

NORTHERN DELAWARE BASIN

EDDY COUNTY, NM

ATLAS

ROAD RUNNER FED COM #23H

OWB

Design: ACTUAL WELLPATH

Standard Survey Report

28 November, 2018

AB 8/12/19

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

Project	EDDY 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	ATLAS			
Site Position:		Northing:	371,480.80 usft	Latitude: 32° 1' 15.933 N
From: Map		Easting:	573,599.60 usft	Longitude: 104° 5' 45.086 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.13 °

Well	ROAD RUNNER FED COM #23H			
Well Position	+N/-S	0.0 usft	Northing:	392,649.29 usft
	+E/-W	0.0 usft	Easting:	526,540.90 usft
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft
			Ground Level:	3,350.6 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/16/2018	7.10	59.80	47,635.24114084

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	359.56

Survey Program	Date	11/28/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	8,198.2	GYRO (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
8,349.0	18,991.0	MWD-CURVE/LAT (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	0.64	162.95	100.0	-0.5	0.2	-0.5	0.64	0.64	0.00
125.0	0.60	170.31	125.0	-0.8	0.2	-0.8	0.36	-0.16	29.44
150.0	0.91	171.55	150.0	-1.1	0.3	-1.1	1.24	1.24	4.96
175.0	1.01	172.35	175.0	-1.5	0.3	-1.5	0.40	0.40	3.20
200.0	0.95	184.80	200.0	-2.0	0.3	-2.0	0.88	-0.24	49.80
225.0	1.01	182.23	225.0	-2.4	0.3	-2.4	0.30	0.24	-10.28
250.0	1.17	182.52	250.0	-2.9	0.3	-2.9	0.64	0.64	1.16

