

**OCD – HOBBS
07/23/2019
RECEIVED**

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

VALOR STATE COM #701H

OWB

Plan: PWP1

Standard Survey Report

22 July, 2019

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well VALOR STATE COM #701H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329.3+31 @ 3359.3usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329.3+31 @ 3359.3usft (Precision 106)
Well:	VALOR STATE COM #701H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

Project	LEA COUNTY, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	BULLDOG		
Site Position:		Northing:	398,637.10 usft
From:	Map	Easting:	741,887.40 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 5' 36.820 N
		Longitude:	103° 33' 8.116 W
		Grid Convergence:	0.42 °

Well	VALOR STATE COM #701H		
Well Position	+N/-S	0.0 usft	Northing: 398,669.30 usft
	+E/-W	0.0 usft	Easting: 746,806.60 usft
Position Uncertainty	3.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 5' 36.783 N
		Longitude:	103° 32' 10.933 W
		Ground Level:	3,329.3 usft

Wellbore	OWB		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	6/27/2019	6.71
			Dip Angle (°)
			59.92
			Field Strength (nT)
			47,656.80367413

Design	PWP1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			176.85

Survey Tool Program	Date	7/22/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,236.7	PWP1 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
12,236.2	20,247.8	PWP1 (OWB)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00

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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00

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5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
5,600.0	2.00	78.30	5,600.0	0.4	1.7	-0.3	2.00	2.00	0.00
5,648.4	2.97	78.30	5,648.3	0.8	3.8	-0.6	2.00	2.00	0.00
Start 6592.8 hold at 5648.4 MD									
5,700.0	2.97	78.30	5,699.9	1.3	6.4	-1.0	0.00	0.00	0.00
5,800.0	2.97	78.30	5,799.7	2.4	11.4	-1.7	0.00	0.00	0.00
5,900.0	2.97	78.30	5,899.6	3.4	16.5	-2.5	0.00	0.00	0.00
6,000.0	2.97	78.30	5,999.5	4.5	21.6	-3.3	0.00	0.00	0.00
6,100.0	2.97	78.30	6,099.3	5.5	26.7	-4.0	0.00	0.00	0.00
6,200.0	2.97	78.30	6,199.2	6.6	31.7	-4.8	0.00	0.00	0.00
6,300.0	2.97	78.30	6,299.1	7.6	36.8	-5.6	0.00	0.00	0.00
6,400.0	2.97	78.30	6,398.9	8.7	41.9	-6.4	0.00	0.00	0.00
6,500.0	2.97	78.30	6,498.8	9.7	46.9	-7.1	0.00	0.00	0.00
6,600.0	2.97	78.30	6,598.7	10.8	52.0	-7.9	0.00	0.00	0.00
6,700.0	2.97	78.30	6,698.5	11.8	57.1	-8.7	0.00	0.00	0.00
6,800.0	2.97	78.30	6,798.4	12.9	62.1	-9.4	0.00	0.00	0.00
6,900.0	2.97	78.30	6,898.3	13.9	67.2	-10.2	0.00	0.00	0.00
7,000.0	2.97	78.30	6,998.1	15.0	72.3	-11.0	0.00	0.00	0.00
7,100.0	2.97	78.30	7,098.0	16.0	77.4	-11.7	0.00	0.00	0.00
7,200.0	2.97	78.30	7,197.9	17.1	82.4	-12.5	0.00	0.00	0.00
7,300.0	2.97	78.30	7,297.7	18.1	87.5	-13.3	0.00	0.00	0.00
7,400.0	2.97	78.30	7,397.6	19.2	92.6	-14.0	0.00	0.00	0.00
7,500.0	2.97	78.30	7,497.5	20.2	97.6	-14.8	0.00	0.00	0.00
7,600.0	2.97	78.30	7,597.3	21.3	102.7	-15.6	0.00	0.00	0.00
7,700.0	2.97	78.30	7,697.2	22.3	107.8	-16.4	0.00	0.00	0.00
7,800.0	2.97	78.30	7,797.0	23.4	112.8	-17.1	0.00	0.00	0.00
7,900.0	2.97	78.30	7,896.9	24.4	117.9	-17.9	0.00	0.00	0.00
8,000.0	2.97	78.30	7,996.8	25.5	123.0	-18.7	0.00	0.00	0.00
8,100.0	2.97	78.30	8,096.6	26.5	128.1	-19.4	0.00	0.00	0.00
8,200.0	2.97	78.30	8,196.5	27.6	133.1	-20.2	0.00	0.00	0.00
8,300.0	2.97	78.30	8,296.4	28.6	138.2	-21.0	0.00	0.00	0.00
8,400.0	2.97	78.30	8,396.2	29.7	143.3	-21.7	0.00	0.00	0.00
8,500.0	2.97	78.30	8,496.1	30.7	148.3	-22.5	0.00	0.00	0.00
8,600.0	2.97	78.30	8,596.0	31.8	153.4	-23.3	0.00	0.00	0.00
8,700.0	2.97	78.30	8,695.8	32.8	158.5	-24.0	0.00	0.00	0.00
8,800.0	2.97	78.30	8,795.7	33.9	163.5	-24.8	0.00	0.00	0.00
8,900.0	2.97	78.30	8,895.6	34.9	168.6	-25.6	0.00	0.00	0.00
9,000.0	2.97	78.30	8,995.4	36.0	173.7	-26.4	0.00	0.00	0.00
9,100.0	2.97	78.30	9,095.3	37.0	178.7	-27.1	0.00	0.00	0.00
9,200.0	2.97	78.30	9,195.2	38.1	183.8	-27.9	0.00	0.00	0.00
9,300.0	2.97	78.30	9,295.0	39.1	188.9	-28.7	0.00	0.00	0.00

