

HOBBS OCD

DEC 05 2016

RECEIVED

WESTERN DIVISION

PBNM

Norwalk

Thistle Unit 131H

Wellbore #1

Plan: Design #1

Standard Planning Report

05 October, 2016

Devon Energy

Planning Report

Database:	EDM r5000 US Production	Local Co-ordinate Reference:	Well Thistle Unit 131H
Company:	WESTERN DIVISION	TVD Reference:	RKB @ 3674.80ft
Project:	PBNM	MD Reference:	RKB @ 3674.80ft
Site:	Norwalk	North Reference:	Grid
Well:	Thistle Unit 131H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	PBNM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Norwalk		
Site Position:		Northing:	0.00 usft
From:	Map	Easting:	0.00 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	30.988446
		Longitude:	-106.060830
		Grid Convergence:	-0.89 °

Well	Thistle Unit 131H					
Well Position	+N/-S	457,532.04 ft	Northing:	457,531.12 usft	Latitude:	32.255472
	+E/-W	779,878.62 ft	Easting:	779,877.06 usft	Longitude:	-103.561684
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	3,649.80 ft

Wellbore		Wellbore #1			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/1/2016	6.94	60.09	48,113

Design	Design #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	359.93	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,966.67	5.00	180.00	3,965.82	-29.07	0.00	0.75	0.75	0.00	180.00	
7,966.67	5.00	180.00	7,950.60	-377.69	0.00	0.00	0.00	0.00	0.00	
8,633.34	0.00	0.00	8,616.42	-406.76	0.00	0.75	-0.75	0.00	180.00	
9,507.34	0.00	0.00	9,490.42	-406.76	0.00	0.00	0.00	0.00	0.00	
10,406.49	89.92	359.94	10,063.38	165.35	-0.62	10.00	10.00	-0.01	359.94	
17,585.48	89.92	359.94	10,074.00	7,344.32	-8.45	0.00	0.00	0.00	0.00	This/le Unit 131H_BH

Devon Energy

Planning Report

Database: EDM r5000 US Production
 Company: WESTERN DIVISION
 Project: PBNM
 Site: Norwalk
 Well: Thistle Unit 131H
 Wellbore: Wellbore #1
 Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 131H
 TVD Reference: RKB @ 3674.80ft
 MD Reference: RKB @ 3674.80ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.75	180.00	3,400.00	-0.65	0.00	-0.65	0.75	0.75	0.00
3,500.00	1.50	180.00	3,499.98	-2.62	0.00	-2.62	0.75	0.75	0.00
3,600.00	2.25	180.00	3,599.92	-5.89	0.00	-5.89	0.75	0.75	0.00
3,700.00	3.00	180.00	3,699.82	-10.47	0.00	-10.47	0.75	0.75	0.00
3,800.00	3.75	180.00	3,799.64	-16.36	0.00	-16.36	0.75	0.75	0.00
3,900.00	4.50	180.00	3,899.38	-23.55	0.00	-23.55	0.75	0.75	0.00
3,966.67	5.00	180.00	3,965.82	-29.07	0.00	-29.07	0.75	0.75	0.00
4,000.00	5.00	180.00	3,999.03	-31.98	0.00	-31.98	0.00	0.00	0.00
4,100.00	5.00	180.00	4,098.65	-40.69	0.00	-40.69	0.00	0.00	0.00
4,200.00	5.00	180.00	4,198.27	-49.41	0.00	-49.41	0.00	0.00	0.00
4,300.00	5.00	180.00	4,297.89	-58.12	0.00	-58.12	0.00	0.00	0.00
4,400.00	5.00	180.00	4,397.51	-66.84	0.00	-66.84	0.00	0.00	0.00
4,500.00	5.00	180.00	4,497.12	-75.55	0.00	-75.55	0.00	0.00	0.00
4,600.00	5.00	180.00	4,596.74	-84.27	0.00	-84.27	0.00	0.00	0.00
4,700.00	5.00	180.00	4,696.36	-92.98	0.00	-92.98	0.00	0.00	0.00
4,800.00	5.00	180.00	4,795.98	-101.70	0.00	-101.70	0.00	0.00	0.00
4,900.00	5.00	180.00	4,895.60	-110.42	0.00	-110.42	0.00	0.00	0.00
5,000.00	5.00	180.00	4,995.22	-119.13	0.00	-119.13	0.00	0.00	0.00
5,100.00	5.00	180.00	5,094.84	-127.85	0.00	-127.85	0.00	0.00	0.00
5,200.00	5.00	180.00	5,194.46	-136.56	0.00	-136.56	0.00	0.00	0.00

