

HOBBS OCD

FEB 04 2020

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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Valiant 24 Fed Com

#709H

OH

Design: OH

Midland PVA

17 October, 2019



Midland PVA

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Valiant 24 Fed Com
 Well: #709H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #709H
 TVD Reference: KB = 25 @ 3487.0usft
 MD Reference: KB = 25 @ 3487.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Project Lea County, NM (NAD 83 NME)

Map System: US State Plane 1983
 Geo Datum: North American Datum 1983
 Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site Valiant 24 Fed Com

Site Position:		Northing:	406,151.00 usft	Latitude:	32° 6' 52.620 N
From:	Map	Easting:	760,107.00 usft	Longitude:	103° 37' 38.212 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well #709H

Well Position	+N-S	0.0 usft	Northing:	405,885.00 usft	Latitude:	32° 6' 49.884 N
	+E-W	0.0 usft	Easting:	761,699.00 usft	Longitude:	103° 37' 17.722 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,462.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/6/2019	6.73	59.92	47,639.07539089

Design OH

Audit Notes:		Phase:	ACTUAL	Tie On Depth:	0.0
Version:	1.0				
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.0	0.0	0.0	183.48	

Survey Program Date 10/17/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
194.0	19,920.0	Drilltech MWD (OH)	MWD	OWSG MWD - Standard



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0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
194.0	0.18	9.67	194.0	0.3	0.1	0.09	0.09	0.00	-0.3	0.0
310.0	0.97	328.54	310.0	1.3	-0.4	0.73	0.68	-35.46	-1.3	-0.3
486.0	2.11	321.07	485.9	5.1	-3.2	0.68	0.65	-4.24	-6.0	-0.7
572.0	2.29	321.07	571.9	7.7	-5.3	0.21	0.21	0.00	-9.3	-0.7
759.0	2.80	330.30	758.7	14.7	-10.0	0.39	0.33	4.94	-17.7	1.4
942.0	3.08	328.34	941.4	22.8	-15.0	0.15	0.10	-2.16	-27.3	-0.1
1,127.0	3.25	317.75	1,126.1	30.8	-21.3	0.27	0.09	-4.64	-37.1	-5.0
1,222.0	2.99	318.71	1,221.0	34.7	-24.8	0.28	-0.27	1.01	-42.4	-4.3
1,317.0	2.99	317.57	1,315.9	38.4	-28.1	0.08	0.00	-1.20	-47.3	-5.2
1,411.0	2.90	314.41	1,409.7	41.8	-31.4	0.20	-0.10	-3.36	-51.7	-7.8
1,506.0	2.81	313.26	1,504.6	45.1	-34.8	0.11	-0.09	-1.21	-56.3	-9.0
1,601.0	2.81	312.21	1,599.5	48.3	-38.2	0.05	0.00	-1.11	-59.1	-9.8
1,696.0	2.90	310.45	1,694.4	51.4	-41.8	0.13	0.09	-1.85	-58.7	-10.2
1,780.0	2.99	310.98	1,788.3	54.6	-45.5	0.10	0.10	0.56	-55.8	-7.5
1,886.0	3.17	313.53	1,884.1	58.0	-49.3	0.24	0.19	2.66	-50.0	-2.5
1,981.0	3.25	315.64	1,979.0	61.8	-53.1	0.15	0.08	2.22	-41.2	1.9
2,075.0	3.25	315.37	2,072.8	65.6	-56.6	0.02	0.00	-0.29	-32.1	4.4
2,168.0	3.34	318.71	2,165.7	69.5	-60.4	0.23	0.10	3.59	-22.6	8.1
2,263.0	6.77	323.81	2,260.3	76.1	-65.6	3.64	3.61	5.37	-15.3	10.8
2,358.0	7.65	326.71	2,354.5	85.8	-72.3	1.00	0.93	3.05	-11.8	11.6
2,452.0	9.15	322.67	2,447.5	97.1	-80.3	1.71	1.60	-4.30	-11.6	11.0
2,547.0	9.41	325.39	2,541.3	109.5	-89.3	0.54	0.27	2.88	-11.5	12.0
2,642.0	9.50	329.26	2,635.0	122.6	-97.7	0.68	0.09	4.07	-11.4	12.3
2,737.0	8.97	331.72	2,728.8	135.8	-105.2	0.70	-0.58	2.59	-11.4	11.6
2,832.0	8.88	334.80	2,822.6	149.0	-111.9	0.51	-0.09	3.24	-10.8	10.2
2,927.0	10.02	331.55	2,916.3	162.9	-118.9	1.32	1.20	-3.42	-12.2	7.7



