

# **CRESTONE PEAK RESOURCES**

**WELD COUNTY**

**SEC 22-T1N-R68W**

**COSSLETT EAST FED 1A-22H-H168**

**OWB**

**Design: FINAL SURVEY**

## **Standard Survey Report**

**10 April, 2023**

Project: WELD COUNTY  
 Site: SEC 22-T1N-R68W  
 Well: COSSLETT EAST FED 1A-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: 7.74°

Magnetic Field  
 Strength: 51549.3snT  
 Dip Angle: 66.26°  
 Date: 4/2/2023  
 Model: IGRF2020

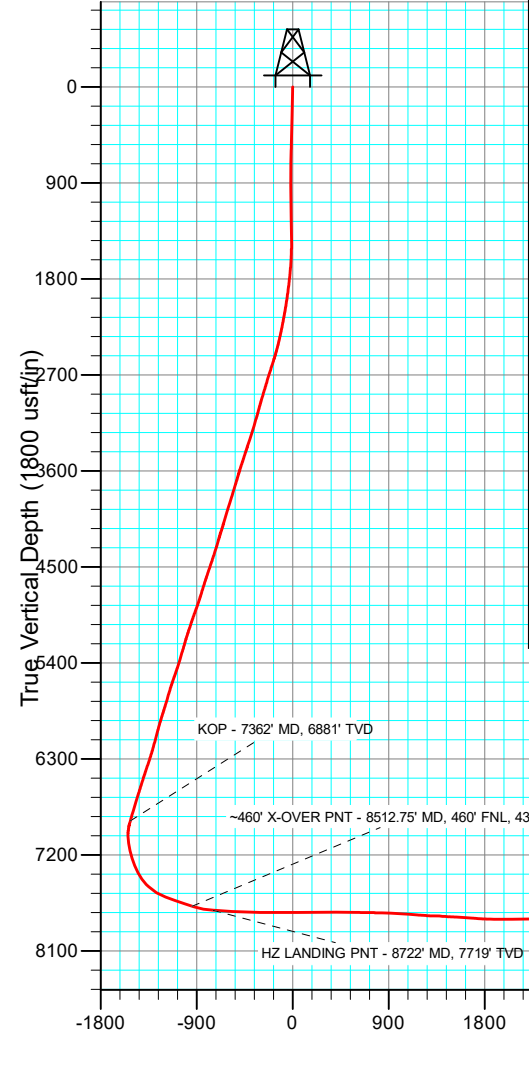
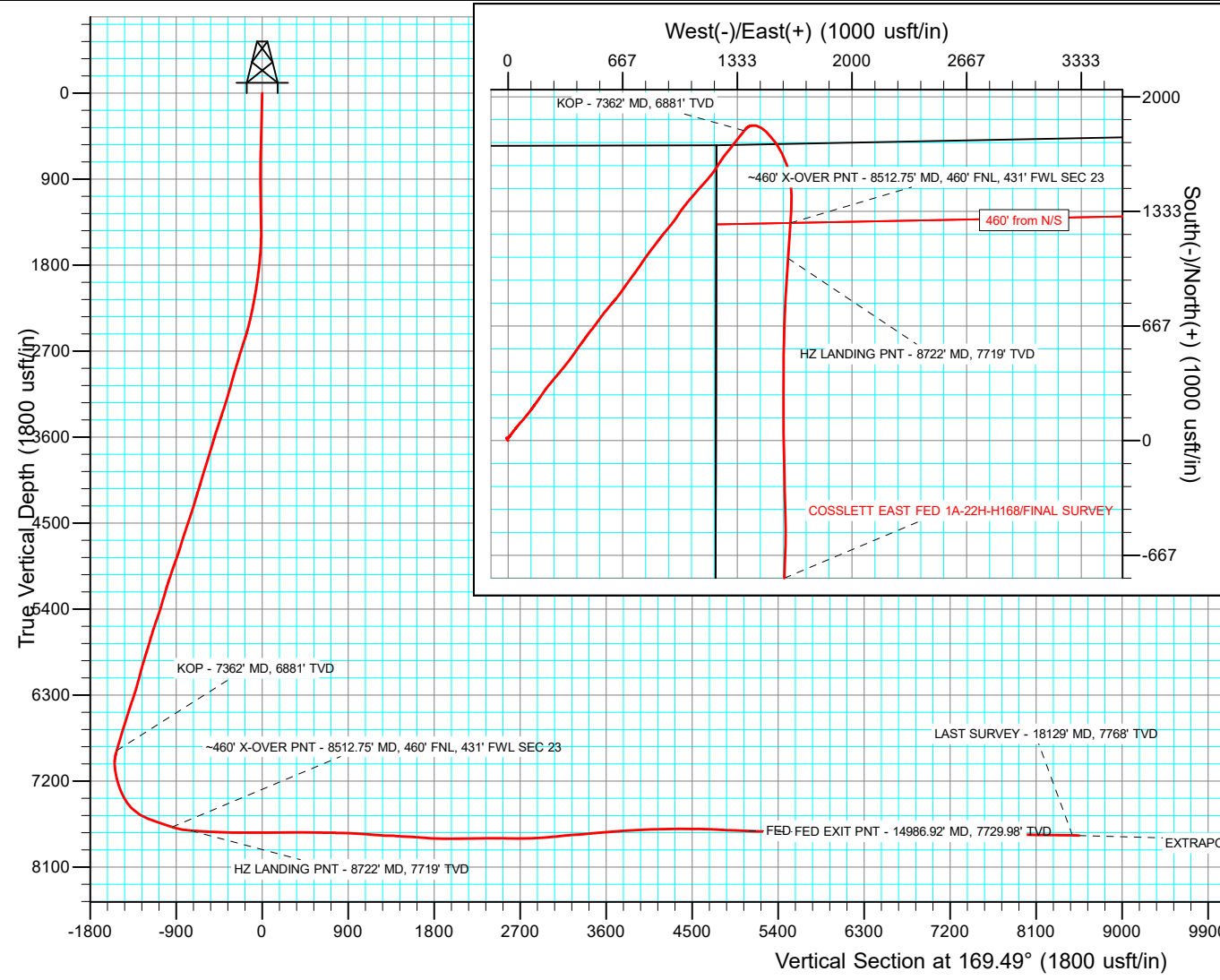
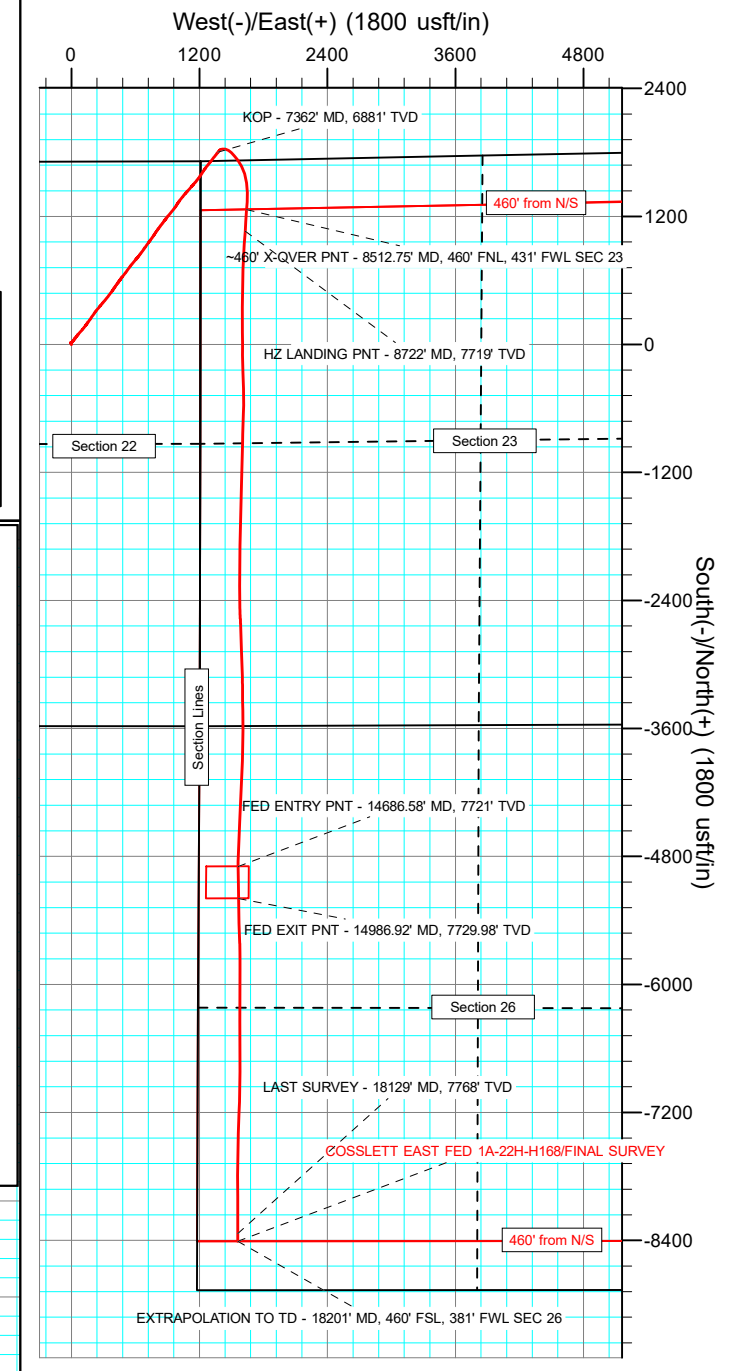
WELL DETAILS: COSSLETT EAST FED 1A-22H-H168

