

CRESTONE PEAK RESOURCES

WELD COUNTY

SEC 22-T1N-R68W

COSSLETT EAST 1D-22H-H168

OWB

Design: FINAL SURVEY

Standard Survey Report

24 April, 2023

Project: WELD COUNTY
 Site: SEC 22-T1N-R68W
 Well: COSSLETT EAST 1D-22H-H168
 Wellbore: OWB
 Design: FINAL SURVEY

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: 7.75°
 Magnetic Field
 Strength: 51552.8snT
 Dip Angle: 66.26°
 Date: 3/21/2023
 Model: IGRF2020

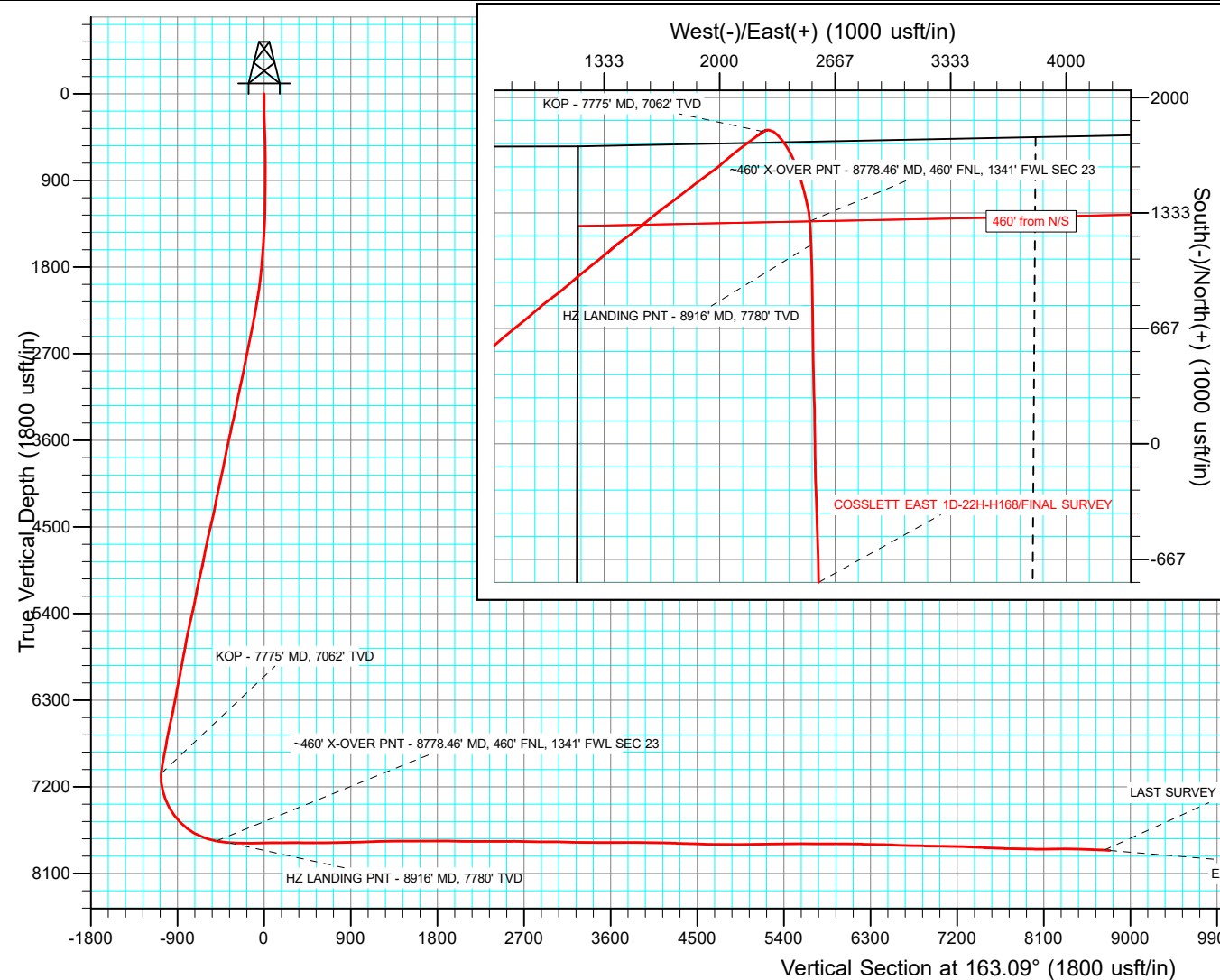
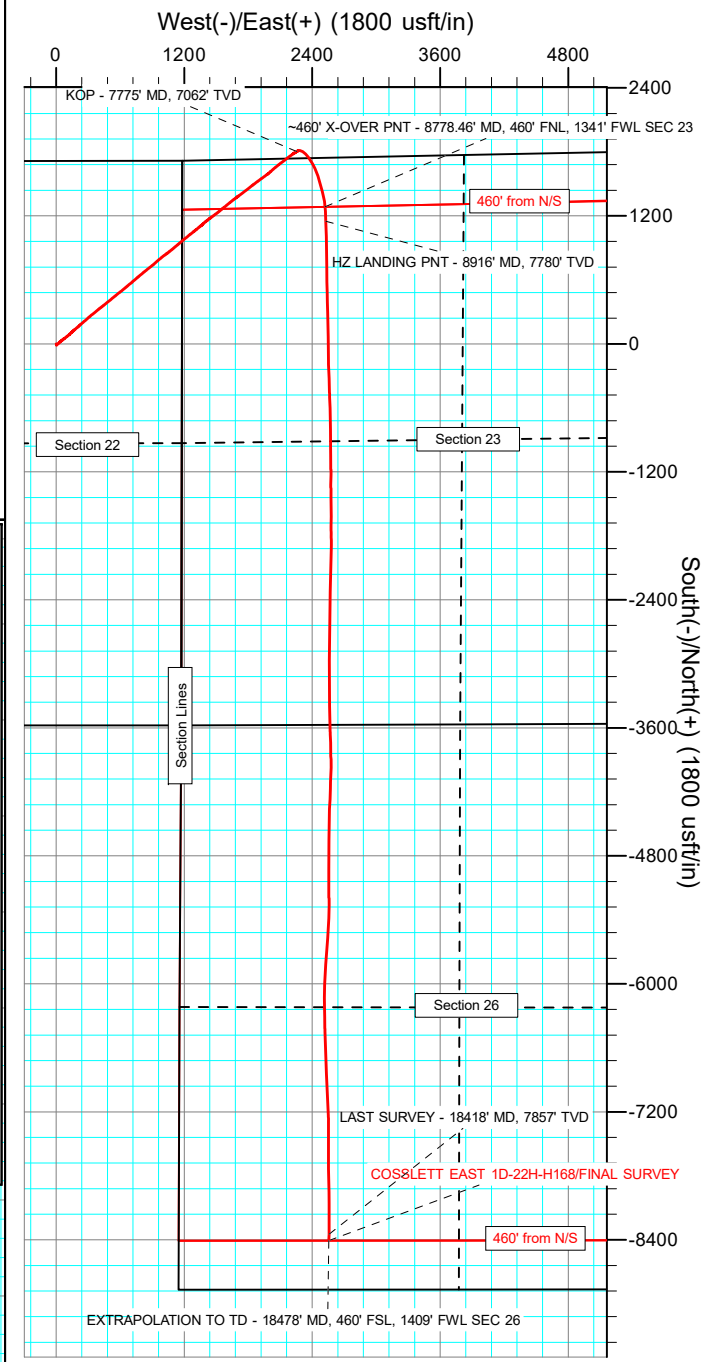
WELL DETAILS: COSSLETT EAST 1D-22H-H168

