

30-025-44369

HOBBS OCD

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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Nautilus 16 State Com

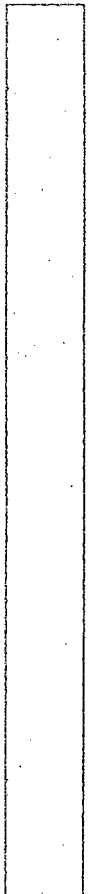
#615H

OH

Design: OH

PVA Report

26 April, 2018





PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #815H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3342.0usft
Site:	Nautilus 16 State Corn	MD Reference:	KB = 25 @ 3342.0usft
Well:	#815H	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	Nautilus 16 State Corn				
Site Position:		Northing:	383,047.00 usft	Latitude:	32° 3' 0.681 N
From:	Map	Easting:	806,402.00 usft	Longitude:	103° 28' 40.085 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	#815H					
Well Position	+N-S	0.0 usft	Northing:	383,084.00 usft	Latitude:	32° 3' 0.856 N
	+E-W	0.0 usft	Easting:	808,831.00 usft	Longitude:	103° 28' 11.860 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,317.0 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/10/2018	6.83	59.91	47,787.97759588

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.0	0.0	0.0	173.47	



PVA Report

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Well:	#815H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey Program	Date	4/28/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
189.0	762.0	Trueshot MWD (OH)	MWD	OWSG MWD - Standard	
887.0	17,410.0	Phoenix MWD (OH)	MWD	OWSG MWD - Standard	

MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	Solid ("/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
189.0	0.60	252.20	189.0	-0.3	-0.9	0.32	0.32	0.00	-1.0	0.0
282.0	0.50	288.00	282.0	-0.3	-1.8	0.38	-0.11	38.49	-1.6	0.9
376.0	0.80	282.20	376.0	-0.1	-2.8	0.33	0.32	-6.17	-2.7	0.7
472.0	0.70	283.70	472.0	0.2	-4.0	0.11	-0.10	1.56	-4.0	0.7
565.0	1.10	276.90	565.0	0.5	-5.5	0.44	0.43	-7.31	-5.5	0.2
692.0	0.80	272.90	691.9	0.7	-7.6	0.24	-0.24	-3.15	-7.6	-0.3
762.0	0.90	277.70	761.9	0.8	-8.6	0.18	0.14	6.86	-8.6	0.4
887.0	0.71	233.79	886.9	0.4	-10.2	0.50	-0.15	-35.13	-8.0	-6.4
1,077.0	0.71	248.74	1,076.9	-0.7	-12.3	0.10	0.00	7.87	-11.7	-3.8
1,268.0	0.42	238.76	1,267.9	-1.5	-14.0	0.16	-0.15	-5.23	-12.7	-6.0
1,458.0	0.54	226.98	1,457.9	-2.5	-15.2	0.08	0.06	-6.20	-12.8	-8.6
1,648.0	0.55	219.19	1,647.9	-3.8	-16.4	0.04	0.01	-4.10	-13.3	-10.4
1,838.0	1.37	114.99	1,837.9	-5.4	-15.0	0.84	0.43	-54.84	11.3	-11.3
2,028.0	1.87	94.25	2,027.8	-6.6	-9.8	0.40	0.26	-10.92	9.4	-7.4
2,218.0	2.18	67.22	2,217.7	-5.5	-3.4	0.52	0.16	-14.23	10.8	-1.9
2,408.0	2.38	58.74	2,407.5	-2.0	3.3	0.21	0.11	-4.46	9.4	2.1
2,598.0	1.96	57.51	2,597.4	1.8	9.4	0.22	-0.22	-0.65	8.1	5.3
2,789.0	1.81	78.47	2,788.3	4.1	15.1	0.37	-0.08	10.97	10.0	4.0
2,979.0	2.29	85.77	2,978.2	5.0	21.9	0.29	0.25	3.84	10.3	2.9
3,169.0	2.83	88.76	3,168.0	5.4	30.3	0.29	0.28	1.57	8.5	2.2



