



CRESTONE PEAK
RESOURCES

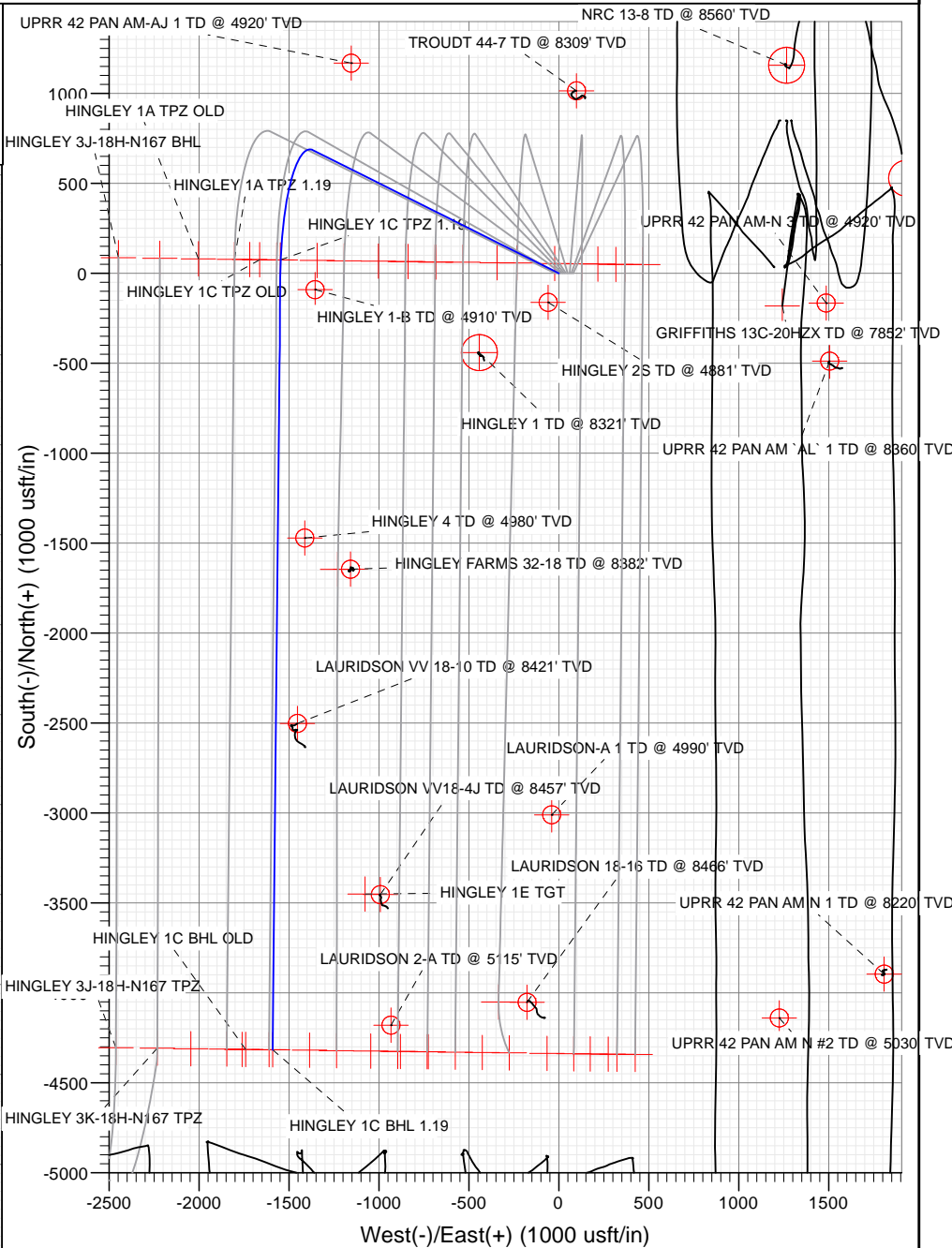
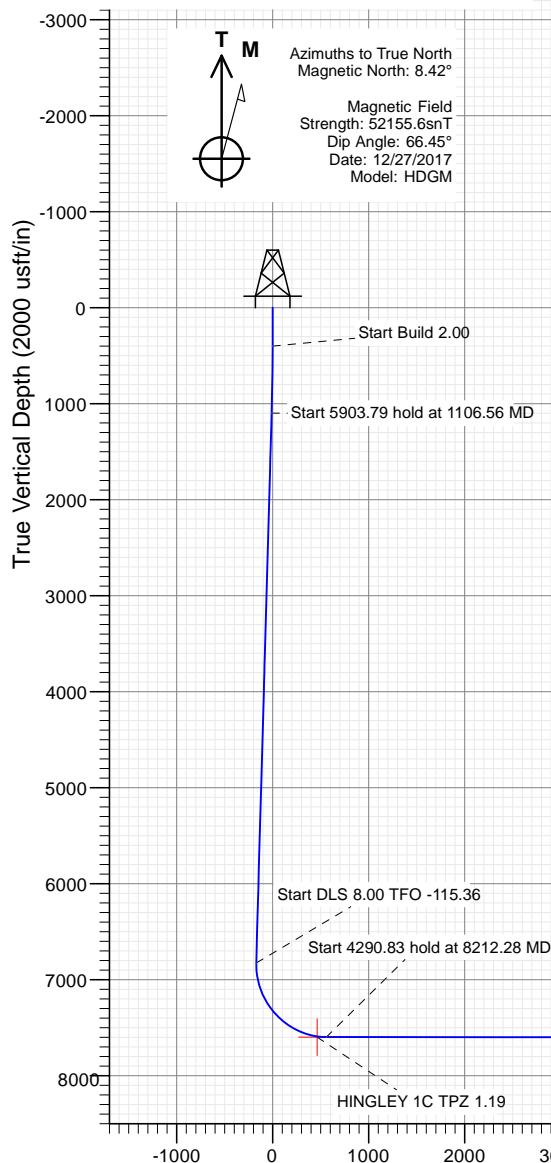
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1106.56	14.13	296.62	1099.42	38.84	-77.50	2.00	296.62	-9.64	
4	7010.35	14.13	296.62	6824.56	684.62	-1366.11	0.00	0.00	-169.96	
5	8212.28	90.00	180.57	7598.00	-25.67	-1548.13	8.00	-115.36	559.46	
6	12503.11	90.00	180.57	7598.00	-4316.29	-1590.80	0.00	0.00	4600.11	HINGLEY 1C BHL 1.19

