



CONCHO

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

TIGERCAT FED COM #2H

OWB

HOBBS OCD

Design: ACTUAL WELLPATH

NOV 09 2018

RECEIVED

Standard Survey Report

25 April, 2018

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #2H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

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

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

Well	TIGERCAT FED COM #2H		
Well Position	+N/-S	0.0 usft	Northing: 387,868.60 usft
	+E/-W	0.0 usft	Easting: 730,075.80 usft
Position Uncertainty		3.0 usft	Wellhead Elevation: usft
			Latitude: 32° 3' 51.083 N
			Longitude: 103° 35' 26.275 W
			Ground Level: 3,322.3 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	WMM2015	11/8/2017	(°)	(°)	(nT)
			6.93	59.89	47,788.65628517

Design	ACTUAL WELLPATH			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	
		Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	179.67

Survey Program	Date	3/19/2018		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	9,670.0	GYRO (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
9,700.0	19,876.0	MWD-CURVE/LATERAL (OWB)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

Survey										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate	
(usft)	(°)	(°)	(usft)	(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	0.54	131.24	100.0	-0.3	0.4	0.3	0.54	0.54	0.00	
125.0	0.61	130.13	125.0	-0.5	0.5	0.5	0.28	0.28	-4.44	
150.0	0.64	128.70	150.0	-0.6	0.8	0.7	0.14	0.12	-5.72	
175.0	0.78	120.68	175.0	-0.8	1.0	0.8	0.69	0.56	-32.08	
200.0	0.66	118.13	200.0	-1.0	1.3	1.0	0.50	-0.48	-10.20	
225.0	0.71	123.19	225.0	-1.1	1.5	1.1	0.31	0.20	20.24	
250.0	0.72	122.50	250.0	-1.3	1.8	1.3	0.05	0.04	-2.76	

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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	0.72	115.25	275.0	-1.4	2.1	1.5	0.36	0.00	-29.00
300.0	0.77	114.48	300.0	-1.6	2.4	1.6	0.20	0.20	-3.08
325.0	0.66	108.79	325.0	-1.7	2.7	1.7	0.52	-0.44	-22.76
350.0	0.58	97.27	350.0	-1.8	2.9	1.8	0.59	-0.32	-46.08
375.0	0.62	97.85	375.0	-1.8	3.2	1.8	0.16	0.16	2.32
400.0	0.59	90.74	400.0	-1.8	3.4	1.8	0.32	-0.12	-28.44
425.0	0.50	84.62	425.0	-1.8	3.7	1.8	0.43	-0.36	-24.48
450.0	0.50	93.87	450.0	-1.8	3.9	1.8	0.32	0.00	37.00
475.0	0.47	90.19	475.0	-1.8	4.1	1.8	0.17	-0.12	-14.72
500.0	0.50	80.99	500.0	-1.8	4.3	1.8	0.33	0.12	-36.80
525.0	0.36	81.06	525.0	-1.8	4.5	1.8	0.56	-0.56	0.28
550.0	0.36	73.88	550.0	-1.7	4.7	1.8	0.18	0.00	-28.72
575.0	0.32	62.34	575.0	-1.7	4.8	1.7	0.32	-0.16	-46.16
600.0	0.37	63.04	600.0	-1.6	4.9	1.6	0.20	0.20	2.80
625.0	0.27	40.39	625.0	-1.5	5.0	1.6	0.64	-0.40	-90.60
650.0	0.33	13.44	650.0	-1.4	5.1	1.4	0.61	-0.24	-107.80
675.0	0.32	356.71	675.0	-1.3	5.1	1.3	0.38	-0.04	-66.92
700.0	0.37	0.98	700.0	-1.1	5.1	1.2	0.22	0.20	17.08
725.0	0.30	335.60	725.0	-1.0	5.1	1.0	0.65	-0.28	-101.52
750.0	0.25	334.95	750.0	-0.9	5.0	0.9	0.20	-0.20	-2.60
775.0	0.28	307.46	775.0	-0.8	5.0	0.8	0.52	0.12	-109.96
800.0	0.36	318.93	800.0	-0.7	4.9	0.7	0.41	0.32	45.88
825.0	0.41	311.63	825.0	-0.6	4.7	0.6	0.28	0.20	-29.20
850.0	0.51	314.15	850.0	-0.4	4.6	0.5	0.41	0.40	10.08
875.0	0.48	306.10	875.0	-0.3	4.4	0.3	0.30	-0.12	-32.20
900.0	0.52	300.30	900.0	-0.2	4.2	0.2	0.26	0.16	-23.20
925.0	0.58	309.01	925.0	0.0	4.1	0.1	0.41	0.24	34.84
950.0	0.49	297.60	950.0	0.1	3.9	-0.1	0.56	-0.36	-45.64
975.0	0.71	305.65	975.0	0.2	3.6	-0.2	0.94	0.88	32.20
1,000.0	0.61	298.60	1,000.0	0.4	3.4	-0.4	0.51	-0.40	-28.20
1,025.0	0.66	306.56	1,025.0	0.5	3.2	-0.5	0.41	0.20	31.84
1,050.0	0.62	299.78	1,050.0	0.7	2.9	-0.7	0.34	-0.16	-27.12
1,075.0	0.65	294.99	1,075.0	0.8	2.7	-0.8	0.24	0.12	-19.16
1,100.0	0.67	292.54	1,100.0	0.9	2.4	-0.9	0.14	0.08	-9.80
1,125.0	0.68	296.58	1,125.0	1.0	2.2	-1.0	0.19	0.04	16.16
1,150.0	0.63	292.10	1,150.0	1.2	1.9	-1.2	0.29	-0.20	-17.92
1,175.0	0.65	290.69	1,174.9	1.3	1.6	-1.3	0.10	0.08	-5.64
1,200.0	0.73	290.79	1,199.9	1.4	1.3	-1.4	0.32	0.32	0.40
1,225.0	0.65	294.75	1,224.9	1.5	1.1	-1.5	0.37	-0.32	15.84
1,250.0	0.61	281.03	1,249.9	1.6	0.8	-1.6	0.62	-0.16	-54.88
1,275.0	0.40	249.78	1,274.9	1.6	0.6	-1.6	1.36	-0.84	-125.00
1,300.0	0.54	211.95	1,299.9	1.4	0.5	-1.4	1.33	0.56	-151.32

