

CRESTONE PEAK RESOURCES

WELD COUNTY

SEC 22-T1N-R68W

COSSLETT EAST 1N-22H-H168

OWB

Plan: PROPOSAL 1

Standard Planning Report

01 March, 2022

Project: WELD COUNTY
Site: SEC 22-T1N-R68W
Well: COSSLETT EAST 1N-22H-H168
Wellbore: OWB
Design: PROPOSAL 1

PROJECT DETAILS: WELD COUNTY
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 7.86°
Magnetic Field
Strength: 51667.7snT
Dip Angle: 66.31°
Date: 2/16/2022
Model: IGRF2020

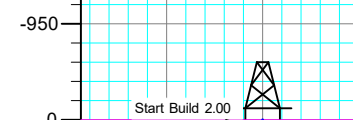
WELL DETAILS: COSSLETT EAST 1N-22H-H168

	+N/-S	+E/-W	Northing	Easting	5181.00	Latitude	Longitude	Slot
	0.00	0.00	1257557.46	3144503.00		40.039229°N	104.983901°W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
3	2292.11	43.84	70.45	2084.36	267.18	752.54	2.00	70.45	209.24	
4	9392.50	43.84	70.45	7205.52	1912.69	5387.36	0.00	0.00	1497.97	
5	10427.79	90.00	180.19	7730.00	1354.03	5859.58	10.00	104.51	2226.13	LP-COSSLETT E 1N-H168
6	20184.95	90.00	180.19	7730.00	-8403.07	5826.59	0.00	0.00	10225.49	PBHL-COSSLETT E 1N-H168

ANNOTATIONS

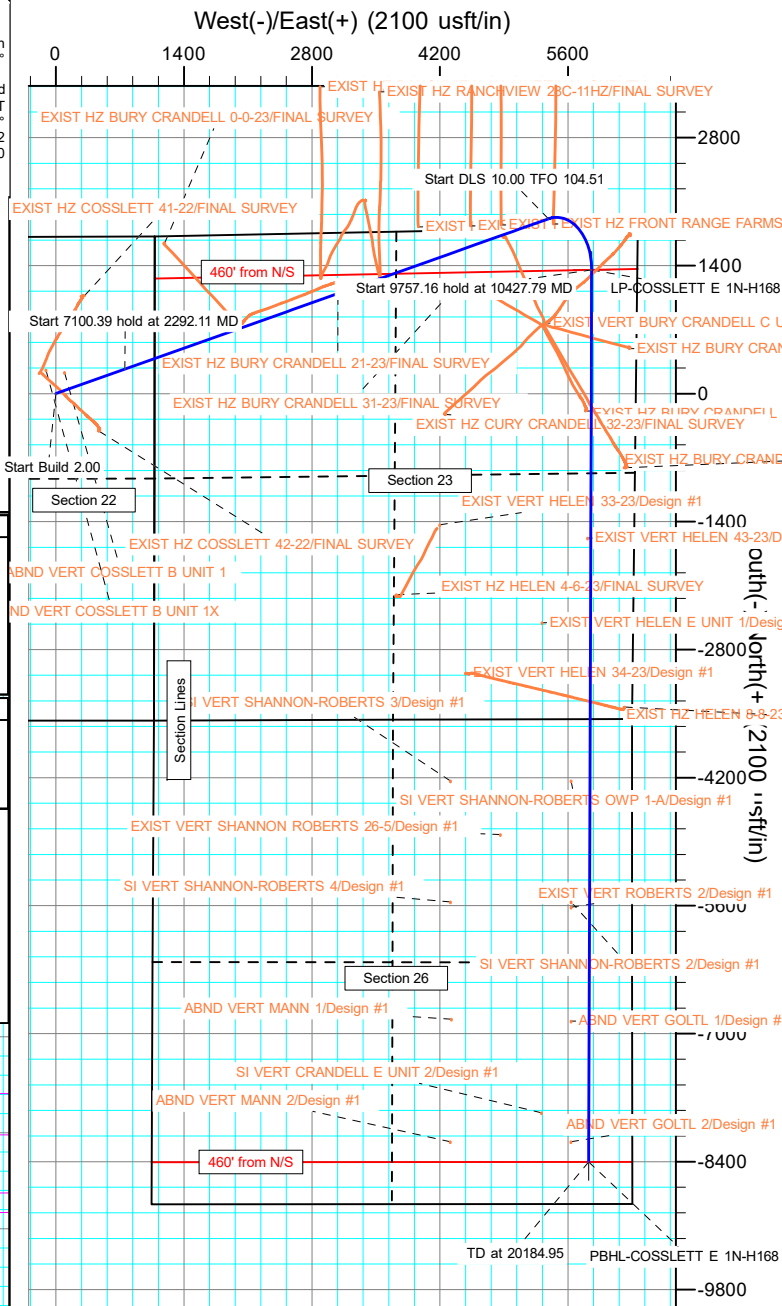
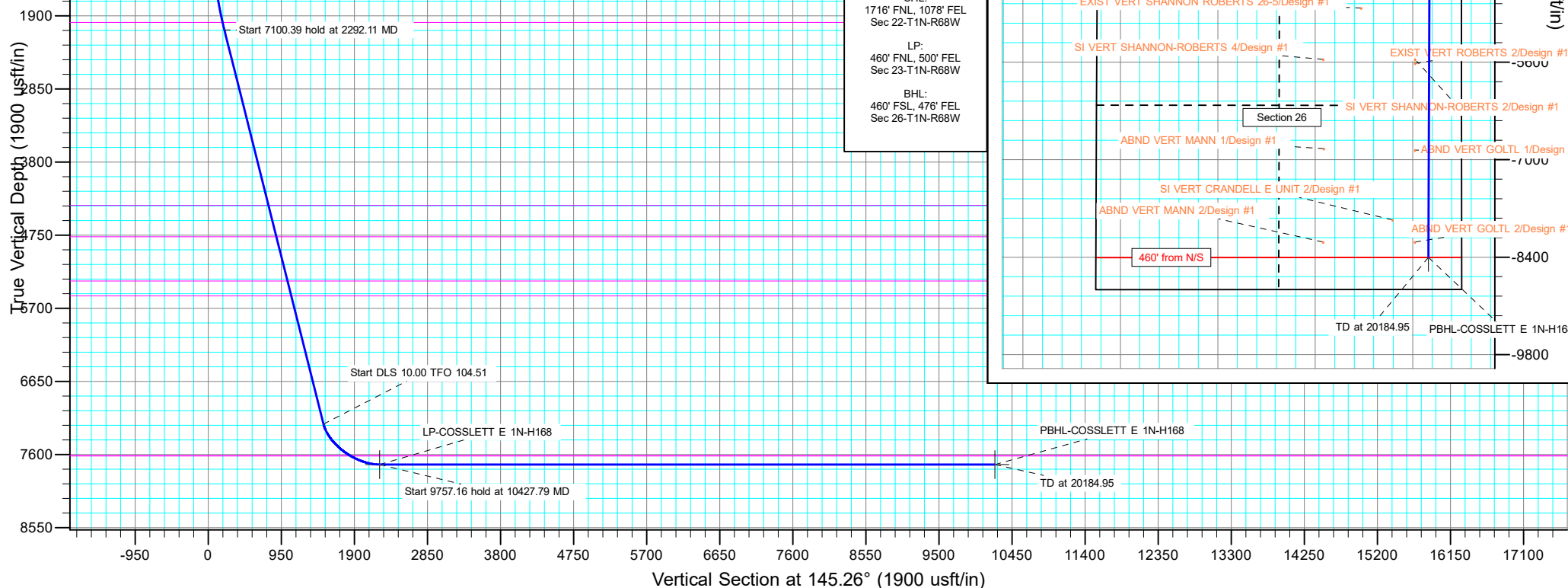


MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	Start Build 2.00
2292.11	43.84	70.45	2084.36	267.18	752.54	209.24	798.56	Start 7100.39 hold at 2292.11 MD
9392.50	43.84	70.45	7205.52	1912.69	5387.36	1497.97	5716.82	Start DLS 10.00 TFO 104.51
10427.79	90.00	180.19	7730.00	1354.03	5859.58	2226.13	6567.88	Start 9757.16 hold at 10427.79 MD
20184.95	90.00	180.19	7730.00	-8403.07	5826.59	10225.49	16325.04	TD at 20184.95

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP-COSSLETT E 1N-H168	7730.00	1354.03	5859.58	1258945.53	3150354.39	40.042944°N	104.962973°W
PBHL-COSSLETT E 1N-H168	7730.00	-8403.07	5826.59	1249188.75	3150378.18	40.016160°N	104.963099°W

SHL:
1716' FNL, 1078' FEL
Sec 22-T1N-R68W
LP:
460' FNL, 500' FEL
Sec 23-T1N-R68W
BHL:
460' FSL, 476' FEL
Sec 26-T1N-R68W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1N-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1N-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Project	WELD COUNTY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		SEC 22-T1N-R68W			
Site Position:		Northing:	1,259,282.05 usft	Latitude:	40.043946°N
From:	Lat/Long	Easting:	3,145,574.24 usft	Longitude:	104.980039°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.34 °

Well	COSSLETT EAST 1N-22H-H168					
Well Position	+N/-S	-1,718.34 usft	Northing:	1,257,557.46 usft	Latitude:	40.039229°N
	+E/-W	-1,081.37 usft	Easting:	3,144,503.00 usft	Longitude:	104.983901°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,181.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2/16/2022	7.86	66.31	51,667.74801715

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	145.26

Plan Survey Tool Program	Date	3/1/2022		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,184.95	PROPOSAL 1 (OWB)	MWD OWSG
				OWSG MWD - Standard

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
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	
2,292.11	43.84	70.45	2,084.36	267.18	752.54	2.00	2.00	0.00	70.45	
9,392.50	43.84	70.45	7,205.52	1,912.69	5,387.36	0.00	0.00	0.00	0.00	
10,427.79	90.00	180.19	7,730.00	1,354.03	5,859.58	10.00	4.46	10.60	104.51	LP-COSSLETT E 1N-
20,184.95	90.00	180.19	7,730.00	-8,403.07	5,826.59	0.00	0.00	0.00	0.00	PBHL-COSSLETT E