PLAN #2
HINGLEY 1C-18H-A167
23 KB @ 5078.00usft
Ground Level @ 5055.00
North American Datum 1983
Well HINGLEY 1C-18H-A167 - Slot Hingley 1C-18H-A167 SHL True North

Type	Target	No Target (Freehand)	Azimuth	Origin Type	Slot	N/S	E/W	From TVD
Name	TVD	+N/-S	+E/-W	Latitude	Longitude			
HINGLEY 1C BHL 1.19	7598.00	-4316.29	-1590.80	40.045158	-104.931753			
HINGLEY 1C BHL OLD	7598.00	-4314.46	-1740.86	40.045163	-104.932319			
HINGLEY 1C TPZ 1.19	7598.00	74.33	-1547.13	40.057211	-104.931628			
HINGLEY 1C TPZ OLD	7598.00	75.79	-1662.18	40.057215	-104.932039			

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



Vertical Section at 200.23° (2000 usft/in)

WELL DETAILS: HINGLEY 1C-18H-A167

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1264132.93	3160644.37	40.057007	-104.926101

CATHEDRAL



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1C-18H-A167 - Slot Hingley 1C-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5078.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5078.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1C-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 1C-18H-A167 - Slot Hingley 1C-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:	3,160,644.37 usft	Longitude:	-104.926101
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,055.00 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	200.23