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1257557.61	3144403.04	40.039231°N	104.984258°W	

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
7775.00	23.83	57.38	7062.06	1802.31	2252.51	-1069.00	2909.05	KOP - 7775' MD, 7062' TVD
8778.46	78.39	174.33	7761.73	1285.35	2520.53	-496.43	3542.78	~460' X-OVER PNT - 8778.46' MD, 460' FNL, 1341' FWL SEC 23
8916.00	87.60	178.38	7779.61	1149.35	2527.64	-364.24	3678.82	HZ LANDING PNT - 8916' MD, 7780' TVD
18418.00	87.20	180.43	7856.99	-8346.82	2556.89	8729.65	13178.66	LAST SURVEY - 18418' MD, 7857' TVD
18478.00	87.20	180.43	7859.92	-8406.75	2556.44	8786.85	13238.59	EXTRAPOLATION TO TD - 18478' MD, 460' FSL, 1409' FWL SEC 26

SHL:
 1715' FNL, 1178' FEL
 Sec 22-T1N-R68W
 ~460' X-OVER PNT:
 460' FNL, 1341' FWL
 Sec 23-T1N-R68W
 BHL:
 460' FSL, 1409' FWL
 Sec 26-T1N-R68W



Survey Report

Company: CRESTONE PEAK RESOURCES	Local Co-ordinate Reference: Well COSSLETT EAST 1D-22H-H168
Project: WELD COUNTY	TVD Reference: KB 25' @ 5208.00usft
Site: SEC 22-T1N-R68W	MD Reference: KB 25' @ 5208.00usft
Well: COSSLETT EAST 1D-22H-H168	North Reference: True
Wellbore: OWB	Survey Calculation Method: Minimum Curvature
Design: FINAL SURVEY	Database: EDT_32Bit_ODBC

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 1D-22H-H168		
Well Position +N/-S 0.00 usft	Northing: 1,257,557.61 usft	Latitude: 40.039231°N
+E/-W 0.00 usft	Easting: 3,144,403.04 usft	Longitude: 104.984258°W
Position Uncertainty 0.00 usft	Wellhead Elevation: usft	Ground Level: 5,183.00 usft

Wellbore OWB					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/21/2023	7.75	66.26	51,552.79926587

Design FINAL SURVEY				
Audit Notes:				
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.00		
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	163.09

Survey Program		Date 4/24/2023		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
158.00	2,396.00	SURFACE SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard
2,627.00	18,478.00	FINAL SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard

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
158.00	0.80	151.63	157.99	-0.97	0.52	1.08	0.51	0.51	0.00
219.00	1.05	171.31	218.99	-1.90	0.81	2.05	0.66	0.41	32.26
310.00	1.61	172.05	309.96	-3.99	1.11	4.14	0.62	0.62	0.81
402.00	2.27	176.97	401.91	-7.09	1.39	7.19	0.74	0.72	5.35
496.00	1.47	177.34	495.86	-10.15	1.54	10.16	0.85	-0.85	0.39
535.00	1.33	177.50	534.85	-11.10	1.59	11.08	0.36	-0.36	0.41
686.00	0.87	110.23	685.82	-13.25	2.74	13.47	0.85	-0.30	-44.55
781.00	0.44	20.43	780.82	-13.16	3.54	13.62	1.02	-0.45	-94.53
876.00	0.67	354.42	875.81	-12.26	3.62	12.78	0.35	0.24	-27.38

