

Extraction Oil & Gas

Weld County, CO (NAD83)

Hergert Pad (Sec 35-T7N-R67W)

HERGERT SOUTH 35W-15-5N

Wellbore #1

Design: Wellbore #1

Standard Survey Report

12 April, 2018

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well HERGERT SOUTH 35W-15-5N
Project:	Weld County, CO (NAD83)	TVD Reference:	KB=25 @ 4908.00ft
Site:	Hergert Pad (Sec 35-T7N-R67W)	MD Reference:	KB=25 @ 4908.00ft
Well:	HERGERT SOUTH 35W-15-5N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

Project	Weld County, CO (NAD83)		
Map System:	US State Plane 1983	System Datum:	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Hergert Pad (Sec 35-T7N-R67W)				
Site Position:		Northing:	1,436,424.30 usft	Latitude:	40.529588	
From:	Map	Easting:	3,179,655.02 usft	Longitude:	-104.853702	
Position Uncertainty:		0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well		HERGERT SOUTH 35W-15-5N, MS				
Well Position	+N/-S	0.00 ft	Northing:	1,436,425.28 usft	Latitude:	40.529589
	+E/-W	0.00 ft	Easting:	3,179,738.96 usft	Longitude:	-104.853400
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,883.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/22/2018	8.30	66.93	52,332

Design	Wellbore #1				
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	0.00	0.00	133.13	

Survey Program	Date	4/12/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
103.00	1,510.00	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,652.00	14,843.00	MWD Survey (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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
103.00	0.53	240.02	103.00	-0.24	-0.41	-0.14	0.51	0.51	0.00	
199.00	0.53	256.28	198.99	-0.57	-1.23	-0.51	0.16	0.00	16.94	
294.00	0.97	230.35	293.99	-1.18	-2.27	-0.85	0.57	0.46	-27.29	
389.00	0.57	326.15	388.98	-1.30	-3.16	-1.41	1.24	-0.42	100.84	
484.00	0.70	342.94	483.97	-0.36	-3.59	-2.38	0.24	0.14	17.67	
580.00	0.97	357.09	579.96	1.02	-3.80	-3.47	0.35	0.28	14.74	
675.00	0.79	12.29	674.95	2.46	-3.71	-4.39	0.31	-0.19	16.00	
768.00	1.63	111.70	767.94	2.60	-2.34	-3.48	2.07	0.90	106.89	
863.00	2.72	124.62	862.87	0.82	0.77	0.00	1.25	1.15	13.60	

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Site:	Hergert Pad (Sec 35-T7N-R67W)	MD Reference:	KB=25 @ 4908.00ft
Well:	HERGERT SOUTH 35W-15-5N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
958.00	3.47	128.83	957.73	-2.27	4.87	5.10	0.82	0.79	4.43
1,053.00	4.88	127.17	1,052.48	-6.51	10.33	11.99	1.49	1.48	-1.75
1,147.00	6.24	133.67	1,146.03	-12.45	17.21	21.07	1.59	1.45	6.91
1,243.00	8.96	135.60	1,241.18	-21.40	26.21	33.76	2.85	2.83	2.01
1,339.00	10.37	137.18	1,335.82	-33.08	37.32	49.85	1.49	1.47	1.65
1,433.00	10.46	136.13	1,428.27	-45.43	48.98	66.81	0.22	0.10	-1.12
1,510.00	11.34	132.88	1,503.88	-55.62	59.37	81.36	1.39	1.14	-4.22
Tie in to Surface Surveys									
1,652.00	10.12	130.72	1,643.39	-73.26	79.06	107.79	0.90	-0.86	-1.52
First MWD Survey @ 1652'MD									
1,747.00	12.11	130.94	1,736.61	-85.24	92.92	126.08	2.10	2.09	0.23
1,841.00	13.57	130.76	1,828.25	-98.90	108.72	146.96	1.55	1.55	-0.19
1,935.00	12.90	130.98	1,919.76	-112.98	124.99	168.46	0.71	-0.71	0.23
2,029.00	12.64	128.82	2,011.43	-126.31	140.93	189.20	0.58	-0.28	-2.30
2,124.00	12.59	133.98	2,104.14	-140.02	156.48	209.92	1.19	-0.05	5.43
2,218.00	12.59	132.44	2,195.88	-154.04	171.41	230.41	0.36	0.00	-1.64
2,312.00	12.02	131.42	2,287.72	-167.43	186.31	250.44	0.65	-0.61	-1.09
2,406.00	12.11	136.14	2,379.65	-181.02	200.48	270.07	1.05	0.10	5.02
2,501.00	11.89	135.04	2,472.57	-195.13	214.30	289.80	0.33	-0.23	-1.16
2,595.00	13.21	136.27	2,564.32	-209.74	228.57	310.20	1.43	1.40	1.31
2,690.00	13.35	136.54	2,656.78	-225.55	243.62	331.99	0.16	0.15	0.28
2,784.00	13.04	136.14	2,748.30	-241.07	258.43	353.41	0.34	-0.33	-0.43
2,878.00	12.28	135.61	2,840.02	-255.86	272.77	373.99	0.82	-0.81	-0.56
2,972.00	11.62	134.38	2,931.98	-269.62	286.53	393.44	0.75	-0.70	-1.31
3,067.00	11.05	134.51	3,025.12	-282.70	299.86	412.11	0.60	-0.60	0.14
3,161.00	12.11	130.63	3,117.21	-295.44	313.77	430.96	1.40	1.13	-4.13
3,256.00	11.45	128.25	3,210.21	-307.76	328.74	450.32	0.86	-0.69	-2.51
3,351.00	13.08	130.28	3,303.04	-320.55	344.34	470.45	1.77	1.72	2.14
3,445.00	12.55	129.71	3,394.70	-333.95	360.31	491.27	0.58	-0.56	-0.61
3,539.00	13.21	127.28	3,486.33	-346.98	376.72	512.15	0.91	0.70	-2.59
3,634.00	11.98	127.11	3,579.04	-359.51	393.22	532.75	1.30	-1.29	-0.18
3,728.00	12.42	132.13	3,670.92	-372.17	408.49	552.56	1.22	0.47	5.34
3,822.00	12.51	132.00	3,762.71	-385.77	423.56	572.85	0.10	0.10	-0.14
3,916.00	12.51	131.12	3,854.48	-399.28	438.79	593.20	0.20	0.00	-0.94
4,010.00	12.33	130.85	3,946.28	-412.54	454.05	613.40	0.20	-0.19	-0.29
4,105.00	11.49	132.44	4,039.23	-425.56	468.71	633.00	0.95	-0.88	1.67
4,199.00	13.30	134.77	4,131.04	-439.49	483.30	653.17	2.00	1.93	2.48
4,292.00	12.37	136.84	4,221.71	-454.29	497.70	673.80	1.12	-1.00	2.23
4,386.00	14.23	135.61	4,313.19	-469.89	512.67	695.40	2.00	1.98	-1.31
4,480.00	13.21	136.71	4,404.50	-485.97	528.12	717.66	1.12	-1.09	1.17
4,574.00	12.90	135.79	4,496.08	-501.30	542.80	738.86	0.40	-0.33	-0.98
4,668.00	11.45	135.43	4,587.96	-515.47	556.67	758.66	1.54	-1.54	-0.38
4,762.00	12.68	131.82	4,679.88	-529.00	570.91	778.30	1.53	1.31	-3.84

