



CRESTONE PEAK
RESOURCES

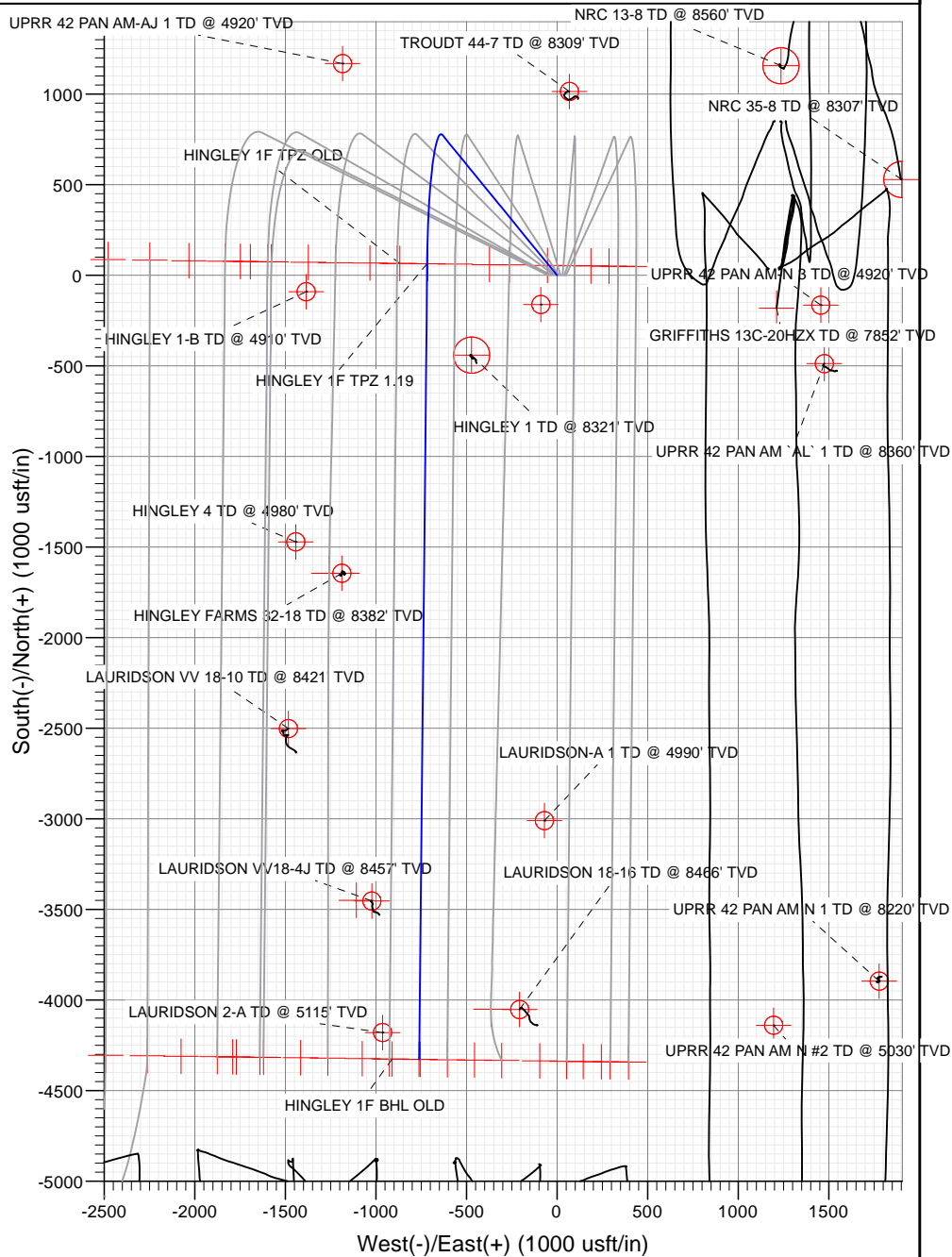
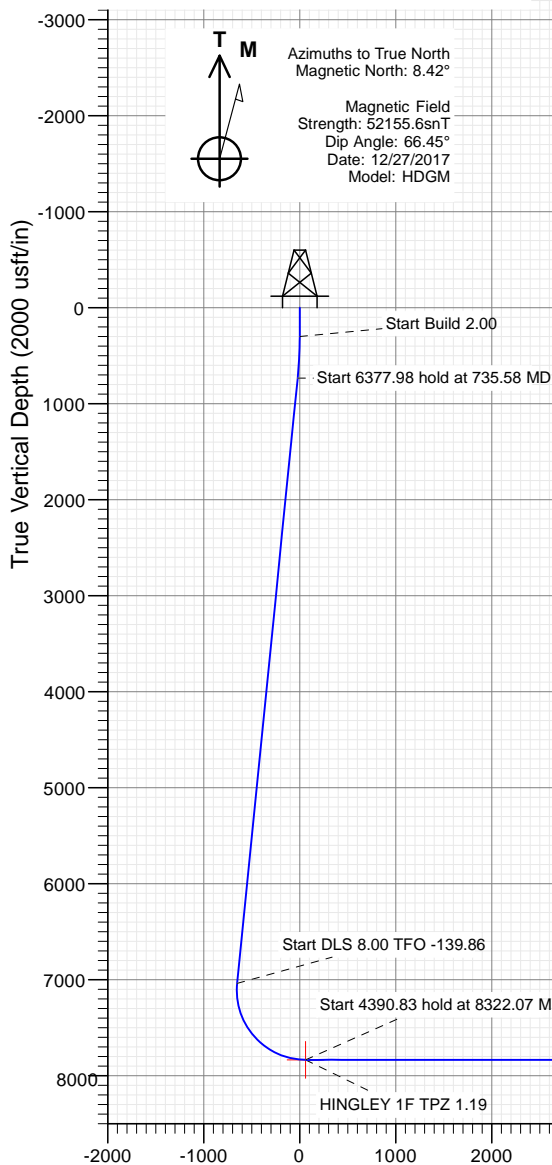
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	735.58	8.71	320.75	733.90	25.60	-20.91	2.00	320.75	-21.59	
4	7113.56	8.71	320.75	7038.31	773.71	-632.06	0.00	0.00	-652.54	
5	8322.07	90.00	180.57	7834.00	63.19	-717.22	8.00	-139.86	61.99	HINGLEY 1F TPZ 1.19
6	12712.90	90.00	180.57	7834.00	-4327.43	-761.03	0.00	0.00	4393.83	HINGLEY 1F BHL 1.19

