.1	
9,679.0	9.76	156.04	9,675.2	-46.6	107.3	4.25	4.21	4.59	-46.0	76.0	
9,773.0	9.05	154.55	9,767.9	-60.5	113.7	0.80	-0.76	-1.59	-47.9	73.8	
9,867.0	7.38	156.83	9,860.9	-72.8	119.3	1.81	-1.78	2.43	-43.0	74.6	
9,960.0	6.99	163.07	9,953.2	-83.7	123.3	0.94	-0.42	6.71	-31.4	76.4	
10,053.0	6.99	163.77	10,045.5	-94.5	126.5	0.09	0.00	0.75	-26.8	73.7	
10,116.0	5.98	157.89	10,108.1	-101.2	128.8	1.92	-1.60	-9.33	-31.0	69.1	
10,147.0	6.68	154.90	10,138.9	-104.4	130.2	2.50	2.26	-9.65	-32.9	67.0	
10,241.0	8.48	156.39	10,232.1	-115.7	135.3	1.93	1.91	1.59	-28.2	66.7	
10,334.0	8.97	169.84	10,324.0	-129.1	139.3	2.25	0.53	14.46	-11.6	68.3	
10,428.0	9.01	182.32	10,416.9	-143.7	140.3	2.07	0.04	13.28	2.0	62.9	
10,521.0	6.77	187.94	10,509.0	-156.4	139.2	2.54	-2.41	6.04	7.9	54.1	
10,615.0	5.23	190.32	10,602.5	-166.1	137.7	1.66	-1.64	2.53	12.5	44.3	
10,708.0	5.27	175.55	10,695.1	-174.5	137.3	1.45	0.04	-15.88	6.4	38.8	



PVA Report

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Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
10,802.0	7.16	171.68	10,788.5	-184.6	138.4	2.06	2.01	-4.12	8.0	33.6	
10,896.0	6.99	174.94	10,881.8	-196.1	139.8	0.46	-0.18	3.47	12.5	27.3	
10,989.0	6.02	179.16	10,974.2	-206.6	140.4	1.16	-1.04	4.54	17.5	19.8	
11,083.0	5.71	182.32	11,067.7	-216.2	140.3	0.48	-0.33	3.36	22.2	11.2	
11,177.0	6.51	179.07	11,161.2	-226.2	140.1	0.93	0.85	-3.46	25.2	5.1	
11,271.0	6.15	177.22	11,254.6	-236.6	140.5	0.44	-0.38	-1.97	28.6	-0.8	
11,365.0	5.76	188.21	11,348.1	-246.3	140.0	1.28	-0.41	11.69	30.7	-14.4	
11,459.0	5.27	194.80	11,441.7	-255.1	138.3	0.85	-0.52	7.01	31.2	-27.8	
11,615.0	4.40	166.15	11,597.1	-267.8	137.9	1.62	-0.56	-18.37	53.1	-19.5	
11,646.0	4.13	171.16	11,628.1	-270.1	138.3	1.48	-0.87	16.16	53.8	-25.6	
11,677.0	4.79	155.25	11,659.0	-272.4	139.0	4.50	2.13	-51.32	61.4	-10.6	
11,709.0	7.12	130.29	11,690.8	-274.9	141.1	10.72	7.28	-78.00	61.9	17.3	
11,740.0	9.85	112.80	11,721.5	-277.1	145.0	12.02	8.81	-56.42	53.5	37.4	
11,772.0	10.90	99.61	11,752.9	-278.7	150.5	8.09	3.28	-41.22	41.4	51.9	
11,817.0	12.97	63.32	11,797.0	-277.1	159.3	16.99	4.60	-80.64	-4.0	71.3	
KOP (Cobalt 32 State #701H)											
11,866.0	15.08	35.45	11,844.6	-269.5	167.9	14.28	4.31	-56.88	-50.6	65.2	
11,911.0	17.71	11.72	11,887.8	-258.0	172.7	15.86	5.84	-52.73	-84.9	39.7	
11,959.0	23.16	8.30	11,932.8	-241.5	175.5	11.62	11.35	-7.12	-98.4	37.3	
12,004.0	28.31	1.18	11,973.3	-222.0	177.0	13.33	11.44	-15.82	-111.8	27.4	
12,053.0	33.36	0.39	12,015.4	-196.9	177.3	10.34	10.31	-1.61	-120.8	29.8	
12,098.0	35.69	359.24	12,052.5	-171.4	177.3	5.38	5.18	-2.56	-126.5	31.3	
12,147.0	37.89	0.21	12,091.7	-142.1	177.1	4.64	4.49	1.98	-126.9	37.1	
12,192.0	40.18	2.58	12,126.7	-113.8	177.8	6.07	5.09	5.27	-122.1	43.2	
12,241.0	41.93	3.99	12,163.6	-81.6	179.7	4.04	3.57	2.88	-112.8	45.7	
12,268.1	44.18	4.69	12,183.4	-63.2	181.1	8.49	8.31	2.60	-106.1	45.8	
HL Crossing, MD:12268.1', TVD:12183.4', N/S:-63.2', E/W:181.1', INC:44.18											



