

# Tekton Energy

Well Name: **Frye Farms 13 5-5-33-090-4CH**

Surface Location: Frye Farms Pad Sec.32-T6N-R67W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

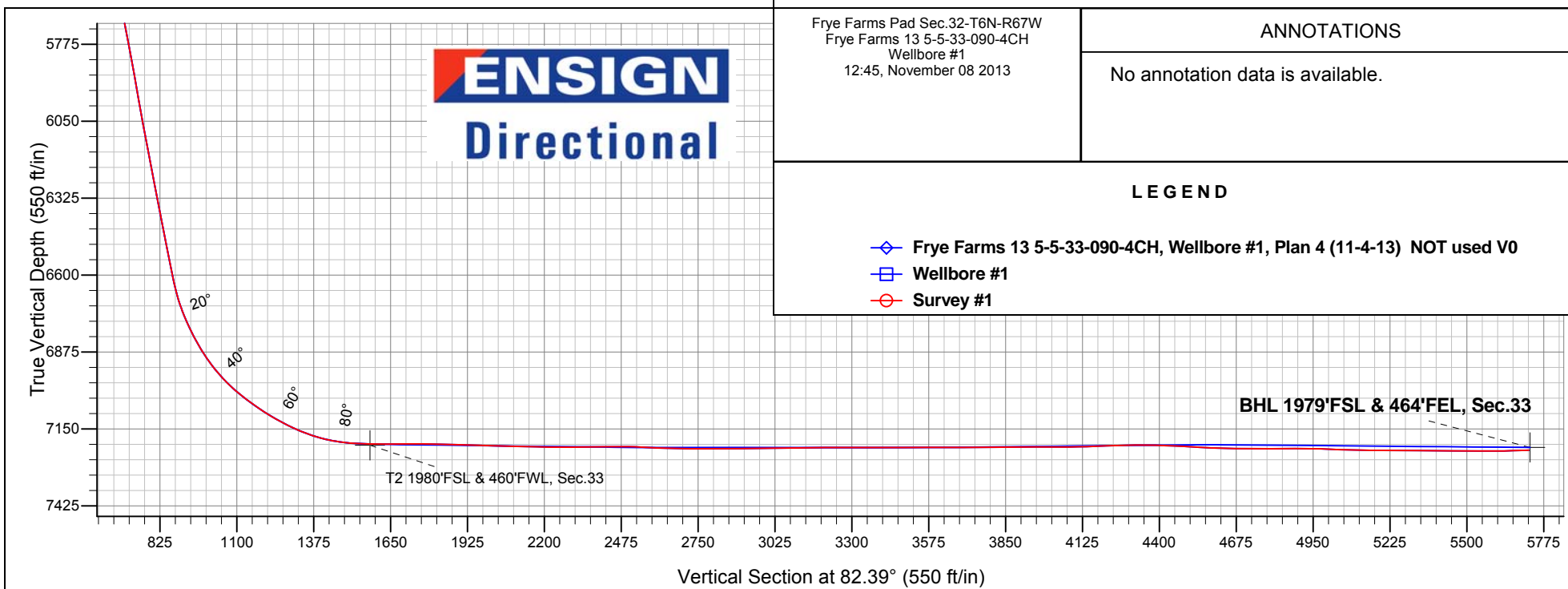
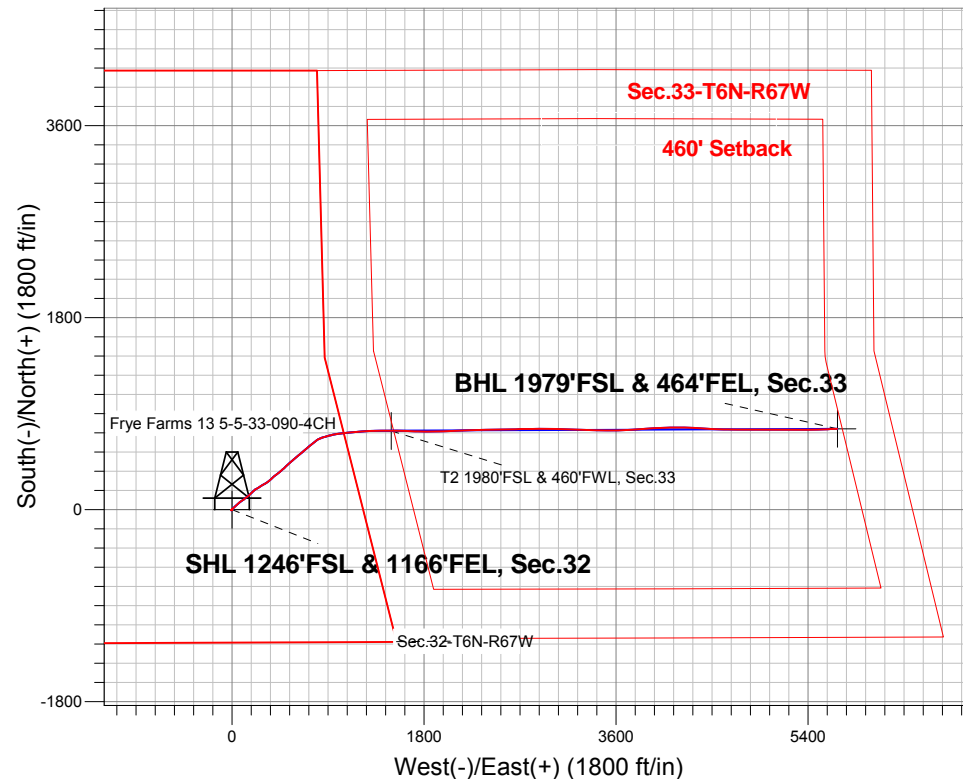
Ground Elevation: 4880.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1403469.71	3164029.49	40.439430	-104.910700	