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)	
275.0	1.22	181.78	275.0	-3.4	0.3	-3.4	0.21	0.20	-2.96	
300.0	1.21	176.24	300.0	-3.9	0.3	-3.9	0.47	-0.04	-22.16	
325.0	1.24	178.30	325.0	-4.4	0.3	-4.4	0.21	0.12	8.24	
350.0	1.12	173.90	350.0	-5.0	0.4	-5.0	0.60	-0.48	-17.60	
375.0	1.12	177.18	375.0	-5.4	0.4	-5.5	0.26	0.00	13.12	
400.0	1.04	176.24	399.9	-5.9	0.4	-5.9	0.33	-0.32	-3.76	
425.0	0.94	174.57	424.9	-6.3	0.5	-6.4	0.42	-0.40	-6.68	
450.0	1.08	175.30	449.9	-6.8	0.5	-6.8	0.56	0.56	2.92	
475.0	0.96	182.11	474.9	-7.2	0.5	-7.2	0.68	-0.48	27.24	
500.0	0.90	182.69	499.9	-7.6	0.5	-7.6	0.24	-0.24	2.32	
525.0	0.77	187.31	524.9	-8.0	0.5	-8.0	0.59	-0.52	18.48	
550.0	0.73	190.92	549.9	-8.3	0.4	-8.3	0.25	-0.16	14.44	
575.0	0.68	190.57	574.9	-8.6	0.3	-8.6	0.20	-0.20	-1.40	
600.0	0.71	195.45	599.9	-8.9	0.3	-8.9	0.27	0.12	19.52	
625.0	0.56	180.81	624.9	-9.2	0.2	-9.2	0.88	-0.60	-58.56	
650.0	0.43	172.12	649.9	-9.4	0.2	-9.4	0.60	-0.52	-34.76	
675.0	0.41	171.12	674.9	-9.6	0.3	-9.6	0.09	-0.08	-4.00	
700.0	0.33	175.72	699.9	-9.7	0.3	-9.8	0.34	-0.32	18.40	
725.0	0.29	167.82	724.9	-9.9	0.3	-9.9	0.23	-0.16	-31.60	
750.0	0.30	159.08	749.9	-10.0	0.3	-10.0	0.18	0.04	-34.96	
775.0	0.28	158.04	774.9	-10.1	0.4	-10.1	0.08	-0.08	-4.16	
800.0	0.28	165.62	799.9	-10.2	0.4	-10.2	0.15	0.00	30.32	
825.0	0.19	153.39	824.9	-10.3	0.5	-10.3	0.41	-0.36	-48.92	
850.0	0.16	182.89	849.9	-10.4	0.5	-10.4	0.37	-0.12	118.00	
875.0	0.15	166.27	874.9	-10.5	0.5	-10.5	0.18	-0.04	-66.48	
900.0	0.12	128.22	899.9	-10.5	0.5	-10.5	0.37	-0.12	-152.20	
925.0	0.04	126.14	924.9	-10.5	0.5	-10.5	0.32	-0.32	-8.32	
950.0	0.05	80.83	949.9	-10.5	0.6	-10.6	0.14	0.04	-181.24	
975.0	0.11	76.93	974.9	-10.5	0.6	-10.5	0.24	0.24	-15.60	
1,000.0	0.11	153.06	999.9	-10.6	0.6	-10.6	0.54	0.00	304.52	
1,025.0	0.13	224.54	1,024.9	-10.6	0.6	-10.6	0.56	0.08	285.92	
1,050.0	0.11	171.00	1,049.9	-10.6	0.6	-10.6	0.44	-0.08	-214.16	
1,075.0	0.13	227.82	1,074.9	-10.7	0.6	-10.7	0.46	0.08	227.28	
1,100.0	0.10	154.63	1,099.9	-10.7	0.6	-10.7	0.56	-0.12	-292.76	
1,125.0	0.08	141.00	1,124.9	-10.8	0.6	-10.8	0.12	-0.08	-54.52	
1,150.0	0.10	225.59	1,149.9	-10.8	0.6	-10.8	0.49	0.08	338.36	
1,175.0	0.14	195.80	1,174.9	-10.8	0.6	-10.8	0.29	0.16	-119.16	
1,200.0	0.03	137.08	1,199.9	-10.9	0.6	-10.9	0.51	-0.44	-234.88	
1,225.0	0.06	145.29	1,224.9	-10.9	0.6	-10.9	0.12	0.12	32.84	
1,250.0	0.16	98.57	1,249.9	-10.9	0.6	-10.9	0.51	0.40	-186.88	
1,275.0	0.41	99.68	1,274.9	-10.9	0.7	-10.9	1.00	1.00	4.44	
1,300.0	0.38	100.17	1,299.9	-10.9	0.9	-11.0	0.12	-0.12	1.96	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)	
1,325.0	0.55	94.24	1,324.9	-11.0	1.1	-11.0	0.71	0.68	-23.72	
1,350.0	0.66	86.24	1,349.9	-11.0	1.4	-11.0	0.55	0.44	-32.00	
1,375.0	0.73	91.05	1,374.9	-11.0	1.7	-11.0	0.36	0.28	19.24	
1,400.0	0.68	86.87	1,399.9	-11.0	2.0	-11.0	0.29	-0.20	-16.72	
1,425.0	0.70	86.96	1,424.9	-10.9	2.3	-11.0	0.08	0.08	0.36	
1,450.0	0.81	84.94	1,449.9	-10.9	2.6	-10.9	0.45	0.44	-8.08	
1,475.0	0.77	87.18	1,474.9	-10.9	3.0	-10.9	0.20	-0.16	8.96	
1,500.0	0.73	81.00	1,499.9	-10.9	3.3	-10.9	0.36	-0.16	-24.72	
1,525.0	0.70	80.50	1,524.9	-10.8	3.6	-10.8	0.12	-0.12	-2.00	
1,550.0	0.77	85.03	1,549.9	-10.8	3.9	-10.8	0.36	0.28	18.12	
1,575.0	0.83	87.13	1,574.9	-10.7	4.3	-10.8	0.27	0.24	8.40	
1,600.0	0.81	89.10	1,599.9	-10.7	4.6	-10.8	0.14	-0.08	7.88	
1,625.0	0.84	94.44	1,624.9	-10.7	5.0	-10.8	0.33	0.12	21.36	
1,650.0	0.82	90.58	1,649.9	-10.8	5.3	-10.8	0.24	-0.08	-15.44	
1,675.0	0.78	91.77	1,674.9	-10.8	5.7	-10.8	0.17	-0.16	4.76	
1,700.0	0.74	95.15	1,699.9	-10.8	6.0	-10.8	0.24	-0.16	13.52	
1,725.0	0.76	97.32	1,724.9	-10.8	6.3	-10.9	0.14	0.08	8.68	
1,750.0	0.79	101.67	1,749.9	-10.9	6.7	-10.9	0.26	0.12	17.40	
1,775.0	0.74	97.86	1,774.9	-10.9	7.0	-11.0	0.29	-0.20	-15.24	
1,800.0	0.68	89.80	1,799.9	-11.0	7.3	-11.0	0.47	-0.24	-32.24	
1,825.0	0.62	91.81	1,824.9	-11.0	7.6	-11.0	0.26	-0.24	8.04	
1,850.0	0.52	89.38	1,849.9	-11.0	7.8	-11.0	0.41	-0.40	-9.72	
1,875.0	0.44	88.98	1,874.9	-11.0	8.1	-11.0	0.32	-0.32	-1.60	
1,900.0	0.49	85.12	1,899.9	-11.0	8.3	-11.0	0.24	0.20	-15.44	
1,925.0	0.45	98.99	1,924.9	-11.0	8.5	-11.0	0.48	-0.16	55.48	
1,950.0	0.23	93.21	1,949.9	-11.0	8.6	-11.0	0.89	-0.88	-23.12	
1,975.0	0.39	98.19	1,974.9	-11.0	8.7	-11.1	0.65	0.64	19.92	
2,000.0	0.29	100.99	1,999.9	-11.0	8.9	-11.1	0.41	-0.40	11.20	
2,025.0	0.29	115.54	2,024.9	-11.1	9.0	-11.1	0.29	0.00	58.20	
2,050.0	0.34	123.38	2,049.9	-11.1	9.1	-11.2	0.26	0.20	31.36	
2,075.0	0.37	126.53	2,074.9	-11.2	9.2	-11.3	0.14	0.12	12.60	
2,100.0	0.31	135.40	2,099.9	-11.3	9.4	-11.4	0.32	-0.24	35.48	
2,125.0	0.30	123.16	2,124.9	-11.4	9.5	-11.5	0.26	-0.04	-48.96	
2,150.0	0.32	129.64	2,149.9	-11.5	9.6	-11.5	0.16	0.08	25.92	