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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	0.87	194.25	1,324.9	1.2	0.3	-1.2	1.57	1.32	-70.80	
1,350.0	1.04	192.84	1,349.9	0.8	0.2	-0.8	0.69	0.68	-5.64	
1,375.0	1.02	190.78	1,374.9	0.3	0.2	-0.3	0.17	-0.08	-8.24	
1,400.0	1.17	188.87	1,399.9	-0.2	0.1	0.2	0.62	0.60	-7.64	
1,425.0	1.17	196.41	1,424.9	-0.7	0.0	0.7	0.62	0.00	30.16	
1,450.0	1.16	192.77	1,449.9	-1.1	-0.2	1.1	0.30	-0.04	-14.56	
1,475.0	1.21	193.49	1,474.9	-1.7	-0.3	1.6	0.21	0.20	2.88	
1,500.0	1.20	194.93	1,499.9	-2.2	-0.4	2.2	0.13	-0.04	5.76	
1,525.0	1.23	201.13	1,524.9	-2.7	-0.6	2.7	0.54	0.12	24.80	
1,550.0	1.25	196.23	1,549.9	-3.2	-0.7	3.2	0.43	0.08	-19.60	
1,575.0	1.23	197.90	1,574.9	-3.7	-0.9	3.7	0.17	-0.08	6.68	
1,600.0	1.31	198.70	1,599.9	-4.2	-1.1	4.2	0.33	0.32	3.20	
1,625.0	1.29	201.09	1,624.9	-4.8	-1.3	4.7	0.23	-0.08	9.56	
1,650.0	1.27	201.64	1,649.9	-5.3	-1.5	5.3	0.09	-0.08	2.20	
1,675.0	1.22	204.12	1,674.9	-5.8	-1.7	5.8	0.29	-0.20	9.92	
1,700.0	1.12	209.73	1,699.9	-6.2	-1.9	6.2	0.61	-0.40	22.44	
1,725.0	0.90	224.53	1,724.9	-6.6	-2.2	6.6	1.36	-0.88	59.20	
1,750.0	0.73	236.52	1,749.9	-6.8	-2.4	6.8	0.96	-0.68	47.96	
1,775.0	0.60	251.17	1,774.9	-6.9	-2.7	6.9	0.85	-0.52	58.60	
1,800.0	0.69	265.21	1,799.9	-7.0	-3.0	7.0	0.72	0.36	56.16	
1,825.0	0.66	270.70	1,824.8	-7.0	-3.3	7.0	0.29	-0.12	21.96	
1,850.0	0.63	277.12	1,849.8	-7.0	-3.6	7.0	0.31	-0.12	25.68	
1,875.0	0.65	274.03	1,874.8	-7.0	-3.8	6.9	0.16	0.08	-12.36	
1,900.0	0.60	269.33	1,899.8	-6.9	-4.1	6.9	0.29	-0.20	-18.80	
1,925.0	0.62	277.69	1,924.8	-6.9	-4.4	6.9	0.36	0.08	33.44	
1,950.0	0.57	279.54	1,949.8	-6.9	-4.6	6.9	0.21	-0.20	7.40	
1,975.0	0.62	279.89	1,974.8	-6.9	-4.9	6.8	0.20	0.20	0.60	
2,000.0	0.56	284.79	1,999.8	-6.8	-5.1	6.8	0.32	-0.24	20.40	
2,025.0	0.57	278.58	2,024.8	-6.7	-5.4	6.7	0.25	0.04	-24.84	
2,050.0	0.55	287.10	2,049.8	-6.7	-5.6	6.7	0.34	-0.08	34.08	
2,075.0	0.58	284.05	2,074.8	-6.6	-5.8	6.6	0.17	0.12	-12.20	
2,100.0	0.51	285.38	2,099.8	-6.6	-6.1	6.5	0.28	-0.28	5.32	
2,125.0	0.45	299.49	2,124.8	-6.5	-6.3	6.5	0.53	-0.24	56.44	
2,150.0	0.45	294.01	2,149.8	-6.4	-6.4	6.4	0.17	0.00	-21.92	
2,175.0	0.46	298.45	2,174.8	-6.3	-6.6	6.3	0.15	0.04	17.76	
2,200.0	0.42	303.98	2,199.8	-6.2	-6.8	6.2	0.23	-0.16	22.12	
2,225.0	0.40	308.15	2,224.8	-6.1	-6.9	6.1	0.14	-0.08	16.68	
2,250.0	0.46	311.67	2,249.8	-6.0	-7.1	5.9	0.26	0.24	14.08	
2,275.0	0.50	327.16	2,274.8	-5.8	-7.2	5.8	0.54	0.16	61.96	
2,300.0	0.60	335.46	2,299.8	-5.6	-7.3	5.6	0.51	0.40	33.20	
2,325.0	0.47	344.72	2,324.8	-5.4	-7.4	5.4	0.62	-0.52	37.04	
2,350.0	0.61	349.42	2,349.8	-5.2	-7.5	5.1	0.59	0.56	18.80	

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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)
2,375.0	0.64	344.07	2,374.8	-4.9	-7.5	4.9	0.26	0.12	-21.40
2,400.0	0.61	352.16	2,399.8	-4.6	-7.6	4.6	0.37	-0.12	32.36
2,425.0	0.66	358.17	2,424.8	-4.4	-7.6	4.3	0.33	0.20	24.04
2,450.0	0.84	3.83	2,449.8	-4.0	-7.6	4.0	0.78	0.72	22.64
2,475.0	0.89	6.09	2,474.8	-3.7	-7.6	3.6	0.24	0.20	9.04
2,500.0	0.95	5.00	2,499.8	-3.3	-7.5	3.2	0.25	0.24	-4.36
2,525.0	0.93	5.77	2,524.8	-2.9	-7.5	2.8	0.09	-0.08	3.08
2,550.0	0.96	7.02	2,549.8	-2.4	-7.4	2.4	0.15	0.12	5.00
2,575.0	1.19	9.20	2,574.8	-2.0	-7.4	1.9	0.93	0.92	8.72
2,600.0	1.21	9.73	2,599.8	-1.5	-7.3	1.4	0.09	0.08	2.12
2,625.0	1.25	9.93	2,624.8	-0.9	-7.2	0.9	0.16	0.16	0.80
2,650.0	1.37	16.89	2,649.8	-0.4	-7.1	0.3	0.80	0.48	27.84
2,675.0	1.40	22.64	2,674.8	0.2	-6.8	-0.2	0.57	0.12	23.00
2,700.0	1.53	22.79	2,699.8	0.8	-6.6	-0.8	0.52	0.52	0.60
2,725.0	1.72	25.07	2,724.8	1.4	-6.3	-1.5	0.80	0.76	9.12
2,750.0	1.82	28.35	2,749.7	2.1	-6.0	-2.1	0.57	0.40	13.12
2,775.0	1.91	31.38	2,774.7	2.8	-5.6	-2.9	0.53	0.36	12.12
2,800.0	2.10	33.55	2,799.7	3.6	-5.1	-3.6	0.82	0.76	8.68
2,825.0	2.21	39.05	2,824.7	4.3	-4.5	-4.3	0.94	0.44	22.00
2,850.0	2.53	37.62	2,849.7	5.1	-3.9	-5.1	1.30	-1.28	-5.72
2,875.0	2.48	39.86	2,874.7	6.0	-3.2	-6.0	0.44	-0.20	8.96
2,900.0	2.37	41.11	2,899.6	6.8	-2.5	-6.8	0.49	-0.44	5.00
2,925.0	2.48	40.43	2,924.6	7.6	-1.8	-7.6	0.45	0.44	-2.72
2,950.0	2.42	43.44	2,949.6	8.4	-1.1	-8.4	0.57	-0.24	12.04
2,975.0	2.28	44.12	2,974.6	9.1	-0.4	-9.1	0.57	-0.56	2.72
3,000.0	2.16	45.04	2,999.5	9.8	0.3	-9.8	0.50	-0.48	3.68
3,025.0	2.08	51.83	3,024.5	10.4	1.0	-10.4	1.05	-0.32	27.16
3,050.0	2.07	50.17	3,049.5	11.0	1.7	-11.0	0.24	-0.04	-6.64
3,075.0	2.05	51.83	3,074.5	11.6	2.4	-11.5	0.25	-0.08	6.64
3,100.0	1.99	52.14	3,099.5	12.1	3.1	-12.1	0.24	-0.24	1.24
3,125.0	1.44	48.37	3,124.5	12.6	3.6	-12.6	2.24	-2.20	-15.08
3,150.0	1.15	44.32	3,149.5	13.0	4.0	-12.9	1.22	-1.16	-16.20
3,175.0	0.95	35.23	3,174.5	13.3	4.3	-13.3	1.04	-0.80	-36.36
3,200.0	1.00	41.46	3,199.5	13.6	4.6	-13.6	0.47	0.20	24.92
3,225.0	0.96	46.54	3,224.5	14.0	4.9	-13.9	0.38	-0.16	20.32
3,250.0	0.96	42.28	3,249.4	14.2	5.2	-14.2	0.29	0.00	-17.04
3,275.0	1.04	49.91	3,274.4	14.6	5.5	-14.5	0.62	0.32	30.52
3,300.0	1.21	53.90	3,299.4	14.9	5.9	-14.8	0.75	0.68	15.96
3,325.0	1.29	56.59	3,324.4	15.2	6.3	-15.1	0.40	0.32	10.76
3,350.0	1.44	52.85	3,349.4	15.5	6.8	-15.5	0.70	0.60	-14.96
3,375.0	1.49	58.37	3,374.4	15.9	7.4	-15.8	0.60	0.20	22.08
3,400.0	1.23	72.81	3,399.4	16.1	7.9	-16.1	1.71	-1.04	57.76