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Survey

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3,020.0	10.20	334.80	3,007.9	177.5	-128.3	0.64	0.19	3.49	-13.7	6.5
3,115.0	9.58	321.44	3,101.5	191.3	-134.8	2.50	-0.65	-14.06	-16.1	2.3
3,210.0	9.23	316.34	3,195.2	203.0	-145.0	0.95	-0.37	-5.37	-17.1	2.6
3,302.0	9.15	318.36	3,286.0	213.8	-154.9	0.36	-0.09	2.20	-17.4	5.3
3,396.0	8.27	317.39	3,378.9	224.3	-164.5	0.95	-0.94	-1.03	-17.2	7.0
3,491.0	7.91	317.83	3,473.0	234.2	-173.5	0.38	-0.38	0.46	-15.8	8.2
3,585.0	7.21	326.82	3,566.2	243.9	-181.1	1.44	-0.74	9.35	-11.8	12.3
3,680.0	6.42	327.77	3,660.5	253.4	-187.2	0.84	-0.83	1.21	-7.9	12.1
3,775.0	6.60	320.82	3,754.9	262.1	-193.5	0.85	0.19	-7.32	-5.2	11.6
3,868.0	6.42	322.40	3,847.3	270.4	-200.0	0.27	-0.19	1.70	-0.9	12.8
3,962.0	7.83	307.02	3,940.8	278.4	-208.4	2.51	1.50	-16.38	-1.7	15.4
4,054.0	9.85	304.39	4,031.5	286.6	-219.9	2.24	2.20	-2.86	-3.1	20.2
4,149.0	8.88	303.86	4,125.2	295.3	-232.6	1.03	-1.02	-0.56	-5.0	25.6
4,244.0	9.41	308.98	4,219.0	304.3	-244.8	1.02	0.56	5.37	-3.5	30.9
4,339.0	9.32	312.91	4,312.7	314.4	-256.4	0.68	-0.09	4.16	-2.4	34.9
4,434.0	9.67	312.47	4,406.4	325.0	-268.0	0.38	0.37	-0.46	-3.8	38.2
4,528.0	6.95	309.40	4,500.4	334.0	-278.3	2.90	-2.86	-3.23	-5.4	41.7
4,622.0	6.86	304.56	4,592.8	340.8	-287.2	0.63	-0.10	-5.20	-6.4	45.8
4,717.0	9.85	310.89	4,686.8	349.3	-298.0	3.29	3.15	6.66	-0.7	50.7
4,812.0	8.53	312.47	4,780.5	359.4	-309.4	1.41	-1.39	1.66	0.0	54.3
4,907.0	9.06	310.01	4,874.4	368.9	-320.3	0.68	0.56	-2.59	-2.5	58.0
5,002.0	10.02	314.49	4,968.1	378.5	-331.8	1.28	1.01	4.72	0.8	61.5
5,097.0	11.43	317.57	5,061.4	382.3	-344.2	1.80	1.48	3.24	1.1	63.9
5,192.0	11.61	317.13	5,154.5	406.2	-357.0	0.21	0.19	-0.46	-3.7	66.0
5,287.0	12.05	315.81	5,247.5	420.4	-370.4	0.54	0.46	-1.39	-10.1	68.3
5,382.0	12.22	313.70	5,340.4	434.4	-384.6	0.50	0.18	-2.22	-18.0	70.6
5,476.0	10.90	321.53	5,432.5	448.2	-397.3	2.16	-1.40	8.33	-12.6	74.8