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1N-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1N-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Denver Formation									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
154.00	1.08	70.45	154.00	0.17	0.48	0.13	2.00	2.00	0.00
Laramie Formation									
200.00	2.00	70.45	199.98	0.58	1.64	0.46	2.00	2.00	0.00
300.00	4.00	70.45	299.84	2.33	6.58	1.83	2.00	2.00	0.00
400.00	6.00	70.45	399.45	5.25	14.79	4.11	2.00	2.00	0.00
500.00	8.00	70.45	498.70	9.33	26.27	7.31	2.00	2.00	0.00
600.00	10.00	70.45	597.47	14.56	41.01	11.40	2.00	2.00	0.00
634.09	10.68	70.45	631.00	16.61	46.78	13.01	2.00	2.00	0.00
Fox Hills sandstone									
700.00	12.00	70.45	695.62	20.95	58.99	16.40	2.00	2.00	0.00
800.00	14.00	70.45	793.06	28.47	80.19	22.30	2.00	2.00	0.00
810.25	14.21	70.45	803.00	29.31	82.55	22.95	2.00	2.00	0.00
Pierre Formation									
900.00	16.00	70.45	889.64	37.13	104.58	29.08	2.00	2.00	0.00
1,000.00	18.00	70.45	985.27	46.91	132.13	36.74	2.00	2.00	0.00
1,067.27	19.35	70.45	1,049.00	54.12	152.43	42.38	2.00	2.00	0.00
Upper Pierre aquifer									
1,100.00	20.00	70.45	1,079.82	57.80	162.81	45.27	2.00	2.00	0.00
1,200.00	22.00	70.45	1,173.17	69.79	196.58	54.66	2.00	2.00	0.00
1,300.00	24.00	70.45	1,265.21	82.86	233.40	64.90	2.00	2.00	0.00
1,400.00	26.00	70.45	1,355.84	97.00	273.23	75.97	2.00	2.00	0.00
1,500.00	28.00	70.45	1,444.94	112.19	316.01	87.87	2.00	2.00	0.00
1,600.00	30.00	70.45	1,532.39	128.41	361.69	100.57	2.00	2.00	0.00
1,700.00	32.00	70.45	1,618.11	145.64	410.22	114.06	2.00	2.00	0.00
1,800.00	34.00	70.45	1,701.97	163.86	461.55	128.33	2.00	2.00	0.00
1,900.00	36.00	70.45	1,783.88	183.05	515.60	143.36	2.00	2.00	0.00
2,000.00	38.00	70.45	1,863.74	203.19	572.31	159.13	2.00	2.00	0.00
2,100.00	40.00	70.45	1,941.45	224.24	631.61	175.62	2.00	2.00	0.00
2,157.34	41.15	70.45	1,985.00	236.72	666.75	185.39	2.00	2.00	0.00
Base of Upper Pierre aquifer									
2,200.00	42.00	70.45	2,016.92	246.19	693.43	192.81	2.00	2.00	0.00
2,292.11	43.84	70.45	2,084.36	267.18	752.54	209.24	2.00	2.00	0.00
Start 7100.39 hold at 2292.11 MD									
2,300.00	43.84	70.45	2,090.06	269.00	757.69	210.68	0.00	0.00	0.00
2,400.00	43.84	70.45	2,162.18	292.18	822.97	228.83	0.00	0.00	0.00
2,500.00	43.84	70.45	2,234.31	315.35	888.24	246.98	0.00	0.00	0.00
2,600.00	43.84	70.45	2,306.43	338.53	953.52	265.13	0.00	0.00	0.00
2,700.00	43.84	70.45	2,378.56	361.70	1,018.79	283.28	0.00	0.00	0.00
2,800.00	43.84	70.45	2,450.68	384.88	1,084.07	301.43	0.00	0.00	0.00
2,900.00	43.84	70.45	2,522.81	408.05	1,149.34	319.58	0.00	0.00	0.00
3,000.00	43.84	70.45	2,594.93	431.23	1,214.62	337.73	0.00	0.00	0.00
3,100.00	43.84	70.45	2,667.06	454.40	1,279.89	355.88	0.00	0.00	0.00
3,200.00	43.84	70.45	2,739.18	477.58	1,345.17	374.03	0.00	0.00	0.00
3,300.00	43.84	70.45	2,811.31	500.75	1,410.45	392.18	0.00	0.00	0.00
3,400.00	43.84	70.45	2,883.43	523.93	1,475.72	410.33	0.00	0.00	0.00
3,500.00	43.84	70.45	2,955.56	547.10	1,541.00	428.48	0.00	0.00	0.00
3,600.00	43.84	70.45	3,027.68	570.28	1,606.27	446.63	0.00	0.00	0.00
3,700.00	43.84	70.45	3,099.81	593.45	1,671.55	464.78	0.00	0.00	0.00
3,800.00	43.84	70.45	3,171.93	616.63	1,736.82	482.93	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1N-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1N-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
3,900.00	43.84	70.45	3,244.06	639.80	1,802.10	501.08	0.00	0.00	0.00	
4,000.00	43.84	70.45	3,316.18	662.98	1,867.38	519.23	0.00	0.00	0.00	