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Company:	WESTERN DIVISION	TVD Reference:	RKB @ 3674.80ft
Project:	PBNM	MD Reference:	RKB @ 3674.80ft
Site:	Norwalk	North Reference:	Grid
Well:	Thistle Unit 131H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	5.00	180.00	5,294.08	-145.28	0.00	-145.28	0.00	0.00	0.00
5,400.00	5.00	180.00	5,393.70	-153.99	0.00	-153.99	0.00	0.00	0.00
5,500.00	5.00	180.00	5,493.32	-162.71	0.00	-162.71	0.00	0.00	0.00
5,600.00	5.00	180.00	5,592.94	-171.42	0.00	-171.42	0.00	0.00	0.00
5,700.00	5.00	180.00	5,692.56	-180.14	0.00	-180.14	0.00	0.00	0.00
5,800.00	5.00	180.00	5,792.18	-188.86	0.00	-188.86	0.00	0.00	0.00
5,900.00	5.00	180.00	5,891.80	-197.57	0.00	-197.57	0.00	0.00	0.00
6,000.00	5.00	180.00	5,991.42	-206.29	0.00	-206.29	0.00	0.00	0.00
6,100.00	5.00	180.00	6,091.04	-215.00	0.00	-215.00	0.00	0.00	0.00
6,200.00	5.00	180.00	6,190.66	-223.72	0.00	-223.72	0.00	0.00	0.00
6,300.00	5.00	180.00	6,290.28	-232.43	0.00	-232.43	0.00	0.00	0.00
6,400.00	5.00	180.00	6,389.89	-241.15	0.00	-241.15	0.00	0.00	0.00
6,500.00	5.00	180.00	6,489.51	-249.86	0.00	-249.86	0.00	0.00	0.00
6,600.00	5.00	180.00	6,589.13	-258.58	0.00	-258.58	0.00	0.00	0.00
6,700.00	5.00	180.00	6,688.75	-267.30	0.00	-267.30	0.00	0.00	0.00
6,800.00	5.00	180.00	6,788.37	-276.01	0.00	-276.01	0.00	0.00	0.00
6,900.00	5.00	180.00	6,887.99	-284.73	0.00	-284.73	0.00	0.00	0.00
7,000.00	5.00	180.00	6,987.61	-293.44	0.00	-293.44	0.00	0.00	0.00
7,100.00	5.00	180.00	7,087.23	-302.16	0.00	-302.16	0.00	0.00	0.00
7,200.00	5.00	180.00	7,186.85	-310.87	0.00	-310.87	0.00	0.00	0.00
7,300.00	5.00	180.00	7,286.47	-319.59	0.00	-319.59	0.00	0.00	0.00
7,400.00	5.00	180.00	7,386.09	-328.31	0.00	-328.30	0.00	0.00	0.00
7,500.00	5.00	180.00	7,485.71	-337.02	0.00	-337.02	0.00	0.00	0.00
7,600.00	5.00	180.00	7,585.33	-345.74	0.00	-345.74	0.00	0.00	0.00
7,700.00	5.00	180.00	7,684.95	-354.45	0.00	-354.45	0.00	0.00	0.00
7,800.00	5.00	180.00	7,784.57	-363.17	0.00	-363.17	0.00	0.00	0.00
7,900.00	5.00	180.00	7,884.19	-371.88	0.00	-371.88	0.00	0.00	0.00
7,966.67	5.00	180.00	7,950.60	-377.69	0.00	-377.69	0.00	0.00	0.00
8,000.00	4.75	180.00	7,983.81	-380.53	0.00	-380.53	0.75	-0.75	0.00
8,100.00	4.00	180.00	8,083.52	-388.15	0.00	-388.15	0.75	-0.75	0.00
8,200.00	3.25	180.00	8,183.32	-394.48	0.00	-394.48	0.75	-0.75	0.00
8,300.00	2.50	180.00	8,283.19	-399.49	0.00	-399.49	0.75	-0.75	0.00
8,400.00	1.75	180.00	8,383.12	-403.20	0.00	-403.20	0.75	-0.75	0.00
8,500.00	1.00	180.00	8,483.09	-405.60	0.00	-405.60	0.75	-0.75	0.00
8,600.00	0.25	180.00	8,583.09	-406.69	0.00	-406.69	0.75	-0.75	0.00
8,633.34	0.00	0.00	8,616.42	-406.76	0.00	-406.76	0.75	-0.75	0.00
8,700.00	0.00	0.00	8,683.09	-406.76	0.00	-406.76	0.00	0.00	0.00
8,800.00	0.00	0.00	8,783.09	-406.76	0.00	-406.76	0.00	0.00	0.00
8,900.00	0.00	0.00	8,883.09	-406.76	0.00	-406.76	0.00	0.00	0.00
9,000.00	0.00	0.00	8,983.09	-406.76	0.00	-406.76	0.00	0.00	0.00
9,100.00	0.00	0.00	9,083.09	-406.76	0.00	-406.76	0.00	0.00	0.00
9,200.00	0.00	0.00	9,183.09	-406.76	0.00	-406.76	0.00	0.00	0.00
9,300.00	0.00	0.00	9,283.09	-406.76	0.00	-406.76	0.00	0.00	0.00
9,400.00	0.00	0.00	9,383.09	-406.76	0.00	-406.76	0.00	0.00	0.00
9,507.34	0.00	0.00	9,490.42	-406.76	0.00	-406.76	0.00	0.00	0.00
9,550.00	4.27	359.94	9,533.05	-405.18	0.00	-405.18	10.00	10.00	0.00
9,600.00	9.27	359.94	9,582.68	-399.29	-0.01	-399.29	10.00	10.00	0.00
9,650.00	14.27	359.94	9,631.62	-389.09	-0.02	-389.09	10.00	10.00	0.00
9,700.00	19.27	359.94	9,679.48	-374.68	-0.03	-374.67	10.00	10.00	0.00
9,750.00	24.27	359.94	9,725.90	-356.14	-0.06	-356.14	10.00	10.00	0.00
9,800.00	29.27	359.94	9,770.53	-333.63	-0.08	-333.63	10.00	10.00	0.00
9,850.00	34.27	359.94	9,813.02	-307.31	-0.11	-307.31	10.00	10.00	0.00
9,900.00	39.27	359.94	9,853.06	-277.40	-0.14	-277.40	10.00	10.00	0.00
9,950.00	44.27	359.94	9,890.35	-244.10	-0.18	-244.10	10.00	10.00	0.00