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Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	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	1.18	87.40	3,424.4	16.2	8.4	-16.2	1.24	-0.20	58.36	
3,450.0	1.23	104.91	3,449.4	16.2	8.9	-16.1	1.48	0.20	70.04	
3,475.0	1.21	108.10	3,474.4	16.0	9.4	-15.9	0.28	-0.08	12.76	
3,500.0	1.41	114.96	3,499.4	15.8	10.0	-15.7	1.02	0.80	27.44	
3,525.0	1.64	114.71	3,524.4	15.5	10.6	-15.4	0.92	0.92	-1.00	
3,550.0	1.74	114.36	3,549.4	15.2	11.2	-15.1	0.40	0.40	-1.40	
3,575.0	2.06	114.23	3,574.4	14.9	12.0	-14.8	1.28	1.28	-0.52	
3,600.0	2.28	114.98	3,599.3	14.5	12.8	-14.4	0.89	-0.88	3.00	
3,625.0	2.28	111.60	3,624.3	14.1	13.8	-14.0	0.54	0.00	-13.52	
3,650.0	2.35	114.28	3,649.3	13.7	14.7	-13.6	0.52	0.28	-10.72	
3,675.0	2.23	110.59	3,674.3	13.3	15.6	-13.2	0.76	-0.48	-14.76	
3,700.0	2.02	100.42	3,699.3	13.0	16.5	-13.0	1.72	-0.84	-40.68	
3,725.0	1.64	87.78	3,724.2	13.0	17.3	-12.9	2.21	-1.52	-50.56	
3,750.0	1.81	89.00	3,749.2	13.1	18.0	-13.0	2.12	-0.12	-75.12	
3,775.0	1.68	48.59	3,774.2	13.5	18.6	-13.4	2.35	0.28	-81.64	
3,800.0	1.90	36.24	3,799.2	14.1	19.1	-14.0	1.77	0.88	-49.40	
3,825.0	1.96	34.71	3,824.2	14.8	19.6	-14.6	0.32	0.24	-6.12	
3,850.0	2.04	38.13	3,849.2	15.5	20.1	-15.3	0.57	0.32	13.68	
3,875.0	2.01	37.77	3,874.2	16.1	20.6	-16.0	0.13	-0.12	-1.44	
3,900.0	2.13	43.46	3,899.2	16.8	21.2	-16.7	0.95	-0.48	22.76	
3,925.0	1.98	40.55	3,924.1	17.5	21.8	-17.4	0.73	-0.60	-11.64	
3,950.0	1.68	44.26	3,949.1	18.1	22.4	-18.0	1.29	-1.20	14.84	
3,975.0	0.67	25.14	3,974.1	18.5	22.7	-18.4	4.28	-4.04	-76.48	
4,000.0	0.60	257.06	3,999.1	18.6	22.6	-18.5	4.57	-0.28	-512.32	
4,025.0	1.14	236.62	4,024.1	18.4	22.3	-18.3	2.46	2.16	-81.76	
4,050.0	1.40	236.28	4,049.1	18.1	21.8	-18.0	1.04	1.04	-1.36	
4,075.0	1.53	227.35	4,074.1	17.7	21.3	-17.6	1.05	0.52	-35.72	
4,100.0	1.92	219.47	4,099.1	17.2	20.8	-17.0	1.82	1.56	-31.52	
4,125.0	2.18	210.71	4,124.1	16.4	20.3	-16.3	1.63	1.04	-35.04	
4,150.0	2.32	206.26	4,149.1	15.6	19.8	-15.5	0.90	0.56	-17.80	
4,175.0	2.43	203.47	4,174.0	14.6	19.4	-14.5	0.64	0.44	-11.16	
4,200.0	2.55	198.16	4,199.0	13.6	19.0	-13.5	1.04	0.48	-21.24	
4,225.0	2.43	196.62	4,224.0	12.6	18.7	-12.5	0.55	-0.48	-6.16	
4,250.0	2.12	191.11	4,249.0	11.6	18.5	-11.5	1.52	-1.24	-22.04	
4,275.0	1.74	178.76	4,274.0	10.8	18.4	-10.7	2.25	-1.52	-49.40	
4,300.0	1.53	165.02	4,298.9	10.1	18.5	-10.0	1.77	-0.84	-54.96	
4,325.0	1.50	151.18	4,323.9	9.5	18.7	-9.4	1.46	-0.12	-55.36	
4,350.0	1.49	137.67	4,348.9	9.0	19.1	-8.8	1.41	-0.04	-54.04	
4,375.0	1.72	130.20	4,373.9	8.5	19.6	-8.4	1.24	0.92	-29.88	
4,400.0	2.10	126.45	4,398.9	8.0	20.3	-7.8	1.60	1.52	-15.00	
4,425.0	2.27	120.70	4,423.9	7.4	21.0	-7.3	1.11	0.68	-23.00	
4,450.0	2.58	117.45	4,448.9	6.9	22.0	-6.8	1.36	1.24	-13.00	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #2H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	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	2.72	119.08	4,473.8	6.4	23.0	-6.2	0.64	0.56	6.52
4,500.0	2.81	119.62	4,498.8	5.8	24.0	-5.6	0.37	0.36	2.16
4,525.0	2.79	120.27	4,523.8	5.2	25.1	-5.0	0.15	-0.08	2.60
4,550.0	2.71	125.21	4,548.7	4.5	26.1	-4.4	1.00	-0.32	19.76
4,575.0	2.61	130.55	4,573.7	3.8	27.0	-3.7	1.07	-0.40	21.36
4,600.0	2.34	140.99	4,598.7	3.0	27.8	-2.9	2.10	-1.08	41.76
4,625.0	2.22	164.27	4,623.7	2.2	28.2	-2.0	3.71	-0.48	93.12
4,650.0	2.21	181.11	4,648.7	1.2	28.3	-1.1	2.59	-0.04	67.36
4,675.0	2.31	191.84	4,673.6	0.3	28.2	-0.1	1.74	0.40	42.92
4,700.0	2.48	195.62	4,698.6	-0.8	28.0	0.9	0.93	0.68	15.12
4,725.0	2.31	197.72	4,723.6	-1.8	27.7	1.9	0.77	-0.68	8.40
4,750.0	2.35	198.02	4,748.6	-2.7	27.4	2.9	0.17	0.16	1.20
4,775.0	2.38	195.71	4,773.6	-3.7	27.1	3.9	0.40	0.12	-9.24
4,800.0	2.22	198.19	4,798.5	-4.7	26.8	4.8	0.75	-0.64	9.92
4,825.0	2.34	196.79	4,823.5	-5.6	26.5	5.8	0.53	0.48	-5.60
4,850.0	2.26	197.09	4,848.5	-6.6	26.2	6.7	0.32	-0.32	1.20
4,875.0	2.20	198.28	4,873.5	-7.5	25.9	7.7	0.30	-0.24	4.76
4,900.0	2.09	200.25	4,898.5	-8.4	25.6	8.5	0.53	-0.44	7.88
4,925.0	2.16	198.23	4,923.4	-9.3	25.3	9.4	0.41	0.28	-8.08
4,950.0	2.15	195.31	4,948.4	-10.2	25.0	10.3	0.44	-0.04	-11.68
4,975.0	2.34	198.93	4,973.4	-11.1	24.7	11.2	0.95	0.76	14.48
5,000.0	2.16	199.09	4,998.4	-12.0	24.4	12.2	0.72	-0.72	0.64
5,025.0	2.20	197.77	5,023.4	-12.9	24.1	13.1	0.26	0.16	-5.28
5,050.0	2.30	200.68	5,048.3	-13.9	23.8	14.0	0.61	0.40	11.64
5,075.0	2.15	200.99	5,073.3	-14.8	23.4	14.9	0.60	-0.60	1.24
5,100.0	2.19	200.55	5,098.3	-15.6	23.1	15.8	0.17	0.16	-1.76
5,125.0	2.04	205.10	5,123.3	-16.5	22.7	16.6	0.90	-0.60	18.20
5,150.0	1.70	208.29	5,148.3	-17.2	22.4	17.4	1.42	-1.36	12.76
5,175.0	1.34	217.41	5,173.3	-17.8	22.0	17.9	1.73	-1.44	36.48
5,200.0	0.92	250.28	5,198.3	-18.1	21.7	18.2	3.02	-1.68	131.48
5,225.0	1.17	301.30	5,223.3	-18.0	21.3	18.1	3.71	1.00	204.08
5,250.0	1.13	308.68	5,248.3	-17.7	20.8	17.9	0.61	-0.16	29.52
5,275.0	1.06	308.34	5,273.3	-17.4	20.5	17.6	0.28	-0.28	-1.36
5,300.0	1.17	311.03	5,298.2	-17.1	20.1	17.2	0.49	0.44	10.76
5,325.0	1.04	319.20	5,323.2	-16.8	19.8	16.9	0.82	-0.52	32.68
5,350.0	1.02	322.31	5,348.2	-16.4	19.5	16.6	0.24	-0.08	12.44
5,375.0	1.12	320.35	5,373.2	-16.1	19.2	16.2	0.43	0.40	-7.84
5,400.0	1.15	317.58	5,398.2	-15.7	18.9	15.8	0.25	0.12	-11.08
5,425.0	1.15	318.43	5,423.2	-15.3	18.5	15.4	0.07	0.00	3.40
5,450.0	1.12	325.19	5,448.2	-14.9	18.2	15.0	0.55	-0.12	27.04
5,475.0	1.02	321.51	5,473.2	-14.6	17.9	14.7	0.49	-0.40	-14.72
5,500.0	1.13	319.61	5,498.2	-14.2	17.6	14.3	0.46	0.44	-7.60