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5,570.0	10.90	322.14	5,524.8	482.2	-408.3	0.12	0.00	0.65	-15.0	75.9
5,663.0	11.43	320.56	5,616.0	478.3	-419.6	0.66	0.57	-1.70	-20.6	76.5
5,756.0	11.78	318.45	5,707.1	490.5	-431.7	0.59	0.38	-2.27	-27.7	77.2
5,851.0	10.82	320.82	5,800.3	504.7	-443.8	1.12	-1.01	2.49	-28.4	79.9
5,945.0	10.29	316.34	5,892.7	517.6	-455.2	1.04	-0.56	-4.77	-37.2	79.2
6,039.0	9.85	315.20	5,985.2	529.4	-466.6	0.51	-0.47	-1.21	-40.8	81.0
6,134.0	9.15	317.75	6,078.9	540.7	-477.4	0.88	-0.74	2.68	-38.2	85.1
6,229.0	9.50	329.61	6,172.7	553.1	-488.5	2.05	0.37	12.48	-20.6	91.6
6,324.0	10.11	335.32	6,266.3	567.4	-493.9	1.21	0.64	6.01	-13.0	91.5
6,419.0	9.78	338.68	6,359.9	582.5	-500.3	0.71	-0.37	3.52	-9.7	89.2
6,514.0	9.67	342.62	6,453.5	597.6	-505.7	0.71	-0.09	4.17	-5.4	85.9
6,609.0	10.02	340.07	6,547.1	613.0	-510.9	0.59	0.37	-2.68	-11.0	81.5
6,703.0	9.85	348.33	6,639.7	628.5	-515.3	1.53	-0.18	8.79	-1.9	77.8
6,798.0	9.15	350.71	6,733.4	644.0	-518.1	0.84	-0.74	2.51	-0.9	71.8
6,890.0	8.53	349.91	6,824.3	657.9	-520.5	0.69	-0.67	-0.87	-2.8	65.8
6,985.0	8.62	356.15	6,918.3	671.9	-522.2	0.98	0.09	6.57	3.0	59.0
7,079.0	8.00	355.63	7,011.3	685.5	-523.2	0.66	-0.66	-0.55	1.7	51.6
7,174.0	7.56	354.48	7,105.4	698.3	-524.3	0.49	-0.46	-1.21	0.9	44.3
7,267.0	7.83	1.87	7,197.6	710.7	-524.7	1.10	0.29	7.95	5.9	36.0
7,361.0	8.00	4.68	7,290.7	723.6	-523.9	0.45	0.18	2.99	6.0	26.9
7,456.0	8.00	17.60	7,384.8	736.5	-521.4	1.89	0.00	13.60	6.4	16.7
7,551.0	5.01	29.38	7,478.1	748.5	-517.4	3.43	-3.15	12.40	3.2	6.1
7,646.0	3.69	46.87	7,573.9	752.2	-513.1	1.85	-1.39	18.41	-0.6	2.0
7,741.0	2.20	70.51	7,668.7	754.9	-509.1	1.99	-1.57	24.88	-5.1	0.4
7,804.1	1.70	78.69	7,731.8	755.4	-507.1	0.90	-0.79	12.97	-7.3	1.0
Brushy Top(VAL 24 FC #709H)										
7,833.0	1.49	84.22	7,760.7	755.6	-506.3	0.90	-0.73	19.11	-7.9	1.6



