

HOBBS OCD

OCT 01 2018

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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Orrtanna 20 Fed

#708H

OH

Design: OH

Final PVA Report

29 June, 2018



Final PVA Report

Company:	EOG Resources - Midland			Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)			TVD Reference:	KB = 25 @ 3265.0usft (HP #465)
Site:	Oritanna 20 Fed			MD Reference:	KB = 25 @ 3265.0usft (HP #465)
Well:	#708H			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 Oritanna 20 Fed					
Site Position:		Northing:	373,025.00 usft	Latitude:	32° 1' 24.126 N
From:	Map	Easting:	770,593.00 usft	Longitude:	103° 35' 36.933 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39 °
Well #708H					
Well Position	+N-S 0.0 usft	Northing:	373,249.00 usft	Latitude:	32° 1' 26.207 N
	+E-W 0.0 usft	Easting:	772,581.00 usft	Longitude:	103° 35' 13.823 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,240.0 usft
Wellbore OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/29/2018	6.84	59.86	47,721.59957337
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	0.69	



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Survey Program		Date	6/29/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
190.0	866.0	Cartel 41 8'kb +17' (OH)	MWD	OWSG MWD - Standard	
928.0	17,115.0	Intrepid MWD #1 (OH)	MWD	OWSG MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
190.0	0.51	261.65	190.0	-0.1	-0.8	0.27	0.27	0.00	0.0	0.0
313.0	0.44	263.33	313.0	-0.3	-1.8	0.06	-0.06	1.37	0.0	0.0
440.0	0.42	254.09	440.0	-0.4	-2.8	0.06	-0.02	-7.28	0.0	0.0
567.0	0.24	270.79	567.0	-0.6	-3.5	0.16	-0.14	13.15	0.0	0.0
694.0	0.04	347.52	694.0	-0.5	-3.8	0.18	-0.16	60.42	0.0	0.0
821.0	0.18	221.13	821.0	-0.6	-3.9	0.16	0.11	-99.52	0.0	0.0
866.0	0.13	193.89	866.0	-0.7	-4.0	0.19	-0.11	-60.53	0.0	0.0
928.0	0.30	268.10	928.0	-0.8	-4.1	0.47	0.27	119.69	-0.1	-0.1
1,114.0	0.70	141.50	1,114.0	-1.7	-3.9	0.49	0.22	-68.06	-0.4	-0.1
1,244.0	0.40	157.20	1,244.0	-2.7	-3.3	0.26	-0.23	12.08	-1.4	0.4
1,433.0	0.00	95.10	1,433.0	-3.4	-3.0	0.21	-0.21	0.00	1.4	-1.3
1,622.0	0.20	283.50	1,622.0	-3.3	-3.3	0.11	0.11	0.00	1.2	0.6
1,812.0	0.40	256.40	1,812.0	-3.4	-4.3	0.13	0.11	-14.26	0.1	0.6
2,001.0	1.90	210.20	2,000.9	-6.2	-6.5	0.87	0.79	-24.44	-3.6	-0.2
2,189.0	6.70	192.00	2,188.4	-19.6	-10.4	2.62	2.55	-9.68	-16.8	-2.2
2,378.0	9.40	181.30	2,375.5	-45.9	-13.0	1.63	1.43	-5.86	-40.5	-7.5
2,567.0	10.50	170.00	2,561.7	-78.3	-10.4	1.18	0.58	-5.98	-58.0	-17.6
2,755.0	10.50	168.80	2,746.5	-111.9	-4.1	0.12	0.00	-0.64	-67.1	-17.2
2,944.0	10.10	171.90	2,932.5	-145.2	1.6	0.36	-0.21	1.64	-72.4	-12.1
3,132.0	9.20	174.50	3,117.8	-176.5	5.4	0.53	-0.48	1.38	-75.2	-8.8



