



Site: Sec 17-T9S-R94W (Hawxhurst 17-04B Pad)
Well: Hawxhurst 17-03C
Wellbore: S-Well
Design: Plan #1

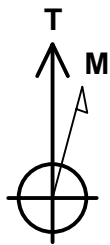
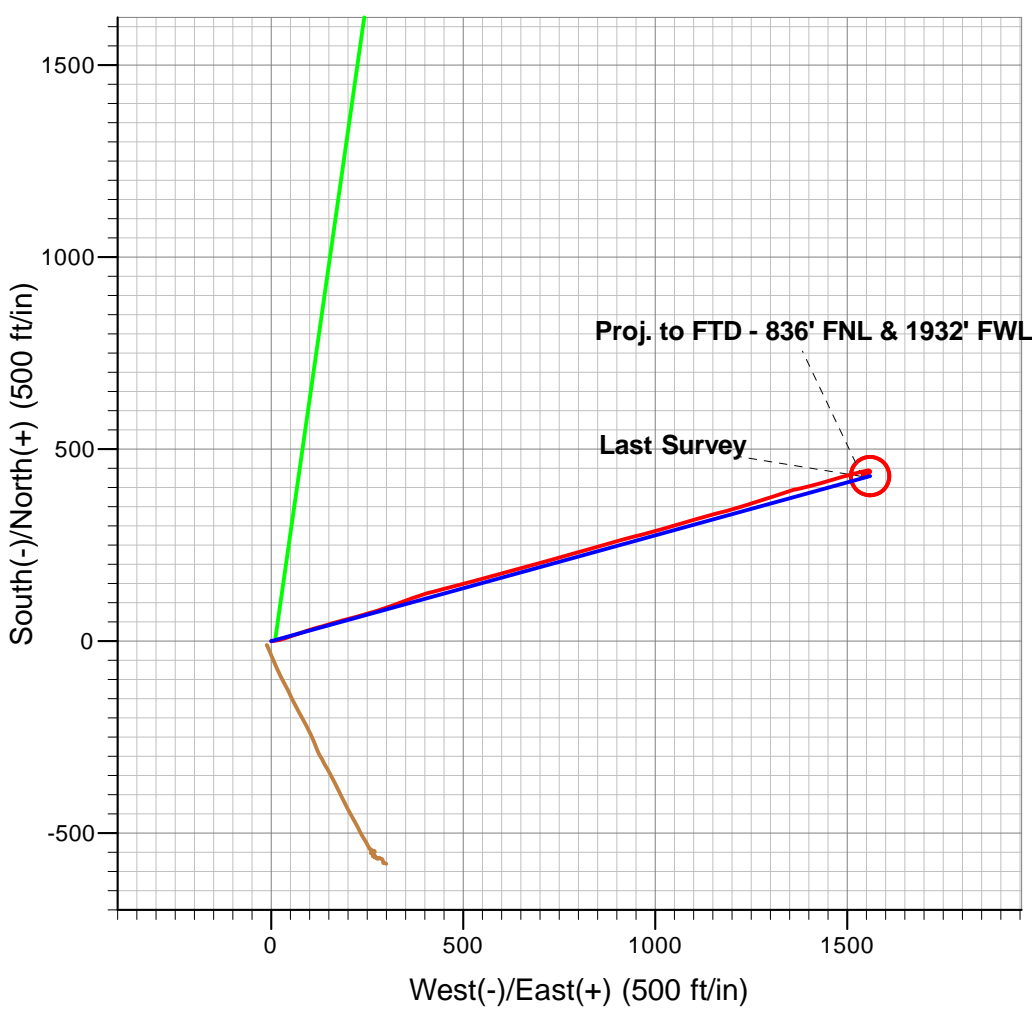
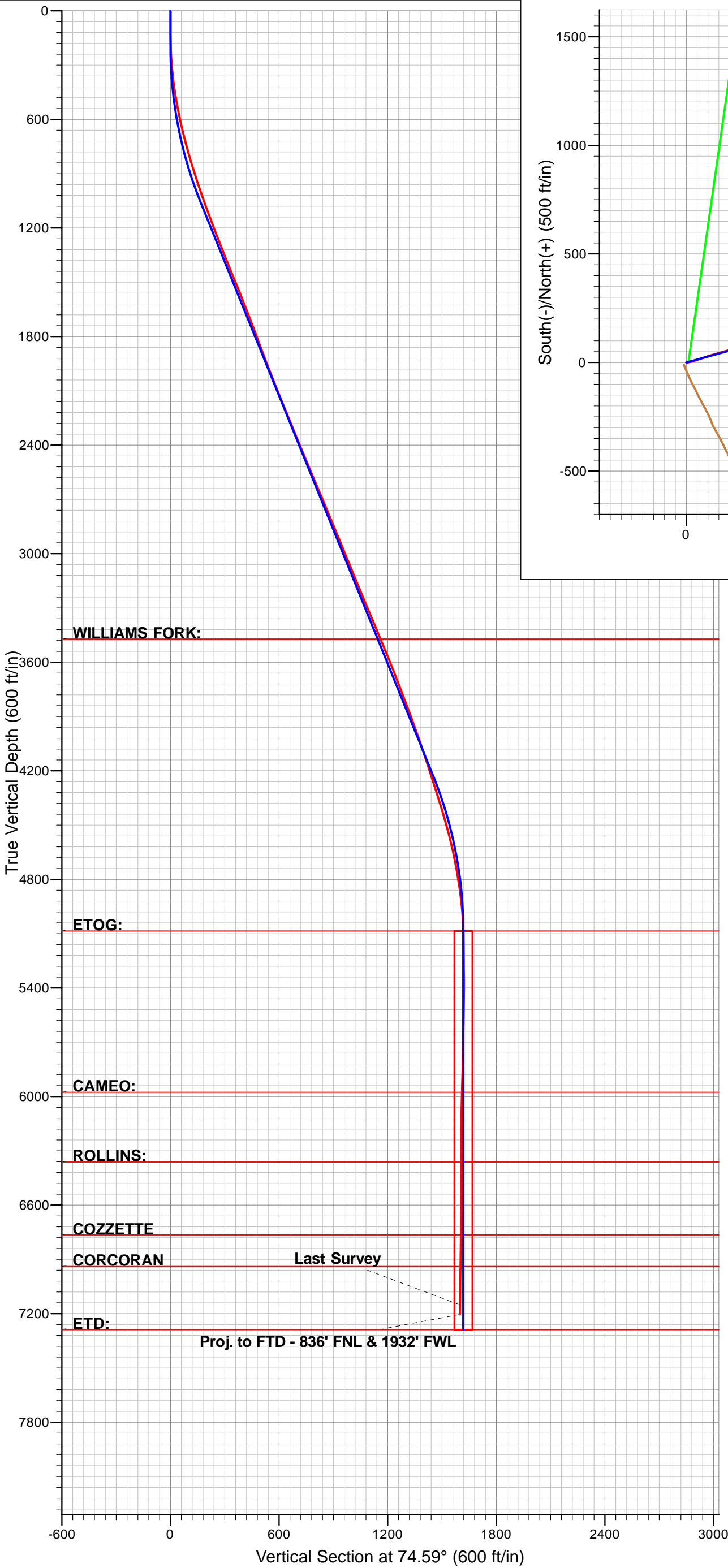
Reference Details - WELL CENTRE
Geodetic System: US State Plane 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone
Northing: 1536173.14
Easting: 2316904.29
Latitude: 39° 16' 50.196 N
Longitude: 107° 54' 48.672 W
Grid Convergence: 1.52° East
Ground Elevation: 6786.00
KB Elevation: WELL @ 6807.00ft (Original Well Elev)