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7,927.0	1.41	86.59	7,854.7	755.8	-503.9	0.11	-0.09	2.52	-10.2	2.2	
8,020.0	1.14	97.14	7,947.8	755.7	-501.9	0.38	-0.29	11.34	-11.7	4.2	
8,114.0	1.14	98.48	8,041.8	755.5	-500.0	0.03	0.00	1.40	-13.5	4.5	
8,208.0	1.06	106.55	8,135.8	755.1	-498.2	0.19	-0.09	8.61	-14.5	6.5	
8,303.0	0.97	124.47	8,230.8	754.4	-496.7	0.35	-0.09	18.88	-13.5	10.9	
8,398.0	0.88	138.45	8,325.8	753.4	-495.6	0.25	-0.09	14.72	-11.9	14.0	
8,493.0	0.97	157.81	8,420.8	752.1	-494.8	0.34	0.09	20.17	-8.2	17.4	
8,588.0	1.14	173.17	8,515.5	750.4	-494.4	0.35	0.18	16.38	-4.9	19.2	
8,681.0	1.23	185.73	8,608.5	748.5	-494.4	0.29	0.10	13.51	-2.5	20.0	
8,776.0	1.32	182.04	8,703.5	746.4	-494.5	0.13	0.09	-3.88	-5.9	19.7	
8,870.0	1.49	187.58	8,797.5	744.1	-494.7	0.23	0.18	5.89	-8.3	20.3	
8,965.0	1.41	185.85	8,892.4	741.7	-495.0	0.10	-0.08	-2.03	-9.4	20.0	
9,059.0	1.23	188.37	8,988.4	739.5	-495.3	0.20	-0.19	2.89	-10.6	20.5	
9,153.0	1.14	199.71	9,080.4	737.7	-495.7	0.27	-0.10	12.06	-8.3	22.4	
9,248.0	1.32	199.01	9,173.4	735.8	-496.4	0.19	0.19	-0.75	-10.5	22.3	
9,340.0	0.97	223.00	9,267.4	734.2	-497.3	0.62	-0.37	25.52	-2.4	25.1	
9,434.0	0.97	214.39	9,361.3	732.9	-498.3	0.15	0.00	-8.16	-7.7	24.3	
9,529.0	1.14	218.61	9,458.3	731.5	-499.3	0.20	0.18	4.44	-7.8	24.9	
9,624.0	0.70	211.22	9,551.3	730.3	-500.2	0.48	-0.48	-7.78	-12.3	23.8	
9,718.0	0.70	229.08	9,645.3	728.4	-500.9	0.23	0.00	18.98	-5.6	26.4	
9,813.0	0.82	228.80	9,740.3	728.7	-501.8	0.08	-0.08	-0.27	-8.8	28.3	
9,908.0	0.35	224.78	9,835.3	728.2	-502.3	0.29	-0.28	-4.25	-9.4	25.8	
10,004.0	0.35	108.48	9,931.3	727.9	-502.3	0.82	0.00	-121.12	-18.1	-20.1	
10,098.0	0.26	129.31	10,025.3	727.6	-501.8	0.15	-0.10	22.16	-25.5	-11.9	
10,191.0	0.26	85.45	10,118.3	727.5	-501.5	0.21	0.00	-47.16	-10.5	-26.4	
10,286.0	0.18	0.37	10,213.3	727.7	-501.3	0.32	-0.08	-89.58	25.2	-12.9	
10,381.0	0.18	251.85	10,308.3	727.8	-501.4	0.31	0.00	-114.44	4.0	27.8	



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10,472.0	0.35	158.56	10,399.3	727.5	-501.4	0.45	0.19	-104.49	-28.4	1.4	
10,568.0	0.53	90.81	10,493.3	727.2	-500.9	0.53	0.19	-69.95	-13.5	-25.8	
10,659.0	0.82	146.27	10,586.3	726.8	-500.2	0.58	0.10	59.63	-29.5	-3.0	
10,753.0	0.70	165.34	10,680.3	725.8	-499.7	0.25	0.09	20.29	-29.9	6.9	
10,843.0	1.14	251.82	10,870.3	724.1	-501.2	0.69	0.23	45.57	3.2	31.4	
11,038.0	1.23	227.66	10,965.2	723.1	-502.9	0.53	0.09	-25.54	-11.9	29.6	
11,133.0	1.76	193.47	11,060.2	721.0	-504.0	1.07	0.56	-35.99	-28.8	17.2	
11,228.0	1.85	213.95	11,155.2	718.3	-505.2	0.68	0.09	21.56	-23.8	26.7	
11,323.0	3.08	222.39	11,250.1	715.2	-507.8	1.35	1.29	8.88	-23.7	30.1	
11,418.0	3.25	223.70	11,344.9	711.3	-511.3	0.19	0.18	1.38	-28.2	30.7	
11,514.0	3.34	228.71	11,440.8	707.5	-515.3	0.31	0.09	5.22	-31.0	33.3	
11,608.0	2.81	231.44	11,534.8	704.3	-519.2	0.58	-0.56	2.90	-34.4	34.9	
11,652.8	2.38	229.48	11,579.4	703.0	-520.7	0.98	-0.96	-4.37	-37.8	33.6	
FTP Crossing, MD:11652.8, TVD:11579.4, N/S:703.0, E/W:-520.7, INC:2.38											
11,654.0	2.37	229.42	11,580.8	703.0	-520.8	0.98	-0.95	-5.18	-37.7	33.6	
11,749.0	1.49	228.54	11,675.5	700.9	-523.2	0.93	-0.93	-0.93	-41.4	33.0	
11,844.0	1.14	213.33	11,770.5	699.3	-524.6	0.52	-0.37	-18.01	-50.7	20.8	
11,930.0	1.41	157.37	11,856.5	697.8	-524.7	1.42	0.31	-65.06	-44.9	-30.5	
KOP, MD:11930.0, TVD:11856.5, N/S:697.8, E/W:-524.7, INC:1.41											
11,939.0	1.49	153.57	11,865.5	697.4	-524.8	1.42	0.93	-42.27	-42.0	-33.0	
12,034.0	11.17	180.37	11,959.8	687.0	-524.1	10.38	10.19	28.21	-40.5	-12.2	
12,128.0	20.66	178.88	12,051.1	681.0	-523.9	10.00	9.99	-1.57	-24.0	-18.1	
12,223.0	37.55	175.72	12,132.9	615.5	-521.4	18.04	17.97	-3.36	-8.6	-18.3	
12,288.3	40.72	179.76	12,183.6	574.4	-519.8	6.23	4.88	6.19	-1.5	-20.0	
FTP (VAL 24 FC #709H)											
12,318.0	42.21	181.43	12,205.8	554.7	-520.0	6.23	5.00	5.62	3.7	-22.3	
12,368.0	43.97	185.73	12,240.9	522.0	-522.1	7.13	3.67	8.96	13.7	-28.7	