PVA Report

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Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
12,286.0	45.67	5.13	12,196.1	-50.6	182.2	8.49	8.32	2.43	-101.2		45.5
12,335.0	50.86	4.96	12,228.7	-14.2	185.4	10.59	10.59	-0.35	-87.3		42.5
12,372.6	51.92	2.90	12,252.2	15.1	187.4	5.12	2.81	-5.48	-74.8		40.1
FTP (Cobalt 32 State #701H)											
12,380.0	52.13	2.50	12,256.7	20.9	187.7	5.12	2.87	-5.39	-72.0		39.8
12,430.0	56.75	358.01	12,285.8	61.6	187.8	11.78	9.24	-8.98	-52.7		38.4
12,475.0	63.60	358.72	12,308.1	100.6	186.7	15.28	15.22	1.58	-34.5		39.1
12,523.0	75.82	0.83	12,324.8	145.5	186.5	25.79	25.46	4.40	-19.3		38.0
12,538.0	80.04	1.00	12,327.9	160.2	186.8	28.16	28.13	1.13	-16.3		37.5
12,568.0	85.80	1.62	12,331.6	189.9	187.5	19.31	19.20	2.07	-12.5		36.4
12,648.0	90.73	3.20	12,334.0	269.8	190.8	6.47	6.16	1.97	-9.4		32.3
12,742.0	94.73	2.14	12,329.5	363.6	195.2	4.40	4.26	-1.13	-13.0		27.1
12,836.0	94.29	1.79	12,322.1	457.2	198.4	0.60	-0.47	-0.37	-19.4		23.0
12,881.0	95.12	2.14	12,318.5	502.0	199.9	2.00	1.84	0.78	-22.6		21.1
12,930.0	94.02	1.62	12,314.6	550.9	201.6	2.48	-2.24	-1.06	-26.0		19.1
12,975.0	90.29	1.35	12,312.9	595.8	202.7	8.31	-8.29	-0.60	-27.2		17.5
13,024.0	87.96	1.18	12,313.6	644.8	203.8	4.77	-4.76	-0.35	-25.9		16.1
13,069.0	86.51	0.47	12,315.8	689.7	204.4	3.59	-3.22	-1.58	-23.3		15.0
13,119.0	87.03	0.30	12,318.6	739.6	204.8	1.09	1.04	-0.34	-19.9		14.3
13,164.0	90.51	0.83	12,319.6	784.6	205.2	7.82	7.73	1.18	-18.5		13.4
13,213.0	91.65	0.91	12,318.6	833.6	206.0	2.33	2.33	0.16	-18.9		12.2
13,258.0	92.57	1.00	12,317.0	878.6	206.7	2.05	2.04	0.20	-20.1		11.1
13,268.7	92.58	0.98	12,316.5	889.3	206.9	0.21	0.10	-0.18	-20.5		10.8
TGT 1 (Cobalt 32 State #701H)											
13,307.0	92.62	0.91	12,314.8	927.5	207.5	0.21	0.10	-0.18	-21.7		9.8
13,352.0	93.45	0.91	12,312.4	972.4	208.2	1.84	1.84	0.00	-23.5		8.7
13,400.0	89.89	0.65	12,311.0	1,020.4	208.9	7.44	-7.42	-0.54	-24.2		7.7