Frontier 10 RKB - 22.5' WELI @ 4902.5ft (Frontier 10 RKB - 22.5')

## FINAL SURVEY

Projected Bottom Hole Location  
11903'MD 7225'TVD 758'N & 5671'E of SHL  
91.62 degree Incl @ 87.69 degree AZM



Frye Farms Pad Sec.32-T6N-R67W  
Frye Farms 13 5-5-33-090-4CH  
Wellbore #1  
12:45, November 08 2013

### ANNOTATIONS

No annotation data is available.

### LEGEND

- ◆ Frye Farms 13 5-5-33-090-4CH, Wellbore #1, Plan 4 (11-4-13) NOT used V0
- Wellbore #1
- Survey #1



## **Tekton Energy**

**SEC.32-T6N-R67W**

**Frye Farms Pad Sec.32-T6N-R67W**

**Frye Farms 13 5-5-33-090-4CH**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**08 November, 2013**

<b>Company:</b>	Tekton Energy	<b>Local Co-ordinate Reference:</b>	Well Frye Farms 13 5-5-33-090-4CH
<b>Project:</b>	SEC.32-T6N-R67W	<b>TVD Reference:</b>	WELI @ 4902.5ft (Frontier 10 RKB - 22.5')
<b>Site:</b>	Frye Farms Pad Sec.32-T6N-R67W	<b>MD Reference:</b>	WELI @ 4902.5ft (Frontier 10 RKB - 22.5')
<b>Well:</b>	Frye Farms 13 5-5-33-090-4CH	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.32-T6N-R67W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Frye Farms Pad Sec.32-T6N-R67W				
Site Position:		Northing:	1,403,480.58 ft	Latitude:	40.439460
From:	Lat/Long	Easting:	3,164,018.28 ft	Longitude:	-104.910740
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.38 °

Well	Frye Farms 13 5-5-33-090-4CH					
Well Position	+N/-S	0.0 ft	Northing:	1,403,469.71 ft	Latitude:	40.439430
	+E/-W	0.0 ft	Easting:	3,164,029.49 ft	Longitude:	-104.910700
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,880.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/2/2013	8.64	66.98	52,894

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	7,216.0	0.0	0.0	82.39	

<b>Survey Program</b>	<b>Date</b>	11/8/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
166.0	11,903.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.01	165.30	1.0	0.0	0.0	0.0	0.54	0.54	0.00	
<b>SHL 1246'FSL &amp; 1166'FEL, Sec.32</b>										
166.0	0.90	165.30	166.0	-1.3	0.3	0.2	0.54	0.54	0.00	
227.0	0.80	140.70	227.0	-2.1	0.7	0.4	0.61	-0.16	-40.33	
318.0	1.30	2.10	318.0	-1.5	1.2	1.0	2.17	0.55	-152.31	
410.0	2.00	357.90	409.9	1.1	1.1	1.3	0.77	0.76	-4.57	
502.0	1.00	318.50	501.9	3.3	0.6	1.0	1.50	-1.09	-42.83	
594.0	0.60	197.60	593.9	3.5	-0.1	0.3	1.53	-0.43	-131.41	
686.0	0.40	218.70	685.9	2.8	-0.5	-0.1	0.29	-0.22	22.93	
778.0	0.60	231.90	777.9	2.2	-1.1	-0.7	0.25	0.22	14.35	
870.0	0.90	221.70	869.9	1.4	-1.9	-1.7	0.36	0.33	-11.09	
1,005.0	0.80	220.60	1,004.9	-0.1	-3.2	-3.2	0.08	-0.07	-0.81	