Departure
Energy Services (US) LP

Denver, Colorado
Phone: 303.542.2000

Casper, Wyoming
Phone: 307.265.2231
Fax: 307.472.5064
www.departureus.com



Azimuths to True North
Magnetic North: 10.33°

Magnetic Field
Strength: 52169.1snT
Dip Angle: 65.59°
Date: 02/18/2011
Model: IGRF2010



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Laramie Energy II, LLC

Mesa County, Colorado

NWNW Sec 17-T9S-R94W

Hawxhurst 17-03C

S- Well

Final Surveys

Job Number: 311042

Final Survey Report

December 5, 2011

Company:	Laramie Energy II, LLC	Local Co-ordinate Reference:	Site Sec 17-T9S-R94W (Hawxhurst 17-04B Pad)
Project:	MESA, CO	TVD Reference:	WELL @ 6807.00ft (Original Well Elev)
Site:	Sec 17-T9S-R94W (Hawxhurst 17-04B Pad)	MD Reference:	WELL @ 6807.00ft (Original Well Elev)
Well:	Hawxhurst 17-03C	North Reference:	True
Wellbore:	S-Well	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM Depart

Project	MESA, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	Sec 17-T9S-R94W (Hawxhurst 17-04B Pad)				
Site Position:		Northing:	1,536,162.52 ft	Latitude:	39° 16' 50.088 N
From:	Lat/Long	Easting:	2,316,892.69 ft	Longitude:	107° 54' 48.816 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.52 °

Well	Hawxhurst 17-03C					
Well Position	+N/-S	10.93 ft	Northing:	1,536,173.14 ft	Latitude:	39° 16' 50.196 N
	+E/-W	11.32 ft	Easting:	2,316,904.30 ft	Longitude:	107° 54' 48.672 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,786.00 ft

Wellbore	S-Well				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	02/18/11	10.33	65.59	52,169

Design		Surveys			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)		+N/-S (ft)	+E/-W (ft)	Direction (°)
		0.00	10.93	11.32	74.59

Survey Program		Date	12/05/11		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
133.00	7,490.00	Survey #1 (S-Well)	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)
0.00	0.00	0.00	0.00	10.93	11.32	0.00	0.00	0.00	0.00
133.00	0.40	105.40	133.00	10.80	11.77	0.40	0.30	0.30	0.00
193.00	1.20	73.90	192.99	10.92	12.58	1.21	1.47	1.33	-52.50
285.00	4.40	84.90	284.87	11.50	17.02	5.64	3.51	3.48	11.96
377.00	7.00	81.70	376.41	12.63	26.08	14.68	2.85	2.83	-3.48
468.00	9.40	74.00	466.47	15.48	38.71	27.62	2.89	2.64	-8.46
560.00	11.10	70.30	557.00	20.53	54.28	43.96	1.98	1.85	-4.02
650.00	13.00	69.80	645.02	26.95	71.93	62.69	2.11	2.11	-0.56
742.00	14.90	72.80	734.30	34.02	92.95	84.83	2.21	2.07	3.26
833.00	16.60	71.90	821.88	41.52	116.48	109.51	1.89	1.87	-0.99

Company:	Laramie Energy II, LLC	Local Co-ordinate Reference:	Site Sec 17-T9S-R94W (Hawxhurst 17-04B Pad)
Project:	MESA, CO	TVD Reference:	WELL @ 6807.00ft (Original Well Elev)
Site:	Sec 17-T9S-R94W (Hawxhurst 17-04B Pad)	MD Reference:	WELL @ 6807.00ft (Original Well Elev)
Well:	Hawxhurst 17-03C	North Reference:	True
Wellbore:	S-Well	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM Depart

