



HOBBS OCD

OCT 31 2017

RECEIVED

Lea County, NM (NAD 83 NME)

Nautilus 16 State Com #711H

H&P 642

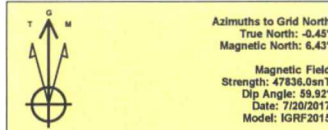
Plan #1

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

WELL DETAILS: #711H

KB= 25' @ 3355.0usft (H&P 642) 3330.0
Northing 383047.00 Easting 806437.00 Latitude 32° 3' 0.678 N Longitude 103° 28' 39.678 W



Azimuths to Grid North
True North: -0.45°
Magnetic North: 6.43°
Magnetic Field
Strength: 47336.0nT
Dip Angle: 59.52°
Date: 7/20/2017
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.43°
To convert a Magnetic Direction to a True Direction, Add 6.89° East
To convert a True Direction to a Grid Direction, Subtract 0.45°

SECTION DETAILS

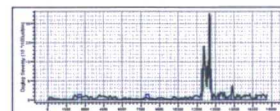
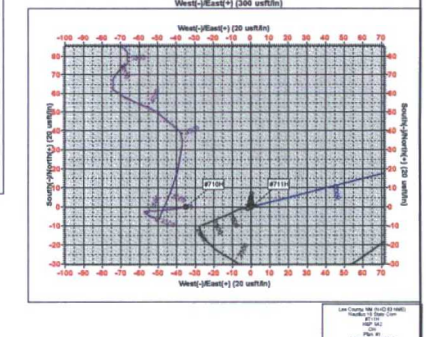
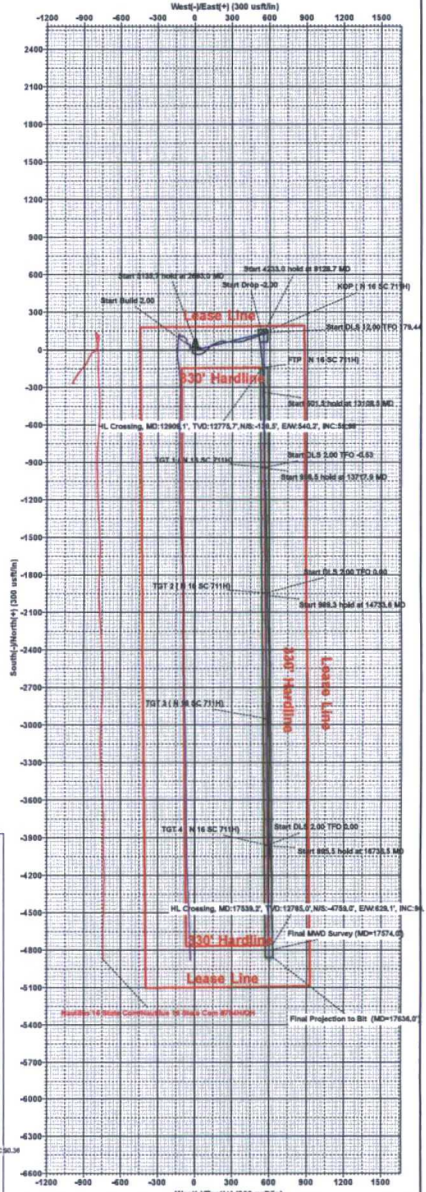
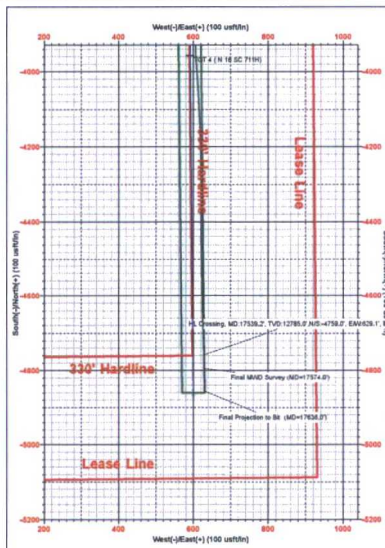
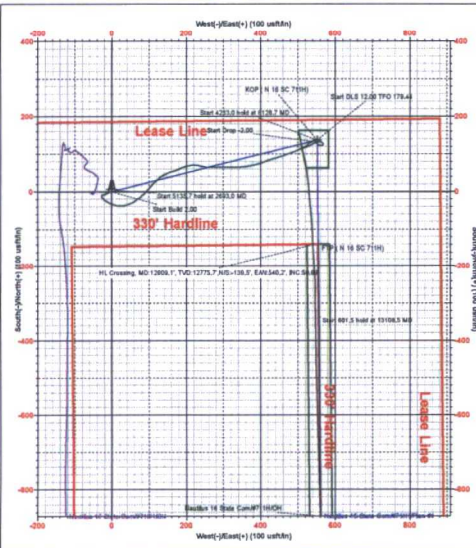
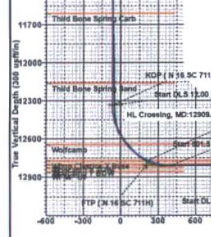
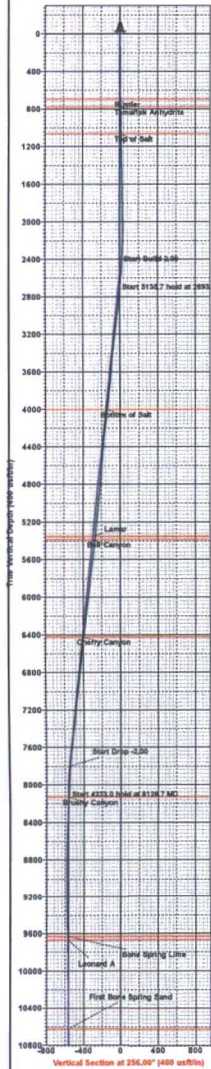
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2393.0	0.00	0.00	2393.0	0.0	0.0	0.00	0.00	0.0	
3	2693.0	6.00	76.00	2692.5	3.8	15.2	2.00	76.00	-1.9	
4	7828.7	6.00	76.00	7800.0	133.7	536.1	0.00	0.00	-67.0	
5	8128.7	0.00	0.00	8099.5	137.5	551.3	2.00	180.00	-68.9	