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Well:	#708H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
ND (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)	
3,321.0	9.20	169.70	3,304.4	-206.4	9.5	0.41	0.00	-2.54	-75.0	-14.6	
3,511.0	7.80	163.10	3,492.3	-233.7	16.0	0.90	-0.74	-3.47	-71.7	-19.6	
3,701.0	7.50	153.40	3,680.6	-257.1	25.3	0.70	-0.16	-5.11	-64.7	-23.5	
3,890.0	6.90	167.80	3,868.1	-279.3	33.2	1.00	-0.32	7.62	-62.5	-1.2	
4,079.0	6.50	182.00	4,055.8	-301.0	35.2	0.90	-0.21	7.51	-53.5	12.2	
4,269.0	7.90	178.60	4,244.3	-324.9	35.2	0.77	0.74	-1.79	-48.4	5.6	
4,457.0	7.00	173.30	4,430.8	-349.1	36.8	0.60	-0.48	-2.82	-43.8	-0.2	
4,646.0	7.50	166.10	4,618.3	-372.6	41.2	0.55	0.26	-3.81	-37.9	-3.5	
4,769.0	6.80	167.10	4,740.3	-387.4	44.7	0.58	-0.57	0.81	-34.2	-0.8	
4,830.0	6.30	168.20	4,800.9	-394.2	46.2	0.85	-0.82	1.80	-31.7	0.8	
5,018.0	11.30	172.90	4,986.6	-422.6	50.6	2.68	2.66	2.50	-31.0	4.2	
5,206.0	12.20	173.70	5,170.7	-460.7	55.0	0.49	0.48	0.43	-40.2	4.6	
5,395.0	12.60	176.90	5,355.3	-501.1	58.3	0.42	0.21	1.69	-51.3	5.9	
5,583.0	11.20	179.30	5,539.2	-539.8	59.7	0.79	-0.74	1.28	-60.8	5.7	
5,771.0	8.50	172.10	5,724.5	-571.9	61.8	1.58	-1.44	-3.83	-63.9	-3.7	
5,959.0	8.10	171.20	5,910.5	-598.7	65.8	0.22	-0.21	-0.48	-61.7	-3.9	
6,148.0	7.90	170.10	6,097.6	-624.7	70.0	0.13	-0.11	-0.58	-58.5	-3.9	
6,337.0	7.90	172.00	6,284.9	-650.3	74.1	0.14	0.00	1.01	-55.2	-1.0	
6,526.0	7.20	181.40	6,472.2	-675.0	75.6	0.75	-0.37	4.97	-50.2	5.8	
6,715.0	5.40	195.90	6,660.1	-695.4	72.9	1.26	-0.95	7.67	-40.3	9.6	
6,905.0	2.00	129.00	6,849.7	-706.1	73.0	2.61	-1.79	-35.21	-10.3	-20.9	
7,093.0	2.00	142.10	7,037.6	-710.8	77.5	0.24	0.00	6.97	3.9	-2.2	
7,283.0	1.80	146.70	7,227.5	-715.9	81.2	0.13	-0.11	2.42	18.7	8.3	
7,472.0	1.80	148.00	7,416.4	-720.9	84.4	0.02	0.00	0.69	23.0	12.6	
7,661.0	1.70	158.70	7,605.3	-726.0	87.0	0.18	-0.05	5.66	20.1	8.9	
7,851.0	1.70	169.90	7,795.2	-731.4	88.5	0.17	0.00	5.89	15.9	5.4	
8,040.0	1.70	160.80	7,984.2	-736.8	89.9	0.14	0.00	-4.81	9.3	7.4	