PLAN #2
HINGLEY 1F-18H-A167
23 KB @ 5079.00usft
Ground Level @ 5056.00
North American Datum 1983
Well HINGLEY 1F-18H-A167 - Slot Hingley 1F-18H-A167 SHL, True North

Type	Target	Target	No Target (Freehand)	Azimuth	Origin Type	Slot	N/S	E/W	From TVD
Name	TD	TD	TD	TD	TD	TD	TD	TD	TD
HINGLEY 1F BHL 1.19	7834.00	-4327.43	-761.03	40.045127	-104.925912				
HINGLEY 1F BHL OLD	7834.00	-4325.23	-910.81	40.045133	-104.925247				
HINGLEY 1F TPZ 1.19	7834.00	63.19	-717.22	40.057180	-104.928556				
HINGLEY 1F TPZ OLD	7834.00	65.35	-867.26	40.057186	-104.928092				

Project: DJ BASIN
Site: S18-T1N-R67W (HINGLEY)
Well: HINGLEY 1F-18H-A167
Wellbore: OH
Design: PLAN #2



WELL DETAILS: HINGLEY 1F-18H-A167

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1264132.93	3160674.37	40.057007	-104.925994

CATHEDRAL



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1F-18H-A167 - Slot Hingley 1F-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5079.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5079.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1F-18H-A167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Project	DJ BASIN		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S18-T1N-R67W (HINGLEY)			
Site Position:		Northing:	1,257,176.93 usft	Latitude:	40.038044
From:	Lat/Long	Easting:	3,153,030.55 usft	Longitude:	-104.953454
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well	HINGLEY 1F-18H-A167 - Slot Hingley 1F-18H-A167 SHL					
Well Position	+N/-S	0.00 usft	Northing:	1,264,132.93 usft	Latitude:	40.057007
	+E/-W	0.00 usft	Easting:	3,160,674.37 usft	Longitude:	-104.925994
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,056.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	12/27/2017	8.42	66.45	52,155.60000000