6	12361.7	0.00	0.00	12332.5	137.5	551.3	0.00	0.00	-68.9	
7	13108.5	89.61	179.44	12810.0	-336.8	555.9	12.00	179.44	402.3	TGT 1 (N 16 SC 711H)
8	13710.0	89.61	179.44	12814.0	-938.2	561.8	0.00	0.00	1000.0	TGT 2 (N 16 SC 711H)
9	13717.9	89.77	179.44	12814.0	-946.1	561.9	2.00	-0.53	1007.8	TGT 3 (N 16 SC 711H)
10	14716.4	89.77	179.44	12818.0	-1944.6	571.6	0.00	0.00	2000.0	TGT 4 (N 16 SC 711H)
11	14733.6	90.12	179.44	12818.0	-1961.8	571.8	2.00	0.00	2017.1	
12	15722.9	90.12	179.44	12816.0	-2951.0	581.4	0.00	0.00	3000.0	
13	16729.3	90.11	179.44	12814.0	-3957.4	591.2	0.00	-180.00	4000.0	
14	16736.5	90.25	179.44	12814.0	-3964.6	591.3	2.00	0.00	4007.2	
15	17632.0	90.25	179.44	12810.0	-4860.0	600.0	0.00	0.00	4896.9	PBHL (N 16 SC 711H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	+N/S	+E/W	Northing	Easting
KOP (N 16 SC 711H)	12332.5	137.5	383184.46	806889.33
PTP (N 16 SC 711H)	12810.0	-139.0	382509.00	806891.00
PBHL (N 16 SC 711H)	12810.0	-4860.0	378187.00	807037.00
TGT 1 (N 16 SC 711H)	12814.0	-938.2	382108.80	806898.79
TGT 2 (N 16 SC 711H)	12814.0	-938.2	379099.80	807028.21
TGT 3 (N 16 SC 711H)	12816.0	-2951.0	380096.00	807018.40
TGT 4 (N 16 SC 711H)	12818.0	-1944.6	381102.40	807008.59





EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Nautilus 16 State Com

#711H

OH

Design: OH

PVA Report

29 August, 2017

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #711H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Site:	Nautilus 16 State Com	MD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Well:	#711H	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 Com		
Site Position:		Northing:	383,047.00 usft
From:	Map	Easting:	806,402.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 3' 0.681 N
		Longitude:	103° 28' 40.085 W
		Grid Convergence:	0.45 °

Well		#711H				
Well Position	+N/-S	0.0 usft	Northing:	383,047.00 usft	Latitude:	32° 3' 0.678 N
	+E/-W	0.0 usft	Easting:	806,437.00 usft	Longitude:	103° 28' 39.678 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,330.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/20/2017	6.89	59.92	47,835.99819185

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	172.96

Survey Program		Date 8/29/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
140.0	17,636.0	Intrepid MWD (OH)	MWD	MWD - Standard

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Well:	#711H	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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.0
140.0	1.20	213.80	140.0	-1.2	-0.8	0.86	0.86	0.00	-1.5	0.0	
321.0	0.50	353.30	321.0	-2.0	-2.0	0.89	-0.39	77.07	1.8	2.2	
503.0	0.40	276.50	503.0	-1.1	-2.7	0.31	-0.05	-42.20	-2.5	1.4	
671.0	1.10	268.20	671.0	-1.1	-4.9	0.42	0.42	-4.94	-4.9	1.0	
768.0	0.80	255.60	767.9	-1.3	-6.5	0.38	-0.31	-12.99	-6.6	-0.3	
868.0	1.00	243.30	867.9	-1.9	-7.9	0.28	0.20	-12.30	-7.9	-1.9	
1,053.0	1.10	241.30	1,052.9	-3.5	-10.9	0.06	0.05	-1.08	-11.2	-2.2	
1,238.0	1.00	257.30	1,237.9	-4.7	-14.1	0.17	-0.05	8.65	-14.7	1.5	
1,423.0	1.10	242.20	1,422.8	-5.9	-17.2	0.16	0.05	-8.16	-18.0	-2.8	
1,609.0	1.20	248.70	1,608.8	-7.4	-20.6	0.09	0.05	3.49	-21.9	-0.6	
1,796.0	1.10	245.20	1,795.8	-8.9	-24.0	0.07	-0.05	-1.87	-25.6	-2.0	
1,983.0	1.30	250.90	1,982.7	-10.3	-27.7	0.12	0.11	3.05	-29.5	0.7	
2,172.0	2.90	146.40	2,171.6	-15.0	-27.1	1.83	0.85	-55.29	2.5	-30.8	
2,360.0	4.10	123.70	2,359.3	-22.7	-18.8	0.96	0.64	-12.07	3.1	-29.3	
2,547.0	5.60	118.30	2,545.6	-30.7	-5.2	0.84	0.80	-2.89	-6.9	-32.3	
2,734.0	6.00	102.40	2,731.7	-37.2	12.3	0.88	0.21	-8.50	-2.2	-42.4	
2,922.0	6.90	81.60	2,918.5	-37.6	33.1	1.32	0.48	-11.06	11.9	-45.9	
3,110.0	7.90	58.90	3,105.0	-29.3	55.3	1.63	0.53	-12.07	24.0	-36.4	
3,297.0	7.60	52.50	3,290.3	-15.1	76.2	0.49	-0.16	-3.42	20.7	-27.1	
3,484.0	5.90	40.00	3,476.0	-0.2	92.2	1.20	-0.91	-6.68	20.2	-13.2	
3,672.0	6.10	42.60	3,662.9	14.5	105.1	0.18	0.11	1.38	16.3	-2.8	
3,859.0	7.20	45.30	3,848.7	30.1	120.2	0.61	0.59	1.44	11.4	6.8	
4,047.0	6.50	59.80	4,035.4	43.7	137.8	0.99	-0.37	7.71	9.5	12.2	
4,141.0	7.90	68.70	4,128.6	48.7	148.4	1.90	1.49	9.47	9.3	12.7	
4,329.0	5.80	74.50	4,315.3	56.0	169.6	1.17	-1.12	3.09	7.8	13.5	
4,516.0	3.30	61.00	4,501.7	61.1	183.4	1.45	-1.34	-7.22	8.8	17.8	