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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,106.56	14.13	296.62	1,099.42	38.84	-77.50	2.00	2.00	0.00	296.62	
7,010.35	14.13	296.62	6,824.56	684.62	-1,366.11	0.00	0.00	0.00	0.00	
8,212.28	90.00	180.57	7,598.00	-25.67	-1,548.13	8.00	6.31	-9.66	-115.36	
12,503.11	90.00	180.57	7,598.00	-4,316.29	-1,590.80	0.00	0.00	0.00	0.00	HINGLEY 1C BHL 1.1

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1C-18H-A167 - Slot Hingley 1C-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5078.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5078.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1C-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	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
500.00	2.00	296.62	499.98	0.78	-1.56	-0.19	2.00	2.00	
600.00	4.00	296.62	599.84	3.13	-6.24	-0.78	2.00	2.00	
700.00	6.00	296.62	699.45	7.03	-14.03	-1.75	2.00	2.00	
800.00	8.00	296.62	798.70	12.49	-24.93	-3.10	2.00	2.00	
900.00	10.00	296.62	897.47	19.50	-38.91	-4.84	2.00	2.00	
1,000.00	12.00	296.62	995.62	28.05	-55.97	-6.96	2.00	2.00	
1,100.00	14.00	296.62	1,093.06	38.13	-76.08	-9.46	2.00	2.00	
1,106.56	14.13	296.62	1,099.42	38.84	-77.50	-9.64	2.00	2.00	
1,200.00	14.13	296.62	1,190.03	49.06	-97.90	-12.18	0.00	0.00	
1,300.00	14.13	296.62	1,287.00	60.00	-119.72	-14.89	0.00	0.00	
1,400.00	14.13	296.62	1,383.98	70.94	-141.55	-17.61	0.00	0.00	
1,500.00	14.13	296.62	1,480.95	81.88	-163.38	-20.33	0.00	0.00	
1,600.00	14.13	296.62	1,577.93	92.82	-185.20	-23.04	0.00	0.00	
1,700.00	14.13	296.62	1,674.90	103.75	-207.03	-25.76	0.00	0.00	
1,800.00	14.13	296.62	1,771.87	114.69	-228.86	-28.47	0.00	0.00	
1,900.00	14.13	296.62	1,868.85	125.63	-250.69	-31.19	0.00	0.00	
2,000.00	14.13	296.62	1,965.82	136.57	-272.51	-33.90	0.00	0.00	
2,100.00	14.13	296.62	2,062.80	147.51	-294.34	-36.62	0.00	0.00	
2,200.00	14.13	296.62	2,159.77	158.45	-316.17	-39.33	0.00	0.00	
2,300.00	14.13	296.62	2,256.74	169.38	-337.99	-42.05	0.00	0.00	
2,400.00	14.13	296.62	2,353.72	180.32	-359.82	-44.77	0.00	0.00	
2,500.00	14.13	296.62	2,450.69	191.26	-381.65	-47.48	0.00	0.00	
2,600.00	14.13	296.62	2,547.67	202.20	-403.47	-50.20	0.00	0.00	
2,700.00	14.13	296.62	2,644.64	213.14	-425.30	-52.91	0.00	0.00	
2,800.00	14.13	296.62	2,741.61	224.08	-447.13	-55.63	0.00	0.00	
2,900.00	14.13	296.62	2,838.59	235.02	-468.95	-58.34	0.00	0.00	
3,000.00	14.13	296.62	2,935.56	245.95	-490.78	-61.06	0.00	0.00	
3,100.00	14.13	296.62	3,032.54	256.89	-512.61	-63.77	0.00	0.00	
3,200.00	14.13	296.62	3,129.51	267.83	-534.43	-66.49	0.00	0.00	
3,300.00	14.13	296.62	3,226.48	278.77	-556.26	-69.20	0.00	0.00	
