

CONCHO

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

TIGERCAT FED COM #3H

OWB

Design: ACTUAL WELLPATH

HOBBS OGD

NOV 09 2018

RECEIVED

Standard Survey Report

26 June, 2018

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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 #3H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	3.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 3' 51.048 N
		Longitude:	103° 35' 49.392 W
		Ground Level:	3,324.5 usft

Wellbore:	OWB		
Magnetics	Model Name	Sample Date	Declination
			(°)
	WMM2015	11/7/2017	6.93
			Dip Angle
			(°)
			Field Strength
			(nT)
			47,788.22806612

Design:	ACTUAL WELLPATH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			179.57

Survey Program	Date 6/26/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	11,558.0	GYRO (OWB)	Standard Keeper 104
11,689.0	17,636.0	MWD-CURVE/LATERAL (OWB)	MWD-IFR1+MS
			Description
			Standard Wireline Keeper ver 1.0.4
			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	0.64	259.32	100.0	-0.1	-0.5	0.1	0.64	0.64	0.00
125.0	0.64	264.47	125.0	-0.1	-0.8	0.1	0.23	0.00	20.60
150.0	0.64	272.76	150.0	-0.1	-1.1	0.1	0.37	0.00	33.16
175.0	0.70	270.80	175.0	-0.1	-1.4	0.1	0.26	0.24	-7.84
200.0	0.80	265.52	200.0	-0.2	-1.7	0.1	0.49	0.40	-21.12
225.0	0.85	260.61	225.0	-0.2	-2.1	0.2	0.35	0.20	-19.64
250.0	0.82	256.24	250.0	-0.3	-2.4	0.3	0.28	-0.12	-17.48

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Well:	TIGERCAT FED COM #3H	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	0.81	253.91	275.0	-0.4	-2.8	0.3	0.14	-0.04	-9.32
300.0	0.83	256.05	300.0	-0.5	-3.1	0.4	0.15	0.08	8.56
325.0	0.91	256.65	325.0	-0.5	-3.5	0.5	0.32	0.32	2.40
350.0	1.01	256.72	350.0	-0.6	-3.9	0.6	0.40	0.40	0.28
375.0	1.09	251.23	375.0	-0.8	-4.3	0.7	0.51	0.32	-21.96
400.0	1.08	247.06	400.0	-0.9	-4.8	0.9	0.32	-0.04	-16.68
425.0	1.05	247.24	425.0	-1.1	-5.2	1.1	0.12	-0.12	0.72
450.0	1.03	249.82	450.0	-1.3	-5.6	1.2	0.20	-0.08	10.32
475.0	1.06	251.18	475.0	-1.4	-6.1	1.4	0.16	0.12	5.44
500.0	1.09	250.87	499.9	-1.6	-6.5	1.5	0.12	0.12	-1.24
525.0	1.08	248.34	524.9	-1.8	-7.0	1.7	0.20	-0.04	-10.12
550.0	1.00	245.87	549.9	-1.9	-7.4	1.9	0.37	-0.32	-9.88
575.0	0.88	240.80	574.9	-2.1	-7.7	2.1	0.58	-0.48	-20.28
600.0	0.65	238.23	599.9	-2.3	-8.0	2.2	0.93	-0.92	-10.28
625.0	0.48	234.59	624.9	-2.4	-8.2	2.4	0.69	-0.68	-14.56
650.0	0.43	226.07	649.9	-2.5	-8.4	2.5	0.34	-0.20	-34.08
675.0	0.41	215.92	674.9	-2.7	-8.5	2.6	0.31	-0.08	-40.60
700.0	0.39	206.96	699.9	-2.8	-8.6	2.8	0.26	-0.08	-35.84
725.0	0.29	202.76	724.9	-3.0	-8.7	2.9	0.41	-0.40	-16.80
750.0	0.29	204.48	749.9	-3.1	-8.7	3.0	0.03	0.00	6.88
775.0	0.28	213.40	774.9	-3.2	-8.8	3.1	0.18	-0.04	35.68
800.0	0.34	218.38	799.9	-3.3	-8.8	3.2	0.26	0.24	19.92
825.0	0.35	219.24	824.9	-3.4	-8.9	3.3	0.05	0.04	3.44
850.0	0.42	213.30	849.9	-3.5	-9.0	3.5	0.32	0.28	-23.76
875.0	0.38	206.21	874.9	-3.7	-9.1	3.6	0.25	-0.16	-28.36
900.0	0.27	207.77	899.9	-3.8	-9.2	3.8	0.44	-0.44	6.24
925.0	0.22	227.79	924.9	-3.9	-9.3	3.8	0.39	-0.20	80.08
950.0	0.28	243.02	949.9	-4.0	-9.3	3.9	0.36	0.24	60.92
975.0	0.32	236.93	974.9	-4.0	-9.5	4.0	0.20	0.16	-24.36
1,000.0	0.28	228.25	999.9	-4.1	-9.6	4.0	0.24	-0.16	-34.72
1,025.0	0.18	227.17	1,024.9	-4.2	-9.6	4.1	0.40	-0.40	-4.32
1,050.0	0.16	11.00	1,049.9	-4.2	-9.7	4.1	1.29	-0.08	575.32
1,075.0	0.53	20.88	1,074.9	-4.0	-9.6	4.0	1.49	1.48	39.52
1,100.0	0.73	25.03	1,099.9	-3.8	-9.5	3.7	0.82	0.80	16.60
1,125.0	0.87	29.82	1,124.9	-3.5	-9.3	3.4	0.62	0.56	19.16
1,150.0	1.15	28.76	1,149.9	-3.1	-9.1	3.0	1.12	1.12	-4.24
1,175.0	1.41	28.10	1,174.9	-2.6	-8.9	2.5	1.04	1.04	-2.64
1,200.0	1.49	27.73	1,199.9	-2.0	-8.6	2.0	0.32	0.32	-1.48
1,225.0	1.50	24.62	1,224.9	-1.4	-8.3	1.4	0.33	0.04	-12.44
1,250.0	1.46	23.73	1,249.9	-0.9	-8.0	0.8	0.18	-0.16	-3.56
1,275.0	1.55	24.13	1,274.9	-0.3	-7.7	0.2	0.36	0.36	1.60
1,300.0	1.65	25.61	1,299.9	0.4	-7.4	-0.4	0.43	0.40	5.92

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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)	
1,325.0	2.04	23.75	1,324.9	1.1	-7.1	-1.2	1.58	1.56	-7.44	
1,350.0	2.85	20.29	1,349.8	2.1	-6.7	-2.1	3.29	3.24	-13.84	
1,375.0	3.87	17.64	1,374.8	3.5	-6.2	-3.5	4.13	4.08	-10.60	
1,400.0	4.37	17.23	1,399.7	5.2	-5.7	-5.2	2.00	2.00	-1.64	
1,425.0	4.70	17.62	1,424.6	7.1	-5.1	-7.1	1.33	1.32	1.56	
1,450.0	5.12	16.72	1,449.6	9.1	-4.5	-9.2	1.71	1.68	-3.60	
1,475.0	5.47	15.87	1,474.4	11.3	-3.8	-11.4	1.43	1.40	-3.40	
1,500.0	6.28	13.00	1,499.3	13.8	-3.2	-13.8	3.45	3.24	-11.48	
1,525.0	7.01	10.61	1,524.1	16.7	-2.6	-16.7	3.12	2.92	-9.56	
1,550.0	7.25	10.12	1,549.0	19.7	-2.1	-19.7	0.99	0.96	-1.96	
1,575.0	7.40	9.64	1,573.8	22.8	-1.5	-22.9	0.65	0.60	-1.92	
1,600.0	7.65	8.83	1,598.5	26.1	-1.0	-26.1	1.09	1.00	-3.24	
1,625.0	7.75	8.20	1,623.3	29.4	-0.5	-29.4	0.52	0.40	-2.52	
1,650.0	8.00	6.74	1,648.1	32.8	0.0	-32.8	1.28	1.00	-5.84	
1,675.0	8.20	5.76	1,672.8	36.3	0.3	-36.3	0.97	0.80	-3.92	
1,700.0	8.22	5.52	1,697.6	39.8	0.7	-39.8	0.16	0.08	-0.96	
1,725.0	8.23	5.59	1,722.3	43.4	1.0	-43.4	0.06	0.04	0.28	
1,750.0	8.33	5.55	1,747.1	47.0	1.4	-47.0	0.40	0.40	-0.16	
1,775.0	8.41	5.27	1,771.8	50.6	1.7	-50.6	0.36	0.32	-1.12	
1,800.0	8.39	5.18	1,796.5	54.2	2.1	-54.2	0.10	-0.08	-0.36	
1,825.0	8.38	4.56	1,821.2	57.9	2.4	-57.9	0.36	-0.04	-2.48	
1,850.0	8.28	4.66	1,846.0	61.5	2.7	-61.5	0.40	-0.40	0.40	
1,875.0	8.22	4.88	1,870.7	65.1	3.0	-65.0	0.27	-0.24	0.88	
1,900.0	7.95	3.82	1,895.5	68.6	3.2	-68.5	1.23	-1.08	-4.24	
1,925.0	7.69	2.75	1,920.2	72.0	3.4	-71.9	1.19	-1.04	-4.28	
1,950.0	7.52	2.25	1,945.0	75.3	3.6	-75.2	0.73	-0.68	-2.00	
1,975.0	7.36	1.82	1,969.8	78.5	3.7	-78.5	0.68	-0.64	-1.72	
2,000.0	7.32	1.70	1,994.6	81.7	3.8	-81.7	0.17	-0.16	-0.48	
2,025.0	6.85	1.53	2,019.4	84.8	3.9	-84.7	1.88	-1.88	-0.68	
2,050.0	6.34	1.96	2,044.3	87.6	3.9	-87.6	2.05	-2.04	1.72	
2,075.0	6.27	2.52	2,069.1	90.4	4.1	-90.4	0.37	-0.28	2.24	
2,100.0	6.06	2.18	2,094.0	93.1	4.2	-93.0	0.85	-0.84	-1.36	
2,125.0	6.09	2.48	2,118.8	95.7	4.3	-95.7	0.17	0.12	1.20	
2,150.0	6.33	2.68	2,143.7	98.4	4.4	-98.4	0.96	0.96	0.80	
2,175.0	6.37	2.51	2,168.5	101.2	4.5	-101.1	0.18	0.16	-0.68	
2,200.0	6.36	2.61	2,193.4	103.9	4.6	-103.9	0.06	-0.04	0.40	
2,225.0	6.42	2.53	2,218.2	106.7	4.8	-106.7	0.24	0.24	-0.32	
2,250.0	6.41	3.07	2,243.1	109.5	4.9	-109.5	0.24	-0.04	2.16	
2,275.0	6.32	2.97	2,267.9	112.3	5.1	-112.2	0.36	-0.36	-0.40	
2,300.0	6.26	2.64	2,292.7	115.0	5.2	-115.0	0.28	-0.24	-1.32	
2,325.0	6.26	2.67	2,317.6	117.7	5.3	-117.7	0.01	0.00	0.12	
2,350.0	6.23	3.01	2,342.4	120.5	5.4	-120.4	0.19	-0.12	1.36	

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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)
2,375.0	6.13	2.99	2,367.3	123.1	5.6	-123.1	0.40	-0.40	-0.08
2,400.0	6.07	3.33	2,392.2	125.8	5.7	-125.8	0.28	-0.24	1.36
2,425.0	6.05	3.41	2,417.0	128.4	5.9	-128.4	0.09	-0.08	0.32
2,450.0	5.90	2.86	2,441.9	131.0	6.0	-131.0	0.64	-0.60	-2.20
2,475.0	5.46	2.24	2,466.8	133.5	6.1	-133.5	1.78	-1.76	-2.48
2,500.0	5.10	2.20	2,491.7	135.8	6.2	-135.8	1.44	-1.44	-0.16
2,525.0	5.03	2.93	2,516.6	138.0	6.3	-138.0	0.38	-0.28	2.92
2,550.0	5.08	2.98	2,541.5	140.2	6.4	-140.2	0.20	0.20	0.20
2,575.0	5.10	3.03	2,566.4	142.4	6.6	-142.4	0.08	0.08	0.20
2,600.0	5.08	2.89	2,591.3	144.6	6.7	-144.6	0.09	-0.08	-0.56
2,625.0	5.03	3.81	2,616.2	146.8	6.8	-146.8	0.38	-0.20	3.68
2,650.0	4.94	6.41	2,641.1	149.0	7.0	-148.9	0.97	-0.36	10.40
2,675.0	5.03	7.96	2,666.0	151.2	7.3	-151.1	0.65	0.36	6.20
2,700.0	5.03	8.45	2,690.9	153.3	7.6	-153.3	0.17	0.00	1.96
2,725.0	4.97	9.03	2,715.8	155.5	7.9	-155.4	0.31	-0.24	2.32
2,750.0	4.90	9.28	2,740.7	157.6	8.3	-157.5	0.29	-0.28	1.00
2,775.0	4.84	9.99	2,765.6	159.7	8.6	-159.6	0.34	-0.24	2.84
2,800.0	4.69	10.83	2,790.5	161.7	9.0	-161.7	0.66	-0.60	3.36
2,825.0	4.60	11.23	2,815.4	163.7	9.4	-163.7	0.38	-0.36	1.60
2,850.0	4.62	11.72	2,840.4	165.7	9.8	-165.6	0.18	0.08	1.96
2,875.0	4.61	12.01	2,865.3	167.7	10.2	-167.6	0.10	-0.04	1.16
2,900.0	4.68	11.66	2,890.2	169.6	10.6	-169.6	0.30	0.28	-1.40
2,925.0	4.73	11.44	2,915.1	171.7	11.0	-171.6	0.21	0.20	-0.88
2,950.0	4.75	11.11	2,940.0	173.7	11.4	-173.6	0.14	0.08	-1.32
2,975.0	4.76	10.43	2,964.9	175.7	11.8	-175.6	0.23	0.04	-2.72
3,000.0	4.72	10.67	2,989.9	177.7	12.2	-177.7	0.18	-0.16	0.96
3,025.0	4.72	10.94	3,014.8	179.8	12.6	-179.7	0.09	0.00	1.08
3,050.0	4.77	9.02	3,039.7	181.8	12.9	-181.7	0.67	-0.20	-7.68
3,075.0	4.82	7.50	3,064.6	183.9	13.2	-183.8	0.55	0.20	-6.08
3,100.0	4.86	7.68	3,089.5	186.0	13.5	-185.9	0.17	0.16	0.72
3,125.0	4.86	8.10	3,114.4	188.1	13.8	-188.0	0.14	0.00	1.68
3,150.0	4.87	7.81	3,139.3	190.2	14.1	-190.0	0.11	0.04	-1.16
3,175.0	4.88	8.15	3,164.2	192.3	14.4	-192.2	0.12	0.04	1.36
3,200.0	4.88	8.64	3,189.1	194.4	14.7	-194.3	0.17	0.00	1.96
3,225.0	4.86	10.25	3,214.1	196.5	15.0	-196.3	0.55	-0.08	6.44
3,250.0	4.85	13.21	3,239.0	198.5	15.5	-198.4	1.00	-0.04	11.84
3,275.0	4.90	14.58	3,263.9	200.6	16.0	-200.5	0.51	0.20	5.48
3,300.0	4.94	14.38	3,288.8	202.7	16.5	-202.5	0.17	0.16	-0.80
3,325.0	4.93	12.75	3,313.7	204.8	17.0	-204.6	0.56	-0.04	-6.52
3,350.0	4.92	10.86	3,338.6	206.9	17.5	-206.7	0.65	-0.04	-7.56
3,375.0	4.93	9.61	3,363.5	209.0	17.8	-208.8	0.43	0.04	-5.00
3,400.0	5.04	10.10	3,388.4	211.1	18.2	-211.0	0.47	0.44	1.96