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #615H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3342.0usft
Site:	Nautilus 16 State Com	MD Reference:	KB = 25 @ 3342.0usft
Well:	#615H	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)	
3,359.0	3.63	94.25	3,357.7	5.0	41.0	0.45	0.42	2.89	4.6	0.7	
3,549.0	3.17	81.94	3,547.3	5.3	52.2	0.45	-0.24	-6.48	-0.2	0.8	
3,739.0	2.63	76.58	3,737.1	7.1	61.7	0.32	-0.28	-2.82	-3.3	1.2	
3,929.0	2.01	80.54	3,926.9	8.6	69.2	0.34	-0.33	2.08	-4.3	2.3	
4,119.0	2.03	84.62	4,116.8	9.5	75.8	0.08	0.01	2.15	-4.2	2.8	
4,309.0	1.77	78.03	4,306.7	10.4	82.1	0.18	-0.14	-3.47	-4.2	2.8	
4,499.0	1.77	79.09	4,496.6	11.6	87.8	0.02	0.00	0.56	-3.4	3.6	
4,689.0	2.09	85.33	4,686.5	12.4	94.1	0.20	0.17	3.28	-2.7	4.2	
4,880.0	2.00	95.26	4,877.4	12.4	100.9	0.19	-0.05	5.20	-2.2	4.0	
5,070.0	2.14	110.12	5,067.3	10.9	107.6	0.29	0.07	7.82	-1.8	2.5	
5,187.0	1.95	103.92	5,184.2	9.7	111.5	0.25	-0.16	-5.30	-1.4	-0.1	
5,351.0	3.04	68.76	5,348.1	10.6	118.3	1.12	0.66	-21.44	7.3	-1.2	
5,541.0	6.11	61.86	5,537.4	17.2	131.9	1.64	1.62	-3.63	16.7	3.3	
5,731.0	5.59	76.80	5,726.5	24.0	149.9	0.84	-0.27	7.86	22.7	-0.8	
5,921.0	6.65	69.55	5,915.4	30.0	169.2	0.69	0.56	-3.82	27.2	1.8	
6,111.0	8.68	69.59	6,103.7	38.8	192.9	1.07	1.07	0.02	26.7	2.6	
6,301.0	8.72	69.20	6,291.5	49.0	219.8	0.04	0.02	-0.21	22.6	3.7	
6,492.0	7.53	70.87	6,480.6	58.2	245.2	0.64	-0.62	0.87	20.7	3.8	
6,682.0	7.29	69.72	6,669.0	66.5	268.2	0.15	-0.13	-0.61	20.8	4.7	
6,872.0	7.21	71.97	6,857.5	74.3	290.9	0.15	-0.04	1.18	21.9	4.2	
7,062.0	7.21	72.23	7,046.0	81.6	313.6	0.02	0.00	0.14	22.9	3.9	
7,252.0	7.59	74.74	7,234.4	88.6	337.0	0.26	0.20	1.32	23.4	2.0	
7,442.0	8.76	80.27	7,422.4	94.3	363.4	0.74	0.62	2.91	21.0	-2.8	
7,632.0	7.91	82.69	7,610.4	98.4	390.6	0.48	-0.45	1.27	17.7	-7.8	
7,822.0	7.28	85.59	7,798.8	101.0	415.6	0.39	-0.33	1.53	15.9	-14.0	
8,012.0	3.96	71.61	7,987.8	104.0	433.8	1.88	-1.75	-7.36	16.0	-12.7	
8,202.0	1.92	25.91	8,177.6	109.0	441.4	1.56	-1.07	-24.05	14.9	0.3	



