



Lea County, NM (NAD 83 NME)

Ruby 2 State Com #601Y

HP 642

Plan #1

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

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

WELL DETAILS: #601Y

KB=25' @ 3329.0usft (HP 642) 3304.0
Northing 393647.31 Easting 816352.53 Latitude 32° 4' 44.777 N Longitude 103° 28' 43.463 W

SECTION DETAILS

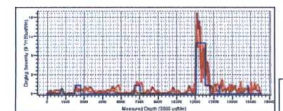
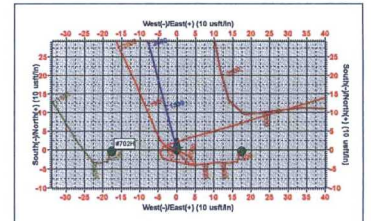
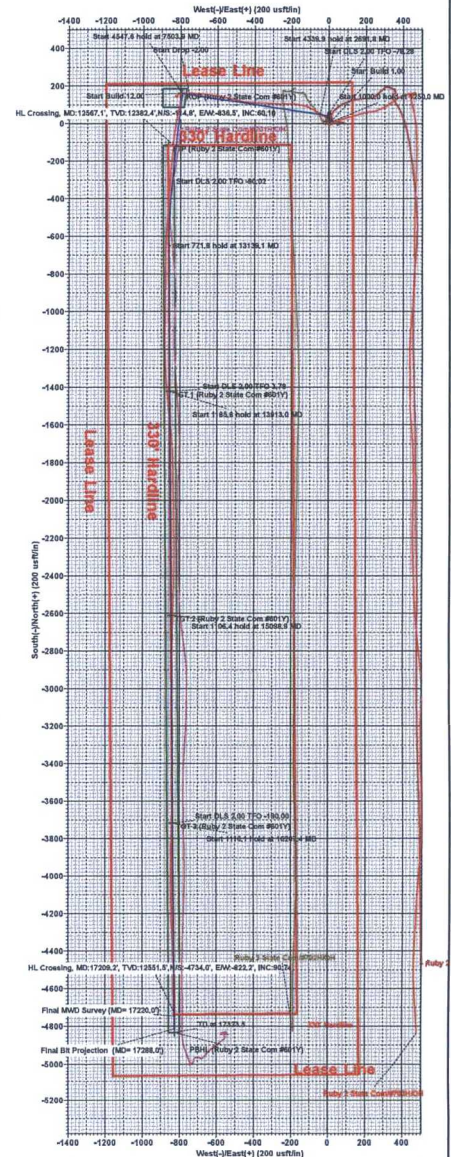
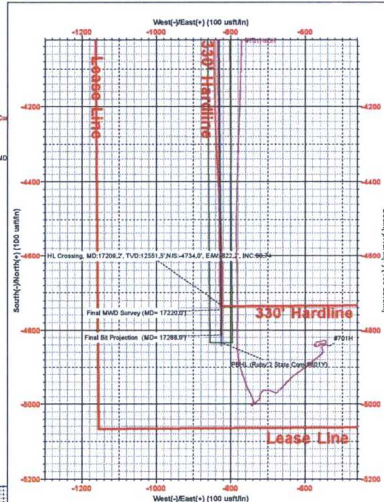
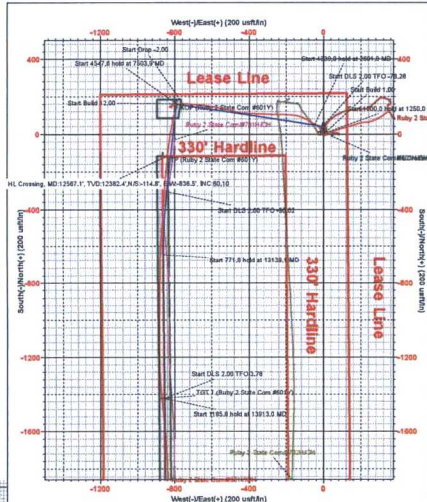
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeal	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1050.0	0.00	0.00	1050.0	0.0	0.0	0.00	0.00	0.0	
1250.0	2.00	345.00	1250.0	3.4	-0.9	1.00	345.00	-3.2	
2250.0	2.00	345.00	2249.4	37.1	-9.9	0.00	0.00	-34.9	
2691.8	9.45	278.59	2688.9	50.0	-47.8	2.00	-78.28	-41.2	
7031.6	9.45	278.59	6969.9	156.3	-752.1	0.00	0.00	-27.5	
7503.9	0.00	0.00	7440.0	162.1	-790.5	2.00	180.00	-26.7	
12051.5	0.00	0.00	11987.6	162.1	-790.5	0.00	0.00	-26.7	
12795.5	89.28	186.39	12465.0	-306.4	-842.9	12.00	186.39	444.0	
13139.1	89.28	179.52	12469.3	-548.4	-860.6	2.00	-90.02	785.0	
13910.9	89.28	179.52	12479.0	-1421.1	-854.1	0.00	0.00	1544.6	TGT 1 (Ruby 2 State Com #601Y)
13913.0	89.32	179.52	12479.0	-1423.2	-854.1	2.00	3.78	1546.7	
15098.9	89.32	179.52	12493.0	-2608.9	-844.2	0.00	0.00	2713.8	TGT 2 (Ruby 2 State Com #601Y)
16205.3	89.32	179.52	12506.0	-3715.2	-834.9	0.00	0.00	3802.7	TGT 3 (Ruby 2 State Com #601Y)
16207.4	89.28	179.52	12506.0	-3717.3	-834.9	2.00	-180.00	3804.8	
17323.5	89.28	179.52	12520.0	-4833.3	-825.5	0.00	0.00	4903.3	PBHL (Ruby 2 State Com #601Y)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
TGT 1 (Ruby 2 State Com #601Y)	12479.0	-1421.1	-854.1	392226.20	815486.41
TGT 2 (Ruby 2 State Com #601Y)	12493.0	-2608.9	-844.2	391038.40	815508.36
TGT 3 (Ruby 2 State Com #601Y)	12506.0	-3715.2	-834.9	389832.10	815517.63
PBHL (Ruby 2 State Com #601Y)	12520.0	-4833.3	-825.5	388814.00	815527.00
FTP (Ruby 2 State Com #601Y)	12465.0	-115.3	-864.5	393532.00	815488.00
KOP (Ruby 2 State Com #601Y)	11987.5	162.1	-790.5	393809.41	815562.08



