

CRESTONE PEAK RESOURCES

WELD COUNTY

SEC 22-T1N-R68W

COSSLETT EAST 1K-22H-H168

OWB

Design: FINAL SURVEY

Standard Survey Report

22 May, 2023

Project: WELD COUNTY
 Site: SEC 22-T1N-R68W
 Well: COSSLETT EAST 1K-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: 7.73°

Magnetic Field
 Strength: 51536.7snT
 Dip Angle: 66.26°
 Date: 5/16/2023
 Model: IGRF2020

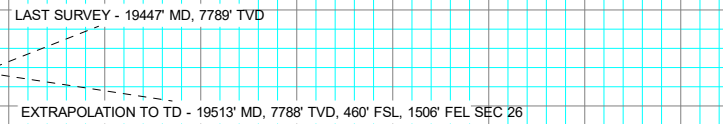
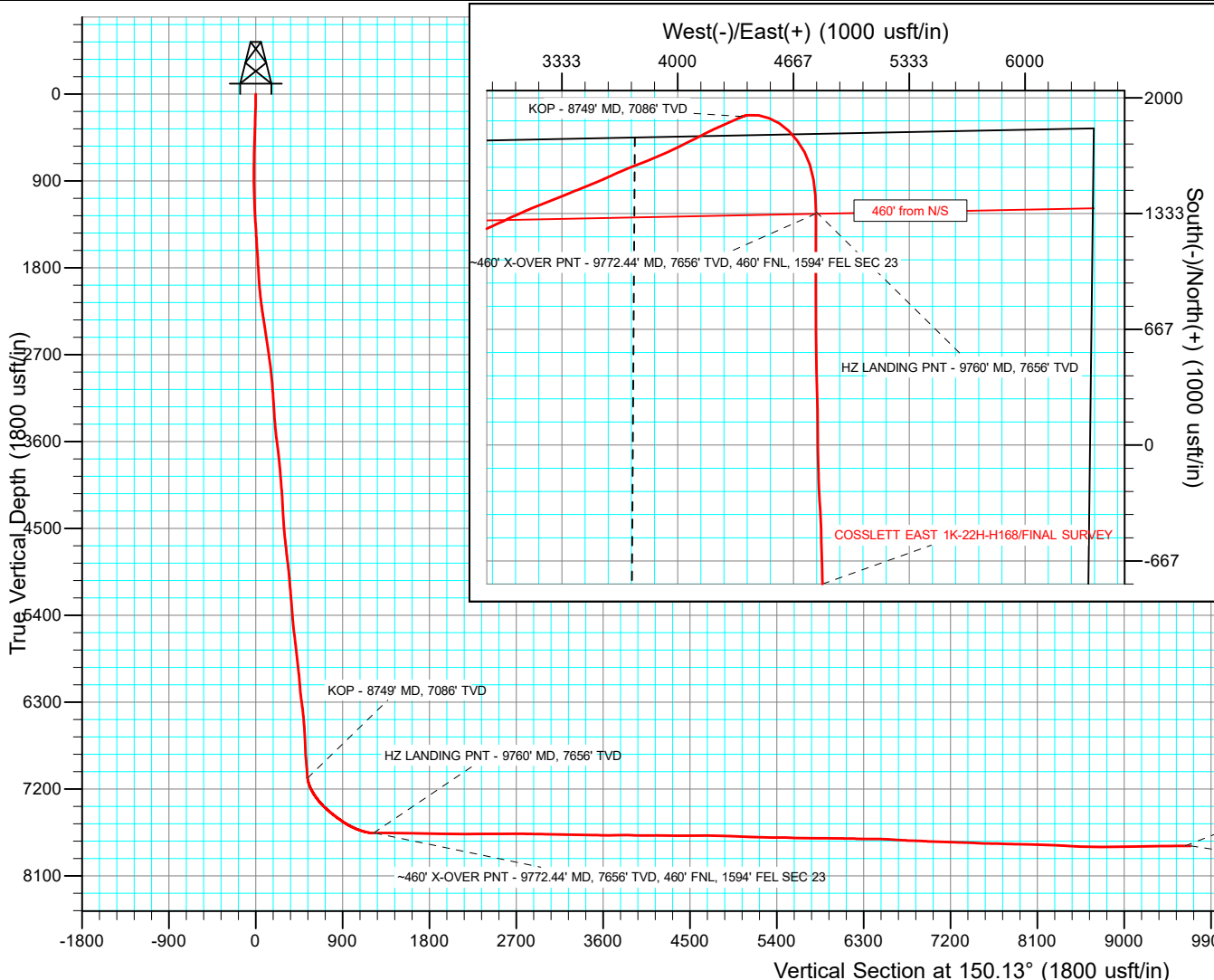
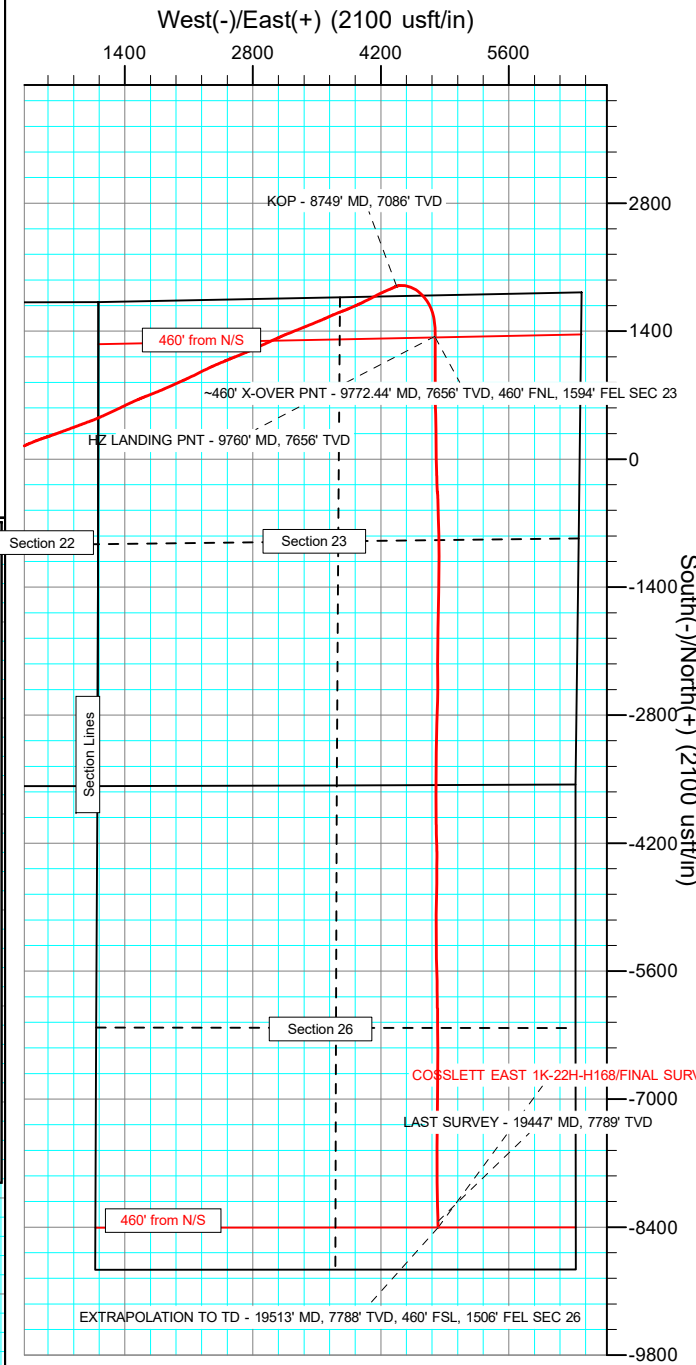
WELL DETAILS: COSSLETT EAST 1K-22H-H168

