



CONCHO

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

DOMINATOR 25 FED #607H

OWB

Design: ACTUAL WELLPATH

Standard Survey Report

08 November, 2018

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Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: DOMINATOR 25 FED #607H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well DOMINATOR 25 FED #607H
TVD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
MD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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	Eastng:	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	DOMINATOR 25 FED #607H		
Well Position	+N-S	0.0 usft	Northing: 399,179.80 usft
	+E-W	0.0 usft	Eastng: 749,499.80 usft
Position Uncertainty	3.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 5' 41.636 N
		Longitude:	103° 31' 39.584 W
		Ground Level:	3,336.2 usft

Wellbore	OWB		
Magnetics	Model Name	Sample Date	Declination
	WMM2015	1/30/2018	(°)
			6.88
			Dip Angle
			(°)
			59.93
			Field Strength
			(nT)
			47,789.45903897

Design	ACTUAL WELLPATH		
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
			(°)
			356.56

Survey Program	Date 11/6/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	11,739.0	GYRO (OWB)	Standard Keeper 104
11,888.0	17,138.0	MWD-CURVE/LATERAL (OWB)	MWD+IFR1+MS
			Description
			Standard Wireline Keeper ver 1.0.4
			OWSG MWD + IFR1 + Multi-Station Correction

Survey										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.29	25.59	100.0	0.2	0.1	0.2	0.29	0.29	0.00	
125.0	0.37	23.90	125.0	0.4	0.2	0.3	0.32	0.32	-6.76	
150.0	0.29	21.79	150.0	0.5	0.2	0.5	0.32	-0.32	-8.44	
175.0	0.34	39.47	175.0	0.6	0.3	0.6	0.43	0.20	70.72	
200.0	0.42	30.55	200.0	0.7	0.4	0.7	0.40	0.32	-35.68	
225.0	0.36	41.27	225.0	0.9	0.5	0.9	0.38	-0.24	42.88	
250.0	0.38	43.81	250.0	1.0	0.6	1.0	0.10	0.08	10.16	
275.0	0.40	46.34	275.0	1.1	0.7	1.1	0.11	0.08	10.12	
300.0	0.41	31.14	300.0	1.3	0.8	1.2	0.43	0.04	-60.80	



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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)
325.0	0.37	39.06	325.0	1.4	0.9	1.3	0.27	-0.16	31.68
350.0	0.34	42.49	350.0	1.5	1.0	1.4	0.15	-0.12	13.72
375.0	0.39	35.84	375.0	1.6	1.1	1.6	0.26	0.20	-26.60
400.0	0.41	40.26	400.0	1.8	1.2	1.7	0.15	0.08	17.68
425.0	0.38	35.09	425.0	1.9	1.3	1.8	0.19	-0.12	-20.68
450.0	0.40	35.90	450.0	2.0	1.4	2.0	0.08	0.08	3.24
475.0	0.41	35.51	475.0	2.2	1.5	2.1	0.04	0.04	-1.56
500.0	0.43	36.95	500.0	2.3	1.6	2.2	0.09	0.08	5.76
525.0	0.34	29.83	525.0	2.5	1.7	2.4	0.41	-0.36	-28.48
550.0	0.32	38.45	550.0	2.6	1.8	2.5	0.21	-0.08	34.48
575.0	0.31	28.33	575.0	2.7	1.9	2.6	0.23	-0.04	-40.48
600.0	0.32	35.87	600.0	2.8	2.0	2.7	0.17	0.04	30.16
625.0	0.20	354.89	625.0	2.9	2.0	2.8	0.86	-0.48	-163.92
650.0	0.22	335.84	650.0	3.0	2.0	2.9	0.29	0.08	-76.20
675.0	0.30	356.38	675.0	3.1	2.0	3.0	0.49	0.32	82.16
700.0	0.24	355.20	700.0	3.2	2.0	3.1	0.24	-0.24	-4.72
725.0	0.24	355.43	725.0	3.3	1.9	3.2	0.00	0.00	0.92
750.0	0.20	342.84	750.0	3.4	1.9	3.3	0.25	-0.16	-50.36
775.0	0.24	340.23	775.0	3.5	1.9	3.4	0.16	0.16	-10.44
800.0	0.27	334.14	800.0	3.6	1.9	3.5	0.16	0.12	-24.36
825.0	0.29	337.31	825.0	3.7	1.8	3.6	0.10	0.08	12.68
850.0	0.26	344.06	850.0	3.9	1.8	3.7	0.18	-0.12	27.00
875.0	0.26	329.17	875.0	4.0	1.7	3.9	0.27	0.00	-59.56
900.0	0.22	313.51	900.0	4.0	1.7	3.9	0.31	-0.16	-62.64
925.0	0.25	328.94	925.0	4.1	1.6	4.0	0.28	0.12	61.72
950.0	0.29	337.05	950.0	4.2	1.5	4.1	0.22	0.16	32.44
975.0	0.28	331.33	975.0	4.3	1.5	4.2	0.12	-0.04	-22.88
1,000.0	0.32	331.74	1,000.0	4.5	1.4	4.4	0.16	0.16	1.64
1,025.0	0.32	337.22	1,025.0	4.6	1.4	4.5	0.12	0.00	21.92
1,050.0	0.34	338.84	1,050.0	4.7	1.3	4.6	0.09	0.08	6.48
1,075.0	0.31	332.77	1,075.0	4.8	1.3	4.8	0.18	-0.12	-24.28
1,100.0	0.28	325.88	1,100.0	5.0	1.2	4.9	0.19	-0.12	-27.56
1,125.0	0.26	334.99	1,125.0	5.1	1.1	5.0	0.19	-0.08	36.44
1,150.0	0.26	330.39	1,150.0	5.2	1.1	5.1	0.08	0.00	-18.40
1,175.0	0.24	332.63	1,175.0	5.3	1.0	5.2	0.09	-0.08	8.96
1,200.0	0.46	346.05	1,200.0	5.4	1.0	5.3	0.93	0.88	53.68
1,225.0	0.69	345.42	1,225.0	5.6	0.9	5.6	0.92	0.92	-2.52
1,250.0	0.89	347.21	1,250.0	6.0	0.8	5.9	0.81	0.80	7.16
1,275.0	1.14	347.52	1,275.0	6.4	0.7	6.4	1.00	1.00	1.24
1,300.0	1.22	343.55	1,300.0	6.9	0.6	6.9	0.46	0.32	-15.88
1,325.0	1.26	342.67	1,325.0	7.4	0.4	7.4	0.18	0.16	-3.52
1,350.0	1.27	338.06	1,350.0	7.9	0.3	7.9	0.41	0.04	-18.44
1,375.0	1.38	328.15	1,375.0	8.5	0.0	8.4	1.02	0.44	-39.64