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Well:	VALOR STATE COM #701H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,400.0	2.97	78.30	9,394.9	40.2	194.0	-29.4	0.00	0.00	0.00
9,500.0	2.97	78.30	9,494.8	41.2	199.0	-30.2	0.00	0.00	0.00
9,600.0	2.97	78.30	9,594.6	42.3	204.1	-31.0	0.00	0.00	0.00
9,700.0	2.97	78.30	9,694.5	43.3	209.2	-31.7	0.00	0.00	0.00
9,800.0	2.97	78.30	9,794.4	44.4	214.2	-32.5	0.00	0.00	0.00
9,900.0	2.97	78.30	9,894.2	45.4	219.3	-33.3	0.00	0.00	0.00
10,000.0	2.97	78.30	9,994.1	46.5	224.4	-34.1	0.00	0.00	0.00
10,100.0	2.97	78.30	10,094.0	47.5	229.4	-34.8	0.00	0.00	0.00
10,200.0	2.97	78.30	10,193.8	48.6	234.5	-35.6	0.00	0.00	0.00
10,300.0	2.97	78.30	10,293.7	49.6	239.6	-36.4	0.00	0.00	0.00
10,400.0	2.97	78.30	10,393.6	50.7	244.7	-37.1	0.00	0.00	0.00
10,500.0	2.97	78.30	10,493.4	51.7	249.7	-37.9	0.00	0.00	0.00
10,600.0	2.97	78.30	10,593.3	52.8	254.8	-38.7	0.00	0.00	0.00
10,700.0	2.97	78.30	10,693.2	53.8	259.9	-39.4	0.00	0.00	0.00
10,800.0	2.97	78.30	10,793.0	54.9	264.9	-40.2	0.00	0.00	0.00
10,900.0	2.97	78.30	10,892.9	55.9	270.0	-41.0	0.00	0.00	0.00
11,000.0	2.97	78.30	10,992.8	57.0	275.1	-41.7	0.00	0.00	0.00
11,100.0	2.97	78.30	11,092.6	58.0	280.1	-42.5	0.00	0.00	0.00
11,200.0	2.97	78.30	11,192.5	59.1	285.2	-43.3	0.00	0.00	0.00
11,300.0	2.97	78.30	11,292.4	60.1	290.3	-44.1	0.00	0.00	0.00
11,400.0	2.97	78.30	11,392.2	61.2	295.4	-44.8	0.00	0.00	0.00
11,500.0	2.97	78.30	11,492.1	62.2	300.4	-45.6	0.00	0.00	0.00
11,600.0	2.97	78.30	11,592.0	63.3	305.5	-46.4	0.00	0.00	0.00
11,700.0	2.97	78.30	11,691.8	64.3	310.6	-47.1	0.00	0.00	0.00
11,800.0	2.97	78.30	11,791.7	65.4	315.6	-47.9	0.00	0.00	0.00
11,900.0	2.97	78.30	11,891.5	66.4	320.7	-48.7	0.00	0.00	0.00
12,000.0	2.97	78.30	11,991.4	67.5	325.8	-49.4	0.00	0.00	0.00
12,100.0	2.97	78.30	12,091.3	68.5	330.8	-50.2	0.00	0.00	0.00
12,200.0	2.97	78.30	12,191.1	69.6	335.9	-51.0	0.00	0.00	0.00
12,241.2	2.97	78.30	12,232.3	70.0	338.0	-51.3	0.00	0.00	0.00
Start DLS 12.00 TFO 101.26									
12,300.0	7.10	155.47	12,290.9	67.0	341.0	-48.1	12.00	7.02	131.25
12,400.0	18.70	170.93	12,388.2	45.5	346.1	-26.4	12.00	11.60	15.46
12,500.0	30.60	174.64	12,479.0	4.2	351.0	15.2	12.00	11.91	3.71
12,600.0	42.56	176.39	12,559.1	-55.1	355.6	74.6	12.00	11.96	1.76
12,700.0	54.53	177.49	12,625.2	-129.9	359.5	149.4	12.00	11.97	1.10
12,800.0	66.51	178.30	12,674.3	-216.7	362.6	236.3	12.00	11.98	0.81
12,900.0	78.49	178.98	12,704.4	-311.9	364.9	331.5	12.00	11.98	0.67
12,994.1	89.76	179.56	12,714.0	-405.3	366.1	424.8	12.00	11.98	0.62
Start 7253.7 hold at 12994.1 MD									
13,000.0	89.76	179.56	12,714.0	-411.2	366.1	430.7	0.00	0.00	0.00
13,100.0	89.76	179.56	12,714.4	-511.2	366.9	530.6	0.00	0.00	0.00
13,200.0	89.76	179.56	12,714.8	-611.2	367.7	630.5	0.00	0.00	0.00