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 Site: Norwalk
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Local Co-ordinate Reference: Well Thistle Unit 131H
 TVD Reference: RKB @ 3674.80ft
 MD Reference: RKB @ 3674.80ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,000.00	49.27	359.94	9,924.58	-207.69	-0.22	-207.69	10.00	10.00	0.00
10,050.00	54.27	359.94	9,955.52	-168.42	-0.26	-168.42	10.00	10.00	0.00
10,100.00	59.27	359.94	9,982.91	-126.62	-0.31	-126.61	10.00	10.00	0.00
10,150.00	64.27	359.94	10,006.56	-82.58	-0.35	-82.58	10.00	10.00	0.00
10,200.00	69.27	359.94	10,026.27	-36.65	-0.40	-36.65	10.00	10.00	0.00
10,250.00	74.27	359.94	10,041.91	10.83	-0.46	10.83	10.00	10.00	0.00
10,300.00	79.27	359.94	10,053.36	59.48	-0.51	59.48	10.00	10.00	0.00
10,350.00	84.27	359.94	10,060.52	108.95	-0.56	108.95	10.00	10.00	0.00
10,400.00	89.27	359.94	10,063.34	158.86	-0.62	158.86	10.00	10.00	0.00
10,406.49	89.92	359.94	10,063.38	165.35	-0.62	165.35	10.00	10.00	0.00
10,500.00	89.92	359.94	10,063.52	258.86	-0.73	258.86	0.00	0.00	0.00
10,600.00	89.92	359.94	10,063.67	358.86	-0.83	358.86	0.00	0.00	0.00
10,700.00	89.92	359.94	10,063.82	458.86	-0.94	458.86	0.00	0.00	0.00
10,800.00	89.92	359.94	10,063.96	558.86	-1.05	558.86	0.00	0.00	0.00
10,900.00	89.92	359.94	10,064.11	658.86	-1.16	658.86	0.00	0.00	0.00
11,000.00	89.92	359.94	10,064.26	758.86	-1.27	758.86	0.00	0.00	0.00
11,100.00	89.92	359.94	10,064.41	858.86	-1.38	858.86	0.00	0.00	0.00
11,200.00	89.92	359.94	10,064.56	958.86	-1.49	958.86	0.00	0.00	0.00
11,300.00	89.92	359.94	10,064.70	1,058.86	-1.60	1,058.86	0.00	0.00	0.00
11,400.00	89.92	359.94	10,064.85	1,158.86	-1.71	1,158.86	0.00	0.00	0.00
11,500.00	89.92	359.94	10,065.00	1,258.86	-1.82	1,258.86	0.00	0.00	0.00
11,600.00	89.92	359.94	10,065.15	1,358.86	-1.92	1,358.86	0.00	0.00	0.00
11,700.00	89.92	359.94	10,065.29	1,458.85	-2.03	1,458.86	0.00	0.00	0.00
11,800.00	89.92	359.94	10,065.44	1,558.85	-2.14	1,558.86	0.00	0.00	0.00
11,900.00	89.92	359.94	10,065.59	1,658.85	-2.25	1,658.86	0.00	0.00	0.00
