

Tekton Energy

Well Name: **Rancho Water Valley #13 7-6-33-270-6-CH**

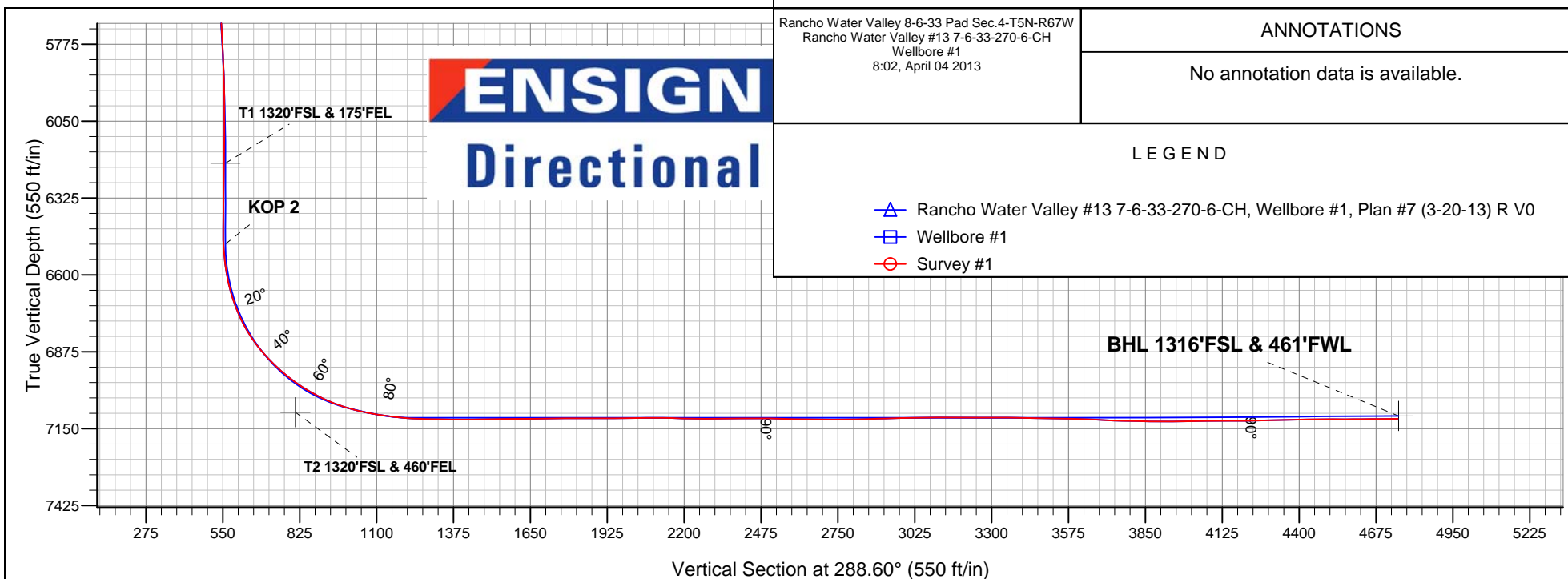
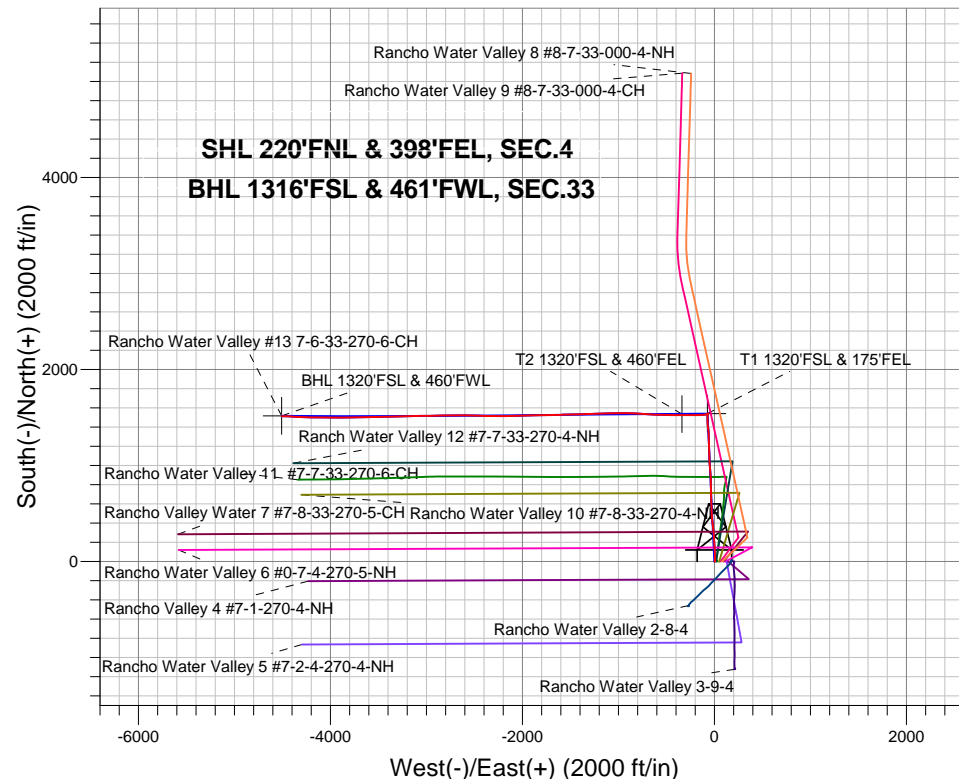
Surface Location: Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4775.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1402072.46	3170199.12	40.435480	-104.888570	

