

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

VALOR STATE COM #702H

OWB

Plan: PWP1

Standard Survey Report

22 July, 2019

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well VALOR STATE COM #702H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329+30 @ 3359.5usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329+30 @ 3359.5usft (Precision 106)
Well:	VALOR STATE COM #702H	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	Latitude:	32° 5' 36.820 N
From:	Map	Easting:	741,887.40 usft	Longitude:	103° 33' 8.116 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well		VALOR STATE COM #702H				
Well Position	+N/-S	0.0 usft	Northing:	398,668.80 usft	Latitude:	32° 5' 36.782 N
	+E/-W	0.0 usft	Easting:	746,746.60 usft	Longitude:	103° 32' 11.631 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft	Ground Level:	3,329.5 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	11/7/2018	6.81	59.91	47,706.44894976

Design	PWP1				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	180.13	

Survey Tool Program	Date	6/27/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,107.2	PWP1 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
12,107.2	20,213.3	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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Well:	VALOR STATE COM #702H	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)
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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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)
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									
5,576.4	1.53	335.72	5,576.4	0.9	-0.4	-0.9	2.00	2.00	0.00
Start 6530.9 hold at 5576.4 MD									
5,600.0	1.53	335.72	5,600.0	1.5	-0.7	-1.5	0.00	0.00	0.00
5,700.0	1.53	335.72	5,699.9	3.9	-1.8	-3.9	0.00	0.00	0.00
5,800.0	1.53	335.72	5,799.9	6.4	-2.9	-6.4	0.00	0.00	0.00
5,900.0	1.53	335.72	5,899.9	8.8	-4.0	-8.8	0.00	0.00	0.00
6,000.0	1.53	335.72	5,999.8	11.2	-5.1	-11.2	0.00	0.00	0.00
6,100.0	1.53	335.72	6,099.8	13.6	-6.2	-13.6	0.00	0.00	0.00
6,200.0	1.53	335.72	6,199.8	16.1	-7.3	-16.1	0.00	0.00	0.00
6,300.0	1.53	335.72	6,299.7	18.5	-8.3	-18.5	0.00	0.00	0.00
6,400.0	1.53	335.72	6,399.7	20.9	-9.4	-20.9	0.00	0.00	0.00
6,500.0	1.53	335.72	6,499.7	23.4	-10.5	-23.3	0.00	0.00	0.00
6,600.0	1.53	335.72	6,599.6	25.8	-11.6	-25.8	0.00	0.00	0.00
6,700.0	1.53	335.72	6,699.6	28.2	-12.7	-28.2	0.00	0.00	0.00
6,800.0	1.53	335.72	6,799.6	30.7	-13.8	-30.6	0.00	0.00	0.00
6,900.0	1.53	335.72	6,899.5	33.1	-14.9	-33.1	0.00	0.00	0.00
7,000.0	1.53	335.72	6,999.5	35.5	-16.0	-35.5	0.00	0.00	0.00
7,100.0	1.53	335.72	7,099.4	37.9	-17.1	-37.9	0.00	0.00	0.00
7,200.0	1.53	335.72	7,199.4	40.4	-18.2	-40.3	0.00	0.00	0.00
7,300.0	1.53	335.72	7,299.4	42.8	-19.3	-42.8	0.00	0.00	0.00
7,400.0	1.53	335.72	7,399.3	45.2	-20.4	-45.2	0.00	0.00	0.00
7,500.0	1.53	335.72	7,499.3	47.7	-21.5	-47.6	0.00	0.00	0.00
7,600.0	1.53	335.72	7,599.3	50.1	-22.6	-50.0	0.00	0.00	0.00
7,700.0	1.53	335.72	7,699.2	52.5	-23.7	-52.5	0.00	0.00	0.00
7,800.0	1.53	335.72	7,799.2	55.0	-24.8	-54.9	0.00	0.00	0.00
7,900.0	1.53	335.72	7,899.2	57.4	-25.9	-57.3	0.00	0.00	0.00
8,000.0	1.53	335.72	7,999.1	59.8	-27.0	-59.7	0.00	0.00	0.00
8,100.0	1.53	335.72	8,099.1	62.2	-28.1	-62.2	0.00	0.00	0.00
8,200.0	1.53	335.72	8,199.1	64.7	-29.2	-64.6	0.00	0.00	0.00
8,300.0	1.53	335.72	8,299.0	67.1	-30.3	-67.0	0.00	0.00	0.00
8,400.0	1.53	335.72	8,399.0	69.5	-31.4	-69.5	0.00	0.00	0.00
8,500.0	1.53	335.72	8,499.0	72.0	-32.5	-71.9	0.00	0.00	0.00
8,600.0	1.53	335.72	8,598.9	74.4	-33.6	-74.3	0.00	0.00	0.00
8,700.0	1.53	335.72	8,698.9	76.8	-34.7	-76.7	0.00	0.00	0.00
8,800.0	1.53	335.72	8,798.8	79.2	-35.8	-79.2	0.00	0.00	0.00
8,900.0	1.53	335.72	8,898.8	81.7	-36.8	-81.6	0.00	0.00	0.00
9,000.0	1.53	335.72	8,998.8	84.1	-37.9	-84.0	0.00	0.00	0.00
9,100.0	1.53	335.72	9,098.7	86.5	-39.0	-86.4	0.00	0.00	0.00
9,200.0	1.53	335.72	9,198.7	89.0	-40.1	-88.9	0.00	0.00	0.00
9,300.0	1.53	335.72	9,298.7	91.4	-41.2	-91.3	0.00	0.00	0.00