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Site:	Nautilus 16 State Com	MD Reference:	KB = 25 @ 3342.0usft
Well:	#815H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)
8,392.0	1.38	18.30	8,367.5	114.0	443.5	0.31	-0.28	-4.01	9.3	1.8
8,582.0	1.33	41.38	8,557.5	117.8	445.7	0.29	-0.03	12.15	4.9	-1.0
8,773.0	0.98	48.67	8,748.4	120.6	448.4	0.20	-0.18	3.82	0.9	-1.4
8,963.0	0.66	12.15	8,938.4	122.7	449.9	0.31	-0.17	-19.22	-0.8	-1.5
9,153.0	0.55	63.66	9,128.4	124.2	450.9	0.28	-0.06	27.11	-3.3	0.6
9,343.0	0.28	100.89	9,318.4	124.5	452.2	0.19	-0.14	19.59	-3.5	3.0
9,533.0	0.19	46.17	9,508.4	124.6	452.9	0.12	-0.05	-28.80	-5.0	-1.5
9,723.0	0.75	352.42	9,698.4	126.1	452.9	0.35	0.29	-28.29	-3.2	-5.2
9,913.0	1.24	334.92	9,888.4	129.2	451.9	0.30	0.26	-9.21	-4.7	-6.3
10,103.0	1.83	340.86	10,078.3	133.9	450.0	0.32	0.31	3.13	-10.5	-5.6
10,293.0	0.62	131.08	10,268.3	136.1	449.8	1.26	-0.64	79.06	7.9	11.5
10,483.0	1.26	296.55	10,458.2	136.4	448.7	0.98	0.34	87.09	-5.9	-12.9
10,674.0	1.75	294.80	10,649.2	138.5	444.2	0.26	0.26	-0.92	-10.5	-13.1
10,864.0	3.49	258.27	10,839.0	138.6	435.9	1.23	0.92	-19.23	-8.7	-18.5
11,054.0	1.75	283.85	11,028.8	138.1	427.4	1.08	-0.92	13.46	-24.0	-10.4
11,244.0	0.50	49.95	11,218.8	139.3	425.2	1.10	-0.66	66.37	6.6	27.9
11,434.0	1.54	359.40	11,408.7	142.4	425.8	0.67	0.55	-26.61	-20.4	22.2
11,624.0	1.72	1.73	11,598.7	147.8	425.9	0.10	0.09	1.23	-24.9	23.1
11,814.0	1.06	327.94	11,788.6	152.1	425.0	0.54	-0.35	-17.78	-37.7	3.7
11,872.0	0.50	284.38	11,846.6	152.7	424.5	1.34	-0.97	-75.10	-30.5	-23.6
12,017.0	5.69	164.92	11,991.4	145.9	425.8	4.10	3.58	-82.39	28.6	-15.6
12,112.0	7.48	179.16	12,085.7	135.1	427.1	2.54	1.88	14.99	13.2	-21.0
12,139.6	12.35	184.42	12,112.9	130.4	426.9	17.95	17.66	19.08	6.4	-21.9
KOP (Nautilus 16 Fed Com #815H)										
12,159.0	15.81	186.19	12,131.7	125.7	426.4	17.95	17.81	9.11	1.5	-22.1
12,207.0	20.02	180.00	12,177.4	111.0	425.7	9.61	8.77	-12.90	-6.4	-23.1
12,254.0	23.89	181.67	12,221.0	93.4	425.5	8.34	8.23	3.55	-16.1	-24.0