+N/-S	+E/-W	Northing	Easting	5183.00 Latitude	Longitude	Slot
0.00	0.00	1257557.80	3144372.80	40.039232°N	104.984366°W	

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
7362.00	23.15	38.69	6880.55	1802.23	1373.92	-1521.51	2295.41	KOP - 7362' MD, 6881' TVD
8512.75	74.02	183.87	7679.95	1265.24	1641.57	-944.73	3017.67	~460' X-OVER PNT - 8512.75' MD, 460' FNL, 431' FWL SEC 23
8722.00	86.98	183.61	7719.28	1060.62	1627.98	-746.01	3222.58	HZ LANDING PNT - 8722' MD, 7719' TVD
14686.58	87.94	179.71	7721.03	-4894.52	1562.66	5097.39	9180.55	FED ENTRY PNT - 14686.58' MD, 7721' TVD
14986.92	89.32	179.24	7729.98	-5194.69	1566.52	5393.24	9480.75	FED EXIT PNT - 14986.92' MD, 7729.98' TVD
18129.00	89.80	180.13	7767.86	-8335.50	1559.22	8480.07	12622.14	LAST SURVEY - 18129' MD, 7768' TVD
18201.00	89.80	180.13	7768.11	-8407.50	1559.06	8550.84	12694.14	EXTRAPOLATION TO TD - 18201' MD, 460' FSL, 381' FWL SEC 26

SHL:  
 1715' FNL, 1209' FEL  
 Sec 22-T1N-R68W  
 ~460' X-OVER PNT:  
 460' FNL, 431' FWL  
 Sec 23-T1N-R68W  
 BHL:  
 460' FSL, 381' FWL  
 Sec 26-T1N-R68W



## Survey Report

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

<b>Project</b> WELD COUNTY			
<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		Using geodetic scale factor

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

<b>Well</b> COSSLETT EAST FED 1A-22H-H168			
<b>Well Position</b>	+N/-S	0.00 usft	<b>Northing:</b> 1,257,557.80 usft
	+E/-W	0.00 usft	<b>Easting:</b> 3,144,372.80 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40.039232°N
		<b>Longitude:</b>	104.984366°W
		<b>Ground Level:</b>	5,183.00 usft

<b>Wellbore</b> OWB					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	4/2/2023	7.74	66.26	51,549.32491380

<b>Design</b> FINAL SURVEY					
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	169.49	

<b>Survey Program</b>		<b>Date</b> 4/10/2023			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
158.00	2,594.00	SURFACE SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard	
2,721.00	18,201.00	FINAL SURVEY (OWB)	MWD OWSG	OWSG MWD - Standard	

<b>Survey</b>										
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	0.00
158.00	1.59	337.25	157.98	2.02	-0.85	-2.14	1.01	1.01	0.00	
249.00	2.01	335.68	248.93	4.64	-1.99	-4.93	0.46	0.46	-1.73	
341.00	1.20	350.51	340.90	7.06	-2.82	-7.46	0.98	-0.88	16.12	
432.00	1.06	346.69	431.88	8.82	-3.17	-9.25	0.17	-0.15	-4.20	
526.00	1.45	338.70	525.86	10.77	-3.80	-11.29	0.45	0.41	-8.50	
686.00	2.06	334.60	685.78	15.26	-5.77	-16.05	0.39	0.38	-2.56	
781.00	0.55	274.43	780.76	16.84	-6.96	-17.82	1.95	-1.59	-63.34	
876.00	0.79	241.39	875.75	16.56	-7.99	-17.74	0.47	0.25	-34.78	
971.00	1.17	258.87	970.74	16.06	-9.51	-17.52	0.50	0.40	18.40	