EST KB 17.5 RKB @ 4792.5ft (EST KB 17.5)

FINAL SURVEY

Projected Bottom Hole Location
11483' MD 7115' TVD 1516' N & 4505' W of SHL
90.48 degree Incl @ 272.82 degree AZM



Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W
Rancho Water Valley #13 7-6-33-270-6-CH
Wellbore #1
8:02, April 04 2013

ANNOTATIONS

No annotation data is available.

LEGEND

- △ Rancho Water Valley #13 7-6-33-270-6-CH, Wellbore #1, Plan #7 (3-20-13) R V0
- Wellbore #1
- Survey #1



Tekton Energy

SEC.4-T5N-R67W

Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W

Rancho Water Valley #13 7-6-33-270-6-CH

Wellbore #1

Survey: Survey #1

Standard Survey Report

04 April, 2013

Company:	Tekton Energy	Local Co-ordinate Reference:	Well Rancho Water Valley #13 7-6-33-270-6-CH
Project:	SEC.4-T5N-R67W	TVD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Site:	Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W	MD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Well:	Rancho Water Valley #13 7-6-33-270-6-CH	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.4-T5N-R67W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W			
Site Position:		Northing:	1,402,075.64 ft	Latitude:	40.435485
From:	Lat/Long	Easting:	3,170,392.26 ft	Longitude:	-104.887876
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.40 °

Well	Rancho Water Valley #13 7-6-33-270-6-CH					
Well Position	+N-S	0.0 ft	Northing:	1,402,072.46 ft	Latitude:	40.435480
	+E-W	0.0 ft	Easting:	3,170,199.12 ft	Longitude:	-104.888570
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,775.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/19/2013	8.70	67.00	52,952

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	288.60	

Survey Program		Date	4/4/2013	
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
187.0	11,483.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard

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)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	1.0	0.01	58.60	1.0	0.0	0.0	0.0	0.80	0.80	0.00
	SHL 220'FNL & 398'FEL									
	187.0	1.50	58.60	187.0	1.3	2.1	-1.6	0.80	0.80	0.00
	278.0	2.20	34.50	277.9	3.3	4.1	-2.8	1.13	0.77	-26.48
	369.0	3.40	18.50	368.8	7.3	5.9	-3.3	1.56	1.32	-17.58
	461.0	6.10	2.70	460.5	14.8	7.0	-1.9	3.23	2.93	-17.17
	552.0	8.60	358.20	550.7	26.4	7.1	1.7	2.82	2.75	-4.95
	645.0	10.50	358.20	642.5	41.9	6.6	7.1	2.04	2.04	0.00
	736.0	12.20	358.20	731.7	59.8	6.0	13.4	1.87	1.87	0.00
	828.0	13.80	358.30	821.3	80.4	5.4	20.6	1.74	1.74	0.11
	922.0	15.20	358.00	912.3	104.0	4.6	28.8	1.49	1.49	-0.32