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1,400.0	1.74	307.57	1,399.9	8.9	-0.5	9.0	2.64	1.44	-82.32
1,425.0	1.99	295.64	1,424.9	9.4	-1.2	9.4	1.84	1.00	-47.72
1,450.0	2.10	290.28	1,449.9	9.7	-2.0	9.8	0.88	0.44	-21.44
1,475.0	2.20	288.50	1,474.9	10.0	-2.9	10.2	0.48	0.40	-7.12
1,500.0	2.31	289.84	1,499.9	10.3	-3.8	10.6	0.49	0.44	5.36
1,525.0	2.35	288.02	1,524.9	10.7	-4.7	10.9	0.34	0.16	-7.28
1,550.0	2.33	289.42	1,549.8	11.0	-5.7	11.3	0.24	-0.08	5.60
1,575.0	2.44	287.83	1,574.8	11.3	-6.7	11.7	0.51	0.44	-6.36
1,600.0	2.41	287.68	1,599.8	11.7	-7.7	12.1	0.12	-0.12	-0.60
1,625.0	2.51	290.55	1,624.8	12.0	-8.7	12.5	0.63	0.40	11.48
1,650.0	2.39	278.34	1,649.7	12.3	-9.7	12.8	2.14	-0.48	-48.84
1,675.0	2.47	264.79	1,674.7	12.3	-10.8	12.9	2.31	0.32	-54.20
1,700.0	2.45	255.58	1,699.7	12.1	-11.9	12.8	1.58	-0.08	-36.84
1,725.0	2.43	248.39	1,724.7	11.8	-12.9	12.5	1.23	-0.08	-28.76
1,750.0	2.52	247.44	1,749.7	11.4	-13.9	12.2	0.40	0.36	-3.80
1,775.0	2.45	247.38	1,774.6	11.0	-14.9	11.8	0.28	-0.28	-0.24
1,800.0	2.52	246.10	1,799.6	10.5	-15.9	11.5	0.36	0.28	-5.12
1,825.0	2.47	247.00	1,824.6	10.1	-16.9	11.1	0.25	-0.20	3.60
1,850.0	2.47	247.28	1,849.6	9.7	-17.9	10.7	0.05	0.00	1.12
1,875.0	2.58	246.35	1,874.5	9.3	-18.9	10.4	0.47	0.44	-3.72
1,900.0	2.58	243.52	1,899.5	8.8	-19.9	10.0	0.51	0.00	-11.32
1,925.0	2.53	243.77	1,924.5	8.3	-20.9	9.5	0.20	-0.20	1.00
1,950.0	2.50	241.68	1,949.5	7.8	-21.9	9.1	0.39	-0.12	-8.36
1,975.0	2.50	241.93	1,974.4	7.3	-22.8	8.6	0.04	0.00	1.00
2,000.0	2.46	242.60	1,999.4	6.8	-23.8	8.2	0.20	-0.16	2.68
2,025.0	2.42	242.38	2,024.4	6.3	-24.7	7.7	0.16	-0.16	-0.88
2,050.0	2.48	241.41	2,049.4	5.8	-25.7	7.3	0.29	0.24	-3.88
2,075.0	2.43	241.83	2,074.3	5.3	-26.6	6.8	0.21	-0.20	1.68
2,100.0	2.42	243.21	2,099.3	4.8	-27.5	6.4	0.24	-0.04	5.52
2,125.0	2.49	240.59	2,124.3	4.3	-28.5	6.0	0.53	0.28	-10.48
2,150.0	2.44	241.27	2,149.3	3.7	-29.4	5.5	0.23	-0.20	2.72
2,175.0	2.38	242.12	2,174.3	3.2	-30.4	5.1	0.28	-0.24	3.40
2,200.0	2.48	241.59	2,199.2	2.7	-31.3	4.6	0.41	0.40	-2.12
2,225.0	2.50	241.17	2,224.2	2.2	-32.2	4.2	0.11	0.08	-1.68
2,250.0	2.37	243.03	2,249.2	1.7	-33.2	3.7	0.61	-0.52	7.44
2,275.0	2.38	241.31	2,274.2	1.2	-34.1	3.3	0.29	0.04	-6.88
2,300.0	2.44	240.97	2,299.1	0.7	-35.0	2.8	0.25	0.24	-1.36
2,325.0	2.40	241.62	2,324.1	0.2	-35.9	2.4	0.19	-0.16	2.60
2,350.0	2.32	241.12	2,349.1	-0.3	-36.8	1.9	0.33	-0.32	-2.00
2,375.0	2.27	239.83	2,374.1	-0.8	-37.7	1.5	0.29	-0.20	-5.16
2,400.0	2.26	238.89	2,399.1	-1.3	-38.6	1.1	0.15	-0.04	-3.76
2,425.0	2.15	238.24	2,424.0	-1.8	-39.4	0.6	0.45	-0.44	-2.60
2,450.0	2.04	237.98	2,449.0	-2.2	-40.2	0.2	0.44	-0.44	-1.04



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2,475.0	2.02	235.90	2,474.0	-2.7	-40.9	-0.3	0.31	-0.08	-8.32
2,500.0	2.00	236.18	2,499.0	-3.2	-41.6	-0.7	0.09	-0.08	1.12
2,525.0	1.81	237.15	2,524.0	-3.7	-42.3	-1.1	0.77	-0.76	3.88
2,550.0	1.77	234.41	2,549.0	-4.1	-43.0	-1.5	0.38	-0.16	-10.96
2,575.0	1.61	236.40	2,574.0	-4.5	-43.6	-1.9	0.68	-0.64	7.96
2,600.0	1.68	234.58	2,598.9	-4.9	-44.2	-2.3	0.35	0.28	-7.28
2,625.0	1.42	236.49	2,623.9	-5.3	-44.7	-2.6	1.06	-1.04	7.64
2,650.0	1.26	237.07	2,648.9	-5.6	-45.2	-2.9	0.64	-0.64	2.32
2,675.0	1.18	230.00	2,673.9	-6.0	-45.6	-3.2	0.68	-0.32	-28.28
2,700.0	0.97	228.88	2,698.9	-6.3	-46.0	-3.5	0.84	-0.84	-4.48
2,725.0	0.75	227.28	2,723.9	-6.5	-46.3	-3.7	0.89	-0.88	-6.40
2,750.0	0.73	226.84	2,748.9	-6.7	-46.5	-3.9	0.08	-0.08	-1.76
2,775.0	0.61	228.68	2,773.9	-6.9	-46.7	-4.1	0.49	-0.48	7.36
2,800.0	0.56	232.43	2,798.9	-7.1	-46.9	-4.3	0.25	-0.20	15.00
2,825.0	0.66	229.43	2,823.9	-7.3	-47.1	-4.4	0.42	0.40	-12.00
2,850.0	0.67	236.35	2,848.9	-7.4	-47.4	-4.6	0.32	0.04	27.68
2,875.0	0.64	236.57	2,873.9	-7.6	-47.6	-4.7	0.12	-0.12	0.88
2,900.0	0.70	233.76	2,898.9	-7.8	-47.8	-4.9	0.27	0.24	-11.24
2,925.0	0.64	235.75	2,923.9	-7.9	-48.1	-5.0	0.26	-0.24	7.96
2,950.0	0.65	238.24	2,948.9	-8.1	-48.3	-5.2	0.12	0.04	9.96
2,975.0	0.63	241.03	2,973.9	-8.2	-48.6	-5.3	0.15	-0.08	11.16
3,000.0	0.50	236.24	2,998.9	-8.4	-48.8	-5.4	0.55	-0.52	-19.16
3,025.0	0.45	239.29	3,023.9	-8.5	-48.9	-5.5	0.22	-0.20	12.20
3,050.0	0.22	240.85	3,048.9	-8.5	-49.1	-5.6	0.92	-0.92	6.24
3,075.0	0.33	350.56	3,073.9	-8.5	-49.1	-5.5	1.82	0.44	438.84
3,100.0	0.72	346.91	3,098.9	-8.3	-49.2	-5.3	1.56	1.56	-14.60
3,125.0	0.76	341.21	3,123.9	-8.0	-49.3	-5.0	0.33	0.16	-22.80
3,150.0	0.87	348.81	3,148.9	-7.6	-49.4	-4.6	0.62	0.44	30.40
3,175.0	1.05	340.47	3,173.9	-7.2	-49.5	-4.2	0.91	0.72	-33.36
3,200.0	0.98	333.64	3,198.9	-6.8	-49.6	-3.8	0.56	-0.28	-27.32
3,225.0	0.96	334.31	3,223.9	-6.4	-49.8	-3.4	0.09	-0.08	2.68
3,250.0	0.93	334.45	3,248.9	-6.0	-50.0	-3.0	0.12	-0.12	0.56
3,275.0	0.82	351.50	3,273.9	-5.7	-50.1	-2.7	1.13	-0.44	68.20
3,300.0	0.78	4.98	3,298.9	-5.3	-50.1	-2.3	0.77	-0.16	53.92
3,325.0	0.75	23.88	3,323.9	-5.0	-50.0	-2.0	1.01	-0.12	75.60
3,350.0	0.94	48.21	3,348.9	-4.7	-49.8	-1.7	1.61	0.76	97.32
3,375.0	1.15	62.36	3,373.9	-4.5	-49.5	-1.5	1.32	0.84	56.60
3,400.0	1.22	67.37	3,398.9	-4.3	-49.0	-1.3	0.50	0.28	20.04
3,425.0	1.17	67.55	3,423.9	-4.1	-48.5	-1.1	0.20	-0.20	0.72
3,450.0	1.17	72.43	3,448.8	-3.9	-48.0	-1.0	0.40	0.00	19.52
3,475.0	0.75	76.75	3,473.8	-3.8	-47.6	-0.9	1.70	-1.68	17.28
3,500.0	0.27	165.49	3,498.8	-3.8	-47.4	-0.9	3.17	-1.92	354.96
3,525.0	0.24	193.92	3,523.8	-3.9	-47.4	-1.0	0.51	-0.12	113.72
3,550.0	0.81	220.63	3,548.8	-4.1	-47.6	-1.2	2.42	2.28	106.84



Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: DOMINATOR 25 FED #607H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well DOMINATOR 25 FED #607H
 TVD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
 MD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM_Users

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)
3,575.0	2.08	234.98	3,573.8	-4.5	-48.1	-1.6	5.24	5.08	57.40
3,600.0	2.82	238.78	3,598.8	-5.1	-49.0	-2.1	3.03	2.96	15.20
3,625.0	3.00	238.02	3,623.8	-5.7	-50.0	-2.7	0.74	0.72	-3.04
3,650.0	3.07	238.34	3,648.7	-6.4	-51.2	-3.3	0.29	0.28	1.28
3,675.0	3.05	238.11	3,673.7	-7.1	-52.3	-4.0	0.09	-0.08	-0.92
3,700.0	2.85	239.66	3,698.7	-7.8	-53.4	-4.6	0.86	-0.80	6.20
3,725.0	2.73	240.06	3,723.6	-8.4	-54.5	-5.1	0.49	-0.48	1.60
3,750.0	2.66	238.91	3,748.6	-9.0	-55.5	-5.7	0.35	-0.28	-4.60
3,775.0	2.54	239.78	3,773.6	-9.6	-56.4	-6.2	0.51	-0.48	3.48
3,800.0	2.66	238.31	3,798.6	-10.2	-57.4	-6.7	0.55	0.48	-5.88
3,825.0	2.44	238.62	3,823.5	-10.7	-58.4	-7.2	0.88	-0.88	1.24
3,850.0	2.47	239.02	3,848.5	-11.3	-59.3	-7.7	0.14	0.12	1.60
3,875.0	2.49	239.11	3,873.5	-11.9	-60.2	-8.2	0.08	0.08	0.36
3,900.0	2.17	235.24	3,898.5	-12.4	-61.1	-8.7	1.43	-1.28	-15.48
3,925.0	1.80	236.44	3,923.5	-12.9	-61.8	-9.2	1.49	-1.48	4.80
3,950.0	1.42	230.88	3,948.4	-13.3	-62.3	-9.5	1.64	-1.52	-22.24
3,975.0	1.01	219.97	3,973.4	-13.7	-62.7	-9.9	1.88	-1.64	-43.64
4,000.0	0.80	212.52	3,998.4	-14.0	-63.0	-10.2	0.96	-0.84	-29.80
4,025.0	0.97	217.87	4,023.4	-14.3	-63.2	-10.5	0.76	0.68	21.40
4,050.0	1.01	218.31	4,048.4	-14.6	-63.4	-10.8	0.16	0.16	1.76
4,075.0	0.97	215.91	4,073.4	-15.0	-63.7	-11.1	0.23	-0.16	-9.60
4,100.0	0.99	219.07	4,098.4	-15.3	-64.0	-11.5	0.23	0.08	12.64
4,125.0	0.97	220.21	4,123.4	-15.7	-64.2	-11.8	0.11	-0.08	4.56
4,150.0	1.91	238.83	4,148.4	-16.0	-64.7	-12.1	4.15	3.76	74.48
4,175.0	2.32	239.37	4,173.4	-16.5	-65.5	-12.5	1.64	1.64	2.16
4,200.0	2.50	237.76	4,198.4	-17.1	-66.4	-13.0	0.77	0.72	-6.44
4,225.0	2.41	238.93	4,223.4	-17.6	-67.3	-13.5	0.41	-0.36	4.68
4,250.0	2.35	238.31	4,248.3	-18.2	-68.2	-14.0	0.26	-0.24	-2.48
4,275.0	2.35	233.08	4,273.3	-18.7	-69.1	-14.5	0.86	0.00	-20.92
4,300.0	2.32	231.46	4,298.3	-19.4	-69.9	-15.1	0.29	-0.12	-6.48
4,325.0	2.14	232.69	4,323.3	-20.0	-70.6	-15.7	0.74	-0.72	4.92
4,350.0	1.95	227.42	4,348.3	-20.5	-71.3	-16.2	1.07	-0.76	-21.08
4,375.0	1.74	220.96	4,373.2	-21.1	-71.9	-16.7	1.18	-0.84	-25.84
4,400.0	1.51	210.98	4,398.2	-21.7	-72.3	-17.3	1.46	-0.92	-39.92
4,425.0	1.56	210.61	4,423.2	-22.2	-72.6	-17.8	0.20	0.20	-1.48
4,450.0	1.36	201.97	4,448.2	-22.8	-72.9	-18.4	1.19	-0.80	-34.56
4,475.0	1.33	176.17	4,473.2	-23.4	-73.0	-18.9	2.40	-0.12	-103.20
4,500.0	1.47	170.89	4,498.2	-24.0	-73.0	-19.6	0.76	0.56	-21.12
4,525.0	1.50	172.16	4,523.2	-24.6	-72.9	-20.2	0.18	0.12	5.08
4,550.0	1.42	168.87	4,548.2	-25.2	-72.8	-20.8	0.46	-0.32	-13.16
4,575.0	1.48	169.74	4,573.2	-25.9	-72.6	-21.5	0.26	0.24	3.48
4,600.0	1.74	184.68	4,598.2	-26.6	-72.6	-22.2	1.97	1.04	59.76
4,625.0	1.78	185.68	4,623.2	-27.3	-72.7	-22.9	0.20	0.16	4.00