## Survey Report

<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>Local Co-ordinate Reference:</b>	Well COSSLETT EAST FED 1A-22H-H168
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 25' @ 5208.00usft
<b>Site:</b>	SEC 22-T1N-R68W	<b>MD Reference:</b>	KB 25' @ 5208.00usft
<b>Well:</b>	COSSLETT EAST FED 1A-22H-H168	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	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	1.07	158.49	1,066.73	15.03	-10.14	-16.63	1.79	-0.10	-104.56	
1,161.00	1.38	147.30	1,160.70	13.26	-9.21	-14.72	0.42	0.33	-11.90	
1,257.00	1.38	166.24	1,256.68	11.17	-8.31	-12.50	0.47	0.00	19.73	
1,351.00	0.84	112.84	1,350.66	9.80	-7.41	-10.99	1.18	-0.57	-56.81	
1,446.00	1.11	95.19	1,445.65	9.45	-5.85	-10.36	0.42	0.28	-18.58	
1,541.00	2.69	44.87	1,540.60	10.94	-3.36	-11.37	2.27	1.66	-52.97	
1,636.00	5.23	37.47	1,635.36	15.96	0.85	-15.54	2.72	2.67	-7.79	
1,731.00	7.94	39.22	1,729.73	24.48	7.63	-22.68	2.86	2.85	1.84	
1,825.00	9.87	38.24	1,822.59	35.84	16.72	-32.19	2.06	2.05	-1.04	
1,921.00	11.30	37.28	1,916.96	49.79	27.51	-43.94	1.50	1.49	-1.00	
2,016.00	12.79	38.30	2,009.86	65.45	39.67	-57.12	1.58	1.57	1.07	
2,111.00	15.01	38.63	2,102.07	83.31	53.87	-72.09	2.34	2.34	0.35	
2,206.00	17.02	41.32	2,193.38	103.37	70.73	-88.74	2.25	2.12	2.83	
2,300.00	18.55	41.31	2,282.89	124.93	89.69	-106.49	1.63	1.63	-0.01	
2,396.00	19.86	39.28	2,373.54	149.03	110.09	-126.45	1.53	1.36	-2.11	
2,491.00	21.32	36.33	2,462.48	175.43	130.54	-148.69	1.88	1.54	-3.11	
2,594.00	25.49	36.53	2,556.98	208.34	154.84	-176.62	4.05	4.05	0.19	
2,721.00	23.51	34.80	2,672.54	251.10	185.56	-213.06	1.66	-1.56	-1.36	
2,816.00	23.59	34.25	2,759.63	282.38	207.08	-239.89	0.25	0.08	-0.58	
2,911.00	24.40	38.03	2,846.42	313.55	229.86	-266.38	1.83	0.85	3.98	
3,006.00	25.16	40.32	2,932.68	344.40	255.02	-292.13	1.29	0.80	2.41	
3,101.00	22.86	39.75	3,019.45	373.99	279.89	-316.69	2.43	-2.42	-0.60	
3,196.00	24.49	40.35	3,106.45	403.19	304.44	-340.92	1.73	1.72	0.63	
3,385.00	25.29	36.99	3,277.91	465.29	354.10	-392.93	0.86	0.42	-1.78	
3,480.00	26.60	35.98	3,363.33	498.71	378.80	-421.28	1.46	1.38	-1.06	
3,576.00	23.91	34.29	3,450.15	532.18	402.39	-449.89	2.90	-2.80	-1.76	
3,692.00	26.03	36.74	3,555.30	572.01	430.87	-483.86	2.03	1.83	2.11	
3,786.00	22.64	34.70	3,640.94	603.42	453.51	-510.62	3.72	-3.61	-2.17	
3,882.00	24.85	38.78	3,728.81	634.34	476.67	-536.80	2.87	2.30	4.25	
3,976.00	24.95	38.03	3,814.08	665.35	501.25	-562.81	0.35	0.11	-0.80	
4,072.00	24.42	34.84	3,901.31	697.59	525.07	-590.16	1.49	-0.55	-3.32	
4,261.00	24.28	40.02	4,073.51	759.42	572.38	-642.33	1.13	-0.07	2.74	
4,356.00	27.20	40.03	4,159.08	791.01	598.91	-668.56	3.07	3.07	0.01	
4,450.00	23.40	39.25	4,244.05	821.93	624.55	-694.28	4.06	-4.04	-0.83	
4,545.00	25.01	37.08	4,330.69	852.56	648.59	-720.01	1.94	1.69	-2.28	
4,640.00	24.90	33.95	4,416.83	885.17	671.87	-747.84	1.39	-0.12	-3.29	
4,735.00	26.11	36.89	4,502.57	918.49	695.59	-776.26	1.84	1.27	3.09	
4,831.00	26.66	35.69	4,588.57	952.87	720.84	-805.47	0.80	0.57	-1.25	
4,926.00	24.03	36.59	4,674.42	985.72	744.81	-833.40	2.80	-2.77	0.95	
5,022.00	23.52	33.81	4,762.28	1,017.33	767.12	-860.41	1.28	-0.53	-2.90	
5,117.00	25.91	34.41	4,848.57	1,050.21	789.40	-888.68	2.53	2.52	0.63	
5,212.00	28.08	35.79	4,933.21	1,085.48	814.20	-918.83	2.38	2.28	1.45	
5,307.00	26.66	38.70	5,017.58	1,120.25	840.61	-948.20	2.05	-1.49	3.06	