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #711H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Site:	Nautilus 16 State Com	MD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Well:	#711H	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)	
4,704.0	4.70	75.30	4,689.2	65.7	195.6	0.91	0.74	7.61	19.6	16.7	
4,892.0	5.50	79.10	4,876.5	69.4	211.9	0.46	0.43	2.02	23.6	14.8	
4,986.0	6.30	91.20	4,970.0	70.1	221.4	1.57	0.85	12.87	26.1	7.9	
5,080.0	6.70	100.20	5,063.4	69.0	232.0	1.16	0.43	9.57	25.4	0.5	
5,174.0	6.40	100.00	5,156.8	67.1	242.6	0.32	-0.32	-0.21	23.6	-3.4	
5,268.0	5.60	101.10	5,250.2	65.3	252.2	0.86	-0.85	1.17	22.6	-7.9	
5,455.0	6.90	87.60	5,436.1	64.1	272.4	1.04	0.70	-7.22	22.9	-8.5	
5,643.0	6.90	89.80	5,622.8	64.6	295.0	0.14	0.00	1.17	19.1	-13.6	
5,830.0	6.80	91.40	5,808.4	64.3	317.3	0.12	-0.05	0.86	15.2	-19.0	
6,017.0	5.90	89.30	5,994.3	64.2	337.9	0.50	-0.48	-1.12	14.2	-23.4	
6,205.0	7.10	80.20	6,181.1	66.3	359.1	0.84	0.64	-4.84	16.1	-23.8	
6,392.0	6.70	79.70	6,366.7	70.2	381.2	0.22	-0.21	-0.27	13.4	-25.0	
6,580.0	6.80	68.40	6,553.4	76.3	402.3	0.71	0.05	-6.01	15.6	-21.5	
6,769.0	6.80	71.80	6,741.1	83.9	423.4	0.21	0.00	1.80	11.6	-20.2	
6,954.0	6.90	74.80	6,924.8	90.2	444.5	0.20	0.05	1.62	7.8	-19.8	
7,142.0	6.70	68.90	7,111.5	97.1	465.6	0.39	-0.11	-3.14	7.1	-17.7	
7,330.0	6.30	68.70	7,298.3	104.8	485.5	0.21	-0.21	-0.11	5.3	-15.2	
7,517.0	6.10	69.80	7,484.2	112.0	504.3	0.12	-0.11	0.59	4.3	-13.0	
7,704.0	5.00	71.00	7,670.3	118.1	521.4	0.59	-0.59	0.64	5.4	-11.2	
7,891.0	3.50	59.60	7,856.8	123.6	534.0	0.92	-0.80	-6.10	12.1	-6.1	
8,078.0	2.90	62.10	8,043.5	128.7	543.1	0.33	-0.32	1.34	10.8	-4.0	
8,265.0	2.00	73.00	8,230.3	131.9	550.4	0.54	-0.48	5.83	2.5	-5.1	
8,453.0	1.50	95.50	8,418.2	132.6	556.0	0.45	-0.27	11.97	-5.1	-4.4	
8,640.0	1.30	87.60	8,605.2	132.4	560.5	0.15	-0.11	-4.22	-9.0	-5.4	
8,827.0	1.80	136.30	8,792.1	130.4	564.7	0.73	0.27	26.04	-14.3	4.8	
9,015.0	0.70	140.60	8,980.1	127.4	567.5	0.59	-0.59	2.29	-18.0	6.1	
9,196.0	1.40	215.60	9,161.0	124.7	566.9	0.77	0.39	41.44	-1.3	20.0	