5181.00						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1257557.65	3144473.04	40.039230°N	104.984008°W	

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
8749.00	36.77	71.06	7085.87	1891.44	4372.84	537.68	4777.08	KOP - 8749' MD, 7086' TVD
9760.00	88.53	180.47	7655.92	1344.75	4795.36	1222.18	5574.94	HZ LANDING PNT - 9760' MD, 7656' TVD
9772.44	88.61	180.35	7656.23	1332.32	4795.27	1232.92	5587.38	~460' X-OVER PNT - 9772.44' MD, 7656' TVD, 460' FNL, 1594' FEL SEC 23
19447.00	90.42	178.06	7788.87	-8338.18	4824.59	9633.32	15259.60	LAST SURVEY - 19447' MD, 7789' TVD
19513.00	90.42	178.06	7788.39	-8404.14	4826.83	9691.64	15325.59	EXTRAPOLATION TO TD - 19513' MD, 7788' TVD, 460' FSL, 1506' FEL SEC 26

SHL:
 1715' FNL, 1108' FEL
 Sec 22-T1N-R68W
 ~460' X-OVER PNT:
 460' FNL, 1594' FEL
 Sec 23-T1N-R68W
 BHL:
 460' FSL, 1506' FEL
 Sec 26-T1N-R68W



Survey Report

Company: CRESTONE PEAK RESOURCES	Local Co-ordinate Reference: Well COSSLETT EAST 1K-22H-H168
Project: WELD COUNTY	TVD Reference: KB 25' @ 5206.00usft
Site: SEC 22-T1N-R68W	MD Reference: KB 25' @ 5206.00usft
Well: COSSLETT EAST 1K-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 1K-22H-H168				
Well Position	+N/-S 0.00 usft	Northing: 1,257,557.65 usft	Latitude: 40.039230°N	
	+E/-W 0.00 usft	Easting: 3,144,473.04 usft	Longitude: 104.984008°W	
Position Uncertainty	0.00 usft	Wellhead Elevation: usft	Ground Level: 5,181.00 usft	

Wellbore OWB					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/16/2023	7.73	66.26	51,536.67843604

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	150.13

Survey Program		Date 5/22/2023
From (usft)	To (usft)	Survey (Wellbore)
128.00	2,655.00	SURFACE SURVEY (OWB)
2,809.00	19,513.00	FINAL SURVEY (OWB)
		Tool Name
		MWD OWSG
		Description
		OWSG MWD - Standard
		OWSG MWD - Standard