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #2H
Project:	LEA COUNTY NM	TVD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	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	0.99	326.40	5,523.2	-13.8	17.4	13.9	0.75	-0.56	27.16	
5,550.0	1.08	317.53	5,548.2	-13.5	17.1	13.6	0.73	0.36	-35.48	
5,575.0	1.02	319.88	5,573.2	-13.1	16.8	13.2	0.30	-0.24	9.40	
5,600.0	0.98	316.00	5,598.2	-12.8	16.5	12.9	0.31	-0.16	-15.52	
5,625.0	0.89	320.07	5,623.2	-12.5	16.2	12.6	0.45	-0.36	16.28	
5,650.0	0.88	326.45	5,648.2	-12.2	16.0	12.3	0.40	-0.04	25.52	
5,675.0	0.89	318.43	5,673.2	-11.9	15.7	12.0	0.50	0.04	-32.08	
5,700.0	0.90	322.88	5,698.2	-11.6	15.5	11.7	0.28	0.04	17.80	
5,725.0	0.90	323.86	5,723.2	-11.3	15.3	11.4	0.06	0.00	3.92	
5,750.0	0.87	321.13	5,748.2	-11.0	15.0	11.1	0.21	-0.12	-10.92	
5,775.0	0.90	325.87	5,773.2	-10.7	14.8	10.7	0.32	0.12	18.96	
5,800.0	0.94	319.41	5,798.2	-10.3	14.6	10.4	0.44	0.16	-25.84	
5,825.0	0.91	317.15	5,823.2	-10.0	14.3	10.1	0.19	-0.12	-9.04	
5,850.0	0.79	323.75	5,848.2	-9.8	14.0	9.8	0.62	-0.48	26.40	
5,875.0	0.94	327.23	5,873.2	-9.4	13.8	9.5	0.64	0.60	13.92	
5,900.0	0.95	333.50	5,898.2	-9.1	13.6	9.2	0.42	0.04	25.08	
5,925.0	0.94	333.52	5,923.2	-8.7	13.4	8.8	0.04	-0.04	0.08	
5,950.0	1.07	337.33	5,948.2	-8.3	13.3	8.4	0.58	0.52	15.24	
5,975.0	1.08	328.07	5,973.1	-7.9	13.1	8.0	0.70	0.04	-37.04	
6,000.0	1.07	325.06	5,998.1	-7.5	12.8	7.6	0.23	-0.04	-12.04	
6,025.0	1.10	321.70	6,023.1	-7.1	12.5	7.2	0.28	0.12	-13.44	
6,050.0	0.93	325.24	6,048.1	-6.8	12.2	6.9	0.72	-0.68	14.16	
6,075.0	1.08	322.37	6,073.1	-6.4	12.0	6.5	0.63	0.60	-11.48	
6,100.0	1.04	326.80	6,098.1	-6.1	11.7	6.1	0.36	-0.16	17.72	
6,125.0	1.10	324.30	6,123.1	-5.7	11.5	5.7	0.30	0.24	-10.00	
6,150.0	1.09	322.71	6,148.1	-5.3	11.2	5.3	0.13	-0.04	-6.36	
6,175.0	1.09	323.04	6,173.1	-4.9	10.9	5.0	0.03	0.00	1.32	
6,200.0	1.07	327.10	6,198.1	-4.5	10.6	4.6	0.32	-0.08	16.24	
6,225.0	1.07	322.35	6,223.1	-4.1	10.3	4.2	0.35	0.00	-19.00	
6,250.0	0.96	315.53	6,248.1	-3.8	10.1	3.9	0.65	-0.44	-27.28	
6,275.0	0.99	322.07	6,273.1	-3.5	9.8	3.5	0.46	0.12	26.16	
6,300.0	0.85	323.06	6,298.1	-3.2	9.5	3.2	0.56	-0.56	3.96	
6,325.0	0.90	326.93	6,323.1	-2.9	9.3	2.9	0.31	0.20	15.48	
6,350.0	0.93	328.83	6,348.1	-2.5	9.1	2.6	0.17	0.12	7.60	
6,375.0	1.01	323.27	6,373.1	-2.2	8.9	2.2	0.49	0.32	-22.24	
6,400.0	0.88	327.75	6,398.1	-1.8	8.6	1.9	0.60	-0.52	17.92	
6,425.0	1.00	324.97	6,423.1	-1.5	8.4	1.5	0.51	0.48	-11.12	
6,450.0	0.87	322.27	6,448.1	-1.2	8.2	1.2	0.55	-0.52	-10.80	
6,475.0	0.96	325.59	6,473.1	-0.8	7.9	0.9	0.42	0.36	13.28	
6,500.0	0.83	321.82	6,498.1	-0.5	7.7	0.6	0.57	-0.52	-15.08	
6,525.0	0.90	331.09	6,523.1	-0.2	7.5	0.2	0.62	0.28	37.08	
6,550.0	0.93	323.45	6,548.1	0.1	7.3	-0.1	0.50	0.12	-30.56	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #2H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	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	0.88	329.31	6,573.1	0.5	7.1	-0.4	0.42	-0.20	23.44	
6,600.0	0.88	335.25	6,598.1	0.8	6.9	-0.8	0.36	0.00	23.76	
6,625.0	0.85	331.42	6,623.1	1.1	6.7	-1.1	0.26	-0.12	-15.32	
6,650.0	0.78	340.50	6,648.0	1.5	6.6	-1.4	0.59	-0.28	36.32	
6,675.0	0.95	321.02	6,673.0	1.8	6.4	-1.7	1.35	0.68	-77.92	
6,700.0	0.96	312.32	6,698.0	2.1	6.1	-2.0	0.58	0.04	-34.80	
6,725.0	0.78	328.60	6,723.0	2.4	5.8	-2.3	1.22	-0.72	65.12	
6,750.0	0.76	319.33	6,748.0	2.6	5.7	-2.6	0.50	-0.08	-37.08	
6,775.0	0.68	334.47	6,773.0	2.9	5.5	-2.9	0.82	-0.32	60.56	
6,800.0	0.77	331.12	6,798.0	3.2	5.3	-3.2	0.40	0.36	-13.40	
6,825.0	0.69	320.03	6,823.0	3.4	5.2	-3.4	0.65	-0.32	-44.36	
6,850.0	0.70	327.09	6,848.0	3.7	5.0	-3.7	0.34	0.04	28.24	
6,875.0	0.72	322.94	6,873.0	3.9	4.8	-3.9	0.22	0.08	-16.60	
6,900.0	0.69	326.52	6,898.0	4.2	4.6	-4.2	0.21	-0.12	14.32	
6,925.0	0.63	330.15	6,923.0	4.4	4.5	-4.4	0.29	-0.24	14.52	
6,950.0	0.54	321.36	6,948.0	4.6	4.3	-4.6	0.51	-0.36	-35.16	
6,975.0	0.57	319.02	6,973.0	4.8	4.2	-4.8	0.15	0.12	-9.36	
7,000.0	0.59	313.36	6,998.0	5.0	4.0	-5.0	0.24	0.08	-22.64	
7,025.0	0.69	324.13	7,023.0	5.2	3.8	-5.2	0.62	0.40	43.08	
7,050.0	0.53	332.00	7,048.0	5.5	3.7	-5.4	0.72	-0.64	31.48	
7,075.0	0.66	338.62	7,073.0	5.7	3.6	-5.7	0.59	0.52	26.48	
7,100.0	0.85	349.83	7,098.0	6.0	3.5	-6.0	0.96	0.76	44.84	
7,125.0	0.66	357.58	7,123.0	6.3	3.4	-6.3	0.86	-0.76	31.00	
7,150.0	0.68	2.51	7,148.0	6.6	3.4	-6.6	0.24	0.08	19.72	
7,175.0	0.64	358.61	7,173.0	6.9	3.4	-6.9	0.24	-0.16	-15.60	
7,200.0	0.68	354.43	7,198.0	7.2	3.4	-7.2	0.25	0.16	-16.72	
7,225.0	0.70	7.84	7,223.0	7.5	3.4	-7.5	0.65	0.08	53.64	
7,250.0	0.74	359.18	7,248.0	7.8	3.5	-7.8	0.46	0.16	-34.64	
7,275.0	0.67	1.59	7,273.0	8.1	3.5	-8.1	0.30	-0.28	9.64	
7,300.0	0.73	0.94	7,298.0	8.4	3.5	-8.4	0.24	0.24	-2.60	
7,325.0	0.70	358.40	7,323.0	8.7	3.5	-8.7	0.17	-0.12	-10.16	
7,350.0	0.69	0.94	7,348.0	9.0	3.5	-9.0	0.13	-0.04	10.16	
7,375.0	0.60	353.37	7,373.0	9.3	3.4	-9.3	0.50	-0.36	-30.28	
7,400.0	0.51	353.71	7,398.0	9.6	3.4	-9.5	0.36	-0.36	1.36	
7,425.0	0.61	7.65	7,423.0	9.8	3.4	-9.8	0.67	0.40	55.76	
7,450.0	0.64	347.62	7,448.0	10.1	3.4	-10.0	0.88	0.12	-80.12	
7,475.0	0.54	351.13	7,473.0	10.3	3.4	-10.3	0.43	-0.40	14.04	
7,500.0	0.52	337.02	7,498.0	10.5	3.3	-10.5	0.53	-0.08	-56.44	
7,525.0	0.40	339.56	7,523.0	10.7	3.2	-10.7	0.49	-0.48	10.16	
7,550.0	0.36	342.37	7,548.0	10.9	3.2	-10.9	0.18	-0.16	11.24	
7,575.0	0.30	331.71	7,573.0	11.0	3.1	-11.0	0.34	-0.24	-42.64	
7,600.0	0.25	317.28	7,598.0	11.1	3.0	-11.1	0.34	-0.20	-57.72	



Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #2H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	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	0.28	340.34	7,623.0	11.2	3.0	-11.2	0.44	0.12	92.24
7,650.0	0.14	279.07	7,648.0	11.3	2.9	-11.3	0.98	-0.56	-245.08
7,675.0	0.18	304.21	7,673.0	11.3	2.9	-11.3	0.32	0.16	100.56
7,700.0	0.31	302.89	7,698.0	11.4	2.8	-11.3	0.52	0.52	-5.28
7,725.0	0.39	276.12	7,723.0	11.4	2.6	-11.4	0.72	0.32	-107.08
7,750.0	0.35	266.10	7,748.0	11.4	2.5	-11.4	0.30	-0.16	-40.08
7,775.0	0.26	286.26	7,773.0	11.4	2.4	-11.4	0.55	-0.36	80.64
7,800.0	0.34	274.19	7,798.0	11.4	2.2	-11.4	0.41	0.32	-48.28
7,825.0	0.35	274.34	7,823.0	11.5	2.1	-11.4	0.04	0.04	0.60
7,850.0	0.22	271.79	7,848.0	11.5	2.0	-11.5	0.52	-0.52	-10.20
7,875.0	0.35	267.28	7,873.0	11.5	1.8	-11.4	0.53	0.52	-18.04
7,900.0	0.43	286.08	7,898.0	11.5	1.7	-11.5	0.60	0.32	75.20
7,925.0	0.50	252.81	7,923.0	11.5	1.5	-11.5	1.10	0.28	-133.08
7,950.0	0.26	275.26	7,948.0	11.4	1.3	-11.4	1.11	-0.96	89.80
7,975.0	0.37	285.99	7,973.0	11.5	1.2	-11.5	0.50	0.44	42.92
8,000.0	0.40	277.90	7,998.0	11.5	1.0	-11.5	0.25	0.12	-32.36
8,025.0	0.19	277.75	8,023.0	11.5	0.9	-11.5	0.84	-0.84	-0.60
8,050.0	0.29	282.19	8,048.0	11.5	0.8	-11.5	0.41	0.40	17.76
8,075.0	0.25	261.99	8,073.0	11.6	0.7	-11.5	0.41	-0.16	-80.80
8,100.0	0.24	256.37	8,098.0	11.5	0.6	-11.5	0.10	-0.04	-22.48
8,125.0	0.24	261.08	8,123.0	11.5	0.5	-11.5	0.08	0.00	18.84
8,150.0	0.25	241.48	8,148.0	11.5	0.4	-11.5	0.34	0.04	-78.40
8,175.0	0.22	255.68	8,173.0	11.4	0.3	-11.4	0.26	-0.12	56.80
8,200.0	0.29	256.98	8,198.0	11.4	0.2	-11.4	0.28	0.28	5.20
8,225.0	0.28	256.50	8,223.0	11.4	0.0	-11.4	0.04	-0.04	-1.92
8,250.0	0.33	240.87	8,248.0	11.3	-0.1	-11.3	0.39	0.20	-62.52
8,275.0	0.23	238.62	8,273.0	11.3	-0.2	-11.3	0.40	-0.40	-9.00
8,300.0	0.29	248.24	8,298.0	11.2	-0.3	-11.2	0.30	0.24	38.48
8,325.0	0.22	222.29	8,323.0	11.2	-0.4	-11.2	0.53	-0.28	-103.80
8,350.0	0.29	242.34	8,348.0	11.1	-0.5	-11.1	0.45	0.28	80.20
8,375.0	0.38	218.53	8,373.0	11.0	-0.6	-11.0	0.66	0.36	-95.24
8,400.0	0.38	223.26	8,398.0	10.9	-0.7	-10.9	0.13	0.00	18.92
8,425.0	0.21	203.69	8,423.0	10.8	-0.8	-10.8	0.78	-0.68	-78.28
8,450.0	0.31	208.43	8,448.0	10.7	-0.8	-10.7	0.41	0.40	18.96
8,475.0	0.23	214.44	8,473.0	10.6	-0.9	-10.6	0.34	-0.32	24.04
8,500.0	0.39	195.65	8,498.0	10.5	-0.9	-10.5	0.75	0.64	-75.16
8,525.0	0.34	207.19	8,523.0	10.3	-1.0	-10.3	0.35	-0.20	46.16
8,550.0	0.34	189.48	8,548.0	10.2	-1.0	-10.2	0.42	0.00	-70.84
8,575.0	0.37	212.79	8,573.0	10.0	-1.1	-10.0	0.59	0.12	93.24
8,600.0	0.36	185.60	8,598.0	9.9	-1.1	-9.9	0.69	-0.04	-108.76
8,625.0	0.45	192.95	8,623.0	9.7	-1.2	-9.7	0.41	0.36	29.40
8,650.0	0.32	204.90	8,648.0	9.5	-1.2	-9.6	0.61	-0.52	47.80