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8,229.0	1.50	164.60	8,173.1	-741.8	91.5	0.12	-0.11	2.01	4.5	7.0
8,418.0	1.30	158.90	8,362.0	-746.2	93.0	0.13	-0.11	-3.02	-0.8	7.1
8,607.0	1.70	163.50	8,551.0	-750.9	94.5	0.22	0.21	2.43	-5.2	7.3
8,795.0	1.50	161.00	8,738.9	-755.9	96.1	0.11	-0.11	-1.33	-10.8	7.0
8,984.0	1.30	162.40	8,927.8	-760.3	97.6	0.11	-0.11	0.74	-15.2	7.3
9,172.0	1.00	135.00	9,115.8	-763.5	99.4	0.33	-0.16	-14.57	-20.4	-1.5
9,361.0	0.60	127.10	9,304.8	-765.3	101.3	0.22	-0.21	-4.18	-22.6	-4.5
9,549.0	1.80	283.50	9,492.8	-765.2	99.2	1.26	0.64	83.19	16.9	13.6
9,738.0	2.80	280.50	9,681.6	-763.6	91.8	0.53	0.53	-1.59	8.6	14.3
9,926.0	1.00	7.80	9,869.5	-761.2	87.5	1.56	-0.96	46.44	12.8	-3.3
10,114.0	0.50	285.60	10,057.5	-759.3	87.0	0.56	-0.27	-43.72	4.0	10.6
10,303.0	1.00	257.50	10,246.5	-759.4	84.6	0.32	0.26	-14.87	-3.9	10.9
10,491.0	1.70	236.90	10,434.4	-761.3	80.6	0.45	0.37	-10.96	-11.8	8.2
10,679.0	0.90	35.70	10,622.4	-761.7	79.1	1.36	-0.43	84.47	15.1	-2.4
10,868.0	0.20	322.50	10,811.4	-760.2	79.8	0.46	-0.37	-38.73	5.9	12.3
11,056.0	0.70	201.50	10,999.4	-761.0	79.2	0.44	0.27	-64.36	-14.6	-1.6
11,246.0	1.60	32.80	11,189.4	-759.8	80.2	1.21	0.47	-88.79	13.1	-1.5
11,435.0	1.10	309.90	11,378.3	-756.5	80.2	0.97	-0.26	-43.86	1.0	10.2
11,624.0	1.10	277.90	11,567.3	-755.0	77.0	0.32	0.00	-16.93	-7.9	8.2
11,813.0	0.80	273.30	11,756.3	-754.9	76.0	0.48	-0.46	-7.08	-9.6	7.5
11,999.0	0.60	237.30	11,945.3	-755.1	75.2	0.72	-0.30	-54.55	-12.9	0.1
12,184.0	3.80	324.60	12,129.2	-752.8	73.0	4.02	3.37	91.89	-3.6	13.4
12,369.0	13.50	351.90	12,318.6	-746.1	71.3	21.85	20.64	58.09	-3.9	14.3
12,554.0	16.45	354.13	12,507.0	-741.5	70.7	16.69	16.39	12.38	-7.8	14.6
KOP (Orrtanna 20 Fed #708H)										
11,945.0	21.40	356.50	11,885.4	-731.8	70.0	16.69	16.50	7.91	-16.1	15.5
11,992.0	25.30	353.90	11,928.5	-713.2	68.4	8.58	8.30	-5.53	-30.9	14.9