3,400.00	14.13	296.62	3,323.46	289.71	-578.09	-71.92	0.00	0.00	
3,500.00	14.13	296.62	3,420.43	300.65	-599.91	-74.64	0.00	0.00	
3,600.00	14.13	296.62	3,517.41	311.58	-621.74	-77.35	0.00	0.00	
3,700.00	14.13	296.62	3,614.38	322.52	-643.57	-80.07	0.00	0.00	
3,800.00	14.13	296.62	3,711.35	333.46	-665.39	-82.78	0.00	0.00	
3,900.00	14.13	296.62	3,808.33	344.40	-687.22	-85.50	0.00	0.00	
4,000.00	14.13	296.62	3,905.30	355.34	-709.05	-88.21	0.00	0.00	
4,100.00	14.13	296.62	4,002.27	366.28	-730.87	-90.93	0.00	0.00	
4,200.00	14.13	296.62	4,099.25	377.22	-752.70	-93.64	0.00	0.00	
4,300.00	14.13	296.62	4,196.22	388.15	-774.53	-96.36	0.00	0.00	
4,400.00	14.13	296.62	4,293.20	399.09	-796.35	-99.07	0.00	0.00	
4,500.00	14.13	296.62	4,390.17	410.03	-818.18	-101.79	0.00	0.00	
4,600.00	14.13	296.62	4,487.14	420.97	-840.01	-104.51	0.00	0.00	
4,700.00	14.13	296.62	4,584.12	431.91	-861.83	-107.22	0.00	0.00	
4,800.00	14.13	296.62	4,681.09	442.85	-883.66	-109.94	0.00	0.00	
4,900.00	14.13	296.62	4,778.07	453.78	-905.49	-112.65	0.00	0.00	
5,000.00	14.13	296.62	4,875.04	464.72	-927.32	-115.37	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1C-18H-A167 - Slot Hingley 1C-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5078.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5078.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1C-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	14.13	296.62	4,972.01	475.66	-949.14	-118.08	0.00	0.00	
5,200.00	14.13	296.62	5,068.99	486.60	-970.97	-120.80	0.00	0.00	
5,300.00	14.13	296.62	5,165.96	497.54	-992.80	-123.51	0.00	0.00	
5,400.00	14.13	296.62	5,262.94	508.48	-1,014.62	-126.23	0.00	0.00	
5,500.00	14.13	296.62	5,359.91	519.41	-1,036.45	-128.94	0.00	0.00	
5,600.00	14.13	296.62	5,456.88	530.35	-1,058.28	-131.66	0.00	0.00	
5,700.00	14.13	296.62	5,553.86	541.29	-1,080.10	-134.38	0.00	0.00	
5,800.00	14.13	296.62	5,650.83	552.23	-1,101.93	-137.09	0.00	0.00	
5,900.00	14.13	296.62	5,747.81	563.17	-1,123.76	-139.81	0.00	0.00	
6,000.00	14.13	296.62	5,844.78	574.11	-1,145.58	-142.52	0.00	0.00	
6,100.00	14.13	296.62	5,941.75	585.05	-1,167.41	-145.24	0.00	0.00	
6,200.00	14.13	296.62	6,038.73	595.98	-1,189.24	-147.95	0.00	0.00	
6,300.00	14.13	296.62	6,135.70	606.92	-1,211.06	-150.67	0.00	0.00	
6,400.00	14.13	296.62	6,232.68	617.86	-1,232.89	-153.38	0.00	0.00	
6,500.00	14.13	296.62	6,329.65	628.80	-1,254.72	-156.10	0.00	0.00	
6,600.00	14.13	296.62	6,426.62	639.74	-1,276.54	-158.81	0.00	0.00	
6,700.00	14.13	296.62	6,523.60	650.68	-1,298.37	-161.53	0.00	0.00	
6,800.00	14.13	296.62	6,620.57	661.61	-1,320.20	-164.25	0.00	0.00	
6,900.00	14.13	296.62	6,717.54	672.55	-1,342.02	-166.96	0.00	0.00	