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	
128.00	1.19	349.11	127.99	1.31	-0.25	-1.26	0.93	0.93	0.00	
219.00	1.88	355.69	218.96	3.72	-0.54	-3.50	0.78	0.76	7.23	
310.00	2.38	6.74	309.89	7.09	-0.43	-6.36	0.71	0.55	12.14	
402.00	3.59	31.80	401.77	11.43	1.31	-9.26	1.90	1.32	27.24	
496.00	3.40	29.16	495.60	16.37	4.22	-12.09	0.26	-0.20	-2.81	
686.00	3.62	37.87	685.24	26.02	10.65	-17.26	0.30	0.12	4.58	
781.00	5.79	53.62	779.92	31.23	16.35	-18.94	2.64	2.28	16.58	
876.00	7.99	62.34	874.23	37.14	26.05	-19.23	2.56	2.32	9.18	
971.00	11.31	66.86	967.87	43.87	40.47	-17.88	3.58	3.49	4.76	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1K-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5206.00usft
Well:	COSSLETT EAST 1K-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)	
1,067.00	13.25	69.50	1,061.67	51.42	59.44	-14.99	2.10	2.02	2.75	
1,161.00	16.69	69.07	1,152.47	60.02	82.14	-11.14	3.66	3.66	-0.46	
1,257.00	17.85	68.91	1,244.14	70.24	108.74	-6.75	1.21	1.21	-0.17	
1,351.00	20.26	69.60	1,332.98	81.10	137.44	-1.87	2.57	2.56	0.73	
1,446.00	21.72	69.28	1,421.68	93.05	169.30	3.63	1.54	1.54	-0.34	
1,541.00	23.20	67.23	1,509.47	106.51	203.00	8.74	1.76	1.56	-2.16	
1,636.00	25.59	68.21	1,595.98	121.37	239.31	13.94	2.55	2.52	1.03	
1,731.00	26.07	67.90	1,681.49	136.84	277.70	19.64	0.52	0.51	-0.33	
1,825.00	26.51	65.67	1,765.77	153.26	315.96	24.46	1.15	0.47	-2.37	
1,921.00	28.23	67.12	1,851.02	170.91	356.40	29.29	1.92	1.79	1.51	
2,016.00	27.93	67.95	1,934.84	188.00	397.72	35.06	0.52	-0.32	0.87	
2,111.00	28.87	69.19	2,018.41	204.50	439.78	41.70	1.17	0.99	1.31	
2,206.00	31.63	70.16	2,100.46	221.11	484.66	49.65	2.95	2.91	1.02	
2,300.00	34.59	71.35	2,179.19	238.01	533.14	59.13	3.22	3.15	1.27	
2,396.00	38.28	70.62	2,256.41	256.60	587.03	69.85	3.87	3.84	-0.76	
2,491.00	40.17	71.04	2,330.00	276.32	643.77	81.01	2.01	1.99	0.44	
2,586.00	41.43	69.97	2,401.92	297.04	702.28	92.18	1.52	1.33	-1.13	
2,655.00	41.66	69.72	2,453.56	312.81	745.24	99.91	0.41	0.33	-0.36	
2,809.00	42.73	69.50	2,567.65	348.85	842.19	116.94	0.70	0.69	-0.14	
2,998.00	40.41	69.62	2,709.04	392.64	959.70	137.49	1.23	-1.23	0.06	
3,094.00	41.28	69.37	2,781.66	414.64	1,018.50	147.70	0.92	0.91	-0.26	
3,188.00	41.68	67.94	2,852.09	437.30	1,076.49	156.93	1.09	0.43	-1.52	
3,283.00	42.17	66.23	2,922.77	462.02	1,134.95	164.61	1.31	0.52	-1.80	
3,378.00	41.83	65.37	2,993.37	488.07	1,192.93	170.89	0.70	-0.36	-0.91	
3,568.00	40.62	64.38	3,136.27	541.22	1,306.30	181.26	0.72	-0.64	-0.52	
3,663.00	40.12	64.68	3,208.65	567.69	1,361.85	185.98	0.56	-0.53	0.32	
3,757.00	39.05	64.43	3,281.10	593.42	1,415.94	190.61	1.15	-1.14	-0.27	
3,852.00	38.42	65.92	3,355.20	618.38	1,469.88	195.83	1.18	-0.66	1.57	
3,968.00	38.28	65.73	3,446.17	647.86	1,535.54	202.97	0.16	-0.12	-0.16	
4,064.00	40.17	67.52	3,520.54	671.92	1,591.27	209.86	2.29	1.97	1.86	
4,158.00	41.72	69.20	3,591.54	694.62	1,648.53	218.69	2.02	1.65	1.79	
4,348.00	40.82	67.58	3,734.35	740.76	1,765.04	236.71	0.74	-0.47	-0.85	
4,443.00	41.17	66.81	3,806.05	764.91	1,822.49	244.37	0.65	0.37	-0.81	
4,537.00	40.30	65.96	3,877.28	789.48	1,878.69	251.06	1.10	-0.93	-0.90	
4,728.00	38.37	65.58	4,025.00	839.16	1,989.09	262.97	1.02	-1.01	-0.20	
4,823.00	39.01	66.34	4,099.15	863.35	2,043.32	269.00	0.84	0.67	0.80	
4,918.00	40.81	64.29	4,172.02	888.82	2,098.69	274.49	2.35	1.89	-2.16	
5,109.00	40.74	63.52	4,316.67	943.68	2,210.71	282.70	0.27	-0.04	-0.40	
5,204.00	41.08	64.05	4,388.46	971.16	2,266.52	286.67	0.51	0.36	0.56	
5,299.00	41.43	64.42	4,459.88	998.39	2,322.94	291.16	0.45	0.37	0.39	
