

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

COONSKIN FEE #602H

OWB

Design: ACTUAL WELLPATH

Standard Survey Report

27 December, 2018

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #602H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #602H
TVD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
MD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
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	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	COONSKIN FEE #602H					
Well Position	+N/-S	0.0 usft	Northing:	436,158.80 usft	Latitude:	32° 11' 43.775 N
	+E/-W	0.0 usft	Easting:	796,171.00 usft	Longitude:	103° 22' 33.273 W
Position Uncertainty	3.0 usft	Wellhead Elevation:	usft	Ground Level:	3,315.6 usft	

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	6/23/2018	6.78	60.04	47,823.63201392

Design	ACTUAL WELLPATH				
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	181.38	

Survey Program	Date 12/26/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	11,330.0	GYRO (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
11,478.0	19,497.0	MWD-CURVE/LATERAL (OWB)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

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	0.70	270.58	100.0	0.0	-0.6	0.0	0.70	0.70	0.00
125.0	0.80	270.13	125.0	0.0	-0.9	0.0	0.40	0.40	-1.80
150.0	0.89	269.76	150.0	0.0	-1.3	0.0	0.36	0.36	-1.48
175.0	0.86	271.57	175.0	0.0	-1.7	0.0	0.16	-0.12	7.24
200.0	0.90	273.61	200.0	0.0	-2.1	0.0	0.20	0.16	8.16
225.0	0.99	271.08	225.0	0.0	-2.5	0.0	0.40	0.36	-10.12
250.0	1.09	268.46	250.0	0.0	-2.9	0.0	0.44	0.40	-10.48

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Survey Calculation Method:

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RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

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Grid

Minimum Curvature

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)
275.0	1.15	266.05	275.0	0.0	-3.4	0.1	0.31	0.24	-9.64
300.0	1.34	268.96	300.0	0.0	-4.0	0.1	0.80	0.76	11.64
325.0	1.49	267.97	325.0	0.0	-4.6	0.1	0.61	0.60	-3.96
350.0	1.50	268.00	350.0	0.0	-5.2	0.2	0.04	0.04	0.12
375.0	1.48	265.63	374.9	-0.1	-5.9	0.2	0.26	-0.08	-9.48
400.0	1.48	268.58	399.9	-0.1	-6.5	0.3	0.30	0.00	11.80
425.0	1.55	267.25	424.9	-0.1	-7.2	0.3	0.31	0.28	-5.32
450.0	1.56	266.99	449.9	-0.2	-7.9	0.4	0.05	0.04	-1.04
475.0	1.50	274.94	474.9	-0.2	-8.5	0.4	0.88	-0.24	31.80
500.0	1.55	278.81	499.9	-0.1	-9.2	0.3	0.46	0.20	15.48
525.0	1.79	292.72	524.9	0.1	-9.9	0.1	1.88	0.96	55.64
550.0	1.98	298.92	549.9	0.5	-10.6	-0.2	1.11	0.76	24.80
575.0	2.70	306.02	574.9	1.0	-11.5	-0.8	3.10	2.88	28.40
600.0	2.92	309.86	599.8	1.8	-12.4	-1.5	1.16	0.88	15.36
625.0	3.18	311.03	624.8	2.7	-13.5	-2.3	1.07	1.04	4.68
650.0	3.03	310.67	649.8	3.5	-14.5	-3.2	0.61	-0.60	-1.44
675.0	2.93	312.15	674.7	4.4	-15.5	-4.0	0.50	-0.40	5.92
700.0	2.25	309.66	699.7	5.1	-16.3	-4.7	2.76	-2.72	-9.96
725.0	1.60	306.47	724.7	5.7	-17.0	-5.3	2.63	-2.60	-12.76
750.0	0.77	314.76	749.7	6.0	-17.4	-5.6	3.38	-3.32	33.16
775.0	0.52	356.24	774.7	6.2	-17.5	-5.8	2.05	-1.00	165.92
800.0	1.13	63.42	799.7	6.4	-17.3	-6.0	4.18	2.44	268.72
825.0	1.29	64.81	824.7	6.7	-16.8	-6.3	0.65	0.64	5.56
850.0	1.71	65.80	849.7	6.9	-16.2	-6.6	1.68	1.68	3.96
875.0	1.74	67.46	874.6	7.2	-15.5	-6.9	0.23	0.12	6.64
900.0	1.77	64.57	899.6	7.6	-14.8	-7.2	0.37	0.12	-11.56
925.0	1.80	66.99	924.6	7.9	-14.1	-7.5	0.32	0.12	9.68
950.0	1.77	69.02	949.6	8.2	-13.4	-7.8	0.28	-0.12	8.12
975.0	1.69	69.88	974.6	8.4	-12.7	-8.1	0.34	-0.32	3.44
1,000.0	1.87	73.30	999.6	8.7	-11.9	-8.4	0.84	0.72	13.68
1,025.0	1.73	78.32	1,024.6	8.9	-11.2	-8.6	0.84	-0.56	20.08
1,050.0	1.79	85.91	1,049.6	9.0	-10.4	-8.7	0.96	0.24	30.36
1,075.0	1.79	90.10	1,074.5	9.0	-9.6	-8.8	0.52	0.00	16.76
1,100.0	1.81	94.11	1,099.5	9.0	-8.9	-8.8	0.51	0.08	16.04
1,125.0	1.90	98.00	1,124.5	8.9	-8.1	-8.7	0.62	0.36	15.56
1,150.0	1.78	100.29	1,149.5	8.8	-7.3	-8.6	0.56	-0.48	9.16
1,175.0	1.73	102.94	1,174.5	8.6	-6.5	-8.4	0.38	-0.20	10.60
1,200.0	1.46	110.24	1,199.5	8.4	-5.8	-8.3	1.35	-1.08	29.20
1,225.0	1.21	116.39	1,224.5	8.2	-5.3	-8.1	1.15	-1.00	24.60
1,250.0	1.04	138.48	1,249.5	7.9	-4.9	-7.8	1.85	-0.68	88.36
1,275.0	1.01	147.63	1,274.5	7.5	-4.7	-7.4	0.66	-0.12	36.60
1,300.0	1.08	183.45	1,299.5	7.1	-4.6	-7.0	2.58	0.28	143.28