7,000.00	14.13	296.62	6,814.52	683.49	-1,363.85	-169.68	0.00	0.00	
7,010.35	14.13	296.62	6,824.56	684.62	-1,366.11	-169.96	0.00	0.00	
7,100.00	12.79	265.97	6,911.85	688.84	-1,385.81	-167.10	8.00	-1.50	
7,200.00	15.57	234.84	7,008.93	680.32	-1,407.86	-151.48	8.00	2.78	
7,300.00	21.15	216.35	7,103.89	658.02	-1,429.56	-123.06	8.00	5.58	
7,400.00	27.89	205.87	7,194.86	622.39	-1,450.49	-82.39	8.00	6.74	
7,500.00	35.13	199.32	7,280.08	574.12	-1,470.25	-30.26	8.00	7.24	
7,600.00	42.61	194.80	7,357.90	514.14	-1,488.45	32.31	8.00	7.48	
7,700.00	50.23	191.42	7,426.79	443.63	-1,504.73	104.11	8.00	7.62	
7,800.00	57.93	188.72	7,485.42	363.95	-1,518.79	183.73	8.00	7.70	
7,900.00	65.67	186.44	7,532.64	276.65	-1,530.34	269.64	8.00	7.74	
8,000.00	73.45	184.42	7,567.54	183.44	-1,539.16	360.15	8.00	7.77	
8,100.00	81.24	182.57	7,589.43	86.13	-1,545.08	453.50	8.00	7.79	
8,200.00	89.04	180.79	7,597.90	-13.39	-1,547.98	547.88	8.00	7.80	
8,212.28	90.00	180.57	7,598.00	-25.67	-1,548.13	559.46	8.00	7.80	
8,300.00	90.00	180.57	7,598.00	-113.38	-1,549.00	642.06	0.00	0.00	
8,400.00	90.00	180.57	7,598.00	-213.38	-1,549.99	736.23	0.00	0.00	
8,500.00	90.00	180.57	7,598.00	-313.37	-1,550.99	830.40	0.00	0.00	
8,600.00	90.00	180.57	7,598.00	-413.37	-1,551.98	924.57	0.00	0.00	
8,700.00	90.00	180.57	7,598.00	-513.36	-1,552.98	1,018.74	0.00	0.00	
8,800.00	90.00	180.57	7,598.00	-613.36	-1,553.97	1,112.91	0.00	0.00	
8,900.00	90.00	180.57	7,598.00	-713.35	-1,554.97	1,207.08	0.00	0.00	
9,000.00	90.00	180.57	7,598.00	-813.35	-1,555.96	1,301.25	0.00	0.00	
9,100.00	90.00	180.57	7,598.00	-913.34	-1,556.96	1,395.41	0.00	0.00	
9,200.00	90.00	180.57	7,598.00	-1,013.34	-1,557.95	1,489.58	0.00	0.00	
9,300.00	90.00	180.57	7,598.00	-1,113.33	-1,558.95	1,583.75	0.00	0.00	
9,400.00	90.00	180.57	7,598.00	-1,213.33	-1,559.94	1,677.92	0.00	0.00	
9,500.00	90.00	180.57	7,598.00	-1,313.32	-1,560.93	1,772.09	0.00	0.00	
9,600.00	90.00	180.57	7,598.00	-1,413.32	-1,561.93	1,866.26	0.00	0.00	
9,700.00	90.00	180.57	7,598.00	-1,513.31	-1,562.92	1,960.43	0.00	0.00	
9,800.00	90.00	180.57	7,598.00	-1,613.31	-1,563.92	2,054.60	0.00	0.00	
9,900.00	90.00	180.57	7,598.00	-1,713.30	-1,564.91	2,148.77	0.00	0.00	
10,000.00	90.00	180.57	7,598.00	-1,813.30	-1,565.91	2,242.94	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1C-18H-A167 - Slot Hingley 1C-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5078.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5078.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1C-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	7,598.00	-1,913.29	-1,566.90	2,337.11	0.00	0.00	
10,200.00	90.00	180.57	7,598.00	-2,013.29	-1,567.90	2,431.28	0.00	0.00	