Midland PVA

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Valiant 24 Fed Corn
 Well: #709H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #709H
 TVD Reference: KB = 25 @ 3487.0usft
 MD Reference: KB = 25 @ 3487.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey

MD (usft)	Inc (°)	Asl (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
12,412.0	54.98	182.48	12,270.7	487.2	-524.5	24.48	23.89	-7.07	25.7	-33.8
12,459.0	69.82	177.03	12,292.5	445.7	-524.2	33.23	31.62	-11.60	32.0	-35.1
12,505.0	84.24	171.58	12,302.8	401.2	-519.7	33.39	31.35	-11.85	28.3	-33.7
12,598.0	89.69	171.78	12,307.7	309.4	-506.2	5.88	5.88	0.19	19.0	-27.8
12,693.0	91.98	172.81	12,308.3	215.2	-493.5	2.65	2.41	1.11	16.3	-21.7
12,787.0	91.80	177.30	12,303.2	121.7	-485.4	4.78	-0.19	4.78	13.2	-15.9
12,882.0	92.68	175.98	12,299.5	28.9	-479.8	1.87	0.93	-1.39	9.4	-10.9
12,978.0	93.65	175.80	12,294.3	-88.7	-473.1	1.05	1.03	-0.19	4.2	-4.7
13,071.0	94.26	177.65	12,287.7	-181.3	-467.7	2.05	0.84	1.85	-2.4	0.1
13,166.0	94.44	178.77	12,280.5	-255.9	-463.1	0.94	0.18	-0.93	-9.6	4.2
13,258.0	93.30	178.95	12,274.3	-347.6	-458.0	1.25	-1.24	0.20	-15.9	8.6
13,349.0	90.92	180.29	12,271.0	-438.5	-455.9	4.50	-2.62	3.67	-19.3	10.3
13,444.0	91.28	180.02	12,269.2	-533.5	-458.1	0.47	0.38	-0.28	-21.1	8.4
13,538.0	87.87	181.16	12,270.0	-627.4	-457.1	4.03	-3.84	1.21	-20.3	7.9
13,633.0	87.87	180.55	12,273.9	-722.3	-458.5	0.64	0.00	-0.64	-16.5	5.9
13,727.0	91.63	179.23	12,274.5	-818.3	-458.3	4.44	4.21	-1.40	-15.9	5.5
13,822.0	91.80	180.20	12,271.6	-911.3	-457.8	1.04	0.18	1.02	-18.8	5.4
13,918.0	92.15	180.99	12,268.4	-1,005.2	-458.8	0.92	0.37	0.84	-22.1	3.9
14,011.0	91.01	181.60	12,265.7	-1,100.2	-481.0	1.36	-1.20	0.64	-24.8	1.1
14,106.0	89.52	180.11	12,265.3	-1,195.1	-482.4	2.22	-1.57	-1.57	-25.2	-0.9
14,201.0	88.11	180.81	12,267.3	-1,280.1	-483.1	1.66	-1.48	0.74	-23.3	-2.2
14,296.0	88.46	179.58	12,270.1	-1,365.1	-483.5	1.35	0.37	-1.29	-20.5	-3.1
14,391.0	89.34	179.49	12,271.9	-1,480.0	-482.7	0.93	0.93	-0.09	-18.7	-2.9
14,488.0	90.75	179.08	12,271.9	-1,575.0	-481.5	1.55	1.48	-0.45	-18.8	-2.3
14,581.0	89.60	180.37	12,271.6	-1,670.0	-481.0	1.83	-1.21	1.38	-19.2	-2.4
14,675.0	88.55	179.23	12,273.1	-1,764.0	-480.7	1.65	-1.12	-1.21	-17.7	-2.6
14,770.0	88.20	178.00	12,275.8	-1,858.9	-458.4	1.35	-0.37	-1.29	-15.0	-0.9