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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)
1,325.0	1.09	184.80	1,324.5	6.6	-4.6	-6.5	0.11	0.04	5.40
1,350.0	1.17	204.33	1,349.5	6.2	-4.7	-6.1	1.57	0.32	78.12
1,375.0	1.14	203.25	1,374.5	5.7	-4.9	-5.6	0.15	-0.12	-4.32
1,400.0	1.23	216.08	1,399.4	5.3	-5.2	-5.1	1.12	0.36	51.32
1,425.0	1.25	212.30	1,424.4	4.8	-5.5	-4.7	0.34	0.08	-15.12
1,450.0	1.24	215.19	1,449.4	4.4	-5.8	-4.2	0.25	-0.04	11.56
1,475.0	1.44	228.29	1,474.4	3.9	-6.2	-3.8	1.46	0.80	52.40
1,500.0	1.71	236.58	1,499.4	3.5	-6.7	-3.4	1.41	1.08	33.16
1,525.0	2.31	248.63	1,524.4	3.1	-7.5	-3.0	2.92	2.40	48.20
1,550.0	2.66	251.64	1,549.4	2.8	-8.5	-2.6	1.49	1.40	12.04
1,575.0	3.07	253.10	1,574.4	2.4	-9.7	-2.2	1.67	1.64	5.84
1,600.0	3.41	254.98	1,599.3	2.0	-11.1	-1.7	1.42	1.36	7.52
1,625.0	3.77	254.68	1,624.3	1.6	-12.6	-1.3	1.44	1.44	-1.20
1,650.0	3.84	253.37	1,649.2	1.1	-14.2	-0.8	0.45	0.28	-5.24
1,675.0	3.95	254.83	1,674.1	0.7	-15.8	-0.3	0.59	0.44	5.84
1,700.0	3.99	254.15	1,699.1	0.2	-17.5	0.2	0.25	0.16	-2.72
1,725.0	4.06	254.27	1,724.0	-0.3	-19.2	0.7	0.28	0.28	0.48
1,750.0	4.26	255.89	1,749.0	-0.7	-20.9	1.2	0.93	0.80	6.48
1,775.0	4.33	257.41	1,773.9	-1.2	-22.7	1.7	0.53	0.28	6.08
1,800.0	4.34	258.58	1,798.8	-1.6	-24.6	2.1	0.36	0.04	4.68
1,825.0	4.35	257.44	1,823.7	-1.9	-26.4	2.6	0.35	0.04	-4.56
1,850.0	4.47	258.52	1,848.7	-2.3	-28.3	3.0	0.58	0.48	4.32
1,875.0	4.31	257.81	1,873.6	-2.7	-30.2	3.5	0.68	-0.64	-2.84
1,900.0	4.45	257.52	1,898.5	-3.1	-32.1	3.9	0.57	0.56	-1.16
1,925.0	4.42	258.32	1,923.5	-3.6	-33.9	4.4	0.28	-0.12	3.20
1,950.0	4.46	258.68	1,948.4	-3.9	-35.8	4.8	0.20	0.16	1.44
1,975.0	4.38	258.77	1,973.3	-4.3	-37.7	5.2	0.32	-0.32	0.36
2,000.0	4.43	257.68	1,998.2	-4.7	-39.6	5.7	0.39	0.20	-4.36
2,025.0	4.34	257.06	2,023.2	-5.1	-41.5	6.1	0.41	-0.36	-2.48
2,050.0	4.48	256.17	2,048.1	-5.6	-43.3	6.6	0.62	0.56	-3.56
2,075.0	4.32	255.97	2,073.0	-6.0	-45.2	7.1	0.64	-0.64	-0.80
2,100.0	4.38	256.86	2,097.9	-6.5	-47.0	7.6	0.36	0.24	3.56
2,125.0	4.30	255.93	2,122.9	-6.9	-48.9	8.1	0.43	-0.32	-3.72
2,150.0	4.34	257.09	2,147.8	-7.4	-50.7	8.6	0.38	0.16	4.64
2,175.0	4.23	255.95	2,172.7	-7.8	-52.5	9.1	0.56	-0.44	-4.56
2,200.0	4.28	256.17	2,197.7	-8.2	-54.3	9.5	0.21	0.20	0.88
2,225.0	4.26	257.14	2,222.6	-8.7	-56.1	10.0	0.30	-0.08	3.88
2,250.0	4.26	258.30	2,247.5	-9.1	-58.0	10.5	0.34	0.00	4.64
2,275.0	4.33	257.99	2,272.4	-9.5	-59.8	10.9	0.29	0.28	-1.24
2,300.0	4.44	258.37	2,297.4	-9.8	-61.7	11.3	0.46	0.44	1.52
2,325.0	4.27	258.75	2,322.3	-10.2	-63.5	11.7	0.69	-0.68	1.52
2,350.0	4.26	258.24	2,347.2	-10.6	-65.3	12.2	0.16	-0.04	-2.04

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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)
2,375.0	4.05	258.11	2,372.2	-11.0	-67.1	12.6	0.84	-0.84	-0.52
2,400.0	4.16	258.58	2,397.1	-11.3	-68.9	13.0	0.46	0.44	1.88
2,425.0	4.14	258.83	2,422.0	-11.7	-70.6	13.4	0.11	-0.08	1.00
2,450.0	4.07	258.33	2,447.0	-12.0	-72.4	13.8	0.31	-0.28	-2.00
2,475.0	4.21	259.00	2,471.9	-12.4	-74.2	14.2	0.59	0.56	2.68
2,500.0	4.32	261.32	2,496.8	-12.7	-76.0	14.5	0.82	0.44	9.28
2,525.0	4.40	263.72	2,521.8	-13.0	-77.9	14.8	0.80	0.32	9.60
2,550.0	4.44	262.92	2,546.7	-13.2	-79.8	15.1	0.29	0.16	-3.20
2,575.0	4.47	263.12	2,571.6	-13.4	-81.7	15.4	0.14	0.12	0.80
2,600.0	4.51	263.55	2,596.5	-13.6	-83.7	15.6	0.21	0.16	1.72
2,625.0	4.39	264.10	2,621.5	-13.8	-85.6	15.9	0.51	-0.48	2.20
2,650.0	4.34	262.76	2,646.4	-14.1	-87.5	16.2	0.45	-0.20	-5.36
2,675.0	4.37	263.44	2,671.3	-14.3	-89.4	16.4	0.24	0.12	2.72
2,700.0	4.40	264.03	2,696.2	-14.5	-91.3	16.7	0.22	0.12	2.36
2,725.0	4.38	262.56	2,721.2	-14.7	-93.2	17.0	0.46	-0.08	-5.88
2,750.0	4.52	263.14	2,746.1	-15.0	-95.1	17.2	0.59	0.56	2.32
2,775.0	5.01	266.40	2,771.0	-15.2	-97.2	17.5	2.24	1.96	13.04
2,800.0	5.23	266.80	2,795.9	-15.3	-99.4	17.7	0.89	0.88	1.60
2,825.0	5.20	266.71	2,820.8	-15.4	-101.7	17.9	0.12	-0.12	-0.36
2,850.0	5.24	266.21	2,845.7	-15.6	-103.9	18.0	0.24	0.16	-2.00
2,875.0	5.26	266.84	2,870.6	-15.7	-106.2	18.2	0.24	0.08	2.52
2,900.0	5.26	266.49	2,895.5	-15.8	-108.5	18.4	0.13	0.00	-1.40
2,925.0	5.13	266.47	2,920.4	-16.0	-110.8	18.6	0.52	-0.52	-0.08
2,950.0	5.14	265.74	2,945.3	-16.1	-113.0	18.8	0.26	0.04	-2.92
2,975.0	5.00	265.35	2,970.2	-16.3	-115.2	19.1	0.58	-0.56	-1.56
3,000.0	5.08	265.77	2,995.1	-16.5	-117.4	19.3	0.35	0.32	1.68
3,025.0	4.89	262.55	3,020.0	-16.7	-119.5	19.5	1.35	-0.76	-12.88
3,050.0	4.96	261.37	3,044.9	-17.0	-121.7	19.9	0.49	0.28	-4.72
3,075.0	5.07	260.59	3,069.8	-17.3	-123.8	20.3	0.52	0.44	-3.12
3,100.0	5.09	258.80	3,094.7	-17.7	-126.0	20.7	0.64	0.08	-7.16
3,125.0	5.32	255.35	3,119.6	-18.2	-128.2	21.3	1.55	0.92	-13.80
3,150.0	5.56	252.91	3,144.5	-18.9	-130.5	22.0	1.33	0.96	-9.76
3,175.0	5.54	251.59	3,169.4	-19.6	-132.8	22.8	0.52	-0.08	-5.28
3,200.0	5.73	251.04	3,194.3	-20.4	-135.1	23.6	0.79	0.76	-2.20
3,225.0	5.80	250.81	3,219.1	-21.2	-137.5	24.5	0.29	0.28	-0.92
3,250.0	5.74	250.98	3,244.0	-22.0	-139.9	25.4	0.25	-0.24	0.68
3,275.0	5.74	249.88	3,268.9	-22.9	-142.2	26.3	0.44	0.00	-4.40
3,300.0	5.82	250.40	3,293.8	-23.7	-144.6	27.2	0.38	0.32	2.08
3,325.0	5.90	250.77	3,318.6	-24.6	-147.0	28.1	0.35	0.32	1.48
3,350.0	5.83	250.30	3,343.5	-25.4	-149.4	29.0	0.34	-0.28	-1.88
3,375.0	6.00	250.55	3,368.4	-26.3	-151.8	29.9	0.69	0.68	1.00
3,400.0	6.10	249.71	3,393.2	-27.2	-154.3	30.9	0.53	0.40	-3.36