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Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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	5.22	10.60	3,413.3	213.3	18.6	-213.2	0.74	0.72	2.00
3,450.0	5.40	10.84	3,438.2	215.6	19.0	-215.4	0.73	0.72	0.96
3,475.0	5.47	10.84	3,463.1	217.9	19.5	-217.8	0.28	0.28	0.00
3,500.0	5.54	10.56	3,488.0	220.3	19.9	-220.1	0.30	0.28	-1.12
3,525.0	5.63	10.08	3,512.9	222.7	20.4	-222.5	0.41	0.36	-1.92
3,550.0	5.84	8.54	3,537.7	225.1	20.8	-225.0	1.04	0.84	-6.16
3,575.0	6.09	6.56	3,562.6	227.7	21.1	-227.5	1.30	1.00	-7.92
3,600.0	6.33	4.33	3,587.4	230.4	21.4	-230.2	1.36	0.96	-8.92
3,625.0	6.47	0.37	3,612.3	233.2	21.5	-233.0	1.85	0.56	-15.84
3,650.0	7.13	358.90	3,637.1	236.1	21.5	-236.0	2.73	2.64	-5.88
3,675.0	8.02	357.94	3,661.9	239.4	21.4	-239.3	3.60	3.56	-3.84
3,700.0	8.99	357.13	3,686.6	243.1	21.2	-243.0	3.91	3.88	-3.24
3,725.0	9.13	356.49	3,711.3	247.1	21.0	-246.9	0.69	0.56	-2.56
3,750.0	8.69	355.86	3,736.0	250.9	20.7	-250.8	1.80	-1.76	-2.52
3,775.0	7.19	358.42	3,760.8	254.4	20.6	-254.2	6.16	-6.00	10.24
3,800.0	6.44	0.00	3,785.6	257.3	20.5	-257.2	3.09	-3.00	6.32
3,825.0	6.61	358.66	3,810.4	260.2	20.5	-260.0	0.91	0.68	-5.36
3,850.0	6.48	358.98	3,835.3	263.0	20.4	-262.9	0.54	-0.52	1.28
3,875.0	6.37	359.81	3,860.1	265.8	20.4	-265.7	0.58	-0.44	3.32
3,900.0	6.24	0.90	3,885.0	268.6	20.4	-268.4	0.71	-0.52	4.36
3,925.0	6.04	1.95	3,909.8	271.2	20.5	-271.1	0.92	-0.80	4.20
3,950.0	6.01	2.41	3,934.7	273.9	20.6	-273.7	0.23	-0.12	1.84
3,975.0	5.77	2.47	3,959.5	276.4	20.7	-276.3	0.96	-0.96	0.24
4,000.0	5.31	2.00	3,984.4	278.8	20.8	-278.7	1.85	-1.84	-1.88
4,025.0	4.88	0.33	4,009.3	281.1	20.8	-280.9	1.82	-1.72	-6.68
4,050.0	4.42	357.09	4,034.2	283.1	20.8	-282.9	2.12	-1.84	-12.96
4,075.0	4.07	352.64	4,059.2	284.9	20.6	-284.8	1.92	-1.40	-17.80
4,100.0	3.97	351.00	4,084.1	286.7	20.4	-286.5	0.61	-0.40	-6.56
4,125.0	4.01	351.20	4,109.1	288.4	20.1	-288.2	0.17	0.16	0.80
4,150.0	4.17	351.45	4,134.0	290.1	19.8	-290.0	0.64	0.64	1.00
4,175.0	4.35	351.57	4,158.9	292.0	19.6	-291.8	0.72	0.72	0.48
4,200.0	4.52	351.84	4,183.8	293.9	19.3	-293.7	0.69	0.68	1.08
4,225.0	4.61	352.42	4,208.8	295.9	19.0	-295.7	0.40	0.36	2.32
4,250.0	4.65	352.66	4,233.7	297.9	18.7	-297.7	0.18	0.16	0.96
4,275.0	4.67	352.57	4,258.6	299.9	18.5	-299.7	0.09	0.08	-0.36
4,300.0	4.60	352.42	4,283.5	301.9	18.2	-301.7	0.28	-0.28	-0.60
4,325.0	4.23	350.62	4,308.5	303.8	17.9	-303.6	1.58	-1.48	-7.20
4,350.0	3.91	348.74	4,333.4	305.5	17.6	-305.4	1.39	-1.28	-7.52
4,375.0	3.88	348.64	4,358.3	307.2	17.3	-307.1	0.12	-0.12	-0.40
4,400.0	3.91	349.83	4,383.3	308.9	17.0	-308.7	0.34	0.12	4.76
4,425.0	3.99	350.92	4,408.2	310.6	16.7	-310.4	0.44	0.32	4.36
4,450.0	4.05	350.99	4,433.2	312.3	16.4	-312.2	0.24	0.24	0.28

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well: TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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	4.07	351.01	4,458.1	314.0	16.1	-313.9	0.08	0.08	0.08
4,500.0	4.09	350.73	4,483.0	315.8	15.8	-315.7	0.11	0.08	-1.12
4,525.0	4.10	350.75	4,508.0	317.6	15.6	-317.4	0.04	0.04	0.08
4,550.0	4.13	351.05	4,532.9	319.3	15.3	-319.2	0.15	0.12	1.20
4,575.0	4.15	351.22	4,557.8	321.1	15.0	-321.0	0.09	0.08	0.68
4,600.0	4.15	351.01	4,582.8	322.9	14.7	-322.8	0.06	0.00	-0.84
4,625.0	4.10	350.90	4,607.7	324.7	14.4	-324.6	0.20	-0.20	-0.44
4,650.0	4.02	350.84	4,632.6	326.4	14.2	-326.3	0.32	-0.32	-0.24
4,675.0	3.82	350.59	4,657.6	328.1	13.9	-328.0	0.80	-0.80	-1.00
4,700.0	3.61	350.48	4,682.5	329.7	13.6	-329.6	0.84	-0.84	-0.44
4,725.0	3.49	350.53	4,707.5	331.2	13.4	-331.1	0.48	-0.48	0.20
4,750.0	3.40	350.38	4,732.4	332.7	13.1	-332.6	0.36	-0.36	-0.60
4,775.0	3.33	351.04	4,757.4	334.2	12.9	-334.1	0.32	-0.28	2.64
4,800.0	3.26	351.35	4,782.3	335.6	12.7	-335.5	0.29	-0.28	1.24
4,825.0	3.21	350.60	4,807.3	337.0	12.4	-336.9	0.26	-0.20	-3.00
4,850.0	3.24	350.29	4,832.3	338.4	12.2	-338.3	0.14	0.12	-1.24
4,875.0	3.16	349.75	4,857.2	339.7	12.0	-339.6	0.34	-0.32	-2.16
4,900.0	2.93	348.20	4,882.2	341.0	11.7	-340.9	0.98	-0.92	-6.20
4,925.0	2.72	348.32	4,907.2	342.2	11.5	-342.1	0.84	-0.84	0.48
4,950.0	2.13	349.25	4,932.1	343.3	11.2	-343.2	2.37	-2.36	3.72
4,975.0	1.23	349.16	4,957.1	344.0	11.1	-343.9	3.60	-3.60	-0.36
5,000.0	0.71	351.35	4,982.1	344.4	11.0	-344.3	2.08	-2.08	8.76
5,025.0	0.52	354.06	5,007.1	344.7	11.0	-344.6	0.77	-0.76	10.84
5,050.0	0.42	355.68	5,032.1	344.9	11.0	-344.8	0.40	-0.40	6.48
5,075.0	0.37	359.19	5,057.1	345.1	11.0	-345.0	0.22	-0.20	14.04
5,100.0	0.37	0.02	5,082.1	345.2	11.0	-345.1	0.02	0.00	3.32
5,125.0	0.37	3.13	5,107.1	345.4	11.0	-345.3	0.08	0.00	12.44
5,150.0	0.33	4.29	5,132.1	345.5	11.0	-345.4	0.16	-0.16	4.64
5,175.0	0.31	13.95	5,157.1	345.7	11.0	-345.6	0.23	-0.08	38.64
5,200.0	0.13	58.84	5,182.1	345.8	11.0	-345.7	0.95	-0.72	179.56
5,225.0	0.58	159.63	5,207.1	345.6	11.1	-345.6	2.47	1.80	403.16
5,250.0	1.25	163.30	5,232.1	345.3	11.2	-345.2	2.69	2.68	14.68
5,275.0	1.50	163.17	5,257.1	344.7	11.4	-344.6	1.00	1.00	-0.52
5,300.0	1.49	163.04	5,282.1	344.1	11.6	-344.0	0.04	-0.04	-0.52
5,325.0	1.51	163.29	5,307.1	343.4	11.8	-343.3	0.08	0.08	1.00
5,350.0	1.53	162.74	5,332.1	342.8	12.0	-342.7	0.10	0.08	-2.20
5,375.0	1.56	161.69	5,357.1	342.2	12.2	-342.1	0.16	0.12	-4.20
5,400.0	1.57	161.59	5,382.1	341.5	12.4	-341.4	0.04	0.04	-0.40
5,425.0	1.58	160.65	5,407.1	340.9	12.6	-340.8	0.11	0.04	-3.76
5,450.0	1.56	158.83	5,432.0	340.2	12.9	-340.1	0.21	-0.08	-7.28
5,475.0	1.52	156.53	5,457.0	339.6	13.1	-339.5	0.29	-0.16	-9.20
5,500.0	1.45	155.74	5,482.0	339.0	13.4	-338.9	0.29	-0.28	-3.16