5,394.00	39.86	66.15	4,531.96	1,024.28	2,379.14	296.70	2.03	-1.65	1.82	
5,583.00	42.04	67.97	4,674.71	1,072.51	2,493.21	311.69	1.31	1.15	0.96	
5,677.00	39.21	66.71	4,746.05	1,096.07	2,549.69	319.39	3.13	-3.01	-1.34	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1K-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5206.00usft
Well:	COSSLETT EAST 1K-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)	
5,773.00	41.62	68.94	4,819.14	1,119.53	2,607.33	327.75	2.93	2.51	2.32	
5,868.00	41.76	67.45	4,890.08	1,143.00	2,665.99	336.62	1.05	0.15	-1.57	
5,963.00	42.46	66.84	4,960.56	1,167.74	2,724.68	344.39	0.85	0.74	-0.64	
6,058.00	40.05	64.76	5,031.97	1,193.39	2,781.82	350.61	2.92	-2.54	-2.19	
6,153.00	39.34	66.45	5,105.07	1,218.46	2,837.08	356.39	1.36	-0.75	1.78	
6,248.00	40.64	66.03	5,177.86	1,243.06	2,892.95	362.89	1.40	1.37	-0.44	
6,438.00	41.28	65.22	5,321.34	1,294.46	3,006.39	374.81	0.44	0.34	-0.43	
6,532.00	40.65	65.30	5,392.32	1,320.25	3,062.36	380.32	0.67	-0.67	0.09	
6,627.00	38.48	65.76	5,465.55	1,345.32	3,117.43	386.01	2.30	-2.28	0.48	
6,722.00	39.51	68.42	5,539.39	1,368.57	3,172.49	393.27	2.07	1.08	2.80	
6,912.00	39.90	68.61	5,685.56	1,413.03	3,285.44	410.97	0.21	0.21	0.10	
7,006.00	40.07	66.97	5,757.59	1,435.86	3,341.35	419.02	1.14	0.18	-1.74	
7,101.00	40.51	68.82	5,830.06	1,458.97	3,398.27	427.32	1.34	0.46	1.95	
7,196.00	40.21	67.32	5,902.45	1,481.94	3,455.33	435.82	1.07	-0.32	-1.58	
7,292.00	39.41	68.22	5,976.19	1,505.20	3,512.22	443.99	1.03	-0.83	0.94	
7,386.00	39.80	66.28	6,048.62	1,528.37	3,567.48	451.41	1.38	0.41	-2.06	
7,481.00	41.28	64.99	6,120.81	1,553.86	3,623.72	457.33	1.79	1.56	-1.36	
7,576.00	40.27	66.90	6,192.76	1,579.15	3,680.36	463.60	1.69	-1.06	2.01	
7,671.00	40.65	68.76	6,265.04	1,602.41	3,737.45	471.87	1.33	0.40	1.96	
7,765.00	42.53	69.11	6,335.34	1,624.83	3,795.67	481.42	2.02	2.00	0.37	
7,860.00	41.10	66.69	6,406.15	1,648.64	3,854.36	490.00	2.27	-1.51	-2.55	
7,954.00	39.63	66.55	6,477.77	1,672.80	3,910.24	496.88	1.57	-1.56	-0.15	
8,049.00	41.90	65.21	6,549.72	1,698.16	3,966.84	503.08	2.56	2.39	-1.41	
8,144.00	40.30	63.28	6,621.31	1,725.28	4,023.08	507.58	2.15	-1.68	-2.03	
8,240.00	40.73	63.55	6,694.29	1,753.19	4,078.86	511.15	0.48	0.45	0.28	
8,335.00	41.39	62.36	6,765.92	1,781.56	4,134.43	514.23	1.08	0.69	-1.25	
8,431.00	40.36	64.23	6,838.51	1,809.80	4,190.54	517.68	1.67	-1.07	1.95	
8,525.00	39.11	66.39	6,910.80	1,834.91	4,245.12	523.09	1.98	-1.33	2.30	
8,620.00	39.39	66.13	6,984.37	1,859.11	4,300.14	529.51	0.34	0.29	-0.27	
8,714.00	37.54	64.60	7,057.97	1,883.46	4,353.29	534.86	2.21	-1.97	-1.63	
8,749.00	36.77	71.06	7,085.87	1,891.44	4,372.84	537.68	11.36	-2.21	18.46	
KOP - 8749' MD, 7086' TVD										
8,809.00	36.29	82.50	7,134.14	1,899.60	4,407.47	547.86	11.36	-0.80	19.06	
8,905.00	40.10	99.32	7,209.78	1,898.29	4,466.33	578.30	11.50	3.97	17.52	
9,000.00	42.35	111.11	7,281.34	1,881.79	4,526.47	622.57	8.50	2.37	12.41	
9,094.00	45.47	122.94	7,349.17	1,852.11	4,584.24	677.08	9.33	3.32	12.59	
9,189.00	49.98	133.74	7,413.16	1,808.45	4,639.06	742.24	9.65	4.75	11.37	
9,284.00	52.18	143.48	7,472.93	1,753.06	4,687.75	814.52	8.30	2.32	10.25	
9,380.00	55.02	151.35	7,529.95	1,687.99	4,729.22	891.59	7.23	2.96	8.20	
9,474.00	62.45	161.72	7,578.80	1,614.38	4,760.86	971.19	12.29	7.90	11.03	
9,570.00	69.72	170.80	7,617.75	1,529.26	4,781.47	1,055.26	11.49	7.57	9.46	
9,665.00	77.61	175.60	7,644.47	1,438.83	4,792.18	1,139.01	9.61	8.31	5.05	
9,760.00	88.53	180.47	7,655.92	1,344.75	4,795.36	1,222.18	12.57	11.49	5.13	
HZ LANDING PNT - 9760' MD, 7656' TVD										