HOBBS OCD
FEB 01 2018
RECEIVED

25-44103



30-025-4403

EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Ruby 2 State Com

#601Y

OH

Design: OH

PVA Report

07 November, 2017

HOBBS OCD
FEB 01 2018
RECEIVED

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #601Y
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB=25' @ 3329.0usft (HP 642)
Site:	Ruby 2 State Com	MD Reference:	KB=25' @ 3329.0usft (HP 642)
Well:	#601Y	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	Ruby 2 State Com		
Site Position:		Northing:	393,589.99 usft
From:	Map	Easting:	775,148.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 4' 47.315 N
		Longitude:	103° 34' 42.355 W
		Grid Convergence:	0.40 °

Well	#601Y		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	10/4/2017	6.85
			Dip Angle (°)
			59.95
			Field Strength (nT)
			47,835.39383250

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°)
			189.69

Survey Program	Date 11/7/2017		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
177.0	17,288.0	Intrepid MWD (OH)	MWD
			Description
			MWD - Standard

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Ruby 2 State Com
Well: #601Y
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #601Y
TVD Reference: KB=25' @ 3329.0usft (HP 642)
MD Reference: KB=25' @ 3329.0usft (HP 642)
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)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
177.0	1.30	137.20	177.0	-1.5	1.4	0.73	0.73	0.00	-2.0	0.0
355.0	0.70	122.50	355.0	-3.5	3.7	0.36	-0.34	-8.26	-5.0	-1.0
531.0	0.40	5.70	531.0	-3.5	4.6	0.54	-0.17	-66.36	3.0	-4.9
675.0	0.80	321.70	674.9	-2.2	4.0	0.40	0.28	-30.56	4.2	-1.8
767.0	0.90	310.10	766.9	-1.2	3.1	0.22	0.11	-12.61	3.2	-1.0
949.0	1.00	280.80	948.9	0.0	0.4	0.27	0.05	-16.10	0.4	-0.1
1,008.0	1.10	269.60	1,007.9	0.1	-0.6	0.39	0.17	-18.98	-0.6	-0.1
1,135.0	1.20	310.00	1,134.9	0.9	-2.9	0.63	0.08	31.81	-2.3	1.5
1,317.0	2.30	337.90	1,316.8	5.5	-5.7	0.75	0.60	15.33	-1.5	3.9
1,499.0	2.00	336.70	1,498.7	11.8	-8.3	0.17	-0.16	-0.66	-2.1	4.7
1,689.0	2.10	336.30	1,688.5	18.1	-11.0	0.05	0.05	-0.21	-2.4	5.7
1,878.0	1.90	332.20	1,877.4	24.0	-13.9	0.13	-0.11	-2.17	-2.9	6.7
2,067.0	2.00	337.90	2,066.3	29.8	-16.6	0.12	0.05	3.02	-2.1	8.1
2,257.0	2.50	323.70	2,256.2	36.2	-20.3	0.39	0.26	-7.47	-5.2	8.9
2,446.0	4.90	301.30	2,444.8	43.8	-29.6	1.46	1.27	-11.85	-9.8	5.4
2,635.0	7.10	299.40	2,632.7	53.7	-46.7	1.17	1.16	-1.01	-9.0	-0.8
2,825.0	8.80	300.40	2,820.9	66.8	-69.5	0.90	0.89	0.53	-6.7	-11.8
3,014.0	8.20	302.70	3,007.8	81.4	-93.3	0.36	-0.32	1.22	-6.7	-23.6
3,204.0	8.40	287.50	3,195.9	92.9	-117.9	1.16	0.11	-8.00	3.5	-32.9
3,393.0	7.80	281.60	3,383.0	99.6	-143.7	0.54	-0.32	-3.12	11.3	-35.4
3,582.0	8.20	275.50	3,570.1	103.5	-169.6	0.50	0.21	-3.23	19.8	-33.7
3,772.0	9.60	270.50	3,757.8	104.9	-199.0	0.84	0.74	-2.63	24.1	-28.7
3,960.0	9.20	269.80	3,943.3	105.0	-229.7	0.22	-0.21	-0.37	24.3	-23.9
4,150.0	8.50	273.00	4,131.1	105.7	-258.9	0.45	-0.37	1.68	24.8	-21.3
4,339.0	8.00	274.50	4,318.1	107.5	-285.9	0.29	-0.26	0.79	28.1	-19.4
4,528.0	8.80	271.10	4,505.1	108.8	-313.5	0.50	0.42	-1.80	32.4	-14.4