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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,300.0	89.76	179.56	12,715.2	-711.2	368.4	730.4	0.00	0.00	0.00
13,400.0	89.76	179.56	12,715.7	-811.2	369.2	830.3	0.00	0.00	0.00
13,500.0	89.76	179.56	12,716.1	-911.2	370.0	930.2	0.00	0.00	0.00
13,600.0	89.76	179.56	12,716.5	-1,011.2	370.7	1,030.0	0.00	0.00	0.00
13,700.0	89.76	179.56	12,716.9	-1,111.2	371.5	1,129.9	0.00	0.00	0.00
13,800.0	89.76	179.56	12,717.3	-1,211.2	372.3	1,229.8	0.00	0.00	0.00
13,900.0	89.76	179.56	12,717.7	-1,311.2	373.1	1,329.7	0.00	0.00	0.00
14,000.0	89.76	179.56	12,718.1	-1,411.2	373.8	1,429.6	0.00	0.00	0.00
14,100.0	89.76	179.56	12,718.5	-1,511.2	374.6	1,529.5	0.00	0.00	0.00
14,200.0	89.76	179.56	12,719.0	-1,611.2	375.4	1,629.4	0.00	0.00	0.00
14,300.0	89.76	179.56	12,719.4	-1,711.2	376.1	1,729.3	0.00	0.00	0.00
14,400.0	89.76	179.56	12,719.8	-1,811.1	376.9	1,829.1	0.00	0.00	0.00
14,500.0	89.76	179.56	12,720.2	-1,911.1	377.7	1,929.0	0.00	0.00	0.00
14,600.0	89.76	179.56	12,720.6	-2,011.1	378.5	2,028.9	0.00	0.00	0.00
14,700.0	89.76	179.56	12,721.0	-2,111.1	379.2	2,128.8	0.00	0.00	0.00
14,800.0	89.76	179.56	12,721.4	-2,211.1	380.0	2,228.7	0.00	0.00	0.00
14,900.0	89.76	179.56	12,721.9	-2,311.1	380.8	2,328.6	0.00	0.00	0.00
15,000.0	89.76	179.56	12,722.3	-2,411.1	381.6	2,428.5	0.00	0.00	0.00
15,100.0	89.76	179.56	12,722.7	-2,511.1	382.3	2,528.4	0.00	0.00	0.00
15,200.0	89.76	179.56	12,723.1	-2,611.1	383.1	2,628.2	0.00	0.00	0.00
15,300.0	89.76	179.56	12,723.5	-2,711.1	383.9	2,728.1	0.00	0.00	0.00
15,400.0	89.76	179.56	12,723.9	-2,811.1	384.6	2,828.0	0.00	0.00	0.00
15,500.0	89.76	179.56	12,724.3	-2,911.1	385.4	2,927.9	0.00	0.00	0.00
15,600.0	89.76	179.56	12,724.8	-3,011.1	386.2	3,027.8	0.00	0.00	0.00
15,700.0	89.76	179.56	12,725.2	-3,111.1	387.0	3,127.7	0.00	0.00	0.00
15,800.0	89.76	179.56	12,725.6	-3,211.1	387.7	3,227.6	0.00	0.00	0.00
15,900.0	89.76	179.56	12,726.0	-3,311.1	388.5	3,327.5	0.00	0.00	0.00
16,000.0	89.76	179.56	12,726.4	-3,411.1	389.3	3,427.3	0.00	0.00	0.00