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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	155.79	5,507.0	338.4	13.6	-338.3	0.04	-0.04	0.20	
5,550.0	1.45	155.26	5,532.0	337.9	13.9	-337.8	0.07	0.04	-2.12	
5,575.0	1.45	154.59	5,557.0	337.3	14.2	-337.2	0.07	0.00	-2.68	
5,600.0	1.45	154.03	5,582.0	336.7	14.4	-336.6	0.06	0.00	-2.24	
5,625.0	1.45	153.09	5,607.0	336.2	14.7	-336.0	0.10	0.00	-3.76	
5,650.0	1.44	153.25	5,632.0	335.6	15.0	-335.5	0.04	-0.04	0.64	
5,675.0	1.44	154.06	5,657.0	335.0	15.3	-334.9	0.08	0.00	3.24	
5,700.0	1.41	154.42	5,682.0	334.5	15.6	-334.3	0.13	-0.12	1.44	
5,725.0	1.43	154.60	5,707.0	333.9	15.8	-333.8	0.08	0.08	0.72	
5,750.0	1.43	154.78	5,732.0	333.3	16.1	-333.2	0.02	0.00	0.72	
5,775.0	1.42	154.43	5,756.9	332.8	16.4	-332.7	0.05	-0.04	-1.40	
5,800.0	1.42	155.24	5,781.9	332.2	16.6	-332.1	0.08	0.00	3.24	
5,825.0	1.43	155.49	5,806.9	331.7	16.9	-331.5	0.05	0.04	1.00	
5,850.0	1.45	153.97	5,831.9	331.1	17.1	-331.0	0.17	0.08	-6.08	
5,875.0	1.43	152.81	5,856.9	330.5	17.4	-330.4	0.14	-0.08	-4.64	
5,900.0	1.41	152.63	5,881.9	330.0	17.7	-329.8	0.08	-0.08	-0.72	
5,925.0	1.19	151.15	5,906.9	329.5	18.0	-329.3	0.89	-0.88	-5.92	
5,950.0	0.62	134.33	5,931.9	329.2	18.2	-329.0	2.49	-2.28	-67.28	
5,975.0	0.45	42.82	5,956.9	329.1	18.4	-329.0	3.10	-0.68	-366.04	
6,000.0	0.70	20.75	5,981.9	329.3	18.5	-329.2	1.32	1.00	-88.28	
6,025.0	0.72	21.05	6,006.9	329.6	18.6	-329.5	0.08	0.08	1.20	
6,050.0	0.72	21.85	6,031.9	329.9	18.7	-329.8	0.04	0.00	3.20	
6,075.0	0.73	22.54	6,056.9	330.2	18.8	-330.1	0.05	0.04	2.76	
6,100.0	0.75	22.46	6,081.9	330.5	19.0	-330.4	0.08	0.08	-0.32	
6,125.0	0.74	21.91	6,106.9	330.8	19.1	-330.7	0.05	-0.04	-2.20	
6,150.0	0.74	21.47	6,131.9	331.1	19.2	-331.0	0.02	0.00	-1.76	
6,175.0	0.72	18.16	6,156.9	331.4	19.3	-331.3	0.19	-0.08	-13.24	
6,200.0	0.72	17.02	6,181.9	331.7	19.4	-331.6	0.06	0.00	-4.56	
6,225.0	0.74	15.11	6,206.9	332.0	19.5	-331.9	0.13	0.08	-7.64	
6,250.0	0.69	12.95	6,231.9	332.3	19.6	-332.2	0.23	-0.20	-8.64	
6,275.0	0.65	15.47	6,256.9	332.6	19.6	-332.5	0.20	-0.16	10.08	
6,300.0	0.65	16.53	6,281.9	332.9	19.7	-332.7	0.05	0.00	4.24	
6,325.0	0.65	17.13	6,306.9	333.2	19.8	-333.0	0.03	0.00	2.40	
6,350.0	0.67	18.61	6,331.9	333.4	19.9	-333.3	0.11	0.08	5.92	
6,375.0	0.69	14.49	6,356.9	333.7	20.0	-333.6	0.21	0.08	-16.48	
6,400.0	0.72	12.56	6,381.9	334.0	20.0	-333.9	0.15	0.12	-7.72	
6,425.0	0.79	15.53	6,406.9	334.3	20.1	-334.2	0.32	0.28	11.88	
6,450.0	0.77	19.42	6,431.9	334.7	20.2	-334.5	0.23	-0.08	15.56	
6,475.0	0.77	19.18	6,456.9	335.0	20.3	-334.8	0.01	0.00	-0.96	
6,500.0	0.78	18.13	6,481.9	335.3	20.4	-335.1	0.07	0.04	-4.20	
6,525.0	0.78	17.88	6,506.9	335.6	20.5	-335.5	0.01	0.00	-1.00	
6,550.0	0.82	17.46	6,531.9	336.0	20.7	-335.8	0.16	0.16	-1.68	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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	0.81	17.60	6,556.8	336.3	20.8	-336.1	0.04	-0.04	0.56	
6,600.0	0.79	16.63	6,581.8	336.6	20.9	-336.5	0.10	-0.08	-3.88	
6,625.0	0.78	16.07	6,606.8	337.0	21.0	-336.8	0.05	-0.04	-2.24	
6,650.0	0.78	15.38	6,631.8	337.3	21.1	-337.1	0.04	0.00	-2.76	
6,675.0	0.77	16.05	6,656.8	337.6	21.1	-337.4	0.05	-0.04	2.68	
6,700.0	0.78	17.21	6,681.8	337.9	21.2	-337.8	0.07	0.04	4.64	
6,725.0	0.78	17.83	6,706.8	338.3	21.3	-338.1	0.03	0.00	2.48	
6,750.0	0.76	18.12	6,731.8	338.6	21.4	-338.4	0.08	-0.08	1.16	
6,775.0	0.77	19.50	6,756.8	338.9	21.6	-338.7	0.08	0.04	5.52	
6,800.0	0.77	21.60	6,781.8	339.2	21.7	-339.0	0.11	0.00	8.40	
6,825.0	0.76	20.62	6,806.8	339.5	21.8	-339.3	0.07	-0.04	-3.92	
6,850.0	0.78	18.82	6,831.8	339.8	21.9	-339.7	0.13	0.08	-7.20	
6,875.0	0.79	18.00	6,856.8	340.2	22.0	-340.0	0.06	0.04	-3.28	
6,900.0	0.76	10.64	6,881.8	340.5	22.1	-340.3	0.42	-0.12	-29.44	
6,925.0	0.76	9.92	6,906.8	340.8	22.2	-340.6	0.04	0.00	-2.88	
6,950.0	0.77	16.73	6,931.8	341.1	22.2	-341.0	0.37	0.04	27.24	
6,975.0	0.77	19.27	6,956.8	341.5	22.3	-341.3	0.14	0.00	10.16	
7,000.0	0.77	20.38	6,981.8	341.8	22.5	-341.6	0.06	0.00	4.44	
7,025.0	0.77	21.45	7,006.8	342.1	22.6	-341.9	0.06	0.00	4.28	
7,050.0	0.78	22.90	7,031.8	342.4	22.7	-342.2	0.09	0.04	5.80	
7,075.0	0.78	25.18	7,056.8	342.7	22.8	-342.5	0.12	0.00	9.12	
7,100.0	0.77	25.67	7,081.8	343.0	23.0	-342.8	0.05	-0.04	1.96	
7,125.0	0.77	25.63	7,106.8	343.3	23.1	-343.1	0.00	0.00	-0.16	
7,150.0	0.79	28.14	7,131.8	343.6	23.3	-343.4	0.16	0.08	10.04	
7,175.0	0.83	27.61	7,156.8	343.9	23.4	-343.7	0.16	0.16	-2.12	
7,200.0	0.81	26.18	7,181.8	344.3	23.6	-344.1	0.11	-0.08	-5.72	
7,225.0	0.80	24.57	7,206.8	344.6	23.8	-344.4	0.10	-0.04	-6.44	
7,250.0	0.80	25.50	7,231.8	344.9	23.9	-344.7	0.05	0.00	3.72	
7,275.0	0.78	24.42	7,256.8	345.2	24.1	-345.0	0.10	-0.08	-4.32	
7,300.0	0.76	24.48	7,281.8	345.5	24.2	-345.3	0.08	-0.08	0.24	
7,325.0	0.76	25.89	7,306.8	345.8	24.3	-345.6	0.07	0.00	5.64	
7,350.0	0.72	26.49	7,331.8	346.1	24.5	-345.9	0.16	-0.16	2.40	
7,375.0	0.68	29.84	7,356.8	346.4	24.6	-346.2	0.23	-0.16	13.40	
7,400.0	0.69	32.48	7,381.8	346.6	24.8	-346.4	0.13	0.04	10.56	
7,425.0	0.72	32.01	7,406.8	346.9	24.9	-346.7	0.12	0.12	-1.88	
7,450.0	0.73	30.74	7,431.8	347.1	25.1	-347.0	0.08	0.04	-5.08	
7,475.0	0.71	30.43	7,456.8	347.4	25.3	-347.2	0.08	-0.08	-1.24	
7,500.0	0.70	29.92	7,481.8	347.7	25.4	-347.5	0.05	-0.04	-2.04	
7,525.0	0.59	23.55	7,506.8	347.9	25.5	-347.7	0.52	-0.44	-25.48	
7,550.0	0.39	328.48	7,531.8	348.1	25.6	-347.9	1.95	-0.80	-220.28	
7,575.0	0.74	277.58	7,556.8	348.2	25.3	-348.0	2.32	1.40	-203.60	
7,600.0	1.05	264.60	7,581.8	348.2	25.0	-348.0	1.47	1.24	-51.92	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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	1.19	259.86	7,606.8	348.2	24.5	-348.0	0.67	0.56	-18.96	
7,650.0	1.21	259.74	7,631.7	348.1	24.0	-347.9	0.08	0.08	-0.48	
7,675.0	1.22	258.69	7,656.7	348.0	23.4	-347.8	0.10	0.04	-4.20	
7,700.0	1.26	257.79	7,681.7	347.9	22.9	-347.7	0.18	0.16	-3.60	
7,725.0	1.31	256.96	7,706.7	347.7	22.4	-347.6	0.21	0.20	-3.32	
7,750.0	1.37	256.21	7,731.7	347.6	21.8	-347.4	0.25	0.24	-3.00	
7,775.0	1.45	252.68	7,756.7	347.4	21.2	-347.3	0.47	0.32	-14.12	
7,800.0	1.52	249.08	7,781.7	347.2	20.6	-347.1	0.47	0.28	-14.40	
7,825.0	1.55	247.85	7,806.7	347.0	20.0	-346.8	0.18	0.12	-4.92	
7,850.0	1.60	247.94	7,831.7	346.7	19.3	-346.6	0.20	0.20	0.36	
7,875.0	1.62	246.36	7,856.7	346.4	18.7	-346.3	0.19	0.08	-6.32	
7,900.0	1.69	245.83	7,881.7	346.1	18.0	-346.0	0.29	0.28	-2.12	
7,925.0	1.79	244.27	7,906.7	345.8	17.3	-345.7	0.44	0.40	-6.24	
7,950.0	1.84	242.72	7,931.6	345.5	16.6	-345.3	0.28	0.20	-6.20	
7,975.0	1.92	240.96	7,956.6	345.1	15.9	-345.0	0.39	0.32	-7.04	
8,000.0	1.95	240.34	7,981.6	344.7	15.2	-344.5	0.15	0.12	-2.48	
8,025.0	1.99	239.79	8,006.6	344.2	14.4	-344.1	0.18	0.16	-2.20	
8,050.0	2.04	239.26	8,031.6	343.8	13.7	-343.7	0.21	0.20	-2.12	
8,075.0	2.12	236.87	8,056.6	343.3	12.9	-343.2	0.47	0.32	-9.56	
8,100.0	2.03	228.11	8,081.6	342.8	12.2	-342.7	1.32	-0.36	-35.04	
8,125.0	1.95	219.30	8,106.5	342.1	11.6	-342.0	1.26	-0.32	-35.24	
8,150.0	2.00	216.57	8,131.5	341.5	11.1	-341.4	0.43	0.20	-10.92	
8,175.0	2.01	212.36	8,156.5	340.7	10.6	-340.7	0.59	0.04	-16.84	
8,200.0	1.96	207.28	8,181.5	340.0	10.1	-339.9	0.73	-0.20	-20.32	
8,225.0	1.84	195.08	8,206.5	339.2	9.8	-339.1	1.68	-0.48	-48.80	
8,250.0	1.76	185.90	8,231.5	338.5	9.7	-338.4	1.20	-0.32	-36.72	
8,275.0	1.75	182.81	8,256.5	337.7	9.6	-337.6	0.38	-0.04	-12.36	
8,300.0	1.75	180.73	8,281.4	336.9	9.6	-336.8	0.25	0.00	-8.32	
8,325.0	1.73	178.86	8,306.4	336.2	9.6	-336.1	0.24	-0.08	-7.48	
8,350.0	1.61	176.25	8,331.4	335.4	9.6	-335.4	0.57	-0.48	-10.44	
8,375.0	1.32	170.70	8,356.4	334.8	9.7	-334.7	1.29	-1.16	-22.20	
8,400.0	1.12	165.95	8,381.4	334.3	9.8	-334.2	0.90	-0.80	-19.00	
8,425.0	1.07	165.12	8,406.4	333.8	9.9	-333.7	0.21	-0.20	-3.32	
8,450.0	1.05	164.91	8,431.4	333.4	10.0	-333.3	0.08	-0.08	-0.84	
8,475.0	1.05	163.17	8,456.4	332.9	10.2	-332.9	0.13	0.00	-6.96	
8,500.0	1.07	161.32	8,481.4	332.5	10.3	-332.4	0.16	0.08	-7.40	
8,525.0	1.05	159.26	8,506.4	332.1	10.5	-332.0	0.17	-0.08	-8.24	
8,550.0	1.07	158.29	8,531.4	331.6	10.6	-331.5	0.11	0.08	-3.88	
8,575.0	1.05	157.87	8,556.4	331.2	10.8	-331.1	0.09	-0.08	-1.68	
8,600.0	1.07	157.45	8,581.4	330.8	11.0	-330.7	0.09	0.08	-1.68	
8,625.0	1.10	159.02	8,606.4	330.3	11.2	-330.2	0.17	0.12	6.28	
8,650.0	1.08	158.93	8,631.4	329.9	11.3	-329.8	0.08	-0.08	-0.36	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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)	
8,675.0	1.05	160.79	8,656.4	329.5	11.5	-329.4	0.18	-0.12	7.44	
8,700.0	0.91	159.94	8,681.4	329.0	11.6	-329.0	0.56	-0.56	-3.40	
8,725.0	0.61	152.92	8,706.4	328.7	11.8	-328.6	1.25	-1.20	-28.08	
8,750.0	0.38	143.62	8,731.4	328.6	11.9	-328.5	0.97	-0.92	-37.20	
8,775.0	0.29	130.02	8,756.4	328.5	12.0	-328.4	0.48	-0.36	-54.40	
8,800.0	0.31	108.76	8,781.4	328.4	12.1	-328.3	0.45	0.08	-85.04	
8,825.0	0.33	94.40	8,806.4	328.4	12.2	-328.3	0.33	0.08	-57.44	
8,850.0	0.32	93.86	8,831.4	328.4	12.4	-328.3	0.04	-0.04	-2.16	
8,875.0	0.36	91.53	8,856.4	328.3	12.5	-328.2	0.17	0.16	-9.32	
8,900.0	0.38	84.42	8,881.4	328.4	12.7	-328.2	0.20	0.08	-28.44	
8,925.0	0.37	82.26	8,906.4	328.4	12.8	-328.3	0.07	-0.04	-8.64	
8,950.0	0.38	83.89	8,931.4	328.4	13.0	-328.3	0.06	0.04	6.52	
8,975.0	0.38	83.97	8,956.3	328.4	13.2	-328.3	0.00	0.00	0.32	
9,000.0	0.41	82.94	8,981.3	328.4	13.3	-328.3	0.12	0.12	-4.12	
9,025.0	0.46	80.33	9,006.3	328.5	13.5	-328.3	0.22	0.20	-10.44	
9,050.0	0.41	81.69	9,031.3	328.5	13.7	-328.4	0.20	-0.20	5.44	
9,075.0	0.36	78.62	9,056.3	328.5	13.9	-328.4	0.22	-0.20	-12.28	
9,100.0	0.40	71.24	9,081.3	328.6	14.0	-328.4	0.25	0.16	-29.52	
9,125.0	0.41	65.78	9,106.3	328.6	14.2	-328.5	0.16	0.04	-21.84	
9,150.0	0.39	58.08	9,131.3	328.7	14.3	-328.6	0.23	-0.08	-30.80	
9,175.0	0.37	47.85	9,156.3	328.8	14.5	-328.7	0.28	-0.08	-40.92	
9,200.0	0.34	41.98	9,181.3	328.9	14.6	-328.8	0.19	-0.12	-23.48	
9,225.0	0.31	39.61	9,206.3	329.0	14.7	-328.9	0.13	-0.12	-9.48	
9,250.0	0.30	39.51	9,231.3	329.1	14.8	-329.0	0.04	-0.04	-0.40	
9,275.0	0.33	38.09	9,256.3	329.2	14.9	-329.1	0.12	0.12	-5.68	
9,300.0	0.36	33.05	9,281.3	329.4	14.9	-329.2	0.17	0.12	-20.16	
9,325.0	0.38	26.29	9,306.3	329.5	15.0	-329.4	0.19	0.08	-27.04	
9,350.0	0.37	15.91	9,331.3	329.6	15.1	-329.5	0.27	-0.04	-41.52	
9,375.0	0.30	5.57	9,356.3	329.8	15.1	-329.7	0.37	-0.28	-41.36	
9,400.0	0.24	11.61	9,381.3	329.9	15.1	-329.8	0.27	-0.24	24.16	
9,425.0	0.25	18.75	9,406.3	330.0	15.2	-329.9	0.13	0.04	28.56	
9,450.0	0.29	25.38	9,431.3	330.1	15.2	-330.0	0.20	0.16	26.52	
9,475.0	0.31	24.05	9,456.3	330.2	15.3	-330.1	0.08	0.08	-5.32	
9,500.0	0.32	14.84	9,481.3	330.4	15.3	-330.2	0.21	0.04	-36.84	
9,525.0	0.32	1.82	9,506.3	330.5	15.3	-330.4	0.29	0.00	-52.08	
9,550.0	0.31	355.75	9,531.3	330.6	15.3	-330.5	0.14	-0.04	-24.28	
9,575.0	0.28	346.05	9,556.3	330.8	15.3	-330.6	0.23	-0.12	-38.80	
9,600.0	0.32	340.06	9,581.3	330.9	15.3	-330.8	0.20	0.16	-23.96	
9,625.0	0.38	337.12	9,606.3	331.0	15.2	-330.9	0.25	0.24	-11.76	
9,650.0	0.45	336.18	9,631.3	331.2	15.1	-331.1	0.28	0.28	-3.76	
9,675.0	0.53	329.23	9,656.3	331.4	15.0	-331.3	0.40	0.32	-27.80	
9,700.0	0.68	321.36	9,681.3	331.6	14.9	-331.5	0.68	0.60	-31.48	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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)
9,725.0	0.86	316.94	9,708.3	331.9	14.7	-331.7	0.76	0.72	-17.68
9,750.0	0.97	314.22	9,731.3	332.1	14.4	-332.0	0.47	0.44	-10.88
9,775.0	1.01	312.10	9,756.3	332.4	14.1	-332.3	0.22	0.16	-8.48
9,800.0	1.04	307.79	9,781.3	332.7	13.7	-332.6	0.33	0.12	-17.24
9,825.0	1.10	300.20	9,806.3	333.0	13.3	-332.9	0.62	0.24	-30.36
9,850.0	1.16	290.91	9,831.3	333.2	12.9	-333.1	0.77	0.24	-37.16
9,875.0	1.26	281.80	9,856.3	333.3	12.4	-333.2	0.87	0.40	-36.44
9,900.0	1.33	272.44	9,881.3	333.4	11.8	-333.3	0.89	0.28	-37.44
9,925.0	1.35	265.33	9,906.3	333.4	11.2	-333.3	0.67	-0.08	-28.44
9,950.0	1.39	262.67	9,931.3	333.3	10.6	-333.2	0.30	0.16	-10.64
9,975.0	1.43	262.69	9,956.3	333.3	10.0	-333.2	0.16	0.16	0.08
10,000.0	1.52	261.84	9,981.3	333.2	9.4	-333.1	0.37	0.36	-3.40
10,025.0	1.49	261.93	10,006.3	333.1	8.8	-333.0	0.12	-0.12	0.36
10,050.0	1.39	259.78	10,031.3	333.0	8.1	-332.9	0.45	-0.40	-8.60
10,075.0	1.30	258.55	10,056.2	332.9	7.6	-332.8	0.38	-0.36	-4.92
10,100.0	1.19	256.49	10,081.2	332.7	7.0	-332.7	0.47	-0.44	-8.24
10,125.0	1.06	253.00	10,106.2	332.6	6.6	-332.6	0.59	-0.52	-13.96
10,150.0	0.89	255.29	10,131.2	332.5	6.1	-332.4	0.70	-0.68	9.16
10,175.0	0.74	259.85	10,156.2	332.4	5.8	-332.4	0.65	-0.60	18.24
10,200.0	0.70	262.43	10,181.2	332.4	5.5	-332.3	0.21	-0.16	10.32
10,225.0	0.71	265.37	10,206.2	332.3	5.2	-332.3	0.15	0.04	11.76
10,250.0	0.77	266.06	10,231.2	332.3	4.9	-332.3	0.24	0.24	2.76
10,275.0	0.83	265.44	10,256.2	332.3	4.5	-332.3	0.24	0.24	-2.48
10,300.0	0.85	262.32	10,281.2	332.3	4.1	-332.2	0.20	0.08	-12.48
10,325.0	0.79	254.38	10,306.2	332.2	3.8	-332.1	0.51	-0.24	-31.76
10,350.0	0.74	234.65	10,331.2	332.0	3.5	-332.0	1.07	-0.20	-78.92
10,375.0	0.83	217.50	10,356.2	331.8	3.3	-331.8	1.00	0.36	-68.60
10,400.0	0.91	210.14	10,381.2	331.5	3.0	-331.5	0.55	0.32	-29.44
10,425.0	0.91	212.08	10,406.2	331.2	2.8	-331.1	0.12	0.00	7.76
10,450.0	0.83	229.48	10,431.2	330.9	2.6	-330.8	1.10	-0.32	69.60
10,475.0	0.74	255.10	10,456.2	330.7	2.3	-330.7	1.44	-0.36	102.48
10,500.0	0.78	272.91	10,481.2	330.7	2.0	-330.6	0.95	0.16	71.24
10,525.0	0.79	281.98	10,506.2	330.7	1.6	-330.7	0.50	0.04	36.28
10,550.0	0.76	288.64	10,531.2	330.8	1.3	-330.8	0.28	-0.12	18.64
10,575.0	0.62	286.38	10,556.2	330.9	1.0	-330.9	0.56	-0.56	-1.04
10,600.0	0.38	316.34	10,581.2	331.0	0.8	-331.0	1.39	-0.96	119.84
10,625.0	0.41	15.35	10,606.2	331.1	0.8	-331.1	1.56	0.12	236.04
10,650.0	0.55	35.46	10,631.2	331.3	0.9	-331.3	0.87	0.56	80.44
10,675.0	0.61	41.83	10,656.2	331.5	1.1	-331.5	0.35	0.24	25.48
10,700.0	0.56	46.92	10,681.2	331.7	1.2	-331.7	0.29	-0.20	20.36
10,725.0	0.59	49.33	10,706.2	331.9	1.4	-331.8	0.15	0.12	9.64
10,750.0	0.62	40.91	10,731.2	332.0	1.6	-332.0	0.37	0.12	-33.68