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3441.0usft (HP 444)
Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
13,445.0	87.74	359.86	12,311.9	1,065.4	209.1	5.09	-4.78	-1.76	-22.6	7.1	
13,494.0	87.82	359.68	12,313.8	1,114.4	208.9	0.40	0.16	-0.37	-20.0	6.9	
13,539.0	88.66	359.24	12,315.2	1,159.3	208.5	2.11	1.87	-0.98	-18.0	6.9	
13,588.0	89.19	359.07	12,316.1	1,208.3	207.8	1.14	1.08	-0.35	-16.4	7.2	
13,633.0	90.02	359.07	12,316.4	1,253.3	207.0	1.84	1.84	0.00	-15.4	7.5	
13,682.0	90.29	358.36	12,316.3	1,302.3	205.9	1.55	0.55	-1.45	-14.8	8.2	
13,727.0	90.55	357.66	12,316.0	1,347.3	204.4	1.66	0.58	-1.56	-14.5	9.4	
13,774.0	91.21	357.31	12,315.2	1,394.2	202.3	1.59	1.40	-0.74	-14.6	11.0	
13,819.0	92.18	357.84	12,313.9	1,439.2	200.4	2.46	2.16	1.18	-15.3	12.5	
13,868.0	91.08	359.86	12,312.5	1,488.1	199.4	4.69	-2.24	4.12	-16.0	13.1	
13,913.0	90.55	359.68	12,311.9	1,533.1	199.2	1.24	-1.18	-0.40	-16.0	12.9	
13,961.0	89.14	359.77	12,312.0	1,581.1	199.0	2.94	-2.94	0.19	-15.1	12.7	
13,971.2	89.17	359.83	12,312.2	1,591.3	199.0	0.65	0.29	0.58	-14.8	12.6	
TGT 2 (Cobalt 32 State #701H)											
14,006.0	89.27	0.03	12,312.6	1,626.1	198.9	0.65	0.29	0.58	-13.9	12.4	
14,055.0	91.43	359.95	12,312.3	1,675.1	198.9	4.41	4.41	-0.16	-13.5	11.9	
14,100.0	91.74	359.16	12,311.1	1,720.1	198.6	1.89	0.69	-1.76	-14.1	11.9	
14,148.0	90.15	0.47	12,310.3	1,768.1	198.4	4.29	-3.31	2.73	-14.2	11.6	
14,193.0	88.84	358.72	12,310.7	1,813.1	198.1	4.86	-2.91	-3.89	-13.1	11.6	
14,242.0	88.70	359.86	12,311.7	1,862.1	197.5	2.34	-0.29	2.33	-11.4	11.8	
14,287.0	90.07	358.63	12,312.2	1,907.1	196.9	4.09	3.04	-2.73	-10.3	12.0	
14,336.0	90.20	358.01	12,312.1	1,956.0	195.5	1.29	0.27	-1.27	-9.7	13.0	
14,381.0	88.31	358.19	12,312.7	2,001.0	194.0	4.22	-4.20	0.40	-8.5	14.1	
14,430.0	86.64	357.75	12,314.9	2,049.9	192.2	3.52	-3.41	-0.90	-5.6	15.4	
14,475.0	85.76	356.17	12,317.8	2,094.8	189.9	4.01	-1.96	-3.51	-2.0	17.4	
14,524.0	87.74	356.43	12,320.6	2,143.6	186.7	4.08	4.04	0.53	1.5	20.1	
14,569.0	88.26	355.82	12,322.2	2,188.4	183.7	1.78	1.16	-1.36	3.7	22.8	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3441.0usft (HP 444)
Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
14,617.0	88.53	355.82	12,323.5	2,236.3	180.2	0.56	0.56	0.00	5.7	25.8	
14,662.0	90.24	355.64	12,324.0	2,281.2	176.8	3.82	3.80	-0.40	6.9	28.8	
14,671.9	90.28	355.81	12,324.0	2,291.0	176.1	1.80	0.36	1.76	7.0	29.4	
TGT 3 (Cobalt 32 State #701H)											
14,712.0	90.42	356.52	12,323.7	2,331.1	173.4	1.80	0.36	1.76	7.5	31.8	
14,757.0	90.73	356.52	12,323.3	2,376.0	170.7	0.69	0.69	0.00	7.9	34.1	
14,805.0	92.22	357.93	12,322.0	2,423.9	168.3	4.27	3.10	2.94	7.7	36.0	
14,850.0	92.75	358.10	12,320.1	2,468.8	166.8	1.24	1.18	0.38	6.6	37.2	
14,899.0	93.32	357.05	12,317.5	2,517.7	164.7	2.44	1.16	-2.14	5.0	38.8	
14,944.0	92.53	356.52	12,315.2	2,562.6	162.2	2.11	-1.76	-1.18	3.6	41.0	
14,992.0	91.65	358.19	12,313.4	2,610.5	160.0	3.93	-1.83	3.48	2.8	42.8	
15,037.0	90.77	358.63	12,312.5	2,655.5	158.7	2.19	-1.96	0.98	2.7	43.6	