Midland PVA

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Valiant 24 Fed Com
 Well: #708H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #708H
 TVD Reference: KB = 25 @ 3487.0usft
 MD Reference: KB = 25 @ 3487.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey

MD (usft)	Inc (°)	Asl (azimuth) (°)	TVD (usft)	NIS (usft)	EW (usft)	DLag (°/100usft)	Bulld (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
14,864.0	90.75	177.56	12,278.8	-1,952.9	-454.8	2.75	2.71	-0.47	-14.2	2.2
14,959.0	92.59	177.56	12,273.9	-2,047.7	-450.7	1.94	1.94	0.00	-17.0	5.6
15,050.0	94.88	179.14	12,268.0	-2,138.5	-448.1	3.08	2.52	1.74	-23.0	7.7
15,145.0	92.86	180.99	12,261.5	-2,233.3	-448.2	2.88	-2.13	1.95	-29.4	7.0
15,240.0	90.84	180.46	12,258.5	-2,328.2	-449.4	2.20	-2.13	-0.56	-32.5	5.2
15,335.0	88.64	180.90	12,258.9	-2,423.2	-450.5	2.36	-2.32	0.46	-32.1	3.5
15,428.0	88.37	181.89	12,261.3	-2,518.1	-452.6	0.90	-0.28	0.85	-29.7	0.9
15,523.0	88.64	181.60	12,263.8	-2,611.1	-455.4	0.30	0.28	-0.09	-27.3	-2.4
15,618.0	89.78	181.34	12,265.1	-2,708.0	-457.8	1.23	1.20	-0.27	-26.0	-5.4
15,713.0	90.57	182.22	12,264.8	-2,801.0	-460.8	1.24	0.83	0.93	-26.4	-8.0
15,808.0	89.25	180.29	12,265.0	-2,895.9	-462.8	2.46	-1.39	-2.03	-26.2	-11.6
15,903.0	93.74	181.25	12,262.5	-2,990.9	-464.1	4.83	4.73	1.01	-28.8	-13.5
15,998.0	91.54	180.29	12,258.1	-3,085.8	-465.4	2.53	-2.32	-1.01	-33.2	-15.3
16,093.0	89.34	181.25	12,257.4	-3,180.7	-468.7	2.53	-2.32	1.01	-33.9	-17.2
16,187.0	87.85	180.90	12,259.7	-3,274.7	-468.4	1.83	-1.59	-0.37	-31.7	-19.5
16,282.0	91.19	181.25	12,260.5	-3,369.7	-470.2	3.54	3.52	0.37	-30.9	-21.9
16,377.0	88.37	179.14	12,260.9	-3,464.6	-470.5	3.71	-2.97	-2.22	-30.6	-22.8
16,472.0	89.87	178.09	12,262.3	-3,559.6	-468.2	1.93	1.58	-1.11	-29.2	-21.0
16,566.0	89.69	179.06	12,262.7	-3,653.6	-465.9	1.05	-0.19	1.03	-28.8	-19.3
16,661.0	90.40	179.76	12,262.6	-3,748.6	-464.9	1.05	0.75	0.74	-29.0	-18.9
16,756.0	90.57	179.67	12,261.8	-3,843.6	-464.4	0.20	0.18	-0.09	-29.8	-19.0
16,851.0	91.54	179.76	12,260.1	-3,938.5	-464.0	1.03	1.02	0.09	-31.6	-19.1
16,946.0	90.40	178.53	12,258.4	-4,033.5	-462.6	1.77	-1.20	-1.29	-33.2	-18.2
17,041.0	89.87	178.53	12,258.2	-4,128.5	-460.1	0.56	-0.56	0.00	-33.5	-16.4
17,136.0	90.40	178.26	12,258.0	-4,223.4	-457.5	0.63	0.56	-0.28	-33.8	-14.3
17,231.0	90.75	178.53	12,257.0	-4,318.4	-454.8	0.47	0.37	0.28	-34.8	-12.2
17,326.0	90.92	178.26	12,255.7	-4,413.4	-452.1	0.34	0.18	-0.28	-36.2	-10.1