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #711H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Site:	Nautilus 16 State Com	MD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Well:	#711H	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)	
9,383.0	1.10	258.50	9,348.0	122.5	563.8	0.51	-0.16	22.94	9.2	17.1	
9,570.0	1.10	276.70	9,535.0	122.4	560.2	0.19	0.00	9.73	10.6	14.0	
9,757.0	1.30	288.70	9,721.9	123.3	556.5	0.17	0.11	6.42	9.4	11.8	
9,944.0	1.30	281.10	9,908.9	124.3	552.4	0.09	0.00	-4.06	3.5	12.7	
10,132.0	0.90	91.60	10,096.8	124.7	551.7	1.17	-0.21	90.69	-0.8	-12.7	
10,319.0	0.70	342.70	10,283.8	125.8	552.9	0.70	-0.11	-58.24	11.6	2.0	
10,506.0	0.80	290.80	10,470.8	127.3	551.3	0.35	0.05	-27.75	3.6	9.5	
10,692.0	1.70	330.30	10,656.8	130.2	548.7	0.64	0.48	21.24	5.0	5.9	
10,880.0	1.80	307.50	10,844.7	134.4	545.0	0.37	0.05	-12.13	-3.2	6.3	
11,068.0	0.90	237.80	11,032.7	135.4	541.4	0.91	-0.48	-37.07	-9.5	-3.5	
11,254.0	1.40	200.10	11,218.6	132.5	539.4	0.47	0.27	-20.27	-8.8	-9.5	
11,441.0	2.00	275.20	11,405.6	130.6	535.4	1.14	0.32	40.16	-15.3	8.2	
11,629.0	1.30	257.20	11,593.5	130.5	530.0	0.46	-0.37	-9.57	-22.3	2.1	
11,817.0	3.30	200.20	11,781.3	124.9	526.1	1.50	1.06	-30.32	-20.5	-19.4	
12,004.0	3.10	251.90	11,968.1	118.3	519.4	1.49	-0.11	27.65	-36.3	8.3	
12,036.0	3.10	260.30	12,000.0	117.9	517.7	1.42	0.00	26.25	-36.4	13.7	
12,221.0	1.70	252.30	12,184.9	116.2	510.2	0.78	-0.76	-4.32	-45.7	7.7	
12,314.0	0.80	129.20	12,277.9	115.4	509.4	2.41	-0.97	-132.37	18.6	-43.6	
12,408.0	2.00	154.20	12,371.8	113.5	510.6	1.40	1.28	26.60	-2.3	-46.4	
12,455.0	3.60	160.40	12,418.8	111.4	511.4	3.46	3.40	13.19	-3.4	-43.7	
12,502.0	10.10	165.30	12,465.4	106.0	513.0	13.87	13.83	10.43	-2.0	-40.3	
12,549.0	19.90	166.00	12,510.7	94.2	516.0	20.85	20.85	1.49	0.2	-36.6	
12,596.0	28.00	168.50	12,553.7	75.6	520.1	17.37	17.23	5.32	-1.0	-32.4	
12,643.0	34.80	170.90	12,593.8	51.5	524.4	14.71	14.47	5.11	-3.1	-28.3	
12,690.0	39.90	174.90	12,631.1	23.2	527.9	12.01	10.85	8.51	-5.6	-24.9	
12,737.0	43.20	175.30	12,666.3	-7.8	530.6	7.04	7.02	0.85	-5.2	-22.5	
12,782.0	45.50	175.20	12,698.5	-39.2	533.2	5.11	5.11	-0.22	-2.6	-20.0	

