



CRESTONE PEAK  
RESOURCES

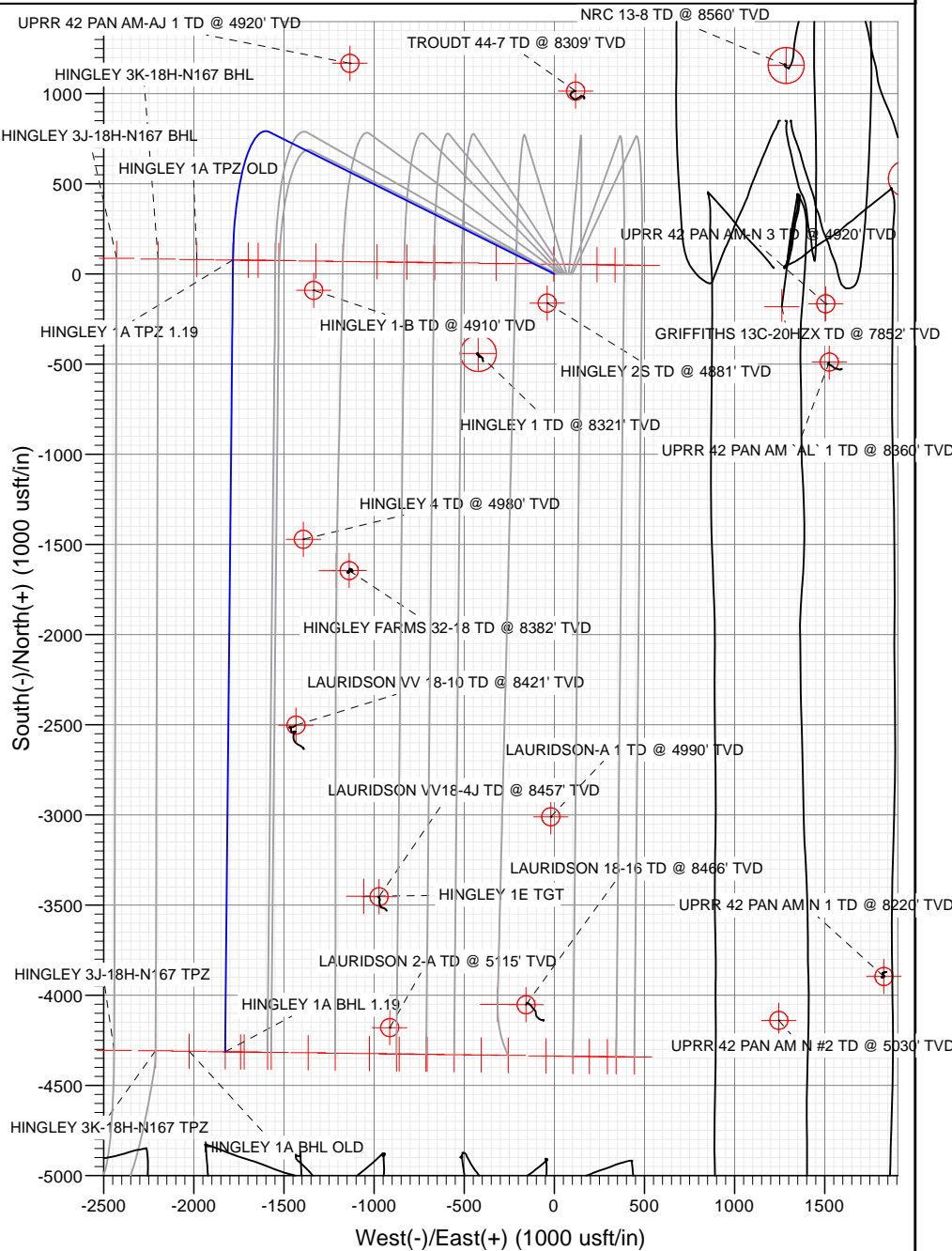
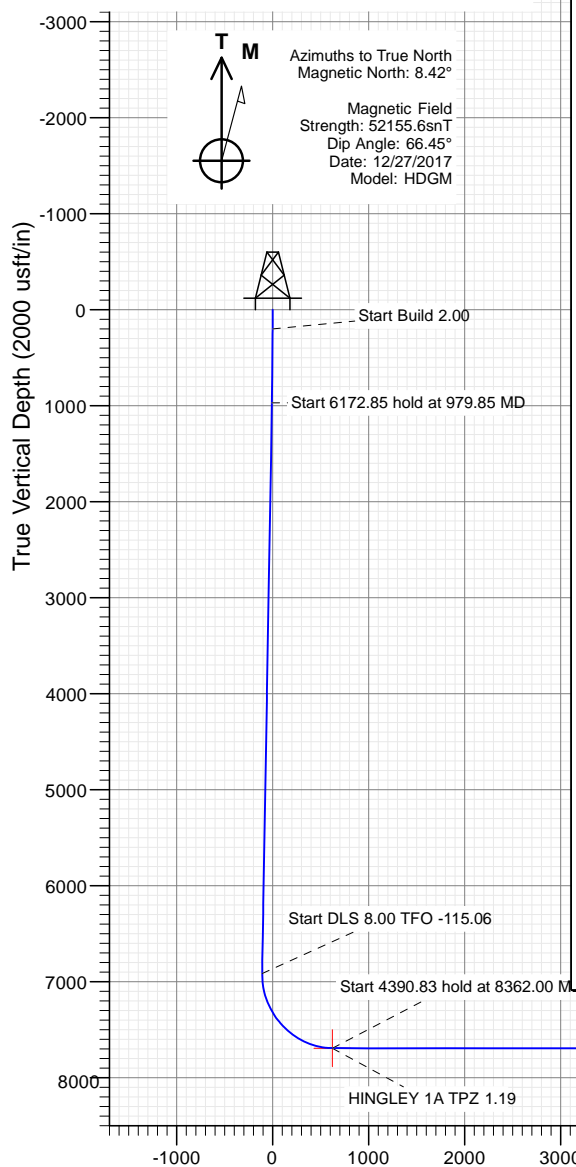
SECTION DETAILS