Company:	Tekton Energy	Local Co-ordinate Reference:	Well Rancho Water Valley #13 7-6-33-270-6-CH
Project:	SEC.4-T5N-R67W	TVD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Site:	Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W	MD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Well:	Rancho Water Valley #13 7-6-33-270-6-CH	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
1,017.0	16.30	357.60	1,003.7	129.7	3.6	37.9	1.16	1.16	-0.42
1,112.0	16.80	357.40	1,094.8	156.8	2.4	47.7	0.53	0.53	-0.21
1,208.0	16.40	357.10	1,186.8	184.2	1.1	57.7	0.43	-0.42	-0.31
1,271.0	15.90	356.60	1,247.3	201.7	0.2	64.2	0.82	-0.79	-0.79
1,369.0	17.20	355.50	1,341.3	229.5	-1.8	74.9	1.36	1.33	-1.12
1,465.0	18.20	355.20	1,432.7	258.6	-4.1	86.4	1.05	1.04	-0.31
1,560.0	18.40	356.00	1,522.9	288.3	-6.4	98.0	0.34	0.21	0.84
1,655.0	18.50	353.80	1,613.0	318.3	-9.1	110.1	0.74	0.11	-2.32
1,750.0	18.70	354.30	1,703.1	348.4	-12.2	122.7	0.27	0.21	0.53
1,844.0	18.30	353.60	1,792.2	378.1	-15.4	135.1	0.49	-0.43	-0.74
1,938.0	18.40	352.70	1,881.4	407.5	-18.9	147.9	0.32	0.11	-0.96
2,032.0	18.00	353.20	1,970.7	436.6	-22.5	160.6	0.46	-0.43	0.53
2,126.0	17.60	354.10	2,060.2	465.2	-25.7	172.7	0.52	-0.43	0.96
2,220.0	16.70	354.80	2,150.0	492.7	-28.4	184.0	0.98	-0.96	0.74
2,314.0	16.40	359.40	2,240.2	519.5	-29.7	193.8	1.43	-0.32	4.89
2,408.0	16.40	357.40	2,330.3	546.0	-30.5	203.0	0.60	0.00	-2.13
2,502.0	17.40	358.70	2,420.3	573.3	-31.4	212.6	1.14	1.06	1.38
2,596.0	17.00	0.80	2,510.1	601.1	-31.5	221.6	0.79	-0.43	2.23
2,689.0	16.40	358.70	2,599.1	627.8	-31.6	230.2	0.91	-0.65	-2.26
2,783.0	17.10	359.40	2,689.2	654.9	-32.1	239.3	0.77	0.74	0.74
2,876.0	17.10	357.60	2,778.0	682.2	-32.8	248.7	0.57	0.00	-1.94
2,970.0	17.00	358.30	2,867.9	709.8	-33.8	258.4	0.24	-0.11	0.74
3,063.0	16.40	359.70	2,957.0	736.5	-34.3	267.3	0.78	-0.65	1.51
3,156.0	16.40	358.90	3,046.2	762.7	-34.6	276.0	0.24	0.00	-0.86
3,249.0	15.90	358.50	3,135.5	788.6	-35.2	284.8	0.55	-0.54	-0.43
3,342.0	15.30	359.20	3,225.1	813.6	-35.7	293.3	0.68	-0.65	0.75
3,435.0	14.90	358.00	3,314.9	837.8	-36.3	301.6	0.55	-0.43	-1.29
3,529.0	14.90	358.50	3,405.7	862.0	-37.0	310.0	0.14	0.00	0.53
3,623.0	15.70	355.20	3,496.4	886.7	-38.4	319.2	1.26	0.85	-3.51
3,716.0	16.90	353.90	3,585.7	912.7	-40.9	329.8	1.35	1.29	-1.40
3,809.0	17.60	356.00	3,674.5	940.2	-43.3	340.9	1.01	0.75	2.26
3,902.0	18.00	354.80	3,763.0	968.5	-45.6	352.1	0.58	0.43	-1.29
3,995.0	17.10	357.10	3,851.7	996.5	-47.6	362.9	1.22	-0.97	2.47
4,089.0	15.70	357.40	3,941.9	1,023.0	-48.8	372.5	1.49	-1.49	0.32
4,183.0	16.30	356.20	4,032.2	1,048.9	-50.3	382.2	0.73	0.64	-1.28
4,277.0	15.70	359.40	4,122.6	1,074.7	-51.3	391.4	1.13	-0.64	3.40
4,371.0	16.60	356.40	4,212.9	1,100.9	-52.3	400.6	1.31	0.96	-3.19
4,465.0	16.40	356.70	4,303.0	1,127.5	-53.9	410.6	0.23	-0.21	0.32
4,558.0	16.00	0.40	4,392.3	1,153.4	-54.6	419.5	1.19	-0.43	3.98
4,652.0	15.90	359.20	4,482.7	1,179.3	-54.6	427.9	0.37	-0.11	-1.28
4,746.0	15.70	359.40	4,573.2	1,204.9	-55.0	436.3	0.22	-0.21	0.21
4,841.0	16.20	358.50	4,664.5	1,231.0	-55.4	445.1	0.59	0.53	-0.95
4,935.0	16.30	357.10	4,754.7	1,257.2	-56.4	454.4	0.43	0.11	-1.49
5,029.0	15.50	358.00	4,845.2	1,283.0	-57.6	463.7	0.89	-0.85	0.96
5,123.0	15.20	357.60	4,935.8	1,307.8	-58.5	472.5	0.34	-0.32	-0.43
5,217.0	14.80	357.80	5,026.6	1,332.1	-59.5	481.2	0.43	-0.43	0.21
5,310.0	14.80	356.20	5,116.5	1,355.9	-60.7	489.9	0.44	0.00	-1.72
5,404.0	14.60	352.50	5,207.4	1,379.6	-63.1	499.7	1.02	-0.21	-3.94
5,498.0	14.20	353.10	5,298.5	1,402.8	-66.0	509.9	0.45	-0.43	0.64
5,592.0	14.20	355.20	5,389.6	1,425.7	-68.4	519.4	0.55	0.00	2.23
5,686.0	14.10	355.50	5,480.8	1,448.6	-70.2	528.5	0.13	-0.11	0.32
5,780.0	13.00	358.30	5,572.1	1,470.6	-71.4	536.7	1.36	-1.17	2.98
5,874.0	10.80	0.80	5,664.1	1,490.0	-71.6	543.0	2.40	-2.34	2.66