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #601Y
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB=25' @ 3329.0usft (HP 642)
Site:	Ruby 2 State Com	MD Reference:	KB=25' @ 3329.0usft (HP 642)
Well:	#601Y	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)	
4,717.0	7.30	272.10	4,692.2	109.5	-340.0	0.80	-0.79	0.53	36.5	-11.2	
4,905.0	7.80	273.80	4,878.6	110.8	-364.6	0.29	0.27	0.90	42.3	-9.4	
5,096.0	8.80	273.80	5,067.6	112.6	-392.1	0.52	0.52	0.00	46.0	-6.8	
5,268.0	7.30	273.10	5,237.9	114.1	-416.2	0.87	-0.87	-0.41	50.2	-3.7	
5,432.0	6.50	270.80	5,400.7	114.8	-435.9	0.52	-0.49	-1.40	57.3	1.6	
5,620.0	8.80	285.90	5,587.0	118.8	-460.4	1.61	1.22	8.03	61.8	-14.4	
5,807.0	12.90	283.00	5,770.6	127.5	-494.5	2.21	2.19	-1.55	57.8	-14.4	
5,994.0	12.30	282.90	5,953.1	136.6	-534.2	0.32	-0.32	-0.05	47.4	-16.6	
6,182.0	12.40	281.50	6,136.8	145.1	-573.5	0.17	0.05	-0.74	38.2	-17.5	
6,369.0	11.50	278.80	6,319.7	152.0	-611.6	0.57	-0.48	-1.44	30.9	-16.8	
6,558.0	11.40	276.30	6,505.0	156.9	-648.8	0.27	-0.05	-1.32	24.9	-15.0	
6,745.0	11.90	275.30	6,688.1	160.7	-686.4	0.29	0.27	-0.53	17.9	-13.2	
6,932.0	12.50	273.00	6,870.9	163.5	-725.8	0.41	0.32	-1.23	9.3	-10.2	
7,119.0	13.00	269.90	7,053.3	164.6	-767.0	0.45	0.27	-1.66	-2.5	-6.4	
7,306.0	8.30	254.00	7,237.0	160.8	-801.0	2.94	-2.51	-8.50	-17.1	-4.6	
7,493.0	5.10	230.60	7,422.8	151.8	-820.5	2.22	-1.71	-12.51	-29.7	-11.2	
7,680.0	0.40	90.30	7,609.5	146.5	-826.2	2.90	-2.51	-75.03	35.7	-15.8	
7,868.0	0.70	88.00	7,797.5	146.5	-824.4	0.16	0.16	-1.22	34.5	-14.4	
8,056.0	0.70	90.40	7,985.5	146.6	-822.1	0.02	0.00	1.28	31.6	-15.7	
8,243.0	0.60	114.60	8,172.5	146.2	-820.1	0.15	-0.05	12.94	20.3	-26.8	
8,431.0	0.50	153.50	8,360.5	145.0	-818.8	0.20	-0.05	20.69	-2.6	-33.0	
8,617.0	0.80	161.60	8,546.5	143.1	-818.1	0.17	0.16	4.35	-9.3	-32.2	
8,806.0	0.40	150.90	8,735.5	141.2	-817.3	0.22	-0.21	-5.66	-5.2	-33.6	
8,993.0	1.30	19.20	8,922.5	142.7	-816.3	0.85	0.48	-70.43	26.9	18.0	
9,180.0	1.00	18.80	9,109.4	146.2	-815.1	0.16	-0.16	-0.21	23.0	18.2	
9,368.0	1.00	11.70	9,297.4	149.4	-814.2	0.07	0.00	-3.78	17.3	20.7	
9,555.0	0.80	19.70	9,484.4	152.2	-813.5	0.13	-0.11	4.28	17.1	18.3	