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1K-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5206.00usft
Well:	COSSLETT EAST 1K-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)	
9,772.44	88.61	180.35	7,656.23	1,332.32	4,795.27	1,232.92	1.20	0.68	-0.99	
~460' X-OVER PNT - 9772.44' MD, 7656' TVD, 460' FNL, 1594' FEL SEC 23										
9,856.00	89.18	179.52	7,657.84	1,248.77	4,795.37	1,305.41	1.20	0.68	-0.99	
9,951.00	90.72	179.75	7,657.92	1,153.78	4,795.97	1,388.09	1.64	1.62	0.24	
10,046.00	89.47	180.88	7,657.76	1,058.78	4,795.45	1,470.20	1.77	-1.32	1.19	
10,140.00	90.77	180.60	7,657.57	964.79	4,794.23	1,551.10	1.41	1.38	-0.30	
10,331.00	88.20	179.25	7,659.28	773.82	4,794.48	1,716.83	1.52	-1.35	-0.71	
10,427.00	88.36	179.47	7,662.16	677.87	4,795.56	1,800.56	0.28	0.17	0.23	
10,521.00	88.89	179.12	7,664.42	583.90	4,796.71	1,882.62	0.68	0.56	-0.37	
10,616.00	89.63	178.99	7,665.65	488.93	4,798.28	1,965.76	0.79	0.78	-0.14	
10,711.00	90.59	178.62	7,665.46	393.95	4,800.26	2,049.11	1.08	1.01	-0.39	
10,806.00	91.63	178.55	7,663.62	299.00	4,802.61	2,132.62	1.10	1.09	-0.07	
10,901.00	89.00	179.14	7,663.10	204.03	4,804.52	2,215.92	2.84	-2.77	0.62	
10,996.00	89.61	179.79	7,664.25	109.04	4,805.41	2,298.74	0.94	0.64	0.68	
11,091.00	89.99	179.08	7,664.59	14.04	4,806.34	2,381.58	0.85	0.40	-0.75	
11,187.00	90.17	178.48	7,664.45	-81.93	4,808.39	2,465.82	0.65	0.19	-0.62	
11,282.00	90.64	178.72	7,663.78	-176.90	4,810.71	2,549.33	0.56	0.49	0.25	
11,377.00	90.96	177.26	7,662.45	-271.83	4,814.04	2,633.31	1.57	0.34	-1.54	
11,472.00	89.29	175.80	7,662.25	-366.65	4,819.79	2,718.39	2.33	-1.76	-1.54	
11,567.00	88.81	178.57	7,663.82	-461.51	4,824.45	2,802.98	2.96	-0.51	2.92	
11,662.00	89.13	178.37	7,665.53	-556.47	4,826.99	2,886.58	0.40	0.34	-0.21	
11,757.00	89.19	178.54	7,666.92	-651.42	4,829.55	2,970.19	0.19	0.06	0.18	
11,852.00	89.08	178.26	7,668.36	-746.37	4,832.20	3,053.85	0.32	-0.12	-0.29	
12,138.00	88.90	180.58	7,673.40	-1,032.29	4,835.10	3,303.23	0.81	-0.06	0.81	
12,233.00	89.13	179.98	7,675.03	-1,127.28	4,834.63	3,385.37	0.68	0.24	-0.63	
12,328.00	89.35	179.68	7,676.29	-1,222.27	4,834.92	3,467.88	0.39	0.23	-0.32	
12,423.00	89.51	178.52	7,677.24	-1,317.25	4,836.41	3,550.99	1.23	0.17	-1.22	
12,517.00	89.55	181.20	7,678.01	-1,411.24	4,836.64	3,632.60	2.85	0.04	2.85	
12,612.00	89.98	181.92	7,678.40	-1,506.20	4,834.05	3,713.66	0.88	0.45	0.76	
12,707.00	91.11	182.74	7,677.49	-1,601.12	4,830.19	3,794.05	1.47	1.19	0.86	
12,802.00	88.59	181.73	7,677.74	-1,696.04	4,826.49	3,874.51	2.86	-2.65	-1.06	
12,897.00	89.10	181.19	7,679.66	-1,790.98	4,824.07	3,955.64	0.78	0.54	-0.57	
12,992.00	89.94	180.81	7,680.45	-1,885.97	4,822.41	4,037.18	0.97	0.88	-0.40	
13,088.00	90.62	180.80	7,679.98	-1,981.95	4,821.06	4,119.74	0.71	0.71	-0.01	
13,183.00	88.96	179.71	7,680.33	-2,076.95	4,820.64	4,201.91	2.09	-1.75	-1.15	
13,278.00	89.27	179.81	7,681.80	-2,171.94	4,821.03	4,284.47	0.34	0.33	0.11	
13,374.00	89.34	179.66	7,682.96	-2,267.93	4,821.48	4,367.93	0.17	0.07	-0.16	
13,468.00	90.01	179.93	7,683.50	-2,361.93	4,821.81	4,449.61	0.77	0.71	0.29	
13,563.00	90.39	179.77	7,683.17	-2,456.92	4,822.06	4,532.11	0.43	0.40	-0.17	
13,658.00	89.41	181.11	7,683.33	-2,551.92	4,821.33	4,614.13	1.75	-1.03	1.41	
13,753.00	89.93	180.85	7,683.88	-2,646.90	4,819.71	4,695.68	0.61	0.55	-0.27	
13,848.00	90.42	181.54	7,683.59	-2,741.88	4,817.73	4,777.06	0.89	0.52	0.73	
13,944.00	88.27	181.85	7,684.69	-2,837.83	4,814.89	4,858.84	2.26	-2.24	0.32	