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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	979.85	15.60	296.47	970.25	47.02	-94.43	2.00	296.47	-6.49	
4	7152.70	15.60	296.47	6915.79	786.76	-1580.15	0.00	0.00	-108.52	
5	8362.00	90.00	180.57	7692.00	77.49	-1782.14	8.00	-115.06	623.38	HINGLEY 1A TPZ 1.19
6	12752.83	90.00	180.57	7692.00	-4313.12	-1825.85	0.00	0.00	4683.67	HINGLEY 1A BHL 1.19

PLAN #2  
HINGLEY 1A-18H-A167  
23 KB @ 5077.00usft  
Ground Level @ 5054.00  
North American Datum 1983  
Well HINGLEY 1A-18H-A167 - Slot Hingley 1A-18H-A167 SHL, True North

Type	Target	No Target (Freehand)	Azimuth	Origin	Type	N/S	E/W	From	TVD
Name									
HINGLEY 1A BHL 1.19			202.94						
HINGLEY 1A BHL OLD									
HINGLEY 1A TPZ 1.19									
HINGLEY 1A TPZ OLD									

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



Vertical Section at 202.94° (2000 usft/in)

WELL DETAILS: HINGLEY 1A-18H-A167

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1264132.93	3160624.37	40.057007	-104.926172

CATHEDRAL



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well HINGLEY 1A-18H-A167 - Slot Hingley 1A-1
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5077.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5077.00usft
<b>Site:</b>	S18-T1N-R67W (HINGLEY)	<b>North Reference:</b>	True
<b>Well:</b>	HINGLEY 1A-18H-A167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #2		

<b>Project</b>	DJ BASIN		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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 1A-18H-A167 - Slot Hingley 1A-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:	3,160,624.37 usft	Longitude:	-104.926172
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,054.00 usft

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

<b>Design</b>	PLAN #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	202.94

<b>Plan Sections</b>										
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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
979.85	15.60	296.47	970.25	47.02	-94.43	2.00	2.00	0.00	296.47	
7,152.70	15.60	296.47	6,915.79	786.76	-1,580.15	0.00	0.00	0.00	0.00	
8,362.00	90.00	180.57	7,692.00	77.49	-1,782.14	8.00	6.15	-9.58	-115.06	HINGLEY 1A TPZ 1.1
12,752.83	90.00	180.57	7,692.00	-4,313.12	-1,825.85	0.00	0.00	0.00	0.00	HINGLEY 1A BHL 1.1