2,175.0	0.28	149.10	2,174.9	-11.6	9.7	-11.6	0.44	-0.16	77.84	
2,200.0	0.19	154.49	2,199.9	-11.7	9.7	-11.7	0.37	-0.36	21.56	
2,225.0	0.20	166.11	2,224.9	-11.7	9.7	-11.8	0.16	0.04	46.48	
2,250.0	0.08	95.46	2,249.9	-11.8	9.8	-11.9	0.76	-0.48	-282.60	
2,275.0	0.22	132.88	2,274.9	-11.8	9.8	-11.9	0.66	0.56	149.68	
2,300.0	0.24	93.24	2,299.9	-11.9	9.9	-11.9	0.63	0.08	-158.56	
2,325.0	0.29	97.63	2,324.9	-11.9	10.0	-11.9	0.22	0.20	17.56	
2,350.0	0.14	119.10	2,349.9	-11.9	10.1	-12.0	0.67	-0.60	85.88	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)	
2,375.0	0.28	157.95	2,374.9	-12.0	10.2	-12.0	0.77	0.56	155.40	
2,400.0	0.11	182.84	2,399.9	-12.0	10.2	-12.1	0.74	-0.68	99.56	
2,425.0	0.15	179.57	2,424.9	-12.1	10.2	-12.2	0.16	0.16	-13.08	
2,450.0	0.16	128.00	2,449.9	-12.1	10.2	-12.2	0.54	0.04	-206.28	
2,475.0	0.10	125.43	2,474.9	-12.2	10.3	-12.3	0.24	-0.24	-10.28	
2,500.0	0.05	148.33	2,499.9	-12.2	10.3	-12.3	0.23	-0.20	91.60	
2,525.0	0.19	138.42	2,524.9	-12.2	10.3	-12.3	0.56	0.56	-39.64	
2,550.0	0.19	104.42	2,549.9	-12.3	10.4	-12.4	0.44	0.00	-136.00	
2,575.0	0.30	118.01	2,574.9	-12.3	10.5	-12.4	0.49	0.44	54.36	
2,600.0	0.35	143.74	2,599.9	-12.4	10.6	-12.5	0.61	0.20	102.92	
2,625.0	0.27	158.74	2,624.9	-12.5	10.6	-12.6	0.45	-0.32	60.00	
2,650.0	0.26	157.89	2,649.9	-12.6	10.7	-12.7	0.04	-0.04	-3.40	
2,675.0	0.34	227.32	2,674.9	-12.7	10.7	-12.8	1.39	0.32	277.72	
2,700.0	0.21	167.00	2,699.9	-12.8	10.6	-12.9	1.19	-0.52	-241.28	
2,725.0	0.23	137.98	2,724.9	-12.9	10.7	-13.0	0.45	0.08	-116.08	
2,750.0	0.17	122.45	2,749.9	-13.0	10.7	-13.1	0.32	-0.24	-62.12	
2,775.0	0.31	131.52	2,774.9	-13.0	10.8	-13.1	0.58	0.56	36.28	
2,800.0	0.35	134.00	2,799.9	-13.1	10.9	-13.2	0.17	0.16	9.92	
2,825.0	0.36	146.84	2,824.9	-13.3	11.0	-13.3	0.32	0.04	51.36	
2,850.0	0.27	197.08	2,849.9	-13.4	11.0	-13.5	1.12	-0.36	200.96	
2,875.0	0.50	231.09	2,874.9	-13.5	10.9	-13.6	1.26	0.92	136.04	
2,900.0	0.53	236.40	2,899.9	-13.6	10.7	-13.7	0.23	0.12	21.24	
2,925.0	0.56	242.91	2,924.9	-13.8	10.5	-13.8	0.28	0.12	26.04	
2,950.0	0.48	247.01	2,949.9	-13.9	10.3	-13.9	0.35	-0.32	16.40	
2,975.0	0.46	228.00	2,974.9	-14.0	10.2	-14.0	0.63	-0.08	-76.04	
3,000.0	0.46	221.77	2,999.9	-14.1	10.0	-14.2	0.20	0.00	-24.92	
3,025.0	0.53	243.40	3,024.9	-14.2	9.9	-14.3	0.79	0.28	86.52	
3,050.0	0.55	239.99	3,049.9	-14.3	9.6	-14.4	0.15	0.08	-13.64	
3,075.0	0.52	238.47	3,074.9	-14.5	9.4	-14.5	0.13	-0.12	-6.08	
3,100.0	0.59	236.39	3,099.9	-14.6	9.2	-14.7	0.29	0.28	-8.32	
3,125.0	0.60	243.86	3,124.8	-14.7	9.0	-14.8	0.31	0.04	29.88	
3,150.0	0.56	230.42	3,149.8	-14.9	8.8	-14.9	0.57	-0.16	-53.76	
3,175.0	0.58	237.21	3,174.8	-15.0	8.6	-15.1	0.28	0.08	27.16	
3,200.0	0.57	225.81	3,199.8	-15.2	8.4	-15.2	0.46	-0.04	-45.60	
3,225.0	0.54	219.96	3,224.8	-15.3	8.2	-15.4	0.26	-0.12	-23.40	
3,250.0	0.54	215.92	3,249.8	-15.5	8.1	-15.6	0.15	0.00	-16.16	
3,275.0	0.57	239.76	3,274.8	-15.7	7.9	-15.7	0.92	0.12	95.36	
3,300.0	0.63	239.41	3,299.8	-15.8	7.7	-15.9	0.24	0.24	-1.40	
3,325.0	0.76	238.12	3,324.8	-16.0	7.4	-16.0	0.52	0.52	-5.16	
3,350.0	0.73	237.16	3,349.8	-16.1	7.2	-16.2	0.13	-0.12	-3.84	
3,375.0	0.76	245.57	3,374.8	-16.3	6.9	-16.4	0.45	0.12	33.64	
3,400.0	0.74	248.58	3,399.8	-16.4	6.6	-16.5	0.18	-0.08	12.04	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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	0.71	240.83	3,424.8	-16.6	6.3	-16.6	0.41	-0.12	-31.00	
3,450.0	0.65	236.50	3,449.8	-16.7	6.0	-16.8	0.32	-0.24	-17.32	
3,475.0	0.85	238.14	3,474.8	-16.9	5.8	-16.9	0.80	0.80	6.56	
3,500.0	0.92	242.34	3,499.8	-17.1	5.4	-17.1	0.38	0.28	16.80	
3,525.0	0.81	245.66	3,524.8	-17.3	5.1	-17.3	0.48	-0.44	13.28	
3,550.0	0.79	238.24	3,549.8	-17.4	4.8	-17.5	0.42	-0.08	-29.68	
3,575.0	0.81	229.44	3,574.8	-17.6	4.5	-17.7	0.50	0.08	-35.20	
3,600.0	0.90	229.47	3,599.8	-17.9	4.2	-17.9	0.36	0.36	0.12	
3,625.0	0.99	230.20	3,624.8	-18.1	3.9	-18.2	0.36	0.36	2.92	
3,650.0	0.97	235.33	3,649.8	-18.4	3.6	-18.4	0.36	-0.08	20.52	
3,675.0	0.92	237.59	3,674.8	-18.6	3.2	-18.6	0.25	-0.20	9.04	
3,700.0	0.86	238.81	3,699.8	-18.8	2.9	-18.8	0.25	-0.24	4.88	
3,725.0	0.75	228.51	3,724.8	-19.0	2.6	-19.0	0.73	-0.44	-41.20	
3,750.0	0.82	223.03	3,749.8	-19.3	2.4	-19.3	0.41	0.28	-21.92	
3,775.0	0.86	225.47	3,774.8	-19.5	2.1	-19.5	0.21	0.16	9.76	
3,800.0	0.92	218.26	3,799.8	-19.8	1.8	-19.8	0.51	0.24	-28.84	
3,825.0	1.11	230.40	3,824.8	-20.1	1.5	-20.1	1.14	0.76	48.56	
3,850.0	0.97	233.14	3,849.8	-20.4	1.2	-20.4	0.59	-0.56	10.96	
3,875.0	0.92	229.47	3,874.8	-20.7	0.9	-20.7	0.31	-0.20	-14.68	
3,900.0	0.95	237.11	3,899.8	-20.9	0.5	-20.9	0.51	0.12	30.56	
3,925.0	0.86	232.02	3,924.8	-21.1	0.2	-21.1	0.48	-0.36	-20.36	
3,950.0	0.89	226.86	3,949.8	-21.4	-0.1	-21.4	0.34	0.12	-20.64	
3,975.0	0.83	220.36	3,974.8	-21.7	-0.3	-21.7	0.46	-0.24	-26.00	