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Ruby 2 State Com
Well: #601Y
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #601Y
TVD Reference: KB=25' @ 3329.0usft (HP 642)
MD Reference: KB=25' @ 3329.0usft (HP 642)
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)
9,741.0	0.90	9.30	9,670.4	154.9	-812.8	0.10	0.05	-5.59	10.7	20.9
9,835.0	1.00	18.90	9,764.3	156.4	-812.4	0.20	0.11	10.21	12.5	18.9
9,929.0	0.80	31.80	9,858.3	157.7	-811.8	0.30	-0.21	13.72	15.0	15.8
10,115.0	2.10	68.40	10,044.3	160.1	-807.9	0.82	0.70	19.68	17.0	4.5
10,303.0	1.80	99.40	10,232.2	160.8	-801.8	0.58	-0.16	16.49	11.0	-3.1
10,491.0	1.50	123.60	10,420.1	159.0	-796.9	0.40	-0.16	12.87	3.6	-6.1
10,679.0	0.30	264.60	10,608.1	157.6	-795.3	0.93	-0.64	75.00	-5.2	4.0
10,865.0	0.40	306.50	10,794.1	157.9	-796.3	0.14	0.05	22.53	-2.2	6.8
11,053.0	0.20	5.60	10,982.1	158.7	-796.8	0.18	-0.11	31.44	4.0	6.0
11,240.0	1.10	61.40	11,169.1	159.8	-795.2	0.54	0.48	29.84	5.2	0.3
11,427.0	2.30	39.50	11,356.0	163.6	-791.2	0.72	0.64	-11.71	-0.7	1.5
11,614.0	0.90	352.60	11,542.9	167.9	-789.0	0.97	-0.75	-25.08	-5.6	-2.2
11,773.0	2.50	310.90	11,701.8	171.5	-791.8	1.21	1.01	-26.23	-7.1	-6.2
11,842.0	2.40	310.00	11,770.8	173.4	-794.1	0.16	-0.14	-1.30	-10.0	-6.3
11,936.0	0.40	239.40	11,864.7	174.5	-795.8	2.44	-2.13	-75.11	1.7	-13.4
12,029.0	1.10	171.10	11,957.7	173.4	-796.0	1.10	0.75	-73.44	12.0	-3.7
12,060.3	6.22	178.06	11,988.9	171.4	-795.9	16.39	16.36	22.26	9.5	-5.1
KOP (Ruby 2 State Com #601Y)										
12,123.0	16.50	179.00	12,050.3	159.1	-795.6	16.39	16.39	1.50	1.2	-4.7
12,218.0	26.70	186.90	12,138.6	124.3	-797.9	11.14	10.74	8.32	-13.2	-3.2
12,311.0	36.60	193.40	12,217.7	76.5	-806.9	11.25	10.65	6.99	-24.8	-4.3
12,405.0	46.50	190.20	12,287.9	15.5	-819.5	10.77	10.53	-3.40	-32.9	-10.9
12,451.0	53.60	187.80	12,317.5	-19.3	-824.9	15.94	15.43	-5.22	-36.2	-13.6
12,498.0	54.90	187.60	12,344.9	-57.1	-830.1	2.79	2.77	-0.43	-38.5	-14.5
12,545.0	57.80	185.90	12,371.0	-96.0	-834.6	6.87	6.17	-3.62	-37.3	-15.4
12,567.1	60.10	185.61	12,382.4	-114.8	-836.5	10.48	10.42	-1.31	-36.1	-15.2
HL Crossing, MD:12567.1', TVD:12382.4', N/S:-114.8', E/W:-836.5', INC:60.10										