Company:	Tekton Energy	Local Co-ordinate Reference:	Well Rancho Water Valley #13 7-6-33-270-6-CH
Project:	SEC.4-T5N-R67W	TVD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Site:	Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W	MD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Well:	Rancho Water Valley #13 7-6-33-270-6-CH	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
5,967.0	8.50	358.30	5,755.8	1,505.6	-71.7	548.1	2.51	-2.47	-2.69
6,061.0	6.90	0.30	5,848.9	1,518.2	-71.9	552.3	1.73	-1.70	2.13
6,155.0	5.50	7.30	5,942.4	1,528.3	-71.3	554.9	1.69	-1.49	7.45
6,248.0	4.00	17.30	6,035.1	1,535.8	-69.7	555.9	1.84	-1.61	10.75
6,342.0	2.60	34.00	6,128.9	1,540.7	-67.6	555.4	1.79	-1.49	17.77
6,413.0	1.33	50.98	6,199.8	1,542.5	-66.0	554.5	1.95	-1.79	23.92
T1 1320'FSL & 175'FEL									
6,435.0	1.00	64.60	6,221.9	1,542.8	-65.7	554.2	1.95	-1.50	61.85
6,528.0	0.70	101.20	6,314.9	1,543.0	-64.4	553.1	0.65	-0.32	39.35
6,591.0	0.80	104.70	6,377.9	1,542.8	-63.6	552.3	0.17	0.16	5.56
6,619.0	0.70	123.10	6,405.9	1,542.7	-63.2	551.9	0.93	-0.36	65.71
6,648.0	0.50	147.90	6,434.8	1,542.5	-63.0	551.6	1.11	-0.69	85.52
6,679.0	1.40	232.10	6,465.8	1,542.1	-63.2	551.7	4.64	2.90	271.61
6,709.0	4.00	243.70	6,495.8	1,541.5	-64.5	552.7	8.81	8.67	38.67
6,740.0	6.90	247.80	6,526.7	1,540.3	-67.2	554.9	9.43	9.35	13.23
6,772.0	9.60	249.90	6,558.3	1,538.6	-71.5	558.4	8.49	8.44	6.56
6,803.0	11.80	250.40	6,588.8	1,536.7	-76.9	562.9	7.10	7.10	1.61
6,834.0	14.20	254.80	6,619.0	1,534.6	-83.5	568.6	8.37	7.74	14.19
6,866.0	16.80	257.10	6,649.8	1,532.6	-91.8	575.8	8.35	8.13	7.19
6,897.0	19.20	261.60	6,679.3	1,530.8	-101.2	584.1	8.94	7.74	14.52
6,928.0	21.80	265.70	6,708.3	1,529.6	-112.0	594.0	9.58	8.39	13.23
6,959.0	24.90	268.20	6,736.8	1,529.0	-124.3	605.4	10.50	10.00	8.06
6,990.0	28.10	268.20	6,764.5	1,528.6	-138.1	618.4	10.32	10.32	0.00
7,022.0	31.40	267.10	6,792.3	1,527.9	-154.0	633.2	10.45	10.31	-3.44
7,053.0	34.80	267.10	6,818.3	1,527.1	-170.9	648.9	10.97	10.97	0.00
7,084.0	38.30	268.50	6,843.2	1,526.4	-189.3	666.2	11.61	11.29	4.52
7,116.0	41.20	269.70	6,867.8	1,526.0	-209.8	685.5	9.37	9.06	3.75
7,147.0	43.80	270.10	6,890.6	1,526.0	-230.7	705.3	8.43	8.39	1.29
7,179.0	46.00	270.80	6,913.3	1,526.2	-253.3	726.8	7.05	6.88	2.19
7,210.0	48.70	271.00	6,934.3	1,526.5	-276.1	748.5	8.72	8.71	0.65
7,241.0	51.60	270.30	6,954.2	1,526.8	-299.9	771.1	9.51	9.35	-2.26
7,273.0	54.30	270.10	6,973.5	1,526.9	-325.4	795.4	8.45	8.44	-0.63
7,304.0	57.20	269.00	6,990.9	1,526.7	-351.1	819.6	9.80	9.35	-3.55
7,335.0	59.80	270.10	7,007.1	1,526.5	-377.5	844.6	8.92	8.39	3.55
7,340.5	60.16	270.28	7,009.9	1,526.5	-382.3	849.1	7.04	6.44	3.28
T2 1320'FSL & 460'FEL									
7,366.0	61.80	271.10	7,022.2	1,526.8	-404.5	870.3	7.04	6.45	3.21
7,397.0	64.00	271.30	7,036.3	1,527.4	-432.1	896.6	7.12	7.10	0.65
7,428.0	66.80	271.00	7,049.2	1,527.9	-460.3	923.5	9.08	9.03	-0.97
7,459.0	70.30	270.10	7,060.6	1,528.2	-489.2	950.9	11.61	11.29	-2.90
7,490.0	73.40	270.40	7,070.2	1,528.3	-518.6	978.9	10.04	10.00	0.97
7,581.0	78.70	272.21	7,092.2	1,530.3	-606.9	1,063.2	6.14	5.82	1.99
7,613.0	80.46	273.52	7,098.0	1,531.9	-638.3	1,093.5	6.82	5.50	4.09
7,644.0	81.95	274.49	7,102.7	1,534.1	-668.9	1,123.1	5.72	4.81	3.13
7,675.0	83.10	273.70	7,106.7	1,536.3	-699.5	1,152.9	4.49	3.71	-2.55
7,707.0	84.50	273.44	7,110.2	1,538.2	-731.3	1,183.6	4.45	4.38	-0.81
7,738.0	85.91	272.82	7,112.8	1,539.9	-762.1	1,213.4	4.97	4.55	-2.00
7,769.0	87.49	273.44	7,114.6	1,541.6	-793.0	1,243.2	5.47	5.10	2.00
7,801.0	89.08	273.26	7,115.5	1,543.5	-824.9	1,274.1	5.00	4.97	-0.56
7,832.0	89.34	272.12	7,115.9	1,544.9	-855.9	1,303.9	3.77	0.84	-3.68
7,863.0	89.16	271.33	7,116.3	1,545.9	-886.9	1,333.6	2.61	-0.58	-2.55
7,895.0	89.16	270.71	7,116.8	1,546.4	-918.9	1,364.1	1.94	0.00	-1.94
7,926.0	89.08	269.74	7,117.3	1,546.6	-949.9	1,393.5	3.14	-0.26	-3.13