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well HINGLEY 1A-18H-A167 - Slot Hingley 1A-1
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5077.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5077.00usft
<b>Site:</b>	S18-T1N-R67W (HINGLEY)	<b>North Reference:</b>	True
<b>Well:</b>	HINGLEY 1A-18H-A167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	2.00	296.47	299.98	0.78	-1.56	-0.11	2.00	2.00	
400.00	4.00	296.47	399.84	3.11	-6.25	-0.43	2.00	2.00	
500.00	6.00	296.47	499.45	6.99	-14.05	-0.96	2.00	2.00	
600.00	8.00	296.47	598.70	12.43	-24.96	-1.71	2.00	2.00	
700.00	10.00	296.47	697.47	19.40	-38.96	-2.68	2.00	2.00	
800.00	12.00	296.47	795.62	27.90	-56.04	-3.85	2.00	2.00	
900.00	14.00	296.47	893.06	37.93	-76.18	-5.23	2.00	2.00	
979.85	15.60	296.47	970.25	47.02	-94.43	-6.49	2.00	2.00	
1,000.00	15.60	296.47	989.66	49.43	-99.28	-6.82	0.00	0.00	
1,100.00	15.60	296.47	1,085.98	61.42	-123.35	-8.47	0.00	0.00	
1,200.00	15.60	296.47	1,182.30	73.40	-147.42	-10.12	0.00	0.00	
1,300.00	15.60	296.47	1,278.62	85.38	-171.49	-11.78	0.00	0.00	
1,400.00	15.60	296.47	1,374.93	97.37	-195.56	-13.43	0.00	0.00	
1,500.00	15.60	296.47	1,471.25	109.35	-219.63	-15.08	0.00	0.00	
1,600.00	15.60	296.47	1,567.57	121.34	-243.69	-16.74	0.00	0.00	
1,700.00	15.60	296.47	1,663.89	133.32	-267.76	-18.39	0.00	0.00	
1,800.00	15.60	296.47	1,760.20	145.30	-291.83	-20.04	0.00	0.00	
1,900.00	15.60	296.47	1,856.52	157.29	-315.90	-21.69	0.00	0.00	
2,000.00	15.60	296.47	1,952.84	169.27	-339.97	-23.35	0.00	0.00	
2,100.00	15.60	296.47	2,049.16	181.25	-364.04	-25.00	0.00	0.00	
2,200.00	15.60	296.47	2,145.47	193.24	-388.11	-26.65	0.00	0.00	
2,300.00	15.60	296.47	2,241.79	205.22	-412.18	-28.31	0.00	0.00	
2,400.00	15.60	296.47	2,338.11	217.21	-436.24	-29.96	0.00	0.00	
2,500.00	15.60	296.47	2,434.43	229.19	-460.31	-31.61	0.00	0.00	
2,600.00	15.60	296.47	2,530.74	241.17	-484.38	-33.26	0.00	0.00	
2,700.00	15.60	296.47	2,627.06	253.16	-508.45	-34.92	0.00	0.00	
2,800.00	15.60	296.47	2,723.38	265.14	-532.52	-36.57	0.00	0.00	
2,900.00	15.60	296.47	2,819.70	277.12	-556.59	-38.22	0.00	0.00	
3,000.00	15.60	296.47	2,916.02	289.11	-580.66	-39.88	0.00	0.00	
3,100.00	15.60	296.47	3,012.33	301.09	-604.72	-41.53	0.00	0.00	
3,200.00	15.60	296.47	3,108.65	313.08	-628.79	-43.18	0.00	0.00	
3,300.00	15.60	296.47	3,204.97	325.06	-652.86	-44.84	0.00	0.00	
3,400.00	15.60	296.47	3,301.29	337.04	-676.93	-46.49	0.00	0.00	
3,500.00	15.60	296.47	3,397.60	349.03	-701.00	-48.14	0.00	0.00	
3,600.00	15.60	296.47	3,493.92	361.01	-725.07	-49.79	0.00	0.00	
3,700.00	15.60	296.47	3,590.24	372.99	-749.14	-51.45	0.00	0.00	