4,000.0	0.73	238.31	3,999.8	-21.9	-0.6	-21.9	1.05	-0.40	71.80	
4,025.0	0.85	233.43	4,024.8	-22.1	-0.9	-22.1	0.55	0.48	-19.52	
4,050.0	0.72	239.91	4,049.8	-22.3	-1.2	-22.3	0.63	-0.52	25.92	
4,075.0	0.63	231.03	4,074.8	-22.4	-1.4	-22.4	0.55	-0.36	-35.52	
4,100.0	0.73	223.60	4,099.8	-22.6	-1.6	-22.6	0.53	0.40	-29.72	
4,125.0	0.85	224.53	4,124.8	-22.9	-1.9	-22.9	0.48	0.48	3.72	
4,150.0	0.79	228.69	4,149.8	-23.1	-2.1	-23.1	0.34	-0.24	16.64	
4,175.0	0.75	236.63	4,174.7	-23.3	-2.4	-23.3	0.46	-0.16	31.76	
4,200.0	0.66	238.72	4,199.7	-23.5	-2.6	-23.5	0.37	-0.36	8.36	
4,225.0	0.66	227.43	4,224.7	-23.7	-2.9	-23.6	0.52	0.00	-45.16	
4,250.0	0.73	219.83	4,249.7	-23.9	-3.1	-23.9	0.46	0.28	-30.40	
4,275.0	0.81	229.24	4,274.7	-24.1	-3.3	-24.1	0.60	0.32	37.64	
4,300.0	0.82	231.29	4,299.7	-24.3	-3.6	-24.3	0.12	0.04	8.20	
4,325.0	0.78	238.81	4,324.7	-24.5	-3.9	-24.5	0.45	-0.16	30.08	
4,350.0	0.66	224.29	4,349.7	-24.7	-4.1	-24.7	0.87	-0.48	-58.08	
4,375.0	0.79	223.26	4,374.7	-25.0	-4.3	-24.9	0.52	0.52	-4.12	
4,400.0	0.84	232.65	4,399.7	-25.2	-4.6	-25.2	0.57	0.20	37.56	
4,425.0	0.76	234.23	4,424.7	-25.4	-4.9	-25.4	0.33	-0.32	6.32	
4,450.0	0.75	229.39	4,449.7	-25.6	-5.1	-25.6	0.26	-0.04	-19.36	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)	
4,475.0	0.79	222.55	4,474.7	-25.8	-5.4	-25.8	0.40	0.16	-27.36	
4,500.0	0.89	224.26	4,499.7	-26.1	-5.6	-26.1	0.41	0.40	6.84	
4,525.0	0.92	233.62	4,524.7	-26.4	-5.9	-26.3	0.60	0.12	37.44	
4,550.0	0.80	232.06	4,549.7	-26.6	-6.2	-26.6	0.49	-0.48	-6.24	
4,575.0	0.69	235.88	4,574.7	-26.8	-6.5	-26.7	0.48	-0.44	15.28	
4,600.0	0.80	225.66	4,599.7	-27.0	-6.7	-26.9	0.69	0.44	-40.88	
4,625.0	0.87	220.97	4,624.7	-27.3	-7.0	-27.2	0.39	0.28	-18.76	
4,650.0	0.97	235.82	4,649.7	-27.5	-7.3	-27.5	1.03	0.40	59.40	
4,675.0	0.91	233.54	4,674.7	-27.8	-7.6	-27.7	0.28	-0.24	-9.12	
4,700.0	0.91	236.33	4,699.7	-28.0	-8.0	-27.9	0.18	0.00	11.16	
4,725.0	0.87	236.13	4,724.7	-28.2	-8.3	-28.1	0.16	-0.16	-0.80	
4,750.0	0.80	226.83	4,749.7	-28.4	-8.6	-28.4	0.61	-0.28	-37.20	
4,775.0	0.89	218.79	4,774.7	-28.7	-8.8	-28.6	0.59	0.36	-32.16	
4,800.0	1.07	217.72	4,799.7	-29.0	-9.1	-29.0	0.72	0.72	-4.28	
4,825.0	1.01	226.36	4,824.7	-29.4	-9.4	-29.3	0.67	-0.24	34.56	
4,850.0	0.98	237.17	4,849.7	-29.6	-9.7	-29.6	0.76	-0.12	43.24	
4,875.0	0.87	229.99	4,874.7	-29.9	-10.0	-29.8	0.64	-0.44	-28.72	
4,900.0	0.97	221.42	4,899.7	-30.2	-10.3	-30.1	0.68	0.40	-34.28	
4,925.0	1.05	219.11	4,924.7	-30.5	-10.6	-30.4	0.36	0.32	-9.24	
4,950.0	1.09	228.07	4,949.7	-30.8	-10.9	-30.7	0.69	0.16	35.84	
4,975.0	1.09	221.70	4,974.7	-31.2	-11.3	-31.1	0.48	0.00	-25.48	
5,000.0	1.07	223.83	4,999.7	-31.5	-11.6	-31.4	0.18	-0.08	8.52	
5,025.0	0.92	220.27	5,024.6	-31.8	-11.9	-31.7	0.65	-0.60	-14.24	
5,050.0	1.21	219.56	5,049.6	-32.2	-12.2	-32.1	1.16	1.16	-2.84	
5,075.0	1.08	227.96	5,074.6	-32.6	-12.5	-32.5	0.85	-0.52	33.60	
5,100.0	1.08	232.24	5,099.6	-32.9	-12.9	-32.8	0.32	0.00	17.12	
5,125.0	1.04	218.10	5,124.6	-33.2	-13.2	-33.1	1.06	-0.16	-56.56	
5,150.0	1.14	211.44	5,149.6	-33.6	-13.5	-33.5	0.64	0.40	-26.64	
5,175.0	1.27	221.94	5,174.6	-34.0	-13.8	-33.9	1.02	0.52	42.00	
5,200.0	1.22	226.80	5,199.6	-34.4	-14.2	-34.3	0.47	-0.20	19.44	
5,225.0	1.16	222.87	5,224.6	-34.7	-14.5	-34.6	0.41	-0.24	-15.72	
5,250.0	1.18	219.50	5,249.6	-35.1	-14.9	-35.0	0.29	0.08	-13.48	
5,275.0	1.22	219.13	5,274.6	-35.5	-15.2	-35.4	0.16	0.16	-1.48	
5,300.0	1.27	215.79	5,299.6	-36.0	-15.5	-35.8	0.35	0.20	-13.36	
5,325.0	1.25	219.64	5,324.6	-36.4	-15.9	-36.3	0.35	-0.08	15.40	
5,350.0	1.29	231.14	5,349.6	-36.8	-16.3	-36.7	1.03	0.16	46.00	
5,375.0	1.33	220.35	5,374.6	-37.2	-16.7	-37.1	1.00	0.16	-43.16	
5,400.0	1.33	220.33	5,399.6	-37.6	-17.0	-37.5	0.00	0.00	-0.08	
5,425.0	1.36	214.93	5,424.6	-38.1	-17.4	-38.0	0.52	0.12	-21.60	
5,450.0	1.50	221.83	5,449.6	-38.6	-17.8	-38.4	0.89	0.56	27.60	
5,475.0	1.56	214.15	5,474.5	-39.1	-18.2	-39.0	0.85	0.24	-30.72	
5,500.0	1.50	213.44	5,499.5	-39.7	-18.6	-39.5	0.25	-0.24	-2.84	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)	
5,525.0	1.44	220.90	5,524.5	-40.2	-19.0	-40.0	0.80	-0.24	29.84	
5,550.0	1.52	210.43	5,549.5	-40.7	-19.3	-40.5	1.13	0.32	-41.88	
5,575.0	1.60	212.60	5,574.5	-41.3	-19.7	-41.1	0.40	0.32	8.68	
5,600.0	1.68	221.22	5,599.5	-41.8	-20.1	-41.7	1.04	0.32	34.48	
5,625.0	1.58	217.10	5,624.5	-42.4	-20.6	-42.2	0.62	-0.40	-16.48	
5,650.0	1.55	217.78	5,649.5	-42.9	-21.0	-42.8	0.14	-0.12	2.72	
5,675.0	1.59	210.48	5,674.5	-43.5	-21.4	-43.3	0.82	0.16	-29.20	
5,700.0	1.63	217.30	5,699.5	-44.1	-21.8	-43.9	0.78	0.16	27.28	
5,725.0	1.76	219.12	5,724.5	-44.7	-22.2	-44.5	0.56	0.52	7.28	
5,750.0	1.66	220.61	5,749.4	-45.2	-22.7	-45.1	0.44	-0.40	5.96	