<b>Company:</b>	Tekton Energy	<b>Local Co-ordinate Reference:</b>	Well Frye Farms 13 5-5-33-090-4CH
<b>Project:</b>	SEC.32-T6N-R67W	<b>TVD Reference:</b>	WELI @ 4902.5ft (Frontier 10 RKB - 22.5')
<b>Site:</b>	Frye Farms Pad Sec.32-T6N-R67W	<b>MD Reference:</b>	WELI @ 4902.5ft (Frontier 10 RKB - 22.5')
<b>Well:</b>	Frye Farms 13 5-5-33-090-4CH	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,098.0	0.70	241.90	1,097.9	-0.9	-4.2	-4.2	0.32	-0.11	22.90	
1,191.0	0.70	235.60	1,190.9	-1.5	-5.1	-5.3	0.08	0.00	-6.77	
1,284.0	0.60	227.50	1,283.9	-2.1	-6.0	-6.2	0.15	-0.11	-8.71	
1,374.0	1.10	232.20	1,373.8	-3.0	-7.0	-7.3	0.56	0.56	5.22	
1,466.0	1.00	224.70	1,465.8	-4.1	-8.2	-8.7	0.18	-0.11	-8.15	
1,557.0	1.10	54.90	1,556.8	-4.1	-8.1	-8.6	2.30	0.11	-186.59	
1,649.0	3.10	44.00	1,648.8	-1.8	-5.6	-5.8	2.21	2.17	-11.85	
1,741.0	5.20	41.70	1,740.5	3.1	-1.1	-0.7	2.29	2.28	-2.50	
1,833.0	6.60	47.50	1,832.0	9.7	5.5	6.8	1.65	1.52	6.30	
1,925.0	9.40	48.40	1,923.1	18.3	15.1	17.3	3.05	3.04	0.98	
2,018.0	10.70	46.40	2,014.7	29.3	27.0	30.6	1.45	1.40	-2.15	
2,110.0	11.60	42.60	2,105.0	42.0	39.4	44.6	1.26	0.98	-4.13	
2,201.0	11.30	46.40	2,194.1	54.9	52.1	58.9	0.89	-0.33	4.18	
2,295.0	10.80	50.70	2,286.4	66.8	65.6	73.8	1.03	-0.53	4.57	
2,390.0	11.40	58.20	2,379.6	77.4	80.4	90.0	1.64	0.63	7.89	
2,484.0	11.70	55.40	2,471.7	87.7	96.2	106.9	0.68	0.32	-2.98	
2,578.0	11.30	53.60	2,563.8	98.6	111.4	123.5	0.57	-0.43	-1.91	
2,672.0	12.40	49.60	2,655.8	110.6	126.5	140.1	1.46	1.17	-4.26	
2,765.0	12.40	54.20	2,746.7	122.9	142.2	157.3	1.06	0.00	4.95	
2,860.0	12.20	50.50	2,839.5	135.3	158.3	174.8	0.86	-0.21	-3.89	
2,954.0	11.30	45.90	2,931.5	148.0	172.5	190.6	1.38	-0.96	-4.89	
3,049.0	12.60	43.80	3,024.5	161.9	186.4	206.2	1.44	1.37	-2.21	
3,144.0	12.50	44.50	3,117.2	176.8	200.8	222.4	0.19	-0.11	0.74	
3,237.0	11.90	58.60	3,208.1	188.9	216.0	239.1	3.26	-0.65	15.16	