Midland PVA

Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Valiant 24 Fed Com
Well: #709H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #709H
TVD Reference: KB = 25 @ 3487.0usft
MD Reference: KB = 25 @ 3487.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14

Survey

MD (usft)	Inc (°)	Asl (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Buld (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
17,421.0	89.69	177.56	12,255.2	-4,508.3	-448.7	1.49	-1.29	-0.74	-36.7	-7.2
17,516.0	88.46	178.18	12,256.7	-4,603.2	-445.1	1.45	-1.29	0.65	-35.2	-4.3
17,611.0	88.55	178.00	12,259.2	-4,698.1	-442.0	0.21	0.09	-0.19	-32.8	-1.7
17,705.0	90.04	178.09	12,260.3	-4,792.1	-438.8	1.59	1.59	0.10	-31.7	0.9
17,744.7	90.63	178.27	12,260.1	-4,831.7	-437.5	1.55	1.48	0.46	-31.9	2.0
TOTAL (VAL 24 FC #709H)										
17,800.0	91.45	178.53	12,259.1	-4,887.0	-436.0	1.55	1.48	0.46	-33.2	3.2
17,895.0	91.54	180.02	12,256.6	-4,982.0	-434.8	1.57	0.09	1.57	-36.2	3.8
17,990.0	88.99	180.81	12,258.2	-5,076.9	-435.5	2.81	-2.68	0.83	-37.1	2.5
18,084.0	87.58	180.02	12,259.0	-5,170.9	-436.1	1.72	-1.50	-0.84	-34.8	1.2
18,179.0	87.14	181.43	12,263.4	-5,265.8	-437.3	1.55	-0.46	1.48	-31.0	-0.6
18,271.0	88.20	181.34	12,267.1	-5,357.7	-439.8	1.16	1.15	-0.10	-27.7	-3.3
18,366.0	88.55	181.34	12,269.8	-5,452.6	-441.8	0.37	0.37	0.00	-25.5	-6.1
18,460.0	88.64	181.52	12,272.1	-5,546.6	-444.1	0.21	0.10	0.19	-23.7	-9.1
18,554.0	89.08	180.64	12,274.0	-5,640.5	-445.9	1.05	0.47	-0.94	-22.4	-11.4
18,648.0	89.52	180.64	12,275.1	-5,734.5	-446.9	0.47	0.47	0.00	-21.7	-13.1
18,742.0	88.99	180.90	12,276.3	-5,828.5	-448.2	0.63	-0.56	0.28	-21.0	-14.9
18,835.0	88.29	180.99	12,276.5	-5,921.5	-449.7	0.76	-0.75	0.10	-19.3	-17.0
18,930.0	88.02	179.93	12,281.6	-6,016.4	-450.5	1.15	-0.28	-1.12	-16.8	-18.4
19,025.0	90.92	179.23	12,282.5	-6,111.4	-449.8	3.14	3.05	-0.74	-16.4	-18.3
19,119.0	91.63	178.14	12,280.4	-6,205.4	-448.5	0.78	0.78	-0.10	-19.0	-17.5
19,214.0	90.48	180.37	12,278.6	-6,300.3	-448.1	1.77	-1.21	1.29	-21.3	-17.7
19,309.0	90.84	180.55	12,277.5	-6,395.3	-448.8	0.42	0.38	0.19	-22.9	-19.0
19,404.0	91.36	181.34	12,275.7	-6,490.3	-450.4	1.00	0.55	0.83	-25.2	-21.2
19,499.0	90.57	180.99	12,274.1	-6,585.3	-452.3	0.91	-0.83	-0.37	-27.3	-23.7
19,594.0	85.65	179.76	12,277.3	-6,680.2	-452.9	5.34	-5.16	-1.29	-24.7	-24.9