4,100.00	43.84	70.45	3,388.31	686.15	1,932.65	537.38	0.00	0.00	0.00	
4,200.00	43.84	70.45	3,460.43	709.33	1,997.93	555.53	0.00	0.00	0.00	
4,300.00	43.84	70.45	3,532.56	732.50	2,063.20	573.68	0.00	0.00	0.00	
4,400.00	43.84	70.45	3,604.68	755.68	2,128.48	591.83	0.00	0.00	0.00	
4,500.00	43.84	70.45	3,676.81	778.85	2,193.75	609.98	0.00	0.00	0.00	
4,600.00	43.84	70.45	3,748.93	802.03	2,259.03	628.13	0.00	0.00	0.00	
4,700.00	43.84	70.45	3,821.06	825.20	2,324.30	646.28	0.00	0.00	0.00	
4,800.00	43.84	70.45	3,893.18	848.38	2,389.58	664.43	0.00	0.00	0.00	
4,900.00	43.84	70.45	3,965.31	871.55	2,454.86	682.58	0.00	0.00	0.00	
5,000.00	43.84	70.45	4,037.43	894.73	2,520.13	700.73	0.00	0.00	0.00	
5,100.00	43.84	70.45	4,109.56	917.90	2,585.41	718.88	0.00	0.00	0.00	
5,200.00	43.84	70.45	4,181.68	941.08	2,650.68	737.03	0.00	0.00	0.00	
5,300.00	43.84	70.45	4,253.81	964.25	2,715.96	755.18	0.00	0.00	0.00	
5,400.00	43.84	70.45	4,325.93	987.43	2,781.23	773.33	0.00	0.00	0.00	
5,451.40	43.84	70.45	4,363.00	999.34	2,814.78	782.66	0.00	0.00	0.00	
Larimer sandstone										
5,500.00	43.84	70.45	4,398.06	1,010.60	2,846.51	791.48	0.00	0.00	0.00	
5,600.00	43.84	70.45	4,470.18	1,033.78	2,911.79	809.63	0.00	0.00	0.00	
5,700.00	43.84	70.45	4,542.31	1,056.95	2,977.06	827.78	0.00	0.00	0.00	
5,800.00	43.84	70.45	4,614.43	1,080.13	3,042.34	845.93	0.00	0.00	0.00	
5,900.00	43.84	70.45	4,686.56	1,103.30	3,107.61	864.08	0.00	0.00	0.00	
6,000.00	43.84	70.45	4,758.68	1,126.48	3,172.89	882.23	0.00	0.00	0.00	
6,017.08	43.84	70.45	4,771.00	1,130.44	3,184.04	885.33	0.00	0.00	0.00	
Terry ("Sussex") sandstone										
6,100.00	43.84	70.45	4,830.81	1,149.65	3,238.16	900.38	0.00	0.00	0.00	
6,200.00	43.84	70.45	4,902.93	1,172.83	3,303.44	918.53	0.00	0.00	0.00	
6,300.00	43.84	70.45	4,975.06	1,196.00	3,368.71	936.68	0.00	0.00	0.00	
6,400.00	43.84	70.45	5,047.18	1,219.18	3,433.99	954.83	0.00	0.00	0.00	
6,500.00	43.84	70.45	5,119.31	1,242.35	3,499.27	972.98	0.00	0.00	0.00	
6,600.00	43.84	70.45	5,191.43	1,265.53	3,564.54	991.13	0.00	0.00	0.00	
6,700.00	43.84	70.45	5,263.56	1,288.70	3,629.82	1,009.28	0.00	0.00	0.00	
6,800.00	43.84	70.45	5,335.68	1,311.88	3,695.09	1,027.43	0.00	0.00	0.00	
6,814.31	43.84	70.45	5,346.00	1,315.19	3,704.43	1,030.03	0.00	0.00	0.00	
Hygiene ("Shannon") sandstone										
6,900.00	43.84	70.45	5,407.81	1,335.05	3,760.37	1,045.58	0.00	0.00	0.00	
7,000.00	43.84	70.45	5,479.93	1,358.23	3,825.64	1,063.73	0.00	0.00	0.00	
7,081.90	43.84	70.45	5,539.00	1,377.21	3,879.10	1,078.59	0.00	0.00	0.00	
Pierre shale										
7,100.00	43.84	70.45	5,552.06	1,381.40	3,890.92	1,081.88	0.00	0.00	0.00	
7,200.00	43.84	70.45	5,624.18	1,404.58	3,956.20	1,100.03	0.00	0.00	0.00	
7,300.00	43.84	70.45	5,696.31	1,427.75	4,021.47	1,118.18	0.00	0.00	0.00	
7,400.00	43.84	70.45	5,768.43	1,450.93	4,086.75	1,136.33	0.00	0.00	0.00	
7,500.00	43.84	70.45	5,840.56	1,474.10	4,152.02	1,154.48	0.00	0.00	0.00	
7,600.00	43.84	70.45	5,912.68	1,497.28	4,217.30	1,172.63	0.00	0.00	0.00	
7,700.00	43.84	70.45	5,984.81	1,520.45	4,282.57	1,190.78	0.00	0.00	0.00	
7,800.00	43.84	70.45	6,056.93	1,543.63	4,347.85	1,208.93	0.00	0.00	0.00	
7,900.00	43.84	70.45	6,129.06	1,566.80	4,413.12	1,227.08	0.00	0.00	0.00	
8,000.00	43.84	70.45	6,201.18	1,589.98	4,478.40	1,245.23	0.00	0.00	0.00	
8,100.00	43.84	70.45	6,273.31	1,613.15	4,543.68	1,263.38	0.00	0.00	0.00	
8,200.00	43.84	70.45	6,345.43	1,636.33	4,608.95	1,281.53	0.00	0.00	0.00	
8,300.00	43.84	70.45	6,417.56	1,659.50	4,674.23	1,299.68	0.00	0.00	0.00	
8,400.00	43.84	70.45	6,489.68	1,682.68	4,739.50	1,317.83	0.00	0.00	0.00	