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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)
3,425.0	6.31	250.54	3,418.1	-28.1	-156.9	31.9	0.91	0.84	3.32
3,450.0	6.47	251.21	3,442.9	-29.0	-159.5	32.8	0.71	0.64	2.68
3,475.0	6.58	250.64	3,467.8	-30.0	-162.2	33.8	0.51	0.44	-2.28
3,500.0	6.72	250.33	3,492.6	-30.9	-164.9	34.9	0.58	0.56	-1.24
3,525.0	6.75	250.35	3,517.4	-31.9	-167.7	35.9	0.12	0.12	0.08
3,550.0	6.76	250.34	3,542.2	-32.9	-170.4	37.0	0.04	0.04	-0.04
3,575.0	6.82	250.36	3,567.1	-33.9	-173.2	38.0	0.24	0.24	0.08
3,600.0	6.74	250.46	3,591.9	-34.9	-176.0	39.1	0.32	-0.32	0.40
3,625.0	6.75	249.91	3,616.7	-35.9	-178.8	40.2	0.26	0.04	-2.20
3,650.0	6.69	249.73	3,641.5	-36.9	-181.5	41.2	0.25	-0.24	-0.72
3,675.0	6.15	249.67	3,666.4	-37.9	-184.1	42.3	2.16	-2.16	-0.24
3,700.0	5.96	248.64	3,691.3	-38.8	-186.6	43.3	0.88	-0.76	-4.12
3,725.0	5.43	249.97	3,716.1	-39.7	-188.9	44.2	2.18	-2.12	5.32
3,750.0	5.19	251.62	3,741.0	-40.4	-191.1	45.0	1.14	-0.96	6.60
3,775.0	4.94	252.64	3,765.9	-41.1	-193.2	45.7	1.06	-1.00	4.08
3,800.0	4.84	252.02	3,790.8	-41.8	-195.2	46.4	0.45	-0.40	-2.48
3,825.0	4.64	252.37	3,815.7	-42.4	-197.2	47.1	0.81	-0.80	1.40
3,850.0	4.52	251.00	3,840.7	-43.0	-199.1	47.8	0.65	-0.48	-5.48
3,875.0	4.37	251.24	3,865.6	-43.6	-200.9	48.5	0.60	-0.60	0.96
3,900.0	4.07	253.49	3,890.5	-44.2	-202.7	49.1	1.37	-1.20	9.00
3,925.0	3.85	256.47	3,915.5	-44.6	-204.3	49.5	1.20	-0.88	11.92
3,950.0	3.60	261.80	3,940.4	-45.0	-205.9	49.9	1.71	-1.00	21.32
3,975.0	3.51	261.49	3,965.4	-45.2	-207.5	50.2	0.37	-0.36	-1.24
4,000.0	3.54	262.46	3,990.3	-45.4	-209.0	50.4	0.27	0.12	3.88
4,025.0	3.45	262.51	4,015.3	-45.6	-210.5	50.6	0.36	-0.36	0.20
4,050.0	3.45	262.43	4,040.2	-45.8	-212.0	50.9	0.02	0.00	-0.32
4,075.0	3.26	267.34	4,065.2	-45.9	-213.4	51.0	1.38	-0.76	19.64
4,100.0	3.12	269.74	4,090.1	-46.0	-214.8	51.1	0.77	-0.56	9.60
4,125.0	2.61	277.81	4,115.1	-45.9	-216.1	51.1	2.60	-2.04	32.28
4,150.0	2.36	283.27	4,140.1	-45.7	-217.1	50.9	1.38	-1.00	21.84
4,175.0	2.06	293.04	4,165.1	-45.4	-218.1	50.6	1.92	-1.20	39.08
4,200.0	2.06	297.58	4,190.1	-45.0	-218.9	50.3	0.65	0.00	18.16
4,225.0	1.87	305.57	4,215.0	-44.6	-219.6	49.8	1.33	-0.76	31.96
4,250.0	1.78	310.73	4,240.0	-44.1	-220.2	49.4	0.75	-0.36	20.64
4,275.0	1.76	313.76	4,265.0	-43.6	-220.8	48.8	0.38	-0.08	12.12
4,300.0	1.91	317.52	4,290.0	-43.0	-221.4	48.3	0.77	0.60	15.04
4,325.0	1.88	321.72	4,315.0	-42.4	-221.9	47.7	0.57	-0.12	16.80
4,350.0	2.11	324.90	4,340.0	-41.7	-222.4	47.0	1.02	0.92	12.72
4,375.0	2.17	329.02	4,365.0	-40.9	-222.9	46.2	0.66	0.24	16.48
4,400.0	2.31	329.23	4,389.9	-40.0	-223.4	45.4	0.56	0.56	0.84
4,425.0	2.27	329.16	4,414.9	-39.2	-223.9	44.5	0.16	-0.16	-0.28
4,450.0	2.26	328.89	4,439.9	-38.3	-224.4	43.7	0.06	-0.04	-1.08

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #602H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #602H

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

Grid

Minimum Curvature

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)
4,475.0	2.10	323.58	4,464.9	-37.5	-225.0	42.9	1.03	-0.64	-21.24
4,500.0	1.85	315.10	4,489.9	-36.9	-225.5	42.3	1.54	-1.00	-33.92
4,525.0	1.52	306.23	4,514.9	-36.4	-226.1	41.8	1.68	-1.32	-35.48
4,550.0	1.19	300.01	4,539.8	-36.1	-226.6	41.5	1.44	-1.32	-24.88
4,575.0	0.94	287.18	4,564.8	-35.9	-227.0	41.3	1.38	-1.00	-51.32
4,600.0	0.92	286.02	4,589.8	-35.8	-227.4	41.2	0.11	-0.08	-4.64
4,625.0	0.82	292.96	4,614.8	-35.6	-227.7	41.1	0.58	-0.40	27.76
4,650.0	0.85	281.47	4,639.8	-35.5	-228.1	41.0	0.68	0.12	-45.96
4,675.0	0.89	278.57	4,664.8	-35.5	-228.5	41.0	0.24	0.16	-11.60
4,700.0	0.91	271.07	4,689.8	-35.4	-228.9	40.9	0.48	0.08	-30.00
4,725.0	1.02	269.68	4,714.8	-35.4	-229.3	40.9	0.45	0.44	-5.56
4,750.0	1.62	251.86	4,739.8	-35.6	-229.8	41.1	2.88	2.40	-71.28
4,775.0	1.99	246.39	4,764.8	-35.8	-230.6	41.4	1.63	1.48	-21.88
4,800.0	2.37	245.88	4,789.8	-36.2	-231.4	41.8	1.52	1.52	-2.04
4,825.0	2.78	243.58	4,814.8	-36.7	-232.4	42.3	1.69	1.64	-9.20
4,850.0	3.63	240.57	4,839.7	-37.4	-233.7	43.0	3.46	3.40	-12.04
4,875.0	3.89	240.56	4,864.7	-38.2	-235.1	43.8	1.04	1.04	-0.04
4,900.0	3.85	241.37	4,889.6	-39.0	-236.6	44.7	0.27	-0.16	3.24
4,925.0	3.88	240.90	4,914.6	-39.8	-238.1	45.5	0.17	0.12	-1.88
4,950.0	3.89	241.13	4,939.5	-40.6	-239.5	46.4	0.07	0.04	0.92
4,975.0	3.88	240.18	4,964.4	-41.4	-241.0	47.2	0.26	-0.04	-3.80
5,000.0	3.87	239.81	4,989.4	-42.3	-242.5	48.1	0.11	-0.04	-1.48
5,025.0	3.91	236.70	5,014.3	-43.2	-243.9	49.0	0.86	0.16	-12.44
5,050.0	3.97	236.33	5,039.3	-44.1	-245.4	50.0	0.26	0.24	-1.48
5,075.0	3.90	234.93	5,064.2	-45.1	-246.8	51.0	0.48	-0.28	-5.60
5,100.0	3.94	234.38	5,089.1	-46.1	-248.2	52.0	0.22	0.16	-2.20
5,125.0	3.73	233.53	5,114.1	-47.1	-249.5	53.1	0.87	-0.84	-3.40
5,150.0	3.73	234.72	5,139.0	-48.0	-250.8	54.0	0.31	0.00	4.76
5,175.0	3.49	234.65	5,164.0	-48.9	-252.1	55.0	0.96	-0.96	-0.28
5,200.0	3.34	234.79	5,188.9	-49.8	-253.3	55.9	0.60	-0.60	0.56
5,225.0	3.25	233.86	5,213.9	-50.6	-254.5	56.7	0.42	-0.36	-3.72
5,250.0	2.96	236.71	5,238.9	-51.4	-255.6	57.5	1.31	-1.16	11.40
5,275.0	2.51	235.69	5,263.8	-52.1	-256.6	58.2	1.81	-1.80	-4.08
5,300.0	1.94	238.38	5,288.8	-52.6	-257.4	58.8	2.32	-2.28	10.76
5,325.0	1.86	238.09	5,313.8	-53.0	-258.1	59.2	0.32	-0.32	-1.16
5,350.0	1.61	238.21	5,338.8	-53.4	-258.8	59.6	1.00	-1.00	0.48
5,375.0	1.72	240.78	5,363.8	-53.8	-259.4	60.0	0.53	0.44	10.28
5,400.0	1.68	235.66	5,388.8	-54.2	-260.0	60.4	0.63	-0.16	-20.48
5,425.0	1.61	237.82	5,413.8	-54.6	-260.6	60.8	0.37	-0.28	8.64
5,450.0	1.62	236.76	5,438.8	-55.0	-261.2	61.2	0.13	0.04	-4.24
5,475.0	1.69	228.42	5,463.7	-55.4	-261.8	61.7	1.00	0.28	-33.36
5,500.0	1.66	229.52	5,488.7	-55.9	-262.3	62.2	0.18	-0.12	4.40