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Ruby 2 State Com
Well: #601Y
Wellbore: OH
Design: OH

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North Reference: Grid
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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)
12,592.0	62.70	185.30	12,394.3	-136.6	-838.6	10.48	10.43	-1.25	-34.5	-14.9
12,604.5	64.14	185.47	12,399.9	-147.7	-839.7	11.55	11.49	1.32	-33.6	-14.7
FTP (Ruby 2 State Com #601Y)										
12,639.0	68.10	185.90	12,413.8	-179.1	-842.8	11.55	11.49	1.26	-31.0	-14.2
12,686.0	69.60	184.90	12,430.8	-222.7	-846.9	3.76	3.19	-2.13	-25.3	-13.6
12,732.0	72.00	183.20	12,445.9	-266.0	-850.0	6.28	5.22	-3.70	-16.7	-11.8
12,779.0	75.10	183.60	12,459.2	-311.0	-852.7	6.65	6.60	0.85	-5.7	-9.3
12,824.0	78.00	184.40	12,469.7	-354.7	-855.7	6.67	6.44	1.78	4.0	-7.8
12,873.0	83.80	184.20	12,477.4	-402.9	-859.3	11.84	11.84	-0.41	11.2	-7.3
12,889.0	85.10	184.30	12,479.0	-418.8	-860.5	8.15	8.12	0.62	12.5	-7.2
12,973.0	90.20	184.30	12,482.4	-502.5	-866.8	6.07	6.07	0.00	14.9	-8.7
13,067.0	89.10	183.00	12,483.0	-596.3	-872.8	1.81	-1.17	-1.38	14.3	-12.2
13,161.0	88.70	180.90	12,484.8	-690.2	-876.0	2.27	-0.43	-2.23	14.9	-15.7
13,254.0	88.50	180.10	12,487.1	-783.1	-876.8	0.89	-0.22	-0.86	16.1	-17.3
13,348.0	88.60	180.40	12,489.5	-877.1	-877.2	0.34	0.11	0.32	17.3	-18.5
13,442.0	88.40	180.40	12,491.9	-971.1	-877.9	0.21	-0.21	0.00	18.5	-20.0
13,536.0	87.90	180.50	12,494.9	-1,065.0	-878.6	0.54	-0.53	0.11	20.4	-21.5
13,630.0	87.60	180.00	12,498.6	-1,159.0	-879.0	0.62	-0.32	-0.53	22.9	-22.7
13,723.0	87.10	177.90	12,502.9	-1,251.8	-877.3	2.32	-0.54	-2.26	26.1	-21.7
13,817.0	88.40	176.00	12,506.6	-1,345.6	-872.3	2.45	1.38	-2.02	28.6	-17.5
13,892.9	88.32	175.19	12,508.8	-1,421.2	-866.5	1.07	-0.11	-1.06	29.8	-12.3
TGT 1 (Ruby 2 State Com #601Y)										
13,911.0	88.30	175.00	12,509.3	-1,439.3	-864.9	1.07	-0.11	-1.06	30.1	-10.9
14,005.0	88.80	173.20	12,511.7	-1,532.8	-855.3	1.99	0.53	-1.91	31.4	-2.0
14,098.0	91.20	174.30	12,511.7	-1,625.2	-845.2	2.84	2.58	1.18	30.3	7.3
14,192.0	93.00	176.90	12,508.3	-1,718.8	-837.9	3.36	1.91	2.77	25.8	13.7
14,285.0	91.60	178.00	12,504.5	-1,811.7	-833.8	1.91	-1.51	1.18	20.9	17.0