Planning Report

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Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1N-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,500.00	43.84	70.45	6,561.81	1,705.85	4,804.78	1,335.98	0.00	0.00	0.00
8,600.00	43.84	70.45	6,633.93	1,729.03	4,870.05	1,354.13	0.00	0.00	0.00
8,700.00	43.84	70.45	6,706.06	1,752.20	4,935.33	1,372.28	0.00	0.00	0.00
8,800.00	43.84	70.45	6,778.18	1,775.38	5,000.61	1,390.43	0.00	0.00	0.00
8,900.00	43.84	70.45	6,850.31	1,798.55	5,065.88	1,408.58	0.00	0.00	0.00
9,000.00	43.84	70.45	6,922.43	1,821.73	5,131.16	1,426.73	0.00	0.00	0.00
9,100.00	43.84	70.45	6,994.56	1,844.90	5,196.43	1,444.88	0.00	0.00	0.00
9,200.00	43.84	70.45	7,066.68	1,868.08	5,261.71	1,463.03	0.00	0.00	0.00
9,300.00	43.84	70.45	7,138.81	1,891.25	5,326.98	1,481.18	0.00	0.00	0.00
9,392.50	43.84	70.45	7,205.52	1,912.69	5,387.36	1,497.97	0.00	0.00	0.00
Start DLS 10.00 TFO 104.51									
9,400.00	43.66	71.51	7,210.94	1,914.38	5,392.27	1,499.37	10.00	-2.44	14.02
9,450.00	42.69	78.68	7,247.42	1,923.19	5,425.28	1,510.95	10.00	-1.93	14.34
9,500.00	42.19	86.05	7,284.35	1,927.67	5,458.67	1,526.29	10.00	-1.01	14.75
9,550.00	42.16	93.50	7,321.43	1,927.80	5,492.19	1,545.28	10.00	-0.05	14.90
9,600.00	42.61	100.89	7,358.38	1,923.58	5,525.58	1,567.78	10.00	0.91	14.78
9,650.00	43.53	108.09	7,394.93	1,915.03	5,558.59	1,593.61	10.00	1.83	14.40
9,700.00	44.88	115.00	7,430.79	1,902.22	5,590.96	1,622.59	10.00	2.70	13.81
9,750.00	46.63	121.54	7,465.70	1,885.24	5,622.46	1,654.48	10.00	3.49	13.09
9,800.00	48.72	127.68	7,499.38	1,864.24	5,652.83	1,689.05	10.00	4.19	12.28
9,850.00	51.13	133.42	7,531.58	1,839.36	5,681.86	1,726.04	10.00	4.81	11.47
9,900.00	53.79	138.76	7,562.06	1,810.80	5,709.31	1,765.15	10.00	5.33	10.68
9,950.00	56.68	143.73	7,590.58	1,778.77	5,734.98	1,806.10	10.00	5.77	9.95
9,992.26	59.26	147.67	7,613.00	1,749.17	5,755.15	1,841.91	10.00	6.11	9.34
Sharon Springs									
10,000.00	59.75	148.37	7,616.93	1,743.52	5,758.68	1,848.57	10.00	6.28	9.03
10,002.13	59.88	148.56	7,618.00	1,741.94	5,759.64	1,850.41	10.00	6.31	8.97
Niobrara									
10,050.00	62.97	152.73	7,640.90	1,705.31	5,780.22	1,892.24	10.00	6.45	8.70
10,100.00	66.32	156.84	7,662.32	1,664.44	5,799.44	1,936.78	10.00	6.70	8.22
10,150.00	69.77	160.74	7,681.01	1,621.22	5,816.20	1,981.85	10.00	6.91	7.80
10,200.00	73.31	164.47	7,696.85	1,575.97	5,830.36	2,027.10	10.00	7.07	7.46
10,250.00	76.91	168.06	7,709.70	1,529.05	5,841.82	2,072.19	10.00	7.20	7.18
10,300.00	80.56	171.55	7,719.47	1,480.80	5,850.49	2,116.78	10.00	7.30	6.97
10,350.00	84.24	174.96	7,726.09	1,431.60	5,856.30	2,160.52	10.00	7.36	6.83
10,400.00	87.94	178.33	7,729.50	1,381.82	5,859.22	2,203.09	10.00	7.40	6.74
10,427.79	90.00	180.19	7,730.00	1,354.03	5,859.58	2,226.13	10.00	7.42	6.71
Start 9757.16 hold at 10427.79 MD									
10,500.00	90.00	180.19	7,730.00	1,281.83	5,859.33	2,285.33	0.00	0.00	0.00
10,600.00	90.00	180.19	7,730.00	1,181.83	5,858.99	2,367.31	0.00	0.00	0.00
10,700.00	90.00	180.19	7,730.00	1,081.83	5,858.66	2,449.30	0.00	0.00	0.00
10,800.00	90.00	180.19	7,730.00	981.83	5,858.32	2,531.28	0.00	0.00	0.00
10,900.00	90.00	180.19	7,730.00	881.83	5,857.98	2,613.27	0.00	0.00	0.00
11,000.00	90.00	180.19	7,730.00	781.83	5,857.64	2,695.25	0.00	0.00	0.00
11,100.00	90.00	180.19	7,730.00	681.83	5,857.30	2,777.24	0.00	0.00	0.00
11,200.00	90.00	180.19	7,730.00	581.83	5,856.96	2,859.22	0.00	0.00	0.00
11,300.00	90.00	180.19	7,730.00	481.83	5,856.63	2,941.21	0.00	0.00	0.00