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)
925.00	18.20	75.00	909.67	49.32	142.85	137.00	2.01	1.74	3.37
1,020.00	18.80	73.70	999.76	57.46	171.87	167.14	0.77	0.63	-1.37
1,115.00	19.70	74.80	1,089.45	65.95	202.02	198.46	1.02	0.95	1.16
1,211.00	20.90	75.00	1,179.48	74.63	234.17	231.77	1.25	1.25	0.21
1,306.00	21.30	73.20	1,268.12	84.00	267.06	265.96	0.80	0.42	-1.89
1,401.00	21.80	71.50	1,356.48	94.58	300.31	300.83	0.84	0.53	-1.79
1,496.00	22.00	70.80	1,444.62	106.03	333.84	336.20	0.35	0.21	-0.74
1,618.00	22.50	68.50	1,557.54	122.10	377.14	382.21	0.82	0.41	-1.89
1,681.00	21.70	71.80	1,615.91	130.16	399.42	405.83	2.34	-1.27	5.24
1,777.00	21.10	75.90	1,705.30	139.91	433.04	440.83	1.68	-0.63	4.27
1,872.00	20.40	75.60	1,794.13	148.20	465.67	474.49	0.75	-0.74	-0.32
1,968.00	20.20	75.30	1,884.17	156.56	497.90	507.79	0.23	-0.21	-0.31
2,063.00	21.20	75.40	1,973.04	165.06	530.39	541.36	1.05	1.05	0.11
2,158.00	21.70	74.20	2,061.46	174.17	563.91	576.10	0.70	0.53	-1.26
2,253.00	22.40	74.70	2,149.51	183.73	598.27	611.77	0.76	0.74	0.53
2,349.00	22.20	75.00	2,238.33	193.25	633.43	648.19	0.24	-0.21	0.31
2,444.00	22.10	75.20	2,326.32	202.46	668.05	684.01	0.13	-0.11	0.21
2,539.00	23.00	74.20	2,414.05	212.08	703.19	720.44	1.03	0.95	-1.05
2,634.00	22.50	74.20	2,501.66	222.08	738.53	757.18	0.53	-0.53	0.00
2,730.00	22.20	73.80	2,590.45	232.14	773.63	793.68	0.35	-0.31	-0.42
2,825.00	23.40	74.70	2,678.03	242.13	809.06	830.49	1.32	1.26	0.95
2,920.00	22.80	74.00	2,765.41	252.18	844.95	867.76	0.69	-0.63	-0.74
3,015.00	22.20	73.70	2,853.18	262.29	879.87	904.11	0.64	-0.63	-0.32
3,110.00	22.50	75.10	2,941.04	272.00	914.66	940.24	0.64	0.32	1.47
3,206.00	21.90	74.70	3,029.93	281.45	949.68	976.51	0.64	-0.63	-0.42
3,302.00	22.80	75.40	3,118.71	290.86	984.95	1,013.01	0.98	0.94	0.73
3,397.00	22.10	74.90	3,206.51	300.16	1,020.02	1,049.29	0.76	-0.74	-0.53
3,492.00	23.20	74.20	3,294.18	309.91	1,055.28	1,085.87	1.19	1.16	-0.74
3,587.00	22.50	72.90	3,381.73	320.35	1,090.66	1,122.75	0.91	-0.74	-1.37
3,683.00	22.50	73.20	3,470.42	331.06	1,125.80	1,159.48	0.12	0.00	0.31
3,778.00	22.50	76.30	3,558.19	340.62	1,160.86	1,195.82	1.25	0.00	3.26
3,873.00	21.70	74.10	3,646.21	349.73	1,195.42	1,231.55	1.21	-0.84	-2.32
3,969.00	20.60	73.30	3,735.75	359.45	1,228.66	1,266.18	1.18	-1.15	-0.83
4,064.00	21.20	72.90	3,824.50	369.30	1,261.09	1,300.06	0.65	0.63	-0.42
4,159.00	20.00	72.20	3,913.42	379.32	1,292.97	1,333.47	1.29	-1.26	-0.74
4,255.00	19.10	70.40	4,003.89	389.61	1,323.40	1,365.53	1.13	-0.94	-1.88
4,350.00	19.10	72.50	4,093.66	399.49	1,352.87	1,396.57	0.72	0.00	2.21
4,445.00	18.00	78.40	4,183.73	407.12	1,382.07	1,426.75	2.29	-1.16	6.21
4,540.00	17.30	75.50	4,274.26	413.61	1,410.13	1,455.52	1.18	-0.74	-3.05
4,636.00	17.50	74.30	4,365.86	421.09	1,437.84	1,484.23	0.43	0.21	-1.25
4,731.00	16.20	74.10	4,456.78	428.58	1,464.34	1,511.76	1.37	-1.37	-0.21
4,826.00	14.90	73.30	4,548.30	435.73	1,488.79	1,537.23	1.39	-1.37	-0.84
4,922.00	12.30	75.10	4,641.61	441.90	1,510.49	1,559.79	2.74	-2.71	1.88
5,017.00	10.60	74.30	4,734.71	446.87	1,528.68	1,578.65	1.80	-1.79	-0.84