3,331.0	12.90	60.30	3,299.9	199.2	233.4	257.7	1.13	1.06	1.81	
3,425.0	12.20	59.60	3,391.7	209.4	251.1	276.6	0.76	-0.74	-0.74	
3,518.0	13.50	56.30	3,482.3	220.4	268.6	295.4	1.60	1.40	-3.55	
3,612.0	12.80	57.20	3,573.9	232.1	286.5	314.7	0.78	-0.74	0.96	
3,707.0	13.30	63.30	3,666.4	242.7	305.1	334.5	1.54	0.53	6.42	
3,802.0	13.70	57.30	3,758.8	253.7	324.3	355.1	1.53	0.42	-6.32	
3,895.0	13.40	49.60	3,849.2	266.7	341.8	374.1	1.97	-0.32	-8.28	
3,989.0	12.30	47.30	3,940.9	280.5	357.4	391.4	1.29	-1.17	-2.45	
4,085.0	12.30	46.10	4,034.7	294.5	372.3	408.0	0.27	0.00	-1.25	
4,178.0	11.60	46.80	4,125.7	307.8	386.3	423.6	0.77	-0.75	0.75	
4,272.0	11.50	52.80	4,217.8	319.9	400.6	439.5	1.28	-0.11	6.38	
4,365.0	12.70	56.30	4,308.7	331.2	416.5	456.7	1.51	1.29	3.76	
4,457.0	12.10	50.80	4,398.5	342.9	432.4	474.0	1.44	-0.65	-5.98	
4,552.0	10.60	49.80	4,491.7	354.9	446.8	489.9	1.59	-1.58	-1.05	
4,646.0	10.60	48.50	4,584.1	366.2	459.9	504.3	0.25	0.00	-1.38	
4,740.0	11.70	51.00	4,676.3	377.9	473.8	519.6	1.28	1.17	2.66	
4,833.0	13.10	46.10	4,767.1	391.1	488.7	536.2	1.88	1.51	-5.27	
4,928.0	12.00	45.20	4,859.9	405.6	503.4	552.7	1.18	-1.16	-0.95	
5,023.0	12.00	46.40	4,952.8	419.3	517.6	568.6	0.26	0.00	1.26	
5,118.0	12.10	47.50	5,045.7	432.9	532.1	584.7	0.26	0.11	1.16	
5,213.0	12.40	48.70	5,138.5	446.3	547.1	601.4	0.41	0.32	1.26	
5,307.0	12.80	50.50	5,230.3	459.6	562.7	618.6	0.60	0.43	1.91	
5,403.0	10.50	46.30	5,324.3	472.4	577.2	634.7	2.55	-2.40	-4.38	
5,497.0	10.50	50.50	5,416.7	483.8	590.0	648.9	0.81	0.00	4.47	
5,592.0	11.30	50.70	5,510.0	495.2	603.9	664.2	0.84	0.84	0.21	
5,687.0	12.70	49.40	5,602.9	507.9	619.1	680.9	1.50	1.47	-1.37	
5,782.0	12.30	52.40	5,695.7	520.8	635.0	698.4	0.80	-0.42	3.16	
5,877.0	12.30	52.60	5,788.5	533.2	651.1	715.9	0.04	0.00	0.21	
5,970.0	12.40	45.70	5,879.3	546.2	666.1	732.6	1.59	0.11	-7.42	
6,062.0	11.80	48.50	5,969.3	559.3	680.2	748.3	0.91	-0.65	3.04	