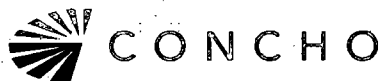
Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: DOMINATOR 25 FED #607H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well DOMINATOR 25 FED #607H
TVD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
MD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
4,650.0	1.99	185.53	4,648.1	-28.1	-72.8	-23.7	0.84	0.84	-0.60
4,675.0	2.06	186.25	4,673.1	-29.0	-72.9	-24.6	0.30	0.28	2.88
4,700.0	2.08	187.99	4,698.1	-29.9	-73.0	-25.5	0.26	0.08	6.96
4,725.0	2.83	201.96	4,723.1	-30.9	-73.3	-26.5	3.82	3.00	55.88
4,750.0	2.93	199.15	4,748.1	-32.1	-73.7	-27.6	0.69	0.40	-11.24
4,775.0	3.04	202.39	4,773.0	-33.3	-74.2	-28.8	0.81	0.44	12.96
4,800.0	3.10	202.50	4,798.0	-34.6	-74.7	-30.0	0.24	0.24	0.44
4,825.0	3.42	204.10	4,822.9	-35.9	-75.2	-31.3	1.33	1.28	6.40
4,850.0	3.64	204.29	4,847.9	-37.3	-75.9	-32.7	0.88	0.88	0.76
4,875.0	3.58	204.45	4,872.8	-38.7	-76.5	-34.1	0.24	-0.24	0.64
4,900.0	3.60	205.02	4,897.8	-40.1	-77.2	-35.4	0.16	0.08	2.28
4,925.0	3.62	204.65	4,922.7	-41.6	-77.8	-36.8	0.12	0.08	-1.48
4,950.0	3.53	208.02	4,947.7	-43.0	-78.5	-38.2	0.91	-0.36	13.48
4,975.0	3.59	207.14	4,972.7	-44.3	-79.2	-39.5	0.32	0.24	-3.52
5,000.0	3.47	209.42	4,997.6	-45.7	-80.0	-40.8	0.74	-0.48	9.12
5,025.0	3.41	210.83	5,022.6	-47.0	-80.7	-42.1	0.41	-0.24	5.64
5,050.0	3.34	211.30	5,047.5	-48.3	-81.5	-43.3	0.30	-0.28	1.88
5,075.0	3.17	211.27	5,072.5	-49.5	-82.2	-44.4	0.68	-0.68	-0.12
5,100.0	3.19	213.45	5,097.4	-50.6	-83.0	-45.6	0.49	0.08	8.72
5,125.0	2.95	214.08	5,122.4	-51.8	-83.7	-46.6	0.97	-0.96	2.52
5,150.0	2.81	211.53	5,147.4	-52.8	-84.4	-47.6	0.76	-0.56	-10.20
5,175.0	2.58	212.25	5,172.3	-53.8	-85.0	-48.6	0.93	-0.92	2.88
5,200.0	2.69	213.01	5,197.3	-54.8	-85.6	-49.5	0.46	0.44	3.04
5,225.0	2.54	214.18	5,222.3	-55.7	-86.3	-50.4	0.64	-0.60	4.68
5,250.0	2.64	216.47	5,247.3	-56.6	-86.9	-51.3	0.58	0.40	9.16
5,275.0	2.58	230.08	5,272.2	-57.5	-87.7	-52.1	2.48	-0.24	54.44
5,300.0	2.68	243.31	5,297.2	-58.1	-88.6	-52.7	2.46	0.40	52.92
5,325.0	2.81	248.23	5,322.2	-58.6	-89.7	-53.1	1.08	0.52	19.68
5,350.0	3.11	256.05	5,347.1	-59.0	-91.0	-53.4	2.01	1.20	31.28
5,375.0	3.48	260.91	5,372.1	-59.3	-92.4	-53.6	1.85	1.48	19.44
5,400.0	3.63	261.96	5,397.1	-59.5	-93.9	-53.7	0.65	0.60	4.20
5,425.0	3.68	263.43	5,422.0	-59.7	-95.5	-53.8	0.42	0.20	5.88
5,450.0	3.84	262.27	5,447.0	-59.9	-97.1	-54.0	0.71	0.64	-4.64
5,475.0	3.78	262.77	5,471.9	-60.1	-98.7	-54.1	0.27	-0.24	2.00
5,500.0	3.89	260.73	5,496.8	-60.4	-100.4	-54.2	0.70	0.44	-8.16
5,525.0	3.75	265.06	5,521.8	-60.6	-102.1	-54.3	1.28	-0.56	17.32
5,550.0	3.73	267.67	5,546.7	-60.7	-103.7	-54.3	0.69	-0.08	10.44
5,575.0	3.72	266.30	5,571.7	-60.7	-105.3	-54.3	0.36	-0.04	-5.48
5,600.0	3.80	264.60	5,596.6	-60.9	-106.9	-54.3	0.55	0.32	-6.80
5,625.0	3.77	265.45	5,621.6	-61.0	-108.6	-54.4	0.25	-0.12	3.40
5,650.0	3.77	265.41	5,646.5	-61.2	-110.2	-54.4	0.01	0.00	-0.16
5,675.0	3.70	265.41	5,671.5	-61.3	-111.8	-54.5	0.28	-0.28	0.00
5,700.0	3.71	266.08	5,696.4	-61.4	-113.5	-54.5	0.18	0.04	2.68



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: DOMINATOR 25 FED #607H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well DOMINATOR 25 FED #607H
TVD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
5,725.0	3.65	267.33	5,721.4	-61.5	-115.1	-54.5	0.40	-0.24	5.00
5,750.0	3.66	267.98	5,746.3	-61.6	-116.6	-54.4	0.17	0.04	2.60
5,775.0	3.68	266.25	5,771.3	-61.6	-118.2	-54.4	0.45	0.08	-6.92
5,800.0	3.75	266.05	5,796.2	-61.7	-119.9	-54.4	0.28	0.28	-0.80
5,825.0	3.70	267.01	5,821.2	-61.8	-121.5	-54.4	0.32	-0.20	3.84
5,850.0	3.70	266.46	5,846.1	-61.9	-123.1	-54.4	0.14	0.00	-2.20
5,875.0	3.62	268.41	5,871.1	-62.0	-124.7	-54.4	0.59	-0.32	7.80
5,900.0	3.79	266.82	5,896.0	-62.1	-126.3	-54.4	0.79	0.68	-6.36
5,925.0	3.68	268.55	5,920.9	-62.1	-127.9	-54.3	0.63	-0.44	6.92
5,950.0	3.58	268.34	5,945.9	-62.2	-129.5	-54.3	0.40	-0.40	-0.84
5,975.0	3.54	267.07	5,970.8	-62.2	-131.1	-54.3	0.35	-0.16	-5.08
6,000.0	3.58	266.49	5,995.8	-62.3	-132.6	-54.3	0.22	0.16	-2.32
6,025.0	3.52	267.00	6,020.8	-62.4	-134.2	-54.3	0.27	-0.24	2.04
6,050.0	3.48	266.69	6,045.7	-62.5	-135.7	-54.2	0.18	-0.16	-1.24
6,075.0	3.48	264.31	6,070.7	-62.6	-137.2	-54.3	0.58	0.00	-9.52
6,100.0	3.56	266.20	6,095.6	-62.8	-138.7	-54.3	0.56	0.32	7.56
6,125.0	3.68	262.56	6,120.6	-62.9	-140.3	-54.4	1.04	0.48	-14.56
6,150.0	4.01	262.15	6,145.5	-63.1	-142.0	-54.5	1.32	1.32	-1.64
6,175.0	4.13	261.25	6,170.4	-63.4	-143.7	-54.6	0.54	0.48	-3.60
6,200.0	4.10	261.17	6,195.4	-63.7	-145.5	-54.8	0.12	-0.12	-0.32
6,225.0	4.10	260.60	6,220.3	-63.9	-147.2	-55.0	0.16	0.00	-2.28
6,250.0	4.20	259.19	6,245.2	-64.3	-149.0	-55.2	0.57	0.40	-5.64
6,275.0	4.05	261.61	6,270.2	-64.6	-150.8	-55.4	0.92	-0.60	9.68
6,300.0	4.10	261.33	6,295.1	-64.8	-152.6	-55.5	0.22	0.20	-1.12
6,325.0	4.06	260.24	6,320.1	-65.1	-154.3	-55.7	0.35	-0.16	-4.36
6,350.0	4.04	259.04	6,345.0	-65.4	-156.1	-55.9	0.35	-0.08	-4.80
6,375.0	4.00	260.08	6,369.9	-65.7	-157.8	-56.2	0.33	-0.16	4.16
6,400.0	4.03	260.06	6,394.9	-66.0	-159.5	-56.3	0.12	0.12	-0.08
6,425.0	4.05	260.13	6,419.8	-66.4	-161.2	-56.5	0.08	0.08	0.28
6,450.0	3.92	258.35	6,444.8	-66.7	-162.9	-56.8	0.72	-0.52	-7.12
6,475.0	3.87	259.11	6,469.7	-67.0	-164.6	-57.0	0.29	-0.20	3.04
6,500.0	3.87	260.23	6,494.6	-67.3	-166.3	-57.2	0.30	0.00	4.48
6,525.0	3.80	259.13	6,519.6	-67.6	-167.9	-57.4	0.41	-0.28	-4.40
6,550.0	3.76	259.35	6,544.5	-67.9	-169.5	-57.6	0.17	-0.16	0.88
6,575.0	3.75	259.49	6,569.5	-68.2	-171.1	-57.8	0.05	-0.04	0.56
6,600.0	3.74	257.62	6,594.4	-68.5	-172.7	-58.0	0.49	-0.04	-7.48
6,625.0	3.71	259.40	6,619.4	-68.9	-174.3	-58.3	0.48	-0.12	7.12
6,650.0	3.66	258.73	6,644.3	-69.2	-175.9	-58.5	0.26	-0.20	-2.68
6,675.0	3.66	257.39	6,669.3	-69.5	-177.5	-58.7	0.34	0.00	-5.36
6,700.0	3.61	257.74	6,694.2	-69.8	-179.0	-59.0	0.22	-0.20	1.40
6,725.0	3.60	256.71	6,719.2	-70.2	-180.6	-59.2	0.26	-0.04	-4.12
6,750.0	3.61	257.26	6,744.1	-70.5	-182.1	-59.5	0.14	0.04	2.20
6,775.0	3.59	256.99	6,769.1	-70.9	-183.6	-59.7	0.10	-0.08	-1.08
6,800.0	3.73	256.32	6,794.0	-71.3	-185.2	-60.0	0.59	0.56	-2.68