Company:	Tekton Energy	Local Co-ordinate Reference:	Well Rancho Water Valley #13 7-6-33-270-6-CH
Project:	SEC.4-T5N-R67W	TVD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Site:	Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W	MD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Well:	Rancho Water Valley #13 7-6-33-270-6-CH	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
7,957.0	89.87	269.04	7,117.6	1,546.2	-980.9	1,422.7	3.40	2.55	-2.26
7,988.0	90.40	269.31	7,117.5	1,545.8	-1,011.9	1,452.0	1.92	1.71	0.87
8,020.0	90.92	269.04	7,117.1	1,545.3	-1,043.9	1,482.2	1.83	1.63	-0.84
8,051.0	91.45	269.04	7,116.5	1,544.8	-1,074.8	1,511.4	1.71	1.71	0.00
8,082.0	91.80	268.95	7,115.6	1,544.3	-1,105.8	1,540.6	1.17	1.13	-0.29
8,113.0	90.92	268.34	7,114.9	1,543.5	-1,136.8	1,569.7	3.45	-2.84	-1.97
8,144.0	89.87	268.34	7,114.7	1,542.6	-1,167.8	1,598.8	3.39	-3.39	0.00
8,175.0	89.96	268.43	7,114.7	1,541.8	-1,198.8	1,627.9	0.41	0.29	0.29
8,207.0	90.40	268.34	7,114.6	1,540.9	-1,230.8	1,657.9	1.40	1.38	-0.28
8,238.0	90.75	268.25	7,114.3	1,539.9	-1,261.8	1,687.0	1.17	1.13	-0.29
8,269.0	91.19	268.16	7,113.8	1,539.0	-1,292.7	1,716.0	1.45	1.42	-0.29
8,300.0	90.31	268.16	7,113.4	1,538.0	-1,323.7	1,745.1	2.84	-2.84	0.00
8,332.0	90.31	268.16	7,113.2	1,536.9	-1,355.7	1,775.0	0.00	0.00	0.00
8,362.0	90.31	267.46	7,113.0	1,535.8	-1,385.7	1,803.1	2.33	0.00	-2.33
8,394.0	90.57	267.37	7,112.8	1,534.3	-1,417.6	1,832.9	0.86	0.81	-0.28
8,425.0	90.13	267.72	7,112.6	1,533.0	-1,448.6	1,861.9	1.81	-1.42	1.13
8,456.0	89.52	268.78	7,112.7	1,532.1	-1,479.6	1,890.9	3.95	-1.97	3.42
8,487.0	89.78	268.95	7,112.9	1,531.5	-1,510.6	1,920.1	1.00	0.84	0.55
8,518.0	90.04	268.95	7,112.9	1,530.9	-1,541.6	1,949.3	0.84	0.84	0.00
8,549.0	90.48	268.87	7,112.8	1,530.3	-1,572.6	1,978.5	1.44	1.42	-0.26
8,580.0	90.75	268.78	7,112.5	1,529.7	-1,603.6	2,007.7	0.92	0.87	-0.29
8,611.0	91.10	268.52	7,112.0	1,528.9	-1,634.6	2,036.8	1.41	1.13	-0.84
8,643.0	90.13	268.69	7,111.6	1,528.2	-1,666.5	2,066.9	3.08	-3.03	0.53
8,674.0	90.22	268.69	7,111.5	1,527.4	-1,697.5	2,096.0	0.29	0.29	0.00
8,705.0	89.34	268.69	7,111.6	1,526.7	-1,728.5	2,125.2	2.84	-2.84	0.00
8,736.0	88.46	269.04	7,112.2	1,526.1	-1,759.5	2,154.3	3.05	-2.84	1.13
8,767.0	88.55	269.13	7,113.0	1,525.6	-1,790.5	2,183.5	0.41	0.29	0.29
8,799.0	88.81	268.69	7,113.8	1,525.0	-1,822.5	2,213.7	1.60	0.81	-1.38
8,830.0	89.16	268.34	7,114.3	1,524.2	-1,853.5	2,242.8	1.60	1.13	-1.13
8,861.0	89.78	268.60	7,114.6	1,523.4	-1,884.5	2,271.9	2.17	2.00	0.84
8,892.0	90.22	268.52	7,114.6	1,522.6	-1,915.5	2,301.0	1.44	1.42	-0.26
8,924.0	90.66	268.78	7,114.4	1,521.9	-1,947.4	2,331.1	1.60	1.38	0.81
8,954.0	91.01	268.69	7,113.9	1,521.2	-1,977.4	2,359.3	1.20	1.17	-0.30
8,985.0	90.48	268.16	7,113.5	1,520.3	-2,008.4	2,388.4	2.42	-1.71	-1.71
9,016.0	90.66	268.43	7,113.2	1,519.4	-2,039.4	2,417.5	1.05	0.58	0.87
9,047.0	89.96	268.60	7,113.1	1,518.6	-2,070.4	2,446.6	2.32	-2.26	0.55
9,079.0	90.22	268.95	7,113.0	1,517.9	-2,102.4	2,476.7	1.36	0.81	1.09
9,110.0	89.08	269.04	7,113.2	1,517.4	-2,133.4	2,505.9	3.69	-3.68	0.29
9,141.0	88.11	270.01	7,114.0	1,517.1	-2,164.4	2,535.2	4.42	-3.13	3.13
9,172.0	88.20	270.01	7,114.9	1,517.1	-2,195.3	2,564.5	0.29	0.29	0.00
9,201.0	88.55	269.48	7,115.8	1,517.0	-2,224.3	2,592.0	2.19	1.21	-1.83
9,234.0	88.99	270.01	7,116.5	1,516.9	-2,257.3	2,623.2	2.09	1.33	1.61
9,265.0	89.25	269.92	7,117.0	1,516.8	-2,288.3	2,652.6	0.89	0.84	-0.29
9,297.0	89.25	270.45	7,117.4	1,516.9	-2,320.3	2,682.9	1.66	0.00	1.66
9,328.0	89.69	270.98	7,117.7	1,517.3	-2,351.3	2,712.4	2.22	1.42	1.71
9,359.0	89.87	271.15	7,117.8	1,517.9	-2,382.3	2,742.0	0.80	0.58	0.55
9,390.0	90.57	271.59	7,117.7	1,518.7	-2,413.3	2,771.6	2.67	2.26	1.42
9,422.0	90.84	271.68	7,117.3	1,519.6	-2,445.3	2,802.2	0.89	0.84	0.28
9,453.0	91.71	271.68	7,116.6	1,520.5	-2,476.3	2,831.9	2.81	2.81	0.00
9,483.0	92.24	271.59	7,115.5	1,521.3	-2,506.2	2,860.5	1.79	1.77	-0.30
9,514.0	91.63	271.59	7,114.5	1,522.2	-2,537.2	2,890.2	1.97	-1.97	0.00
9,545.0	91.36	271.24	7,113.7	1,523.0	-2,568.2	2,919.8	1.43	-0.87	-1.13
9,576.0	91.54	271.15	7,112.9	1,523.6	-2,599.2	2,949.3	0.65	0.58	-0.29