5,775.0	1.59	220.56	5,774.4	-45.8	-23.2	-45.6	0.28	-0.28	-0.20	
5,800.0	1.60	210.95	5,799.4	-46.3	-23.6	-46.2	1.07	0.04	-38.44	
5,825.0	1.75	215.40	5,824.4	-46.9	-24.0	-46.8	0.79	0.60	17.80	
5,850.0	1.77	215.88	5,849.4	-47.6	-24.4	-47.4	0.10	0.08	1.92	
5,875.0	1.75	215.63	5,874.4	-48.2	-24.9	-48.0	0.09	-0.08	-1.00	
5,900.0	1.74	216.34	5,899.4	-48.8	-25.3	-48.6	0.10	-0.04	2.84	
5,925.0	1.65	213.67	5,924.4	-49.4	-25.7	-49.2	0.48	-0.36	-10.68	
5,950.0	1.56	214.02	5,949.4	-50.0	-26.1	-49.8	0.36	-0.36	1.40	
5,975.0	1.57	216.18	5,974.3	-50.6	-26.5	-50.4	0.24	0.04	8.64	
6,000.0	1.59	215.46	5,999.3	-51.1	-26.9	-50.9	0.11	0.08	-2.88	
6,025.0	1.48	213.98	6,024.3	-51.7	-27.3	-51.5	0.47	-0.44	-5.92	
6,050.0	1.30	210.83	6,049.3	-52.2	-27.6	-52.0	0.78	-0.72	-12.60	
6,075.0	0.86	197.31	6,074.3	-52.6	-27.8	-52.4	2.02	-1.76	-54.08	
6,100.0	0.86	181.72	6,099.3	-53.0	-27.9	-52.7	0.93	0.00	-62.36	
6,125.0	0.93	180.04	6,124.3	-53.4	-27.9	-53.1	0.30	0.28	-6.72	
6,150.0	0.77	186.25	6,149.3	-53.7	-27.9	-53.5	0.74	-0.64	24.84	
6,175.0	0.54	184.15	6,174.3	-54.0	-27.9	-53.8	0.92	-0.92	-8.40	
6,200.0	0.29	170.64	6,199.3	-54.2	-27.9	-54.0	1.07	-1.00	-54.04	
6,225.0	0.28	226.37	6,224.3	-54.3	-28.0	-54.1	1.07	-0.04	222.92	
6,250.0	0.32	232.24	6,249.3	-54.4	-28.1	-54.2	0.20	0.16	23.48	
6,275.0	0.36	252.90	6,274.3	-54.4	-28.2	-54.2	0.51	0.16	82.64	
6,300.0	0.29	257.65	6,299.3	-54.5	-28.3	-54.3	0.30	-0.28	19.00	
6,325.0	0.33	239.54	6,324.3	-54.5	-28.5	-54.3	0.42	0.16	-72.44	
6,350.0	0.24	251.18	6,349.3	-54.6	-28.6	-54.4	0.43	-0.36	46.56	
6,375.0	0.32	252.29	6,374.3	-54.6	-28.7	-54.4	0.32	0.32	4.44	
6,400.0	0.27	242.20	6,399.3	-54.7	-28.8	-54.4	0.29	-0.20	-40.36	
6,425.0	0.31	248.32	6,424.3	-54.7	-28.9	-54.5	0.20	0.16	24.48	
6,450.0	0.28	234.37	6,449.3	-54.8	-29.0	-54.6	0.31	-0.12	-55.80	
6,475.0	0.47	245.05	6,474.3	-54.9	-29.2	-54.6	0.81	0.76	42.72	
6,500.0	0.46	246.86	6,499.3	-54.9	-29.4	-54.7	0.07	-0.04	7.24	
6,525.0	0.36	257.74	6,524.3	-55.0	-29.5	-54.8	0.51	-0.40	43.52	
6,550.0	0.26	88.81	6,549.3	-55.0	-29.5	-54.8	2.47	-0.40	-675.72	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)
6,575.0	0.47	75.95	6,574.3	-55.0	-29.4	-54.8	0.90	0.84	-51.44
6,600.0	0.60	95.10	6,599.3	-55.0	-29.2	-54.8	0.88	0.52	76.60
6,625.0	0.56	99.69	6,624.3	-55.0	-28.9	-54.8	0.25	-0.16	18.36
6,650.0	0.53	110.52	6,649.3	-55.1	-28.7	-54.9	0.43	-0.12	43.32
6,675.0	0.55	108.92	6,674.3	-55.2	-28.5	-54.9	0.10	0.08	-6.40
6,700.0	0.46	94.24	6,699.3	-55.2	-28.2	-55.0	0.63	-0.36	-58.72
6,725.0	0.44	93.88	6,724.3	-55.2	-28.1	-55.0	0.08	-0.08	-1.44
6,750.0	0.39	81.33	6,749.3	-55.2	-27.9	-55.0	0.41	-0.20	-50.20
6,775.0	0.51	74.72	6,774.3	-55.2	-27.7	-54.9	0.52	0.48	-26.44
6,800.0	0.55	76.14	6,799.3	-55.1	-27.5	-54.9	0.17	0.16	5.68
6,825.0	0.63	76.41	6,824.3	-55.0	-27.2	-54.8	0.32	0.32	1.08
6,850.0	0.61	80.69	6,849.3	-55.0	-26.9	-54.8	0.20	-0.08	17.12
6,875.0	0.51	76.96	6,874.3	-54.9	-26.7	-54.7	0.43	-0.40	-14.92
6,900.0	0.67	81.34	6,899.3	-54.9	-26.4	-54.7	0.66	0.64	17.52
6,925.0	0.72	69.45	6,924.3	-54.8	-26.2	-54.6	0.61	0.20	-47.56
6,950.0	0.85	75.49	6,949.3	-54.7	-25.8	-54.5	0.62	0.52	24.16
6,975.0	0.80	68.13	6,974.3	-54.6	-25.5	-54.4	0.47	-0.20	-29.44
7,000.0	0.94	72.21	6,999.3	-54.5	-25.1	-54.3	0.61	0.56	16.32
7,025.0	0.96	67.39	7,024.3	-54.3	-24.7	-54.1	0.33	0.08	-19.28
7,050.0	0.94	69.20	7,049.3	-54.2	-24.4	-54.0	0.14	-0.08	7.24
7,075.0	0.96	63.70	7,074.3	-54.0	-24.0	-53.8	0.37	0.08	-22.00
7,100.0	1.04	67.44	7,099.3	-53.8	-23.6	-53.7	0.41	0.32	14.96
7,125.0	1.01	68.33	7,124.3	-53.7	-23.2	-53.5	0.14	-0.12	3.56
7,150.0	1.01	60.82	7,149.3	-53.5	-22.8	-53.3	0.53	0.00	-30.04
7,175.0	0.94	63.00	7,174.2	-53.3	-22.4	-53.1	0.32	-0.28	8.72
7,200.0	0.87	62.19	7,199.2	-53.1	-22.0	-52.9	0.28	-0.28	-3.24
7,225.0	0.87	68.10	7,224.2	-52.9	-21.7	-52.8	0.36	0.00	23.64
7,250.0	1.08	66.49	7,249.2	-52.8	-21.3	-52.6	0.85	0.84	-6.44
7,275.0	0.96	66.88	7,274.2	-52.6	-20.9	-52.4	0.48	-0.48	1.56
7,300.0	1.14	74.96	7,299.2	-52.5	-20.5	-52.3	0.93	0.72	32.32
7,325.0	1.19	71.40	7,324.2	-52.3	-20.0	-52.1	0.35	0.20	-14.24
7,350.0	1.22	81.44	7,349.2	-52.2	-19.5	-52.0	0.85	0.12	40.16
7,375.0	1.39	87.37	7,374.2	-52.1	-18.9	-52.0	0.87	0.68	23.72
7,400.0	1.46	97.23	7,399.2	-52.2	-18.3	-52.0	1.02	0.28	39.44
7,425.0	1.78	101.66	7,424.2	-52.3	-17.6	-52.1	1.37	1.28	17.72
7,450.0	2.01	101.82	7,449.2	-52.4	-16.8	-52.3	0.92	0.92	0.64
7,475.0	2.12	102.99	7,474.2	-52.6	-15.9	-52.5	0.47	0.44	4.68
7,500.0	2.24	99.82	7,499.1	-52.8	-15.0	-52.7	0.68	0.48	-12.68
7,525.0	2.24	101.61	7,524.1	-53.0	-14.0	-52.9	0.28	0.00	7.16
7,550.0	2.22	103.60	7,549.1	-53.2	-13.1	-53.1	0.32	-0.08	7.96
7,575.0	2.07	103.34	7,574.1	-53.4	-12.2	-53.3	0.60	-0.60	-1.04
7,600.0	1.90	106.50	7,599.1	-53.7	-11.3	-53.6	0.81	-0.68	12.64