Survey Report

Company: NORTHERN DELAWARE BASIN
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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)
6,825.0	3.56	256.79	6,819.0	-71.6	-186.7	-60.3	0.69	-0.68	1.88
6,850.0	3.53	255.01	6,843.9	-72.0	-188.2	-60.6	0.46	-0.12	-7.12
6,875.0	3.51	256.56	6,868.9	-72.4	-189.7	-60.9	0.39	-0.08	6.20
6,900.0	3.49	256.24	6,893.8	-72.7	-191.2	-61.1	0.11	-0.08	-1.28
6,925.0	3.43	255.88	6,918.8	-73.1	-192.6	-61.4	0.26	-0.24	-1.44
6,950.0	3.46	257.25	6,943.7	-73.5	-194.1	-61.7	0.35	0.12	5.48
6,975.0	3.35	255.87	6,968.7	-73.8	-195.6	-61.9	0.55	-0.44	-5.52
7,000.0	3.15	256.41	6,993.6	-74.1	-196.9	-62.2	0.81	-0.80	2.16
7,025.0	3.14	255.70	7,018.6	-74.5	-198.3	-62.4	0.16	-0.04	-2.84
7,050.0	3.04	255.60	7,043.6	-74.8	-199.6	-62.7	0.40	-0.40	-0.40
7,075.0	2.99	255.35	7,068.5	-75.1	-200.8	-62.9	0.21	-0.20	-1.00
7,100.0	3.11	255.85	7,093.5	-75.5	-202.1	-63.2	0.49	0.48	2.00
7,125.0	3.06	256.75	7,118.5	-75.8	-203.4	-63.4	0.28	-0.20	3.60
7,150.0	3.20	256.81	7,143.4	-76.1	-204.8	-63.7	0.56	0.56	0.24
7,175.0	3.32	264.39	7,168.4	-76.3	-206.2	-63.8	1.79	0.48	30.32
7,200.0	3.28	265.43	7,193.3	-76.5	-207.6	-63.8	0.29	-0.16	4.16
7,225.0	3.43	263.87	7,218.3	-76.6	-209.1	-63.9	0.70	0.60	-6.24
7,250.0	3.37	263.14	7,243.3	-76.8	-210.5	-64.0	0.30	-0.24	-2.92
7,275.0	3.34	263.69	7,268.2	-76.9	-212.0	-64.1	0.18	-0.12	2.20
7,300.0	3.36	263.89	7,293.2	-77.1	-213.4	-64.1	0.09	0.08	0.80
7,325.0	3.42	263.42	7,318.1	-77.2	-214.9	-64.2	0.26	0.24	-1.88
7,350.0	3.29	264.51	7,343.1	-77.4	-216.4	-64.3	0.58	-0.52	4.36
7,375.0	3.31	263.04	7,368.0	-77.6	-217.8	-64.3	0.35	0.08	-5.88
7,400.0	3.37	262.08	7,393.0	-77.7	-219.2	-64.4	0.33	0.24	-3.84
7,425.0	3.45	262.15	7,418.0	-78.0	-220.7	-64.6	0.32	0.32	0.28
7,450.0	3.42	260.93	7,442.9	-78.2	-222.2	-64.7	0.32	-0.12	-4.88
7,475.0	3.34	262.09	7,467.9	-78.4	-223.6	-64.8	0.42	-0.32	4.64
7,500.0	3.33	260.19	7,492.8	-78.6	-225.1	-64.9	0.44	-0.04	-7.60
7,525.0	3.19	259.96	7,517.8	-78.9	-226.5	-65.1	0.56	-0.56	-0.92
7,550.0	3.23	260.74	7,542.7	-79.1	-227.9	-65.3	0.24	0.16	3.12
7,575.0	3.30	258.88	7,567.7	-79.3	-229.3	-65.4	0.51	0.28	-7.44
7,600.0	3.20	259.76	7,592.7	-79.6	-230.7	-65.6	0.45	-0.40	3.52
7,625.0	3.26	258.37	7,617.6	-79.9	-232.0	-65.8	0.39	0.24	-5.56
7,650.0	3.20	259.46	7,642.6	-80.1	-233.4	-66.0	0.34	-0.24	4.36
7,675.0	3.29	259.15	7,667.5	-80.4	-234.8	-66.2	0.37	0.36	-1.24
7,700.0	3.19	262.39	7,692.5	-80.6	-236.2	-66.3	0.83	-0.40	12.96
7,725.0	2.96	262.53	7,717.5	-80.8	-237.5	-66.4	0.92	-0.92	0.56
7,750.0	2.76	263.74	7,742.4	-81.0	-238.8	-66.5	0.84	-0.80	4.84
7,775.0	2.54	264.84	7,767.4	-81.1	-239.9	-66.5	0.90	-0.88	4.40
7,800.0	2.43	264.45	7,792.4	-81.2	-241.0	-66.6	0.45	-0.44	-1.56
7,825.0	2.34	263.68	7,817.4	-81.3	-242.0	-66.6	0.38	-0.36	-3.08
7,850.0	2.32	269.20	7,842.3	-81.3	-243.0	-66.6	0.90	-0.08	22.08
7,875.0	2.43	266.60	7,867.3	-81.4	-244.1	-66.6	0.62	0.44	-10.40



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: DOMINATOR 25 FED #607H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well DOMINATOR 25 FED #607H
TVD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
MD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
7,900.0	1.73	271.75	7,892.3	-81.4	-245.0	-66.5	2.90	-2.80	20.60
7,925.0	0.99	300.26	7,917.3	-81.3	-245.6	-66.4	3.93	-2.96	114.04
7,950.0	0.99	308.54	7,942.3	-81.0	-245.9	-66.1	0.57	0.00	33.12
7,975.0	0.92	306.82	7,967.3	-80.8	-246.2	-65.8	0.30	-0.28	-6.88
8,000.0	0.96	302.44	7,992.3	-80.6	-246.6	-65.6	0.33	0.16	-17.52
8,025.0	0.96	310.04	8,017.3	-80.3	-246.9	-65.3	0.51	0.00	30.40
8,050.0	0.93	304.93	8,042.3	-80.1	-247.2	-65.1	0.36	-0.12	-20.44
8,075.0	0.97	309.24	8,067.3	-79.8	-247.6	-64.8	0.33	0.16	17.24
8,100.0	0.93	303.60	8,092.3	-79.6	-247.9	-64.5	0.41	-0.16	-22.56
8,125.0	0.91	299.09	8,117.3	-79.4	-248.2	-64.3	0.30	-0.08	-18.04
8,150.0	0.86	291.04	8,142.3	-79.2	-248.6	-64.1	0.54	-0.20	-32.20
8,175.0	0.91	290.54	8,167.3	-79.1	-249.0	-64.0	0.20	0.20	-2.00
8,200.0	0.95	291.53	8,192.3	-78.9	-249.3	-63.8	0.17	0.16	3.96
8,225.0	0.85	284.37	8,217.3	-78.8	-249.7	-63.6	0.60	-0.40	-28.64
8,250.0	0.88	288.01	8,242.3	-78.7	-250.1	-63.5	0.25	0.12	14.56
8,275.0	0.76	286.43	8,267.3	-78.6	-250.4	-63.4	0.49	-0.48	-6.32
8,300.0	0.72	278.66	8,292.3	-78.5	-250.7	-63.3	0.43	-0.16	-31.08
8,325.0	0.77	280.39	8,317.3	-78.4	-251.0	-63.2	0.22	0.20	6.92
8,350.0	0.79	275.12	8,342.3	-78.4	-251.4	-63.2	0.30	0.08	-21.08
8,375.0	0.73	277.76	8,367.2	-78.4	-251.7	-63.1	0.28	-0.24	10.56
8,400.0	0.86	279.02	8,392.2	-78.3	-252.1	-63.0	0.52	0.52	5.04
8,425.0	0.82	281.49	8,417.2	-78.2	-252.4	-62.9	0.22	-0.16	9.88
8,450.0	0.88	278.90	8,442.2	-78.2	-252.8	-62.9	0.28	0.24	-10.36
8,475.0	0.78	279.23	8,467.2	-78.1	-253.1	-62.8	0.40	-0.40	1.32
8,500.0	0.73	272.34	8,492.2	-78.1	-253.5	-62.7	0.41	-0.20	-27.56
8,525.0	0.77	268.64	8,517.2	-78.1	-253.8	-62.7	0.25	0.16	-14.80
8,550.0	0.85	277.47	8,542.2	-78.1	-254.1	-62.7	0.59	0.32	35.32
8,575.0	0.69	274.11	8,567.2	-78.0	-254.5	-62.6	0.66	-0.64	-13.44
8,600.0	0.77	280.34	8,592.2	-78.0	-254.8	-62.5	0.45	0.32	24.92
8,625.0	0.80	264.99	8,617.2	-78.0	-255.1	-62.5	0.85	0.12	-61.40
8,650.0	0.73	274.79	8,642.2	-78.0	-255.5	-62.5	0.59	-0.28	39.20
8,675.0	0.81	276.13	8,667.2	-78.0	-255.8	-62.4	0.33	0.32	5.36
8,700.0	0.78	277.30	8,692.2	-77.9	-256.1	-62.4	0.14	-0.12	4.68
8,725.0	0.74	278.26	8,717.2	-77.9	-256.5	-62.3	0.17	-0.16	3.84
8,750.0	0.72	319.57	8,742.2	-77.7	-256.7	-62.2	2.06	-0.08	165.24
8,775.0	1.16	6.04	8,767.2	-77.4	-256.8	-61.8	3.38	1.76	185.88
8,800.0	1.19	10.18	8,792.2	-76.8	-256.7	-61.3	0.36	0.12	16.56
8,825.0	1.19	6.21	8,817.2	-76.3	-256.7	-60.8	0.33	0.00	-15.88
8,850.0	1.30	8.58	8,842.2	-75.8	-256.6	-60.2	0.49	0.44	9.48
8,875.0	1.24	5.17	8,867.2	-75.2	-256.5	-59.7	0.39	-0.24	-13.64
8,900.0	1.21	8.83	8,892.2	-74.7	-256.5	-59.2	0.34	-0.12	14.64
8,925.0	1.14	7.43	8,917.2	-74.2	-256.4	-58.7	0.30	-0.28	-5.60
8,950.0	1.09	5.96	8,942.2	-73.7	-256.3	-58.2	0.23	-0.20	-5.88