PVA Report

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Site:	Nautilus 16 State Com			MD Reference:				KB = 25 @ 3342.0usft			
Well:	#615H			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)	
12,302.0	28.19	179.65	12,264.1	72.3	425.2	9.15	8.96	-4.21	-23.2	-26.4	
12,349.0	31.73	177.49	12,304.8	48.9	425.9	7.87	7.53	-4.60	-28.5	-28.9	
12,397.0	33.63	174.77	12,345.2	23.0	427.6	5.00	3.96	-5.67	-30.9	-31.2	
12,444.0	34.69	174.24	12,384.1	-3.2	430.2	2.34	2.26	-1.13	-30.3	-31.9	
12,492.0	38.42	174.02	12,422.7	-31.7	433.1	7.78	7.77	-0.46	-26.8	-32.4	
12,539.0	42.64	168.48	12,458.4	-61.8	437.8	11.80	8.98	-11.79	-19.5	-32.7	
12,587.0	48.47	167.56	12,492.0	-95.3	444.9	12.22	12.15	-1.92	-13.7	-29.1	
12,634.0	54.67	172.22	12,521.2	-131.5	451.3	15.30	13.19	9.91	-9.7	-26.0	
12,663.8	58.92	172.75	12,537.5	-156.3	454.6	14.33	14.25	1.78	-6.6	-25.5	
HL Crossing, MD:12663.8, TVD:12537.5, N/S:-156.3, E/W:454.6, INC:58.92											
12,682.0	61.51	173.05	12,546.5	-171.9	456.5	14.33	14.25	1.65	-4.9	-25.3	
12,692.3	62.82	172.80	12,551.3	-180.9	457.6	12.94	12.76	-2.44	-3.9	-25.3	
FTP (Nautilus 16 Fed Com #615H)											
12,729.0	67.51	171.95	12,566.8	-214.0	462.1	12.94	12.77	-2.31	-0.3	-24.6	
12,777.0	70.14	171.29	12,584.1	-258.2	468.6	5.63	5.48	-1.37	5.3	-23.1	
12,824.0	77.49	174.11	12,597.2	-303.0	474.3	16.66	15.64	6.00	10.9	-22.7	
12,872.0	83.76	176.31	12,605.0	-350.2	478.2	13.82	13.06	4.58	15.9	-24.2	
12,919.0	92.57	176.92	12,606.5	-397.0	481.0	18.79	18.74	1.30	17.6	-26.3	
12,967.0	92.82	176.39	12,604.3	-444.9	483.8	1.22	0.52	-1.10	15.3	-27.9	
13,062.0	92.41	176.22	12,599.9	-539.6	489.9	0.47	-0.43	-0.18	10.8	-28.1	
13,157.0	88.57	175.51	12,599.1	-634.3	496.8	4.11	-4.04	-0.75	9.9	-24.3	
13,252.0	89.75	177.01	12,600.5	-729.1	503.0	2.01	1.24	1.58	11.0	-19.0	
13,347.0	90.94	177.54	12,599.9	-824.0	507.5	1.37	1.25	0.56	10.2	-15.3	
13,443.0	89.64	176.48	12,599.4	-919.8	512.5	1.75	-1.35	-1.10	9.5	-11.2	
13,470.6	89.72	177.14	12,599.6	-947.4	514.0	2.43	0.27	2.41	9.6	-9.9	
TGT 1 (Nautilus 16 Fed Com #615H)											
13,538.0	89.90	178.77	12,599.8	-1,014.8	516.4	2.43	0.27	2.41	9.8	-8.0	