16,100.0	89.76	179.56	12,726.8	-3,511.1	390.1	3,527.2	0.00	0.00	0.00
16,200.0	89.76	179.56	12,727.2	-3,611.1	390.8	3,627.1	0.00	0.00	0.00
16,300.0	89.76	179.56	12,727.7	-3,711.1	391.6	3,727.0	0.00	0.00	0.00
16,400.0	89.76	179.56	12,728.1	-3,811.1	392.4	3,826.9	0.00	0.00	0.00
16,500.0	89.76	179.56	12,728.5	-3,911.1	393.1	3,926.8	0.00	0.00	0.00
16,600.0	89.76	179.56	12,728.9	-4,011.1	393.9	4,026.7	0.00	0.00	0.00
16,700.0	89.76	179.56	12,729.3	-4,111.1	394.7	4,126.6	0.00	0.00	0.00
16,800.0	89.76	179.56	12,729.7	-4,211.1	395.5	4,226.4	0.00	0.00	0.00
16,900.0	89.76	179.56	12,730.1	-4,311.1	396.2	4,326.3	0.00	0.00	0.00
17,000.0	89.76	179.56	12,730.6	-4,411.0	397.0	4,426.2	0.00	0.00	0.00
17,100.0	89.76	179.56	12,731.0	-4,511.0	397.8	4,526.1	0.00	0.00	0.00
17,200.0	89.76	179.56	12,731.4	-4,611.0	398.6	4,626.0	0.00	0.00	0.00
17,300.0	89.76	179.56	12,731.8	-4,711.0	399.3	4,725.9	0.00	0.00	0.00
17,400.0	89.76	179.56	12,732.2	-4,811.0	400.1	4,825.8	0.00	0.00	0.00
17,500.0	89.76	179.56	12,732.6	-4,911.0	400.9	4,925.6	0.00	0.00	0.00
17,600.0	89.76	179.56	12,733.0	-5,011.0	401.6	5,025.5	0.00	0.00	0.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well VALOR STATE COM #701H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329.3+31 @ 3359.3usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329.3+31 @ 3359.3usft (Precision 106)
Well:	VALOR STATE COM #701H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,700.0	89.76	179.56	12,733.5	-5,111.0	402.4	5,125.4	0.00	0.00	0.00
17,800.0	89.76	179.56	12,733.9	-5,211.0	403.2	5,225.3	0.00	0.00	0.00
17,900.0	89.76	179.56	12,734.3	-5,311.0	404.0	5,325.2	0.00	0.00	0.00
18,000.0	89.76	179.56	12,734.7	-5,411.0	404.7	5,425.1	0.00	0.00	0.00
18,100.0	89.76	179.56	12,735.1	-5,511.0	405.5	5,525.0	0.00	0.00	0.00
18,200.0	89.76	179.56	12,735.5	-5,611.0	406.3	5,624.9	0.00	0.00	0.00
18,300.0	89.76	179.56	12,735.9	-5,711.0	407.0	5,724.7	0.00	0.00	0.00
18,400.0	89.76	179.56	12,736.4	-5,811.0	407.8	5,824.6	0.00	0.00	0.00