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1D-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5208.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5208.00usft
Well:	COSSLETT EAST 1D-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
971.00	0.33	0.40	970.81	-11.44	3.56	11.98	0.36	-0.36	6.29	
1,067.00	0.63	316.76	1,066.81	-10.78	3.20	11.24	0.47	0.31	-45.46	
1,161.00	2.06	63.09	1,160.79	-9.63	4.36	10.49	2.47	1.52	113.12	
1,257.00	4.19	52.66	1,256.64	-6.73	8.68	8.96	2.29	2.22	-10.86	
1,351.00	6.08	46.55	1,350.26	-1.22	15.03	5.54	2.09	2.01	-6.50	
1,446.00	7.36	44.70	1,444.60	6.57	22.96	0.40	1.37	1.35	-1.95	
1,541.00	9.54	47.90	1,538.57	16.17	33.08	-5.85	2.35	2.29	3.37	
1,636.00	11.24	51.12	1,632.01	27.26	46.13	-12.66	1.89	1.79	3.39	
1,731.00	12.88	52.80	1,724.91	39.48	61.78	-19.79	1.77	1.73	1.77	
1,825.00	15.15	53.23	1,816.10	53.16	79.96	-27.60	2.42	2.41	0.46	
1,921.00	17.08	51.37	1,908.33	69.48	101.03	-37.08	2.08	2.01	-1.94	
2,016.00	17.65	48.34	1,999.00	87.76	122.69	-48.27	1.13	0.60	-3.19	
2,111.00	19.81	46.84	2,088.96	108.35	145.19	-61.42	2.33	2.27	-1.58	
2,206.00	23.00	48.46	2,177.40	131.67	170.83	-76.27	3.41	3.36	1.71	
2,300.00	23.43	50.08	2,263.79	155.84	198.91	-91.23	0.82	0.46	1.72	
2,396.00	25.30	49.00	2,351.24	181.55	229.03	-107.06	2.00	1.95	-1.12	
2,627.00	27.39	48.76	2,558.23	248.97	306.25	-149.10	0.91	0.90	-0.10	
2,722.00	27.63	50.85	2,642.49	277.28	339.77	-166.44	1.05	0.25	2.20	
2,842.00	27.57	50.61	2,748.84	312.47	382.81	-187.58	0.11	-0.05	-0.20	
2,937.00	27.99	53.33	2,832.89	339.74	417.68	-203.52	1.41	0.44	2.86	
3,032.00	29.22	50.80	2,916.30	367.71	453.53	-219.85	1.82	1.29	-2.66	
3,222.00	29.90	50.45	3,081.57	427.18	525.99	-255.67	0.37	0.36	-0.18	
3,317.00	28.66	51.56	3,164.43	456.42	562.09	-273.14	1.42	-1.31	1.17	
3,411.00	28.91	51.96	3,246.81	484.43	597.64	-289.60	0.34	0.27	0.43	
3,506.00	28.76	49.15	3,330.04	513.53	633.01	-307.15	1.44	-0.16	-2.96	
3,602.00	29.62	50.00	3,413.85	543.89	668.66	-325.82	0.99	0.90	0.89	
3,696.00	29.96	50.38	3,495.42	573.79	704.53	-343.99	0.41	0.36	0.40	
3,790.00	28.59	49.40	3,577.42	603.39	739.69	-362.09	1.54	-1.46	-1.04	
3,886.00	27.56	49.79	3,662.12	632.68	774.09	-380.10	1.09	-1.07	0.41	
3,980.00	27.86	50.75	3,745.34	660.62	807.71	-397.04	0.57	0.32	1.02	
4,076.00	28.56	51.84	3,829.94	688.99	843.12	-413.88	0.91	0.73	1.14	
4,170.00	28.88	51.35	3,912.37	717.05	878.52	-430.43	0.42	0.34	-0.52	
4,265.00	28.89	49.11	3,995.56	746.40	913.79	-448.26	1.14	0.01	-2.36	
4,360.00	28.54	49.10	4,078.87	776.28	948.29	-466.81	0.37	-0.37	-0.01	
4,454.00	28.74	50.45	4,161.37	805.37	982.69	-484.63	0.72	0.21	1.44	
4,549.00	28.86	53.71	4,244.63	833.49	1,018.78	-501.03	1.66	0.13	3.43	
4,644.00	30.06	52.73	4,327.34	861.47	1,056.20	-516.91	1.36	1.26	-1.03	
4,739.00	31.47	50.74	4,408.97	891.57	1,094.33	-534.62	1.83	1.48	-2.09	
4,835.00	31.31	49.46	4,490.92	923.64	1,132.69	-554.14	0.71	-0.17	-1.33	
4,930.00	29.71	48.92	4,572.77	955.16	1,169.20	-573.67	1.71	-1.68	-0.57	
5,026.00	28.62	51.58	4,656.60	985.08	1,205.15	-591.84	1.76	-1.14	2.77	
5,121.00	28.48	50.68	4,740.05	1,013.57	1,240.50	-608.82	0.48	-0.15	-0.95	
5,216.00	27.44	52.05	4,823.96	1,041.39	1,275.28	-625.31	1.29	-1.09	1.44	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1D-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5208.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5208.00usft