<b>Company:</b>	Tekton Energy	<b>Local Co-ordinate Reference:</b>	Well Frye Farms 13 5-5-33-090-4CH
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<b>Site:</b>	Frye Farms Pad Sec.32-T6N-R67W	<b>MD Reference:</b>	WELI @ 4902.5ft (Frontier 10 RKB - 22.5')
<b>Well:</b>	Frye Farms 13 5-5-33-090-4CH	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,156.0	12.30	52.40	6,061.2	571.8	695.3	764.9	1.02	0.53	4.15
6,251.0	13.00	48.90	6,153.9	585.0	711.4	782.6	1.09	0.74	-3.68
6,344.0	12.80	49.60	6,244.6	598.5	727.1	800.0	0.27	-0.22	0.75
6,438.0	13.00	49.90	6,336.2	612.1	743.1	817.7	0.22	0.21	0.32
6,531.0	12.80	50.80	6,426.9	625.3	759.1	835.3	0.30	-0.22	0.97
6,625.0	13.60	51.70	6,518.4	638.8	775.9	853.6	0.88	0.85	0.96
6,672.0	12.70	52.10	6,564.1	645.4	784.3	862.9	1.92	-1.91	0.85
6,720.0	13.20	53.80	6,610.9	651.8	792.9	872.2	1.31	1.04	3.54
6,767.0	15.10	61.90	6,656.5	657.9	802.6	882.7	5.83	4.04	17.23
6,813.0	18.80	65.10	6,700.5	663.8	814.6	895.4	8.29	8.04	6.96
6,860.0	23.00	68.40	6,744.4	670.4	830.0	911.5	9.28	8.94	7.02
6,908.0	25.70	70.50	6,788.1	677.3	848.6	930.8	5.91	5.63	4.38
6,955.0	28.50	74.20	6,830.0	683.8	869.0	951.9	6.95	5.96	7.87
7,002.0	32.30	76.30	6,870.5	689.8	892.0	975.5	8.39	8.09	4.47
7,049.0	35.70	74.60	6,909.4	696.4	917.4	1,001.6	7.51	7.23	-3.62
7,095.0	40.30	77.00	6,945.7	703.4	944.8	1,029.7	10.50	10.00	5.22
7,142.0	44.00	80.20	6,980.5	709.6	975.8	1,061.1	9.10	7.87	6.81
7,189.0	49.40	83.70	7,012.8	714.3	1,009.6	1,095.3	12.70	11.49	7.45
7,236.0	52.70	83.50	7,042.3	718.4	1,045.9	1,131.9	7.03	7.02	-0.43
7,284.0	55.50	84.60	7,070.4	722.4	1,084.6	1,170.7	6.12	5.83	2.29
7,331.0	57.70	84.20	7,096.3	726.2	1,123.6	1,209.9	4.73	4.68	-0.85
7,378.0	61.00	85.10	7,120.3	730.0	1,163.9	1,250.3	7.21	7.02	1.91
7,425.0	64.50	85.80	7,141.8	733.3	1,205.5	1,292.0	7.56	7.45	1.49
7,472.0	68.30	85.80	7,160.6	736.5	1,248.5	1,335.0	8.09	8.09	0.00
7,519.0	72.70	88.10	7,176.3	738.8	1,292.7	1,379.2	10.44	9.36	4.89
7,567.0	77.80	89.30	7,188.5	739.8	1,339.1	1,425.3	10.90	10.63	2.50
7,614.0	82.40	89.10	7,196.6	740.5	1,385.4	1,471.3	9.80	9.79	-0.43
7,662.0	86.10	90.00	7,201.4	740.9	1,433.1	1,518.6	7.93	7.71	1.88
7,692.0	88.60	89.50	7,202.8	741.0	1,463.1	1,548.4	8.50	8.33	-1.67
7,721.0	88.60	89.50	7,203.5	741.2	1,492.1	1,577.1	0.00	0.00	0.00
<b>T2 1980'FSL &amp; 460'FWL, Sec.33</b>									
7,742.0	88.60	89.50	7,204.0	741.4	1,513.1	1,598.0	0.00	0.00	0.00
7,756.0	90.39	91.36	7,204.1	741.3	1,527.1	1,611.8	18.44	12.79	13.29
7,851.0	90.17	91.74	7,203.7	738.8	1,622.0	1,705.6	0.46	-0.23	0.40
7,945.0	89.22	92.60	7,204.2	735.2	1,716.0	1,798.2	1.36	-1.01	0.91
8,040.0	88.27	89.60	7,206.2	733.4	1,810.9	1,892.1	3.31	-1.00	-3.16
8,134.0	88.38	89.29	7,209.0	734.3	1,904.9	1,985.3	0.35	0.12	-0.33
8,228.0	88.49	88.48	7,211.6	736.1	1,998.8	2,078.7	0.87	0.12	-0.86
8,323.0	88.71	87.11	7,213.9	739.8	2,093.7	2,173.3	1.46	0.23	-1.44
8,417.0	89.78	87.61	7,215.1	744.1	2,187.6	2,266.9	1.26	1.14	0.53
8,511.0	90.89	88.64	7,214.6	747.2	2,281.6	2,360.4	1.61	1.18	1.10
8,606.0	90.73	89.20	7,213.2	749.0	2,376.5	2,454.8	0.61	-0.17	0.59
8,700.0	86.86	88.42	7,215.2	750.9	2,470.5	2,548.2	4.20	-4.12	-0.83
8,795.0	88.38	88.35	7,219.1	753.6	2,565.3	2,642.6	1.60	1.60	-0.07
8,889.0	89.83	89.02	7,220.6	755.7	2,659.3	2,736.0	1.70	1.54	0.71
8,983.0	90.50	90.08	7,220.3	756.5	2,753.3	2,829.2	1.33	0.71	1.13
9,078.0	90.28	88.89	7,219.7	757.3	2,848.3	2,923.5	1.27	-0.23	-1.25
9,172.0	90.78	90.16	7,218.8	758.1	2,942.3	3,016.8	1.45	0.53	1.35
9,267.0	90.78	90.98	7,217.5	757.2	3,037.3	3,110.8	0.86	0.00	0.86
9,361.0	90.28	92.28	7,216.7	754.5	3,131.2	3,203.6	1.48	-0.53	1.38
9,455.0	89.89	92.27	7,216.5	750.8	3,225.2	3,296.2	0.42	-0.41	-0.01
9,550.0	90.11	90.78	7,216.5	748.2	3,320.1	3,390.0	1.59	0.23	-1.57
9,644.0	89.94	91.18	7,216.5	746.6	3,414.1	3,482.9	0.46	-0.18	0.43
9,738.0	90.39	90.93	7,216.2	744.9	3,508.1	3,575.8	0.55	0.48	-0.27