11,400.00	90.00	180.19	7,730.00	381.83	5,856.29	3,023.19	0.00	0.00	0.00
11,500.00	90.00	180.19	7,730.00	281.83	5,855.95	3,105.17	0.00	0.00	0.00
11,600.00	90.00	180.19	7,730.00	181.83	5,855.61	3,187.16	0.00	0.00	0.00
11,700.00	90.00	180.19	7,730.00	81.83	5,855.27	3,269.14	0.00	0.00	0.00
11,800.00	90.00	180.19	7,730.00	-18.17	5,854.94	3,351.13	0.00	0.00	0.00
11,900.00	90.00	180.19	7,730.00	-118.17	5,854.60	3,433.11	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1N-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1N-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,000.00	90.00	180.19	7,730.00	-218.16	5,854.26	3,515.10	0.00	0.00	0.00
12,100.00	90.00	180.19	7,730.00	-318.16	5,853.92	3,597.08	0.00	0.00	0.00
12,200.00	90.00	180.19	7,730.00	-418.16	5,853.58	3,679.07	0.00	0.00	0.00
12,300.00	90.00	180.19	7,730.00	-518.16	5,853.25	3,761.05	0.00	0.00	0.00
12,400.00	90.00	180.19	7,730.00	-618.16	5,852.91	3,843.04	0.00	0.00	0.00
12,500.00	90.00	180.19	7,730.00	-718.16	5,852.57	3,925.02	0.00	0.00	0.00
12,600.00	90.00	180.19	7,730.00	-818.16	5,852.23	4,007.00	0.00	0.00	0.00
12,700.00	90.00	180.19	7,730.00	-918.16	5,851.89	4,088.99	0.00	0.00	0.00
12,800.00	90.00	180.19	7,730.00	-1,018.16	5,851.56	4,170.97	0.00	0.00	0.00
12,900.00	90.00	180.19	7,730.00	-1,118.16	5,851.22	4,252.96	0.00	0.00	0.00
13,000.00	90.00	180.19	7,730.00	-1,218.16	5,850.88	4,334.94	0.00	0.00	0.00
13,100.00	90.00	180.19	7,730.00	-1,318.16	5,850.54	4,416.93	0.00	0.00	0.00
13,200.00	90.00	180.19	7,730.00	-1,418.16	5,850.20	4,498.91	0.00	0.00	0.00
13,300.00	90.00	180.19	7,730.00	-1,518.16	5,849.86	4,580.90	0.00	0.00	0.00
13,400.00	90.00	180.19	7,730.00	-1,618.16	5,849.53	4,662.88	0.00	0.00	0.00
13,500.00	90.00	180.19	7,730.00	-1,718.16	5,849.19	4,744.87	0.00	0.00	0.00
13,600.00	90.00	180.19	7,730.00	-1,818.16	5,848.85	4,826.85	0.00	0.00	0.00
13,700.00	90.00	180.19	7,730.00	-1,918.16	5,848.51	4,908.83	0.00	0.00	0.00
13,800.00	90.00	180.19	7,730.00	-2,018.15	5,848.17	4,990.82	0.00	0.00	0.00
13,900.00	90.00	180.19	7,730.00	-2,118.15	5,847.84	5,072.80	0.00	0.00	0.00
14,000.00	90.00	180.19	7,730.00	-2,218.15	5,847.50	5,154.79	0.00	0.00	0.00
14,100.00	90.00	180.19	7,730.00	-2,318.15	5,847.16	5,236.77	0.00	0.00	0.00
14,200.00	90.00	180.19	7,730.00	-2,418.15	5,846.82	5,318.76	0.00	0.00	0.00
14,300.00	90.00	180.19	7,730.00	-2,518.15	5,846.48	5,400.74	0.00	0.00	0.00
14,400.00	90.00	180.19	7,730.00	-2,618.15	5,846.15	5,482.73	0.00	0.00	0.00
14,500.00	90.00	180.19	7,730.00	-2,718.15	5,845.81	5,564.71	0.00	0.00	0.00
14,600.00	90.00	180.19	7,730.00	-2,818.15	5,845.47	5,646.70	0.00	0.00	0.00
14,700.00	90.00	180.19	7,730.00	-2,918.15	5,845.13	5,728.68	0.00	0.00	0.00
14,800.00	90.00	180.19	7,730.00	-3,018.15	5,844.79	5,810.66	0.00	0.00	0.00
14,900.00	90.00	180.19	7,730.00	-3,118.15	5,844.45	5,892.65	0.00	0.00	0.00
15,000.00	90.00	180.19	7,730.00	-3,218.15	5,844.12	5,974.63	0.00	0.00	0.00
15,100.00	90.00	180.19	7,730.00	-3,318.15	5,843.78	6,056.62	0.00	0.00	0.00
15,200.00	90.00	180.19	7,730.00	-3,418.15	5,843.44	6,138.60	0.00	0.00	0.00
15,300.00	90.00	180.19	7,730.00	-3,518.15	5,843.10	6,220.59	0.00	0.00	0.00
15,400.00	90.00	180.19	7,730.00	-3,618.15	5,842.76	6,302.57	0.00	0.00	0.00
15,500.00	90.00	180.19	7,730.00	-3,718.14	5,842.43	6,384.56	0.00	0.00	0.00
15,600.00	90.00	180.19	7,730.00	-3,818.14	5,842.09	6,466.54	0.00	0.00	0.00
15,700.00	90.00	180.19	7,730.00	-3,918.14	5,841.75	6,548.53	0.00	0.00	0.00
15,800.00	90.00	180.19	7,730.00	-4,018.14	5,841.41	6,630.51	0.00	0.00	0.00