Design	PLAN #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	189.97

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
735.58	8.71	320.75	733.90	25.60	-20.91	2.00	2.00	0.00	320.75	
7,113.56	8.71	320.75	7,038.31	773.71	-632.06	0.00	0.00	0.00	0.00	
8,322.07	90.00	180.57	7,834.00	63.19	-717.22	8.00	6.73	-11.60	-139.86	HINGLEY 1F TPZ 1.1
12,712.90	90.00	180.57	7,834.00	-4,327.43	-761.03	0.00	0.00	0.00	0.00	HINGLEY 1F BHL 1.1

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1F-18H-A167 - Slot Hingley 1F-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5079.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5079.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1F-18H-A167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
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	
200.00	0.00	0.00	200.00	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	
400.00	2.00	320.75	399.98	1.35	-1.10	-1.14	2.00	2.00	
500.00	4.00	320.75	499.84	5.40	-4.41	-4.56	2.00	2.00	
600.00	6.00	320.75	599.45	12.15	-9.93	-10.25	2.00	2.00	
700.00	8.00	320.75	698.70	21.59	-17.64	-18.21	2.00	2.00	
735.58	8.71	320.75	733.90	25.60	-20.91	-21.59	2.00	2.00	
800.00	8.71	320.75	797.58	33.15	-27.08	-27.96	0.00	0.00	
900.00	8.71	320.75	896.43	44.88	-36.66	-37.85	0.00	0.00	
1,000.00	8.71	320.75	995.27	56.61	-46.25	-47.75	0.00	0.00	
1,100.00	8.71	320.75	1,094.12	68.34	-55.83	-57.64	0.00	0.00	
1,200.00	8.71	320.75	1,192.97	80.07	-65.41	-67.53	0.00	0.00	
1,300.00	8.71	320.75	1,291.81	91.80	-74.99	-77.42	0.00	0.00	
1,400.00	8.71	320.75	1,390.66	103.53	-84.58	-87.32	0.00	0.00	
1,500.00	8.71	320.75	1,489.50	115.26	-94.16	-97.21	0.00	0.00	
1,600.00	8.71	320.75	1,588.35	126.99	-103.74	-107.10	0.00	0.00	
1,700.00	8.71	320.75	1,687.20	138.72	-113.32	-116.99	0.00	0.00	
1,800.00	8.71	320.75	1,786.04	150.45	-122.90	-126.89	0.00	0.00	
1,900.00	8.71	320.75	1,884.89	162.18	-132.49	-136.78	0.00	0.00	
2,000.00	8.71	320.75	1,983.74	173.91	-142.07	-146.67	0.00	0.00	
2,100.00	8.71	320.75	2,082.58	185.64	-151.65	-156.56	0.00	0.00	
2,200.00	8.71	320.75	2,181.43	197.37	-161.23	-166.46	0.00	0.00	
2,300.00	8.71	320.75	2,280.28	209.10	-170.81	-176.35	0.00	0.00	
2,400.00	8.71	320.75	2,379.12	220.83	-180.40	-186.24	0.00	0.00	
2,500.00	8.71	320.75	2,477.97	232.56	-189.98	-196.14	0.00	0.00	
2,600.00	8.71	320.75	2,576.81	244.29	-199.56	-206.03	0.00	0.00	
2,700.00	8.71	320.75	2,675.66	256.01	-209.14	-215.92	0.00	0.00	
2,800.00	8.71	320.75	2,774.51	267.74	-218.73	-225.81	0.00	0.00	
2,900.00	8.71	320.75	2,873.35	279.47	-228.31	-235.71	0.00	0.00	
3,000.00	8.71	320.75	2,972.20	291.20	-237.89	-245.60	0.00	0.00	