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)
7,625.0	1.65	107.51	7,624.1	-53.9	-10.6	-53.8	1.01	-1.00	4.04
7,650.0	1.82	110.72	7,649.1	-54.1	-9.9	-54.1	0.78	0.68	12.84
7,675.0	1.82	108.36	7,674.0	-54.4	-9.1	-54.3	0.30	0.00	-9.44
7,700.0	1.72	108.35	7,699.0	-54.6	-8.4	-54.6	0.40	-0.40	-0.04
7,725.0	1.87	112.12	7,724.0	-54.9	-7.6	-54.9	0.76	0.60	15.08
7,750.0	1.73	113.74	7,749.0	-55.2	-6.9	-55.2	0.60	-0.56	6.48
7,775.0	1.45	117.64	7,774.0	-55.5	-6.3	-55.5	1.20	-1.12	15.60
7,800.0	1.50	111.90	7,799.0	-55.8	-5.7	-55.7	0.62	0.20	-22.96
7,825.0	1.32	120.25	7,824.0	-56.1	-5.2	-56.0	1.09	-0.72	33.40
7,850.0	1.31	120.37	7,849.0	-56.3	-4.7	-56.3	0.04	-0.04	0.48
7,875.0	1.50	120.37	7,874.0	-56.7	-4.1	-56.6	0.76	0.76	0.00
7,900.0	1.44	125.60	7,899.0	-57.0	-3.6	-57.0	0.59	-0.24	20.92
7,925.0	1.61	124.44	7,923.9	-57.4	-3.1	-57.4	0.69	0.68	-4.64
7,950.0	1.63	127.54	7,948.9	-57.8	-2.5	-57.8	0.36	0.08	12.40
7,975.0	1.48	124.15	7,973.9	-58.2	-1.9	-58.2	0.70	-0.60	-13.56
8,000.0	1.46	126.39	7,998.9	-58.6	-1.4	-58.6	0.24	-0.08	8.96
8,025.0	1.64	127.56	8,023.9	-59.0	-0.9	-59.0	0.73	0.72	4.68
8,050.0	1.49	129.17	8,048.9	-59.4	-0.3	-59.4	0.63	-0.60	6.44
8,075.0	1.69	126.00	8,073.9	-59.8	0.2	-59.8	0.87	0.80	-12.68
8,100.0	1.85	129.67	8,098.9	-60.3	0.8	-60.3	0.78	0.64	14.68
8,125.0	2.02	130.09	8,123.9	-60.8	1.5	-60.8	0.68	0.68	1.68
8,150.0	2.13	126.14	8,148.8	-61.4	2.2	-61.4	0.72	0.44	-15.80
8,175.0	2.33	126.69	8,173.8	-62.0	3.0	-62.0	0.80	0.80	2.20
8,198.2	2.14	124.81	8,197.0	-62.5	3.7	-62.5	0.88	-0.82	-8.12
8,349.0	1.96	123.66	8,347.7	-65.5	8.2	-65.6	0.12	-0.12	-0.76
8,371.0	2.06	128.36	8,369.7	-66.0	8.8	-66.1	0.88	0.45	21.36
8,387.0	1.95	127.50	8,385.7	-66.3	9.2	-66.4	0.71	-0.69	-5.38
8,432.0	1.69	129.01	8,430.7	-67.2	10.3	-67.3	0.59	-0.58	3.36
8,463.0	2.46	347.13	8,461.7	-66.9	10.6	-66.9	12.68	2.48	-457.68
8,526.0	12.48	338.98	8,524.0	-59.2	7.8	-59.2	15.95	15.90	-12.94
8,588.0	20.73	343.87	8,583.4	-42.3	2.3	-42.4	13.48	13.31	7.89
8,619.0	25.08	345.44	8,612.0	-30.7	-0.8	-30.7	14.17	14.03	5.06
8,650.0	29.21	345.25	8,639.5	-17.0	-4.4	-17.0	13.33	13.32	-0.61
8,681.0	31.34	344.54	8,666.3	-1.9	-8.5	-1.9	6.97	6.87	-2.29
8,713.0	33.48	343.94	8,693.3	14.6	-13.1	14.7	6.76	6.69	-1.88
8,760.0	38.42	342.79	8,731.4	41.0	-21.1	41.2	10.61	10.51	-2.45
8,807.0	43.72	341.32	8,766.8	70.4	-30.6	70.6	11.46	11.28	-3.13
8,857.0	48.75	340.52	8,801.4	104.5	-42.4	104.8	10.13	10.06	-1.60
8,878.3	50.24	340.52	8,815.2	119.7	-47.8	120.1	7.00	7.00	-0.02
FTP @ 8878.3' MD									
8,902.0	51.90	340.51	8,830.1	137.1	-53.9	137.5	7.00	7.00	-0.02
8,957.0	58.50	343.78	8,861.5	180.1	-67.7	180.6	12.95	12.00	5.95