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Survey									
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5,110.00	8.50	76.10	4,826.42	450.84	1,543.59	1,594.08	2.28	-2.26	1.94
5,206.00	6.40	79.20	4,921.60	453.54	1,555.74	1,606.50	2.23	-2.19	3.23
5,299.00	3.90	76.70	5,014.22	455.24	1,563.91	1,614.83	2.70	-2.69	-2.69
5,395.00	1.10	108.10	5,110.12	455.71	1,567.96	1,618.87	3.14	-2.92	32.71
5,490.00	1.30	121.70	5,205.10	454.86	1,569.75	1,620.36	0.36	0.21	14.32
5,585.00	1.50	161.60	5,300.07	453.11	1,571.05	1,621.16	1.02	0.21	42.00
5,681.00	0.10	345.20	5,396.06	452.00	1,571.43	1,621.22	1.67	-1.46	-183.75
5,776.00	0.50	229.40	5,491.06	451.81	1,571.09	1,620.85	0.58	0.42	-121.89
5,872.00	2.00	223.50	5,587.04	450.32	1,569.62	1,619.04	1.57	1.56	-6.15
5,967.00	0.60	265.10	5,682.01	449.08	1,567.99	1,617.13	1.69	-1.47	43.79
6,062.00	1.30	250.50	5,777.00	448.67	1,566.47	1,615.56	0.77	0.74	-15.37
6,157.00	1.20	263.10	5,871.98	448.20	1,564.47	1,613.50	0.31	-0.11	13.26
6,253.00	1.50	243.90	5,967.95	447.52	1,562.34	1,611.28	0.56	0.31	-20.00
6,348.00	1.80	237.80	6,062.91	446.18	1,559.97	1,608.63	0.37	0.32	-6.42
6,444.00	0.40	280.30	6,158.89	445.44	1,558.36	1,606.88	1.59	-1.46	44.27
6,539.00	1.10	264.30	6,253.88	445.41	1,557.13	1,605.68	0.76	0.74	-16.84
6,634.00	1.50	4.30	6,348.87	446.55	1,556.31	1,605.20	2.11	0.42	105.26
6,729.00	1.10	350.80	6,443.84	448.69	1,556.26	1,605.72	0.53	-0.42	-14.21
6,825.00	0.70	331.20	6,539.83	450.12	1,555.83	1,605.68	0.52	-0.42	-20.42
6,920.00	0.40	234.10	6,634.83	450.43	1,555.28	1,605.24	0.89	-0.32	-102.21
7,015.00	0.70	203.30	6,729.82	449.70	1,554.78	1,604.57	0.43	0.32	-32.42
7,111.00	1.00	196.40	6,825.81	448.36	1,554.31	1,603.76	0.33	0.31	-7.19
7,206.00	1.40	196.50	6,920.79	446.45	1,553.75	1,602.71	0.42	0.42	0.11
7,301.00	1.70	195.30	7,015.76	443.98	1,553.05	1,601.37	0.32	0.32	-1.26
7,396.00	2.00	190.60	7,110.71	440.99	1,552.37	1,599.93	0.35	0.32	-4.95
7,437.00	2.20	189.50	7,151.68	439.51	1,552.11	1,599.28	0.50	0.49	-2.68
Last Survey									
7,490.00	2.20	189.50	7,204.64	437.51	1,551.78	1,598.43	0.00	0.00	0.00
Proj. to FTD - 836' FNL & 1932' FWL									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,437.00	7,151.68	439.51	1,552.11	Last Survey
7,490.00	7,204.64	437.51	1,551.78	Proj. to FTD - 836' FNL & 1932' FWL

Checked By: _____ Approved By: _____ Date: _____