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12,802.0	48.00	174.10	12,712.2	-53.7	534.5	13.13	12.50	-5.50	-0.7	-18.7
12,830.0	51.20	175.80	12,730.3	-74.9	536.4	12.33	11.43	6.07	1.3	-17.0
12,876.0	55.00	176.80	12,757.9	-111.6	538.8	8.44	8.26	2.17	5.8	-14.9
12,907.0	59.70	177.10	12,774.6	-137.7	540.2	15.18	15.16	0.97	9.1	-13.7
12,909.1	59.99	177.09	12,775.7	-139.5	540.2	14.01	14.00	-0.68	9.3	-13.6
HL Crossing, MD:12909.1', TVD:12775.7',N/S:-139.5', E/W:540.2', INC:59.99										
12,922.0	61.80	177.00	12,782.0	-150.7	540.8	14.01	14.00	-0.66	10.5	-13.1
12,954.0	66.80	176.60	12,795.8	-179.5	542.4	15.67	15.62	-1.25	13.1	-11.8
12,970.0	68.30	176.30	12,802.0	-194.3	543.4	9.53	9.37	-1.87	14.3	-11.0
12,985.0	72.60	176.90	12,807.0	-208.4	544.2	28.91	28.67	4.00	15.1	-10.3
12,995.0	75.90	177.60	12,809.7	-218.0	544.7	33.68	33.00	7.00	15.2	-10.0
13,001.0	77.30	177.90	12,811.1	-223.8	544.9	23.83	23.33	5.00	15.1	-9.9
13,048.0	92.40	179.60	12,815.3	-270.5	545.9	32.33	32.13	3.62	10.2	-9.5
13,064.0	93.10	179.60	12,814.5	-286.5	546.0	4.37	4.37	0.00	7.5	-9.5
13,157.0	89.90	178.80	12,812.1	-379.4	547.3	3.55	-3.44	-0.86	1.8	-9.1
13,251.0	90.30	178.40	12,811.9	-473.4	549.6	0.60	0.43	-0.43	1.0	-7.7
13,344.0	92.40	179.00	12,809.7	-566.3	551.7	2.35	2.26	0.65	-1.8	-6.5
13,438.0	91.30	178.40	12,806.7	-660.3	553.8	1.33	-1.17	-0.64	-5.4	-5.2
13,532.0	91.80	178.30	12,804.2	-754.2	556.5	0.54	0.53	-0.11	-8.6	-3.5
13,625.0	90.50	178.20	12,802.3	-847.1	559.4	1.40	-1.40	-0.11	-11.1	-1.5
13,720.0	88.40	177.30	12,803.2	-942.0	563.1	2.40	-2.21	-0.95	-10.8	1.3
13,814.0	89.50	177.20	12,804.9	-1,035.9	567.6	1.18	1.17	-0.11	-9.5	4.9
13,908.0	91.70	178.80	12,803.9	-1,129.8	570.9	2.89	2.34	1.70	-10.8	7.3
14,002.0	89.30	177.80	12,803.1	-1,223.8	573.7	2.77	-2.55	-1.06	-12.0	9.1
14,096.0	88.40	178.10	12,805.0	-1,317.7	577.1	1.01	-0.96	0.32	-10.5	11.6
14,190.0	90.80	179.30	12,805.7	-1,411.7	579.2	2.85	2.55	1.28	-10.2	12.8
14,284.0	90.50	179.00	12,804.6	-1,505.7	580.6	0.45	-0.32	-0.32	-11.7	13.3

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #711H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Site:	Nautilus 16 State Com	MD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Well:	#711H	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)
14,378.0	89.50	178.80	12,804.6	-1,599.6	582.4	1.08	-1.06	-0.21	-12.0	14.1
14,472.0	89.10	179.00	12,805.7	-1,693.6	584.2	0.48	-0.43	0.21	-11.3	15.0
14,566.0	88.10	179.70	12,808.0	-1,787.6	585.3	1.30	-1.06	0.74	-9.3	15.2
14,660.0	89.40	180.40	12,810.1	-1,881.6	585.2	1.57	1.38	0.74	-7.7	14.2
14,753.0	88.60	179.50	12,811.7	-1,974.5	585.3	1.29	-0.86	-0.97	-6.3	13.4
14,847.0	93.50	178.50	12,810.0	-2,068.5	586.9	5.32	5.21	-1.06	-7.8	14.1
14,941.0	92.70	178.00	12,804.9	-2,162.3	589.8	1.00	-0.85	-0.53	-12.7	16.1
15,034.0	91.90	178.50	12,801.2	-2,255.2	592.6	1.01	-0.86	0.54	-16.2	18.0
15,128.0	91.70	178.80	12,798.2	-2,349.1	594.8	0.38	-0.21	0.32	-19.0	19.3
15,221.0	89.70	178.60	12,797.1	-2,442.1	596.9	2.16	-2.15	-0.22	-20.0	20.5
15,314.0	90.00	179.50	12,797.3	-2,535.1	598.5	1.02	0.32	0.97	-19.5	21.1
15,408.0	90.10	181.20	12,797.2	-2,629.1	597.9	1.81	0.11	1.81	-19.4	19.6
15,502.0	89.90	181.30	12,797.2	-2,723.0	595.8	0.24	-0.21	0.11	-19.2	16.7
15,596.0	89.30	180.70	12,797.9	-2,817.0	594.2	0.90	-0.64	-0.64	-18.4	14.1
15,689.0	90.10	181.30	12,798.4	-2,910.0	592.6	1.08	0.86	0.65	-17.7	11.6
15,783.0	91.70	181.90	12,796.9	-3,003.9	589.9	1.82	1.70	0.64	-19.0	8.0
15,877.0	90.90	181.50	12,794.8	-3,097.9	587.2	0.95	-0.85	-0.43	-20.9	4.3
15,971.0	89.80	180.20	12,794.2	-3,191.9	585.8	1.81	-1.17	-1.38	-21.3	2.0
16,064.0	88.50	179.60	12,795.6	-3,284.8	585.9	1.54	-1.40	-0.65	-19.7	1.3
16,158.0	89.40	179.00	12,797.3	-3,378.8	587.1	1.15	0.96	-0.64	-17.8	1.5
16,251.0	91.60	178.80	12,796.5	-3,471.8	588.9	2.38	2.37	-0.22	-18.5	2.4
16,345.0	91.40	178.20	12,794.0	-3,565.7	591.3	0.67	-0.21	-0.64	-20.7	3.9
16,438.0	90.90	178.20	12,792.2	-3,658.7	594.2	0.54	-0.54	0.00	-22.4	5.9
16,531.0	90.90	177.80	12,790.7	-3,751.6	597.5	0.43	0.00	-0.43	-23.7	8.3
16,625.0	90.70	177.30	12,789.4	-3,845.5	601.5	0.57	-0.21	-0.53	-24.8	11.4
16,720.0	90.10	176.90	12,788.7	-3,940.4	606.3	0.76	-0.63	-0.42	-25.3	15.3
16,814.0	90.30	176.40	12,788.4	-4,034.2	611.8	0.57	0.21	-0.53	-25.3	19.8