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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)
10,775.0	0.61	35.93	10,756.2	332.3	1.8	-332.2	0.22	-0.04	-19.92
10,800.0	0.62	25.97	10,781.2	332.5	1.9	-332.5	0.43	0.04	-39.84
10,825.0	0.68	9.28	10,806.2	332.8	2.0	-332.7	0.79	0.24	-66.76
10,850.0	0.76	356.07	10,831.2	333.1	2.0	-333.0	0.73	0.32	-52.84
10,875.0	0.98	345.47	10,856.2	333.4	1.9	-333.4	1.09	0.88	-42.40
10,900.0	1.13	339.83	10,881.2	333.9	1.8	-333.9	0.73	0.60	-22.56
10,925.0	1.16	334.54	10,906.2	334.3	1.6	-334.3	0.44	0.12	-21.16
10,950.0	1.20	328.68	10,931.2	334.8	1.4	-334.8	0.51	0.16	-23.44
10,975.0	1.21	325.09	10,956.2	335.2	1.1	-335.2	0.30	0.04	-14.36
11,000.0	1.21	321.96	10,981.2	335.7	0.8	-335.6	0.26	0.00	-12.52
11,025.0	1.21	316.46	11,006.1	336.1	0.4	-336.0	0.46	0.00	-22.00
11,050.0	1.23	311.81	11,031.1	336.4	0.0	-336.4	0.40	0.08	-18.60
11,075.0	1.18	309.56	11,056.1	336.8	-0.4	-336.8	0.28	-0.20	-9.00
11,100.0	1.12	305.39	11,081.1	337.1	-0.8	-337.1	0.41	-0.24	-16.68
11,125.0	1.17	300.80	11,106.1	337.3	-1.2	-337.3	0.42	0.20	-18.36
11,150.0	1.22	298.33	11,131.1	337.6	-1.6	-337.6	0.29	0.20	-9.88
11,175.0	1.27	296.77	11,156.1	337.9	-2.1	-337.9	0.24	0.20	-6.24
11,200.0	1.29	293.44	11,181.1	338.1	-2.6	-338.1	0.31	0.08	-13.32
11,225.0	1.39	295.07	11,206.1	338.3	-3.2	-338.3	0.43	0.40	6.52
11,250.0	1.44	296.90	11,231.1	338.6	-3.7	-338.6	0.27	0.20	7.32
11,275.0	1.48	293.25	11,256.1	338.9	-4.3	-338.9	0.40	0.16	-14.60
11,300.0	1.50	294.09	11,281.1	339.1	-4.9	-339.2	0.12	0.08	3.36
11,325.0	1.42	295.26	11,306.1	339.4	-5.5	-339.4	0.34	-0.32	4.68
11,350.0	1.41	297.19	11,331.1	339.7	-6.0	-339.7	0.19	-0.04	7.72
11,375.0	1.35	296.73	11,356.1	339.9	-6.5	-340.0	0.24	-0.24	-1.84
11,400.0	1.07	291.05	11,381.0	340.2	-7.0	-340.2	1.22	-1.12	-22.72
11,425.0	0.82	277.71	11,406.0	340.3	-7.4	-340.3	1.33	-1.00	-53.36
11,450.0	1.00	280.50	11,431.0	340.3	-7.8	-340.4	0.74	0.72	11.16
11,475.0	1.19	280.14	11,456.0	340.4	-8.3	-340.5	0.76	0.76	-1.44
11,500.0	1.24	276.26	11,481.0	340.5	-8.8	-340.5	0.38	0.20	-15.52
11,525.0	1.31	275.90	11,506.0	340.5	-9.4	-340.6	0.28	0.28	-1.20
11,550.0	1.23	276.87	11,531.0	340.6	-9.9	-340.7	0.33	-0.32	3.64
11,558.0	1.15	277.10	11,539.0	340.6	-10.1	-340.7	1.00	-1.00	2.88
11,689.0	0.73	273.68	11,670.0	340.8	-12.2	-340.9	0.32	-0.32	-2.61
11,784.0	0.59	229.91	11,765.0	340.6	-13.2	-340.7	0.54	-0.15	-46.07
11,879.0	0.84	228.19	11,860.0	339.8	-14.1	-339.9	0.26	0.26	-1.81
11,974.0	0.70	198.79	11,955.0	338.8	-14.8	-338.9	0.44	-0.15	-30.95
12,070.0	0.61	185.88	12,051.0	337.7	-15.0	-337.8	0.18	-0.09	-13.45
12,101.0	1.40	165.54	12,082.0	337.2	-15.0	-337.3	2.76	2.55	-65.61
12,133.0	2.85	165.97	12,113.9	336.0	-14.7	-336.1	4.53	4.53	1.34
12,165.0	4.18	161.94	12,145.9	334.2	-14.1	-334.2	4.22	4.16	-12.59
12,196.0	4.91	161.23	12,176.8	331.8	-13.3	-331.9	2.36	2.35	-2.29