12,000.00	89.92	359.94	10,065.74	1,758.85	-2.36	1,758.86	0.00	0.00	0.00
12,100.00	89.92	359.94	10,065.89	1,858.85	-2.47	1,858.86	0.00	0.00	0.00
12,200.00	89.92	359.94	10,066.03	1,958.85	-2.58	1,958.86	0.00	0.00	0.00
12,300.00	89.92	359.94	10,066.18	2,058.85	-2.69	2,058.86	0.00	0.00	0.00
12,400.00	89.92	359.94	10,066.33	2,158.85	-2.80	2,158.86	0.00	0.00	0.00
12,500.00	89.92	359.94	10,066.48	2,258.85	-2.91	2,258.86	0.00	0.00	0.00
12,600.00	89.92	359.94	10,066.63	2,358.85	-3.01	2,358.86	0.00	0.00	0.00
12,700.00	89.92	359.94	10,066.77	2,458.85	-3.12	2,458.86	0.00	0.00	0.00
12,800.00	89.92	359.94	10,066.92	2,558.85	-3.23	2,558.86	0.00	0.00	0.00
12,900.00	89.92	359.94	10,067.07	2,658.85	-3.34	2,658.85	0.00	0.00	0.00
13,000.00	89.92	359.94	10,067.22	2,758.85	-3.45	2,758.85	0.00	0.00	0.00
13,100.00	89.92	359.94	10,067.37	2,858.85	-3.56	2,858.85	0.00	0.00	0.00
13,200.00	89.92	359.94	10,067.51	2,958.85	-3.67	2,958.85	0.00	0.00	0.00
13,300.00	89.92	359.94	10,067.66	3,058.85	-3.78	3,058.85	0.00	0.00	0.00
13,400.00	89.92	359.94	10,067.81	3,158.85	-3.89	3,158.85	0.00	0.00	0.00
13,500.00	89.92	359.94	10,067.96	3,258.85	-4.00	3,258.85	0.00	0.00	0.00
13,600.00	89.92	359.94	10,068.11	3,358.85	-4.11	3,358.85	0.00	0.00	0.00
13,700.00	89.92	359.94	10,068.25	3,458.85	-4.21	3,458.85	0.00	0.00	0.00
13,800.00	89.92	359.94	10,068.40	3,558.85	-4.32	3,558.85	0.00	0.00	0.00
13,900.00	89.92	359.94	10,068.55	3,658.85	-4.43	3,658.85	0.00	0.00	0.00
14,000.00	89.92	359.94	10,068.70	3,758.85	-4.54	3,758.85	0.00	0.00	0.00
14,100.00	89.92	359.94	10,068.84	3,858.85	-4.65	3,858.85	0.00	0.00	0.00
14,200.00	89.92	359.94	10,068.99	3,958.85	-4.76	3,958.85	0.00	0.00	0.00
14,300.00	89.92	359.94	10,069.14	4,058.85	-4.87	4,058.85	0.00	0.00	0.00
14,400.00	89.92	359.94	10,069.29	4,158.85	-4.98	4,158.85	0.00	0.00	0.00
14,500.00	89.92	359.94	10,069.44	4,258.85	-5.09	4,258.85	0.00	0.00	0.00
14,600.00	89.92	359.94	10,069.58	4,358.85	-5.20	4,358.85	0.00	0.00	0.00
14,700.00	89.92	359.94	10,069.73	4,458.85	-5.30	4,458.85	0.00	0.00	0.00
14,800.00	89.92	359.94	10,069.88	4,558.85	-5.41	4,558.85	0.00	0.00	0.00