15,086.0	89.41	0.65	12,312.4	2,704.5	158.4	4.97	-2.78	4.12	3.6	43.5	
15,180.0	86.11	0.65	12,316.1	2,798.4	159.5	3.51	-3.51	0.00	9.2	41.6	
15,274.0	91.12	359.33	12,318.4	2,892.3	159.5	5.51	5.33	-1.40	13.3	40.8	
15,318.0	93.10	0.21	12,316.7	2,936.3	159.3	4.92	4.50	2.00	12.5	40.6	
15,368.0	94.33	358.63	12,313.5	2,986.2	158.8	4.00	2.46	-3.16	10.4	40.7	
15,412.0	92.75	0.30	12,310.8	3,030.1	158.4	5.22	-3.59	3.80	8.5	40.7	
15,462.0	93.14	359.51	12,308.2	3,080.0	158.3	1.76	0.78	-1.58	6.9	40.4	
15,507.0	90.55	359.24	12,306.8	3,125.0	157.8	5.79	-5.76	-0.60	6.4	40.5	
15,556.0	90.24	1.27	12,306.4	3,174.0	158.0	4.19	-0.63	4.14	7.0	39.8	
15,602.0	89.89	0.21	12,306.4	3,220.0	158.6	2.43	-0.76	-2.30	7.9	38.8	
15,650.0	90.64	2.06	12,306.2	3,268.0	159.6	4.16	1.56	3.85	8.6	37.5	
15,677.9	89.97	1.74	12,306.0	3,295.9	160.5	2.66	-2.41	-1.14	9.0	36.3	
TGT 4 (Cobalt 32 State #701H)											
15,743.0	88.40	1.00	12,306.9	3,360.9	162.1	2.66	-2.41	-1.14	11.0	34.2	
15,792.0	86.81	358.54	12,309.0	3,409.9	161.9	5.97	-3.24	-5.02	13.7	34.0	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3441.0usft (HP 444)
Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey										
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
15,838.0	86.95	358.54	12,311.5	3,455.8	160.7	0.30	0.30	0.00	16.8	34.7
15,883.0	88.22	359.86	12,313.4	3,500.7	160.1	4.07	2.82	2.93	19.4	35.0
15,931.0	89.01	359.60	12,314.5	3,548.7	159.8	1.73	1.65	-0.54	21.3	34.8
15,976.0	90.33	359.51	12,314.8	3,593.7	159.5	2.94	2.93	-0.20	22.2	34.7
16,025.0	91.30	359.42	12,314.1	3,642.7	159.0	1.99	1.98	-0.18	22.3	34.8
16,070.0	92.62	1.09	12,312.6	3,687.7	159.2	4.73	2.93	3.71	21.3	34.2
16,119.0	90.81	0.56	12,311.1	3,736.7	159.9	3.85	-3.69	-1.08	20.6	33.0
16,164.0	91.56	0.03	12,310.2	3,781.6	160.2	2.04	1.67	-1.18	20.3	32.4
16,212.0	90.42	1.79	12,309.3	3,829.6	160.9	4.37	-2.37	3.67	20.2	31.2
16,257.0	90.90	4.25	12,308.8	3,874.6	163.3	5.57	1.07	5.47	20.4	28.5
16,306.0	92.44	3.02	12,307.4	3,923.4	166.4	4.02	3.14	-2.51	19.6	25.0
16,351.0	88.97	4.52	12,306.8	3,968.3	169.4	8.40	-7.71	3.33	19.8	21.6
16,400.0	88.70	2.14	12,307.8	4,017.2	172.2	4.89	-0.55	-4.86	21.5	18.3
16,445.0	89.14	1.88	12,308.7	4,062.2	173.8	1.14	0.98	-0.58	23.0	16.4
16,493.0	90.02	0.74	12,309.0	4,110.2	174.9	3.00	1.83	-2.37	24.0	14.9
16,587.0	91.16	1.18	12,308.1	4,204.2	176.5	1.30	1.21	0.47	24.4	12.5
16,681.0	91.74	359.33	12,305.7	4,298.1	176.9	2.06	0.62	-1.97	23.4	11.2
16,775.0	93.49	358.54	12,301.4	4,392.0	175.1	2.04	1.86	-0.84	20.5	12.2
16,868.0	92.88	355.02	12,296.2	4,484.7	169.9	3.84	-0.66	-3.78	16.8	16.5
16,938.2	94.67	357.61	12,291.6	4,554.6	165.4	4.48	2.55	3.69	13.2	20.4
HL Crossing, MD:16938.2', TVD:12291.6', N/S:4554.6', E/W:165.4', INC:94.67										
16,942.0	94.77	357.75	12,291.3	4,558.4	165.3	4.48	2.55	3.70	12.9	20.6
Final MWD Survey (MD= 16942.0')										
17,010.0	94.77	357.75	12,285.6	4,626.1	162.6	0.00	0.00	0.00	8.3	22.6
Final Bit Projection (MD= 17010.0') - PBHL (Cobalt 32 State #701H)										

