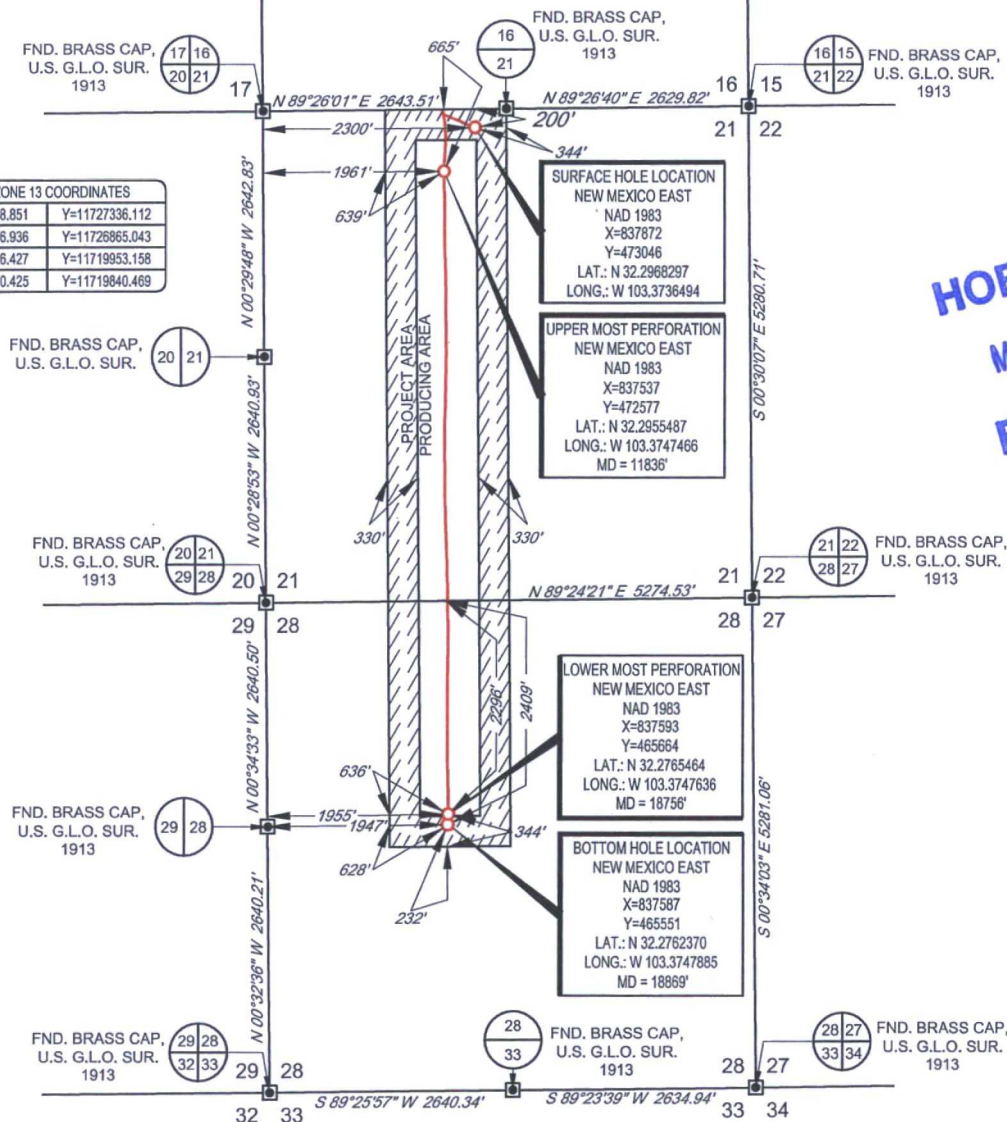


SCALE: 1" = 2000'

0' 1000' 2000'

SECTION 21, TOWNSHIP 23-S, RANGE 35-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

POINT	UTM ZONE 13 COORDINATES
SHL	X=2142808.851 Y=11727336.112
UMP	X=2142476.936 Y=11728865.043
LMP	X=2142576.427 Y=11719953.158
BHL	X=2142570.425 Y=11719840.469



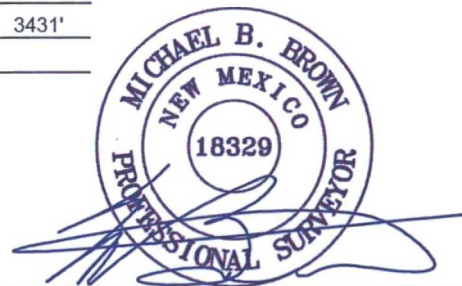
HOBBS OCD
MAY 11 2018
RECEIVED

LEASE NAME & WELL NO.: HUNTER 21 STATE COM #603H
SECTION 21 TWP 23-S RGE 35-E SURVEY N.M.P.M.
COUNTY LEA STATE NM ELEVATION 3431'
DESCRIPTION 200' FNL & 2300' FWL