Devon Energy

Planning Report

Database:	EDM r5000 US Production	Local Co-ordinate Reference:	Well Thistle Unit 131H
Company:	WESTERN DIVISION	TVD Reference:	RKB @ 3674.80ft
Project:	PBNM	MD Reference:	RKB @ 3674.80ft
Site:	Norwalk	North Reference:	Grid
Well:	Thistle Unit 131H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,900.00	89.92	359.94	10,070.03	4,658.85	-5.52	4,658.85	0.00	0.00	0.00
15,000.00	89.92	359.94	10,070.18	4,758.85	-5.63	4,758.85	0.00	0.00	0.00
15,100.00	89.92	359.94	10,070.32	4,858.85	-5.74	4,858.85	0.00	0.00	0.00
15,200.00	89.92	359.94	10,070.47	4,958.85	-5.85	4,958.85	0.00	0.00	0.00
15,300.00	89.92	359.94	10,070.62	5,058.85	-5.96	5,058.85	0.00	0.00	0.00
15,400.00	89.92	359.94	10,070.77	5,158.85	-6.07	5,158.85	0.00	0.00	0.00
15,500.00	89.92	359.94	10,070.92	5,258.85	-6.18	5,258.85	0.00	0.00	0.00
15,600.00	89.92	359.94	10,071.06	5,358.85	-6.29	5,358.85	0.00	0.00	0.00
15,700.00	89.92	359.94	10,071.21	5,458.85	-6.39	5,458.85	0.00	0.00	0.00
15,800.00	89.92	359.94	10,071.36	5,558.85	-6.50	5,558.85	0.00	0.00	0.00
15,900.00	89.92	359.94	10,071.51	5,658.85	-6.61	5,658.85	0.00	0.00	0.00
16,000.00	89.92	359.94	10,071.66	5,758.85	-6.72	5,758.85	0.00	0.00	0.00
16,100.00	89.92	359.94	10,071.80	5,858.85	-6.83	5,858.85	0.00	0.00	0.00
16,200.00	89.92	359.94	10,071.95	5,958.85	-6.94	5,958.85	0.00	0.00	0.00
16,300.00	89.92	359.94	10,072.10	6,058.85	-7.05	6,058.85	0.00	0.00	0.00
16,400.00	89.92	359.94	10,072.25	6,158.85	-7.16	6,158.85	0.00	0.00	0.00
16,500.00	89.92	359.94	10,072.39	6,258.85	-7.27	6,258.85	0.00	0.00	0.00
16,600.00	89.92	359.94	10,072.54	6,358.85	-7.38	6,358.85	0.00	0.00	0.00
16,700.00	89.92	359.94	10,072.69	6,458.85	-7.48	6,458.85	0.00	0.00	0.00
16,800.00	89.92	359.94	10,072.84	6,558.85	-7.59	6,558.85	0.00	0.00	0.00
16,900.00	89.92	359.94	10,072.99	6,658.85	-7.70	6,658.85	0.00	0.00	0.00
17,000.00	89.92	359.94	10,073.13	6,758.85	-7.81	6,758.85	0.00	0.00	0.00
17,100.00	89.92	359.94	10,073.28	6,858.85	-7.92	6,858.85	0.00	0.00	0.00
17,200.00	89.92	359.94	10,073.43	6,958.85	-8.03	6,958.85	0.00	0.00	0.00
17,300.00	89.92	359.94	10,073.58	7,058.85	-8.14	7,058.85	0.00	0.00	0.00
17,400.00	89.92	359.94	10,073.73	7,158.85	-8.25	7,158.85	0.00	0.00	0.00
17,500.00	89.92	359.94	10,073.87	7,258.85	-8.36	7,258.85	0.00	0.00	0.00
17,585.48	89.92	359.94	10,074.00	7,344.32	-8.45	7,344.33	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Thistle Unit 131H_BHL	0.00	0.00	10,074.00	7,344.32	-8.45	464,875.43	779,868.61	32.275659	-103.561541
- plan hits target center									
- Point									