PVA Report

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Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3342.0usft
Site:	Nautilus 16 State Com	MD Reference:	KB = 25 @ 3342.0usft
Well:	#815H	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)	BuId (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
13,633.0	90.42	179.03	12,599.6	-1,109.7	518.2	0.81	0.55	0.27	9.4	-7.0	
13,728.0	90.11	178.90	12,599.1	-1,204.7	520.0	0.35	-0.33	-0.14	8.9	-6.2	
13,823.0	89.67	176.88	12,599.3	-1,299.6	523.5	2.18	-0.46	-2.13	9.0	-3.5	
13,918.0	90.26	180.04	12,599.4	-1,394.6	526.0	3.38	0.62	3.33	8.9	-1.8	
14,013.0	89.28	179.25	12,599.7	-1,489.6	528.6	1.33	-1.03	-0.83	9.2	-2.0	
14,108.0	88.23	178.72	12,601.8	-1,584.6	528.3	1.24	-1.11	-0.56	11.2	-1.1	
14,203.0	90.86	179.21	12,602.6	-1,679.5	530.0	2.82	2.77	0.52	11.8	-0.2	
14,298.0	88.85	178.28	12,602.8	-1,774.5	532.1	2.33	-2.12	-0.98	12.0	1.0	
14,393.0	91.01	178.50	12,602.9	-1,869.5	534.7	2.29	2.27	0.23	12.0	2.9	
14,475.7	90.93	178.31	12,601.5	-1,952.2	537.0	0.25	-0.09	-0.23	10.5	4.4	
TGT 2 (Nautilus 16 Fed Com #815H)											
14,488.0	90.92	178.28	12,601.3	-1,964.4	537.4	0.25	-0.09	-0.23	10.3	4.7	
14,584.0	90.97	180.48	12,599.7	-2,060.4	538.5	2.29	0.05	2.29	8.7	4.9	
14,679.0	90.41	178.85	12,598.6	-2,155.4	539.0	1.81	-0.59	-1.72	7.6	4.6	
14,774.0	91.83	181.32	12,596.7	-2,250.3	538.9	3.00	1.49	2.60	5.7	3.7	
14,869.0	87.56	178.77	12,597.2	-2,345.3	538.8	5.23	-4.49	-2.68	6.2	2.8	
14,964.0	91.63	182.41	12,597.9	-2,440.3	537.8	5.75	4.28	3.83	6.9	1.0	
15,059.0	89.61	180.22	12,596.9	-2,535.2	535.6	3.14	-2.13	-2.31	5.9	-2.0	
15,154.0	91.59	180.44	12,595.9	-2,630.2	535.1	2.10	2.08	0.23	4.9	-3.4	
15,249.0	91.71	179.78	12,593.2	-2,725.2	534.9	0.71	0.13	-0.69	2.2	-4.4	
15,344.0	91.63	179.60	12,590.4	-2,820.1	535.4	0.21	-0.08	-0.19	-0.6	-4.7	
15,439.0	89.49	178.15	12,589.5	-2,915.1	537.3	2.72	-2.25	-1.53	-1.5	-3.7	
15,481.9	89.73	179.56	12,589.8	-2,958.0	538.1	3.33	0.57	3.28	-1.2	-3.2	
TGT 3 (Nautilus 16 Fed Com #815H)											
15,534.0	90.03	181.27	12,589.9	-3,010.1	537.8	3.33	0.57	3.28	-1.2	-4.0	
15,629.0	89.87	182.24	12,589.9	-3,105.0	534.9	1.03	-0.17	1.02	-1.2	-7.8	
15,724.0	90.04	180.44	12,590.0	-3,200.0	532.6	1.90	0.18	-1.89	-1.2	-10.8	