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
APRIL 26, 2018



HUNTER 21 STATE COM #603H AS-COMPLETED	REVISION:	NOTES:
DATE: 04/26/2018		1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
FILE: AD_HUNTER_21_STATE_COM_603H		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.
DRAWN BY: A.V.F.		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.
SHEET: 1 OF 1		

EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Hunter 21 State Com

#603H

OH

Design: OH

PVA Report

09 March, 2018

PVA Report

Company:	EOG Resources - Midland			Local Co-ordinate Reference:	Well #603H
Project:	Lea County, NM (NAD 83 NME)			TVD Reference:	KB = 25 @ 3456.0usft (HP 424)
Site:	Hunter 21 State Com			MD Reference:	KB = 25 @ 3456.0usft (HP 424)
Well:	#603H			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						Hunter 21 State Com					
Site Position:				Northing:		473,030.00 usft		Latitude:		32° 17' 48.570 N	
From:		Map		Easting:		836,252.00 usft		Longitude:		103° 22' 44.008 W	
Position Uncertainty:		0.0 usft		Slot Radius:		13-3/16 "		Grid Convergence:		0.51 °	

Well						#603H							
Well Position		+N/-S		0.0 usft		Northing:		473,046.00 usft		Latitude:		32° 17' 48.585 N	
		+E/-W		0.0 usft		Easting:		837,872.00 usft		Longitude:		103° 22' 25.134 W	
Position Uncertainty		0.0 usft				Wellhead Elevation:		usft		Ground Level:		3,431.0 usft	

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

Magnetics		Model Name		Sample Date		Declination (°)		Dip Angle (°)		Field Strength (nT)	
		IGRF2015		12/12/2017		6.81		60.15		47,951.86261326	

Design						OH					
Audit Notes:											
Version:		1.0		Phase:		ACTUAL		Tie On Depth:		0.0	
Vertical Section:		Depth From (TVD)		+N/-S		+E/-W		Direction			
		(usft)		(usft)		(usft)		(°)			
		0.0		0.0		0.0		182.10			

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #803H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3456.0usft (HP 424)
Site:	Hunter 21 State Corn	MD Reference:	KB = 25 @ 3456.0usft (HP 424)
Well:	#803H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey Program		Date 3/9/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
144.0	1,594.0	Olebrook MWD (OH)	MWD	OWSG MWD - Standard
1,611.0	18,870.0	Newsco (OH)	MWD	OWSG MWD - Standard

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
144.0	0.62	249.36	144.0	-0.3	-0.7	0.43	0.43	0.00	-0.8	0.0	0.0
236.0	0.79	77.89	236.0	-0.3	-0.6	1.53	0.18	-186.38	0.6	-0.2	-0.2
327.0	0.44	134.14	327.0	-0.4	0.3	0.72	-0.38	61.81	-0.5	-0.1	-0.1
422.0	0.62	358.08	422.0	-0.2	0.5	1.04	0.19	-143.22	0.2	-0.5	-0.5
517.0	0.53	99.77	517.0	0.3	0.9	0.94	-0.09	107.04	-0.9	0.4	0.4
611.0	0.35	181.07	611.0	-0.1	1.4	0.63	-0.19	86.49	-0.1	1.4	1.4
706.0	0.26	198.30	706.0	-0.6	1.3	0.13	-0.09	18.14	-0.1	1.4	1.4
801.0	0.35	291.64	801.0	-0.7	1.0	0.47	0.09	98.25	1.1	0.3	0.3
896.0	0.53	196.97	896.0	-1.0	0.6	0.69	0.19	-99.65	-0.8	0.8	0.8
990.0	0.62	197.77	990.0	-1.9	0.3	0.10	0.10	0.85	-1.7	0.8	0.8
1,085.0	0.53	237.94	1,085.0	-2.6	-0.2	0.43	-0.09	42.28	-1.6	2.1	2.1
1,211.0	0.70	175.62	1,211.0	-3.7	-0.7	0.52	0.13	-49.46	-3.6	-1.0	-1.0
1,306.0	0.62	172.72	1,306.0	-4.8	-0.6	0.09	-0.08	-3.05	-4.7	-1.2	-1.2
1,401.0	0.35	156.90	1,401.0	-5.6	-0.4	0.31	-0.28	-16.65	-5.0	-2.5	-2.5
1,496.0	0.18	200.76	1,496.0	-6.0	-0.3	0.27	-0.18	46.17	-5.7	1.8	1.8
1,594.0	0.09	84.83	1,594.0	-6.1	-0.3	0.24	-0.09	-118.30	0.9	-6.1	-6.1
1,611.0	0.09	93.37	1,611.0	-6.1	-0.3	0.08	0.00	50.25	-0.1	-6.1	-6.1
1,628.0	0.09	93.37	1,628.0	-6.1	-0.3	0.00	0.00	0.00	-0.1	-6.1	-6.1
1,817.0	0.40	156.50	1,817.0	-6.7	0.2	0.19	0.16	33.40	-6.2	-2.5	-2.5
2,006.0	0.50	145.20	2,005.9	-8.0	0.9	0.07	0.05	-5.98	-7.1	-3.8	-3.8