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	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)	Buid Rate (°/100usft)	Turn Rate (°/100usft)	
12,228.0	5.54	162.55	12,208.7	329.1	-12.4	-329.1	2.00	1.97	4.13	
12,259.0	6.57	163.88	12,239.5	325.9	-11.5	-326.0	3.35	3.32	4.29	
12,291.0	7.97	165.31	12,271.2	322.0	-10.4	-322.1	4.41	4.38	4.47	
12,323.0	7.93	167.08	12,302.9	317.7	-9.4	-317.8	0.78	-0.13	5.53	
12,355.0	8.20	170.60	12,334.6	313.3	-8.5	-313.4	1.76	0.84	11.00	
12,387.0	8.87	178.83	12,366.2	308.6	-8.1	-308.6	4.35	2.09	25.72	
12,419.0	8.89	173.26	12,397.9	303.7	-7.7	-303.7	2.69	0.06	-17.41	
12,451.0	9.11	178.78	12,429.5	298.7	-7.4	-298.7	2.78	0.69	17.25	
12,482.0	8.56	184.88	12,460.1	293.9	-7.5	-294.0	3.50	-1.77	19.68	
12,514.0	9.48	177.89	12,491.7	288.9	-7.6	-289.0	4.47	2.88	-21.84	
12,546.0	16.43	181.65	12,522.9	281.8	-7.7	-281.8	21.87	21.72	11.75	
12,577.0	23.85	176.51	12,552.0	271.1	-7.4	-271.2	24.58	23.94	-16.58	
12,609.0	31.16	176.30	12,580.3	256.4	-6.5	-256.4	22.85	22.84	-0.66	
12,640.0	38.43	175.68	12,605.8	238.7	-5.2	-238.8	23.48	23.45	-2.00	
12,672.0	47.42	176.36	12,629.2	217.0	-3.7	-217.0	28.13	28.09	2.13	
12,692.0	51.38	177.05	12,642.2	201.9	-2.9	-201.9	19.97	19.80	3.45	
12,724.0	58.13	176.71	12,660.6	175.8	-1.4	-175.8	21.11	21.09	-1.06	
12,756.0	60.27	176.39	12,677.0	148.3	0.2	-148.3	6.74	6.69	-1.00	
12,787.0	63.49	176.11	12,691.6	121.1	2.0	-121.0	10.42	10.39	-0.90	
12,819.0	67.19	175.46	12,705.0	92.1	4.1	-92.0	11.71	11.56	-2.03	
12,851.0	69.85	175.33	12,716.7	62.4	6.5	-62.3	8.32	8.31	-0.41	
12,883.0	70.44	176.35	12,727.6	32.4	8.7	-32.3	3.52	1.84	3.19	
12,915.0	72.10	175.03	12,737.8	2.2	11.0	-2.1	6.49	5.19	-4.13	
12,946.0	74.43	174.82	12,746.8	-27.4	13.6	27.5	7.54	7.52	-0.68	
12,978.0	77.93	175.90	12,754.4	-58.4	16.1	58.5	11.42	10.94	3.38	
13,010.0	80.76	176.30	12,760.3	-89.8	18.3	89.9	8.93	8.84	1.25	
13,042.0	82.28	177.30	12,765.0	-121.4	20.0	121.5	5.67	4.75	3.13	
13,074.0	82.65	177.80	12,769.2	-153.0	21.4	153.2	1.93	1.16	1.56	
13,105.0	83.24	177.85	12,773.0	-183.8	22.6	184.0	1.91	1.90	0.16	
13,137.0	86.78	177.51	12,775.8	-215.6	23.8	215.8	11.11	11.06	-1.06	
13,232.0	88.49	178.77	12,779.8	-310.5	26.9	310.7	2.24	1.80	1.33	
13,327.0	89.55	180.02	12,781.4	-405.5	27.9	405.7	1.73	1.12	1.32	
13,422.0	89.11	181.18	12,782.5	-500.5	26.9	500.7	1.31	-0.46	1.22	
13,517.0	90.25	182.32	12,783.0	-595.4	24.0	595.6	1.70	1.20	1.20	
13,612.0	89.21	183.14	12,783.5	-690.3	19.5	690.4	1.39	-1.09	0.86	
13,707.0	89.47	185.41	12,784.6	-785.0	12.4	785.1	2.40	0.27	2.39	
13,802.0	88.77	181.14	12,786.0	-879.8	7.0	879.9	4.55	-0.74	-4.49	
13,834.0	88.41	175.67	12,786.8	-911.8	7.9	911.8	17.13	-1.13	-17.09	
13,929.0	86.98	172.78	12,790.6	-1,006.2	17.4	1,006.3	3.39	-1.51	-3.04	
14,024.0	88.96	173.64	12,794.0	-1,100.5	28.7	1,100.7	2.27	2.08	0.91	
14,119.0	88.71	173.33	12,795.9	-1,194.9	39.4	1,195.1	0.42	-0.26	-0.33	
14,215.0	90.09	176.69	12,796.9	-1,290.5	47.8	1,290.8	3.78	1.44	3.50	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	North Reference:	Grid
Wallbore:	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)	
14,309.0	89.39	177.82	12,797.4	-1,384.4	52.3	1,384.7	1.41	-0.74	1.20	
14,404.0	89.66	182.46	12,798.1	-1,479.3	52.1	1,479.7	4.89	0.28	4.88	
14,500.0	88.88	181.39	12,799.4	-1,575.3	48.8	1,575.6	1.38	-0.81	-1.11	
14,594.0	87.84	180.76	12,802.1	-1,669.2	47.1	1,669.5	1.29	-1.11	-0.67	
14,689.0	91.90	184.25	12,802.3	-1,764.1	42.9	1,764.4	5.64	4.27	3.67	
14,785.0	90.59	180.67	12,800.2	-1,860.0	38.8	1,860.2	3.97	-1.36	-3.73	
14,880.0	88.01	179.80	12,801.3	-1,955.0	38.4	1,955.2	2.87	-2.72	-0.92	
14,974.0	88.71	179.74	12,804.0	-2,048.9	38.8	2,049.1	0.75	0.74	-0.06	
15,068.0	88.96	178.94	12,805.9	-2,142.9	39.9	2,143.1	0.89	0.27	-0.85	
15,163.0	86.78	178.58	12,809.5	-2,237.8	41.9	2,238.0	2.33	-2.29	-0.38	
15,258.0	89.64	178.73	12,812.4	-2,332.7	44.2	2,333.0	3.01	3.01	0.16	
15,353.0	88.93	177.78	12,813.6	-2,427.7	47.0	2,427.9	1.25	-0.75	-1.00	
15,448.0	88.54	180.97	12,815.7	-2,522.6	48.1	2,522.9	3.38	-0.41	3.36	
15,543.0	88.88	181.00	12,817.9	-2,617.6	46.4	2,617.9	0.36	0.36	0.03	
15,638.0	88.88	181.44	12,819.7	-2,712.5	44.4	2,712.8	0.46	0.00	0.46	
15,732.0	91.93	182.31	12,819.1	-2,806.5	41.4	2,806.7	3.37	3.24	0.93	
15,820.0	89.58	179.75	12,817.9	-2,894.4	39.8	2,894.7	3.95	-2.67	-2.91	
15,916.0	87.45	178.48	12,820.4	-2,990.4	41.3	2,990.6	2.58	-2.22	-1.32	
16,010.0	88.12	179.23	12,824.0	-3,084.3	43.1	3,084.5	1.07	0.71	0.80	
16,105.0	89.21	180.13	12,826.2	-3,179.3	43.7	3,179.5	1.49	1.15	0.95	
16,200.0	89.33	180.81	12,827.4	-3,274.3	42.9	3,274.5	0.73	0.13	0.72	
16,295.0	88.74	178.32	12,829.0	-3,369.2	43.6	3,369.5	2.69	-0.62	-2.62	
16,390.0	87.90	178.63	12,831.8	-3,464.2	46.1	3,464.4	0.94	-0.88	0.33	
16,485.0	87.28	178.90	12,835.8	-3,559.0	48.2	3,559.3	0.71	-0.65	0.28	
16,581.0	86.92	178.54	12,840.7	-3,654.9	50.3	3,655.2	0.53	-0.38	-0.38	
16,674.0	88.38	180.12	12,844.5	-3,747.8	51.4	3,748.1	2.31	1.57	1.70	
16,769.0	87.28	178.26	12,848.1	-3,842.7	52.7	3,843.0	2.27	-1.16	-1.96	
16,864.0	88.66	179.77	12,851.5	-3,937.7	54.4	3,937.9	2.15	1.45	1.59	
16,960.0	89.72	180.67	12,852.8	-4,033.6	54.0	4,033.9	1.45	1.10	0.94	
17,054.0	85.63	178.25	12,856.6	-4,127.5	54.9	4,127.8	5.05	-4.35	-2.57	
17,150.0	87.59	180.10	12,862.3	-4,223.3	56.3	4,223.6	2.81	2.04	1.93	
17,245.0	87.09	181.83	12,866.7	-4,318.2	54.7	4,318.5	1.89	-0.53	1.82	
17,340.0	86.69	180.47	12,871.9	-4,413.1	52.8	4,413.3	1.49	-0.42	-1.43	
17,435.0	86.44	179.84	12,877.6	-4,507.9	52.5	4,508.2	0.71	-0.26	-0.66	
17,530.0	89.69	181.99	12,880.8	-4,602.8	51.0	4,603.1	4.10	3.42	2.26	
17,577.0	88.99	182.75	12,881.3	-4,649.8	49.0	4,650.0	2.20	-1.49	1.62	
17,636.0	88.99	182.75	12,882.4	-4,708.7	46.2	4,708.9	0.00	0.00	0.00	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well TIGERCAT FED COM #3H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Site:	BULLDOG	MD Reference:	RKB=3324.5+25 @ 3349.5usft (PRECISION 585)
Well:	TIGERCAT FED COM #3H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

Checked By: _____	Approved By: _____	Date: _____
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COG

SURVEY REPORT

TIGERCAT FEDERAL COM #3H

PRECISION #595

6/10/2018

This survey is correct to the best of my knowledge and is supported by actual field data.

Kolton Cotton

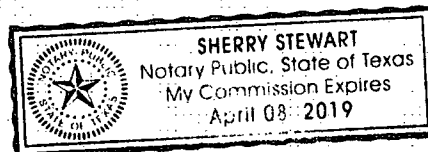
Notarized this date 1st of August, 2018.

Sherry Stewart

Notary Signature

County of Midland

State of Texas



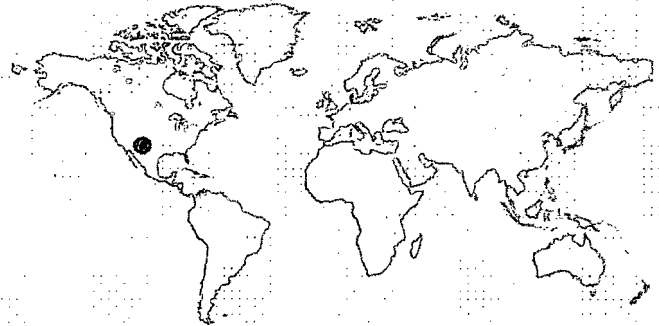
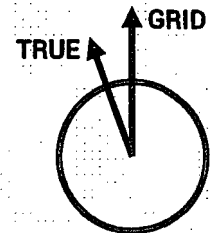
Scientific Drilling

The Ultimate Partner In Wellbore Placement

SURVEY REPORT

TIGERCAT FEDERAL COM #3H

DEFINITIVE KEEPER GYRO SURVEY

CUSTOMER
PROJECT
FIELDCOG
Tigercat Federal Com #3H
WolfcampSDI JOB NO.
SDI DISTRICT
SDI KIT/UNITOP.010806
Midland**SITE INFORMATION**Site Name Tigercat Federal Com #003
Lat/Long 32.06418° N, 103.5970534° W
Northing 387,851.4 ft
Easting 728,086.5 ftSection
Township
Range**MAP INFORMATION**North Reference Grid North
Grid Correction -0.39 deg
System US State Plane 1927
Datum North American Datum 1927 (Clarke 1866)
Map Zone New Mexico East: 3001**WELL INFORMATION**Lat/Long 32.06418° N, 103.5970534° W
Northing 387,851.4 ft
Easting 728,086.5 ft
UWI 30-025-44534**DEPTH AND ELEVATION REFERENCE**Ground Level 3324.5 ft above Mean Sea
Level
Reference Datum RKB
Reference Height 25 ft above G.L.
Reference Elevation 3349.5 ft**VERTICAL SECTION REFERENCE**+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 179.33°
Calculation Method Minimum Curvature**LOCAL GRAVITY REFERENCE INFORMATION**Local Gravity 998.495 mG [computed]
True to Grid subtract 0.39°**WELL NOTES**

Keeper Gyro Survey ran in 4" FH Drill Pipe to 11,558'

OPERATORS

C.Booher/B.Kennedy

SDI Operator Name (Printed)

SIGNATURE

DATE

MD ft	INC deg	AZIM deg	TVD ft	VS ft	IN/S ft	HE/W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.64	259.32	100.00	0.10	-0.10	-0.55	0.64	0.56	259.32
125.00	0.64	264.47	125.00	0.13	-0.14	-0.82	0.23	0.83	260.18
150.00	0.64	272.76	149.99	0.14	-0.15	-1.10	0.37	1.11	262.30
175.00	0.70	270.80	174.99	0.12	-0.14	-1.39	0.25	1.40	264.27
200.00	0.80	265.52	199.99	0.13	-0.15	-1.72	0.48	1.73	264.98
225.00	0.85	260.61	224.99	0.17	-0.20	-2.08	0.35	2.09	264.63
250.00	0.82	256.24	249.99	0.24	-0.27	-2.44	0.28	2.45	263.72
275.00	0.81	253.91	274.98	0.33	-0.36	-2.78	0.15	2.80	262.63
300.00	0.83	256.05	299.98	0.42	-0.45	-3.12	0.15	3.16	261.77
325.00	0.91	256.65	324.98	0.50	-0.54	-3.49	0.33	3.54	261.19
350.00	1.01	256.72	349.97	0.59	-0.64	-3.90	0.40	3.95	260.71
375.00	1.09	251.23	374.97	0.71	-0.77	-4.34	0.51	4.41	260.00
400.00	1.08	247.06	399.97	0.88	-0.93	-4.78	0.32	4.87	258.96
425.00	1.05	247.24	424.96	1.05	-1.11	-5.21	0.10	5.33	257.94
450.00	1.03	249.82	449.96	1.21	-1.28	-5.63	0.21	5.78	257.20
475.00	1.06	251.18	474.95	1.36	-1.43	-6.06	0.17	6.23	256.71
500.00	1.09	250.87	499.95	1.51	-1.58	-6.51	0.13	6.70	256.31
525.00	1.08	248.34	524.94	1.67	-1.75	-6.95	0.20	7.17	255.87
550.00	1.00	245.87	549.94	1.84	-1.92	-7.37	0.39	7.61	255.36
575.00	0.88	240.80	574.94	2.02	-2.11	-7.73	0.57	8.01	254.76
600.00	0.65	238.23	599.93	2.18	-2.28	-8.02	0.95	8.34	254.16
625.00	0.48	234.59	624.93	2.31	-2.41	-8.23	0.66	8.57	253.67
650.00	0.43	226.07	649.93	2.44	-2.54	-8.38	0.34	8.76	253.15
675.00	0.41	215.92	674.93	2.58	-2.68	-8.50	0.31	8.91	252.53
700.00	0.39	206.96	699.93	2.72	-2.82	-8.59	0.27	9.04	251.80
725.00	0.29	202.76	724.93	2.86	-2.96	-8.66	0.40	9.15	251.12
750.00	0.29	204.48	749.93	2.97	-3.08	-8.71	0.04	9.23	250.54
775.00	0.28	213.40	774.93	3.08	-3.18	-8.77	0.18	9.33	250.04
800.00	0.34	218.38	799.93	3.19	-3.29	-8.85	0.24	9.44	249.59
825.00	0.35	219.24	824.93	3.30	-3.41	-8.94	0.07	9.57	249.13
850.00	0.42	213.30	849.93	3.44	-3.54	-9.04	0.31	9.71	248.59

MD ft	INC deg	AZIM deg	TVD ft	VS ft	N/S ft	E/W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
875.00	0.38	206.21	874.93	3.59	-3.69	-9.12	0.25	9.84	247.96
900.00	0.27	207.77	899.93	3.71	-3.82	-9.19	0.43	9.95	247.42
925.00	0.22	227.79	924.93	3.80	-3.90	-9.25	0.39	10.04	247.12
950.00	0.28	243.02	949.93	3.86	-3.96	-9.34	0.34	10.15	247.00
975.00	0.32	236.93	974.93	3.92	-4.03	-9.45	0.21	10.28	246.91
1000.00	0.28	228.25	999.93	4.00	-4.11	-9.56	0.24	10.40	246.74
1025.00	0.18	227.17	1024.93	4.06	-4.18	-9.63	0.37	10.50	246.56
1050.00	0.16	11.00	1049.93	4.06	-4.17	-9.65	1.29	10.51	246.64
1075.00	0.53	20.88	1074.93	3.91	-4.03	-9.60	1.51	10.42	247.25
1100.00	0.73	25.03	1099.92	3.66	-3.78	-9.50	0.81	10.22	248.32
1125.00	0.87	29.82	1124.92	3.36	-3.47	-9.33	0.65	9.96	249.62
1150.00	1.15	28.76	1149.92	2.97	-3.08	-9.12	1.13	9.63	251.33
1175.00	1.41	28.10	1174.91	2.49	-2.59	-8.85	1.03	9.22	253.70
1200.00	1.49	27.73	1199.90	1.93	-2.03	-8.56	0.32	8.79	256.66
1225.00	1.50	24.62	1224.90	1.35	-1.44	-8.27	0.33	8.39	260.09
1250.00	1.46	23.73	1249.89	0.76	-0.86	-8.00	0.19	8.05	263.90
1275.00	1.55	24.13	1274.88	0.16	-0.26	-7.74	0.37	7.74	268.11
1300.00	1.65	25.61	1299.87	-0.47	0.38	-7.44	0.43	7.45	272.91
1325.00	2.04	23.75	1324.86	-1.19	1.11	-7.11	1.55	7.20	278.87
1350.00	2.85	20.29	1349.83	-2.18	2.10	-6.71	3.32	7.04	287.37
1375.00	3.87	17.64	1374.79	-3.56	3.49	-6.24	4.10	7.15	299.19
1400.00	4.37	17.23	1399.72	-5.27	5.20	-5.71	2.00	7.72	312.34
1425.00	4.70	17.62	1424.65	-7.14	7.08	-5.11	1.34	8.74	324.18
1450.00	5.12	16.72	1449.55	-9.18	9.13	-4.48	1.72	10.17	333.85
1475.00	5.47	15.87	1474.45	-11.39	11.35	-3.84	1.44	11.98	341.32
1500.00	6.28	13.00	1499.32	-13.86	13.83	-3.20	3.45	14.19	346.96
1525.00	7.01	10.61	1524.15	-16.69	16.66	-2.61	3.11	16.86	351.08
1550.00	7.25	10.12	1548.95	-19.73	19.71	-2.06	1.00	19.82	354.05
1575.00	7.40	9.64	1573.75	-22.87	22.85	-1.51	0.62	22.90	356.22
1600.00	7.65	8.83	1598.53	-26.09	26.08	-0.98	1.11	26.10	357.84
1625.00	7.75	8.20	1623.31	-29.40	29.40	-0.49	0.51	29.40	359.05
1650.00	8.00	6.74	1648.07	-32.79	32.79	-0.04	1.27	32.79	359.93