Company:	Tekton Energy	Local Co-ordinate Reference:	Well Rancho Water Valley #13 7-6-33-270-6-CH
Project:	SEC.4-T5N-R67W	TVD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Site:	Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W	MD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Well:	Rancho Water Valley #13 7-6-33-270-6-CH	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
9,607.0	91.36	270.45	7,112.1	1,524.0	-2,630.2	2,978.8	2.33	-0.58	-2.26
9,637.0	90.92	269.74	7,111.5	1,524.1	-2,660.2	3,007.3	2.78	-1.47	-2.37
9,669.0	91.01	268.95	7,111.0	1,523.7	-2,692.1	3,037.5	2.48	0.28	-2.47
9,700.0	91.36	268.87	7,110.3	1,523.1	-2,723.1	3,066.7	1.16	1.13	-0.26
9,731.0	90.40	268.78	7,109.9	1,522.5	-2,754.1	3,095.8	3.11	-3.10	-0.29
9,762.0	89.25	269.31	7,110.0	1,522.0	-2,785.1	3,125.1	4.08	-3.71	1.71
9,794.0	89.25	269.31	7,110.4	1,521.6	-2,817.1	3,155.3	0.00	0.00	0.00
9,824.0	89.69	269.04	7,110.7	1,521.2	-2,847.1	3,183.6	1.72	1.47	-0.90
9,856.0	90.04	269.13	7,110.7	1,520.6	-2,879.1	3,213.7	1.13	1.09	0.28
9,886.0	90.40	269.22	7,110.6	1,520.2	-2,909.1	3,242.0	1.24	1.20	0.30
9,917.0	90.84	269.31	7,110.3	1,519.8	-2,940.1	3,271.3	1.45	1.42	0.29
9,947.0	90.04	269.39	7,110.1	1,519.5	-2,970.1	3,299.6	2.68	-2.67	0.27
9,978.0	89.25	269.66	7,110.2	1,519.2	-3,001.1	3,328.9	2.69	-2.55	0.87
10,009.0	89.43	269.66	7,110.6	1,519.0	-3,032.1	3,358.2	0.58	0.58	0.00
10,040.0	88.90	269.39	7,111.1	1,518.8	-3,063.1	3,387.5	1.92	-1.71	-0.87
10,071.0	88.99	269.22	7,111.6	1,518.4	-3,094.1	3,416.7	0.62	0.29	-0.55
10,102.0	89.08	268.87	7,112.1	1,517.9	-3,125.1	3,446.0	1.17	0.29	-1.13
10,133.0	88.99	268.16	7,112.7	1,517.1	-3,156.1	3,475.1	2.31	-0.29	-2.29
10,165.0	89.16	267.90	7,113.2	1,516.0	-3,188.0	3,505.0	0.97	0.53	-0.81
10,196.0	89.16	267.81	7,113.6	1,514.8	-3,219.0	3,534.0	0.29	0.00	-0.29
10,227.0	88.99	267.99	7,114.1	1,513.7	-3,250.0	3,563.0	0.80	-0.55	0.58
10,258.0	89.16	267.64	7,114.6	1,512.5	-3,281.0	3,592.0	1.26	0.55	-1.13
10,288.0	87.85	268.08	7,115.4	1,511.4	-3,310.9	3,620.0	4.61	-4.37	1.47
10,319.0	87.23	268.69	7,116.8	1,510.5	-3,341.9	3,649.1	2.80	-2.00	1.97