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well-TIGERCAT FED COM #2H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	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)	Bullid Rate (°/100usft)	Turn Rate (°/100usft)	
8,675.0	0.37	190.46	8,673.0	9.4	-1.3	-9.4	0.40	0.20	-57.76	
8,700.0	0.43	199.22	8,698.0	9.2	-1.3	-9.2	0.34	0.24	35.04	
8,725.0	0.37	206.06	8,723.0	9.1	-1.4	-9.1	0.31	-0.24	27.36	
8,750.0	0.39	179.88	8,748.0	8.9	-1.4	-8.9	0.69	0.08	-104.72	
8,775.0	0.44	191.64	8,773.0	8.7	-1.4	-8.7	0.39	0.20	47.04	
8,800.0	0.40	197.92	8,798.0	8.6	-1.5	-8.6	0.24	-0.16	25.12	
8,825.0	0.37	196.30	8,823.0	8.4	-1.5	-8.4	0.13	-0.12	-6.48	
8,850.0	0.41	182.81	8,848.0	8.2	-1.6	-8.2	0.40	0.16	-53.96	
8,875.0	0.44	196.26	8,873.0	8.1	-1.6	-8.1	0.42	0.12	53.80	
8,900.0	0.37	199.76	8,898.0	7.9	-1.6	-7.9	0.30	-0.28	14.00	
8,925.0	0.35	192.40	8,923.0	7.7	-1.7	-7.7	0.20	-0.08	-29.44	
8,950.0	0.40	189.29	8,948.0	7.6	-1.7	-7.6	0.22	0.20	-12.44	
8,975.0	0.41	195.68	8,973.0	7.4	-1.8	-7.4	0.18	0.04	25.56	
9,000.0	0.48	201.20	8,998.0	7.2	-1.8	-7.2	0.33	0.28	22.08	
9,025.0	0.34	187.76	9,023.0	7.0	-1.9	-7.1	0.68	-0.56	-53.76	
9,050.0	0.26	206.74	9,048.0	6.9	-1.9	-6.9	0.51	-0.32	75.92	
9,075.0	0.37	222.32	9,073.0	6.8	-2.0	-6.8	0.55	0.44	62.32	
9,100.0	0.28	222.88	9,098.0	6.7	-2.1	-6.7	0.36	-0.36	2.24	
9,125.0	0.23	226.23	9,123.0	6.6	-2.2	-6.6	0.21	-0.20	13.40	
9,150.0	0.34	248.94	9,148.0	6.6	-2.3	-6.6	0.62	0.44	90.84	
9,175.0	0.29	260.33	9,173.0	6.5	-2.4	-6.5	0.32	-0.20	45.56	
9,200.0	0.28	289.14	9,198.0	6.5	-2.5	-6.6	0.57	-0.04	115.24	
9,225.0	0.35	299.50	9,223.0	6.6	-2.6	-6.6	0.36	0.28	41.44	
9,250.0	0.28	282.99	9,248.0	6.6	-2.8	-6.7	0.46	-0.28	-66.04	
9,275.0	0.37	270.49	9,273.0	6.7	-2.9	-6.7	0.46	0.36	-50.00	
9,300.0	0.33	289.77	9,298.0	6.7	-3.0	-6.7	0.49	-0.16	77.12	
9,325.0	0.46	283.87	9,323.0	6.7	-3.2	-6.8	0.54	0.52	-23.60	
9,350.0	0.45	288.89	9,348.0	6.8	-3.4	-6.8	0.16	-0.04	20.08	
9,375.0	0.49	287.93	9,373.0	6.9	-3.6	-6.9	0.16	0.16	-3.84	
9,400.0	0.57	293.36	9,398.0	6.9	-3.8	-7.0	0.38	0.32	21.72	
9,425.0	0.57	284.60	9,423.0	7.0	-4.0	-7.0	0.35	0.00	-35.04	
9,450.0	0.52	281.68	9,448.0	7.1	-4.3	-7.1	0.23	-0.20	-11.68	
9,475.0	0.27	280.61	9,473.0	7.1	-4.4	-7.1	1.00	-1.00	-4.28	
9,500.0	0.08	274.82	9,498.0	7.1	-4.5	-7.1	0.76	-0.76	-23.16	
9,525.0	0.13	124.34	9,523.0	7.1	-4.5	-7.1	0.81	0.20	-601.92	
9,550.0	0.24	103.77	9,548.0	7.1	-4.4	-7.1	0.51	0.44	-82.28	
9,575.0	0.35	127.07	9,573.0	7.0	-4.3	-7.0	0.64	0.44	93.20	
9,600.0	0.44	129.99	9,598.0	6.9	-4.2	-6.9	0.37	0.36	11.68	
9,625.0	0.54	123.62	9,622.9	6.8	-4.0	-6.8	0.45	0.40	-25.48	
9,650.0	0.63	150.23	9,647.9	6.6	-3.9	-6.6	1.13	0.36	106.44	
9,675.0	0.54	146.52	9,667.9	6.4	-3.8	-6.4	0.49	-0.45	-18.55	
9,700.0	0.74	157.26	9,697.9	6.1	-3.6	-6.1	0.77	0.67	35.80	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #2H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	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)	
9,731.0	0.81	170.75	9,728.9	5.7	-3.5	-5.7	0.63	0.23	43.52	
9,794.0	1.34	176.92	9,791.9	4.6	-3.4	-4.6	0.86	0.84	9.79	
9,825.0	5.29	180.56	9,822.9	2.8	-3.4	-2.8	12.75	12.74	11.74	
9,856.0	9.66	189.17	9,853.6	-1.2	-3.8	1.2	14.51	14.10	27.77	
9,918.0	15.52	179.70	9,914.1	-14.7	-4.6	14.7	9.99	9.45	-15.27	
9,965.0	19.63	174.22	9,958.9	-28.8	-3.8	28.8	9.42	8.74	-11.66	
10,012.0	26.42	178.23	10,002.1	-47.2	-2.6	47.1	14.82	14.45	8.53	
10,059.0	31.89	181.43	10,043.2	-70.0	-2.6	70.0	12.10	11.64	6.81	
10,105.0	35.21	183.63	10,081.5	-95.4	-3.8	95.4	7.69	7.22	4.78	
10,168.0	40.21	181.34	10,131.3	-133.9	-5.4	133.9	8.24	7.94	-3.63	
10,199.0	43.03	178.35	10,154.5	-154.5	-5.3	154.5	11.12	9.10	-9.65	
10,246.0	48.32	179.74	10,187.3	-188.1	-4.8	188.1	11.45	11.26	2.96	
10,293.0	53.17	183.26	10,217.1	-224.5	-5.8	224.4	11.83	10.32	7.49	
10,324.0	56.96	183.75	10,234.8	-249.8	-7.3	249.8	12.29	12.23	1.58	