18,500.0	89.76	179.56	12,736.8	-5,911.0	408.6	5,924.5	0.00	0.00	0.00
18,600.0	89.76	179.56	12,737.2	-6,011.0	409.4	6,024.4	0.00	0.00	0.00
18,700.0	89.76	179.56	12,737.6	-6,111.0	410.1	6,124.3	0.00	0.00	0.00
18,800.0	89.76	179.56	12,738.0	-6,211.0	410.9	6,224.2	0.00	0.00	0.00
18,900.0	89.76	179.56	12,738.4	-6,311.0	411.7	6,324.1	0.00	0.00	0.00
19,000.0	89.76	179.56	12,738.8	-6,411.0	412.5	6,424.0	0.00	0.00	0.00
19,100.0	89.76	179.56	12,739.2	-6,511.0	413.2	6,523.8	0.00	0.00	0.00
19,200.0	89.76	179.56	12,739.7	-6,611.0	414.0	6,623.7	0.00	0.00	0.00
19,300.0	89.76	179.56	12,740.1	-6,711.0	414.8	6,723.6	0.00	0.00	0.00
19,400.0	89.76	179.56	12,740.5	-6,811.0	415.5	6,823.5	0.00	0.00	0.00
19,500.0	89.76	179.56	12,740.9	-6,911.0	416.3	6,923.4	0.00	0.00	0.00
19,600.0	89.76	179.56	12,741.3	-7,010.9	417.1	7,023.3	0.00	0.00	0.00
19,700.0	89.76	179.56	12,741.7	-7,110.9	417.9	7,123.2	0.00	0.00	0.00
19,800.0	89.76	179.56	12,742.1	-7,210.9	418.6	7,223.1	0.00	0.00	0.00
19,900.0	89.76	179.56	12,742.6	-7,310.9	419.4	7,322.9	0.00	0.00	0.00
20,000.0	89.76	179.56	12,743.0	-7,410.9	420.2	7,422.8	0.00	0.00	0.00
20,100.0	89.76	179.56	12,743.4	-7,510.9	421.0	7,522.7	0.00	0.00	0.00
20,200.0	89.76	179.56	12,743.8	-7,610.9	421.7	7,622.6	0.00	0.00	0.00
20,247.8	89.76	179.56	12,744.0	-7,658.7	422.1	7,670.3	0.00	0.00	0.00
TD at 20247.8									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (VALOR STATE CO - hit/miss target - Shape - Point	0.00	0.00	12,714.0	112.4	364.2	398,781.70	747,170.80	32° 5' 37.868 N	103° 32' 6.690 W
- plan misses target center by 228.3usft at 12600.0usft MD (12559.1 TVD, -55.1 N, 355.6 E)									
PBHL (VALOR STATE C - plan hits target center - Rectangle (sides W100.0 H7,729.0 D20.0)	-0.24	359.56	12,744.0	-7,658.7	422.1	391,010.60	747,228.70	32° 4' 20.964 N	103° 32' 6.686 W
LTP (VALOR STATE CO - plan misses target center by 0.2usft at 20197.8usft MD (12743.8 TVD, -7608.7 N, 421.7 E) - Point	0.00	0.00	12,744.0	-7,608.7	421.8	391,060.60	747,228.40	32° 4' 21.459 N	103° 32' 6.685 W