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #602H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #602H

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

Grid

Minimum Curvature

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)
5,525.0	1.51	202.63	5,513.7	-56.4	-262.7	62.7	3.01	-0.60	-107.56
5,550.0	1.45	194.00	5,538.7	-57.0	-262.9	63.3	0.92	-0.24	-34.52
5,575.0	1.39	175.41	5,563.7	-57.6	-263.0	63.9	1.85	-0.24	-74.36
5,600.0	1.39	172.88	5,588.7	-58.2	-262.9	64.5	0.25	0.00	-10.12
5,625.0	1.47	164.90	5,613.7	-58.9	-262.8	65.2	0.86	0.32	-31.92
5,650.0	1.41	166.59	5,638.7	-59.5	-262.7	65.8	0.29	-0.24	6.76
5,675.0	1.38	164.23	5,663.7	-60.1	-262.5	66.3	0.26	-0.12	-9.44
5,700.0	1.44	161.41	5,688.7	-60.6	-262.3	66.9	0.37	0.24	-11.28
5,725.0	1.56	162.36	5,713.7	-61.3	-262.1	67.5	0.49	0.48	3.80
5,750.0	1.42	155.21	5,738.7	-61.9	-261.9	68.1	0.93	-0.56	-28.60
5,775.0	1.38	152.97	5,763.6	-62.4	-261.6	68.7	0.27	-0.16	-8.96
5,800.0	1.43	148.47	5,788.6	-63.0	-261.3	69.2	0.48	0.20	-18.00
5,825.0	1.33	150.48	5,813.6	-63.5	-261.0	69.7	0.44	-0.40	8.04
5,850.0	1.29	147.13	5,838.6	-64.0	-260.7	70.2	0.35	-0.16	-13.40
5,875.0	1.29	142.81	5,863.6	-64.4	-260.4	70.7	0.39	0.00	-17.28
5,900.0	1.33	142.75	5,888.6	-64.9	-260.0	71.1	0.16	0.16	-0.24
5,925.0	1.22	131.79	5,913.6	-65.3	-259.7	71.5	1.07	-0.44	-43.84
5,950.0	1.11	123.46	5,938.6	-65.6	-259.3	71.8	0.81	-0.44	-33.32
5,975.0	1.03	105.70	5,963.6	-65.8	-258.9	72.0	1.36	-0.32	-71.04
6,000.0	0.95	99.15	5,988.6	-65.9	-258.4	72.1	0.55	-0.32	-26.20
6,025.0	0.94	100.41	6,013.6	-66.0	-258.0	72.1	0.09	-0.04	5.04
6,050.0	0.98	96.07	6,038.6	-66.0	-257.6	72.2	0.33	0.16	-17.36
6,075.0	0.91	94.38	6,063.6	-66.1	-257.2	72.2	0.30	-0.28	-6.76
6,100.0	0.86	84.70	6,088.6	-66.1	-256.8	72.2	0.63	-0.20	-38.72
6,125.0	0.83	72.24	6,113.6	-66.0	-256.5	72.1	0.74	-0.12	-49.84
6,150.0	0.88	69.78	6,138.6	-65.9	-256.1	72.0	0.25	0.20	-9.84
6,175.0	0.94	81.33	6,163.6	-65.8	-255.7	71.9	0.77	0.24	46.20
6,200.0	0.87	80.26	6,188.6	-65.7	-255.3	71.8	0.29	-0.28	-4.28
6,225.0	0.87	80.98	6,213.6	-65.6	-255.0	71.7	0.04	0.00	2.88
6,250.0	0.81	73.44	6,238.6	-65.6	-254.6	71.7	0.50	-0.24	-30.16
6,275.0	0.91	74.61	6,263.6	-65.5	-254.2	71.5	0.41	0.40	4.68
6,300.0	0.91	79.25	6,288.6	-65.4	-253.9	71.4	0.29	0.00	18.56
6,325.0	0.92	74.19	6,313.6	-65.3	-253.5	71.3	0.33	0.04	-20.24
6,350.0	0.85	70.08	6,338.5	-65.2	-253.1	71.2	0.38	-0.28	-16.44
6,375.0	0.87	78.00	6,363.5	-65.0	-252.7	71.1	0.48	0.08	31.68
6,400.0	0.90	73.57	6,388.5	-65.0	-252.4	71.0	0.30	0.12	-17.72
6,425.0	0.95	78.79	6,413.5	-64.9	-252.0	70.9	0.39	0.20	20.88
6,450.0	0.83	77.25	6,438.5	-64.8	-251.6	70.8	0.49	-0.48	-6.16
6,475.0	0.84	80.06	6,463.5	-64.7	-251.2	70.7	0.17	0.04	11.24
6,500.0	0.77	71.56	6,488.5	-64.6	-250.9	70.6	0.55	-0.28	-34.00
6,525.0	0.76	67.13	6,513.5	-64.5	-250.6	70.5	0.24	-0.04	-17.72
6,550.0	0.81	72.98	6,538.5	-64.4	-250.3	70.4	0.38	0.20	23.40

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #602H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #602H
TVD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
MD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
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)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
6,575.0	0.75	70.64	6,563.5	-64.3	-249.9	70.3	0.27	-0.24	-9.36
6,600.0	0.72	74.44	6,588.5	-64.2	-249.6	70.2	0.23	-0.12	15.20
6,625.0	0.77	59.78	6,613.5	-64.1	-249.3	70.0	0.79	0.20	-58.64
6,650.0	0.76	67.62	6,638.5	-63.9	-249.0	69.9	0.42	-0.04	31.36
6,675.0	0.76	73.20	6,663.5	-63.8	-248.7	69.8	0.30	0.00	22.32
6,700.0	0.69	74.69	6,688.5	-63.7	-248.4	69.7	0.29	-0.28	5.96
6,725.0	0.72	68.66	6,713.5	-63.6	-248.1	69.6	0.32	0.12	-24.12
6,750.0	0.75	69.40	6,738.5	-63.5	-247.8	69.4	0.13	0.12	2.96
6,775.0	0.75	72.81	6,763.5	-63.4	-247.5	69.3	0.18	0.00	13.64
6,800.0	0.74	79.82	6,788.5	-63.3	-247.2	69.2	0.37	-0.04	28.04
6,825.0	0.76	69.16	6,813.5	-63.2	-246.9	69.1	0.56	0.08	-42.64
6,850.0	0.79	73.54	6,838.5	-63.1	-246.6	69.0	0.27	0.12	17.52
6,875.0	0.74	72.87	6,863.5	-63.0	-246.3	68.9	0.20	-0.20	-2.68
6,900.0	0.73	75.47	6,888.5	-62.9	-245.9	68.8	0.14	-0.04	10.40
6,925.0	0.77	74.07	6,913.5	-62.9	-245.6	68.7	0.18	0.16	-5.60
6,950.0	0.69	69.71	6,938.5	-62.8	-245.3	68.6	0.39	-0.32	-17.44
6,975.0	0.72	71.09	6,963.5	-62.7	-245.0	68.5	0.14	0.12	5.52
7,000.0	0.73	76.12	6,988.5	-62.6	-244.7	68.4	0.26	0.04	20.12
7,025.0	0.75	65.56	7,013.5	-62.5	-244.4	68.3	0.55	0.08	-42.24
7,050.0	0.80	66.34	7,038.5	-62.3	-244.1	68.2	0.20	0.20	3.12
7,075.0	0.76	58.62	7,063.5	-62.2	-243.8	68.0	0.45	-0.16	-30.88
7,100.0	0.86	49.61	7,088.5	-62.0	-243.5	67.8	0.65	0.40	-36.04
7,125.0	0.87	40.99	7,113.5	-61.7	-243.3	67.5	0.52	0.04	-34.48
7,150.0	0.93	33.83	7,138.5	-61.4	-243.0	67.2	0.51	0.24	-28.64
7,175.0	0.97	29.85	7,163.5	-61.0	-242.8	66.8	0.31	0.16	-15.92
7,200.0	0.95	29.97	7,188.5	-60.7	-242.6	66.5	0.08	-0.08	0.48
7,225.0	0.98	32.04	7,213.5	-60.3	-242.4	66.1	0.18	0.12	8.28
7,250.0	1.03	26.42	7,238.5	-59.9	-242.2	65.7	0.44	0.20	-22.48
7,275.0	0.99	34.29	7,263.5	-59.5	-242.0	65.3	0.58	-0.16	31.48
7,300.0	0.94	29.75	7,288.5	-59.2	-241.7	65.0	0.37	-0.20	-18.16
7,325.0	0.99	32.38	7,313.4	-58.8	-241.5	64.6	0.27	0.20	10.52
7,350.0	0.98	33.11	7,338.4	-58.5	-241.3	64.2	0.06	-0.04	2.92
7,375.0	1.00	34.33	7,363.4	-58.1	-241.0	63.9	0.12	0.08	4.88
7,400.0	1.03	31.95	7,388.4	-57.7	-240.8	63.5	0.21	0.12	-9.52
7,425.0	1.04	32.49	7,413.4	-57.3	-240.6	63.1	0.06	0.04	2.16
7,450.0	1.02	28.51	7,438.4	-57.0	-240.3	62.7	0.30	-0.08	-15.92
7,475.0	0.96	28.63	7,463.4	-56.6	-240.1	62.3	0.24	-0.24	0.48
7,500.0	0.99	34.43	7,488.4	-56.2	-239.9	62.0	0.41	0.12	23.20
7,525.0	0.90	33.46	7,513.4	-55.9	-239.7	61.6	0.37	-0.36	-3.88
7,550.0	0.99	33.33	7,538.4	-55.5	-239.4	61.3	0.36	0.36	-0.52
7,575.0	0.96	35.52	7,563.4	-55.2	-239.2	60.9	0.19	-0.12	8.76
7,600.0	0.94	31.54	7,588.4	-54.8	-239.0	60.6	0.28	-0.08	-15.92