10,386.0	66.23	183.22	10,264.3	-304.2	-10.6	304.1	14.97	14.95	-0.85	
10,433.0	73.48	181.93	10,280.4	-348.2	-12.6	348.2	15.64	15.43	-2.74	
10,480.0	81.19	179.48	10,290.7	-394.1	-13.1	394.0	17.17	16.40	-5.21	
10,508.0	85.90	178.30	10,293.9	-421.9	-12.6	421.8	17.33	16.82	-4.21	
10,602.0	89.40	177.77	10,297.7	-515.7	-9.4	515.7	3.77	3.72	-0.56	
10,696.0	88.87	177.06	10,299.2	-609.6	-5.1	609.6	0.94	-0.56	-0.76	
10,790.0	90.07	177.89	10,300.0	-703.5	-1.0	703.5	1.55	1.28	0.88	
10,884.0	89.45	177.48	10,300.4	-797.4	2.8	797.4	0.79	-0.66	-0.44	
10,978.0	89.65	177.62	10,301.2	-891.3	6.8	891.4	0.26	0.21	0.15	
11,071.0	88.31	177.26	10,302.8	-984.2	11.0	984.3	1.49	-1.44	-0.39	
11,165.0	88.67	177.77	10,305.3	-1,078.1	15.0	1,078.2	0.66	0.38	0.54	
11,258.0	88.47	178.25	10,307.6	-1,171.0	18.3	1,171.1	0.56	-0.22	0.52	
11,352.0	88.75	178.55	10,309.9	-1,265.0	20.9	1,265.1	0.44	0.30	0.32	
11,446.0	89.90	177.85	10,311.0	-1,358.9	23.8	1,359.0	1.43	1.22	-0.74	
11,540.0	90.35	179.80	10,310.8	-1,452.9	25.8	1,453.0	2.13	0.48	2.07	
11,633.0	90.99	180.13	10,309.7	-1,545.9	25.8	1,546.0	0.77	0.69	0.35	
11,727.0	88.28	179.07	10,310.3	-1,639.9	26.5	1,640.0	3.10	-2.88	-1.13	
11,821.0	90.63	179.38	10,311.2	-1,733.8	27.8	1,734.0	2.52	2.50	0.33	
11,914.0	91.61	180.22	10,309.4	-1,826.8	28.1	1,827.0	1.39	1.05	0.90	
12,008.0	91.75	180.38	10,306.6	-1,920.8	27.6	1,920.9	0.23	0.15	0.17	
12,102.0	90.63	180.72	10,304.7	-2,014.8	26.7	2,014.9	1.25	-1.19	0.36	
12,196.0	90.74	180.18	10,303.6	-2,108.7	25.9	2,108.9	0.59	0.12	-0.57	
12,291.0	89.85	179.50	10,303.1	-2,203.7	26.2	2,203.9	1.18	-0.94	-0.72	
12,385.0	88.53	178.78	10,304.4	-2,297.7	27.6	2,297.8	1.60	-1.40	-0.77	
12,478.0	88.92	180.02	10,306.5	-2,390.7	28.6	2,390.8	1.40	0.42	1.33	
12,572.0	90.85	181.29	10,306.7	-2,484.7	27.5	2,484.8	2.46	2.05	1.35	
12,665.0	90.49	181.42	10,305.6	-2,577.6	25.3	2,577.8	0.41	-0.39	0.14	
12,759.0	88.67	181.21	10,306.3	-2,671.6	23.2	2,671.7	1.95	-1.94	-0.22	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #2H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	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)	
12,852.0	89.85	181.76	10,307.5	-2,764.6	20.8	2,764.6	1.40	1.27	0.59	
12,945.0	89.87	181.81	10,307.7	-2,857.5	18.0	2,857.6	0.16	0.02	-0.16	
13,039.0	90.43	181.51	10,307.4	-2,951.5	15.5	2,951.5	0.61	0.60	-0.11	
13,132.0	90.69	182.76	10,308.5	-3,044.4	12.0	3,044.4	1.37	0.28	1.34	
13,226.0	88.44	181.81	10,307.2	-3,138.3	8.2	3,138.3	2.60	-2.39	-1.01	
13,319.0	89.79	182.92	10,308.7	-3,231.3	4.4	3,231.2	1.88	1.45	1.19	
13,413.0	89.03	180.87	10,309.6	-3,325.2	1.5	3,325.1	2.53	-0.81	-2.39	
13,508.0	91.30	183.11	10,309.4	-3,420.1	-1.7	3,420.1	3.51	2.39	2.57	
13,602.0	89.68	181.20	10,308.6	-3,514.0	-5.2	3,514.0	2.66	-1.72	-2.03	
13,695.0	87.52	180.40	10,310.8	-3,607.0	-6.5	3,606.9	2.48	-2.32	-0.86	
13,789.0	87.32	179.97	10,315.1	-3,700.9	-6.8	3,700.8	0.50	-0.21	-0.46	
13,882.0	87.24	180.31	10,319.5	-3,793.8	-7.0	3,793.7	0.38	-0.09	0.37	
13,975.0	86.17	180.19	10,324.8	-3,886.6	-7.4	3,886.5	1.16	-1.15	-0.13	
14,069.0	87.91	178.91	10,329.7	-3,980.5	-6.7	3,980.4	2.30	1.85	-1.36	
14,162.0	88.67	178.83	10,332.5	-4,073.5	-4.9	4,073.4	0.82	0.82	-0.09	
14,256.0	91.13	180.23	10,332.6	-4,167.4	-4.1	4,167.3	3.01	2.62	1.49	
14,349.0	88.61	180.14	10,332.8	-4,260.4	-4.4	4,260.3	2.71	-2.71	-0.10	
14,443.0	88.95	179.69	10,334.8	-4,354.4	-4.3	4,354.3	0.60	0.36	-0.48	
14,537.0	90.29	178.14	10,335.5	-4,448.4	-2.5	4,448.3	2.18	1.43	-1.65	
14,631.0	88.89	177.59	10,336.1	-4,542.3	1.0	4,542.2	1.60	-1.49	-0.59	
14,726.0	89.15	177.06	10,337.8	-4,637.2	5.5	4,637.2	0.62	0.27	-0.56	
14,819.0	91.00	176.76	10,337.6	-4,730.1	10.5	4,730.0	2.02	1.99	-0.32	
14,913.0	91.47	176.89	10,335.6	-4,823.9	15.7	4,823.9	0.52	0.50	0.14	
15,007.0	91.33	176.99	10,333.3	-4,917.7	20.7	4,917.8	0.18	-0.15	0.11	
15,100.0	91.30	177.36	10,331.2	-5,010.6	25.3	5,010.7	0.40	-0.03	0.40	