10,350.0	87.32	268.60	7,118.2	1,509.8	-3,372.8	3,678.2	0.41	0.29	-0.29
10,381.0	87.76	268.34	7,119.6	1,509.0	-3,403.8	3,707.3	1.65	1.42	-0.84
10,412.0	87.93	268.25	7,120.7	1,508.0	-3,434.8	3,736.3	0.62	0.55	-0.29
10,444.0	88.37	267.99	7,121.8	1,507.0	-3,466.7	3,766.3	1.60	1.38	-0.81
10,475.0	88.72	268.08	7,122.5	1,505.9	-3,497.7	3,795.3	1.17	1.13	0.29
10,507.0	89.16	268.78	7,123.1	1,505.0	-3,529.7	3,825.3	2.58	1.38	2.19
10,538.0	89.08	269.74	7,123.6	1,504.6	-3,560.7	3,854.6	3.11	-0.26	3.10
10,568.0	89.25	269.92	7,124.0	1,504.6	-3,590.7	3,883.0	0.83	0.57	0.60
10,600.0	89.87	269.92	7,124.3	1,504.5	-3,622.7	3,913.3	1.94	1.94	0.00
10,631.0	90.31	269.83	7,124.2	1,504.4	-3,653.7	3,942.7	1.45	1.42	-0.29
10,661.0	90.66	269.66	7,124.0	1,504.3	-3,683.7	3,971.1	1.30	1.17	-0.57
10,692.0	90.92	268.87	7,123.6	1,503.9	-3,714.7	4,000.3	2.68	0.84	-2.55
10,723.0	90.57	268.78	7,123.2	1,503.3	-3,745.7	4,029.5	1.17	-1.13	-0.29
10,755.0	90.66	268.69	7,122.8	1,502.6	-3,777.6	4,059.6	0.40	0.28	-0.28
10,786.0	90.92	268.43	7,122.4	1,501.8	-3,808.6	4,088.7	1.19	0.84	-0.84
10,818.0	90.04	268.87	7,122.1	1,501.0	-3,840.6	4,118.8	3.07	-2.75	1.38
10,849.0	89.96	269.31	7,122.1	1,500.5	-3,871.6	4,148.0	1.44	-0.26	1.42
10,880.0	90.31	269.39	7,122.0	1,500.2	-3,902.6	4,177.3	1.16	1.13	0.26
10,912.0	90.66	269.83	7,121.8	1,500.0	-3,934.6	4,207.5	1.76	1.09	1.38
10,943.0	91.01	269.74	7,121.3	1,499.9	-3,965.6	4,236.9	1.17	1.13	-0.29
10,974.0	91.45	270.27	7,120.7	1,499.9	-3,996.6	4,266.2	2.22	1.42	1.71
11,005.0	91.54	270.18	7,119.9	1,500.0	-4,027.6	4,295.6	0.41	0.29	-0.29
11,037.0	91.01	270.36	7,119.1	1,500.1	-4,059.6	4,326.0	1.75	-1.66	0.56
11,068.0	91.19	270.45	7,118.5	1,500.4	-4,090.6	4,355.5	0.65	0.58	0.29
11,099.0	91.36	270.62	7,117.9	1,500.6	-4,121.6	4,384.9	0.78	0.55	0.55
11,131.0	90.75	271.59	7,117.3	1,501.3	-4,153.6	4,415.4	3.58	-1.91	3.03
11,162.0	90.40	271.77	7,117.0	1,502.2	-4,184.5	4,445.1	1.27	-1.13	0.58
11,194.0	90.22	272.03	7,116.8	1,503.2	-4,216.5	4,475.7	0.99	-0.56	0.81
11,225.0	90.04	272.03	7,116.7	1,504.3	-4,247.5	4,505.5	0.58	-0.58	0.00