3,800.00	15.60	296.47	3,686.56	384.98	-773.20	-53.10	0.00	0.00	
3,900.00	15.60	296.47	3,782.87	396.96	-797.27	-54.75	0.00	0.00	
4,000.00	15.60	296.47	3,879.19	408.95	-821.34	-56.41	0.00	0.00	
4,100.00	15.60	296.47	3,975.51	420.93	-845.41	-58.06	0.00	0.00	
4,200.00	15.60	296.47	4,071.83	432.91	-869.48	-59.71	0.00	0.00	
4,300.00	15.60	296.47	4,168.14	444.90	-893.55	-61.36	0.00	0.00	
4,400.00	15.60	296.47	4,264.46	456.88	-917.62	-63.02	0.00	0.00	
4,500.00	15.60	296.47	4,360.78	468.86	-941.69	-64.67	0.00	0.00	
4,600.00	15.60	296.47	4,457.10	480.85	-965.75	-66.32	0.00	0.00	
4,700.00	15.60	296.47	4,553.42	492.83	-989.82	-67.98	0.00	0.00	
4,800.00	15.60	296.47	4,649.73	504.82	-1,013.89	-69.63	0.00	0.00	
4,900.00	15.60	296.47	4,746.05	516.80	-1,037.96	-71.28	0.00	0.00	
5,000.00	15.60	296.47	4,842.37	528.78	-1,062.03	-72.93	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well HINGLEY 1A-18H-A167 - Slot Hingley 1A-1
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5077.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5077.00usft
<b>Site:</b>	S18-T1N-R67W (HINGLEY)	<b>North Reference:</b>	True
<b>Well:</b>	HINGLEY 1A-18H-A167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	15.60	296.47	4,938.69	540.77	-1,086.10	-74.59	0.00	0.00	
5,200.00	15.60	296.47	5,035.00	552.75	-1,110.17	-76.24	0.00	0.00	
5,300.00	15.60	296.47	5,131.32	564.73	-1,134.23	-77.89	0.00	0.00	
5,400.00	15.60	296.47	5,227.64	576.72	-1,158.30	-79.55	0.00	0.00	
5,500.00	15.60	296.47	5,323.96	588.70	-1,182.37	-81.20	0.00	0.00	
5,600.00	15.60	296.47	5,420.27	600.69	-1,206.44	-82.85	0.00	0.00	
5,700.00	15.60	296.47	5,516.59	612.67	-1,230.51	-84.51	0.00	0.00	
5,800.00	15.60	296.47	5,612.91	624.65	-1,254.58	-86.16	0.00	0.00	
5,900.00	15.60	296.47	5,709.23	636.64	-1,278.65	-87.81	0.00	0.00	
6,000.00	15.60	296.47	5,805.54	648.62	-1,302.71	-89.46	0.00	0.00	
6,100.00	15.60	296.47	5,901.86	660.60	-1,326.78	-91.12	0.00	0.00	
6,200.00	15.60	296.47	5,998.18	672.59	-1,350.85	-92.77	0.00	0.00	
6,300.00	15.60	296.47	6,094.50	684.57	-1,374.92	-94.42	0.00	0.00	
6,400.00	15.60	296.47	6,190.82	696.56	-1,398.99	-96.08	0.00	0.00	
6,500.00	15.60	296.47	6,287.13	708.54	-1,423.06	-97.73	0.00	0.00	
6,600.00	15.60	296.47	6,383.45	720.52	-1,447.13	-99.38	0.00	0.00	
6,700.00	15.60	296.47	6,479.77	732.51	-1,471.19	-101.03	0.00	0.00	
6,800.00	15.60	296.47	6,576.09	744.49	-1,495.26	-102.69	0.00	0.00	
6,900.00	15.60	296.47	6,672.40	756.47	-1,519.33	-104.34	0.00	0.00	
7,000.00	15.60	296.47	6,768.72	768.46	-1,543.40	-105.99	0.00	0.00	
7,100.00	15.60	296.47	6,865.04	780.44	-1,567.47	-107.65	0.00	0.00	