15,900.00	90.00	180.19	7,730.00	-4,118.14	5,841.07	6,712.49	0.00	0.00	0.00
16,000.00	90.00	180.19	7,730.00	-4,218.14	5,840.74	6,794.48	0.00	0.00	0.00
16,100.00	90.00	180.19	7,730.00	-4,318.14	5,840.40	6,876.46	0.00	0.00	0.00
16,200.00	90.00	180.19	7,730.00	-4,418.14	5,840.06	6,958.45	0.00	0.00	0.00
16,300.00	90.00	180.19	7,730.00	-4,518.14	5,839.72	7,040.43	0.00	0.00	0.00
16,400.00	90.00	180.19	7,730.00	-4,618.14	5,839.38	7,122.42	0.00	0.00	0.00
16,500.00	90.00	180.19	7,730.00	-4,718.14	5,839.05	7,204.40	0.00	0.00	0.00
16,600.00	90.00	180.19	7,730.00	-4,818.14	5,838.71	7,286.39	0.00	0.00	0.00
16,700.00	90.00	180.19	7,730.00	-4,918.14	5,838.37	7,368.37	0.00	0.00	0.00
16,800.00	90.00	180.19	7,730.00	-5,018.14	5,838.03	7,450.36	0.00	0.00	0.00
16,900.00	90.00	180.19	7,730.00	-5,118.14	5,837.69	7,532.34	0.00	0.00	0.00
17,000.00	90.00	180.19	7,730.00	-5,218.14	5,837.35	7,614.32	0.00	0.00	0.00
17,100.00	90.00	180.19	7,730.00	-5,318.14	5,837.02	7,696.31	0.00	0.00	0.00
17,200.00	90.00	180.19	7,730.00	-5,418.14	5,836.68	7,778.29	0.00	0.00	0.00
17,300.00	90.00	180.19	7,730.00	-5,518.13	5,836.34	7,860.28	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1N-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1N-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
17,400.00	90.00	180.19	7,730.00	-5,618.13	5,836.00	7,942.26	0.00	0.00	0.00	
17,500.00	90.00	180.19	7,730.00	-5,718.13	5,835.66	8,024.25	0.00	0.00	0.00	
17,600.00	90.00	180.19	7,730.00	-5,818.13	5,835.33	8,106.23	0.00	0.00	0.00	
17,700.00	90.00	180.19	7,730.00	-5,918.13	5,834.99	8,188.22	0.00	0.00	0.00	
17,800.00	90.00	180.19	7,730.00	-6,018.13	5,834.65	8,270.20	0.00	0.00	0.00	
17,900.00	90.00	180.19	7,730.00	-6,118.13	5,834.31	8,352.19	0.00	0.00	0.00	
18,000.00	90.00	180.19	7,730.00	-6,218.13	5,833.97	8,434.17	0.00	0.00	0.00	
18,100.00	90.00	180.19	7,730.00	-6,318.13	5,833.64	8,516.15	0.00	0.00	0.00	
18,200.00	90.00	180.19	7,730.00	-6,418.13	5,833.30	8,598.14	0.00	0.00	0.00	
18,300.00	90.00	180.19	7,730.00	-6,518.13	5,832.96	8,680.12	0.00	0.00	0.00	
18,400.00	90.00	180.19	7,730.00	-6,618.13	5,832.62	8,762.11	0.00	0.00	0.00	
18,500.00	90.00	180.19	7,730.00	-6,718.13	5,832.28	8,844.09	0.00	0.00	0.00	
18,600.00	90.00	180.19	7,730.00	-6,818.13	5,831.94	8,926.08	0.00	0.00	0.00	
18,700.00	90.00	180.19	7,730.00	-6,918.13	5,831.61	9,008.06	0.00	0.00	0.00	
18,800.00	90.00	180.19	7,730.00	-7,018.13	5,831.27	9,090.05	0.00	0.00	0.00	
18,900.00	90.00	180.19	7,730.00	-7,118.13	5,830.93	9,172.03	0.00	0.00	0.00	
19,000.00	90.00	180.19	7,730.00	-7,218.12	5,830.59	9,254.01	0.00	0.00	0.00	
19,100.00	90.00	180.19	7,730.00	-7,318.12	5,830.25	9,336.00	0.00	0.00	0.00	
19,200.00	90.00	180.19	7,730.00	-7,418.12	5,829.92	9,417.98	0.00	0.00	0.00	
19,300.00	90.00	180.19	7,730.00	-7,518.12	5,829.58	9,499.97	0.00	0.00	0.00	
19,400.00	90.00	180.19	7,730.00	-7,618.12	5,829.24	9,581.95	0.00	0.00	0.00	
19,500.00	90.00	180.19	7,730.00	-7,718.12	5,828.90	9,663.94	0.00	0.00	0.00	
19,600.00	90.00	180.19	7,730.00	-7,818.12	5,828.56	9,745.92	0.00	0.00	0.00	
19,700.00	90.00	180.19	7,730.00	-7,918.12	5,828.23	9,827.91	0.00	0.00	0.00	
19,800.00	90.00	180.19	7,730.00	-8,018.12	5,827.89	9,909.89	0.00	0.00	0.00	
19,900.00	90.00	180.19	7,730.00	-8,118.12	5,827.55	9,991.88	0.00	0.00	0.00	
20,000.00	90.00	180.19	7,730.00	-8,218.12	5,827.21	10,073.86	0.00	0.00	0.00	
20,100.00	90.00	180.19	7,730.00	-8,318.12	5,826.87	10,155.84	0.00	0.00	0.00	
20,184.95	90.00	180.19	7,730.00	-8,403.07	5,826.59	10,225.49	0.00	0.00	0.00	
TD at 20184.95										