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Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329+30 @ 3359.5usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329+30 @ 3359.5usft (Precision 106)
Well:	VALOR STATE COM #702H	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	1.53	335.72	9,398.6	93.8	-42.3	-93.7	0.00	0.00	0.00
9,500.0	1.53	335.72	9,498.6	96.3	-43.4	-96.2	0.00	0.00	0.00
9,600.0	1.53	335.72	9,598.6	98.7	-44.5	-98.6	0.00	0.00	0.00
9,700.0	1.53	335.72	9,698.5	101.1	-45.6	-101.0	0.00	0.00	0.00
9,800.0	1.53	335.72	9,798.5	103.5	-46.7	-103.4	0.00	0.00	0.00
9,900.0	1.53	335.72	9,898.5	106.0	-47.8	-105.9	0.00	0.00	0.00
10,000.0	1.53	335.72	9,998.4	108.4	-48.9	-108.3	0.00	0.00	0.00
10,100.0	1.53	335.72	10,098.4	110.8	-50.0	-110.7	0.00	0.00	0.00
10,200.0	1.53	335.72	10,198.3	113.3	-51.1	-113.1	0.00	0.00	0.00
10,300.0	1.53	335.72	10,298.3	115.7	-52.2	-115.6	0.00	0.00	0.00
10,400.0	1.53	335.72	10,398.3	118.1	-53.3	-118.0	0.00	0.00	0.00
10,500.0	1.53	335.72	10,498.2	120.6	-54.4	-120.4	0.00	0.00	0.00
10,600.0	1.53	335.72	10,598.2	123.0	-55.5	-122.9	0.00	0.00	0.00
10,700.0	1.53	335.72	10,698.2	125.4	-56.6	-125.3	0.00	0.00	0.00
10,800.0	1.53	335.72	10,798.1	127.8	-57.7	-127.7	0.00	0.00	0.00
10,900.0	1.53	335.72	10,898.1	130.3	-58.8	-130.1	0.00	0.00	0.00
11,000.0	1.53	335.72	10,998.1	132.7	-59.9	-132.6	0.00	0.00	0.00
11,100.0	1.53	335.72	11,098.0	135.1	-61.0	-135.0	0.00	0.00	0.00
11,200.0	1.53	335.72	11,198.0	137.6	-62.1	-137.4	0.00	0.00	0.00
11,300.0	1.53	335.72	11,298.0	140.0	-63.2	-139.8	0.00	0.00	0.00
11,400.0	1.53	335.72	11,397.9	142.4	-64.2	-142.3	0.00	0.00	0.00
11,500.0	1.53	335.72	11,497.9	144.8	-65.3	-144.7	0.00	0.00	0.00
11,600.0	1.53	335.72	11,597.9	147.3	-66.4	-147.1	0.00	0.00	0.00
11,700.0	1.53	335.72	11,697.8	149.7	-67.5	-149.5	0.00	0.00	0.00
11,800.0	1.53	335.72	11,797.8	152.1	-68.6	-152.0	0.00	0.00	0.00
11,900.0	1.53	335.72	11,897.7	154.6	-69.7	-154.4	0.00	0.00	0.00
12,000.0	1.53	335.72	11,997.7	157.0	-70.8	-156.8	0.00	0.00	0.00
12,100.0	1.53	335.72	12,097.7	159.4	-71.9	-159.3	0.00	0.00	0.00
12,107.2	1.53	335.72	12,104.9	159.6	-72.0	-159.4	0.00	0.00	0.00
Start DLS 12.00 TFO -156.15									
12,200.0	9.75	183.16	12,197.3	152.9	-72.9	-152.7	12.00	8.87	-164.45
12,300.0	21.74	181.11	12,293.3	125.8	-73.8	-125.6	12.00	11.99	-2.05
12,400.0	33.74	180.49	12,381.7	79.3	-74.4	-79.1	12.00	12.00	-0.62
12,500.0	45.74	180.16	12,458.4	15.5	-74.7	-15.3	12.00	12.00	-0.32
12,600.0	57.74	179.95	12,520.3	-62.9	-74.8	63.0	12.00	12.00	-0.21
12,700.0	69.74	179.79	12,564.4	-152.4	-74.6	152.6	12.00	12.00	-0.16
12,800.0	81.74	179.65	12,589.0	-249.1	-74.1	249.3	12.00	12.00	-0.14
12,866.9	89.77	179.57	12,594.0	-315.8	-73.6	316.0	12.00	12.00	-0.13
Start 7346.4 hold at 12866.9 MD									
12,900.0	89.77	179.57	12,594.1	-348.9	-73.4	349.0	0.00	0.00	0.00
13,000.0	89.77	179.57	12,594.5	-448.9	-72.6	449.0	0.00	0.00	0.00
13,100.0	89.77	179.57	12,594.9	-548.9	-71.9	549.0	0.00	0.00	0.00
13,200.0	89.77	179.57	12,595.3	-648.9	-71.1	649.0	0.00	0.00	0.00