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12,024.6	27.65	351.89	11,957.7	-698.8	66.6	7.72	7.22	-6.17	-40.2	14.4	
HL Crossing, MD:12024.6, TVD:11957.7, N/S:-698.8, E/W:66.6, INC:27.65											
12,039.0	28.70	351.10	11,970.4	-692.1	65.6	7.72	7.27	-5.49	-44.0	14.3	
12,086.0	31.50	350.20	12,011.1	-668.8	61.7	6.03	5.96	-1.91	-54.4	15.9	
12,134.0	34.20	351.60	12,051.4	-643.1	57.6	5.84	5.62	2.92	-61.5	20.3	
12,181.0	39.20	356.90	12,089.1	-615.2	54.9	12.59	10.64	11.28	-64.6	27.8	
12,229.0	44.70	0.70	12,124.8	-583.1	54.3	12.62	11.46	7.92	-67.2	31.6	
12,276.0	47.40	0.70	12,157.4	-549.3	54.7	5.74	5.74	0.00	-69.2	30.8	
12,323.0	52.20	359.30	12,187.7	-513.4	54.7	10.46	10.21	-2.98	-69.4	29.5	
12,370.0	58.00	358.10	12,214.6	-474.9	53.8	12.52	12.34	-2.55	-68.3	29.4	
12,418.0	61.10	357.20	12,238.9	-433.6	52.1	6.66	6.46	-1.87	-65.1	30.7	
12,428.5	62.48	357.41	12,243.9	-424.3	51.7	13.30	13.19	2.00	-64.0	31.2	
FTP (Orrtanna 20 Fed #708H)											
12,465.0	67.30	358.10	12,259.4	-391.3	50.4	13.30	13.19	1.89	-60.0	32.8	
12,512.0	75.30	358.60	12,274.4	-346.8	49.1	17.05	17.02	1.06	-55.7	34.0	
12,559.0	81.90	357.80	12,283.7	-300.8	47.6	14.14	14.04	-1.70	-52.3	35.1	
12,607.0	86.60	357.80	12,288.5	-253.1	45.8	9.79	9.79	0.00	-48.3	36.8	
12,638.0	89.20	357.50	12,289.6	-222.1	44.5	8.44	8.39	-0.97	-46.8	37.8	
12,701.0	93.10	358.00	12,288.4	-159.2	42.1	6.24	6.19	0.79	-47.4	39.9	
12,733.0	94.70	0.60	12,286.2	-127.3	41.7	9.52	5.00	8.12	-49.3	40.0	
12,764.0	94.00	2.10	12,283.9	-96.4	42.4	5.33	-2.26	4.84	-51.4	39.0	
12,796.0	88.40	2.00	12,283.2	-64.4	43.5	17.50	-17.50	-0.31	-51.7	37.7	
12,864.0	94.20	4.90	12,281.6	3.4	47.6	9.53	8.53	4.26	-52.7	32.9	
12,890.0	95.00	4.40	12,279.6	29.2	49.7	3.63	3.08	-1.92	-54.4	30.7	
12,954.0	92.70	6.00	12,275.3	92.8	55.5	4.37	-3.59	2.50	-58.1	24.4	
12,985.0	92.50	5.70	12,273.9	123.6	58.7	1.16	-0.65	-0.97	-59.2	21.0	
13,017.0	92.70	5.40	12,272.4	155.4	61.8	1.13	0.62	-0.94	-60.3	17.8	