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)	
8,989.0	62.04	344.59	8,877.3	206.8	-75.3	207.4	11.28	11.06	2.53	
9,020.0	64.15	345.23	8,891.4	233.5	-82.5	234.1	7.05	6.81	2.06	
9,051.0	65.27	345.34	8,904.6	260.6	-89.6	261.3	3.63	3.61	0.35	
9,083.0	67.19	345.50	8,917.5	289.0	-97.0	289.7	6.02	6.00	0.50	
9,115.0	69.48	345.71	8,929.3	317.8	-104.4	318.5	7.18	7.16	0.66	
9,162.0	72.01	346.02	8,944.8	360.8	-115.2	361.7	5.42	5.38	0.66	
9,208.0	75.22	347.75	8,957.8	403.8	-125.2	404.7	7.86	6.98	3.76	
9,255.0	79.42	349.64	8,968.1	448.7	-134.2	449.7	9.76	8.94	4.02	
9,301.0	81.05	350.51	8,975.9	493.4	-142.0	494.4	4.00	3.54	1.89	
9,348.0	83.70	350.99	8,982.1	539.3	-149.5	540.5	5.73	5.64	1.02	
9,394.0	86.14	352.31	8,986.2	584.7	-156.2	585.8	6.03	5.30	2.87	
9,488.0	90.46	352.15	8,989.0	677.7	-168.9	679.0	4.60	4.60	-0.17	
9,582.0	91.47	357.01	8,987.4	771.3	-177.7	772.6	5.28	1.07	5.17	
9,676.0	92.23	359.93	8,984.4	865.2	-180.2	866.5	3.21	0.81	3.11	
9,770.0	91.58	0.20	8,981.3	959.1	-180.1	960.5	0.75	-0.69	0.29	
9,863.0	90.60	0.70	8,979.5	1,052.1	-179.4	1,053.5	1.18	-1.05	0.54	
9,959.0	90.15	359.87	8,978.9	1,148.1	-178.9	1,149.4	0.98	-0.47	-0.86	
10,052.0	88.19	358.83	8,980.2	1,241.1	-180.0	1,242.4	2.39	-2.11	-1.12	
10,145.0	90.57	359.42	8,981.2	1,334.1	-181.4	1,335.4	2.64	2.56	0.63	
10,238.0	90.24	359.38	8,980.6	1,427.1	-182.4	1,428.4	0.36	-0.35	-0.04	
10,332.0	90.04	359.42	8,980.3	1,521.0	-183.4	1,522.4	0.22	-0.21	0.04	
10,426.0	88.19	357.96	8,981.8	1,615.0	-185.5	1,616.4	2.51	-1.97	-1.55	
10,520.0	89.76	358.08	8,983.5	1,708.9	-188.8	1,710.3	1.68	1.67	0.13	
10,614.0	92.59	358.55	8,981.5	1,802.9	-191.5	1,804.3	3.05	3.01	0.50	
10,708.0	92.28	0.19	8,977.5	1,896.8	-192.6	1,898.2	1.77	-0.33	1.74	
10,801.0	89.96	359.49	8,975.7	1,989.7	-192.8	1,991.2	2.61	-2.49	-0.75	
10,895.0	88.36	359.99	8,977.1	2,083.7	-193.2	2,085.2	1.78	-1.70	0.53	
10,989.0	90.01	0.42	8,978.4	2,177.7	-192.9	2,179.1	1.81	1.76	0.46	
11,083.0	89.57	358.90	8,978.8	2,271.7	-193.5	2,273.1	1.68	-0.47	-1.62	
11,176.0	88.61	2.29	8,980.3	2,364.7	-192.5	2,366.1	3.79	-1.03	3.65	
11,269.0	90.77	3.19	8,980.8	2,457.6	-188.0	2,458.9	2.52	2.32	0.97	
11,362.0	89.57	2.63	8,980.5	2,550.4	-183.3	2,551.8	1.42	-1.29	-0.60	
11,456.0	88.56	1.86	8,982.0	2,644.4	-179.6	2,645.7	1.35	-1.07	-0.82	
11,550.0	88.67	0.59	8,984.3	2,738.3	-177.6	2,739.6	1.36	0.12	-1.35	
11,644.0	90.13	0.03	8,985.3	2,832.3	-177.1	2,833.6	1.66	1.55	-0.60	
11,737.0	92.76	0.62	8,982.9	2,925.3	-176.6	2,926.5	2.90	2.83	0.63	
11,831.0	93.83	2.02	8,977.5	3,019.1	-174.4	3,020.3	1.87	1.14	1.49	
11,925.0	93.38	2.09	8,971.6	3,112.8	-171.1	3,114.0	0.48	-0.48	0.07	
12,018.0	91.53	2.11	8,967.6	3,205.7	-167.7	3,206.9	1.99	-1.99	0.02	
12,111.0	88.58	1.57	8,967.5	3,298.6	-164.7	3,299.8	3.22	-3.17	-0.58	
12,205.0	90.04	2.22	8,968.7	3,392.6	-161.6	3,393.7	1.70	1.55	0.69	
12,298.0	88.58	0.04	8,969.8	3,485.5	-159.7	3,486.6	2.82	-1.57	-2.34	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)	
12,392.0	88.64	358.99	8,972.1	3,579.5	-160.5	3,580.6	1.12	0.06	-1.12	
12,485.0	90.38	358.57	8,972.9	3,672.5	-162.5	3,673.6	1.92	1.87	-0.45	
12,579.0	89.71	358.94	8,972.8	3,766.4	-164.6	3,767.6	0.81	-0.71	0.39	
12,672.0	89.85	0.00	8,973.2	3,859.4	-165.4	3,860.6	1.15	0.15	1.14	
12,766.0	91.64	0.56	8,971.9	3,953.4	-165.0	3,954.6	2.00	1.90	0.60	
12,859.0	92.17	1.09	8,968.8	4,046.4	-163.6	4,047.5	0.81	0.57	0.57	
12,953.0	91.05	1.13	8,966.2	4,140.3	-161.8	4,141.4	1.19	-1.19	0.04	
13,046.0	88.67	1.22	8,966.4	4,233.3	-159.9	4,234.4	2.56	-2.56	0.10	
13,139.0	90.57	1.17	8,967.0	4,326.2	-158.0	4,327.3	2.04	2.04	-0.05	
13,232.0	89.96	1.34	8,966.6	4,419.2	-155.9	4,420.3	0.68	-0.66	0.18	
13,325.0	89.09	1.12	8,967.4	4,512.2	-153.9	4,513.2	0.96	-0.94	-0.24	
13,419.0	88.98	359.84	8,969.0	4,606.2	-153.1	4,607.2	1.37	-0.12	-1.36	
13,513.0	90.97	0.85	8,969.0	4,700.2	-152.6	4,701.2	2.37	2.12	1.07	
13,607.0	89.82	0.87	8,968.4	4,794.2	-151.2	4,795.2	1.22	-1.22	0.02	
13,701.0	92.40	0.52	8,966.5	4,888.1	-150.0	4,889.1	2.77	2.74	-0.37	
13,795.0	91.78	0.36	8,963.1	4,982.1	-149.3	4,983.1	0.68	-0.66	-0.17	
13,888.0	90.94	1.71	8,960.9	5,075.0	-147.6	5,076.0	1.71	-0.90	1.45	
13,982.0	90.63	1.92	8,959.6	5,169.0	-144.6	5,169.9	0.40	-0.33	0.22	
14,075.0	90.32	1.83	8,958.8	5,261.9	-141.6	5,262.8	0.35	-0.33	-0.10	
14,169.0	90.07	1.69	8,958.5	5,355.9	-138.7	5,356.8	0.30	-0.27	-0.15	
14,263.0	90.55	2.08	8,958.0	5,449.8	-135.6	5,450.7	0.66	0.51	0.41	
14,357.0	90.43	2.12	8,957.2	5,543.7	-132.2	5,544.6	0.13	-0.13	0.04	
14,450.0	88.73	1.74	8,957.9	5,636.7	-129.0	5,637.5	1.87	-1.83	-0.41	
14,543.0	88.78	2.04	8,959.9	5,729.6	-126.0	5,730.4	0.33	0.05	0.32	
14,637.0	88.45	1.67	8,962.2	5,823.5	-122.9	5,824.3	0.53	-0.35	-0.39	
14,730.0	88.87	1.05	8,964.4	5,916.5	-120.7	5,917.2	0.81	0.45	-0.67	
14,875.0	89.87	1.27	8,966.0	6,061.4	-117.8	6,062.2	0.71	0.69	0.15	
14,917.0	89.59	1.10	8,966.2	6,103.4	-116.9	6,104.1	0.78	-0.67	-0.40	
15,008.0	90.01	1.59	8,966.5	6,194.4	-114.8	6,195.1	0.71	0.46	0.54	
15,102.0	90.91	2.20	8,965.7	6,288.3	-111.7	6,289.0	1.16	0.96	0.65	
15,195.0	89.12	2.21	8,965.7	6,381.3	-108.1	6,381.9	1.92	-1.92	0.01	
15,288.0	88.64	1.59	8,967.5	6,474.2	-105.0	6,474.8	0.84	-0.52	-0.67	
15,382.0	90.13	0.69	8,968.5	6,568.2	-103.1	6,568.8	1.85	1.59	-0.96	
15,476.0	90.29	0.88	8,968.2	6,662.2	-101.9	6,662.8	0.26	0.17	0.20	
15,569.0	90.52	1.30	8,967.5	6,755.1	-100.1	6,755.7	0.51	0.25	0.45	
15,663.0	90.29	1.36	8,966.9	6,849.1	-97.9	6,849.7	0.25	-0.24	0.06	
15,757.0	90.88	1.39	8,965.9	6,943.1	-95.7	6,943.6	0.63	0.63	0.03	
15,850.0	92.34	1.17	8,963.3	7,036.0	-93.6	7,036.5	1.59	1.57	-0.24	
15,944.0	91.95	1.36	8,959.8	7,129.9	-91.5	7,130.4	0.46	-0.41	0.20	
16,037.0	90.04	0.14	8,958.1	7,222.9	-90.3	7,223.4	2.44	-2.05	-1.31	
16,131.0	89.65	359.17	8,958.4	7,316.9	-90.9	7,317.4	1.11	-0.41	-1.03	
16,224.0	89.82	359.07	8,958.8	7,409.9	-92.3	7,410.4	0.21	0.18	-0.11	