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #602H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #602H

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

Grid

Minimum Curvature

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)
7,625.0	0.98	29.21	7,613.4	-54.5	-238.8	60.2	0.22	0.16	-9.32
7,650.0	0.98	32.23	7,638.4	-54.1	-238.5	59.8	0.21	0.00	12.08
7,675.0	1.00	29.08	7,663.4	-53.7	-238.3	59.4	0.23	0.08	-12.60
7,700.0	0.99	29.75	7,688.4	-53.4	-238.1	59.1	0.06	-0.04	2.68
7,725.0	0.98	27.52	7,713.4	-53.0	-237.9	58.7	0.16	-0.04	-8.92
7,750.0	0.98	23.11	7,738.4	-52.6	-237.7	58.3	0.30	0.00	-17.64
7,775.0	1.01	26.22	7,763.4	-52.2	-237.5	57.9	0.25	0.12	12.44
7,800.0	0.94	25.90	7,788.4	-51.8	-237.4	57.5	0.28	-0.28	-1.28
7,825.0	0.88	26.26	7,813.4	-51.5	-237.2	57.1	0.24	-0.24	1.44
7,850.0	0.92	15.75	7,838.4	-51.1	-237.0	56.8	0.68	0.16	-42.04
7,875.0	0.86	11.19	7,863.4	-50.7	-236.9	56.4	0.37	-0.24	-18.24
7,900.0	0.75	5.55	7,888.4	-50.4	-236.9	56.1	0.54	-0.44	-22.56
7,925.0	0.74	2.22	7,913.4	-50.0	-236.9	55.7	0.18	-0.04	-13.32
7,950.0	0.70	1.02	7,938.4	-49.7	-236.9	55.4	0.17	-0.16	-4.80
7,975.0	0.64	0.12	7,963.4	-49.4	-236.9	55.1	0.24	-0.24	-3.60
8,000.0	0.79	356.59	7,988.4	-49.1	-236.9	54.8	0.63	0.60	-14.12
8,025.0	0.72	352.17	8,013.4	-48.8	-236.9	54.5	0.36	-0.28	-17.68
8,050.0	0.70	350.07	8,038.4	-48.5	-237.0	54.2	0.13	-0.08	-8.40
8,075.0	0.73	335.48	8,063.4	-48.2	-237.0	53.9	0.74	0.12	-58.36
8,100.0	0.56	342.48	8,088.4	-47.9	-237.1	53.6	0.75	-0.68	28.00
8,125.0	0.67	332.91	8,113.4	-47.7	-237.2	53.4	0.60	0.44	-38.28
8,150.0	0.60	344.14	8,138.3	-47.4	-237.4	53.1	0.57	-0.28	44.92
8,175.0	0.61	333.34	8,163.3	-47.2	-237.4	52.9	0.46	0.04	-43.20
8,200.0	0.55	336.88	8,188.3	-47.0	-237.6	52.7	0.28	-0.24	14.16
8,225.0	0.62	338.04	8,213.3	-46.7	-237.7	52.4	0.28	0.28	4.64
8,250.0	0.60	339.83	8,238.3	-46.5	-237.7	52.2	0.11	-0.08	7.16
8,275.0	0.52	340.89	8,263.3	-46.3	-237.8	52.0	0.32	-0.32	4.24
8,300.0	0.55	344.93	8,288.3	-46.0	-237.9	51.7	0.19	0.12	16.16
8,325.0	0.50	339.34	8,313.3	-45.8	-238.0	51.5	0.29	-0.20	-22.36
8,350.0	0.54	336.90	8,338.3	-45.6	-238.1	51.3	0.18	0.16	-9.76
8,375.0	0.55	344.21	8,363.3	-45.4	-238.1	51.1	0.28	0.04	29.24
8,400.0	0.54	330.24	8,388.3	-45.2	-238.2	50.9	0.53	-0.04	-55.88
8,425.0	0.52	324.46	8,413.3	-45.0	-238.3	50.7	0.23	-0.08	-23.12
8,450.0	0.63	298.67	8,438.3	-44.8	-238.5	50.5	1.11	0.44	-103.16
8,475.0	0.70	295.33	8,463.3	-44.7	-238.8	50.4	0.32	0.28	-13.36
8,500.0	0.66	292.45	8,488.3	-44.6	-239.1	50.3	0.21	-0.16	-11.52
8,525.0	0.67	290.62	8,513.3	-44.4	-239.3	50.2	0.09	0.04	-7.32
8,550.0	0.62	290.87	8,538.3	-44.3	-239.6	50.1	0.20	-0.20	1.00
8,575.0	0.55	292.03	8,563.3	-44.3	-239.8	50.0	0.28	-0.28	4.64
8,600.0	0.47	289.70	8,588.3	-44.2	-240.0	49.9	0.33	-0.32	-9.32
8,625.0	0.49	286.22	8,613.3	-44.1	-240.2	49.9	0.14	0.08	-13.92
8,650.0	0.36	282.59	8,638.3	-44.1	-240.4	49.8	0.53	-0.52	-14.52