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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)
13,300.0	89.77	179.57	12,595.7	-748.9	-70.4	749.0	0.00	0.00	0.00
13,400.0	89.77	179.57	12,596.2	-848.9	-69.6	849.0	0.00	0.00	0.00
13,500.0	89.77	179.57	12,596.6	-948.9	-68.8	949.0	0.00	0.00	0.00
13,600.0	89.77	179.57	12,597.0	-1,048.9	-68.1	1,049.0	0.00	0.00	0.00
13,700.0	89.77	179.57	12,597.4	-1,148.8	-67.3	1,149.0	0.00	0.00	0.00
13,800.0	89.77	179.57	12,597.8	-1,248.8	-66.6	1,249.0	0.00	0.00	0.00
13,900.0	89.77	179.57	12,598.2	-1,348.8	-65.8	1,349.0	0.00	0.00	0.00
14,000.0	89.77	179.57	12,598.6	-1,448.8	-65.0	1,449.0	0.00	0.00	0.00
14,100.0	89.77	179.57	12,599.0	-1,548.8	-64.3	1,549.0	0.00	0.00	0.00
14,200.0	89.77	179.57	12,599.4	-1,648.8	-63.5	1,649.0	0.00	0.00	0.00
14,300.0	89.77	179.57	12,599.8	-1,748.8	-62.8	1,749.0	0.00	0.00	0.00
14,400.0	89.77	179.57	12,600.2	-1,848.8	-62.0	1,849.0	0.00	0.00	0.00
14,500.0	89.77	179.57	12,600.6	-1,948.8	-61.3	1,949.0	0.00	0.00	0.00
14,600.0	89.77	179.57	12,601.1	-2,048.8	-60.5	2,049.0	0.00	0.00	0.00
14,700.0	89.77	179.57	12,601.5	-2,148.8	-59.7	2,148.9	0.00	0.00	0.00
14,800.0	89.77	179.57	12,601.9	-2,248.8	-59.0	2,248.9	0.00	0.00	0.00
14,900.0	89.77	179.57	12,602.3	-2,348.8	-58.2	2,348.9	0.00	0.00	0.00
15,000.0	89.77	179.57	12,602.7	-2,448.8	-57.5	2,448.9	0.00	0.00	0.00
15,100.0	89.77	179.57	12,603.1	-2,548.8	-56.7	2,548.9	0.00	0.00	0.00
15,200.0	89.77	179.57	12,603.5	-2,648.8	-55.9	2,648.9	0.00	0.00	0.00
15,300.0	89.77	179.57	12,603.9	-2,748.8	-55.2	2,748.9	0.00	0.00	0.00
15,400.0	89.77	179.57	12,604.3	-2,848.8	-54.4	2,848.9	0.00	0.00	0.00
15,500.0	89.77	179.57	12,604.7	-2,948.8	-53.7	2,948.9	0.00	0.00	0.00
15,600.0	89.77	179.57	12,605.1	-3,048.8	-52.9	3,048.9	0.00	0.00	0.00
15,700.0	89.77	179.57	12,605.6	-3,148.8	-52.1	3,148.9	0.00	0.00	0.00
15,800.0	89.77	179.57	12,606.0	-3,248.8	-51.4	3,248.9	0.00	0.00	0.00
15,900.0	89.77	179.57	12,606.4	-3,348.8	-50.6	3,348.9	0.00	0.00	0.00
16,000.0	89.77	179.57	12,606.8	-3,448.8	-49.9	3,448.9	0.00	0.00	0.00