PVA Report

Company: EOG Resources - Midland		Local Co-ordinate Reference: Well #603H			
Project: Lea County, NM (NAD 83 NME)		TVD Reference: KB = 25 @ 3456.0usft (HP 424)			
Site: Hunter 21 State Com		MD Reference: KB = 25 @ 3456.0usft (HP 424)			
Well: #603H		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)	
2,196.0	0.70	145.80	2,195.9	-9.6	2.0	0.11	0.11	0.32	-9.1	-3.8	
2,385.0	0.70	160.90	2,384.9	-11.7	3.0	0.10	0.00	7.99	-12.0	-1.0	
2,573.0	0.50	142.90	2,572.9	-13.4	3.9	0.14	-0.11	-9.57	-13.1	-5.0	
2,763.0	0.50	130.00	2,762.9	-14.6	5.0	0.06	0.00	-6.79	-13.3	-8.0	
2,952.0	1.10	318.20	2,951.9	-13.8	4.5	0.84	0.32	-90.90	13.3	5.9	
3,142.0	3.00	289.20	3,141.8	-10.8	-1.4	1.11	1.00	-15.26	7.5	11.2	
3,331.0	1.60	321.10	3,330.6	-7.1	-7.8	0.98	-0.74	16.88	11.3	5.3	
3,520.0	3.00	315.80	3,519.5	-1.5	-12.9	0.75	0.74	-2.80	9.4	3.7	
3,709.0	2.80	338.50	3,708.2	6.3	-18.0	0.61	-0.11	12.01	5.7	-2.8	
3,899.0	3.40	289.30	3,898.0	12.5	-25.0	1.39	0.32	-25.89	3.8	-0.4	
4,088.0	3.00	277.90	4,086.7	15.0	-35.2	0.40	-0.21	-6.03	-0.4	1.2	
4,277.0	2.60	276.80	4,275.5	16.2	-44.4	0.21	-0.21	-0.58	-3.3	3.2	
4,466.0	2.20	300.40	4,464.3	18.6	-51.8	0.56	-0.21	12.49	-2.8	5.3	
4,655.0	2.20	291.20	4,653.2	21.7	-58.3	0.19	0.00	-4.87	-4.2	4.7	
4,845.0	2.00	283.90	4,843.0	23.8	-64.9	0.18	-0.11	-3.84	-5.2	4.9	
5,034.0	1.90	285.60	5,031.9	25.5	-71.1	0.06	-0.05	0.90	-5.0	6.3	
5,223.0	1.80	286.00	5,220.8	27.1	-77.0	0.05	-0.05	0.21	-2.0	7.6	
5,286.0	1.90	289.20	5,283.8	27.7	-78.9	0.23	0.16	5.08	1.9	8.2	
5,490.0	5.10	297.40	5,487.4	33.0	-90.2	1.58	1.57	4.02	16.7	6.4	
5,679.0	9.80	294.30	5,674.7	43.5	-112.3	2.49	2.49	-1.64	18.2	6.3	
5,868.0	9.40	294.50	5,861.1	56.5	-141.0	0.21	-0.21	0.11	13.0	5.6	
6,057.0	9.00	295.20	6,047.7	69.2	-168.4	0.22	-0.21	0.37	9.2	4.6	
6,247.0	8.10	293.10	6,235.5	80.8	-194.2	0.50	-0.47	-1.11	7.2	4.4	
6,436.0	8.00	290.60	6,422.7	90.7	-218.7	0.19	-0.05	-1.32	6.9	5.3	
6,625.0	7.20	291.50	6,610.0	99.6	-242.1	0.43	-0.42	0.48	8.4	6.1	
6,814.0	7.30	291.70	6,797.5	108.4	-264.3	0.05	0.05	0.11	10.9	6.7	
7,003.0	7.10	292.00	6,985.0	117.2	-286.2	0.11	-0.11	0.16	13.6	7.2	