7,152.70	15.60	296.47	6,915.79	786.76	-1,580.15	-108.52	0.00	0.00	
7,200.00	14.40	282.56	6,961.50	790.87	-1,591.59	-107.85	8.00	-2.54	
7,300.00	14.95	250.66	7,058.40	789.30	-1,615.94	-96.91	8.00	0.56	
7,400.00	19.11	227.01	7,154.10	773.84	-1,640.13	-73.24	8.00	4.16	
7,500.00	25.15	212.91	7,246.76	744.79	-1,663.68	-37.31	8.00	6.03	
7,600.00	32.01	204.26	7,334.56	702.72	-1,686.15	10.19	8.00	6.86	
7,700.00	39.27	198.46	7,415.80	648.45	-1,707.09	68.33	8.00	7.26	
7,800.00	46.74	194.24	7,488.89	583.03	-1,726.10	135.99	8.00	7.47	
7,900.00	54.33	190.96	7,552.42	507.74	-1,742.80	211.83	8.00	7.59	
8,000.00	61.99	188.25	7,605.14	424.04	-1,756.88	294.40	8.00	7.66	
8,100.00	69.70	185.90	7,646.04	333.56	-1,768.05	382.08	8.00	7.71	
8,200.00	77.44	183.78	7,674.31	238.06	-1,776.10	473.16	8.00	7.74	
8,300.00	85.19	181.78	7,689.40	139.40	-1,780.87	565.87	8.00	7.75	
8,362.00	90.00	180.57	7,692.00	77.49	-1,782.14	623.38	8.00	7.76	
8,400.00	90.00	180.57	7,692.00	39.49	-1,782.52	658.52	0.00	0.00	
8,500.00	90.00	180.57	7,692.00	-60.50	-1,783.51	750.99	0.00	0.00	
8,600.00	90.00	180.57	7,692.00	-160.50	-1,784.51	843.46	0.00	0.00	
8,700.00	90.00	180.57	7,692.00	-260.49	-1,785.50	935.93	0.00	0.00	
8,800.00	90.00	180.57	7,692.00	-360.49	-1,786.50	1,028.41	0.00	0.00	
8,900.00	90.00	180.57	7,692.00	-460.48	-1,787.50	1,120.88	0.00	0.00	
9,000.00	90.00	180.57	7,692.00	-560.48	-1,788.49	1,213.35	0.00	0.00	
9,100.00	90.00	180.57	7,692.00	-660.47	-1,789.49	1,305.82	0.00	0.00	
9,200.00	90.00	180.57	7,692.00	-760.47	-1,790.48	1,398.30	0.00	0.00	
9,300.00	90.00	180.57	7,692.00	-860.47	-1,791.48	1,490.77	0.00	0.00	
9,400.00	90.00	180.57	7,692.00	-960.46	-1,792.47	1,583.24	0.00	0.00	
9,500.00	90.00	180.57	7,692.00	-1,060.46	-1,793.47	1,675.71	0.00	0.00	
9,600.00	90.00	180.57	7,692.00	-1,160.45	-1,794.46	1,768.18	0.00	0.00	
9,700.00	90.00	180.57	7,692.00	-1,260.45	-1,795.46	1,860.66	0.00	0.00	
9,800.00	90.00	180.57	7,692.00	-1,360.44	-1,796.45	1,953.13	0.00	0.00	
9,900.00	90.00	180.57	7,692.00	-1,460.44	-1,797.45	2,045.60	0.00	0.00	
10,000.00	90.00	180.57	7,692.00	-1,560.43	-1,798.45	2,138.07	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well HINGLEY 1A-18H-A167 - Slot Hingley 1A-1
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5077.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5077.00usft
<b>Site:</b>	S18-T1N-R67W (HINGLEY)	<b>North Reference:</b>	True
<b>Well:</b>	HINGLEY 1A-18H-A167	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	7,692.00	-1,660.43	-1,799.44	2,230.54	0.00	0.00	
10,200.00	90.00	180.57	7,692.00	-1,760.42	-1,800.44	2,323.02	0.00	0.00	