Well:	COSSLETT EAST 1D-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
5,311.00	29.77	50.49	4,907.36	1,069.86	1,310.74	-642.23	2.58	2.45	-1.64	
5,405.00	31.78	50.66	4,988.12	1,100.40	1,347.90	-660.64	2.14	2.14	0.18	
5,500.00	27.38	47.86	5,070.72	1,130.93	1,383.46	-679.50	4.85	-4.63	-2.95	
5,595.00	27.89	52.19	5,154.89	1,159.21	1,417.22	-696.74	2.18	0.54	4.56	
5,689.00	30.14	54.52	5,237.09	1,186.39	1,453.81	-712.10	2.68	2.39	2.48	
5,785.00	31.61	52.83	5,319.49	1,215.58	1,493.49	-728.48	1.78	1.53	-1.76	
5,880.00	32.63	51.16	5,399.95	1,246.69	1,533.28	-746.67	1.42	1.07	-1.76	
5,975.00	30.57	50.73	5,480.86	1,278.05	1,571.93	-765.42	2.18	-2.17	-0.45	
6,070.00	29.60	50.24	5,563.06	1,308.35	1,608.67	-783.72	1.05	-1.02	-0.52	
6,165.00	28.02	51.37	5,646.30	1,337.28	1,644.14	-801.09	1.76	-1.66	1.19	
6,260.00	26.87	53.64	5,730.60	1,363.94	1,678.87	-816.49	1.64	-1.21	2.39	
6,355.00	29.68	53.28	5,814.26	1,390.74	1,715.01	-831.61	2.96	2.96	-0.38	
6,450.00	29.18	52.51	5,897.00	1,418.90	1,752.24	-847.72	0.66	-0.53	-0.81	
6,544.00	28.41	52.94	5,979.38	1,446.32	1,788.27	-863.48	0.85	-0.82	0.46	
6,639.00	27.93	51.90	6,063.13	1,473.67	1,823.81	-879.30	0.72	-0.51	-1.09	
6,734.00	29.09	52.26	6,146.60	1,501.53	1,859.59	-895.55	1.23	1.22	0.38	
6,829.00	29.29	53.86	6,229.54	1,529.37	1,896.61	-911.42	0.85	0.21	1.68	
6,923.00	30.23	54.31	6,311.14	1,556.74	1,934.40	-926.60	1.03	1.00	0.48	
7,018.00	29.60	53.61	6,393.49	1,584.61	1,972.72	-942.12	0.76	-0.66	-0.74	
7,113.00	29.31	47.79	6,476.22	1,614.16	2,008.83	-959.89	3.03	-0.31	-6.13	
7,208.00	27.96	49.78	6,559.60	1,644.17	2,043.06	-978.63	1.74	-1.42	2.09	
7,304.00	27.51	50.74	6,644.57	1,672.73	2,077.41	-995.97	0.66	-0.47	1.00	
7,398.00	27.12	52.75	6,728.09	1,699.44	2,111.28	-1,011.67	1.07	-0.41	2.14	
7,493.00	27.97	52.75	6,812.33	1,726.03	2,146.25	-1,026.93	0.89	0.89	0.00	
7,588.00	28.39	53.42	6,896.07	1,752.97	2,182.12	-1,042.28	0.55	0.44	0.71	
7,683.00	28.62	54.76	6,979.55	1,779.56	2,218.84	-1,057.03	0.72	0.24	1.41	
7,775.00	23.83	57.38	7,062.06	1,802.31	2,252.51	-1,069.00	5.35	-5.20	2.85	
KOP - 7775' MD, 7062' TVD										
7,777.00	23.73	57.45	7,063.89	1,802.74	2,253.19	-1,069.22	5.35	-5.17	3.40	
7,872.00	17.74	95.46	7,153.08	1,811.70	2,283.87	-1,068.86	15.17	-6.31	40.01	
7,966.00	19.16	122.77	7,242.42	1,801.97	2,311.15	-1,051.61	9.23	1.51	29.05	
8,061.00	23.38	136.47	7,330.98	1,779.84	2,337.27	-1,022.84	6.84	4.44	14.42	
8,156.00	29.69	143.51	7,415.95	1,747.22	2,364.28	-983.77	7.41	6.64	7.41	
8,252.00	37.07	149.40	7,496.08	1,703.13	2,393.19	-933.18	8.39	7.69	6.14	
8,347.00	44.57	153.60	7,567.94	1,648.53	2,422.64	-872.38	8.40	7.89	4.42	
8,443.00	52.56	160.71	7,631.46	1,582.23	2,450.27	-800.91	10.00	8.32	7.41	
8,537.00	60.52	165.34	7,683.26	1,507.28	2,473.00	-722.58	9.41	8.47	4.93	
8,632.00	70.19	164.68	7,722.83	1,423.98	2,495.32	-636.39	10.20	10.18	-0.69	
8,726.00	76.07	171.14	7,750.13	1,336.09	2,514.07	-546.85	9.07	6.26	6.87	
8,778.46	78.39	174.33	7,761.73	1,285.35	2,520.53	-496.43	7.39	4.42	6.07	
~460' X-OVER PNT - 8778.46' MD, 460' FNL, 1341' FWL SEC 23										
8,821.00	80.29	176.87	7,769.60	1,243.68	2,523.74	-455.62	7.39	4.48	5.98	
8,916.00	87.60	178.38	7,779.61	1,149.35	2,527.64	-364.24	7.86	7.69	1.59	
HZ LANDING PNT - 8916' MD, 7780' TVD										