MD	INC	AZIM	TVD	VS	IN/S	TE/W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft	deg
1675.00	8.20	5.76	1672.82	-36.28	36.29	0.34	0.97	36.29	0.54
1700.00	8.22	5.52	1697.57	-39.83	39.84	0.69	0.17	39.85	0.99
1725.00	8.23	5.59	1722.31	-43.39	43.40	1.04	0.05	43.41	1.37
1750.00	8.33	5.55	1747.05	-46.97	46.99	1.39	0.41	47.01	1.69
1775.00	8.41	5.27	1771.78	-50.58	50.61	1.73	0.35	50.64	1.96
1800.00	8.39	5.18	1796.52	-54.22	54.25	2.06	0.11	54.28	2.18
1825.00	8.38	4.56	1821.25	-57.84	57.88	2.37	0.36	57.92	2.35
1850.00	8.28	4.66	1845.99	-61.45	61.49	2.66	0.39	61.54	2.48
1875.00	8.22	4.88	1870.73	-65.02	65.06	2.96	0.27	65.13	2.61
1900.00	7.95	3.82	1895.48	-68.52	68.57	3.23	1.22	68.64	2.70
1925.00	7.69	2.75	1920.25	-71.92	71.96	3.42	1.21	72.04	2.72
1950.00	7.52	2.25	1945.03	-75.22	75.27	3.57	0.72	75.35	2.71
1975.00	7.36	1.82	1969.82	-78.45	78.50	3.68	0.69	78.59	2.69
2000.00	7.32	1.70	1994.61	-81.64	81.69	3.78	0.18	81.78	2.65
2025.00	6.85	1.53	2019.42	-84.72	84.77	3.87	1.87	84.86	2.61
2050.00	6.34	1.96	2044.25	-87.59	87.64	3.96	2.04	87.73	2.58
2075.00	6.27	2.52	2069.10	-90.33	90.39	4.06	0.38	90.48	2.57
2100.00	6.06	2.18	2093.96	-93.01	93.07	4.17	0.82	93.16	2.57
2125.00	6.09	2.48	2118.82	-95.65	95.71	4.28	0.15	95.81	2.56
2150.00	6.33	2.68	2143.67	-98.35	98.41	4.40	0.99	98.51	2.56
2175.00	6.37	2.51	2168.52	-101.11	101.17	4.53	0.15	101.28	2.56
2200.00	6.36	2.61	2193.36	-103.88	103.94	4.65	0.06	104.05	2.56
2225.00	6.42	2.53	2218.21	-106.66	106.72	4.78	0.24	106.83	2.56
2250.00	6.41	3.07	2243.05	-109.44	109.51	4.91	0.24	109.62	2.57
2275.00	6.32	2.97	2267.90	-112.21	112.27	5.06	0.37	112.39	2.58
2300.00	6.26	2.64	2292.75	-114.94	115.01	5.19	0.26	115.13	2.58
2325.00	6.26	2.67	2317.60	-117.66	117.73	5.32	0.01	117.85	2.59
2350.00	6.23	3.01	2342.45	-120.38	120.45	5.45	0.19	120.57	2.59
2375.00	6.13	2.99	2367.31	-123.06	123.14	5.59	0.40	123.27	2.60
2400.00	6.07	3.33	2392.16	-125.72	125.79	5.74	0.28	125.92	2.61
2425.00	6.05	3.41	2417.02	-128.35	128.43	5.90	0.12	128.56	2.63
2450.00	5.90	2.86	2441.89	-130.95	131.03	6.04	0.64	131.17	2.64

MD	INC	AZIM	TVD	VS	IN/S	HE/W	DLS	CLOSURE	CLOSURE
ft	deg	deg	ft	ft	ft	ft	%/100ft	DIST	DIR
2475.00	5.46	2.24	2466.77	-133.42	133.50	6.15	1.78	133.64	2.64
2500.00	5.10	2.20	2491.66	-135.71	135.79	6.24	1.45	135.94	2.63
2525.00	5.03	2.93	2516.56	-137.91	138.00	6.34	0.38	138.14	2.63
2550.00	5.08	2.98	2541.47	-140.11	140.20	6.45	0.23	140.35	2.63
2575.00	5.10	3.03	2566.37	-142.33	142.41	6.57	0.07	142.56	2.64
2600.00	5.08	2.89	2591.27	-144.54	144.63	6.68	0.08	144.78	2.64
2625.00	5.03	3.81	2616.17	-146.74	146.83	6.81	0.40	146.99	2.66
2650.00	4.94	6.41	2641.08	-148.90	148.99	7.00	0.96	149.16	2.69
2675.00	5.03	7.96	2665.98	-151.05	151.15	7.27	0.65	151.32	2.76
2700.00	5.03	8.45	2690.89	-153.22	153.32	7.59	0.17	153.51	2.83
2725.00	4.97	9.03	2715.79	-155.37	155.47	7.92	0.33	155.67	2.92
2750.00	4.90	9.28	2740.70	-157.49	157.60	8.26	0.29	157.81	3.00
2775.00	4.84	9.99	2765.61	-159.58	159.69	8.62	0.33	159.92	3.09
2800.00	4.69	10.83	2790.52	-161.62	161.73	8.99	0.66	161.98	3.18
2825.00	4.60	11.23	2815.44	-163.60	163.72	9.38	0.39	163.99	3.28
2850.00	4.62	11.72	2840.36	-165.57	165.69	9.78	0.18	165.98	3.38
2875.00	4.61	12.01	2865.28	-167.53	167.66	10.19	0.10	167.97	3.48
2900.00	4.68	11.66	2890.19	-169.51	169.64	10.61	0.28	169.98	3.58
2925.00	4.73	11.44	2915.11	-171.51	171.65	11.02	0.20	172.01	3.67
2950.00	4.75	11.11	2940.02	-173.53	173.68	11.42	0.15	174.05	3.76
2975.00	4.76	10.43	2964.94	-175.56	175.71	11.81	0.23	176.11	3.85
3000.00	4.72	10.67	2989.85	-177.59	177.74	12.19	0.21	178.16	3.92
3025.00	4.72	10.94	3014.77	-179.61	179.76	12.57	0.09	180.20	4.00
3050.00	4.77	9.02	3039.68	-181.64	181.80	12.93	0.67	182.26	4.07
3075.00	4.82	7.50	3064.59	-183.70	183.87	13.23	0.54	184.35	4.12
3100.00	4.86	7.68	3089.51	-185.79	185.96	13.51	0.20	186.45	4.16
3125.00	4.86	8.10	3114.42	-187.89	188.06	13.80	0.14	188.57	4.20
3150.00	4.87	7.81	3139.33	-189.98	190.16	14.10	0.10	190.68	4.24
3175.00	4.88	8.15	3164.24	-192.08	192.26	14.39	0.12	192.80	4.28
3200.00	4.88	8.64	3189.14	-194.18	194.37	14.70	0.17	194.92	4.33
3225.00	4.86	10.25	3214.05	-196.27	196.46	15.05	0.55	197.03	4.38
3250.00	4.85	13.21	3238.96	-198.33	198.53	15.48	1.00	199.13	4.46

MD ft	INC deg	AZIM deg	TVD ft	VS ft	±N/S ft	±E/W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
3275.00	4.90	14.58	3263.87	-200.39	200.59	15.99	0.51	201.23	4.56
3300.00	4.94	14.38	3288.78	-202.46	202.67	16.52	0.18	203.34	4.66
3325.00	4.93	12.75	3313.69	-204.54	204.76	17.03	0.56	205.46	4.75
3350.00	4.92	10.86	3338.60	-206.64	206.86	17.47	0.65	207.60	4.83
3375.00	4.93	9.61	3363.50	-208.75	208.97	17.85	0.43	209.73	4.88
3400.00	5.04	10.10	3388.41	-210.89	211.11	18.22	0.48	211.90	4.93
3425.00	5.22	10.60	3413.31	-213.08	213.31	18.62	0.71	214.12	4.99
3450.00	5.40	10.84	3438.20	-215.35	215.59	19.05	0.75	216.43	5.05
3475.00	5.47	10.84	3463.09	-217.67	217.91	19.50	0.27	218.78	5.11
3500.00	5.54	10.56	3487.97	-220.02	220.27	19.95	0.29	221.17	5.17
3525.00	5.63	10.08	3512.86	-222.41	222.66	20.38	0.39	223.59	5.23
3550.00	5.84	8.54	3537.73	-224.87	225.13	20.78	1.05	226.08	5.27
3575.00	6.09	6.56	3562.60	-227.44	227.70	21.12	1.30	228.68	5.30
3600.00	6.33	4.33	3587.45	-230.13	230.40	21.38	1.37	231.39	5.30
3625.00	6.47	0.37	3612.29	-232.91	233.18	21.49	1.84	234.17	5.27
3650.00	7.13	358.90	3637.12	-235.87	236.14	21.47	2.74	237.11	5.20
3675.00	8.02	357.94	3661.90	-239.17	239.43	21.38	3.57	240.39	5.10
3700.00	8.99	357.13	3686.62	-242.86	243.13	21.22	3.94	244.05	4.99
3725.00	9.13	356.49	3711.31	-246.80	247.06	21.00	0.68	247.95	4.86
3750.00	8.69	355.86	3736.01	-250.66	250.92	20.74	1.83	251.78	4.73
3775.00	7.19	358.42	3760.77	-254.11	254.37	20.56	6.16	255.20	4.62
3800.00	6.44	0.00	3785.59	-257.08	257.33	20.52	3.07	258.15	4.56
3825.00	6.61	358.66	3810.43	-259.92	260.17	20.49	0.92	260.98	4.50
3850.00	6.48	358.98	3835.27	-262.77	263.02	20.43	0.54	263.82	4.44
3875.00	6.37	359.81	3860.11	-265.57	265.82	20.40	0.58	266.60	4.39
3900.00	6.24	0.90	3884.96	-268.31	268.57	20.41	0.70	269.34	4.35
3925.00	6.04	1.95	3909.82	-270.99	271.24	20.48	0.92	272.02	4.32
3950.00	6.01	2.41	3934.68	-273.61	273.86	20.58	0.24	274.64	4.30
3975.00	5.77	2.47	3959.55	-276.17	276.43	20.69	0.96	277.20	4.28
4000.00	5.31	2.00	3984.43	-278.57	278.84	20.78	1.82	279.61	4.26
4025.00	4.88	0.33	4009.33	-280.79	281.06	20.83	1.84	281.83	4.24
4050.00	4.42	357.09	4034.25	-282.82	283.08	20.79	2.11	283.84	4.20

MD	INC	AZIM	TVD	VS	HN/S	HE/W	DLS	CLOSURE	CLOSURE
ft	deg	deg	ft	ft	ft	ft	%/100ft	DIST	DIR
4075.00	4.07	352.64	4059.18	-284.66	284.92	20.62	1.92	285.67	4.14
4100.00	3.97	351.00	4084.12	-286.40	286.66	20.38	0.61	287.38	4.07
4125.00	4.01	351.20	4109.06	-288.13	288.38	20.11	0.18	289.08	3.99
4150.00	4.17	351.45	4133.99	-289.89	290.14	19.84	0.63	290.82	3.91
4175.00	4.35	351.57	4158.92	-291.73	291.98	19.56	0.73	292.64	3.83
4200.00	4.52	351.84	4183.85	-293.65	293.90	19.28	0.68	294.53	3.75
4225.00	4.61	352.42	4208.77	-295.62	295.87	19.01	0.40	296.48	3.68
4250.00	4.65	352.66	4233.69	-297.63	297.87	18.75	0.19	298.46	3.60
4275.00	4.67	352.57	4258.61	-299.65	299.88	18.49	0.06	300.45	3.53
4300.00	4.60	352.42	4283.52	-301.65	301.88	18.22	0.27	302.43	3.45
4325.00	4.23	350.62	4308.45	-303.56	303.79	17.94	1.57	304.32	3.38
4350.00	3.91	348.74	4333.39	-305.31	305.53	17.63	1.40	306.04	3.30
4375.00	3.88	348.64	4358.33	-306.98	307.20	17.29	0.13	307.69	3.22
4400.00	3.91	349.83	4383.27	-308.65	308.87	16.98	0.34	309.33	3.15
4425.00	3.99	350.92	4408.21	-310.35	310.56	16.69	0.45	311.01	3.08
4450.00	4.05	350.99	4433.15	-312.08	312.29	16.41	0.22	312.73	3.01
4475.00	4.07	351.01	4458.09	-313.83	314.04	16.14	0.11	314.46	2.94
4500.00	4.09	350.73	4483.02	-315.59	315.80	15.85	0.11	316.20	2.87
4525.00	4.10	350.75	4507.96	-317.36	317.56	15.57	0.03	317.95	2.81
4550.00	4.13	351.05	4532.90	-319.13	319.33	15.28	0.13	319.70	2.74
4575.00	4.15	351.22	4557.83	-320.92	321.12	15.00	0.11	321.47	2.68
4600.00	4.15	351.01	4582.77	-322.71	322.90	14.72	0.06	323.24	2.61
4625.00	4.10	350.90	4607.70	-324.49	324.68	14.44	0.17	325.00	2.55
4650.00	4.02	350.84	4632.64	-326.24	326.43	14.16	0.32	326.74	2.48
4675.00	3.82	350.59	4657.58	-327.93	328.12	13.88	0.81	328.41	2.42
4700.00	3.61	350.48	4682.53	-329.53	329.71	13.62	0.84	330.00	2.37
4725.00	3.49	350.53	4707.48	-331.06	331.24	13.36	0.48	331.51	2.31
4750.00	3.40	350.38	4732.43	-332.55	332.72	13.11	0.35	332.98	2.26
4775.00	3.33	351.04	4757.39	-334.00	334.17	12.88	0.32	334.42	2.21
4800.00	3.26	351.35	4782.35	-335.42	335.59	12.66	0.30	335.83	2.16
4825.00	3.21	350.60	4807.31	-336.82	336.99	12.44	0.25	337.22	2.11
4850.00	3.24	350.29	4832.27	-338.21	338.37	12.20	0.13	338.59	2.07