## Survey Report

<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>Local Co-ordinate Reference:</b>	Well COSSLETT EAST FED 1A-22H-H168
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 25' @ 5208.00usft
<b>Site:</b>	SEC 22-T1N-R68W	<b>MD Reference:</b>	KB 25' @ 5208.00usft
<b>Well:</b>	COSSLETT EAST FED 1A-22H-H168	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	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)	
5,401.00	26.46	36.20	5,101.66	1,153.61	866.16	-976.34	1.21	-0.21	-2.66	
5,496.00	23.56	38.27	5,187.75	1,185.60	890.43	-1,003.38	3.19	-3.05	2.18	
5,591.00	24.97	40.43	5,274.35	1,215.77	915.19	-1,028.53	1.75	1.48	2.27	
5,685.00	25.22	39.28	5,359.48	1,246.38	940.74	-1,053.96	0.58	0.27	-1.22	
5,781.00	25.73	36.79	5,446.15	1,278.90	966.17	-1,081.30	1.24	0.53	-2.59	
5,876.00	25.93	31.66	5,531.67	1,313.09	989.42	-1,110.68	2.36	0.21	-5.40	
5,971.00	24.73	36.93	5,617.54	1,346.66	1,012.27	-1,139.53	2.69	-1.26	5.55	
6,066.00	24.41	39.14	5,703.94	1,377.77	1,036.60	-1,165.68	1.02	-0.34	2.33	
6,161.00	25.45	40.18	5,790.09	1,408.60	1,062.16	-1,191.32	1.19	1.09	1.09	
6,256.00	27.60	41.49	5,875.09	1,440.68	1,089.91	-1,217.81	2.35	2.26	1.38	
6,351.00	25.33	41.58	5,960.13	1,472.37	1,117.98	-1,243.85	2.39	-2.39	0.09	
6,446.00	23.14	42.25	6,046.75	1,501.39	1,144.02	-1,267.64	2.32	-2.31	0.71	
6,540.00	23.11	39.95	6,133.20	1,529.21	1,168.29	-1,290.56	0.96	-0.03	-2.45	
6,635.00	23.59	36.91	6,220.42	1,558.70	1,191.68	-1,315.30	1.37	0.51	-3.20	
6,730.00	24.29	32.98	6,307.25	1,590.29	1,213.73	-1,342.34	1.83	0.74	-4.14	
6,825.00	24.89	32.23	6,393.64	1,623.59	1,235.03	-1,371.20	0.71	0.63	-0.79	
6,919.00	25.29	37.78	6,478.78	1,656.20	1,257.88	-1,399.09	2.54	0.43	5.90	
7,014.00	26.32	39.38	6,564.31	1,688.52	1,283.68	-1,426.17	1.31	1.08	1.68	
7,109.00	24.81	37.49	6,650.00	1,720.62	1,309.17	-1,453.08	1.81	-1.59	-1.99	
7,204.00	24.54	38.32	6,736.33	1,751.91	1,333.54	-1,479.40	0.46	-0.28	0.87	
7,300.00	24.21	39.04	6,823.77	1,782.84	1,358.30	-1,505.30	0.46	-0.34	0.75	
7,362.00	23.15	38.69	6,880.55	1,802.23	1,373.92	-1,521.51	1.72	-1.70	-0.57	
<b>KOP - 7362' MD, 6881' TVD</b>										
7,394.00	22.61	38.49	6,910.03	1,811.95	1,381.68	-1,529.66	1.72	-1.70	-0.61	
7,489.00	21.04	75.79	6,998.64	1,830.52	1,409.71	-1,542.81	14.46	-1.65	39.26	
7,584.00	19.73	101.02	7,087.86	1,831.65	1,442.05	-1,538.02	9.28	-1.38	26.56	
7,679.00	20.66	123.48	7,177.15	1,819.32	1,471.81	-1,520.47	8.17	0.98	23.64	
7,773.00	23.48	134.11	7,264.29	1,797.12	1,499.11	-1,493.67	5.19	3.00	11.31	
7,868.00	29.06	138.71	7,349.46	1,766.59	1,527.95	-1,458.39	6.25	5.87	4.84	
7,962.00	38.77	143.90	7,427.39	1,725.55	1,560.43	-1,412.11	10.77	10.33	5.52	
8,057.00	48.09	153.44	7,496.38	1,669.71	1,593.88	-1,351.11	11.97	9.81	10.04	
8,152.00	58.83	161.31	7,552.91	1,599.31	1,622.82	-1,276.62	13.10	11.31	8.28	
8,248.00	70.24	172.25	7,594.22	1,515.16	1,642.18	-1,190.35	15.70	11.89	11.40	
8,343.00	70.65	179.25	7,626.05	1,425.96	1,648.81	-1,101.43	6.96	0.43	7.37	
8,439.00	70.87	183.89	7,657.70	1,335.38	1,646.32	-1,012.83	4.57	0.23	4.83	
8,512.75	74.02	183.87	7,679.95	1,265.24	1,641.57	-944.73	4.27	4.27	-0.03	
<b>-460' X-OVER PNT - 8512.75' MD, 460' FNL, 431' FWL SEC 23</b>										
8,533.00	74.88	183.86	7,685.38	1,245.77	1,640.25	-925.83	4.27	4.27	-0.03	
8,628.00	78.40	183.85	7,707.33	1,153.57	1,634.04	-836.30	3.71	3.71	-0.01	
8,722.00	86.98	183.61	7,719.28	1,060.62	1,627.98	-746.01	9.13	9.13	-0.26	
<b>HZ LANDING PNT - 8722' MD, 7719' TVD</b>										
8,817.00	86.66	183.51	7,724.55	965.95	1,622.09	-654.00	0.35	-0.34	-0.11	
8,912.00	87.37	183.33	7,729.49	871.24	1,616.43	-561.92	0.77	0.75	-0.19	
9,007.00	86.90	183.36	7,734.24	776.53	1,610.90	-469.80	0.50	-0.49	0.03	