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13,048.0	91.70	3.90	12,271.2	186.3	64.3	5.81	-3.23	-4.84	-61.1		15.1
13,080.0	91.60	3.60	12,270.3	218.2	66.4	0.99	-0.31	-0.94	-61.7		12.8
13,143.0	89.50	2.20	12,269.7	281.1	69.6	4.01	-3.33	-2.22	-61.7		9.2
13,175.0	89.40	2.30	12,270.0	313.1	70.8	0.44	-0.31	0.31	-61.0		7.7
13,238.0	87.20	1.30	12,271.9	376.0	72.8	3.84	-3.49	-1.59	-58.5		5.3
13,269.0	87.40	1.30	12,273.3	407.0	73.5	0.65	0.65	0.00	-56.7		4.4
13,332.0	87.10	1.50	12,276.3	469.9	75.0	0.57	-0.48	0.32	-53.1		2.4
13,364.0	86.80	1.60	12,278.0	501.8	75.9	0.99	-0.94	0.31	-51.0		1.3
13,459.0	87.30	359.50	12,282.9	596.7	76.8	2.27	0.53	-2.21	-45.2		-0.2
13,554.0	89.10	359.90	12,285.9	691.7	76.3	1.94	1.89	0.42	-41.2		-0.4
13,601.0	88.70	359.80	12,286.8	738.6	76.2	0.88	-0.85	-0.21	-39.8		-0.6
13,648.0	88.40	359.70	12,288.0	785.6	76.0	0.67	-0.64	-0.21	-38.2		-0.7
13,743.0	91.80	359.10	12,287.8	880.6	75.0	3.63	3.58	-0.63	-37.4		-0.4
13,790.0	90.30	358.30	12,287.0	927.6	73.9	3.62	-3.19	-1.70	-37.7		0.4
13,838.0	89.60	358.20	12,287.0	975.6	72.4	1.47	-1.46	-0.21	-37.2		1.5
13,861.5	89.87	358.37	12,287.1	999.1	71.7	1.39	1.17	0.74	-36.9		2.0
TGT #1 (Orrtanna 20 Fed #708H)											
13,932.0	90.70	358.90	12,286.8	1,069.5	70.1	1.39	1.17	0.74	-36.0		3.2
14,027.0	89.50	358.40	12,286.6	1,164.5	67.8	1.37	-1.26	-0.53	-34.3		4.8
14,122.0	91.60	358.90	12,285.7	1,259.5	65.6	2.27	2.21	0.53	-33.4		6.3
14,217.0	91.90	358.30	12,282.8	1,354.4	63.3	0.71	0.32	-0.63	-34.5		8.0
14,264.0	92.00	358.40	12,281.2	1,401.4	61.9	0.30	0.21	0.21	-35.2		9.0
14,312.0	90.60	358.00	12,280.1	1,449.3	60.4	3.03	-2.92	-0.83	-35.4		10.2
14,406.0	88.60	358.40	12,280.8	1,543.3	57.5	2.17	-2.13	0.43	-32.9		12.5
14,501.0	91.30	0.00	12,280.9	1,638.2	56.1	3.30	2.84	1.68	-31.0		13.1
14,596.0	90.90	359.90	12,279.0	1,733.2	56.1	0.43	-0.42	-0.11	-31.0		12.6
14,691.0	89.80	359.80	12,278.4	1,828.2	55.8	1.16	-1.16	-0.11	-29.8		12.1