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1D-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5208.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5208.00usft
Well:	COSSLETT EAST 1D-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
9,011.00	88.00	177.80	7,783.26	1,054.48	2,530.80	-272.55	0.74	0.42	-0.61	
9,106.00	90.06	179.39	7,784.87	959.53	2,533.13	-181.03	2.74	2.17	1.67	
9,201.00	90.16	178.70	7,784.68	864.54	2,534.72	-89.69	0.73	0.11	-0.73	
9,296.00	90.62	179.51	7,784.04	769.56	2,536.20	1.62	0.98	0.48	0.85	
9,391.00	91.06	179.52	7,782.64	674.57	2,537.00	92.73	0.46	0.46	0.01	
9,486.00	91.06	179.49	7,780.89	579.59	2,537.82	183.84	0.03	0.00	-0.03	
9,581.00	89.65	178.89	7,780.30	484.60	2,539.17	275.10	1.61	-1.48	-0.63	
9,677.00	90.01	178.60	7,780.58	388.63	2,541.27	367.54	0.48	0.37	-0.30	
9,772.00	89.65	177.56	7,780.87	293.68	2,544.45	459.30	1.16	-0.38	-1.09	
9,867.00	89.79	178.92	7,781.33	198.73	2,547.37	551.00	1.44	0.15	1.43	
9,963.00	90.93	179.46	7,780.73	102.74	2,548.73	643.23	1.31	1.19	0.56	
10,058.00	90.99	179.65	7,779.13	7.76	2,549.46	734.32	0.21	0.06	0.20	
10,152.00	90.96	178.82	7,777.54	-86.22	2,550.72	824.59	0.88	-0.03	-0.88	
10,247.00	91.41	178.93	7,775.57	-181.18	2,552.58	915.99	0.49	0.47	0.12	
10,343.00	91.85	177.32	7,772.84	-277.08	2,555.72	1,008.66	1.74	0.46	-1.68	
10,438.00	91.32	178.38	7,770.21	-371.98	2,559.29	1,100.49	1.25	-0.56	1.12	
10,533.00	92.00	177.99	7,767.46	-466.89	2,562.29	1,192.17	0.83	0.72	-0.41	
10,723.00	90.55	178.42	7,763.23	-656.75	2,568.24	1,375.54	0.80	-0.76	0.23	
10,913.00	89.40	179.76	7,763.32	-846.71	2,571.26	1,558.17	0.93	-0.61	0.71	
11,008.00	89.80	179.49	7,763.98	-941.71	2,571.88	1,649.24	0.51	0.42	-0.28	
11,198.00	91.29	179.16	7,762.17	-1,131.68	2,574.12	1,831.64	0.80	0.78	-0.17	
11,294.00	88.26	180.22	7,762.55	-1,227.67	2,574.64	1,923.63	3.34	-3.16	1.10	
11,388.00	88.54	179.91	7,765.17	-1,321.63	2,574.53	2,013.49	0.44	0.30	-0.33	
11,484.00	89.28	179.72	7,767.00	-1,417.61	2,574.84	2,105.41	0.80	0.77	-0.20	
11,579.00	89.65	178.79	7,767.89	-1,512.60	2,576.08	2,196.65	1.05	0.39	-0.98	
11,674.00	90.82	180.08	7,767.50	-1,607.59	2,577.02	2,287.80	1.83	1.23	1.36	
11,769.00	90.14	180.68	7,766.70	-1,702.58	2,576.39	2,378.50	0.95	-0.72	0.63	
11,864.00	89.85	178.26	7,766.71	-1,797.57	2,577.26	2,469.64	2.57	-0.31	-2.55	
11,959.00	90.56	180.41	7,766.37	-1,892.56	2,578.37	2,560.84	2.38	0.75	2.26	
12,055.00	89.20	182.14	7,766.57	-1,988.53	2,576.23	2,652.04	2.29	-1.42	1.80	
12,150.00	88.78	182.43	7,768.24	-2,083.44	2,572.44	2,741.74	0.54	-0.44	0.31	
12,245.00	89.25	181.38	7,769.88	-2,178.37	2,569.29	2,831.64	1.21	0.49	-1.11	
12,340.00	90.03	180.88	7,770.47	-2,273.35	2,567.41	2,921.97	0.98	0.82	-0.53	
12,434.00	89.80	180.10	7,770.61	-2,367.34	2,566.61	3,011.66	0.87	-0.24	-0.83	
12,529.00	88.20	180.62	7,772.27	-2,462.32	2,566.01	3,102.36	1.77	-1.68	0.55	
12,624.00	88.89	180.55	7,774.68	-2,557.29	2,565.04	3,192.94	0.73	0.73	-0.07	
12,719.00	89.26	180.97	7,776.22	-2,652.27	2,563.78	3,283.44	0.59	0.39	0.44	
12,814.00	88.74	180.77	7,777.88	-2,747.24	2,562.34	3,373.89	0.59	-0.55	-0.21	
12,909.00	89.27	180.47	7,779.53	-2,842.22	2,561.31	3,464.46	0.64	0.56	-0.32	
13,004.00	91.02	180.37	7,779.28	-2,937.21	2,560.62	3,555.14	1.85	1.84	-0.11	
13,099.00	90.45	179.53	7,778.07	-3,032.21	2,560.70	3,646.05	1.07	-0.60	-0.88	
13,290.00	89.65	180.07	7,777.90	-3,223.20	2,561.37	3,828.97	0.51	-0.42	0.28	
13,385.00	90.29	179.45	7,777.95	-3,318.20	2,561.76	3,919.98	0.94	0.67	-0.65	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1D-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5208.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5208.00usft