## Survey Report

<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>Local Co-ordinate Reference:</b>	Well COSSLETT EAST FED 1A-22H-H168
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 25' @ 5208.00usft
<b>Site:</b>	SEC 22-T1N-R68W	<b>MD Reference:</b>	KB 25' @ 5208.00usft
<b>Well:</b>	COSSLETT EAST FED 1A-22H-H168	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	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)	
9,102.00	88.35	181.81	7,738.18	681.71	1,606.62	-377.35	2.23	1.53	-1.63	
9,197.00	90.37	180.99	7,739.24	586.75	1,604.29	-284.41	2.29	2.13	-0.86	
9,292.00	90.08	180.69	7,738.87	491.76	1,602.90	-191.26	0.44	-0.31	-0.32	
9,387.00	89.59	180.14	7,739.14	396.76	1,602.21	-97.98	0.78	-0.52	-0.58	
9,482.00	90.90	180.59	7,738.73	301.77	1,601.61	-4.69	1.46	1.38	0.47	
9,577.00	90.78	179.48	7,737.34	206.78	1,601.55	88.69	1.18	-0.13	-1.17	
9,673.00	90.60	179.83	7,736.18	110.79	1,602.13	183.18	0.41	-0.19	0.36	
9,768.00	89.82	179.28	7,735.84	15.79	1,602.87	276.72	1.00	-0.82	-0.58	
9,864.00	89.56	178.91	7,736.36	-80.19	1,604.38	371.37	0.47	-0.27	-0.39	
9,959.00	88.88	178.84	7,737.65	-175.16	1,606.25	465.09	0.72	-0.72	-0.07	
10,054.00	89.82	178.88	7,738.73	-270.14	1,608.14	558.82	0.99	0.99	0.04	
10,148.00	89.38	178.34	7,739.38	-364.11	1,610.42	651.63	0.74	-0.47	-0.57	
10,244.00	89.08	178.00	7,740.67	-460.05	1,613.48	746.52	0.47	-0.31	-0.35	
10,339.00	88.81	181.37	7,742.42	-555.02	1,614.01	839.99	3.56	-0.28	3.55	
10,434.00	86.91	181.96	7,745.97	-649.91	1,611.25	932.79	2.09	-2.00	0.62	
10,529.00	86.61	181.79	7,751.34	-744.71	1,608.14	1,025.43	0.36	-0.32	-0.18	
10,624.00	85.91	181.49	7,757.54	-839.46	1,605.43	1,118.11	0.80	-0.74	-0.32	
10,719.00	85.29	181.54	7,764.82	-934.15	1,602.93	1,210.75	0.65	-0.65	0.05	
10,813.00	87.44	181.01	7,770.78	-1,027.93	1,600.84	1,302.58	2.36	2.29	-0.56	
10,909.00	87.35	180.46	7,775.15	-1,123.82	1,599.61	1,396.64	0.58	-0.09	-0.57	
11,005.00	87.48	181.57	7,779.48	-1,219.71	1,597.91	1,490.61	1.16	0.14	1.16	
11,099.00	86.24	182.37	7,784.63	-1,313.51	1,594.69	1,582.25	1.57	-1.32	0.85	
11,195.00	85.62	182.36	7,791.44	-1,409.19	1,590.73	1,675.60	0.65	-0.65	-0.01	
11,290.00	86.52	182.29	7,797.95	-1,503.88	1,586.89	1,768.01	0.95	0.95	-0.07	
11,385.00	88.60	181.07	7,801.99	-1,598.75	1,584.11	1,860.78	2.54	2.19	-1.28	
11,480.00	89.63	180.20	7,803.46	-1,693.73	1,583.05	1,953.98	1.42	1.08	-0.92	
11,575.00	91.11	180.37	7,802.85	-1,788.72	1,582.58	2,047.29	1.57	1.56	0.18	
11,670.00	90.45	181.07	7,801.55	-1,883.71	1,581.39	2,140.46	1.01	-0.69	0.74	
11,765.00	91.79	181.68	7,799.70	-1,978.66	1,579.11	2,233.41	1.55	1.41	0.64	
11,860.00	89.63	181.08	7,798.52	-2,073.62	1,576.82	2,326.36	2.36	-2.27	-0.63	
11,956.00	91.38	180.15	7,797.67	-2,169.60	1,575.79	2,420.55	2.06	1.82	-0.97	
12,051.00	88.58	179.41	7,797.71	-2,264.59	1,576.16	2,514.01	3.05	-2.95	-0.78	
12,147.00	89.52	179.44	7,799.30	-2,360.57	1,577.12	2,608.56	0.98	0.98	0.03	
12,241.00	88.77	178.86	7,800.70	-2,454.55	1,578.51	2,701.22	1.01	-0.80	-0.62	
12,336.00	91.82	177.25	7,800.21	-2,549.48	1,581.74	2,795.14	3.63	3.21	-1.69	
12,431.00	94.31	178.20	7,795.13	-2,644.26	1,585.50	2,889.02	2.80	2.62	1.00	
12,526.00	94.97	177.63	7,787.45	-2,738.89	1,588.95	2,982.69	0.92	0.69	-0.60	
12,620.00	96.05	177.91	7,778.42	-2,832.38	1,592.59	3,075.28	1.19	1.15	0.30	
12,715.00	94.47	178.72	7,769.71	-2,926.94	1,595.37	3,168.76	1.87	-1.66	0.85	
12,810.00	94.20	178.31	7,762.53	-3,021.63	1,597.82	3,262.31	0.52	-0.28	-0.43	
12,905.00	94.20	177.86	7,755.58	-3,116.32	1,600.99	3,355.99	0.47	0.00	-0.47	
13,000.00	94.92	180.03	7,748.02	-3,211.00	1,602.74	3,449.40	2.40	0.76	2.28	
13,095.00	94.96	179.29	7,739.84	-3,305.65	1,603.30	3,542.56	0.78	0.04	-0.78	