16,100.0	89.77	179.57	12,607.2	-3,548.8	-49.1	3,548.9	0.00	0.00	0.00
16,200.0	89.77	179.57	12,607.6	-3,648.8	-48.4	3,648.9	0.00	0.00	0.00
16,300.0	89.77	179.57	12,608.0	-3,748.8	-47.6	3,748.9	0.00	0.00	0.00
16,400.0	89.77	179.57	12,608.4	-3,848.7	-46.8	3,848.8	0.00	0.00	0.00
16,500.0	89.77	179.57	12,608.8	-3,948.7	-46.1	3,948.8	0.00	0.00	0.00
16,600.0	89.77	179.57	12,609.2	-4,048.7	-45.3	4,048.8	0.00	0.00	0.00
16,700.0	89.77	179.57	12,609.6	-4,148.7	-44.6	4,148.8	0.00	0.00	0.00
16,800.0	89.77	179.57	12,610.0	-4,248.7	-43.8	4,248.8	0.00	0.00	0.00
16,900.0	89.77	179.57	12,610.5	-4,348.7	-43.0	4,348.8	0.00	0.00	0.00
17,000.0	89.77	179.57	12,610.9	-4,448.7	-42.3	4,448.8	0.00	0.00	0.00
17,100.0	89.77	179.57	12,611.3	-4,548.7	-41.5	4,548.8	0.00	0.00	0.00
17,200.0	89.77	179.57	12,611.7	-4,648.7	-40.8	4,648.8	0.00	0.00	0.00
17,300.0	89.77	179.57	12,612.1	-4,748.7	-40.0	4,748.8	0.00	0.00	0.00
17,400.0	89.77	179.57	12,612.5	-4,848.7	-39.2	4,848.8	0.00	0.00	0.00
17,500.0	89.77	179.57	12,612.9	-4,948.7	-38.5	4,948.8	0.00	0.00	0.00
17,600.0	89.77	179.57	12,613.3	-5,048.7	-37.7	5,048.8	0.00	0.00	0.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well VALOR STATE COM #702H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329+30 @ 3359.5usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329+30 @ 3359.5usft (Precision 106)
Well:	VALOR STATE COM #702H	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	89.77	179.57	12,613.7	-5,148.7	-37.0	5,148.8	0.00	0.00	0.00
17,800.0	89.77	179.57	12,614.1	-5,248.7	-36.2	5,248.8	0.00	0.00	0.00
17,900.0	89.77	179.57	12,614.5	-5,348.7	-35.5	5,348.8	0.00	0.00	0.00
18,000.0	89.77	179.57	12,615.0	-5,448.7	-34.7	5,448.8	0.00	0.00	0.00
18,100.0	89.77	179.57	12,615.4	-5,548.7	-33.9	5,548.7	0.00	0.00	0.00
18,200.0	89.77	179.57	12,615.8	-5,648.7	-33.2	5,648.7	0.00	0.00	0.00
18,300.0	89.77	179.57	12,616.2	-5,748.7	-32.4	5,748.7	0.00	0.00	0.00
18,400.0	89.77	179.57	12,616.6	-5,848.7	-31.7	5,848.7	0.00	0.00	0.00