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #615H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3342.0usft
Site:	Nautilus 16 State Com	MD Reference:	KB = 25 @ 3342.0usft
Well:	#615H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	EW (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
15,819.0	89.48	180.74	12,590.4	-3,295.0	531.7	0.67	-0.59	0.32	-0.9	-12.6
15,914.0	89.22	182.37	12,591.5	-3,390.0	529.1	1.74	-0.27	1.72	0.1	-16.0
16,009.0	91.20	187.51	12,591.1	-3,484.6	520.9	5.80	2.08	5.41	-0.3	-25.0
16,043.0	90.34	185.14	12,590.7	-3,518.4	517.2	7.41	-2.53	-6.97	-0.9	-29.1
16,075.0	89.37	182.24	12,590.8	-3,550.3	515.1	9.56	-3.03	-9.06	-0.8	-31.4
16,104.0	90.97	183.16	12,590.7	-3,579.3	513.7	6.36	5.52	3.17	-0.9	-33.0
16,136.0	89.55	180.79	12,590.5	-3,611.2	512.6	8.63	-4.44	-7.41	-1.1	-34.4
16,168.0	88.49	179.65	12,591.1	-3,643.2	512.5	4.86	-3.31	-3.56	-0.6	-34.8
16,199.0	88.18	179.25	12,592.0	-3,674.2	512.8	1.63	-1.00	-1.29	0.3	-34.8
16,231.0	86.02	176.96	12,593.6	-3,706.1	513.9	9.83	-6.75	-7.16	2.0	-34.0
16,263.0	85.75	176.61	12,595.9	-3,738.0	515.6	1.38	-0.84	-1.09	4.2	-32.5
16,295.0	85.99	176.26	12,598.2	-3,769.9	517.6	1.32	0.75	-1.09	6.5	-30.7
16,390.0	89.39	176.35	12,602.0	-3,864.6	523.7	3.58	3.58	0.09	10.2	-25.5
16,485.0	90.04	174.77	12,602.5	-3,959.3	531.1	1.80	0.68	-1.66	10.5	-18.9
16,491.3	90.01	174.80	12,602.5	-3,965.6	531.7	0.64	-0.49	0.41	10.5	-18.4
TGT 4 (Nautilus 16 Fed Com #615H)										
16,580.0	89.57	175.16	12,602.8	-4,053.9	539.4	0.64	-0.49	0.41	10.8	-11.4
16,675.0	90.42	175.78	12,602.8	-4,148.6	546.9	1.11	0.89	0.65	10.7	-4.7
16,770.0	91.20	176.48	12,601.5	-4,243.4	553.4	1.10	0.82	0.74	9.2	0.8
16,865.0	90.39	178.37	12,600.2	-4,338.3	557.6	2.16	-0.85	1.99	7.8	4.3
16,959.0	86.98	178.50	12,602.3	-4,432.2	560.2	3.63	-3.63	0.14	9.8	6.1
17,055.0	86.49	177.36	12,607.8	-4,528.0	563.7	1.29	-0.51	-1.19	15.2	8.7
17,150.0	86.27	176.22	12,613.8	-4,622.7	569.0	1.22	-0.23	-1.20	21.1	13.2
17,245.0	86.55	175.91	12,619.7	-4,717.2	575.5	0.44	0.29	-0.33	26.9	18.9
17,305.0	86.95	176.35	12,623.1	-4,777.0	579.5	0.99	0.66	0.74	30.2	22.4
HL Crossing, MD:17305.0, TVD:12623.1, N/S:-4777.0, EW:579.5, INC:86.95										
17,340.0	87.18	176.61	12,624.9	-4,811.9	581.7	0.99	0.66	0.74	32.0	24.2



PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #615H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3342.0usft
Site:	Nautilus 16 State Com	MD Reference:	KB = 25 @ 3342.0usft
Well:	#615H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

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)
17,358.0	87.14	176.61	12,625.8	-4,829.8	582.7	0.22	-0.22	0.00	32.9	25.1
Final MWD Survey (MD= 17358.0')										
17,400.9	87.14	176.61	12,628.0	-4,872.6	585.3	0.00	0.00	0.00	35.0	27.3
PBHL (Nautilus 16 Fed Com #615H)										
17,410.0	87.14	176.61	12,628.4	-4,881.7	585.8	0.00	0.00	0.00	35.7	28.0
Final Bit Projection (MD= 17410.0')										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/S (usft)	+E/W (usft)		
12,663.8	12,537.5	-156.3	454.6	HL Crossing, MD:12663.8', TVD:12537.5', N/S:-156.3', E/W:454.6', INC:58.92	
17,305.0	12,623.1	-4,777.0	579.5	HL Crossing, MD:17305.0', TVD:12623.1', N/S:-4777.0', E/W:579.5', INC:86.95	
17,358.0	12,625.8	-4,829.8	582.7	Final MWD Survey (MD= 17358.0')	
17,410.0	12,628.4	-4,881.7	585.8	Final Bit Projection (MD= 17410.0')	

Checked By: _____	Approved By: _____	Date: _____
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PROJECT DETAILS: Lea County, NM (NAD 83 NME)

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

Lea County, NM (NAD 83 NME)