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #711H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Site:	Nautilus 16 State Com	MD Reference:	KB= 25' @ 3355.0usft (H&P 642)
Well:	#711H	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)
16,908.0	91.60	177.40	12,786.8	-4,128.1	616.9	1.74	1.38	1.06	-26.4	24.0
17,001.0	91.30	178.80	12,784.5	-4,221.0	620.0	1.54	-0.32	1.51	-28.3	26.2
17,095.0	90.50	180.30	12,783.0	-4,315.0	620.7	1.81	-0.85	1.60	-29.4	26.0
17,189.0	89.80	179.80	12,782.8	-4,409.0	620.6	0.92	-0.74	-0.53	-29.2	25.0
17,283.0	88.50	178.30	12,784.2	-4,502.9	622.2	2.11	-1.38	-1.60	-27.4	25.7
17,377.0	90.00	179.20	12,785.4	-4,596.9	624.2	1.86	1.60	0.96	-25.8	26.8
17,471.0	90.10	177.80	12,785.3	-4,690.9	626.7	1.49	0.11	-1.49	-25.4	28.3
17,539.2	90.36	178.13	12,785.0	-4,759.0	629.1	0.62	0.39	0.49	-25.4	30.1
HL Crossing, MD:17539.2', TVD:12785.0',N/S:-4759.0', E/W:629.1', INC:90.36										
17,574.0	90.50	178.30	12,784.8	-4,793.8	630.2	0.62	0.39	0.49	-25.5	30.8
Final MWD Survey (MD=17574.0')										
17,636.0	90.50	179.50	12,784.2	-4,855.8	631.4	1.94	0.00	1.94	-25.8	31.4
Final Projection to Bit (MD=17636.0')										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,909.1	12,775.7	-139.5	540.2	HL Crossing, MD:12909.1', TVD:12775.7',N/S:-139.5', E/W:540.2', INC:59.99
17,539.2	12,785.0	-4,759.0	629.1	HL Crossing, MD:17539.2', TVD:12785.0',N/S:-4759.0', E/W:629.1', INC:90.36
17,574.0	12,784.8	-4,793.8	630.2	Final MWD Survey (MD=17574.0')
17,636.0	12,784.2	-4,855.8	631.4	Final Projection to Bit (MD=17636.0')

Checked By: _____ Approved By: _____ Date: _____