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #23H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Site:	ATLAS	MD Reference:	RKB=3350.6+27 @ 3377.6usft (SCANDRILL FREEDOM)
Well:	ROAD RUNNER FED COM #23H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

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)
16,317.0	90.27	359.31	8,958.8	7,502.9	-93.6	7,503.4	0.55	0.48	0.26
16,411.0	91.75	0.00	8,957.1	7,596.9	-94.2	7,597.4	1.74	1.57	0.73
16,504.0	92.84	0.34	8,953.4	7,689.8	-93.9	7,690.3	1.23	1.17	0.37
16,597.0	89.65	0.76	8,951.4	7,782.7	-93.0	7,783.2	3.46	-3.43	0.45
16,691.0	90.60	1.27	8,951.1	7,876.7	-91.3	7,877.2	1.15	1.01	0.54
16,784.0	90.27	1.34	8,950.4	7,969.7	-89.2	7,970.2	0.36	-0.35	0.08
16,878.0	90.04	1.86	8,950.2	8,063.7	-86.6	8,064.1	0.60	-0.24	0.55
16,971.0	89.90	1.55	8,950.2	8,156.6	-83.8	8,157.0	0.37	-0.15	-0.33
17,065.0	89.93	1.60	8,950.4	8,250.6	-81.2	8,251.0	0.06	0.03	0.05
17,158.0	89.68	1.31	8,950.7	8,343.6	-78.9	8,343.9	0.41	-0.27	-0.31
17,252.0	90.52	1.78	8,950.5	8,437.5	-76.3	8,437.9	1.02	0.89	0.50
17,346.0	89.48	1.64	8,950.5	8,531.5	-73.5	8,531.8	1.12	-1.11	-0.15
17,440.0	89.51	0.28	8,951.4	8,625.5	-72.0	8,625.8	1.45	0.03	-1.45
17,533.0	90.15	359.77	8,951.6	8,718.5	-71.9	8,718.8	0.88	0.69	-0.55
17,627.0	90.46	359.92	8,951.1	8,812.5	-72.2	8,812.8	0.37	0.33	0.16
17,721.0	90.15	0.26	8,950.6	8,906.5	-72.0	8,906.7	0.49	-0.33	0.36
17,815.0	90.94	1.37	8,949.7	9,000.4	-70.7	9,000.7	1.45	0.84	1.18
17,909.0	90.24	0.86	8,948.8	9,094.4	-68.9	9,094.7	0.92	-0.74	-0.54
18,003.0	89.03	359.60	8,949.4	9,188.4	-68.5	9,188.7	1.86	-1.29	-1.34
18,097.0	89.62	358.99	8,950.5	9,282.4	-69.6	9,282.7	0.90	0.63	-0.65
18,191.0	90.63	359.58	8,950.3	9,376.4	-70.8	9,376.7	1.24	1.07	0.63
18,285.0	90.10	359.82	8,949.7	9,470.4	-71.3	9,470.7	0.62	-0.56	0.26
18,379.0	90.38	0.17	8,949.3	9,564.4	-71.3	9,564.6	0.48	0.30	0.37
18,472.0	89.34	358.77	8,949.5	9,657.4	-72.2	9,657.6	1.88	-1.12	-1.51
18,566.0	89.34	358.82	8,950.6	9,751.3	-74.2	9,751.6	0.05	0.00	0.05
18,660.0	89.01	358.96	8,951.9	9,845.3	-76.0	9,845.6	0.38	-0.35	0.15
18,753.0	90.38	0.05	8,952.4	9,938.3	-76.8	9,938.6	1.88	1.47	1.17
18,847.0	91.41	0.21	8,951.0	10,032.3	-76.6	10,032.6	1.11	1.10	0.17
18,862.1	91.59	0.20	8,950.6	10,047.4	-76.5	10,047.7	1.22	1.22	-0.03
LTP @ 18862.1' MD									
18,935.0	92.48	0.18	8,948.0	10,120.2	-76.3	10,120.5	1.22	1.22	-0.03
18,991.0	92.48	0.18	8,945.6	10,176.2	-76.1	10,176.5	0.00	0.00	0.00

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,878.3	8,815.2	119.7	-47.8	FTP @ 8878.3' MD
18,862.1	8,950.6	10,047.4	-76.5	LTP @ 18862.1' MD

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------