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: DOMINATOR 25 FED #607H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well DOMINATOR 25 FED #607H
TVD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
MD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
8,975.0	0.94	2.80	8,967.2	-73.3	-256.3	-57.7	0.64	-0.60	-12.64
9,000.0	0.93	7.42	8,992.2	-72.9	-256.3	-57.3	0.30	-0.04	18.48
9,025.0	1.08	355.52	9,017.2	-72.4	-256.3	-56.9	1.03	0.60	-47.60
9,050.0	0.92	356.89	9,042.2	-72.0	-256.3	-56.5	0.65	-0.64	5.48
9,075.0	0.98	356.08	9,067.2	-71.6	-256.3	-56.1	0.25	0.24	-3.24
9,100.0	0.92	356.56	9,092.2	-71.2	-256.3	-55.6	0.24	-0.24	1.92
9,125.0	0.86	350.01	9,117.1	-70.8	-256.4	-55.3	0.47	-0.24	-26.20
9,150.0	0.92	343.41	9,142.1	-70.4	-256.5	-54.9	0.47	0.24	-26.40
9,175.0	0.89	338.77	9,167.1	-70.0	-256.6	-54.5	0.32	-0.12	-18.56
9,200.0	0.88	335.31	9,192.1	-69.7	-256.7	-54.1	0.22	-0.04	-13.84
9,225.0	0.82	327.31	9,217.1	-69.4	-256.9	-53.8	0.53	-0.24	-32.00
9,250.0	0.96	325.91	9,242.1	-69.0	-257.1	-53.5	0.57	0.56	-5.60
9,275.0	0.90	317.87	9,267.1	-68.7	-257.4	-53.1	0.57	-0.24	-32.16
9,300.0	0.94	312.41	9,292.1	-68.4	-257.7	-52.8	0.39	0.16	-21.84
9,325.0	0.98	308.34	9,317.1	-68.2	-258.0	-52.5	0.32	0.16	-16.28
9,350.0	0.96	304.79	9,342.1	-67.9	-258.3	-52.3	0.25	-0.08	-14.20
9,375.0	1.01	307.26	9,367.1	-67.7	-258.7	-52.0	0.26	0.20	9.88
9,400.0	1.21	302.11	9,392.1	-67.4	-259.1	-51.7	0.89	0.80	-20.60
9,425.0	1.13	303.93	9,417.1	-67.1	-259.5	-51.4	0.35	-0.32	7.28
9,450.0	1.13	304.76	9,442.1	-66.8	-259.9	-51.1	0.07	0.00	3.32
9,475.0	1.21	299.21	9,467.1	-66.6	-260.3	-50.8	0.55	0.32	-22.20
9,500.0	1.19	299.23	9,492.1	-66.3	-260.8	-50.5	0.08	-0.08	0.08
9,525.0	1.18	285.56	9,517.1	-66.1	-261.3	-50.3	1.13	-0.04	-54.68
9,550.0	1.48	290.38	9,542.1	-65.9	-261.8	-50.1	1.28	1.20	19.28
9,575.0	1.45	285.71	9,567.1	-65.7	-262.4	-49.8	0.49	-0.12	-18.68
9,600.0	1.34	281.96	9,592.1	-65.6	-263.0	-49.7	0.57	-0.44	-15.00
9,625.0	1.26	284.18	9,617.1	-65.5	-263.6	-49.5	0.38	-0.32	8.88
9,650.0	1.31	285.12	9,642.1	-65.3	-264.1	-49.3	0.22	0.20	3.76
9,675.0	1.20	286.35	9,667.0	-65.2	-264.6	-49.1	0.45	-0.44	4.92
9,700.0	1.19	289.29	9,692.0	-65.0	-265.1	-49.0	0.25	-0.04	11.76
9,725.0	1.24	301.13	9,717.0	-64.8	-265.6	-48.7	1.02	0.20	47.36
9,750.0	1.01	297.09	9,742.0	-64.5	-266.0	-48.4	0.97	-0.92	-16.16
9,775.0	0.96	299.70	9,767.0	-64.3	-266.4	-48.2	0.27	-0.20	10.44
9,800.0	0.34	351.43	9,792.0	-64.2	-266.6	-48.0	3.18	-2.48	206.92
9,825.0	0.65	89.94	9,817.0	-64.1	-266.5	-48.0	3.11	1.24	394.04
9,850.0	0.75	83.56	9,842.0	-64.1	-266.2	-48.0	0.51	0.40	-25.52
9,875.0	0.87	79.07	9,867.0	-64.0	-265.8	-47.9	0.54	0.48	-17.96
9,900.0	0.86	72.03	9,892.0	-63.9	-265.5	-47.9	0.43	-0.04	-28.16
9,925.0	0.95	74.27	9,917.0	-63.8	-265.1	-47.8	0.39	0.36	8.96
9,950.0	0.94	69.65	9,942.0	-63.7	-264.7	-47.7	0.31	-0.04	-18.48
9,975.0	0.88	68.56	9,967.0	-63.5	-264.3	-47.5	0.25	-0.24	-4.36
10,000.0	0.85	78.71	9,992.0	-63.4	-264.0	-47.5	0.62	-0.12	40.60
10,025.0	0.91	77.28	10,017.0	-63.3	-263.6	-47.4	0.26	0.24	-5.72
10,050.0	0.91	73.36	10,042.0	-63.2	-263.2	-47.3	0.25	0.00	-15.68



Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: DOMINATOR 25 FED #607H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well DOMINATOR 25 FED #607H
 TVD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
 MD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Buid Rate (°/100usft)	Turn Rate (°/100usft)
10,075.0	0.93	74.11	10,067.0	-63.1	-262.8	-47.2	0.09	0.08	3.00
10,100.0	0.96	64.73	10,092.0	-63.0	-262.4	-47.1	0.63	0.12	-37.52
10,125.0	0.92	64.94	10,117.0	-62.8	-262.1	-47.0	0.16	-0.16	0.84
10,150.0	0.91	58.51	10,142.0	-62.6	-261.7	-46.8	0.41	-0.04	-25.72
10,175.0	0.84	45.23	10,167.0	-62.4	-261.4	-46.6	0.86	-0.28	-53.12
10,200.0	0.71	34.57	10,192.0	-62.1	-261.2	-46.3	0.77	-0.52	-42.64
10,225.0	0.70	359.10	10,217.0	-61.9	-261.1	-46.1	1.72	-0.04	-141.88
10,250.0	0.69	341.40	10,242.0	-61.6	-261.2	-45.8	0.86	-0.04	-70.80
10,275.0	0.90	340.02	10,267.0	-61.2	-261.3	-45.4	0.84	0.84	-5.52
10,300.0	0.95	329.70	10,292.0	-60.9	-261.4	-45.1	0.69	0.20	-41.28
10,325.0	1.10	325.32	10,317.0	-60.5	-261.7	-44.7	0.68	0.60	-17.52
10,350.0	1.19	319.72	10,342.0	-60.1	-262.0	-44.2	0.57	0.36	-22.40
10,375.0	1.20	316.98	10,367.0	-59.7	-262.3	-43.8	0.23	0.04	-10.96
10,400.0	1.15	320.89	10,391.9	-59.3	-262.7	-43.4	0.38	-0.20	15.64
10,425.0	1.26	320.24	10,416.9	-58.9	-263.0	-43.0	0.44	0.44	-2.60
10,450.0	1.40	312.34	10,441.9	-58.5	-263.4	-42.6	0.92	0.56	-31.60
10,475.0	1.42	309.89	10,466.9	-58.1	-263.9	-42.1	0.25	0.08	-9.80
10,500.0	1.40	312.21	10,491.9	-57.7	-264.3	-41.7	0.24	-0.08	9.28
10,525.0	1.44	313.45	10,516.9	-57.3	-264.8	-41.3	0.20	0.16	4.96
10,550.0	1.51	313.67	10,541.9	-56.8	-265.3	-40.8	0.28	0.28	0.88
10,575.0	1.40	309.46	10,566.9	-56.4	-265.7	-40.3	0.61	-0.44	-16.84
10,600.0	1.31	306.23	10,591.9	-56.0	-266.2	-39.9	0.47	-0.36	-12.92
10,625.0	1.35	305.78	10,616.9	-55.7	-266.7	-39.6	0.17	0.16	-1.80
10,650.0	1.27	302.72	10,641.9	-55.4	-267.1	-39.2	0.42	-0.32	-12.24
10,675.0	1.36	304.41	10,666.9	-55.1	-267.6	-38.9	0.39	0.36	6.76
10,700.0	1.37	303.23	10,691.9	-54.7	-268.1	-38.5	0.12	0.04	-4.72
10,725.0	1.17	305.24	10,716.9	-54.4	-268.6	-38.2	0.82	-0.80	8.04
10,750.0	0.90	299.47	10,741.9	-54.2	-269.0	-37.9	1.16	-1.08	-23.08
10,775.0	0.57	305.78	10,766.9	-54.0	-269.2	-37.7	1.36	-1.32	25.24
10,800.0	0.52	304.10	10,791.9	-53.9	-269.4	-37.6	0.21	-0.20	-6.72
10,825.0	0.43	319.53	10,816.9	-53.7	-269.6	-37.4	0.62	-0.36	61.72
10,850.0	0.65	31.94	10,841.8	-53.5	-269.6	-37.3	2.65	0.88	289.64
10,875.0	0.91	49.51	10,866.8	-53.3	-269.3	-37.0	1.40	1.04	70.28
10,900.0	0.88	45.21	10,891.8	-53.0	-269.0	-36.8	0.29	-0.12	-17.20
10,925.0	0.93	46.59	10,916.8	-52.8	-268.8	-36.5	0.22	0.20	5.52
10,950.0	0.85	37.83	10,941.8	-52.5	-268.5	-36.2	0.63	-0.32	-35.04
10,975.0	0.74	40.57	10,966.8	-52.2	-268.3	-36.0	0.47	-0.44	10.96
11,000.0	0.88	42.78	10,991.8	-51.9	-268.0	-35.7	0.57	0.56	8.84
11,025.0	0.87	37.25	11,016.8	-51.6	-267.8	-35.5	0.34	-0.04	-22.12
11,050.0	0.89	36.55	11,041.8	-51.3	-267.6	-35.2	0.09	0.08	-2.80
11,075.0	0.88	37.82	11,066.8	-51.0	-267.3	-34.9	0.09	-0.04	5.08
11,100.0	0.93	35.10	11,091.8	-50.7	-267.1	-34.6	0.26	0.20	-10.88
11,125.0	1.11	15.31	11,116.8	-50.3	-266.9	-34.2	1.57	0.72	-79.16



Survey Report

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TVD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
MD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
11,150.0	1.53	353.54	11,141.8	-49.7	-266.9	-33.6	2.59	1.68	-87.08
11,175.0	1.73	350.81	11,166.8	-49.0	-267.0	-32.9	0.86	0.80	-10.92
11,200.0	1.62	343.80	11,191.8	-48.3	-267.2	-32.2	0.93	-0.44	-28.04
11,225.0	0.96	333.07	11,216.8	-47.8	-267.3	-31.7	2.80	-2.64	-42.92
11,250.0	0.56	314.38	11,241.8	-47.5	-267.5	-31.4	1.86	-1.60	-74.76
11,275.0	0.37	318.84	11,266.8	-47.4	-267.7	-31.2	0.77	-0.76	17.84
11,300.0	0.26	320.75	11,291.8	-47.3	-267.8	-31.1	0.44	-0.44	7.64
11,325.0	0.15	329.46	11,316.8	-47.2	-267.8	-31.0	0.46	-0.44	34.84
11,350.0	0.22	331.99	11,341.8	-47.1	-267.8	-31.0	0.28	0.28	10.12
11,375.0	0.19	326.87	11,366.8	-47.1	-267.9	-30.9	0.14	-0.12	-20.48
11,400.0	0.18	334.82	11,391.8	-47.0	-267.9	-30.8	0.11	-0.04	31.80
11,425.0	0.24	287.03	11,416.8	-46.9	-268.0	-30.8	0.72	0.24	-191.16
11,450.0	0.37	261.38	11,441.8	-46.9	-268.1	-30.7	0.74	0.52	-102.60
11,475.0	0.49	257.62	11,466.8	-47.0	-268.3	-30.8	0.49	0.48	-15.04
11,500.0	0.54	256.44	11,491.8	-47.0	-268.5	-30.8	0.20	0.20	-4.72
11,525.0	0.66	259.41	11,516.8	-47.1	-268.8	-30.8	0.50	0.48	11.88
11,550.0	0.66	257.99	11,541.8	-47.1	-269.1	-30.9	0.07	0.00	-5.68
11,575.0	0.77	252.90	11,566.8	-47.2	-269.4	-30.9	0.51	0.44	-20.36
11,600.0	0.96	258.34	11,591.8	-47.3	-269.7	-31.0	0.83	0.76	21.76
11,625.0	1.10	260.24	11,616.8	-47.4	-270.2	-31.1	0.58	0.56	7.60
11,650.0	1.15	260.86	11,641.8	-47.5	-270.7	-31.1	0.21	0.20	2.48
11,675.0	1.20	260.78	11,666.8	-47.5	-271.2	-31.2	0.20	0.20	-0.32
11,700.0	1.36	255.99	11,691.7	-47.7	-271.7	-31.3	0.77	0.64	-19.16
11,725.0	1.30	259.04	11,716.7	-47.8	-272.3	-31.3	0.37	-0.24	12.20
11,739.0	1.25	259.18	11,730.7	-47.8	-272.6	-31.4	0.36	-0.36	1.00
11,888.0	1.03	250.77	11,879.7	-48.6	-275.5	-32.0	0.19	-0.15	-5.64
11,982.0	1.32	255.24	11,973.7	-49.1	-277.3	-32.4	0.32	0.31	4.76
12,029.0	3.34	319.72	12,020.7	-48.2	-278.7	-31.4	6.42	4.30	137.19
12,077.0	10.25	348.80	12,068.3	-43.0	-280.4	-26.1	15.64	14.40	60.58
12,124.0	16.09	354.54	12,114.0	-32.4	-281.9	-15.4	12.72	12.43	12.21
12,171.0	22.11	356.23	12,158.4	-17.1	-283.1	0.0	12.86	12.81	3.60
12,219.0	27.96	357.42	12,201.9	3.2	-284.2	20.3	12.23	12.19	2.48
12,266.0	31.44	359.35	12,242.7	26.5	-284.8	43.5	7.68	7.40	4.11
12,313.0	33.62	358.39	12,282.4	51.8	-285.3	68.8	4.77	4.64	-2.04
12,361.0	40.27	357.68	12,320.7	80.6	-286.3	97.6	13.88	13.85	-1.48
12,408.0	45.03	358.02	12,355.3	112.4	-287.5	129.4	10.14	10.13	0.72
12,455.0	48.45	359.86	12,387.5	146.6	-288.1	163.6	7.81	7.28	3.91
12,502.0	52.80	359.63	12,417.3	182.9	-288.3	199.9	9.26	9.26	-0.49
12,550.0	60.74	359.79	12,443.6	223.0	-288.5	240.0	16.54	16.54	0.33
12,597.0	66.19	359.83	12,464.5	265.1	-288.6	281.9	11.60	11.60	0.09
12,645.0	71.37	359.58	12,481.9	309.8	-288.9	326.6	10.80	10.79	-0.52
12,692.0	77.43	359.67	12,494.5	355.0	-289.2	371.8	12.89	12.89	0.19
12,740.0	84.67	0.33	12,502.0	402.4	-289.2	419.1	15.14	15.08	1.38