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well VALOR STATE COM #701H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329.3+31 @ 3359.3usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329.3+31 @ 3359.3usft (Precision 106)
Well:	VALOR STATE COM #701H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

Plan Annotations

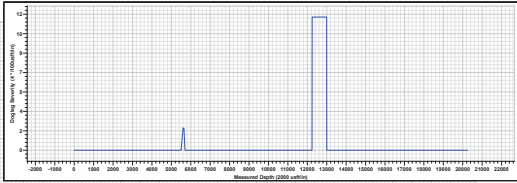
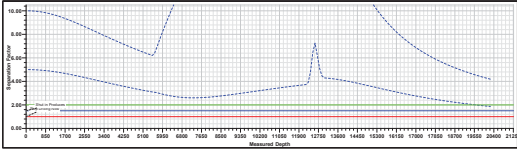
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5500	5500	0	0	Start Build 2.00
5648	5648	1	4	Start 6592.8 hold at 5648.4 MD
12,241	12,232	70	338	Start DLS 12.00 TFO 101.26
12,994	12,714	-405	366	Start 7253.7 hold at 12994.1 MD
20,248	12,744	-7659	422	TD at 20247.8

Checked By: _____ Approved By: _____ Date: _____

Project: LEA COUNTY, NM
Site: BULLDOG
Well: VALOR ST COM #701H
Wellbore: OWB
Design: PWP 1
GL: 3329.3
RKB=3329.3+31 @ 3369.3uoft (Precision 106)

WELL DETAILS: VALOR STATE COM #701H						
+N-S	+E-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	388559.35	748596.85	32° 5' 35.783 N	103° 32' 10.333 W	

DESIGN TARGET DETAILS						
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude
FTP (VALOR ST COM #701H)	12714.0	112.4	364.2	388781.76	747179.89	32° 5' 37.888 N
LTP (VALOR ST COM #701H)	12744.0	-7688.7	421.8	391060.60	747228.40	32° 4' 21.459 N
PEHL (VALOR ST COM #701H)	12744.0	-7688.7	422.1	391010.60	747228.70	32° 4' 20.964 N



MD	Inc	Azi	TVD	+N-S	+E-W	Diag	TFace	VFace	Annotation
0.0	0.00	0.00	0.00	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
5500.0	0.00	0.00	5500.0	0.0	0.0	0.00	0.00	0.0	Start 6992.8 hold at 5648.4 MD
5648.4	2.97	78.30	5648.3	0.0	3.8	2.00	78.30	0.0	Start DLS 12.00 TFO 101.26
12241.2	2.97	78.30	12232.3	70.0	338.0	0.00	0.00	-51.3	Start DLS 12.00 TFO 101.26
12994.1	89.76	179.56	12714.0	-6883.3	365.1	12.00	101.26	424.8	Start 7263.7 hold at 12994.1 MD
20247.8	89.76	179.56	12744.0	-7688.7	422.1	0.00	0.00	7670.3	TD at 20247.8

MD	Inc	Azi	TVD	+N-S	+E-W	VFace	Departure	Annotation
5500.0	0.00	0.00	5500.0	0.0	0.0	0.0	0.0	Start Build 2.00
5648.4	2.97	78.30	5648.3	0.0	3.8	-0.6	3.8	Start 6992.8 hold at 5648.4 MD
12241.2	2.97	78.30	12232.3	70.0	338.0	-51.3	348.2	Start DLS 12.00 TFO 101.26
12994.1	89.76	179.56	12714.0	-6883.3	365.1	424.8	839.4	Start 7263.7 hold at 12994.1 MD
20247.8	89.76	179.56	12744.0	-7688.7	422.1	7670.3	8093.1	TD at 20247.8