<b>Company:</b>	Tekton Energy	<b>Local Co-ordinate Reference:</b>	Well Frye Farms 13 5-5-33-090-4CH
<b>Project:</b>	SEC.32-T6N-R67W	<b>TVD Reference:</b>	WELI @ 4902.5ft (Frontier 10 RKB - 22.5')
<b>Site:</b>	Frye Farms Pad Sec.32-T6N-R67W	<b>MD Reference:</b>	WELI @ 4902.5ft (Frontier 10 RKB - 22.5')
<b>Well:</b>	Frye Farms 13 5-5-33-090-4CH	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,833.0	90.06	89.14	7,215.8	744.8	3,603.1	3,670.0	1.92	-0.35	-1.88
9,927.0	90.00	87.87	7,215.8	747.3	3,697.0	3,763.5	1.35	-0.06	-1.35
10,022.0	90.50	86.15	7,215.4	752.3	3,791.9	3,858.1	1.89	0.53	-1.81
10,116.0	90.67	85.98	7,214.4	758.7	3,885.7	3,951.9	0.26	0.18	-0.18
10,210.0	89.44	86.26	7,214.3	765.1	3,979.5	4,045.7	1.34	-1.31	0.30
10,305.0	91.85	87.91	7,213.3	769.9	4,074.3	4,140.4	3.07	2.54	1.74
10,399.0	92.75	89.83	7,209.5	771.7	4,168.2	4,233.7	2.25	0.96	2.04
10,494.0	89.10	91.92	7,207.9	770.3	4,263.2	4,327.7	4.43	-3.84	2.20
10,588.0	88.88	93.41	7,209.6	765.9	4,357.1	4,420.1	1.60	-0.23	1.59
10,682.0	86.19	93.37	7,213.6	760.4	4,450.8	4,512.3	2.86	-2.86	-0.04
10,777.0	88.10	92.42	7,218.4	755.6	4,545.6	4,605.6	2.24	2.01	-1.00
10,871.0	89.55	90.90	7,220.3	752.9	4,639.5	4,698.3	2.23	1.54	-1.62
10,965.0	90.17	90.63	7,220.5	751.6	4,733.5	4,791.3	0.72	0.66	-0.29
11,060.0	90.28	90.52	7,220.2	750.6	4,828.5	4,885.4	0.16	0.12	-0.12
11,154.0	88.43	90.27	7,221.2	750.0	4,922.5	4,978.4	1.99	-1.97	-0.27
11,249.0	87.76	89.14	7,224.4	750.5	5,017.4	5,072.6	1.38	-0.71	-1.19
11,343.0	89.33	90.46	7,226.8	750.8	5,111.4	5,165.8	2.18	1.67	1.40
11,438.0	90.11	90.64	7,227.2	749.9	5,206.4	5,259.8	0.84	0.82	0.19
11,532.0	89.33	90.85	7,227.7	748.7	5,300.4	5,352.8	0.86	-0.83	0.22
11,626.0	89.78	89.12	7,228.4	748.7	5,394.4	5,446.0	1.90	0.48	-1.84
11,721.0	89.66	88.28	7,228.9	750.9	5,489.3	5,540.4	0.89	-0.13	-0.88
11,815.0	90.84	87.11	7,228.5	754.6	5,583.2	5,634.0	1.77	1.26	-1.24
11,846.0	91.62	87.69	7,227.8	756.0	5,614.2	5,664.9	3.14	2.52	1.87
11,903.0	91.62	87.69	7,226.2	758.3	5,671.1	5,721.6	0.00	0.00	0.00
BHL 1980°FSL & 460°FEL, Sec.33									

Checked By: _____	Approved By: _____	Date: _____
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