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #602H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #602H
TVD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
MD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
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)
8,675.0	0.30	281.19	8,663.3	-44.0	-240.6	49.8	0.24	-0.24	-5.60
8,700.0	0.31	275.37	8,688.3	-44.0	-240.7	49.8	0.13	0.04	-23.28
8,725.0	0.22	278.03	8,713.3	-44.0	-240.8	49.8	0.36	-0.36	10.64
8,750.0	0.32	263.40	8,738.3	-44.0	-240.9	49.8	0.48	0.40	-58.52
8,775.0	0.26	274.13	8,763.3	-44.0	-241.0	49.8	0.32	-0.24	42.92
8,800.0	0.23	272.66	8,788.3	-44.0	-241.2	49.8	0.12	-0.12	-5.88
8,825.0	0.19	280.90	8,813.3	-44.0	-241.2	49.8	0.20	-0.16	32.96
8,850.0	0.24	276.62	8,838.3	-44.0	-241.3	49.8	0.21	0.20	-17.12
8,875.0	0.14	271.56	8,863.3	-44.0	-241.4	49.8	0.41	-0.40	-20.24
8,900.0	0.10	262.17	8,888.3	-44.0	-241.5	49.8	0.18	-0.16	-37.56
8,925.0	0.12	281.46	8,913.3	-44.0	-241.5	49.8	0.17	0.08	77.16
8,950.0	0.07	226.34	8,938.3	-44.0	-241.6	49.8	0.39	-0.20	-220.48
8,975.0	0.08	195.86	8,963.3	-44.0	-241.6	49.8	0.16	0.04	-121.92
9,000.0	0.13	180.27	8,988.3	-44.0	-241.6	49.8	0.23	0.20	-62.36
9,025.0	0.10	207.09	9,013.3	-44.1	-241.6	49.9	0.24	-0.12	107.28
9,050.0	0.12	177.00	9,038.3	-44.1	-241.6	49.9	0.24	0.08	-120.36
9,075.0	0.18	153.34	9,063.3	-44.2	-241.6	50.0	0.34	0.24	-94.64
9,100.0	0.26	171.49	9,088.3	-44.3	-241.6	50.1	0.42	0.32	72.60
9,125.0	0.55	172.23	9,113.3	-44.5	-241.5	50.3	1.16	1.16	2.96
9,150.0	0.57	184.11	9,138.3	-44.7	-241.5	50.5	0.47	0.08	47.52
9,175.0	0.70	173.23	9,163.3	-45.0	-241.5	50.8	0.71	0.52	-43.52
9,200.0	0.62	174.81	9,188.3	-45.3	-241.5	51.1	0.33	-0.32	6.32
9,225.0	0.82	183.72	9,213.3	-45.6	-241.5	51.4	0.91	0.80	35.64
9,250.0	0.89	174.93	9,238.3	-46.0	-241.5	51.7	0.59	0.28	-35.16
9,275.0	0.81	184.37	9,263.3	-46.3	-241.5	52.1	0.64	-0.32	37.76
9,300.0	1.02	180.90	9,288.3	-46.7	-241.5	52.5	0.87	0.84	-13.88
9,325.0	1.07	177.71	9,313.3	-47.2	-241.5	53.0	0.31	0.20	-12.76
9,350.0	1.34	183.96	9,338.3	-47.7	-241.5	53.5	1.20	1.08	25.00
9,375.0	1.28	181.73	9,363.3	-48.3	-241.5	54.1	0.31	-0.24	-8.92
9,400.0	1.44	186.38	9,388.3	-48.9	-241.6	54.7	0.78	0.64	18.60
9,425.0	1.49	183.01	9,413.3	-49.5	-241.6	55.3	0.40	0.20	-13.48
9,450.0	1.59	182.45	9,438.3	-50.2	-241.6	56.0	0.40	0.40	-2.24
9,475.0	1.61	187.23	9,463.3	-50.9	-241.7	56.7	0.54	0.08	19.12
9,500.0	1.37	186.47	9,488.2	-51.5	-241.8	57.3	0.96	-0.96	-3.04
9,525.0	0.97	193.83	9,513.2	-52.0	-241.9	57.8	1.71	-1.60	29.44
9,550.0	0.77	196.65	9,538.2	-52.4	-242.0	58.2	0.82	-0.80	11.28
9,575.0	0.85	204.40	9,563.2	-52.7	-242.1	58.5	0.54	0.32	31.00
9,600.0	0.81	207.91	9,588.2	-53.0	-242.3	58.8	0.26	-0.16	14.04
9,625.0	0.83	205.52	9,613.2	-53.4	-242.4	59.2	0.16	0.08	-9.56
9,650.0	0.84	208.52	9,638.2	-53.7	-242.6	59.5	0.18	0.04	12.00
9,675.0	0.92	207.08	9,663.2	-54.0	-242.8	59.8	0.33	0.32	-5.76
9,700.0	0.86	211.07	9,688.2	-54.4	-242.9	60.2	0.34	-0.24	15.96

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #602H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #602H

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

Grid

Minimum Curvature

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)
9,725.0	0.95	221.55	9,713.2	-54.7	-243.2	60.5	0.75	0.36	41.92
9,750.0	0.95	233.49	9,738.2	-55.0	-243.5	60.8	0.79	0.00	47.76
9,775.0	1.00	237.46	9,763.2	-55.2	-243.8	61.0	0.34	0.20	15.88
9,800.0	1.05	244.45	9,788.2	-55.4	-244.2	61.3	0.54	0.20	27.96
9,825.0	1.22	244.71	9,813.2	-55.6	-244.7	61.5	0.68	0.68	1.04
9,850.0	1.18	246.95	9,838.2	-55.8	-245.2	61.7	0.25	-0.16	8.96
9,875.0	1.18	243.55	9,863.2	-56.1	-245.6	61.9	0.28	0.00	-13.60
9,900.0	1.25	243.18	9,888.2	-56.3	-246.1	62.2	0.28	0.28	-1.48
9,925.0	1.28	243.10	9,913.2	-56.5	-246.6	62.5	0.12	0.12	-0.32
9,950.0	1.27	247.81	9,938.2	-56.8	-247.1	62.7	0.42	-0.04	-18.84
9,975.0	1.37	235.36	9,963.2	-57.0	-247.6	63.0	1.21	0.40	-49.80
10,000.0	1.26	235.54	9,988.2	-57.4	-248.1	63.3	0.44	-0.44	0.72
10,025.0	1.32	236.10	10,013.2	-57.7	-248.5	63.6	0.25	0.24	2.24
10,050.0	1.31	235.38	10,038.1	-58.0	-249.0	64.0	0.08	-0.04	-2.88
10,075.0	1.34	232.56	10,063.1	-58.4	-249.5	64.3	0.29	0.12	-11.28
10,100.0	1.25	236.26	10,088.1	-58.7	-249.9	64.7	0.49	-0.36	14.80
10,125.0	1.23	234.27	10,113.1	-59.0	-250.4	65.0	0.19	-0.08	-7.96
10,150.0	0.99	240.84	10,138.1	-59.3	-250.8	65.3	1.09	-0.96	26.28
10,175.0	1.03	232.98	10,163.1	-59.5	-251.2	65.5	0.58	0.16	-31.44
10,200.0	0.87	228.12	10,188.1	-59.8	-251.5	65.8	0.72	-0.64	-19.44
10,225.0	0.72	227.65	10,213.1	-60.0	-251.7	66.0	0.60	-0.60	-1.88
10,250.0	0.51	204.57	10,238.1	-60.2	-251.9	66.2	1.28	-0.84	-92.32
10,275.0	0.40	185.68	10,263.1	-60.4	-251.9	66.4	0.74	-0.44	-75.56
10,300.0	0.42	159.26	10,288.1	-60.6	-251.9	66.6	0.75	0.08	-105.68
10,325.0	0.47	154.07	10,313.1	-60.7	-251.8	66.8	0.26	0.20	-20.76
10,350.0	0.52	126.74	10,338.1	-60.9	-251.7	66.9	0.96	0.20	-109.32
10,375.0	0.72	121.75	10,363.1	-61.0	-251.5	67.1	0.83	0.80	-19.96
10,400.0	0.90	107.28	10,388.1	-61.2	-251.2	67.2	1.08	0.72	-57.88
10,425.0	0.96	104.25	10,413.1	-61.3	-250.8	67.3	0.31	0.24	-12.12
10,450.0	1.23	99.47	10,438.1	-61.4	-250.3	67.4	1.14	1.08	-19.12
10,475.0	1.45	101.29	10,463.1	-61.5	-249.7	67.5	0.90	0.88	7.28
10,500.0	1.51	90.70	10,488.1	-61.6	-249.1	67.5	1.12	0.24	-42.36
10,525.0	1.68	90.78	10,513.1	-61.6	-248.4	67.5	0.68	0.68	0.32
10,550.0	1.78	86.78	10,538.1	-61.6	-247.6	67.5	0.63	0.40	-16.00
10,575.0	1.82	83.43	10,563.1	-61.5	-246.9	67.4	0.45	0.16	-13.40
10,600.0	1.83	75.96	10,588.0	-61.3	-246.1	67.2	0.95	0.04	-29.88
10,625.0	1.78	62.16	10,613.0	-61.1	-245.3	66.9	1.75	-0.20	-55.20
10,650.0	1.76	62.17	10,638.0	-60.7	-244.7	66.6	0.08	-0.08	0.04
10,675.0	1.42	45.00	10,663.0	-60.3	-244.1	66.2	2.33	-1.36	-68.68
10,700.0	1.37	25.70	10,688.0	-59.8	-243.8	65.7	1.88	-0.20	-77.20
10,725.0	1.29	24.31	10,713.0	-59.3	-243.5	65.1	0.35	-0.32	-5.56
10,750.0	1.38	25.18	10,738.0	-58.8	-243.3	64.6	0.37	0.36	3.48