Design 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										
LP-COSSLETT E 1N-H1	0.00	0.00	7,730.00	1,354.03	5,859.58	1,258,945.53	3,150,354.39	40.042944°N	104.962973°W	
- plan hits target center										
- Point										
PBHL-COSSLETT E 1N	0.00	0.00	7,730.00	-8,403.07	5,826.59	1,249,188.75	3,150,378.18	40.016160°N	104.963099°W	
- plan hits target center										
- Point										

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well COSSLETT EAST 1N-22H-H168
Company:	CRESTONE PEAK RESOURCES	TVD Reference:	KB 25' @ 5206.00usft
Project:	WELD COUNTY	MD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	North Reference:	True
Well:	COSSLETT EAST 1N-22H-H168	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.00	0.00	Denver Formation				
154.00	154.00	Laramie Formation				
634.09	631.00	Fox Hills sandstone				
810.25	803.00	Pierre Formation				
1,067.27	1,049.00	Upper Pierre aquifer				
2,157.34	1,985.00	Base of Upper Pierre aquifer				
5,451.40	4,363.00	Larimer sandstone				
6,017.08	4,771.00	Terry ("Sussex") sandstone				
6,814.31	5,346.00	Hygiene ("Shannon") sandstone				
7,081.90	5,539.00	Pierre shale				
9,992.26	7,613.00	Sharon Springs				
10,002.13	7,618.00	Niobrara				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.00	100.00	0.00	0.00	Start Build 2.00
2,292.11	2,084.36	267.18	752.54	Start 7100.39 hold at 2292.11 MD
9,392.50	7,205.52	1,912.69	5,387.36	Start DLS 10.00 TFO 104.51
10,427.79	7,730.00	1,354.03	5,859.58	Start 9757.16 hold at 10427.79 MD
20,184.95	7,730.00	-8,403.07	5,826.59	TD at 20184.95