3,100.00	8.71	320.75	3,071.05	302.93	-247.47	-255.49	0.00	0.00	
3,200.00	8.71	320.75	3,169.89	314.66	-257.05	-265.38	0.00	0.00	
3,300.00	8.71	320.75	3,268.74	326.39	-266.64	-275.28	0.00	0.00	
3,400.00	8.71	320.75	3,367.59	338.12	-276.22	-285.17	0.00	0.00	
3,500.00	8.71	320.75	3,466.43	349.85	-285.80	-295.06	0.00	0.00	
3,600.00	8.71	320.75	3,565.28	361.58	-295.38	-304.96	0.00	0.00	
3,700.00	8.71	320.75	3,664.12	373.31	-304.97	-314.85	0.00	0.00	
3,800.00	8.71	320.75	3,762.97	385.04	-314.55	-324.74	0.00	0.00	
3,900.00	8.71	320.75	3,861.82	396.77	-324.13	-334.63	0.00	0.00	
4,000.00	8.71	320.75	3,960.66	408.50	-333.71	-344.53	0.00	0.00	
4,100.00	8.71	320.75	4,059.51	420.23	-343.29	-354.42	0.00	0.00	
4,200.00	8.71	320.75	4,158.36	431.96	-352.88	-364.31	0.00	0.00	
4,300.00	8.71	320.75	4,257.20	443.69	-362.46	-374.20	0.00	0.00	
4,400.00	8.71	320.75	4,356.05	455.42	-372.04	-384.10	0.00	0.00	
4,500.00	8.71	320.75	4,454.89	467.15	-381.62	-393.99	0.00	0.00	
4,600.00	8.71	320.75	4,553.74	478.88	-391.20	-403.88	0.00	0.00	
4,700.00	8.71	320.75	4,652.59	490.61	-400.79	-413.78	0.00	0.00	
4,800.00	8.71	320.75	4,751.43	502.34	-410.37	-423.67	0.00	0.00	
4,900.00	8.71	320.75	4,850.28	514.07	-419.95	-433.56	0.00	0.00	
5,000.00	8.71	320.75	4,949.13	525.80	-429.53	-443.45	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5079.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5079.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1F-18H-A167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,100.00	8.71	320.75	5,047.97	537.53	-439.12	-453.35	0.00	0.00	
5,200.00	8.71	320.75	5,146.82	549.26	-448.70	-463.24	0.00	0.00	
5,300.00	8.71	320.75	5,245.67	560.99	-458.28	-473.13	0.00	0.00	
5,400.00	8.71	320.75	5,344.51	572.72	-467.86	-483.02	0.00	0.00	
5,500.00	8.71	320.75	5,443.36	584.44	-477.44	-492.92	0.00	0.00	
5,600.00	8.71	320.75	5,542.20	596.17	-487.03	-502.81	0.00	0.00	
5,700.00	8.71	320.75	5,641.05	607.90	-496.61	-512.70	0.00	0.00	
5,800.00	8.71	320.75	5,739.90	619.63	-506.19	-522.59	0.00	0.00	
5,900.00	8.71	320.75	5,838.74	631.36	-515.77	-532.49	0.00	0.00	
6,000.00	8.71	320.75	5,937.59	643.09	-525.35	-542.38	0.00	0.00	
6,100.00	8.71	320.75	6,036.44	654.82	-534.94	-552.27	0.00	0.00	
6,200.00	8.71	320.75	6,135.28	666.55	-544.52	-562.17	0.00	0.00	
6,300.00	8.71	320.75	6,234.13	678.28	-554.10	-572.06	0.00	0.00	
6,400.00	8.71	320.75	6,332.98	690.01	-563.68	-581.95	0.00	0.00	
6,500.00	8.71	320.75	6,431.82	701.74	-573.27	-591.84	0.00	0.00	
6,600.00	8.71	320.75	6,530.67	713.47	-582.85	-601.74	0.00	0.00	
6,700.00	8.71	320.75	6,629.51	725.20	-592.43	-611.63	0.00	0.00	
6,800.00	8.71	320.75	6,728.36	736.93	-602.01	-621.52	0.00	0.00	