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #603H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3456.0usft (HP 424)
Site:	Hunter 21 State Com	MD Reference:	KB = 25 @ 3456.0usft (HP 424)
Well:	#603H	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)	Bulid ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
7,192.0	6.60	290.40	7,172.7	125.4	-307.2	0.28	-0.26	-0.85	17.2	8.5	
7,381.0	5.00	298.20	7,360.7	133.1	-324.7	0.94	-0.85	4.13	17.9	5.9	
7,570.0	4.50	300.90	7,549.1	140.8	-338.3	0.29	-0.26	1.43	8.8	4.6	
7,759.0	1.20	333.60	7,737.8	146.3	-345.6	1.88	-1.75	17.30	1.7	3.1	
7,948.0	1.00	329.00	7,926.8	149.5	-347.3	0.12	-0.11	-2.43	-2.2	3.1	
8,137.0	1.00	320.40	8,115.7	152.2	-349.2	0.08	0.00	-4.55	-5.9	2.5	
8,326.0	0.80	310.10	8,304.7	154.3	-351.2	0.14	-0.11	-5.45	-9.2	1.1	
8,516.0	0.80	324.80	8,494.7	156.3	-353.0	0.11	0.00	7.74	-11.3	3.7	
8,705.0	1.30	113.80	8,683.7	156.5	-351.8	1.07	0.26	78.84	10.6	3.3	
8,894.0	0.80	123.80	8,872.6	154.9	-348.8	0.28	-0.26	5.29	7.5	1.8	
9,083.0	1.20	184.10	9,061.6	152.2	-347.8	0.56	0.21	31.90	2.7	-4.5	
9,272.0	0.80	332.40	9,250.6	151.4	-348.6	1.02	-0.21	78.47	-4.3	3.5	
9,461.0	0.80	326.00	9,439.6	153.6	-349.9	0.05	0.00	-3.39	-7.3	2.8	
9,650.0	0.40	280.30	9,628.6	154.8	-351.3	0.31	-0.21	-24.18	-8.7	-4.2	
9,839.0	0.80	262.70	9,817.6	154.8	-353.3	0.23	0.21	-9.31	-9.0	-6.8	
10,029.0	1.10	10.40	10,007.6	156.4	-354.2	0.81	0.16	56.68	-5.2	11.9	
10,218.0	0.90	359.40	10,196.5	159.7	-353.9	0.15	-0.11	-5.82	-10.6	10.3	
10,407.0	1.10	69.60	10,385.5	161.8	-352.2	0.61	0.11	37.14	3.8	14.9	
10,596.0	0.80	88.00	10,574.5	162.5	-349.2	0.22	-0.16	9.74	5.3	13.5	
10,785.0	0.50	34.60	10,763.5	163.2	-347.4	0.34	-0.16	-28.25	-9.3	11.2	
10,846.5	2.51	165.54	10,824.9	162.1	-347.0	4.65	3.27	212.91	13.4	-0.1	
KOP(Hunter 21 st com #603H)											
10,883.0	4.20	168.60	10,861.4	160.0	-346.5	4.65	4.63	8.39	12.6	-0.5	
10,978.0	15.70	170.10	10,954.8	143.9	-343.6	12.11	12.11	1.58	12.2	1.8	
11,072.0	22.80	170.30	11,043.5	113.4	-338.3	7.55	7.55	0.21	14.6	7.0	
11,167.0	31.90	169.80	11,127.8	70.5	-330.8	9.58	9.58	-0.53	21.3	15.1	
11,261.0	41.80	174.00	11,202.9	14.7	-323.1	10.86	10.53	4.47	23.7	21.0	