10,300.00	90.00	180.57	7,692.00	-1,860.42	-1,801.43	2,415.49	0.00	0.00	
10,400.00	90.00	180.57	7,692.00	-1,960.41	-1,802.43	2,507.96	0.00	0.00	
10,500.00	90.00	180.57	7,692.00	-2,060.41	-1,803.42	2,600.43	0.00	0.00	
10,600.00	90.00	180.57	7,692.00	-2,160.40	-1,804.42	2,692.90	0.00	0.00	
10,700.00	90.00	180.57	7,692.00	-2,260.40	-1,805.41	2,785.38	0.00	0.00	
10,800.00	90.00	180.57	7,692.00	-2,360.39	-1,806.41	2,877.85	0.00	0.00	
10,900.00	90.00	180.57	7,692.00	-2,460.39	-1,807.41	2,970.32	0.00	0.00	
11,000.00	90.00	180.57	7,692.00	-2,560.38	-1,808.40	3,062.79	0.00	0.00	
11,100.00	90.00	180.57	7,692.00	-2,660.38	-1,809.40	3,155.26	0.00	0.00	
11,200.00	90.00	180.57	7,692.00	-2,760.37	-1,810.39	3,247.74	0.00	0.00	
11,300.00	90.00	180.57	7,692.00	-2,860.37	-1,811.39	3,340.21	0.00	0.00	
11,400.00	90.00	180.57	7,692.00	-2,960.36	-1,812.38	3,432.68	0.00	0.00	
11,500.00	90.00	180.57	7,692.00	-3,060.36	-1,813.38	3,525.15	0.00	0.00	
11,600.00	90.00	180.57	7,692.00	-3,160.35	-1,814.37	3,617.62	0.00	0.00	
11,700.00	90.00	180.57	7,692.00	-3,260.35	-1,815.37	3,710.10	0.00	0.00	
11,800.00	90.00	180.57	7,692.00	-3,360.34	-1,816.36	3,802.57	0.00	0.00	
11,900.00	90.00	180.57	7,692.00	-3,460.34	-1,817.36	3,895.04	0.00	0.00	
12,000.00	90.00	180.57	7,692.00	-3,560.33	-1,818.36	3,987.51	0.00	0.00	
12,100.00	90.00	180.57	7,692.00	-3,660.33	-1,819.35	4,079.98	0.00	0.00	
12,200.00	90.00	180.57	7,692.00	-3,760.32	-1,820.35	4,172.46	0.00	0.00	
12,300.00	90.00	180.57	7,692.00	-3,860.32	-1,821.34	4,264.93	0.00	0.00	
12,400.00	90.00	180.57	7,692.00	-3,960.31	-1,822.34	4,357.40	0.00	0.00	
12,500.00	90.00	180.57	7,692.00	-4,060.31	-1,823.33	4,449.87	0.00	0.00	
12,600.00	90.00	180.57	7,692.00	-4,160.30	-1,824.33	4,542.35	0.00	0.00	
12,700.00	90.00	180.57	7,692.00	-4,260.30	-1,825.32	4,634.82	0.00	0.00	
12,752.83	90.00	180.57	7,692.00	-4,313.12	-1,825.85	4,683.67	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 1A BHL 1.19 - plan hits target center - Point	0.00	0.00	7,692.00	-4,313.12	-1,825.85	1,259,808.08	3,158,826.47	40.045167	-104.932694
HINGLEY 1A TPZ 1.19 - plan hits target center - Point	0.00	0.00	7,692.00	77.49	-1,782.14	1,264,198.89	3,158,841.77	40.057220	-104.932539
HINGLEY 1A BHL OLD - plan misses target center by 199.91usft at 12752.25usft MD (7692.00 TVD, -4312.55 N, -1825.84 E) - Point	0.00	0.00	7,692.00	-4,310.56	-2,025.75	1,259,809.35	3,158,826.56	40.045174	-104.933408
HINGLEY 1A TPZ OLD - plan misses target center by 199.88usft at 8362.00usft MD (7692.00 TVD, 77.49 N, -1782.14 E) - Point	0.00	0.00	7,692.00	80.42	-1,982.00	1,264,200.52	3,158,641.89	40.057228	-104.933253