MD ft	INC deg	AZIM deg	TVD ft	VS ft	N/S ft	E/W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
4875.00	3.16	349.75	4857.23	-339.58	339.75	11.96	0.36	339.96	2.02
4900.00	2.93	348.20	4882.20	-340.89	341.05	11.71	0.97	341.25	1.97
4925.00	2.72	348.32	4907.17	-342.10	342.26	11.46	0.84	342.45	1.92
4950.00	2.13	349.25	4932.14	-343.14	343.29	11.25	2.36	343.48	1.88
4975.00	1.23	349.16	4957.13	-343.86	344.01	11.11	3.58	344.19	1.85
5000.00	0.71	351.35	4982.13	-344.28	344.43	11.04	2.11	344.61	1.84
5025.00	0.52	354.06	5007.13	-344.55	344.70	11.00	0.75	344.87	1.83
5050.00	0.42	355.68	5032.13	-344.75	344.90	10.98	0.42	345.08	1.82
5075.00	0.37	359.19	5057.13	-344.92	345.07	10.98	0.23	345.25	1.82
5100.00	0.37	0.02	5082.12	-345.08	345.24	10.98	0.02	345.41	1.82
5125.00	0.37	3.13	5107.12	-345.24	345.40	10.98	0.08	345.57	1.82
5150.00	0.33	4.29	5132.12	-345.40	345.55	10.99	0.15	345.72	1.82
5175.00	0.31	13.95	5157.12	-345.54	345.69	11.01	0.23	345.86	1.82
5200.00	0.13	58.84	5182.12	-345.62	345.77	11.05	0.96	345.95	1.83
5225.00	0.58	159.63	5207.12	-345.51	345.66	11.12	2.48	345.84	1.84
5250.00	1.25	163.30	5232.12	-345.13	345.28	11.24	2.68	345.47	1.87
5275.00	1.50	163.17	5257.11	-344.55	344.71	11.42	1.00	344.90	1.90
5300.00	1.49	163.04	5282.10	-343.92	344.08	11.61	0.03	344.28	1.93
5325.00	1.51	163.29	5307.09	-343.30	343.46	11.80	0.06	343.66	1.97
5350.00	1.53	162.74	5332.09	-342.66	342.82	11.99	0.12	343.03	2.00
5375.00	1.56	161.69	5357.08	-342.01	342.18	12.20	0.15	342.40	2.04
5400.00	1.57	161.59	5382.07	-341.36	341.53	12.41	0.03	341.76	2.08
5425.00	1.58	160.65	5407.06	-340.71	340.88	12.63	0.11	341.12	2.12
5450.00	1.56	158.83	5432.05	-340.07	340.24	12.87	0.21	340.49	2.17
5475.00	1.52	156.53	5457.04	-339.44	339.62	13.12	0.29	339.87	2.21
5500.00	1.45	155.74	5482.03	-338.85	339.03	13.39	0.31	339.29	2.26
5525.00	1.44	155.79	5507.02	-338.27	338.45	13.65	0.05	338.73	2.31
5550.00	1.45	155.26	5532.02	-337.70	337.88	13.91	0.08	338.17	2.36
5575.00	1.45	154.59	5557.01	-337.12	337.31	14.17	0.07	337.61	2.41
5600.00	1.45	154.03	5582.00	-336.55	336.74	14.45	0.06	337.05	2.46
5625.00	1.45	153.09	5606.99	-335.98	336.17	14.73	0.09	336.50	2.51
5650.00	1.44	153.25	5631.98	-335.41	335.61	15.01	0.02	335.95	2.56

MD	INC	AZIM	TVD	VS	+N/S	HE/W	DLS	CLOSURE	CLOSURE
ft	deg	deg	ft	ft	ft	ft	%/100ft	DIST	DIR
5675.00	1.44	154.06	5656.98	-334.84	335.05	15.29	0.08	335.39	2.61
5700.00	1.41	154.42	5681.97	-334.28	334.49	15.56	0.14	334.85	2.66
5725.00	1.43	154.60	5706.96	-333.72	333.93	15.83	0.07	334.30	2.71
5750.00	1.43	154.78	5731.95	-333.15	333.36	16.10	0.04	333.75	2.76
5775.00	1.42	154.43	5756.94	-332.59	332.80	16.36	0.08	333.20	2.81
5800.00	1.42	155.24	5781.94	-332.02	332.24	16.63	0.08	332.66	2.87
5825.00	1.43	155.49	5806.93	-331.46	331.68	16.89	0.05	332.11	2.91
5850.00	1.45	153.97	5831.92	-330.88	331.11	17.15	0.17	331.55	2.97
5875.00	1.43	152.81	5856.91	-330.32	330.55	17.44	0.14	331.01	3.02
5900.00	1.41	152.63	5881.91	-329.77	330.00	17.72	0.09	330.47	3.07
5925.00	1.19	151.15	5906.90	-329.27	329.50	17.98	0.89	329.99	3.12
5950.00	0.62	134.33	5931.90	-328.94	329.18	18.21	2.49	329.68	3.17
5975.00	0.45	42.82	5956.90	-328.92	329.16	18.37	3.08	329.67	3.19
6000.00	0.70	20.75	5981.89	-329.13	329.37	18.49	1.32	329.89	3.21
6025.00	0.72	21.05	6006.89	-329.42	329.66	18.60	0.08	330.18	3.23
6050.00	0.72	21.85	6031.89	-329.71	329.95	18.71	0.04	330.48	3.25
6075.00	0.73	22.54	6056.89	-330.00	330.24	18.83	0.07	330.78	3.26
6100.00	0.75	22.46	6081.89	-330.30	330.54	18.96	0.06	331.08	3.28
6125.00	0.74	21.91	6106.88	-330.60	330.84	19.08	0.03	331.39	3.30
6150.00	0.74	21.47	6131.88	-330.90	331.14	19.20	0.02	331.70	3.32
6175.00	0.72	18.16	6156.88	-331.19	331.44	19.31	0.19	332.00	3.33
6200.00	0.72	17.02	6181.88	-331.49	331.74	19.40	0.06	332.31	3.35
6225.00	0.74	15.11	6206.88	-331.80	332.05	19.49	0.11	332.62	3.36
6250.00	0.69	12.95	6231.87	-332.10	332.35	19.57	0.22	332.93	3.37
6275.00	0.65	15.47	6256.87	-332.38	332.63	19.64	0.19	333.21	3.38
6300.00	0.65	16.53	6281.87	-332.65	332.91	19.72	0.05	333.49	3.39
6325.00	0.65	17.13	6306.87	-332.92	333.18	19.80	0.03	333.77	3.40
6350.00	0.67	18.61	6331.87	-333.20	333.45	19.89	0.12	334.04	3.41
6375.00	0.69	14.49	6356.87	-333.48	333.74	19.97	0.21	334.33	3.42
6400.00	0.72	12.56	6381.86	-333.78	334.04	20.04	0.17	334.64	3.43
6425.00	0.79	15.53	6406.86	-334.10	334.36	20.12	0.31	334.96	3.44
6450.00	0.77	19.42	6431.86	-334.42	334.68	20.22	0.22	335.29	3.46

MD ft	INC deg	AZIM deg	TVD ft	VS ft	HN/S ft	HE/W ft	DLS /100ft	CLOSURE DIST ft	CLOSURE DIR deg
6475.00	0.77	19.18	6456.86	-334.74	335.00	20.34	0.02	335.61	3.47
6500.00	0.78	18.13	6481.85	-335.06	335.32	20.44	0.08	335.94	3.49
6525.00	0.78	17.88	6506.85	-335.38	335.64	20.55	0.02	336.27	3.50
6550.00	0.82	17.46	6531.85	-335.71	335.97	20.65	0.15	336.61	3.52
6575.00	0.81	17.60	6556.85	-336.05	336.31	20.76	0.03	336.95	3.53
6600.00	0.79	16.63	6581.85	-336.38	336.64	20.86	0.11	337.29	3.55
6625.00	0.78	16.07	6606.84	-336.71	336.97	20.96	0.03	337.62	3.56
6650.00	0.78	15.38	6631.84	-337.03	337.30	21.05	0.05	337.96	3.57
6675.00	0.77	16.05	6656.84	-337.36	337.63	21.14	0.04	338.29	3.58
6700.00	0.78	17.21	6681.84	-337.68	337.95	21.24	0.07	338.62	3.60
6725.00	0.78	17.83	6706.83	-338.01	338.28	21.34	0.04	338.95	3.61
6750.00	0.76	18.12	6731.83	-338.32	338.60	21.45	0.10	339.27	3.62
6775.00	0.77	19.50	6756.83	-338.64	338.91	21.56	0.10	339.60	3.64
6800.00	0.77	21.60	6781.83	-338.95	339.23	21.67	0.11	339.92	3.66
6825.00	0.76	20.62	6806.82	-339.26	339.54	21.79	0.07	340.24	3.67
6850.00	0.78	18.82	6831.82	-339.58	339.86	21.91	0.11	340.56	3.69
6875.00	0.79	18.00	6856.82	-339.90	340.18	22.02	0.08	340.89	3.70
6900.00	0.76	10.64	6881.82	-340.23	340.51	22.10	0.42	341.22	3.71
6925.00	0.76	9.92	6906.82	-340.55	340.83	22.16	0.04	341.55	3.72
6950.00	0.77	16.73	6931.81	-340.87	341.16	22.24	0.37	341.88	3.73
6975.00	0.77	19.27	6956.81	-341.19	341.48	22.34	0.14	342.21	3.74
7000.00	0.77	20.38	6981.81	-341.51	341.79	22.45	0.06	342.53	3.76
7025.00	0.77	21.45	7006.81	-341.82	342.11	22.57	0.06	342.85	3.78
7050.00	0.78	22.90	7031.80	-342.13	342.42	22.70	0.09	343.17	3.79
7075.00	0.78	25.18	7056.80	-342.44	342.73	22.84	0.12	343.49	3.81
7100.00	0.77	25.67	7081.80	-342.74	343.04	22.98	0.05	343.80	3.83
7125.00	0.77	25.63	7106.80	-343.04	343.34	23.13	0.01	344.12	3.85
7150.00	0.79	28.14	7131.80	-343.34	343.64	23.28	0.17	344.43	3.88
7175.00	0.83	27.61	7156.79	-343.66	343.95	23.45	0.14	344.75	3.90
7200.00	0.81	26.18	7181.79	-343.97	344.27	23.61	0.10	345.08	3.92
7225.00	0.80	24.57	7206.79	-344.29	344.59	23.76	0.11	345.41	3.94
7250.00	0.80	25.50	7231.79	-344.60	344.90	23.91	0.05	345.73	3.97

MD ft	INC deg	AZIM deg	TVD ft	VS ft	INCL ft	HE-W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
7275.00	0.78	24.42	7256.78	-344.91	345.22	24.05	0.08	346.05	3.99
7300.00	0.76	24.48	7281.78	-345.22	345.52	24.19	0.10	346.37	4.01
7325.00	0.76	25.89	7306.78	-345.51	345.82	24.33	0.08	346.68	4.02
7350.00	0.72	26.49	7331.78	-345.80	346.11	24.48	0.17	346.98	4.05
7375.00	0.68	29.84	7356.77	-346.07	346.38	24.62	0.23	347.26	4.07
7400.00	0.69	32.48	7381.77	-346.32	346.64	24.77	0.13	347.52	4.09
7425.00	0.72	32.01	7406.77	-346.58	346.90	24.94	0.15	347.79	4.11
7450.00	0.73	30.74	7431.77	-346.85	347.17	25.10	0.07	348.07	4.14
7475.00	0.71	30.43	7456.77	-347.12	347.44	25.26	0.07	348.35	4.16
7500.00	0.70	29.92	7481.76	-347.38	347.70	25.42	0.04	348.63	4.18
7525.00	0.59	23.55	7506.76	-347.63	347.95	25.54	0.53	348.89	4.20
7550.00	0.39	328.48	7531.76	-347.82	348.14	25.55	1.94	349.08	4.20
7575.00	0.74	277.58	7556.76	-347.91	348.23	25.35	2.33	349.16	4.16
7600.00	1.05	264.60	7581.76	-347.92	348.23	24.96	1.46	349.13	4.10
7625.00	1.19	259.86	7606.75	-347.86	348.17	24.47	0.67	349.03	4.02
7650.00	1.21	259.74	7631.75	-347.77	348.07	23.96	0.10	348.90	3.94
7675.00	1.22	258.69	7656.74	-347.68	347.98	23.44	0.10	348.76	3.85
7700.00	1.26	257.79	7681.74	-347.57	347.87	22.91	0.16	348.62	3.77
7725.00	1.31	256.96	7706.73	-347.46	347.74	22.36	0.24	348.46	3.68
7750.00	1.37	256.21	7731.72	-347.33	347.61	21.79	0.25	348.29	3.59
7775.00	1.45	252.68	7756.72	-347.17	347.44	21.20	0.48	348.09	3.49
7800.00	1.52	249.08	7781.71	-346.96	347.23	20.59	0.45	347.84	3.39
7825.00	1.55	247.85	7806.70	-346.73	346.98	19.96	0.20	347.56	3.29
7850.00	1.60	247.94	7831.69	-346.47	346.72	19.33	0.21	347.26	3.19
7875.00	1.62	246.36	7856.68	-346.21	346.45	18.68	0.19	346.95	3.09
7900.00	1.69	245.83	7881.67	-345.92	346.16	18.02	0.28	346.63	2.98
7925.00	1.79	244.27	7906.66	-345.61	345.84	17.33	0.45	346.27	2.87
7950.00	1.84	242.72	7931.64	-345.26	345.48	16.62	0.28	345.88	2.75
7975.00	1.92	240.96	7956.63	-344.88	345.09	15.89	0.38	345.46	2.64
8000.00	1.95	240.34	7981.62	-344.48	344.68	15.16	0.16	345.01	2.52
8025.00	1.99	239.79	8006.60	-344.06	344.25	14.41	0.17	344.55	2.40
8050.00	2.04	239.26	8031.59	-343.62	343.80	13.65	0.22	344.08	2.27