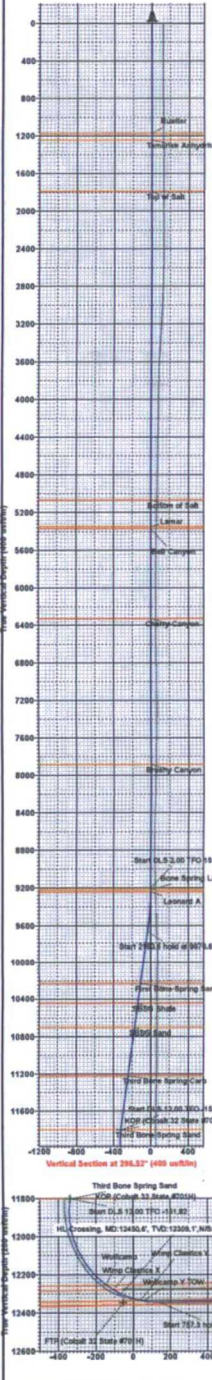


PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #701H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3441.0usft (HP 444)
Site:	Cobalt 32 State	MD Reference:	KB= 25' @ 3441.0usft (HP 444)
Well:	#701H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,268.1	12,183.4	-63.2	181.1	HL Crossing, MD:12268.1', TVD:12183.4', N/S:-63.2', E/W:181.1', INC:44.18
16,938.2	12,291.6	4,554.6	165.4	HL Crossing, MD:16938.2', TVD:12291.6', N/S:4554.6', E/W:165.4', INC:94.67
16,942.0	12,291.3	4,558.4	165.3	Final MWD Survey (MD= 16942.0')
17,010.0	12,285.6	4,626.1	162.6	Final Bit Projection (MD= 17010.0')

Checked By: _____	Approved By: _____	Date: _____
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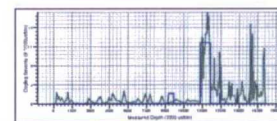
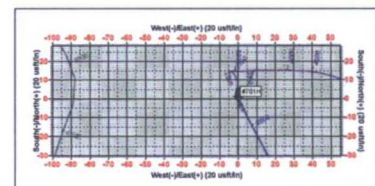
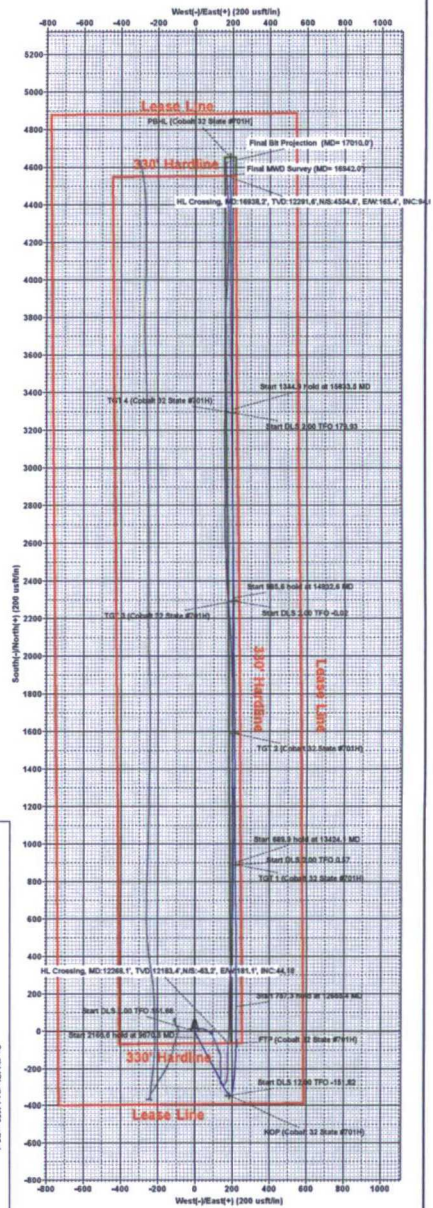
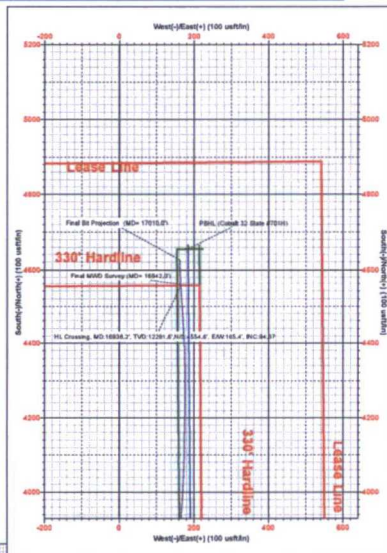
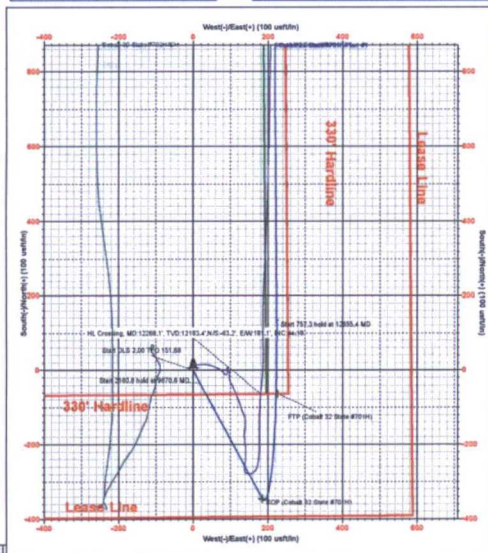
Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