15,194.0	89.48	178.22	10,330.5	-5,104.5	28.9	5,104.6	2.14	-1.94	0.91	
15,287.0	89.87	178.81	10,331.1	-5,197.5	31.3	5,197.6	0.76	0.42	0.63	
15,380.0	89.45	178.86	10,331.6	-5,290.5	33.2	5,290.6	0.45	-0.45	0.05	
15,474.0	88.33	178.25	10,333.4	-5,384.4	35.6	5,384.5	1.36	-1.19	-0.65	
15,567.0	88.56	178.43	10,336.0	-5,477.3	38.3	5,477.5	0.31	0.25	0.19	
15,661.0	87.44	178.75	10,339.2	-5,571.3	40.6	5,571.4	1.24	-1.19	0.34	
15,753.0	88.17	178.07	10,342.8	-5,663.1	43.1	5,663.3	1.08	0.79	-0.74	
15,847.0	88.92	177.76	10,345.2	-5,757.1	46.5	5,757.2	0.86	0.80	-0.33	
15,940.0	90.10	177.23	10,346.0	-5,850.0	50.6	5,850.2	1.39	1.27	-0.57	
16,033.0	91.25	176.64	10,344.9	-5,942.8	55.6	5,943.0	1.39	1.24	-0.63	
16,126.0	89.59	177.95	10,344.2	-6,035.7	60.0	6,036.0	2.27	-1.78	1.41	
16,220.0	88.33	179.95	10,345.9	-6,129.7	61.7	6,129.9	2.51	-1.34	2.13	
16,313.0	88.98	179.42	10,348.1	-6,222.6	62.2	6,222.9	0.90	0.70	-0.57	
16,407.0	89.29	179.93	10,349.5	-6,316.6	62.7	6,316.9	0.63	0.33	0.54	
16,501.0	89.87	180.16	10,350.2	-6,410.6	62.7	6,410.9	0.66	0.62	0.24	
16,594.0	87.60	179.88	10,352.2	-6,503.6	62.6	6,503.9	2.46	-2.44	-0.30	
16,688.0	89.57	180.20	10,354.5	-6,597.6	62.6	6,597.8	2.12	2.10	0.34	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #2H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Site:	BULLDOG	MD Reference:	RKB=27+3322.23 @ 3349.3usft (SCANDRILL FREEDOM)
Well:	TIGERCAT FED COM #2H	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)	
16,782.0	92.03	179.89	10,353.2	-6,691.5	62.5	6,691.8	2.64	2.62	-0.33	
16,875.0	90.46	182.21	10,351.2	-6,784.5	60.8	6,784.7	3.01	-1.69	2.49	
16,969.0	87.44	182.41	10,352.9	-6,878.4	57.0	6,878.6	3.22	-3.21	0.21	
17,063.0	87.16	183.03	10,357.4	-6,972.2	52.5	6,972.4	0.72	-0.30	0.66	
17,156.0	88.98	182.86	10,360.5	-7,065.0	47.8	7,065.2	1.97	1.96	-0.18	
17,249.0	85.53	180.70	10,364.9	-7,157.8	44.9	7,158.0	4.38	-3.71	-2.32	
17,343.0	84.85	181.08	10,372.8	-7,251.5	43.4	7,251.6	0.83	-0.72	0.40	
17,435.0	86.17	180.40	10,380.0	-7,343.2	42.2	7,343.3	1.61	1.43	-0.74	
17,529.0	86.85	180.03	10,385.8	-7,437.0	41.9	7,437.1	0.82	0.72	-0.39	
17,622.0	87.83	178.70	10,390.1	-7,529.9	42.9	7,530.0	1.78	1.05	-1.43	
17,715.0	88.08	179.05	10,393.4	-7,622.8	44.7	7,623.0	0.46	0.27	0.38	
17,809.0	89.12	179.50	10,395.7	-7,716.8	45.9	7,716.9	1.21	1.11	0.48	
17,903.0	88.33	179.25	10,397.8	-7,810.8	47.0	7,810.9	0.88	-0.84	-0.27	
17,996.0	87.69	179.16	10,401.0	-7,903.7	48.3	7,903.9	0.69	-0.69	-0.10	
18,090.0	89.96	179.79	10,402.9	-7,997.7	49.1	7,997.8	2.51	2.41	0.67	
18,184.0	90.57	179.63	10,402.5	-8,091.7	49.6	8,091.8	0.67	0.65	-0.17	
18,277.0	88.73	180.32	10,403.1	-8,184.7	49.6	8,184.8	2.11	-1.98	0.74	
18,370.0	88.28	179.58	10,405.5	-8,277.6	49.7	8,277.8	0.93	-0.48	-0.80	
18,463.0	88.08	179.28	10,408.4	-8,370.6	50.6	8,370.7	0.39	-0.22	-0.32	
18,556.0	88.95	180.82	10,410.9	-8,463.5	50.6	8,463.7	1.90	0.94	1.66	
18,649.0	88.73	180.92	10,412.7	-8,556.5	49.1	8,556.7	0.26	-0.24	0.11	
18,743.0	87.80	180.64	10,415.6	-8,650.5	47.9	8,650.6	1.03	-0.99	-0.30	
18,835.0	89.87	181.14	10,417.5	-8,742.4	46.4	8,742.6	2.31	2.25	0.54	
18,930.0	89.59	181.03	10,417.9	-8,837.4	44.6	8,837.5	0.32	-0.29	-0.12	
19,023.0	90.83	181.39	10,417.6	-8,930.4	42.7	8,930.5	1.39	1.33	0.39	
19,117.0	90.85	180.12	10,416.2	-9,024.4	41.4	9,024.5	1.35	0.02	-1.35	
19,210.0	91.58	179.89	10,414.2	-9,117.3	41.4	9,117.4	0.82	0.78	-0.25	
19,303.0	90.83	179.38	10,412.3	-9,210.3	42.0	9,210.4	0.98	-0.81	-0.55	
19,396.0	90.85	177.80	10,410.9	-9,303.3	44.3	9,303.4	1.70	0.02	-1.70	
19,489.0	90.88	177.56	10,409.5	-9,396.2	48.1	9,396.3	0.26	0.03	-0.26	
19,583.0	91.47	177.86	10,407.6	-9,490.1	51.8	9,490.2	0.70	0.63	0.32	
19,676.0	89.65	179.36	10,406.7	-9,583.1	54.1	9,583.2	2.54	-1.96	1.61	
19,766.0	89.65	179.36	10,407.9	-9,783.0	56.3	9,783.2	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____