Nautilus 16 State Com

#615H

Plan #1

WELL DETAILS: #615H

3317.0
KB = 25 @ 3343.0usft
Northing 383084.00 Easting 808831.00 Latitude 32° 3' 0.856 N Longitude 103° 28' 11.860 W

SECTION DETAILS

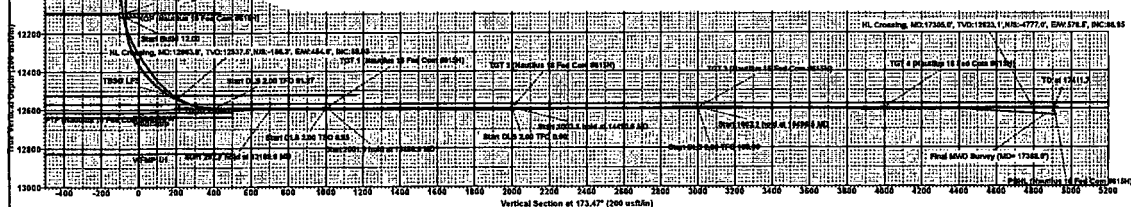
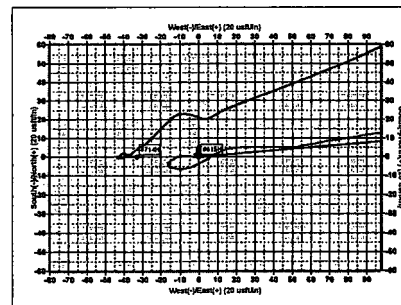
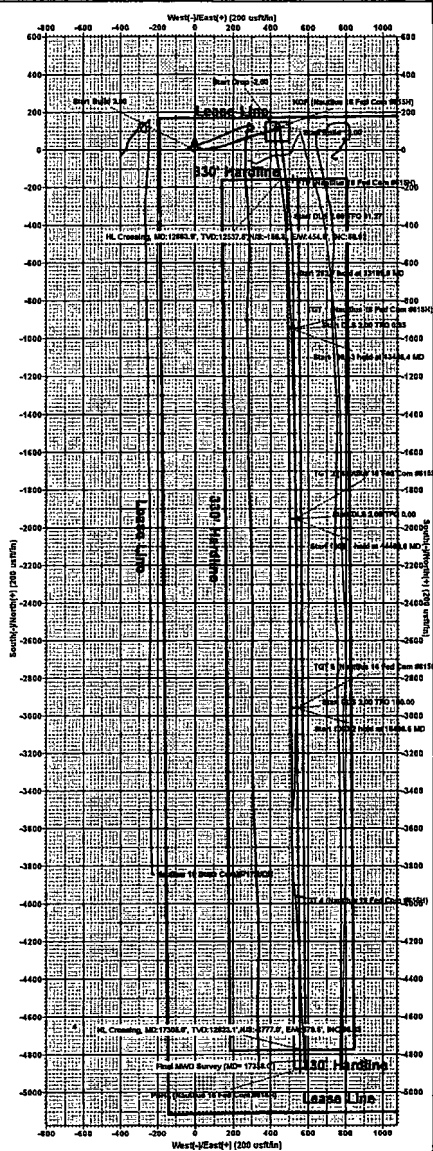
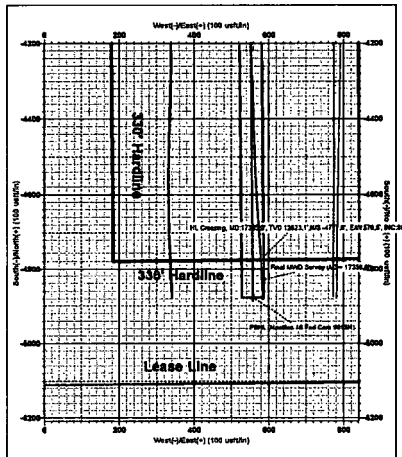
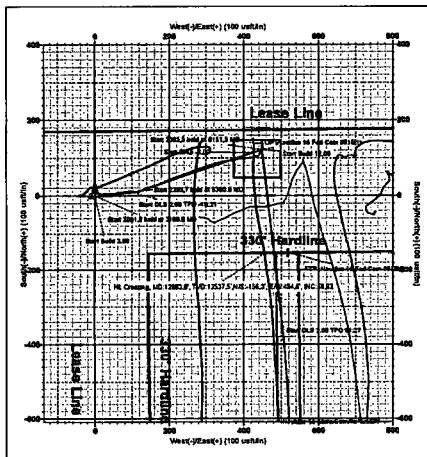
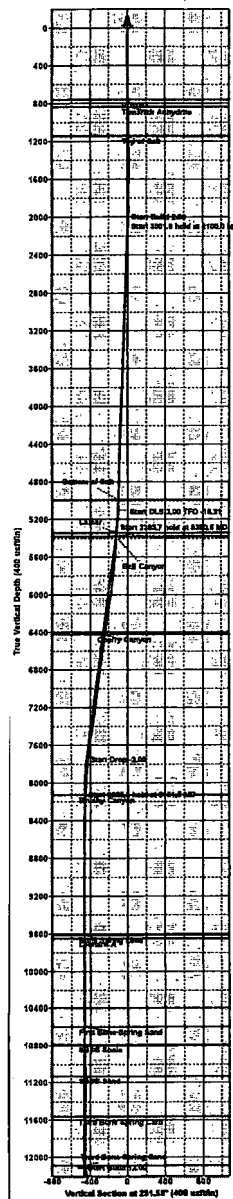
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0
2100.0	2.00	85.00	2100.0	0.2	1.7	2.00	85.00	0.0
5101.8	2.00	85.00	5100.0	9.3	106.1	0.00	0.00	2.8
5380.6	7.50	71.55	5377.7	15.5	128.2	2.00	-18.21	-0.8
7776.4	7.50	71.55	7753.0	114.4	424.9	0.00	0.00	-65.4
8151.5	0.00	0.00	8127.0	122.2	448.2	2.00	180.00	-70.5
12137.0	0.00	0.00	12112.5	122.2	448.2	0.00	0.00	-70.5
12887.0	90.00	173.44	12590.0	-352.1	502.7	12.00	173.44	407.0
13189.9	89.87	179.50	12590.3	-654.3	521.3	2.00	91.27	709.3
13482.6	89.87	179.50	12591.0	-947.0	523.9	0.00	0.00	1000.4
13486.4	89.94	179.50	12591.0	-950.8	523.9	2.00	0.95	1004.2