Final PVA Report

Company: EOG Resources - Midland		Local Co-ordinate Reference: Well #708H	
Project: Lea County, NM (NAD 83 NME)		TVD Reference: KB = 25 @ 3285.0usft (HP #465)	
Site: Ortanna 20 Fed		MD Reference: KB = 25 @ 3285.0usft (HP #465)	
Well: #708H		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)	EW (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
14,785.0	89.10	359.60	12,279.4	1,922.2	55.3	0.77	-0.74	-0.21	-27.1	12.0	
14,862.4	89.10	359.60	12,280.6	1,999.6	54.8	0.00	0.00	0.00	-24.4	12.0	
TGT #2 (Ortanna 20 Fed #708H)											
14,880.0	89.10	359.60	12,280.8	2,017.2	54.6	0.00	0.00	0.00	-23.9	12.0	
14,975.0	89.40	359.70	12,282.1	2,112.2	54.1	0.33	0.32	0.11	-21.2	11.9	
15,069.0	90.80	359.80	12,281.9	2,206.2	53.7	1.49	1.49	0.11	-20.0	11.6	
15,164.0	91.00	359.80	12,280.4	2,301.2	53.3	0.21	0.21	0.00	-20.0	11.3	
15,258.0	90.20	359.50	12,279.4	2,395.2	52.8	0.91	-0.85	-0.32	-19.6	11.2	
15,353.0	89.50	359.40	12,279.7	2,490.2	51.8	0.74	-0.74	-0.11	-17.9	11.5	
15,448.0	90.40	359.50	12,279.8	2,585.2	50.9	0.95	0.95	0.11	-16.4	11.7	
15,542.0	91.00	359.70	12,278.6	2,679.1	50.3	0.67	0.64	0.21	-16.2	11.7	
15,637.0	92.30	0.00	12,275.9	2,774.1	50.0	1.40	1.37	0.32	-17.5	11.3	
15,731.0	90.50	359.70	12,273.6	2,868.1	49.8	1.94	-1.91	-0.32	-18.4	10.9	
15,826.0	92.50	359.50	12,271.1	2,963.0	49.1	2.12	2.11	-0.21	-19.4	10.9	
15,862.1	91.51	359.80	12,269.8	2,999.1	48.9	2.86	-2.74	0.84	-20.2	10.8	
TGT #3 (Ortanna 20 Fed #708H)											
15,921.0	89.90	0.30	12,269.1	3,058.0	48.9	2.86	-2.74	0.84	-20.1	10.4	
15,968.0	89.50	0.60	12,269.4	3,105.0	49.3	1.06	-0.85	0.64	-19.2	9.7	
16,016.0	89.20	0.50	12,269.9	3,153.0	49.8	0.66	-0.62	-0.21	-17.9	8.9	
16,048.0	89.30	0.50	12,270.3	3,185.0	50.1	0.31	0.31	0.00	-17.1	8.4	
16,111.0	91.90	0.30	12,269.7	3,248.0	50.5	4.14	4.13	-0.32	-16.8	7.5	
16,205.0	89.10	0.00	12,268.9	3,342.0	50.7	3.00	-2.98	-0.32	-16.4	6.6	
16,252.0	89.30	359.80	12,269.5	3,389.0	50.7	0.60	0.43	-0.43	-15.0	6.3	
16,300.0	89.20	359.80	12,270.1	3,437.0	50.5	0.21	-0.21	0.00	-13.7	6.2	
16,347.0	89.80	359.90	12,270.5	3,484.0	50.4	1.29	1.28	0.21	-12.7	6.0	
16,362.7	89.83	359.97	12,270.6	3,499.6	50.4	0.48	0.21	0.43	-12.4	5.9	
TGT #4 (Ortanna 20 Fed #708H)											
16,394.0	89.90	0.10	12,270.7	3,531.0	50.4	0.48	0.21	0.43	-11.9	5.6	



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #708H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 25 @ 3265.0usft (HP #465)
Site:	Oritanna 20 Fed	MD Reference:	KB = 25 @ 3265.0usft (HP #465)
Well:	#708H	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)	
16,441.0	90.40	0.10	12,270.5	3,578.0	50.5	1.06	1.06	0.00	-11.5	5.2	
16,489.0	90.90	0.10	12,270.0	3,625.9	50.5	1.04	1.04	0.00	-11.5	4.8	
16,536.0	89.80	0.30	12,269.7	3,672.9	50.7	2.38	-2.34	0.43	-11.2	4.3	
16,583.0	89.10	0.20	12,270.2	3,719.9	50.9	1.50	-1.49	-0.21	-10.2	3.8	
16,678.0	88.60	0.20	12,272.1	3,814.9	51.2	0.53	-0.53	0.00	-7.1	2.8	
16,773.0	88.30	0.30	12,274.6	3,909.9	51.7	0.33	-0.32	0.11	-3.4	1.7	
16,867.0	92.00	1.10	12,274.4	4,003.9	52.8	4.03	3.94	0.85	-2.5	-0.1	
16,962.0	92.70	1.50	12,270.5	4,098.8	55.0	0.85	0.74	0.42	-5.3	-2.9	
17,047.0	94.60	2.20	12,265.1	4,183.5	57.7	2.38	2.24	0.82	-9.7	-6.3	
Final MWD Survey (MD=17047.0)											
17,108.2	94.60	2.20	12,260.2	4,244.5	60.0	0.00	0.00	0.00	-13.8	-9.1	
PBHL (Oritanna 20 Fed #708H)											
17,115.0	94.60	2.20	12,259.6	4,251.3	60.3	0.00	0.00	0.00	-14.8	-9.7	
Final Projection to Bit (MD=17115.0) - TD, MD:17115.0, TVD:12259.6, N/S:4251.3, E/W:60.3, INC:94.60											