6,900.00	8.71	320.75	6,827.21	748.66	-611.59	-631.41	0.00	0.00	
7,000.00	8.71	320.75	6,926.05	760.39	-621.18	-641.31	0.00	0.00	
7,100.00	8.71	320.75	7,024.90	772.12	-630.76	-651.20	0.00	0.00	
7,113.56	8.71	320.75	7,038.31	773.71	-632.06	-652.54	0.00	0.00	
7,200.00	5.61	268.17	7,124.14	778.65	-640.43	-655.96	8.00	-3.59	
7,300.00	9.95	214.58	7,223.31	771.37	-650.24	-647.09	8.00	4.34	
7,400.00	17.15	199.11	7,320.49	750.29	-659.98	-624.64	8.00	7.20	
7,500.00	24.84	192.81	7,413.80	715.83	-669.48	-589.05	8.00	7.69	
7,600.00	32.67	189.37	7,501.41	668.65	-678.55	-541.01	8.00	7.83	
7,700.00	40.56	187.16	7,581.62	609.67	-687.01	-481.46	8.00	7.89	
7,800.00	48.48	185.56	7,652.87	540.04	-694.69	-411.55	8.00	7.92	
7,900.00	56.42	184.31	7,713.77	461.11	-701.46	-332.65	8.00	7.94	
8,000.00	64.37	183.27	7,763.14	374.43	-707.16	-246.29	8.00	7.95	
8,100.00	72.32	182.36	7,800.01	281.67	-711.71	-154.15	8.00	7.96	
8,200.00	80.28	181.53	7,823.67	184.65	-715.00	-58.02	8.00	7.96	
8,300.00	88.24	180.74	7,833.66	85.25	-716.97	40.22	8.00	7.96	
8,322.07	90.00	180.57	7,834.00	63.19	-717.22	61.99	8.00	7.96	
8,400.00	90.00	180.57	7,834.00	-14.74	-718.00	138.87	0.00	0.00	
8,500.00	90.00	180.57	7,834.00	-114.73	-719.00	237.53	0.00	0.00	
8,600.00	90.00	180.57	7,834.00	-214.73	-720.00	336.19	0.00	0.00	
8,700.00	90.00	180.57	7,834.00	-314.72	-720.99	434.84	0.00	0.00	
8,800.00	90.00	180.57	7,834.00	-414.72	-721.99	533.50	0.00	0.00	
8,900.00	90.00	180.57	7,834.00	-514.71	-722.99	632.16	0.00	0.00	
9,000.00	90.00	180.57	7,834.00	-614.71	-723.99	730.81	0.00	0.00	
9,100.00	90.00	180.57	7,834.00	-714.70	-724.98	829.47	0.00	0.00	
9,200.00	90.00	180.57	7,834.00	-814.70	-725.98	928.13	0.00	0.00	
9,300.00	90.00	180.57	7,834.00	-914.69	-726.98	1,026.78	0.00	0.00	
9,400.00	90.00	180.57	7,834.00	-1,014.69	-727.98	1,125.44	0.00	0.00	
9,500.00	90.00	180.57	7,834.00	-1,114.68	-728.97	1,224.10	0.00	0.00	
9,600.00	90.00	180.57	7,834.00	-1,214.68	-729.97	1,322.75	0.00	0.00	
9,700.00	90.00	180.57	7,834.00	-1,314.67	-730.97	1,421.41	0.00	0.00	
9,800.00	90.00	180.57	7,834.00	-1,414.67	-731.97	1,520.06	0.00	0.00	
9,900.00	90.00	180.57	7,834.00	-1,514.66	-732.96	1,618.72	0.00	0.00	
10,000.00	90.00	180.57	7,834.00	-1,614.66	-733.96	1,717.38	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1F-18H-A167 - Slot Hingley 1F-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5079.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5079.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1F-18H-A167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
10,100.00	90.00	180.57	7,834.00	-1,714.65	-734.96	1,816.03	0.00	0.00	