Survey Report

Company:	CRESTONE PEAK RESOURCES	Local Co-ordinate Reference:	Well COSSLETT EAST 1K-22H-H168
Project:	WELD COUNTY	TVD Reference:	KB 25' @ 5206.00usft
Site:	SEC 22-T1N-R68W	MD Reference:	KB 25' @ 5206.00usft
Well:	COSSLETT EAST 1K-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)	
14,038.00	88.03	181.59	7,687.72	-2,931.73	4,812.07	4,938.87	0.38	-0.26	-0.28	
14,133.00	87.93	181.57	7,691.07	-3,026.64	4,809.45	5,019.86	0.11	-0.11	-0.02	
14,229.00	87.99	181.30	7,694.49	-3,122.55	4,807.05	5,101.83	0.29	0.06	-0.28	
14,323.00	87.74	180.77	7,697.99	-3,216.47	4,805.35	5,182.43	0.62	-0.27	-0.56	
14,418.00	89.22	180.20	7,700.51	-3,311.43	4,804.55	5,264.38	1.67	1.56	-0.60	
14,513.00	89.42	179.66	7,701.64	-3,406.42	4,804.66	5,346.81	0.61	0.21	-0.57	
14,608.00	90.21	180.23	7,701.94	-3,501.42	4,804.76	5,429.23	1.03	0.83	0.60	
14,703.00	88.07	180.34	7,703.37	-3,596.40	4,804.28	5,511.36	2.26	-2.25	0.12	
14,799.00	88.51	180.21	7,706.23	-3,692.36	4,803.82	5,594.34	0.48	0.46	-0.14	
14,893.00	89.23	179.37	7,708.09	-3,786.34	4,804.17	5,676.01	1.18	0.77	-0.89	
14,988.00	89.65	179.62	7,709.02	-3,881.33	4,805.00	5,758.80	0.51	0.44	0.26	
15,083.00	90.42	178.94	7,708.96	-3,976.32	4,806.20	5,841.76	1.08	0.81	-0.72	
15,178.00	88.89	179.19	7,709.53	-4,071.30	4,807.75	5,924.90	1.63	-1.61	0.26	
15,273.00	89.21	178.84	7,711.10	-4,166.27	4,809.38	6,008.07	0.50	0.34	-0.37	
15,369.00	89.55	177.91	7,712.14	-4,262.23	4,812.10	6,092.63	1.03	0.35	-0.97	
15,463.00	89.08	180.38	7,713.27	-4,356.20	4,813.51	6,174.82	2.67	-0.50	2.63	
15,557.00	88.71	180.58	7,715.08	-4,450.18	4,812.72	6,255.92	0.45	-0.39	0.21	
15,652.00	89.25	180.47	7,716.77	-4,545.16	4,811.85	6,337.85	0.58	0.57	-0.12	
15,748.00	90.46	180.45	7,717.01	-4,641.16	4,811.08	6,420.71	1.26	1.26	-0.02	
15,843.00	87.85	180.67	7,718.41	-4,736.14	4,810.15	6,502.61	2.76	-2.75	0.23	
15,938.00	87.24	180.54	7,722.48	-4,831.04	4,809.15	6,584.41	0.66	-0.64	-0.14	
16,033.00	86.42	180.32	7,727.74	-4,925.89	4,808.43	6,666.30	0.89	-0.86	-0.23	
16,128.00	88.20	180.83	7,732.20	-5,020.78	4,807.48	6,748.11	1.95	1.87	0.54	
16,223.00	87.80	180.43	7,735.51	-5,115.72	4,806.44	6,829.91	0.60	-0.42	-0.42	
16,317.00	87.78	180.35	7,739.14	-5,209.64	4,805.80	6,911.05	0.09	-0.02	-0.09	
16,412.00	87.99	179.20	7,742.64	-5,304.58	4,806.17	6,993.55	1.23	0.22	-1.21	
16,506.00	88.28	179.07	7,745.70	-5,398.52	4,807.59	7,075.72	0.34	0.31	-0.14	
16,602.00	88.50	178.57	7,748.40	-5,494.46	4,809.57	7,159.90	0.57	0.23	-0.52	
16,697.00	88.36	178.35	7,751.00	-5,589.39	4,812.12	7,243.49	0.27	-0.15	-0.23	
16,791.00	88.68	177.67	7,753.43	-5,683.30	4,815.38	7,326.55	0.80	0.34	-0.72	
16,886.00	87.92	180.33	7,756.25	-5,778.23	4,817.04	7,409.70	2.91	-0.80	2.80	
16,981.00	87.94	179.56	7,759.68	-5,873.17	4,817.13	7,492.07	0.81	0.02	-0.81	
17,076.00	87.97	178.76	7,763.07	-5,968.10	4,818.52	7,575.08	0.84	0.03	-0.84	
17,172.00	88.98	179.72	7,765.62	-6,064.05	4,819.79	7,658.92	1.45	1.05	1.00	
17,267.00	88.87	179.87	7,767.41	-6,159.04	4,820.13	7,741.45	0.20	-0.12	0.16	
17,362.00	89.01	178.96	7,769.16	-6,254.02	4,821.10	7,824.30	0.97	0.15	-0.96	
17,457.00	88.71	179.63	7,771.05	-6,348.99	4,822.27	7,907.24	0.77	-0.32	0.71	
17,552.00	88.62	179.57	7,773.27	-6,443.96	4,822.94	7,989.92	0.11	-0.09	-0.06	
17,647.00	88.76	179.59	7,775.44	-6,538.93	4,823.63	8,072.62	0.15	0.15	0.02	
17,742.00	88.99	179.41	7,777.30	-6,633.91	4,824.46	8,155.40	0.31	0.24	-0.19	
17,932.00	87.02	180.54	7,783.92	-6,823.78	4,824.54	8,320.09	1.20	-1.04	0.59	
18,121.00	87.94	181.98	7,792.23	-7,012.55	4,820.39	8,481.71	0.90	0.49	0.76	
18,217.00	87.86	181.80	7,795.75	-7,108.43	4,817.23	8,563.28	0.21	-0.08	-0.19	