14487.7	89.94	179.50	12592.0	-1952.1	532.6	0.00	0.00	2000.0
14490.6	90.00	179.50	12592.0	-1954.9	532.6	2.00	0.00	2002.8
15493.6	90.00	179.50	12592.0	-2958.0	541.3	0.00	0.00	3000.4
15496.5	89.94	179.50	12592.0	-2969.9	541.4	2.00	180.00	3003.2
16499.7	89.94	179.50	12593.0	-3964.0	550.1	0.00	0.00	4000.8
17411.7	89.93	179.50	12594.0	-4876.0	558.0	0.00	-180.00	4907.8

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
KOP (Nautilus 16 Fed Com #615H)	12112.5	122.2	448.2	383084.00	808831.00
PTP (Nautilus 16 Fed Com #615H)	12880.0	-165.0	817.0	382929.00	809348.00
TOT 1 (Nautilus 16 Fed Com #615H)	12891.0	-947.0	823.9	382137.00	809364.88
TOT 2 (Nautilus 16 Fed Com #615H)	12892.0	-1952.1	532.6	381151.90	809363.61
TOT 3 (Nautilus 16 Fed Com #615H)	12892.0	-2958.0	541.3	380126.00	809372.34
TOT 4 (Nautilus 16 Fed Com #615H)	12893.0	-3964.0	550.1	379120.00	809381.08
PRHL (Nautilus 16 Fed Com #615H)	12894.0	-4876.0	558.0	378208.00	809389.00



Lea County, NM (NAD 83 NME)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level