Company:	Tekton Energy	Local Co-ordinate Reference:	Well Rancho Water Valley #13 7-6-33-270-6-CH
Project:	SEC.4-T5N-R67W	TVD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Site:	Rancho Water Valley 8-6-33 Pad Sec.4-T5N-R67W	MD Reference:	RKB @ 4792.5ft (EST KB 17.5)
Well:	Rancho Water Valley #13 7-6-33-270-6-CH	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
11,256.0	90.48	272.47	7,116.6	1,505.5	-4,278.5	4,535.2	2.01	1.42	1.42
11,287.0	90.40	272.56	7,116.3	1,506.9	-4,309.4	4,565.0	0.39	-0.26	0.29
11,318.0	90.13	272.21	7,116.2	1,508.2	-4,340.4	4,594.8	1.43	-0.87	-1.13
11,349.0	90.57	272.29	7,116.0	1,509.4	-4,371.4	4,624.5	1.44	1.42	0.26
11,381.0	90.66	272.82	7,115.7	1,510.8	-4,403.4	4,655.3	1.68	0.28	1.66
11,407.0	90.48	272.82	7,115.4	1,512.1	-4,429.3	4,680.3	0.69	-0.69	0.00
11,483.0	90.48	272.82	7,114.8	1,515.9	-4,505.2	4,753.4	0.00	0.00	0.00
BHL 1320'FSL & 460'FWL									

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