18,500.0	89.77	179.57	12,617.0	-5,948.7	-30.9	5,948.7	0.00	0.00	0.00
18,600.0	89.77	179.57	12,617.4	-6,048.7	-30.1	6,048.7	0.00	0.00	0.00
18,700.0	89.77	179.57	12,617.8	-6,148.7	-29.4	6,148.7	0.00	0.00	0.00
18,800.0	89.77	179.57	12,618.2	-6,248.7	-28.6	6,248.7	0.00	0.00	0.00
18,900.0	89.77	179.57	12,618.6	-6,348.7	-27.9	6,348.7	0.00	0.00	0.00
19,000.0	89.77	179.57	12,619.0	-6,448.7	-27.1	6,448.7	0.00	0.00	0.00
19,100.0	89.77	179.57	12,619.4	-6,548.6	-26.3	6,548.7	0.00	0.00	0.00
19,200.0	89.77	179.57	12,619.9	-6,648.6	-25.6	6,648.7	0.00	0.00	0.00
19,300.0	89.77	179.57	12,620.3	-6,748.6	-24.8	6,748.7	0.00	0.00	0.00
19,400.0	89.77	179.57	12,620.7	-6,848.6	-24.1	6,848.7	0.00	0.00	0.00
19,500.0	89.77	179.57	12,621.1	-6,948.6	-23.3	6,948.7	0.00	0.00	0.00
19,600.0	89.77	179.57	12,621.5	-7,048.6	-22.6	7,048.7	0.00	0.00	0.00
19,700.0	89.77	179.57	12,621.9	-7,148.6	-21.8	7,148.7	0.00	0.00	0.00
19,800.0	89.77	179.57	12,622.3	-7,248.6	-21.0	7,248.7	0.00	0.00	0.00
19,900.0	89.77	179.57	12,622.7	-7,348.6	-20.3	7,348.6	0.00	0.00	0.00
20,000.0	89.77	179.57	12,623.1	-7,448.6	-19.5	7,448.6	0.00	0.00	0.00
20,100.0	89.77	179.57	12,623.5	-7,548.6	-18.8	7,548.6	0.00	0.00	0.00
20,200.0	89.77	179.57	12,623.9	-7,648.6	-18.0	7,648.6	0.00	0.00	0.00
20,213.3	89.77	179.57	12,624.0	-7,661.9	-17.9	7,661.9	0.00	0.00	0.00
TD at 20213.3									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (VALOR ST CO - hit/miss target - Shape - Point	0.00	0.00	12,594.0	109.6	-75.8	398,778.40	746,670.80	32° 5' 37.872 N	103° 32' 12.503 W
- plan misses target center by 163.8usft at 12510.1usft MD (12465.4 TVD, 8.2 N, -74.7 E)									
LTP (VALOR ST CO - hit/miss target - Shape - Point	0.00	0.01	12,624.0	-7,611.9	-18.2	391,056.90	746,728.40	32° 4' 21.459 N	103° 32' 12.496 W
- plan misses target center by 0.2usft at 20163.3usft MD (12623.8 TVD, -7611.9 N, -18.3 E)									
PBHL (VALOR ST C - hit/miss target - Shape - Rectangle (sides W100.0 H7,821.0 D20.0)	-0.23	359.57	12,624.0	-7,661.9	-17.9	391,006.90	746,728.70	32° 4' 20.964 N	103° 32' 12.497 W