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #602H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #602H
TVD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
MD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
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)
10,775.0	1.48	25.51	10,763.0	-58.2	-243.0	64.0	0.40	0.40	1.32
10,800.0	1.75	33.75	10,788.0	-57.6	-242.6	63.4	1.42	1.08	32.96
10,825.0	2.15	34.56	10,813.0	-56.9	-242.2	62.7	1.60	1.60	3.24
10,850.0	2.29	37.26	10,837.9	-56.1	-241.6	61.9	0.70	0.56	10.80
10,875.0	2.54	37.88	10,862.9	-55.3	-241.0	61.0	1.01	1.00	2.48
10,900.0	2.57	36.74	10,887.9	-54.4	-240.3	60.1	0.24	0.12	-4.56
10,925.0	2.63	40.10	10,912.9	-53.5	-239.6	59.2	0.66	0.24	13.44
10,950.0	2.82	35.19	10,937.8	-52.6	-238.9	58.3	1.20	0.76	-19.64
10,975.0	2.90	32.74	10,962.8	-51.5	-238.2	57.2	0.58	0.32	-9.80
11,000.0	2.93	34.84	10,987.8	-50.5	-237.5	56.2	0.44	0.12	8.40
11,025.0	2.28	35.79	11,012.7	-49.5	-236.8	55.2	2.61	-2.60	3.80
11,050.0	1.09	30.53	11,037.7	-48.9	-236.4	54.6	4.80	-4.76	-21.04
11,075.0	0.88	13.32	11,062.7	-48.5	-236.2	54.2	1.44	-0.84	-68.84
11,100.0	0.76	15.33	11,087.7	-48.2	-236.1	53.8	0.49	-0.48	8.04
11,125.0	0.73	352.02	11,112.7	-47.9	-236.1	53.5	1.21	-0.12	-93.24
11,150.0	0.82	327.93	11,137.7	-47.6	-236.2	53.2	1.34	0.36	-96.36
11,175.0	1.18	304.39	11,162.7	-47.3	-236.5	52.9	2.16	1.44	-94.16
11,200.0	1.69	296.51	11,187.7	-47.0	-237.1	52.6	2.18	2.04	-31.52
11,225.0	2.30	289.38	11,212.7	-46.6	-237.9	52.3	2.63	2.44	-28.52
11,250.0	2.87	293.39	11,237.7	-46.2	-238.9	51.9	2.39	2.28	16.04
11,275.0	3.23	291.58	11,262.6	-45.7	-240.2	51.5	1.49	1.44	-7.24
11,300.0	3.59	293.06	11,287.6	-45.1	-241.5	50.9	1.48	1.44	5.92
11,325.0	3.40	291.77	11,312.5	-44.6	-242.9	50.4	0.82	-0.76	-5.16
11,330.0	3.42	291.60	11,317.5	-44.4	-243.2	50.3	0.45	0.40	-3.40
11,478.0	2.23	249.54	11,465.4	-43.8	-250.0	49.8	1.56	-0.80	-28.42
11,486.0	2.17	249.60	11,473.4	-43.9	-250.3	49.9	0.75	-0.75	0.75
11,517.0	2.52	242.00	11,504.3	-44.5	-251.5	50.5	1.51	1.13	-24.52
11,549.0	4.74	206.16	11,536.3	-46.0	-252.7	52.0	9.60	6.94	-112.00
11,580.0	9.77	192.84	11,567.0	-49.7	-253.8	55.8	17.00	16.23	-42.97
11,612.0	15.72	188.93	11,598.2	-56.6	-255.1	62.7	18.78	18.59	-12.22
11,644.0	18.85	185.42	11,628.8	-66.1	-256.3	72.2	10.31	9.78	-10.97
11,676.0	20.27	182.26	11,658.9	-76.7	-257.0	82.9	5.53	4.44	-9.88
11,707.0	21.50	179.45	11,687.9	-87.8	-257.1	93.9	5.12	3.97	-9.06
11,739.0	23.78	176.48	11,717.4	-100.1	-256.7	106.2	7.97	7.13	-9.28
11,770.0	26.97	176.16	11,745.4	-113.4	-255.8	119.5	10.30	10.29	-1.03
11,801.0	28.70	176.99	11,772.8	-127.8	-254.9	133.9	5.72	5.58	2.68
11,833.0	29.98	178.10	11,800.7	-143.5	-254.3	149.5	4.35	4.00	3.47
11,865.0	31.90	180.64	11,828.2	-159.9	-254.1	166.0	7.26	6.00	7.94
11,896.0	34.94	181.96	11,854.0	-177.0	-254.5	183.0	10.08	9.81	4.26
11,928.0	38.04	180.85	11,879.8	-196.0	-255.0	202.1	9.90	9.69	-3.47
11,959.0	41.09	180.52	11,903.7	-215.7	-255.2	221.8	9.86	9.84	-1.06
11,991.0	44.39	180.71	11,927.2	-237.5	-255.4	243.5	10.32	10.31	0.59

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #602H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #602H
TVD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
MD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
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)
12,023.0	47.29	179.86	11,949.5	-260.4	-255.5	266.5	9.26	9.06	-2.66
12,054.0	49.29	178.58	11,970.1	-283.5	-255.2	289.6	7.15	6.45	-4.13
12,085.0	51.02	177.05	11,989.9	-307.3	-254.3	313.4	6.75	5.58	-4.94
12,117.0	52.76	178.08	12,009.7	-332.5	-253.2	338.5	6.00	5.44	3.22
12,149.0	54.65	179.49	12,028.6	-358.3	-252.7	364.2	6.89	5.91	4.41
12,180.0	56.99	180.28	12,046.0	-383.9	-252.7	389.9	7.84	7.55	2.55
12,212.0	59.47	180.33	12,062.9	-411.1	-252.8	417.1	7.75	7.75	0.16
12,244.0	61.44	179.52	12,078.7	-439.0	-252.8	444.9	6.54	6.16	-2.53
12,276.0	64.53	178.67	12,093.2	-467.5	-252.3	473.4	9.94	9.66	-2.66
12,307.0	67.90	178.86	12,105.7	-495.8	-251.7	501.7	10.89	10.87	0.61
12,339.0	70.39	178.89	12,117.1	-525.7	-251.1	531.6	7.78	7.78	0.09
12,370.0	72.88	178.12	12,126.9	-555.1	-250.3	561.0	8.37	8.03	-2.48
12,401.0	75.12	178.16	12,135.4	-584.9	-249.4	590.7	7.23	7.23	0.13
12,433.0	77.11	177.94	12,143.1	-615.9	-248.3	621.7	6.25	6.22	-0.69
12,458.0	78.75	177.67	12,148.3	-640.4	-247.4	646.1	6.64	6.56	-1.08
12,480.0	81.36	177.41	12,152.1	-662.0	-246.4	667.7	11.92	11.86	-1.18
12,528.0	86.36	178.11	12,157.2	-709.7	-244.6	715.4	10.52	10.42	1.46
12,568.0	87.30	178.00	12,159.5	-749.6	-243.2	755.2	2.37	2.35	-0.28
12,663.0	91.02	177.23	12,160.9	-844.5	-239.3	850.0	4.00	3.92	-0.81
12,758.0	93.46	176.87	12,157.1	-939.3	-234.4	944.6	2.60	2.57	-0.38
12,852.0	93.72	176.79	12,151.3	-1,033.0	-229.2	1,038.2	0.29	0.28	-0.09
12,946.0	89.10	176.33	12,148.9	-1,126.7	-223.6	1,131.8	4.94	-4.91	-0.49
13,041.0	94.48	179.36	12,146.0	-1,221.6	-220.0	1,226.5	6.50	5.66	3.19
13,136.0	89.19	180.35	12,142.9	-1,316.5	-219.8	1,321.4	5.66	-5.57	1.04
13,231.0	88.05	181.42	12,145.2	-1,411.5	-221.2	1,416.4	1.65	-1.20	1.13
13,325.0	87.90	182.20	12,148.5	-1,505.3	-224.2	1,510.3	0.84	-0.16	0.83
13,421.0	88.76	183.35	12,151.3	-1,601.2	-228.8	1,606.2	1.50	0.90	1.20
13,516.0	89.42	182.44	12,152.8	-1,696.1	-233.6	1,701.2	1.18	0.69	-0.96
13,611.0	89.78	182.64	12,153.5	-1,791.0	-237.8	1,796.2	0.43	0.38	0.21
13,707.0	88.94	182.19	12,154.6	-1,886.9	-241.9	1,892.1	0.99	-0.88	-0.47
13,802.0	87.16	181.28	12,157.8	-1,981.8	-244.8	1,987.1	2.10	-1.87	-0.96
13,897.0	88.41	179.94	12,161.5	-2,076.7	-245.8	2,082.0	1.93	1.32	-1.41
13,993.0	89.44	179.22	12,163.3	-2,172.7	-245.1	2,177.9	1.31	1.07	-0.75
14,088.0	89.53	178.49	12,164.1	-2,267.6	-243.2	2,272.8	0.77	0.09	-0.77
14,183.0	85.43	176.92	12,168.3	-2,362.4	-239.4	2,367.5	4.62	-4.32	-1.65
14,278.0	85.03	177.20	12,176.2	-2,457.0	-234.5	2,461.9	0.51	-0.42	0.29
14,372.0	85.66	177.09	12,183.8	-2,550.6	-229.9	2,555.4	0.68	0.67	-0.12
14,467.0	85.88	176.73	12,190.9	-2,645.2	-224.7	2,649.8	0.44	0.23	-0.38
14,561.0	93.34	179.17	12,191.5	-2,739.0	-221.4	2,743.6	8.35	7.94	2.60
14,657.0	88.85	178.73	12,189.7	-2,835.0	-219.6	2,839.4	4.70	-4.68	-0.46
14,751.0	89.65	179.14	12,190.9	-2,928.9	-217.9	2,933.3	0.96	0.85	0.44
14,846.0	92.23	186.21	12,189.3	-3,023.8	-222.3	3,028.2	7.92	2.72	7.44