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Ruby 2 State Com
Well: #601Y
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #601Y
TVD Reference: KB=25' @ 3329.0usft (HP 642)
MD Reference: KB=25' @ 3329.0usft (HP 642)
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)	
14,379.0	90.70	179.20	12,502.7	-1,905.6	-831.5	1.60	-0.96	1.28	17.9	18.5	
14,473.0	90.40	180.10	12,501.7	-1,999.6	-830.9	1.01	-0.32	0.96	15.9	18.3	
14,566.0	89.50	179.30	12,501.8	-2,092.6	-830.5	1.29	-0.97	-0.86	14.9	18.0	
14,659.0	88.70	178.80	12,503.3	-2,185.6	-828.9	1.01	-0.86	-0.54	15.3	18.8	
14,753.0	90.30	180.30	12,504.1	-2,279.6	-828.2	2.33	1.70	1.60	15.0	18.7	
14,847.0	91.30	180.70	12,502.8	-2,373.6	-829.0	1.15	1.06	0.43	12.6	17.1	
14,941.0	91.20	181.30	12,500.7	-2,467.5	-830.6	0.65	-0.11	0.64	9.4	14.7	
15,033.0	89.20	181.50	12,500.4	-2,559.5	-832.9	2.18	-2.17	0.22	8.0	11.7	
15,082.5	88.62	181.29	12,501.4	-2,608.9	-834.1	1.25	-1.17	-0.43	8.4	10.1	
TGT 2 (Ruby 2 State Com #601Y)											
15,127.0	88.10	181.10	12,502.6	-2,653.4	-835.0	1.25	-1.17	-0.43	9.1	8.8	
15,220.0	87.10	180.80	12,506.5	-2,746.3	-836.6	1.12	-1.08	-0.32	11.9	6.5	
15,313.0	88.10	180.20	12,510.4	-2,839.3	-837.4	1.25	1.08	-0.65	14.7	4.9	
15,407.0	87.80	180.40	12,513.8	-2,933.2	-837.9	0.38	-0.32	0.21	17.0	3.6	
15,501.0	87.40	180.30	12,517.7	-3,027.1	-838.4	0.44	-0.43	-0.11	19.8	2.2	
15,593.0	86.90	180.10	12,522.3	-3,119.0	-838.8	0.59	-0.54	-0.22	23.3	1.1	
15,686.0	89.50	179.30	12,525.2	-3,211.9	-838.3	2.92	2.80	-0.86	25.1	0.8	
15,779.0	89.50	179.50	12,526.0	-3,304.9	-837.3	0.22	0.00	0.22	24.8	1.0	
15,873.0	89.10	179.50	12,527.2	-3,398.9	-836.5	0.43	-0.43	0.00	24.9	1.1	
15,966.0	88.80	179.90	12,528.9	-3,491.9	-836.0	0.54	-0.32	0.43	25.5	0.8	
16,060.0	89.00	180.60	12,530.7	-3,585.9	-836.4	0.77	0.21	0.74	26.2	-0.4	
16,154.0	89.50	181.70	12,531.9	-3,679.9	-838.3	1.29	0.53	1.17	26.3	-3.1	
16,188.8	89.24	181.70	12,532.3	-3,714.7	-839.3	0.74	-0.74	0.00	26.3	-4.4	
TGT 3 (Ruby 2 State Com #601Y)											
16,248.0	88.80	181.70	12,533.3	-3,773.8	-841.1	0.74	-0.74	0.00	26.6	-6.7	
16,342.0	87.60	180.90	12,536.3	-3,867.7	-843.2	1.53	-1.28	-0.85	28.4	-9.6	
16,435.0	87.50	181.00	12,540.2	-3,960.6	-844.7	0.15	-0.11	0.11	31.2	-11.9	