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #603H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3456.0usft (HP 424)
Site:	Hunter 21 State Com	MD Reference:	KB = 25 @ 3456.0usft (HP 424)
Well:	#603H	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)	
11,356.0	47.00	180.60	11,270.8	-51.6	-320.1	7.31	5.47	6.95	20.7	21.3	
11,404.0	46.80	180.00	11,303.6	-86.6	-320.3	1.00	-0.42	-1.25	18.3	21.0	
11,450.0	50.20	178.90	11,334.1	-121.1	-320.0	7.60	7.39	-2.39	16.5	21.3	
11,465.6	52.12	179.07	11,343.9	-133.2	-319.7	12.32	12.29	1.10	16.0	21.3	
HL Crossing, MD:11465.6', TVD:11343.9', N/S:-133.2', E/W:-319.7', INC:52.12											
11,498.0	56.10	179.40	11,362.9	-159.5	-319.4	12.32	12.29	1.01	14.2	21.4	
11,542.1	60.60	181.56	11,386.0	-197.0	-319.7	11.03	10.21	4.91	11.1	20.5	
FTP(Hunter 21 st com #603H)											
11,545.0	60.90	181.70	11,387.4	-199.5	-319.8	11.03	10.25	4.67	10.8	20.4	
11,593.0	64.80	184.20	11,409.3	-242.2	-322.0	9.35	8.12	5.21	6.8	17.8	
11,639.0	63.70	184.20	11,429.3	-283.5	-325.0	2.39	-2.39	0.00	4.4	14.4	
11,687.0	67.90	183.80	11,449.0	-327.2	-328.1	8.78	8.75	-0.83	3.7	11.1	
11,734.0	71.50	183.10	11,465.3	-371.1	-330.7	7.79	7.66	-1.49	2.8	8.1	
11,782.0	71.40	183.20	11,480.5	-416.6	-333.2	0.29	-0.21	0.21	3.8	5.1	
11,828.0	74.20	181.00	11,494.1	-460.5	-334.9	7.61	6.09	-4.78	6.6	3.2	
11,876.0	79.10	179.40	11,505.2	-507.2	-335.0	10.71	10.21	-3.33	9.4	2.6	
11,922.0	79.40	178.50	11,513.8	-552.4	-334.2	2.03	0.65	-1.96	13.0	3.1	
11,970.0	81.20	176.90	11,521.9	-599.6	-332.3	4.99	3.75	-3.33	18.9	4.6	
12,017.0	87.00	178.00	11,526.7	-646.3	-330.2	12.56	12.34	2.34	22.5	6.2	
12,058.4	87.60	176.88	11,528.7	-687.6	-328.4	3.07	1.46	-2.71	23.4	7.7	
TGT 1(Hunter 21 st com #603H)											
12,065.0	87.70	176.70	11,528.9	-694.2	-328.0	3.07	1.46	-2.71	23.5	8.0	
12,111.0	88.20	177.30	11,530.6	-740.1	-325.6	1.70	1.09	1.30	23.9	10.0	
12,206.0	89.60	181.20	11,532.4	-835.1	-324.3	4.36	1.47	4.11	23.3	10.3	
12,300.0	84.00	180.20	11,537.7	-928.9	-325.5	6.05	-5.96	-1.06	26.0	8.4	
12,395.0	89.30	180.60	11,543.2	-1,023.7	-326.1	5.59	5.58	0.42	29.1	6.9	
12,489.0	88.90	179.90	11,544.7	-1,117.7	-326.6	0.86	-0.43	-0.74	28.1	5.6	

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #603H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3456.0usft (HP 424)
Site:	Hunter 21 State Com	MD Reference:	KB = 25 @ 3456.0usft (HP 424)
Well:	#603H	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)	
12,584.0	86.70	178.60	11,548.3	-1,212.6	-325.3	2.69	-2.32	-1.37	29.3	6.0	
12,678.0	86.80	178.40	11,553.7	-1,306.4	-322.9	0.24	0.11	-0.21	32.1	7.6	
12,773.0	87.00	178.40	11,558.8	-1,401.2	-320.2	0.21	0.21	0.00	34.8	9.4	
12,809.3	87.55	178.64	11,560.5	-1,437.5	-319.3	1.66	1.51	0.67	35.5	10.0	
TGT 2(Hunter 21 st com #603H)											
12,892.0	88.80	179.20	11,563.2	-1,520.1	-317.7	1.66	1.51	0.67	36.4	10.8	
12,986.0	89.20	178.40	11,564.8	-1,614.1	-315.8	0.95	0.43	-0.85	36.0	12.0	
13,081.0	88.80	179.90	11,566.5	-1,709.1	-314.3	1.63	-0.42	1.58	35.6	12.5	
13,175.0	89.40	179.70	11,567.9	-1,803.0	-314.0	0.67	0.64	-0.21	35.1	12.0	
13,270.0	89.20	179.20	11,569.1	-1,898.0	-313.1	0.57	-0.21	-0.53	34.2	12.1	
13,364.0	89.30	179.60	11,570.3	-1,992.0	-312.1	0.44	0.11	0.43	33.5	12.2	
13,459.0	89.20	179.50	11,571.6	-2,087.0	-311.4	0.15	-0.11	-0.11	32.7	12.1	
13,553.0	89.70	179.40	11,572.5	-2,181.0	-310.5	0.54	0.53	-0.11	31.6	12.2	
13,648.0	90.50	178.80	11,572.3	-2,276.0	-309.0	1.05	0.84	-0.63	29.4	12.8	
13,742.0	91.00	179.00	11,571.1	-2,370.0	-307.2	0.57	0.53	0.21	26.1	13.8	
13,837.0	90.60	180.50	11,569.7	-2,464.9	-306.8	1.63	-0.42	1.58	22.8	13.3	
13,931.0	90.70	181.80	11,568.7	-2,558.9	-306.6	1.39	0.11	1.38	19.7	10.6	
14,026.0	84.90	181.10	11,572.3	-2,653.8	-311.0	6.15	-6.11	-0.74	21.3	7.3	
14,120.0	84.80	180.70	11,580.8	-2,747.4	-312.5	0.44	-0.11	-0.43	27.8	5.0	
14,211.8	87.70	180.60	11,586.8	-2,839.0	-313.6	3.16	3.16	-0.11	31.8	3.2	
TGT 3(Hunter 21 st com #603H)											
14,215.0	87.80	180.60	11,586.9	-2,842.2	-313.6	3.16	3.16	-0.10	31.9	3.1	
14,309.0	90.20	182.00	11,588.5	-2,936.1	-315.7	2.96	2.55	1.49	31.5	0.1	
14,404.0	89.50	181.40	11,588.8	-3,031.1	-318.5	0.97	-0.74	-0.63	29.7	-3.5	
14,498.0	91.20	181.00	11,588.2	-3,125.0	-320.5	1.86	1.81	-0.43	27.2	-6.4	
14,593.0	92.00	181.20	11,585.6	-3,220.0	-322.3	0.87	0.84	0.21	22.5	-9.0	
14,688.0	90.50	180.70	11,583.5	-3,315.0	-323.9	1.66	-1.58	-0.53	18.4	-11.4	