Well:	COSSLETT EAST 1D-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
13,480.00	88.81	179.95	7,778.70	-3,413.19	2,562.26	4,011.01	1.64	-1.56	0.53	
13,575.00	88.79	178.63	7,780.69	-3,508.16	2,563.44	4,102.21	1.39	-0.02	-1.39	
13,670.00	88.21	178.01	7,783.17	-3,603.09	2,566.22	4,193.84	0.89	-0.61	-0.65	
13,765.00	88.32	176.81	7,786.05	-3,697.95	2,570.51	4,285.84	1.27	0.12	-1.26	
13,860.00	88.44	179.42	7,788.73	-3,792.85	2,573.64	4,377.55	2.75	0.13	2.75	
13,956.00	89.01	178.99	7,790.87	-3,888.82	2,574.97	4,469.75	0.74	0.59	-0.45	
14,050.00	88.43	181.30	7,792.97	-3,982.78	2,574.73	4,559.59	2.53	-0.62	2.46	
14,145.00	88.00	180.94	7,795.93	-4,077.72	2,572.87	4,649.87	0.59	-0.45	-0.38	
14,241.00	88.52	182.22	7,798.84	-4,173.64	2,570.23	4,740.87	1.44	0.54	1.33	
14,335.00	89.06	183.14	7,800.83	-4,267.51	2,565.83	4,829.41	1.13	0.57	0.98	
14,430.00	90.96	181.96	7,800.81	-4,362.41	2,561.61	4,918.97	2.35	2.00	-1.24	
14,525.00	91.75	180.92	7,798.57	-4,457.35	2,559.22	5,009.11	1.37	0.83	-1.09	
14,620.00	91.11	180.75	7,796.20	-4,552.31	2,557.84	5,099.56	0.70	-0.67	-0.18	
14,715.00	91.94	180.38	7,793.67	-4,647.27	2,556.90	5,190.14	0.96	0.87	-0.39	
14,810.00	90.23	180.54	7,791.87	-4,742.25	2,556.14	5,280.79	1.81	-1.80	0.17	
14,905.00	90.71	180.05	7,791.09	-4,837.24	2,555.65	5,371.53	0.72	0.51	-0.52	
15,000.00	88.86	180.60	7,791.45	-4,932.24	2,555.11	5,462.26	2.03	-1.95	0.58	
15,095.00	89.05	179.71	7,793.18	-5,027.22	2,554.85	5,553.06	0.96	0.20	-0.94	
15,190.00	89.92	179.38	7,794.03	-5,122.21	2,555.61	5,644.16	0.98	0.92	-0.35	
15,285.00	91.34	178.96	7,792.99	-5,217.19	2,556.98	5,735.43	1.56	1.49	-0.44	
15,380.00	90.26	180.57	7,791.66	-5,312.18	2,557.37	5,826.42	2.04	-1.14	1.69	
15,475.00	89.62	181.50	7,791.76	-5,407.16	2,555.66	5,916.80	1.19	-0.67	0.98	
15,569.00	90.22	184.90	7,791.89	-5,501.00	2,550.41	6,005.05	3.67	0.64	3.62	
15,664.00	88.45	184.70	7,793.00	-5,595.66	2,542.46	6,093.30	1.88	-1.86	-0.21	
15,759.00	89.67	184.58	7,794.55	-5,690.33	2,534.78	6,181.64	1.29	1.28	-0.13	
15,854.00	88.09	183.54	7,796.41	-5,785.07	2,528.05	6,270.33	1.99	-1.66	-1.09	
15,949.00	89.27	184.05	7,798.60	-5,879.84	2,521.77	6,359.17	1.35	1.24	0.54	
16,045.00	88.67	183.07	7,800.32	-5,975.63	2,515.81	6,449.09	1.20	-0.62	-1.02	
16,140.00	87.05	178.59	7,803.87	-6,070.53	2,514.43	6,539.48	5.01	-1.71	-4.72	
16,235.00	88.53	180.62	7,807.54	-6,165.45	2,515.08	6,630.48	2.64	1.56	2.14	
16,329.00	88.08	178.84	7,810.32	-6,259.40	2,515.53	6,720.50	1.95	-0.48	-1.89	
16,423.00	89.47	178.95	7,812.33	-6,353.36	2,517.34	6,810.92	1.48	1.48	0.12	
16,518.00	88.27	178.22	7,814.20	-6,448.31	2,519.68	6,902.44	1.48	-1.26	-0.77	
16,613.00	89.78	178.15	7,815.82	-6,543.25	2,522.69	6,994.15	1.59	1.59	-0.07	
16,708.00	88.48	178.15	7,817.26	-6,638.19	2,525.76	7,085.87	1.37	-1.37	0.00	
16,802.00	89.09	177.78	7,819.25	-6,732.11	2,529.10	7,176.70	0.76	0.65	-0.39	
16,897.00	87.99	177.87	7,821.67	-6,827.00	2,532.70	7,268.54	1.16	-1.16	0.09	
16,992.00	87.69	177.57	7,825.25	-6,921.86	2,536.48	7,360.39	0.45	-0.32	-0.32	
17,088.00	86.89	176.81	7,829.79	-7,017.64	2,541.18	7,453.39	1.15	-0.83	-0.79	
17,183.00	87.93	178.17	7,834.09	-7,112.45	2,545.33	7,545.31	1.80	1.09	1.43	
17,278.00	87.39	176.81	7,837.97	-7,207.27	2,549.49	7,637.24	1.54	-0.57	-1.43	
17,373.00	89.13	179.99	7,840.85	-7,302.18	2,552.14	7,728.81	3.81	1.83	3.35	
17,468.00	88.37	180.01	7,842.92	-7,397.15	2,552.14	7,819.68	0.80	-0.80	0.02	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1D-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5208.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5208.00usft
Well:	COSSLETT EAST 1D-22H-H168	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