10,300.00	90.00	180.57	7,598.00	-2,113.28	-1,568.89	2,525.45	0.00	0.00	
10,400.00	90.00	180.57	7,598.00	-2,213.28	-1,569.89	2,619.62	0.00	0.00	
10,500.00	90.00	180.57	7,598.00	-2,313.27	-1,570.88	2,713.79	0.00	0.00	
10,600.00	90.00	180.57	7,598.00	-2,413.27	-1,571.87	2,807.96	0.00	0.00	
10,700.00	90.00	180.57	7,598.00	-2,513.26	-1,572.87	2,902.13	0.00	0.00	
10,800.00	90.00	180.57	7,598.00	-2,613.26	-1,573.86	2,996.30	0.00	0.00	
10,900.00	90.00	180.57	7,598.00	-2,713.25	-1,574.86	3,090.46	0.00	0.00	
11,000.00	90.00	180.57	7,598.00	-2,813.25	-1,575.85	3,184.63	0.00	0.00	
11,100.00	90.00	180.57	7,598.00	-2,913.24	-1,576.85	3,278.80	0.00	0.00	
11,200.00	90.00	180.57	7,598.00	-3,013.24	-1,577.84	3,372.97	0.00	0.00	
11,300.00	90.00	180.57	7,598.00	-3,113.23	-1,578.84	3,467.14	0.00	0.00	
11,400.00	90.00	180.57	7,598.00	-3,213.23	-1,579.83	3,561.31	0.00	0.00	
11,500.00	90.00	180.57	7,598.00	-3,313.22	-1,580.83	3,655.48	0.00	0.00	
11,600.00	90.00	180.57	7,598.00	-3,413.22	-1,581.82	3,749.65	0.00	0.00	
11,700.00	90.00	180.57	7,598.00	-3,513.21	-1,582.81	3,843.82	0.00	0.00	
11,800.00	90.00	180.57	7,598.00	-3,613.21	-1,583.81	3,937.99	0.00	0.00	
11,900.00	90.00	180.57	7,598.00	-3,713.20	-1,584.80	4,032.16	0.00	0.00	
12,000.00	90.00	180.57	7,598.00	-3,813.20	-1,585.80	4,126.33	0.00	0.00	
12,100.00	90.00	180.57	7,598.00	-3,913.19	-1,586.79	4,220.50	0.00	0.00	
12,200.00	90.00	180.57	7,598.00	-4,013.19	-1,587.79	4,314.67	0.00	0.00	
12,300.00	90.00	180.57	7,598.00	-4,113.18	-1,588.78	4,408.84	0.00	0.00	
12,400.00	90.00	180.57	7,598.00	-4,213.18	-1,589.78	4,503.01	0.00	0.00	
12,500.00	90.00	180.57	7,598.00	-4,313.17	-1,590.77	4,597.18	0.00	0.00	
12,503.11	90.00	180.57	7,598.00	-4,316.29	-1,590.80	4,600.11	0.00	0.00	

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
HINGLEY 1C TPZ OLD	0.00	0.00	7,598.00	75.79	-1,662.18	1,264,197.96	3,158,981.73	40.057215	-104.932039
- plan misses target center by 116.74usft at 8114.44usft MD (7591.49 TVD, 71.85 N, -1545.69 E)									
- Point									
HINGLEY 1C TPZ 1.19	0.00	0.00	7,598.00	74.33	-1,547.13	1,264,197.24	3,159,096.79	40.057211	-104.931628
- plan misses target center by 6.96usft at 8112.55usft MD (7591.24 TVD, 73.72 N, -1545.61 E)									
- Point									
HINGLEY 1C BHL 1.19	0.00	0.00	7,598.00	-4,316.29	-1,590.80	1,259,806.44	3,159,081.54	40.045158	-104.931783
- plan hits target center									
- Point									
HINGLEY 1C BHL OLD	0.00	0.00	7,598.00	-4,314.46	-1,740.86	1,259,807.30	3,158,931.46	40.045163	-104.932319
- plan misses target center by 150.07usft at 12502.77usft MD (7598.00 TVD, -4315.95 N, -1590.80 E)									
- Point									