MD	INC	AZIM	TVD	VS	IN/S	HEAV	DIS	CLOSURE	CLOSURE
ft	deg	deg	ft	ft	ft	ft	%/100ft	DIST	DIP
8075.00	2.12	236.87	8056.57	-343.15	343.32	12.88	0.45	343.57	2.15
8100.00	2.03	228.11	8081.55	-342.61	342.78	12.17	1.31	342.99	2.03
8125.00	1.95	219.30	8106.54	-341.99	342.15	11.57	1.26	342.35	1.94
8150.00	2.00	216.57	8131.52	-341.32	341.47	11.04	0.42	341.65	1.85
8175.00	2.01	212.36	8156.51	-340.61	340.75	10.54	0.59	340.91	1.77
8200.00	1.96	207.28	8181.49	-339.86	340.00	10.11	0.73	340.15	1.70
8225.00	1.84	195.08	8206.48	-339.09	339.23	9.81	1.69	339.37	1.66
8250.00	1.76	185.90	8231.47	-338.33	338.46	9.67	1.19	338.60	1.64
8275.00	1.75	182.81	8256.46	-337.56	337.70	9.61	0.38	337.83	1.63
8300.00	1.75	180.73	8281.44	-336.80	336.93	9.59	0.26	337.07	1.63
8325.00	1.73	178.86	8306.43	-336.04	336.17	9.59	0.24	336.31	1.63
8350.00	1.61	176.25	8331.42	-335.31	335.45	9.62	0.57	335.58	1.64
8375.00	1.32	170.70	8356.41	-334.68	334.81	9.69	1.29	334.95	1.66
8400.00	1.12	165.95	8381.41	-334.15	334.29	9.80	0.88	334.43	1.68
8425.00	1.07	165.12	8406.40	-333.69	333.83	9.91	0.24	333.97	1.70
8450.00	1.05	164.91	8431.40	-333.24	333.38	10.03	0.08	333.53	1.72
8475.00	1.05	163.17	8456.40	-332.80	332.94	10.16	0.13	333.10	1.75
8500.00	1.07	161.32	8481.39	-332.36	332.50	10.30	0.17	332.66	1.77
8525.00	1.05	159.26	8506.39	-331.92	332.07	10.46	0.17	332.23	1.80
8550.00	1.07	158.29	8531.38	-331.49	331.63	10.63	0.11	331.80	1.84
8575.00	1.05	157.87	8556.38	-331.05	331.20	10.80	0.10	331.38	1.87
8600.00	1.07	157.45	8581.37	-330.62	330.78	10.97	0.09	330.96	1.90
8625.00	1.10	159.02	8606.37	-330.18	330.33	11.15	0.17	330.52	1.93
8650.00	1.08	158.98	8631.36	-329.74	329.89	11.32	0.11	330.09	1.97
8675.00	1.05	160.79	8656.36	-329.30	329.46	11.48	0.17	329.66	2.00
8700.00	0.91	159.94	8681.36	-328.89	329.05	11.62	0.56	329.26	2.02
8725.00	0.61	152.92	8706.35	-328.59	328.75	11.75	1.27	328.96	2.05
8750.00	0.38	143.62	8731.35	-328.40	328.56	11.86	0.98	328.78	2.07
8775.00	0.29	130.02	8756.35	-328.29	328.46	11.96	0.46	328.67	2.09
8800.00	0.31	108.76	8781.35	-328.23	328.39	12.07	0.45	328.62	2.11
8825.00	0.33	94.40	8806.35	-328.20	328.37	12.21	0.33	328.59	2.13
8850.00	0.32	93.86	8831.35	-328.19	328.36	12.35	0.03	328.59	2.15

MD	INC	AZIM	TVD	VS	N/S	E/W	DLS	CLOSURE	CLOSURE
ft	deg	deg	ft	ft	ft	ft	%/100ft	DIST	DIR
8875.00	0.36	91.53	8856.35	-328.18	328.35	12.50	0.16	328.59	2.18
8900.00	0.38	84.42	8881.35	-328.19	328.36	12.66	0.20	328.60	2.21
8925.00	0.37	82.26	8906.35	-328.20	328.37	12.82	0.06	328.62	2.24
8950.00	0.38	83.89	8931.35	-328.22	328.39	12.98	0.05	328.65	2.26
8975.00	0.38	83.97	8956.35	-328.24	328.41	13.14	0.02	328.67	2.29
9000.00	0.41	82.94	8981.35	-328.25	328.43	13.32	0.13	328.70	2.32
9025.00	0.46	80.33	9006.35	-328.28	328.46	13.50	0.19	328.74	2.35
9050.00	0.41	81.69	9031.35	-328.31	328.49	13.69	0.18	328.77	2.39
9075.00	0.36	78.62	9056.35	-328.33	328.52	13.86	0.24	328.81	2.42
9100.00	0.40	71.24	9081.35	-328.37	328.56	14.01	0.25	328.86	2.44
9125.00	0.41	65.78	9106.35	-328.44	328.63	14.18	0.16	328.93	2.47
9150.00	0.39	58.08	9131.34	-328.52	328.71	14.33	0.22	329.02	2.50
9175.00	0.37	47.85	9156.34	-328.61	328.81	14.46	0.29	329.12	2.52
9200.00	0.34	41.98	9181.34	-328.72	328.92	14.57	0.18	329.24	2.54
9225.00	0.31	39.61	9206.34	-328.83	329.02	14.67	0.12	329.35	2.55
9250.00	0.30	39.51	9231.34	-328.93	329.13	14.75	0.06	329.46	2.57
9275.00	0.33	38.09	9256.34	-329.04	329.23	14.84	0.12	329.57	2.58
9300.00	0.36	33.05	9281.34	-329.16	329.35	14.92	0.19	329.69	2.59
9325.00	0.38	26.29	9306.34	-329.30	329.50	15.00	0.19	329.84	2.61
9350.00	0.37	15.91	9331.34	-329.45	329.65	15.06	0.27	329.99	2.62
9375.00	0.30	5.57	9356.34	-329.59	329.79	15.09	0.37	330.13	2.62
9400.00	0.24	11.61	9381.34	-329.71	329.91	15.11	0.25	330.25	2.62
9425.00	0.25	18.75	9406.34	-329.81	330.01	15.14	0.13	330.36	2.63
9450.00	0.29	25.38	9431.34	-329.92	330.12	15.18	0.20	330.47	2.63
9475.00	0.31	24.05	9456.34	-330.04	330.24	15.24	0.07	330.59	2.64
9500.00	0.32	14.84	9481.34	-330.17	330.37	15.28	0.20	330.72	2.65
9525.00	0.32	1.82	9506.34	-330.30	330.51	15.30	0.29	330.86	2.65
9550.00	0.31	355.75	9531.34	-330.44	330.64	15.30	0.15	331.00	2.65
9575.00	0.28	346.05	9556.34	-330.57	330.77	15.28	0.23	331.12	2.64
9600.00	0.32	340.06	9581.34	-330.69	330.89	15.24	0.20	331.24	2.64
9625.00	0.38	337.12	9606.34	-330.84	331.04	15.18	0.25	331.38	2.63
9650.00	0.45	336.18	9631.34	-331.00	331.20	15.11	0.28	331.55	2.61

MD	INC	AZIM	TVD	VS	N/S	E/W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft	deg
9675.00	0.53	329.23	9656.34	-331.19	331.39	15.01	0.42	331.73	2.59
9700.00	0.68	321.36	9681.33	-331.41	331.61	14.86	0.67	331.94	2.57
9725.00	0.86	316.94	9706.33	-331.66	331.86	14.64	0.76	332.18	2.53
9750.00	0.97	314.22	9731.33	-331.95	332.14	14.36	0.47	332.45	2.48
9775.00	1.01	312.10	9756.33	-332.25	332.44	14.05	0.23	332.74	2.42
9800.00	1.04	307.79	9781.32	-332.54	332.73	13.70	0.33	333.01	2.36
9825.00	1.10	300.20	9806.32	-332.81	332.99	13.32	0.61	333.25	2.29
9850.00	1.16	290.91	9831.31	-333.02	333.20	12.87	0.78	333.45	2.21
9875.00	1.26	281.80	9856.31	-333.18	333.34	12.37	0.86	333.57	2.12
9900.00	1.33	272.44	9881.30	-333.25	333.41	11.81	0.89	333.62	2.03
9925.00	1.35	265.33	9906.29	-333.25	333.40	11.22	0.67	333.59	1.93
9950.00	1.39	262.67	9931.29	-333.19	333.34	10.63	0.31	333.51	1.83
9975.00	1.43	262.69	9956.28	-333.12	333.26	10.02	0.13	333.41	1.72
10000.00	1.52	261.84	9981.27	-333.04	333.17	9.38	0.38	333.31	1.61
10025.00	1.49	261.93	10006.26	-332.96	333.08	8.73	0.10	333.20	1.50
10050.00	1.39	259.78	10031.25	-332.86	332.98	8.11	0.45	333.08	1.40
10075.00	1.30	258.55	10056.25	-332.76	332.87	7.53	0.39	332.96	1.30
10100.00	1.19	256.49	10081.24	-332.65	332.75	7.00	0.45	332.83	1.21
10125.00	1.06	253.00	10106.24	-332.53	332.63	6.53	0.60	332.69	1.12
10150.00	0.89	255.29	10131.23	-332.41	332.51	6.12	0.69	332.56	1.05
10175.00	0.74	259.85	10156.23	-332.34	332.43	5.77	0.65	332.48	0.99
10200.00	0.70	262.43	10181.23	-332.30	332.38	5.46	0.21	332.43	0.94
10225.00	0.71	265.37	10206.23	-332.27	332.35	5.15	0.15	332.39	0.89
10250.00	0.77	266.06	10231.22	-332.25	332.32	4.83	0.24	332.36	0.83
10275.00	0.83	265.44	10256.22	-332.22	332.30	4.48	0.24	332.33	0.77
10300.00	0.85	262.32	10281.22	-332.19	332.26	4.12	0.19	332.29	0.71
10325.00	0.79	254.38	10306.22	-332.12	332.19	3.77	0.51	332.21	0.65
10350.00	0.74	234.65	10331.21	-331.99	332.05	3.47	1.06	332.07	0.60
10375.00	0.83	217.50	10356.21	-331.75	331.81	3.23	1.01	331.83	0.56
10400.00	0.91	210.14	10381.21	-331.44	331.50	3.02	0.53	331.51	0.52
10425.00	0.91	212.08	10406.21	-331.10	331.16	2.82	0.13	331.17	0.49
10450.00	0.83	229.48	10431.20	-330.82	330.87	2.57	1.10	330.88	0.45

MD	INC	AZIM	TVD	VS	IN/S	HE/W	DLS	CLOSURE DIST	CLOSURE DIR
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft	deg
10475.00	0.74	255.10	10456.20	-330.66	330.71	2.28	1.44	330.72	0.39
10500.00	0.78	272.91	10481.20	-330.63	330.68	1.95	0.95	330.68	0.34
10525.00	0.79	281.98	10506.20	-330.68	330.72	1.61	0.50	330.73	0.28
10550.00	0.76	286.64	10531.19	-330.77	330.80	1.29	0.29	330.81	0.22
10575.00	0.62	286.38	10556.19	-330.86	330.89	1.00	0.55	330.89	0.17
10600.00	0.38	316.34	10581.19	-330.96	330.99	0.81	1.40	330.99	0.14
10625.00	0.41	15.35	10606.19	-331.10	331.13	0.78	1.57	331.14	0.13
10650.00	0.55	35.46	10631.19	-331.29	331.32	0.87	0.85	331.32	0.15
10675.00	0.61	41.83	10656.19	-331.48	331.52	1.03	0.35	331.52	0.18
10700.00	0.56	46.92	10681.19	-331.66	331.70	1.21	0.27	331.70	0.21
10725.00	0.59	49.33	10706.19	-331.83	331.87	1.39	0.14	331.87	0.24
10750.00	0.62	40.91	10731.18	-332.01	332.05	1.58	0.37	332.05	0.27
10775.00	0.61	35.93	10756.18	-332.22	332.26	1.75	0.21	332.26	0.30
10800.00	0.62	25.97	10781.18	-332.45	332.49	1.88	0.43	332.50	0.32
10825.00	0.68	9.28	10806.18	-332.71	332.76	1.97	0.80	332.77	0.34
10850.00	0.76	356.07	10831.18	-333.03	333.07	1.98	0.73	333.08	0.34
10875.00	0.98	345.47	10856.18	-333.40	333.44	1.92	1.07	333.45	0.33
10900.00	1.13	339.83	10881.17	-333.84	333.88	1.78	0.76	333.89	0.31
10925.00	1.16	334.54	10906.17	-334.30	334.34	1.58	0.44	334.35	0.27
10950.00	1.20	328.68	10931.16	-334.76	334.80	1.34	0.50	334.80	0.23
10975.00	1.21	325.09	10956.16	-335.20	335.24	1.05	0.31	335.24	0.18
11000.00	1.21	321.96	10981.15	-335.63	335.66	0.74	0.27	335.67	0.13
11025.00	1.21	316.46	11006.14	-336.04	336.06	0.39	0.47	336.06	0.07
11050.00	1.23	311.81	11031.14	-336.41	336.44	0.01	0.40	336.44	0.00
11075.00	1.18	309.56	11056.13	-336.76	336.78	-0.39	0.27	336.78	359.93
11100.00	1.12	305.39	11081.13	-337.07	337.08	-0.79	0.41	337.08	359.87
11125.00	1.17	300.80	11106.12	-337.35	337.36	-1.21	0.42	337.36	359.79
11150.00	1.22	298.33	11131.12	-337.61	337.61	-1.66	0.28	337.62	359.72
11175.00	1.27	296.77	11156.11	-337.87	337.86	-2.14	0.24	337.87	359.64
11200.00	1.29	293.44	11181.11	-338.11	338.10	-2.65	0.31	338.11	359.55
11225.00	1.39	295.07	11206.10	-338.36	338.34	-3.18	0.42	338.36	359.46
11250.00	1.44	296.90	11231.09	-338.63	338.61	-3.74	0.28	338.63	359.37

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft	CLOSURE DIST ft	CLOSURE DIR deg
11275.00	1.48	293.25	11256.08	-338.91	338.88	-4.31	0.40	338.91	359.27
11300.00	1.50	294.09	11281.07	-339.18	339.14	-4.91	0.12	339.18	359.17
11325.00	1.42	295.26	11306.07	-339.45	339.41	-5.49	0.34	339.45	359.07
11350.00	1.41	297.19	11331.06	-339.73	339.68	-6.04	0.19	339.73	358.98
11375.00	1.35	296.73	11356.05	-340.01	339.95	-6.58	0.23	340.02	358.89
11400.00	1.07	291.05	11381.05	-340.23	340.17	-7.06	1.23	340.24	358.81
11425.00	0.82	277.71	11406.04	-340.34	340.28	-7.45	1.33	340.36	358.74
11450.00	1.00	280.50	11431.04	-340.41	340.34	-7.85	0.74	340.43	358.68
11475.00	1.19	280.14	11456.03	-340.50	340.43	-8.32	0.78	340.53	358.60
11500.00	1.24	276.26	11481.03	-340.58	340.50	-8.84	0.38	340.62	358.51
11525.00	1.31	275.96	11506.02	-340.65	340.56	-9.40	0.27	340.69	358.42
11550.00	1.23	276.87	11531.02	-340.72	340.62	-9.95	0.34	340.77	358.33
11558.00	1.15	277.10	11539.01	-340.74	340.64	-10.11	0.96	340.79	358.30