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
12,024.6	11,957.7	-698.8	66.6	HL Crossing, MD:12024.6, TVD:11957.7, N/S:-698.8, E/W:66.6, INC:27.65
17,047.0	12,265.1	4,183.5	57.7	Final MWD Survey (MD=17047.0)
17,115.0	12,259.6	4,251.3	60.3	Final Projection to Bit (MD=17115.0)
17,115.0	12,259.6	4,251.3	60.3	TD, MD:17115.0, TVD:12259.6, N/S:4251.3, E/W:60.3, INC:94.60

Checked By: _____ Approved By: _____ Date: _____

OCT 01 2018

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Lea County, NM (NAD 83 NME)

Orrtanna 20 Fed #708H

HP #465

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: #708H

KB = 25 @ 3255.0usft (HP #465) 3240.0
Northing 373249.00 Easting 772581.00 Latitude 32° 1' 26.207 N Longitude 103° 35' 13.823 W

SECTION DETAILS

Sec	MD	Inc	Asl	TVD	+N-S	+E-W	Dleg	Tface	V-Sect	Target	Annotation
1	868.0	0.13	193.89	868.0	-0.7	-4.0	0.00	0.00	-0.8		
2	2285.0	0.13	193.89	2285.0	-3.9	-4.7	0.00	0.00	-3.9		
3	2725.3	8.95	173.03	2724.8	-38.6	-0.7	2.00	-21.15	-38.6		
4	7098.8	8.95	173.03	7043.5	-713.4	81.8	0.00	0.00	-712.4		
5	7645.8	0.00	0.00	7429.0	-748.0	86.0	2.00	180.00	-748.0		
6	11918.3	0.00	0.00	11859.5	-748.0	86.0	0.00	0.00	-748.0		
7	12571.2	90.59	359.50	12336.9	-255.7	82.8	12.00	359.50	-254.7		
8	13396.2	90.59	359.50	12324.0	999.2	73.8	0.00	0.00	1000.0		
9	13861.8	91.09	359.50	12323.8	1024.8	73.8	2.00	0.00	1025.4		
10	14595.5	91.09	359.50	12305.0	1959.3	66.7	0.00	0.00	2000.0		
11	14848.3	90.86	359.50	12304.8	2011.2	66.7	2.00	190.00	2011.8		
12	15936.8	90.86	359.50	12290.0	2999.5	66.7	0.00	0.00	3000.0		
13	16338.6	90.80	359.50	12290.0	3092.3	66.7	2.00	-190.00	3002.8		
14	16437.0	90.80	359.50	12283.0	3459.8	56.2	0.00	0.00	3500.0		
15	16442.6	90.89	359.50	12282.8	3505.2	56.2	2.00	-190.00	3505.8		
16	17193.5	90.59	359.50	12274.5	4246.0	61.0	0.00	0.00	4246.3		

To convert a Magnetic Direction to a Grid Direction, Add 8.45°
To convert a Magnetic Direction to a True Direction, Add 8.4° East
To convert a True Direction to a Grid Direction, Subtract 0.40°

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
KOP (Orrtanna 20 Fed #708H)	11859.5	-748.0	86.0	372591.00	772587.00
TGT #1 (Orrtanna 20 Fed #708H)	12324.0	999.2	73.8	374548.20	772654.76
TGT #2 (Orrtanna 20 Fed #708H)	12305.0	1999.3	66.7	375249.30	772847.75
TGT #3 (Orrtanna 20 Fed #708H)	12290.0	2999.5	66.7	376248.50	772840.74
TGT #4 (Orrtanna 20 Fed #708H)	12283.0	3459.8	56.2	376748.60	772637.23
PBHL (Orrtanna 20 Fed #708H)	12274.0	4246.0	61.0	377495.00	772832.00
FTP (Orrtanna 20 Fed #708H)	12337.0	-468.0	86.0	372781.00	772667.00