PVA Report

Company:	EOG Resources - Midland					Local Co-ordinate Reference:	Well #603H				
Project:	Lea County, NM (NAD 83 NME)					TVD Reference:	KB = 25 @ 3456.0usft (HP 424)				
Site:	Hunter 21 State Com					MD Reference:	KB = 25 @ 3456.0usft (HP 424)				
Well:	#603H					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)	
14,782.0	89.60	179.20	11,583.4	-3,409.0	-323.8	1.86	-0.96	-1.60	16.4	-12.2	
14,877.0	90.30	179.20	11,583.5	-3,503.9	-322.5	0.74	0.74	0.00	14.5	-11.7	
14,972.0	88.90	178.70	11,584.1	-3,598.9	-320.8	1.56	-1.47	-0.53	13.2	-10.8	
15,066.0	90.40	179.70	11,584.7	-3,692.9	-319.5	1.92	1.60	1.06	11.8	-10.4	
15,161.0	89.30	180.30	11,585.0	-3,787.9	-319.5	1.32	-1.16	0.63	10.1	-11.2	
15,214.9	88.73	179.67	11,585.9	-3,841.8	-319.4	1.58	-1.06	-1.17	9.9	-11.7	
TGT 4(Hunter 21 st com #603H)											
15,255.0	88.30	179.20	11,586.9	-3,881.9	-319.0	1.58	-1.06	-1.17	10.1	-11.6	
15,350.0	88.10	178.70	11,589.9	-3,976.8	-317.3	0.57	-0.21	-0.53	11.2	-10.8	
15,444.0	89.70	178.80	11,591.7	-4,070.8	-315.3	1.71	1.70	0.11	11.2	-9.5	
15,539.0	87.30	177.80	11,594.2	-4,165.7	-312.4	2.74	-2.53	-1.05	11.7	-7.6	
15,634.0	89.00	178.10	11,597.3	-4,260.6	-309.0	1.82	1.79	0.32	12.9	-5.0	
15,728.0	89.30	178.60	11,598.7	-4,354.5	-306.3	0.62	0.32	0.53	12.4	-3.2	
15,822.0	89.60	178.20	11,599.6	-4,448.5	-303.7	0.53	0.32	-0.43	11.5	-1.4	
15,917.0	88.70	178.40	11,601.0	-4,543.4	-300.9	0.97	-0.95	0.21	11.0	0.6	
16,011.0	88.30	178.40	11,603.4	-4,637.4	-298.3	0.43	-0.43	0.00	11.5	2.4	
16,106.0	88.00	178.10	11,606.5	-4,732.3	-295.4	0.45	-0.32	-0.32	12.7	4.4	
16,200.0	90.90	178.40	11,607.4	-4,826.2	-292.5	3.10	3.09	0.32	11.7	6.4	
16,266.4	91.88	179.03	11,605.8	-4,892.6	-291.0	1.75	1.47	0.95	8.8	7.3	
TGT 5(Hunter 21 st com #603H)											
16,295.0	92.30	179.30	11,604.8	-4,921.2	-290.6	1.75	1.47	0.95	7.2	7.5	
16,389.0	89.40	178.70	11,603.4	-5,015.1	-288.9	3.15	-3.09	-0.64	4.1	8.3	
16,484.0	89.40	178.00	11,604.4	-5,110.1	-286.2	0.74	0.00	-0.74	3.4	10.2	
16,578.0	88.30	177.80	11,606.2	-5,204.0	-282.8	1.19	-1.17	-0.21	3.5	12.8	
16,673.0	87.30	179.10	11,609.9	-5,298.9	-280.2	1.73	-1.05	1.37	5.4	14.5	
16,768.0	88.70	179.50	11,613.2	-5,393.8	-279.0	1.53	1.47	0.42	7.0	14.8	
16,862.0	90.80	180.80	11,613.6	-5,487.8	-279.3	2.63	2.23	1.38	5.7	13.7	