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Ruby 2 State Com
Well: #601Y
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Design: OH

Local Co-ordinate Reference: Well #601Y
TVD Reference: KB=25' @ 3329.0usft (HP 642)
MD Reference: KB=25' @ 3329.0usft (HP 642)
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)
16,529.0	88.50	178.60	12,543.5	-4,054.6	-844.4	2.76	1.06	-2.55	33.3	-12.4
16,623.0	88.40	178.90	12,546.1	-4,148.5	-842.4	0.34	-0.11	0.32	34.6	-11.1
16,717.0	86.90	178.40	12,549.9	-4,242.4	-840.2	1.68	-1.60	-0.53	37.3	-9.7
16,810.0	88.60	176.60	12,553.6	-4,335.2	-836.1	2.66	1.83	-1.94	39.8	-6.4
16,904.0	89.60	176.40	12,555.1	-4,429.0	-830.4	1.08	1.06	-0.21	40.1	-1.4
16,998.0	91.40	177.30	12,554.2	-4,522.9	-825.2	2.14	1.91	0.96	38.1	3.0
17,091.0	90.50	179.10	12,552.7	-4,615.8	-822.3	2.16	-0.97	1.94	35.4	5.1
17,185.0	90.60	180.50	12,551.8	-4,709.8	-821.9	1.49	0.11	1.49	33.3	4.6
17,209.2	90.74	180.85	12,551.5	-4,734.0	-822.2	1.54	0.57	1.43	32.7	4.1
HL Crossing, MD:17209.2', TVD:12551.5', N/S:-4734.0', E/W:-822.2', INC:90.74										
17,220.0	90.80	181.00	12,551.4	-4,744.8	-822.4	1.54	0.57	1.43	32.5	3.9
Final MWD Survey (MD= 17220.0')										
17,288.0	90.80	181.00	12,550.4	-4,812.8	-823.6	0.00	0.00	0.00	30.7	2.1
Final Bit Projection (MD= 17288.0') - PBHL (Ruby 2 State Com #601Y)										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,567.1	12,382.4	-114.8	-836.5	HL Crossing, MD:12567.1', TVD:12382.4', N/S:-114.8', E/W:-836.5', INC:60.10
17,209.2	12,551.5	-4,734.0	-822.2	HL Crossing, MD:17209.2', TVD:12551.5', N/S:-4734.0', E/W:-822.2', INC:90.74
17,220.0	12,551.4	-4,744.8	-822.4	Final MWD Survey (MD= 17220.0')
17,288.0	12,550.4	-4,812.8	-823.6	Final Bit Projection (MD= 17288.0')

Checked By: _____ Approved By: _____ Date: _____