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #602H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #602H

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

RKB=3315.6+25 @ 3340.6usft (PRECISION 595)

Grid

Minimum Curvature

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)
14,941.0	88.21	183.99	12,189.0	-3,118.4	-230.7	3,123.0	4.83	-4.23	-2.34
15,036.0	92.12	184.24	12,188.7	-3,213.1	-237.6	3,217.9	4.12	4.12	0.26
15,131.0	87.02	181.70	12,189.4	-3,307.9	-242.5	3,312.8	6.00	-5.37	-2.67
15,225.0	86.79	180.00	12,194.5	-3,401.8	-243.9	3,406.7	1.82	-0.24	-1.81
15,320.0	87.13	178.35	12,199.5	-3,496.6	-242.5	3,501.4	1.77	0.36	-1.74
15,415.0	86.31	176.56	12,205.0	-3,591.4	-238.3	3,596.1	2.07	-0.86	-1.88
15,510.0	86.73	177.19	12,210.7	-3,686.1	-233.1	3,690.6	0.80	0.44	0.66
15,605.0	86.71	177.34	12,216.2	-3,780.8	-228.6	3,785.2	0.16	-0.02	0.16
15,699.0	87.11	177.99	12,221.2	-3,874.6	-224.8	3,878.9	0.81	0.43	0.69
15,794.0	87.54	178.69	12,225.7	-3,969.4	-222.0	3,973.6	0.86	0.45	0.74
15,889.0	88.41	178.47	12,229.0	-4,064.3	-219.7	4,068.5	0.94	0.92	-0.23
15,983.0	85.81	179.25	12,233.8	-4,158.2	-217.8	4,162.2	2.89	-2.77	0.83
16,078.0	86.29	180.19	12,240.3	-4,253.0	-217.4	4,257.0	1.11	0.51	0.99
16,172.0	86.06	180.13	12,246.6	-4,346.8	-217.6	4,350.7	0.25	-0.24	-0.06
16,267.0	89.36	180.80	12,250.4	-4,441.7	-218.4	4,445.6	3.54	3.47	0.71
16,362.0	90.05	182.83	12,250.9	-4,536.6	-221.4	4,540.6	2.26	0.73	2.14
16,457.0	89.71	181.67	12,251.1	-4,631.5	-225.1	4,635.6	1.27	-0.36	-1.22
16,553.0	88.11	178.32	12,252.9	-4,727.5	-225.1	4,731.6	3.87	-1.67	-3.49
16,648.0	87.57	178.03	12,256.5	-4,822.4	-222.1	4,826.3	0.65	-0.57	-0.31
16,743.0	87.87	178.78	12,260.2	-4,917.3	-219.4	4,921.1	0.85	0.32	0.79
16,838.0	87.30	179.01	12,264.2	-5,012.2	-217.6	5,016.0	0.65	-0.60	0.24
16,933.0	87.06	178.94	12,268.9	-5,107.0	-215.9	5,110.8	0.26	-0.25	-0.07
17,028.0	86.83	178.73	12,274.0	-5,201.9	-214.0	5,205.5	0.33	-0.24	-0.22
17,122.0	87.40	177.58	12,278.7	-5,295.7	-211.0	5,299.3	1.36	0.61	-1.22
17,217.0	89.76	177.91	12,281.1	-5,390.6	-207.2	5,394.0	2.51	2.48	0.35
17,312.0	90.87	178.52	12,280.5	-5,485.6	-204.3	5,488.9	1.33	1.17	0.64
17,407.0	90.69	178.03	12,279.2	-5,580.5	-201.4	5,583.7	0.55	-0.19	-0.52
17,502.0	90.08	179.94	12,278.6	-5,675.5	-199.7	5,678.6	2.11	-0.64	2.01
17,597.0	90.50	180.79	12,278.1	-5,770.5	-200.3	5,773.6	1.00	0.44	0.89
17,691.0	86.93	179.73	12,280.2	-5,864.4	-200.8	5,867.6	3.96	-3.80	-1.13
17,786.0	87.54	179.62	12,284.8	-5,959.3	-200.2	5,962.4	0.65	0.64	-0.12
17,882.0	87.25	179.06	12,289.2	-6,055.2	-199.1	6,058.3	0.66	-0.30	-0.58
17,977.0	88.25	179.98	12,292.9	-6,150.1	-198.3	6,153.1	1.43	1.05	0.97
18,073.0	86.57	178.20	12,297.3	-6,246.0	-196.8	6,249.0	2.55	-1.75	-1.85
18,168.0	86.25	177.76	12,303.2	-6,340.8	-193.5	6,343.6	0.57	-0.34	-0.46
18,263.0	86.65	177.79	12,309.1	-6,435.5	-189.8	6,438.2	0.42	0.42	0.03
18,358.0	87.43	179.08	12,314.0	-6,530.4	-187.2	6,533.0	1.59	0.82	1.36
18,453.0	87.62	179.36	12,318.1	-6,625.3	-185.9	6,627.8	0.36	0.20	0.29
18,548.0	89.22	179.38	12,320.7	-6,720.2	-184.9	6,722.7	1.68	1.68	0.02
18,643.0	89.62	179.53	12,321.7	-6,815.2	-184.0	6,817.7	0.45	0.42	0.16
18,738.0	90.13	178.66	12,321.9	-6,910.2	-182.4	6,912.6	1.06	0.54	-0.92
18,833.0	88.08	178.68	12,323.4	-7,005.2	-180.2	7,007.5	2.16	-2.16	0.02

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #602H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #602H
TVD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
MD Reference: RKB=3315.6+25 @ 3340.6usft (PRECISION 595)
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)
18,928.0	88.47	181.41	12,326.2	-7,100.1	-180.3	7,102.4	2.90	0.41	2.87
19,023.0	88.76	182.26	12,328.5	-7,195.0	-183.4	7,197.4	0.95	0.31	0.89
19,118.0	89.30	182.53	12,330.1	-7,289.9	-187.3	7,292.3	0.64	0.57	0.28
19,213.0	89.41	180.18	12,331.2	-7,384.9	-189.6	7,387.3	2.48	0.12	-2.47
19,307.0	89.87	179.65	12,331.8	-7,478.9	-189.4	7,481.3	0.75	0.49	-0.56
19,372.0	90.32	180.12	12,331.7	-7,543.9	-189.3	7,546.3	1.00	0.69	0.72
19,402.0	90.53	180.33	12,331.5	-7,573.9	-189.4	7,576.2	0.99	0.70	0.70
19,438.0	90.65	180.65	12,331.1	-7,609.9	-189.7	7,612.2	0.95	0.33	0.89
19,497.0	90.65	180.65	12,330.4	-7,668.9	-190.4	7,671.2	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,053.0	11,969.4	-282.8	-255.2	FTP @ 12053'MD
19,372.0	12,331.7	-7,543.9	-189.3	LTP @ 19372' MD

Checked By: _____ Approved By: _____ Date: _____