Survey Report

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TVD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
MD Reference: RKB=3336.2+29 @ 3365.2usft (NORAM 23)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
12,775.0	86.27	359.85	12,504.8	437.3	-289.1	453.9	4.77	4.57	-1.37
12,869.0	88.54	359.65	12,509.0	531.2	-289.5	547.6	2.42	2.41	-0.21
12,965.0	89.89	359.93	12,510.3	627.2	-289.9	643.5	1.44	1.41	0.29
13,059.0	91.04	359.45	12,509.6	721.2	-290.4	737.3	1.33	1.22	-0.51
13,154.0	90.53	358.34	12,508.3	816.2	-292.2	832.2	1.29	-0.54	-1.17
13,248.0	89.64	358.63	12,508.1	910.1	-294.7	926.2	1.00	-0.95	0.31
13,343.0	91.29	359.34	12,507.4	1,005.1	-296.4	1,021.1	1.89	1.74	0.75
13,438.0	90.28	0.81	12,506.1	1,100.1	-296.2	1,115.9	1.88	-1.06	1.55
13,532.0	90.53	1.26	12,505.4	1,194.1	-294.5	1,209.6	0.55	0.27	0.48
13,627.0	87.84	1.58	12,506.7	1,289.0	-292.2	1,304.3	2.85	-2.83	0.34
13,722.0	90.50	3.05	12,508.1	1,383.9	-288.4	1,398.8	3.20	2.80	1.55
13,816.0	91.71	4.09	12,506.3	1,477.7	-282.5	1,492.0	1.70	1.29	1.11
13,908.0	87.45	1.62	12,507.0	1,569.6	-277.9	1,583.4	5.35	-4.63	-2.68
14,002.0	87.39	0.60	12,511.2	1,663.5	-276.1	1,677.1	1.09	-0.06	-1.09
14,097.0	89.61	359.23	12,513.7	1,758.4	-276.2	1,771.9	2.75	2.34	-1.44
14,191.0	86.97	358.50	12,516.5	1,852.4	-278.1	1,865.7	2.91	-2.81	-0.78
14,285.0	86.53	357.82	12,521.8	1,946.2	-281.1	1,959.5	0.86	-0.47	-0.72
14,379.0	89.30	357.46	12,525.3	2,040.0	-285.0	2,053.4	2.97	2.95	-0.38
14,473.0	91.60	357.85	12,524.5	2,133.9	-288.8	2,147.4	2.48	2.45	0.41
14,568.0	92.66	358.25	12,521.0	2,228.8	-292.1	2,242.3	1.19	1.12	0.42
14,662.0	92.80	357.61	12,516.5	2,322.6	-295.5	2,336.2	0.70	0.15	-0.68
14,756.0	90.22	358.62	12,514.0	2,416.5	-298.5	2,430.1	2.95	-2.74	1.07
14,850.0	91.74	0.24	12,512.4	2,510.5	-299.5	2,524.0	2.36	1.62	1.72
14,945.0	86.92	357.79	12,513.5	2,605.5	-301.1	2,618.8	5.69	-5.07	-2.58
15,040.0	87.06	358.14	12,518.5	2,700.3	-304.5	2,713.7	0.40	0.15	0.37
15,135.0	87.98	355.69	12,522.6	2,795.0	-309.6	2,808.6	2.75	0.97	-2.58
15,231.0	89.89	355.63	12,524.4	2,890.7	-316.9	2,904.6	1.99	1.99	-0.06
15,326.0	89.94	356.41	12,524.6	2,985.5	-323.4	2,999.5	0.82	0.05	0.82
15,421.0	92.18	357.18	12,522.8	3,080.3	-328.8	3,094.5	2.49	2.36	0.81
15,516.0	90.59	356.90	12,520.5	3,175.2	-333.7	3,189.5	1.70	-1.67	-0.29
15,608.0	94.29	3.14	12,516.6	3,267.0	-333.6	3,281.2	7.88	4.02	6.78
15,702.0	93.17	3.60	12,510.5	3,360.7	-328.1	3,374.3	1.29	-1.19	0.49
15,797.0	92.97	3.95	12,505.4	3,455.3	-321.9	3,468.4	0.42	-0.21	0.37
15,891.0	90.64	2.47	12,502.4	3,549.1	-316.6	3,561.7	2.94	-2.48	-1.57
15,985.0	90.67	2.36	12,501.4	3,643.0	-312.7	3,655.2	0.12	0.03	-0.12
16,080.0	90.62	2.37	12,500.3	3,737.9	-308.7	3,749.7	0.05	-0.05	0.01
16,174.0	91.26	2.14	12,498.7	3,831.9	-305.0	3,843.3	0.72	0.68	-0.24
16,268.0	90.87	2.83	12,497.0	3,925.8	-301.0	3,936.7	0.84	-0.41	0.73
16,363.0	89.36	2.96	12,496.8	4,020.6	-296.2	4,031.2	1.60	-1.59	0.14
16,458.0	89.27	3.47	12,497.9	4,115.5	-290.8	4,125.5	0.55	-0.09	0.54
16,551.0	88.94	3.80	12,499.4	4,208.3	-284.9	4,217.8	0.50	-0.35	0.35
16,645.0	88.54	1.32	12,501.5	4,302.2	-280.7	4,311.2	2.67	-0.43	-2.64
16,738.0	89.52	1.87	12,503.0	4,395.1	-278.2	4,403.9	1.21	1.05	0.59
16,832.0	88.71	1.88	12,504.5	4,489.0	-275.1	4,497.5	0.86	-0.86	0.01



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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)
16,927.0	88.82	2.07	12,506.5	4,584.0	-271.8	4,592.0	0.23	0.12	0.20
17,010.0	88.50	1.92	12,508.5	4,666.9	-268.9	4,674.7	0.42	-0.38	-0.18
17,021.0	88.46	1.90	12,508.8	4,677.9	-268.6	4,685.6	0.42	-0.38	-0.18
17,085.0	90.00	4.29	12,509.6	4,741.8	-265.1	4,749.1	4.44	2.41	3.73
17,138.0	90.00	4.29	12,509.6	4,794.6	-261.1	4,801.7	0.00	0.00	0.00

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
PBHL-Dominator 25 Fec	0.00	179.57	12,496.0	4,796.8	-288.7	403,976.60	749,211.10	32° 6' 29.125 N	103° 31' 42.524 W
- actual wellpath misses target center by 30.8usft at 17138.0usft MD (12509.6 TVD, 4794.6 N, -261.1 E)									
- Rectangle (sides W100.0 H4,382.7 D0.0)									

Checked By: _____ Approved By: _____ Date: _____