Northing Easting Latitude Longitude
 425840.00 803748.00 32° 10' 4.331 N 103° 29' 7.008 W

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSet	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	9200.0	0.00	0.00	9200.0	0.0	0.0	0.00	0.00	0.0	
3	9670.6	9.41	151.68	9668.5	-34.0	18.3	2.00	151.68	-33.2	
4	11831.2	9.41	151.68	11800.0	-345.0	185.9	0.00	0.00	-337.3	KOP (Cobalt 32 State #701H)
5	12655.4	90.59	359.50	12344.8	132.7	224.3	12.00	-151.82	141.5	
6	13412.8	90.59	359.50	12337.0	890.0	217.7	0.00	0.00	897.9	TGT 1 (Cobalt 32 State #701H)
7	13424.1	90.82	359.50	12336.9	901.3	217.6	2.00	0.57	909.2	
8	14114.0	90.82	359.50	12327.0	1591.1	211.6	0.00	0.00	1598.2	TGT 2 (Cobalt 32 State #701H)
9	14816.0	90.81	359.50	12317.0	2293.0	205.5	0.00	168.71	2299.4	TGT 3 (Cobalt 32 State #701H)
10	14832.6	91.15	359.50	12316.7	2309.6	205.4	2.00	-0.02	2316.0	
11	15818.2	91.15	359.50	12297.0	3295.0	196.8	0.00	0.00	3300.2	TGT 4 (Cobalt 32 State #701H)
12	15833.5	90.84	359.50	12296.7	3310.3	196.7	2.00	179.93	3315.5	
13	17178.4	90.84	359.50	12277.0	4655.0	185.0	0.00	0.00	4658.7	PBHL (Cobalt 32 State #701H)

	TVD	+N-S	+E-W	Northing	Easting
KOP (Cobalt 32 State #701H)	11809.0	-345.0	185.9	425495.0	803933.90
PBH-L (Cobalt 32 State #701H)	12277.0	4655.0	185.0	430495.0	803933.00
TGT 4 (Cobalt 32 State #701H)	12287.0	3285.0	196.8	429135.0	803944.80
TGT 3 (Cobalt 32 State #701H)	12317.0	2293.0	205.5	428133.0	803953.50
TGT 2 (Cobalt 32 State #701H)	12327.0	1591.1	211.6	427431.10	803956.60
TGT 1 (Cobalt 32 State #701H)	12337.0	890.0	217.7	426730.0	803965.70
FTP (Cobalt 32 State #701H)	12347.0	-63.0	226.0	425777.0	803974.00



Lee County 986 854-03 4444
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Plan #1
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