Midland PVA

Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Valiant 24 Fed Com
 Well: #709H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well #709H
 TVD Reference: KB = 25 @ 3487.0usft
 MD Reference: KB = 25 @ 3487.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.14

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLog (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
19,802.2	85.56	179.83	12,277.9	-6,688.4	-452.9	1.34	-1.05	0.83	-24.1	-25.0
TOT12(VAL 24 FC #709H)										
19,720.0	84.33	180.81	12,288.3	-6,805.7	-453.6	1.34	-1.05	0.83	-15.5	-28.3
Last MWD Survey (MD=19720.0)										
19,920.0	84.33	180.81	12,308.0	-7,004.7	-456.4	0.00	0.00	0.00	1.0	-30.4
Projection to Bit (MD=19920.0) - PSBL(VAL 24 FC #709H)										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
11,652.8	11,579.4	703.0	-520.7	FTP Crossing, MD:11652.8', TVD:11579.4', N/S:703.0', E/W:-520.7', INC:2.38
11,930.0	11,856.5	697.6	-524.7	KOP, MD:11930.0', TVD:11856.5', N/S:697.6', E/W:-524.7', INC:1.41
19,720.0	12,288.3	-8,805.7	-453.6	Last MWD Survey (MD=19720.0)
19,920.0	12,308.0	-7,004.7	-456.4	Projection to Bit (MD=19920.0)

Checked By: _____ Approved By: _____ Date: _____



Lea County, NM (NAD 83 NME)

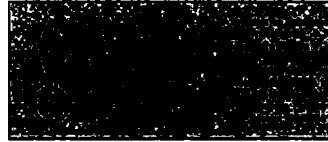
Vallant 24 Fed Com

#709H

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



To convert a Magnetic Direction to a Grid Direction, Add 8.35°
To convert a Magnetic Direction to a True Direction, Add 8.72° East
To convert a True Direction to a Grid Direction, Subtract 0.38°

WELL DETAILS: #709H

3482.0
+N-S +E-W Northing Easting KB = 25 @ 3487.00ft
0.0 0.0 405825.00 761695.20 32° 0' 49.894 N 103° 37' 17.722 W Slot

SECTION DETAILS

Sec	MD	Inc	Azd	TVD	+N-S	+E-W	Dieg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.00	0.00	0.00	0.0	
3	1949.8	9.00	325.68	1947.9	29.1	-19.9	2.00	325.68	-27.8	
4	7330.1	9.00	325.68	7262.1	723.9	-494.1	0.00	0.00	-592.6	
5	7779.9	0.00	0.00	7710.0	753.0	-514.0	2.00	180.00	-720.4	
6	11882.4	0.00	0.00	11812.5	753.0	-514.0	0.00	0.00	-720.4	
7	12832.2	89.88	175.40	12290.0	277.2	-475.7	12.00	175.40	-247.9	
8	12773.9	89.88	179.65	12290.0	135.7	-489.6	3.00	90.04	-106.9	
9	17741.9	89.88	179.65	12292.0	-4832.2	-439.5	0.00	0.00	4850.0	TGT#1(VAL 24 FC #709H)
10	17756.3	89.89	179.65	12292.0	-4846.6	-439.4	2.00	-178.67	4864.3	TGT#2(VAL 24 FC #709H)
11	19596.2	89.89	179.65	12302.0	-6886.4	-428.0	0.00	0.00	6700.0	
12	19626.8	89.08	179.65	12302.3	-6716.9	-427.8	2.00	180.00	6730.5	
13	19917.8	89.08	179.65	12307.0	-7008.0	-428.0	0.00	0.00	7020.9	PBHL(VAL 24 FC #709H)

WELLBORE TARGET DETAILS (MAP COORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting	Shape
Shady Top(VAL 24 FC #709H)	7722.0	763.0	-614.0	406538.00	761185.00	Polygon
PTP(VAL 24 FC #709H)	12290.0	763.0	-474.0	406538.00	761226.00	Point
TOT#1(VAL 24 FC #709H)	12292.0	-4832.2	-439.5	401052.80	761263.64	Point
TOT#2(VAL 24 FC #709H)	12302.0	-6886.4	-428.0	339196.40	761271.01	Point
PBHL(VAL 24 FC #709H)	12307.0	-7008.0	-428.0	338577.00	761273.00	Rectangle (Sides: L&S 1480.0)