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well VALOR STATE COM #702H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3329+30 @ 3359.5usft (Precision 106)
Site:	BULLDOG	MD Reference:	RKB=3329+30 @ 3359.5usft (Precision 106)
Well:	VALOR STATE COM #702H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	EDM_Users

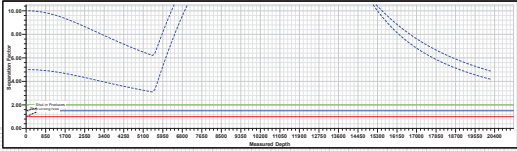
Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5500	5500	0	0	Start Build 2.00
5576	5576	1	0	Start 6530.9 hold at 5576.4 MD
12,107	12,105	160	-72	Start DLS 12.00 TFO -156.15
12,867	12,594	-316	-74	Start 7346.4 hold at 12866.9 MD
20,213	12,624	-7662	-18	TD at 20213.3

Checked By: _____	Approved By: _____	Date: _____
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Project: LEA COUNTY, NM
Site: BULLDOG
Well: VALOR ST COM #702H
Wellbore: OWB
Design: PWP
CU: 3329.5
RKB=3329+30 @ 3359.5uoft (Precision 106)

WELL DETAILS: VALOR STATE COM #702H						
+N-S	+E-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	388558.85	746746.65	32° 5' 36.782 N	103° 32' 11.531 W	

DESIGN TARGET DETAILS						
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude
FTP (VALOR ST COM #702H)	12894.0	109.6	-78.8	388778.45	746679.85	32° 5' 37.872 N
LTP (VALOR ST COM #702H)	12854.0	-7611.9	-18.2	381066.50	746728.70	32° 4' 21.459 N
PEHL (VALOR ST COM #702H)	12624.0	-7661.9	17.5	381066.50	746728.70	32° 4' 20.964 N



SECTION DETAILS									
MD	Inc	Azi	TVD	+N-S	+E-W	Diag	TFace	Vsect	Annotation
5500.0	0.00	0.00	5500.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
5576.4	1.53	335.72	5576.4	9.3	-6.4	2.00	335.72	-9.9	Start 6530.9 hold at 5576.4 MD
12107.2	1.53	335.72	12104.9	189.6	-72.0	0.00	0.00	-189.4	Start DLS 12.00 TFO -186.15
12865.9	89.77	179.57	12894.0	-315.3	-73.6	12.00	-186.15	316.0	Start 7346.4 hold at 12865.9 MD
20213.3	89.77	179.57	12624.0	-7661.9	-17.9	0.00	0.00	7661.9	TD at 20213.3

ANNOTATIONS									
MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Departure	Annotation	
5500.0	0.00	0.00	5500.0	0.0	0.0	0.0	0.0	Start Build 2.00	
5576.4	1.53	335.72	5576.4	9.3	-6.4	-0.9	-0.9	1.0	Start 6530.9 hold at 5576.4 MD
12107.2	1.53	335.72	12104.9	189.6	-72.0	-189.4	178.1	178.1	Start DLS 12.00 TFO -186.15
12865.9	89.77	179.57	12894.0	-315.3	-73.6	316.0	681.1	681.1	Start 7346.4 hold at 12865.9 MD
20213.3	89.77	179.57	12624.0	-7661.9	-17.9	7997.4	7997.4	7997.4	TD at 20213.3