Survey Report

Company: CRESTONE PEAK RESOURCES	Local Co-ordinate Reference: Well COSSLETT EAST 1K-22H-H168
Project: WELD COUNTY	TVD Reference: KB 25' @ 5206.00usft
Site: SEC 22-T1N-R68W	MD Reference: KB 25' @ 5206.00usft
Well: COSSLETT EAST 1K-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)	
18,312.00	89.12	180.12	7,798.25	-7,203.38	4,815.64	8,644.82	2.21	1.33	-1.77	
18,406.00	89.53	179.54	7,799.36	-7,297.37	4,815.92	8,726.47	0.76	0.44	-0.62	
18,501.00	90.85	180.89	7,799.04	-7,392.37	4,815.56	8,808.66	1.99	1.39	1.42	
18,597.00	91.49	179.72	7,797.08	-7,488.34	4,815.05	8,891.63	1.39	0.67	-1.22	
18,691.00	89.92	180.76	7,795.93	-7,582.33	4,814.66	8,972.94	2.00	-1.67	1.11	
18,787.00	90.12	179.13	7,795.89	-7,678.33	4,814.75	9,056.23	1.71	0.21	-1.70	
18,882.00	90.63	179.44	7,795.27	-7,773.32	4,815.93	9,139.19	0.63	0.54	0.33	
18,978.00	90.89	179.77	7,794.00	-7,869.31	4,816.59	9,222.76	0.44	0.27	0.34	
19,073.00	91.53	179.00	7,791.99	-7,964.28	4,817.61	9,305.62	1.05	0.67	-0.81	
19,168.00	90.39	179.88	7,790.40	-8,059.26	4,818.54	9,388.45	1.52	-1.20	0.93	
19,264.00	90.45	178.86	7,789.70	-8,155.25	4,819.60	9,472.21	1.06	0.06	-1.06	
19,358.00	90.08	178.40	7,789.26	-8,249.22	4,821.85	9,554.82	0.63	-0.39	-0.49	
19,447.00	90.42	178.06	7,788.87	-8,338.18	4,824.59	9,633.32	0.54	0.38	-0.38	
LAST SURVEY - 19447' MD, 7789' TVD										
19,513.00	90.42	178.06	7,788.39	-8,404.14	4,826.83	9,691.64	0.00	0.00	0.00	
EXTRAPOLATION TO TD - 19513' MD, 7788' TVD, 460' FSL, 1506' FEL 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 1K-H1 - hit/miss target - Shape - Point	0.00	0.00	7,655.00	1,332.32	4,829.51	1,258,918.00	3,149,294.54	40.042886°N	104.966759°W	
- actual wellpath misses target center by 34.26usft at 9772.16usft MD (7656.22 TVD, 1332.59 N, 4795.27 E)										
PBHL-COSSLETT E 1K- - actual wellpath misses target center by 31.30usft at 19512.29usft MD (7788.39 TVD, -8403.43 N, 4826.80 E) - Point	0.00	0.00	7,780.00	-8,404.38	4,796.67	1,249,181.63	3,149,318.36	40.016158°N	104.966883°W	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
8,749.00	7,085.87	1,891.44	4,372.84	KOP - 8749' MD, 7086' TVD	
9,760.00	7,655.92	1,344.75	4,795.36	HZ LANDING PNT - 9760' MD, 7656' TVD	
9,772.44	7,656.23	1,332.32	4,795.27	~460' X-OVER PNT - 9772.44' MD, 7656' TVD, 460' FNL, 1594' FEL SEC 23	
19,447.00	7,788.87	-8,338.18	4,824.59	LAST SURVEY - 19447' MD, 7789' TVD	
19,513.00	7,788.39	-8,404.14	4,826.83	EXTRAPOLATION TO TD - 19513' MD, 7788' TVD, 460' FSL, 1506' FEL SEC 2	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------