## Survey Report

<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>Local Co-ordinate Reference:</b>	Well COSSLETT EAST FED 1A-22H-H168
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 25' @ 5208.00usft
<b>Site:</b>	SEC 22-T1N-R68W	<b>MD Reference:</b>	KB 25' @ 5208.00usft
<b>Well:</b>	COSSLETT EAST FED 1A-22H-H168	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	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)
13,191.00	94.68	178.79	7,731.77	-3,401.29	1,604.90	3,636.90	0.60	-0.29	-0.52
13,286.00	94.39	178.56	7,724.26	-3,495.97	1,607.09	3,730.39	0.39	-0.31	-0.24
13,382.00	93.59	181.44	7,717.58	-3,591.73	1,607.09	3,824.54	3.11	-0.83	3.00
13,476.00	93.17	180.78	7,712.04	-3,685.54	1,605.27	3,916.45	0.83	-0.45	-0.70
13,571.00	92.81	180.20	7,707.08	-3,780.41	1,604.46	4,009.58	0.72	-0.38	-0.61
13,666.00	91.82	181.26	7,703.25	-3,875.32	1,603.25	4,102.68	1.53	-1.04	1.12
13,761.00	90.35	181.87	7,701.45	-3,970.27	1,600.66	4,195.56	1.68	-1.55	0.64
13,856.00	90.79	181.39	7,700.50	-4,065.22	1,597.95	4,288.43	0.69	0.46	-0.51
13,952.00	89.79	183.49	7,700.02	-4,161.13	1,593.87	4,381.99	2.42	-1.04	2.19
14,046.00	89.60	183.21	7,700.52	-4,254.97	1,588.37	4,473.25	0.36	-0.20	-0.30
14,141.00	89.92	182.54	7,700.92	-4,349.85	1,583.61	4,565.67	0.78	0.34	-0.71
14,237.00	87.47	183.50	7,703.10	-4,445.68	1,578.55	4,658.97	2.74	-2.55	1.00
14,331.00	87.68	183.44	7,707.08	-4,539.42	1,572.87	4,750.11	0.23	0.22	-0.06
14,426.00	87.74	182.36	7,710.87	-4,634.22	1,568.07	4,842.45	1.14	0.06	-1.14
14,521.00	87.68	181.98	7,714.67	-4,729.08	1,564.47	4,935.06	0.40	-0.06	-0.40
14,616.00	87.81	180.24	7,718.41	-4,823.99	1,562.63	5,028.04	1.84	0.14	-1.83
14,686.58	87.94	179.71	7,721.03	-4,894.52	1,562.66	5,097.39	0.77	0.18	-0.75
<b>FED ENTRY PNT - 14686.58' MD, 7721' TVD</b>									
14,711.00	87.98	179.53	7,721.90	-4,918.92	1,562.82	5,121.41	0.77	0.18	-0.75
14,806.00	88.25	179.31	7,725.02	-5,013.86	1,563.79	5,214.94	0.37	0.28	-0.23
14,901.00	88.10	178.99	7,728.05	-5,108.81	1,565.19	5,308.55	0.37	-0.16	-0.34
14,986.92	89.32	179.24	7,729.98	-5,194.69	1,566.52	5,393.24	1.45	1.42	0.29
<b>FED EXIT PNT - 14986.92' MD, 7729.98' TVD</b>									
14,996.00	89.45	179.27	7,730.08	-5,203.77	1,566.64	5,402.19	1.45	1.42	0.29
15,091.00	89.70	178.90	7,730.78	-5,298.76	1,568.15	5,495.85	0.47	0.26	-0.39
15,186.00	90.28	178.93	7,730.80	-5,393.74	1,569.95	5,589.57	0.61	0.61	0.03
15,281.00	90.72	178.10	7,729.97	-5,488.70	1,572.41	5,683.39	0.99	0.46	-0.87
15,376.00	90.76	177.42	7,728.75	-5,583.62	1,576.13	5,777.40	0.72	0.04	-0.72
15,471.00	91.37	179.15	7,726.98	-5,678.56	1,578.97	5,871.26	1.93	0.64	1.82
15,565.00	90.02	179.91	7,725.84	-5,772.54	1,579.74	5,963.81	1.65	-1.44	0.81
15,660.00	91.04	179.98	7,724.96	-5,867.54	1,579.83	6,057.23	1.08	1.07	0.07
15,756.00	89.55	180.07	7,724.47	-5,963.53	1,579.79	6,151.61	1.55	-1.55	0.09
15,851.00	90.27	180.23	7,724.62	-6,058.53	1,579.54	6,244.97	0.78	0.76	0.17
15,946.00	91.05	179.94	7,723.52	-6,153.53	1,579.40	6,338.35	0.88	0.82	-0.31
16,041.00	87.92	180.56	7,724.37	-6,248.51	1,578.99	6,431.66	3.36	-3.29	0.65
16,136.00	88.52	179.97	7,727.33	-6,343.46	1,578.55	6,524.94	0.89	0.63	-0.62
16,231.00	88.87	179.79	7,729.49	-6,438.44	1,578.75	6,618.36	0.41	0.37	-0.19
16,325.00	90.05	179.34	7,730.38	-6,532.43	1,579.46	6,710.91	1.34	1.26	-0.48
16,419.00	88.94	179.40	7,731.20	-6,626.42	1,580.49	6,803.51	1.18	-1.18	0.06
16,514.00	90.25	179.49	7,731.88	-6,721.41	1,581.41	6,897.08	1.38	1.38	0.09
16,609.00	88.30	181.08	7,733.08	-6,816.39	1,580.94	6,990.38	2.65	-2.05	1.67
16,705.00	89.14	181.04	7,735.22	-6,912.35	1,579.17	7,084.41	0.88	0.87	-0.04
16,799.00	88.05	181.48	7,737.53	-7,006.30	1,577.10	7,176.41	1.25	-1.16	0.47
16,894.00	89.27	181.87	7,739.75	-7,101.23	1,574.32	7,269.24	1.35	1.28	0.41