10,200.00	90.00	180.57	7,834.00	-1,814.65	-735.96	1,914.69	0.00	0.00	
10,300.00	90.00	180.57	7,834.00	-1,914.64	-736.95	2,013.35	0.00	0.00	
10,400.00	90.00	180.57	7,834.00	-2,014.64	-737.95	2,112.00	0.00	0.00	
10,500.00	90.00	180.57	7,834.00	-2,114.63	-738.95	2,210.66	0.00	0.00	
10,600.00	90.00	180.57	7,834.00	-2,214.63	-739.95	2,309.32	0.00	0.00	
10,700.00	90.00	180.57	7,834.00	-2,314.62	-740.94	2,407.97	0.00	0.00	
10,800.00	90.00	180.57	7,834.00	-2,414.62	-741.94	2,506.63	0.00	0.00	
10,900.00	90.00	180.57	7,834.00	-2,514.61	-742.94	2,605.29	0.00	0.00	
11,000.00	90.00	180.57	7,834.00	-2,614.61	-743.94	2,703.94	0.00	0.00	
11,100.00	90.00	180.57	7,834.00	-2,714.60	-744.94	2,802.60	0.00	0.00	
11,200.00	90.00	180.57	7,834.00	-2,814.60	-745.93	2,901.26	0.00	0.00	
11,300.00	90.00	180.57	7,834.00	-2,914.59	-746.93	2,999.91	0.00	0.00	
11,400.00	90.00	180.57	7,834.00	-3,014.59	-747.93	3,098.57	0.00	0.00	
11,500.00	90.00	180.57	7,834.00	-3,114.58	-748.93	3,197.22	0.00	0.00	
11,600.00	90.00	180.57	7,834.00	-3,214.58	-749.92	3,295.88	0.00	0.00	
11,700.00	90.00	180.57	7,834.00	-3,314.57	-750.92	3,394.54	0.00	0.00	
11,800.00	90.00	180.57	7,834.00	-3,414.57	-751.92	3,493.19	0.00	0.00	
11,900.00	90.00	180.57	7,834.00	-3,514.56	-752.92	3,591.85	0.00	0.00	
12,000.00	90.00	180.57	7,834.00	-3,614.56	-753.91	3,690.51	0.00	0.00	
12,100.00	90.00	180.57	7,834.00	-3,714.55	-754.91	3,789.16	0.00	0.00	
12,200.00	90.00	180.57	7,834.00	-3,814.55	-755.91	3,887.82	0.00	0.00	
12,300.00	90.00	180.57	7,834.00	-3,914.54	-756.91	3,986.48	0.00	0.00	
12,400.00	90.00	180.57	7,834.00	-4,014.54	-757.90	4,085.13	0.00	0.00	
12,500.00	90.00	180.57	7,834.00	-4,114.53	-758.90	4,183.79	0.00	0.00	
12,600.00	90.00	180.57	7,834.00	-4,214.53	-759.90	4,282.45	0.00	0.00	
12,700.00	90.00	180.57	7,834.00	-4,314.52	-760.90	4,381.10	0.00	0.00	
12,712.90	90.00	180.57	7,834.00	-4,327.43	-761.03	4,393.83	0.00	0.00	

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
HINGLEY 1F BHL 1.19 - plan hits target center - Point	0.00	0.00	7,834.00	-4,327.43	-761.03	1,259,800.67	3,159,941.37	40.045127	-104.928712
HINGLEY 1F TPZ 1.19 - plan hits target center - Point	0.00	0.00	7,834.00	63.19	-717.22	1,264,191.48	3,159,956.75	40.057180	-104.928556
HINGLEY 1F TPZ OLD - plan misses target center by 150.05usft at 8321.60usft MD (7834.00 TVD, 63.66 N, -717.22 E) - Point	0.00	0.00	7,834.00	65.38	-867.26	1,264,192.69	3,159,806.71	40.057186	-104.929092
HINGLEY 1F BHL OLD - plan misses target center by 149.80usft at 12712.21usft MD (7834.00 TVD, -4326.73 N, -761.02 E) - Point	0.00	0.00	7,834.00	-4,325.23	-910.81	1,259,801.89	3,159,791.58	40.045133	-104.929247