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)	
17,564.00	88.88	180.18	7,845.23	-7,493.12	2,551.98	7,911.46	0.56	0.53	0.18	
17,659.00	88.81	180.30	7,847.14	-7,588.10	2,551.58	8,002.21	0.15	-0.07	0.13	
17,754.00	91.03	179.20	7,847.27	-7,683.10	2,552.00	8,093.21	2.61	2.34	-1.16	
17,849.00	91.12	179.12	7,845.49	-7,778.07	2,553.39	8,184.48	0.13	0.09	-0.08	
17,944.00	89.68	179.08	7,844.83	-7,873.05	2,554.88	8,275.79	1.52	-1.52	-0.04	
18,038.00	89.82	178.69	7,845.24	-7,967.03	2,556.71	8,366.24	0.44	0.15	-0.41	
18,133.00	88.30	180.39	7,846.80	-8,062.01	2,557.47	8,457.33	2.40	-1.60	1.79	
18,228.00	88.32	180.34	7,849.60	-8,156.97	2,556.87	8,548.00	0.06	0.02	-0.05	
18,323.00	87.78	179.60	7,852.83	-8,251.91	2,556.92	8,638.86	0.96	-0.57	-0.78	
18,418.00	87.20	180.43	7,856.99	-8,346.82	2,556.89	8,729.65	1.07	-0.61	0.87	
LAST SURVEY - 18418' MD, 7857' TVD										
18,478.00	87.20	180.43	7,859.92	-8,406.75	2,556.44	8,786.85	0.00	0.00	0.00	
EXTRAPOLATION TO TD - 18478' MD, 460' FSL, 1409' FWL SEC 26										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
LP-COSSLETT E 1D-H1	0.00	0.00	7,780.00	1,285.35	2,570.01	1,258,857.84	3,146,965.44	40.042759°N	104.975079°W	
- actual wellpath misses target center by 52.11usft at 8785.57usft MD (7763.14 TVD, 1278.41 N, 2521.19 E)										
- Point										
PBHL-COSSLETT E 1D	0.00	0.00	7,860.00	-8,406.54	2,537.40	1,249,166.28	3,146,989.20	40.016154°N	104.975199°W	
- actual wellpath misses target center by 19.04usft at 18477.94usft MD (7859.92 TVD, -8406.69 N, 2556.44 E)										
- Point										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
7,775.00	7,062.06	1,802.31	2,252.51	KOP - 7775' MD, 7062' TVD	
8,778.46	7,761.73	1,285.35	2,520.53	~460' X-OVER PNT - 8778.46' MD, 460' FNL, 1341' FWL SEC 23	
8,916.00	7,779.61	1,149.35	2,527.64	HZ LANDING PNT - 8916' MD, 7780' TVD	
18,418.00	7,856.99	-8,346.82	2,556.89	LAST SURVEY - 18418' MD, 7857' TVD	
18,478.00	7,859.92	-8,406.75	2,556.44	EXTRAPOLATION TO TD - 18478' MD, 460' FSL, 1409' FWL SEC 26	

Checked By: _____ Approved By: _____ Date: _____