## Survey Report

<b>Company:</b>	CRESTONE PEAK RESOURCES	<b>Local Co-ordinate Reference:</b>	Well COSSLETT EAST FED 1A-22H-H168
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 25' @ 5208.00usft
<b>Site:</b>	SEC 22-T1N-R68W	<b>MD Reference:</b>	KB 25' @ 5208.00usft
<b>Well:</b>	COSSLETT EAST FED 1A-22H-H168	<b>North Reference:</b>	True
<b>Wellbore:</b>	OWB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEY	<b>Database:</b>	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)	
16,989.00	90.37	181.81	7,740.05	-7,196.18	1,571.27	7,362.04	1.16	1.16	-0.06	
17,084.00	87.43	181.72	7,741.87	-7,291.11	1,568.35	7,454.84	3.10	-3.09	-0.09	
17,180.00	87.55	181.97	7,746.07	-7,386.96	1,565.26	7,548.53	0.29	0.12	0.26	
17,275.00	88.04	181.97	7,749.73	-7,481.84	1,562.00	7,641.22	0.52	0.52	0.00	
17,370.00	87.67	181.92	7,753.29	-7,576.72	1,558.77	7,733.92	0.39	-0.39	-0.05	
17,465.00	88.17	180.30	7,756.73	-7,671.63	1,556.94	7,826.91	1.78	0.53	-1.71	
17,560.00	88.69	179.86	7,759.34	-7,766.60	1,556.80	7,920.26	0.72	0.55	-0.46	
17,655.00	89.15	179.33	7,761.13	-7,861.58	1,557.47	8,013.77	0.74	0.48	-0.56	
17,750.00	89.46	180.01	7,762.28	-7,956.57	1,558.02	8,107.27	0.79	0.33	0.72	
17,846.00	89.95	179.73	7,762.77	-8,052.56	1,558.24	8,201.70	0.59	0.51	-0.29	
17,940.00	88.24	179.51	7,764.26	-8,146.55	1,558.86	8,294.22	1.83	-1.82	-0.23	
18,034.00	88.79	179.96	7,766.69	-8,240.51	1,559.30	8,386.69	0.76	0.59	0.48	
18,129.00	89.80	180.13	7,767.86	-8,335.51	1,559.22	8,480.07	1.08	1.06	0.18	
<b>LAST SURVEY - 18129' MD, 7768' TVD</b>										
18,201.00	89.80	180.13	7,768.11	-8,407.50	1,559.06	8,550.84	0.00	0.00	0.00	
<b>EXTRAPOLATION TO TD - 18201' MD, 460' FSL, 381' FWL SEC 26</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
FED ENTRY-COSSLET - hit/miss target - Shape - Point	0.00	0.00	7,721.03	-4,894.52	1,589.61	1,252,672.78	3,145,990.79	40.025796°N	104.978690°W	
- actual wellpath misses target center by 26.94usft at 14686.76usft MD (7721.03 TVD, -4894.70 N, 1562.66 E)										
LP-COSSLETT E FED 1 - Point	0.00	0.00	7,725.00	1,265.24	1,610.49	1,258,832.33	3,145,975.85	40.042705°N	104.978614°W	
- actual wellpath misses target center by 52.85usft at 8526.85usft MD (7683.76 TVD, 1251.70 N, 1640.65 E)										
FED EXIT-COSSLETT E - Point	0.00	0.00	7,729.98	-5,194.69	1,588.79	1,252,372.62	3,145,991.71	40.024972°N	104.978693°W	
- actual wellpath misses target center by 22.27usft at 14987.21usft MD (7729.99 TVD, -5194.98 N, 1566.52 E)										
PBHL-COSSLETT E FE - Point	0.00	0.00	7,790.00	-8,407.71	1,577.79	1,249,159.71	3,145,999.39	40.016152°N	104.978733°W	
- actual wellpath misses target center by 28.81usft at 18201.00usft MD (7768.11 TVD, -8407.50 N, 1559.06 E)										

## Survey Report

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

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,362.00	6,880.55	1,802.23	1,373.92	KOP - 7362' MD, 6881' TVD
8,512.75	7,679.95	1,265.24	1,641.57	~460' X-OVER PNT - 8512.75' MD, 460' FNL, 431' FWL SEC 23
8,722.00	7,719.28	1,060.62	1,627.98	HZ LANDING PNT - 8722' MD, 7719' TVD
14,686.58	7,721.03	-4,894.52	1,562.66	FED ENTRY PNT - 14686.58' MD, 7721' TVD
14,986.92	7,729.98	-5,194.69	1,566.52	FED EXIT PNT - 14986.92' MD, 7729.98' TVD
18,129.00	7,767.86	-8,335.51	1,559.22	LAST SURVEY - 18129' MD, 7768' TVD
18,201.00	7,768.11	-8,407.50	1,559.06	EXTRAPOLATION TO TD - 18201' MD, 460' FSL, 381' FWL SEC 26

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