PVA Report

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Hunter 21 State Com
 Well: #603H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #603H
 TVD Reference: KB = 25 @ 3456.0usft (HP 424)
 MD Reference: KB = 25 @ 3456.0usft (HP 424)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 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)
16,956.0	90.80	180.80	11,612.3	-5,581.8	-280.6	0.00	0.00	0.00	2.7	11.6
17,051.0	89.30	180.80	11,612.2	-5,676.8	-281.9	1.58	-1.58	0.00	0.9	9.4
17,145.0	87.50	180.60	11,614.9	-5,770.7	-283.1	1.93	-1.91	-0.21	1.8	7.4
17,240.0	89.30	180.90	11,617.5	-5,865.7	-284.3	1.92	1.89	0.32	2.7	5.3
17,334.0	90.20	181.40	11,617.9	-5,959.7	-286.2	1.10	0.96	0.53	1.4	2.6
17,429.0	90.60	181.60	11,617.3	-6,054.6	-288.7	0.47	0.42	0.21	-1.0	-0.8
17,524.0	89.60	180.20	11,617.1	-6,149.6	-290.2	1.81	-1.05	-1.47	-2.9	-3.1
17,618.0	90.20	180.60	11,617.2	-6,243.6	-290.8	0.77	0.64	0.43	-4.5	-4.6
17,713.0	88.20	179.20	11,618.6	-6,338.6	-290.7	2.57	-2.11	-1.47	-4.9	-5.3
17,807.0	88.50	179.60	11,621.3	-6,432.5	-289.7	0.53	0.32	0.43	-3.9	-5.2
17,902.0	89.20	179.30	11,623.2	-6,527.5	-288.8	0.80	0.74	-0.32	-3.7	-5.1
17,996.0	88.00	179.30	11,625.5	-6,621.5	-287.6	1.28	-1.28	0.00	-3.2	-4.8
18,069.7	88.31	179.38	11,627.9	-6,695.1	-286.8	0.43	0.42	0.11	-2.1	-4.6
TGT 6(Hunter 21 st com #603H)										
18,091.0	88.40	179.40	11,628.5	-6,716.4	-286.6	0.43	0.42	0.11	-1.9	-4.6
18,185.0	88.40	178.30	11,631.1	-6,810.4	-284.7	1.17	0.00	-1.17	-0.8	-3.5
18,279.0	89.20	178.40	11,633.1	-6,904.3	-282.0	0.86	0.85	0.11	-0.3	-1.7
18,374.0	89.50	178.40	11,634.1	-6,999.3	-279.3	0.32	0.32	0.00	-0.8	0.1
18,469.0	89.40	178.50	11,635.1	-7,094.2	-276.7	0.15	-0.11	0.11	-1.4	1.9
18,563.0	89.00	179.50	11,636.4	-7,188.2	-275.1	1.15	-0.43	1.06	-1.6	2.7
18,658.0	89.30	180.90	11,637.8	-7,283.2	-275.4	1.51	0.32	1.47	-1.8	1.5
18,753.0	88.80	182.40	11,639.3	-7,378.1	-278.2	1.66	-0.53	1.58	-1.7	-2.1
18,771.6	88.99	182.82	11,639.7	-7,396.7	-279.0	2.47	1.03	2.24	-1.7	-3.1
HL Crossing, MD:18771.6', TVD:11639.7', N/S:-7396.7', E/W:-279.0', INC:88.99										
18,811.0	89.40	183.70	11,640.3	-7,436.0	-281.3	2.47	1.03	2.24	-1.8	-5.7
Final MWD Survey (MD=18811.0')										

PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #603H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3456.0usft (HP 424)
Site:	Hunter 21 State Com	MD Reference:	KB = 25 @ 3456.0usft (HP 424)
Well:	#603H	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)
18,870.0	89.40	183.70	11,640.9	-7,494.9	-285.1	0.00	0.00	0.00	-2.1	-10.0
Final Projection to Bit (MD=18870.0') - PBHL(Hunter 21 st com #603H)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,465.6	11,343.9	-133.2	-319.7	HL Crossing, MD:11465.6', TVD:11343.9', N/S:-133.2', E/W:-319.7', INC:52.12
18,771.6	11,639.7	-7,396.7	-279.0	HL Crossing, MD:18771.6', TVD:11639.7', N/S:-7396.7', E/W:-279.0', INC:88.99
18,811.0	11,640.3	-7,436.0	-281.3	Final MWD Survey (MD=18811.0')
18,870.0	11,640.9	-7,494.9	-285.1	Final Projection to Bit (MD=18870.0')

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)

Hunter 21 State Com #603H

HP 424

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: #603H

KB = 25 @ 3456.0usft (HP 424) 3431.0
Northing 473046.00 Easting 537872.00 Latitude 32° 17' 48.585 N Longitude 103° 22' 25.134 W

Azimuths to Grid North
True North: -0.51°
Magnetic North: 6.30°

Magnetic Field
Strength: 47951.5nT
Dip Angle: 60.15°
Date: 12/12/2017
Model: IGRF2016

To convert a Magnetic Direction to a Grid Direction, Add 6.30°
To convert a Magnetic Direction to a True Direction, Add 6.81° East
To convert a True Direction to a Grid Direction, Subtract 0.51°

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2940.0	0.00	0.00	2940.0	0.0	0.0	0.00	0.00	0.0
3040.0	2.00	295.00	3040.0	0.7	-1.6	2.00	295.00	-0.7
5101.3	2.00	295.00	5100.0	31.1	-66.8	0.00	0.00	-28.7
5402.2	8.02	293.07	5399.7	41.6	-90.9	2.00	-2.56	-38.2
7170.3	8.02	293.07	7150.4	138.2	-317.7	0.00	0.00	-126.5
7571.2	0.00	0.00	7550.0	149.2	-343.5	2.00	180.00	-136.5
10845.7	0.00	0.00	10824.5	149.2	-343.5	0.00	0.00	-136.5
11139.3	35.24	179.49	11100.0	61.7	-342.7	12.00	179.49	-49.1
11402.7	45.78	179.49	11300.0	-109.1	-341.2	4.00	0.00	121.6
11936.7	88.50	179.49	11502.7	-589.8	-336.9	8.00	-0.01	601.8
12786.2	88.50	179.49	11525.0	-1439.0	-329.3	0.00	0.00	1450.1
12800.2	88.78	179.49	11525.3	-1453.0	-329.2	2.00	-0.01	1464.1
14188.6	88.78	179.49	11555.0	-2841.0	-316.7	0.00	0.00	2850.7
15189.8	88.82	179.49	11576.0	-3842.0	-307.8	0.00	0.00	3850.7
15191.6	88.85	179.49	11576.0	-3843.7	-307.7	2.00	0.00	3852.4
16240.6	88.85	179.49	11597.0	-4892.5	-296.3	0.00	0.00	4900.1
16245.4	88.95	179.49	11597.1	-4897.3	-296.3	2.00	0.00	4905.0
18043.5	88.95	179.49	11630.0	-6695.0	-282.2	0.00	0.00	6700.8
18049.4	89.07	179.49	11630.1	-6701.0	-282.1	2.00	0.00	6706.8
18844.6	89.07	179.49	11643.0	-7496.0	-275.0	0.00	0.00	7501.0

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	North	East
KOP(Hunter 21 st com #603H)	10824.5	149.2	-343.5	473191.25	537858.53
PTP(Hunter 21 st com #603H)	11480.0	-123.0	-341.0	472913.00	537831.00
TOT 1(Hunter 21 st com #603H)	11567.0	-89.0	-336.0	472937.00	537851.00
TOT 2(Hunter 21 st com #603H)	11525.0	-1429.0	-329.3	471607.00	537842.71
TOT 3(Hunter 21 st com #603H)	11555.0	-2841.0	-316.7	470205.00	537853.27
TOT 4(Hunter 21 st com #603H)	11576.0	-3842.0	-307.8	469204.00	537864.25
TOT 5(Hunter 21 st com #603H)	11597.0	-4892.5	-296.3	468153.50	537872.64
TOT 6(Hunter 21 st com #603H)	11630.0	-6695.0	-282.2	466351.00	537881.82
PBH(Hunter 21 st com #603H)	11643.0	-7496.0	-275.0	465350.00	537897.00