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Design:	Wellbore #1	Database:	EDM 5000.1

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,856.00	11.45	133.67	4,771.80	-542.32	585.34	797.95	1.37	-1.31	1.97
4,950.00	12.64	129.18	4,863.73	-555.26	600.06	817.54	1.61	1.27	-4.78
5,044.00	12.15	127.33	4,955.54	-567.76	615.90	837.64	0.67	-0.52	-1.97
5,139.00	12.99	129.66	5,048.27	-580.64	632.07	858.24	1.03	0.88	2.45
5,233.00	11.31	128.78	5,140.16	-593.15	647.39	877.98	1.80	-1.79	-0.94
5,328.00	12.42	132.92	5,233.13	-605.94	662.14	897.49	1.47	1.17	4.36
5,422.00	13.12	135.61	5,324.80	-620.45	677.00	918.26	0.98	0.74	2.86
5,516.00	11.49	134.42	5,416.64	-634.63	691.15	938.28	1.75	-1.73	-1.27
5,611.00	10.43	133.10	5,509.91	-647.13	704.19	956.33	1.15	-1.12	-1.39
5,705.00	8.66	132.75	5,602.60	-657.75	715.60	971.92	1.88	-1.88	-0.37
5,800.00	8.13	132.26	5,696.58	-667.12	725.82	985.79	0.56	-0.56	-0.52
5,894.00	6.54	131.95	5,789.81	-675.17	734.73	997.79	1.69	-1.69	-0.33
5,989.00	5.44	126.66	5,884.29	-681.47	742.36	1,007.67	1.29	-1.16	-5.57
6,083.00	4.73	127.99	5,977.92	-686.52	748.99	1,015.96	0.77	-0.76	1.41
6,177.00	2.08	92.56	6,071.76	-688.98	753.75	1,021.12	3.47	-2.82	-37.69
6,271.00	0.49	267.95	6,165.74	-689.07	755.05	1,022.13	2.73	-1.69	186.59
6,366.00	0.84	271.03	6,260.73	-689.07	753.95	1,021.33	0.37	0.37	3.24
6,460.00	1.02	290.15	6,354.72	-688.77	752.48	1,020.04	0.38	0.19	20.34
6,578.00	1.02	300.07	6,472.70	-687.89	750.58	1,018.05	0.15	0.00	8.41
6,672.00	9.01	268.96	6,566.27	-687.60	742.48	1,011.95	8.67	8.50	-33.10
6,766.00	19.40	275.26	6,657.28	-686.30	719.52	994.30	11.16	11.05	6.70
6,861.00	26.82	272.66	6,744.60	-683.85	682.34	965.50	7.88	7.81	-2.74
6,955.00	34.07	271.60	6,825.58	-682.13	634.78	929.61	7.73	7.71	-1.13
7,049.00	41.36	268.47	6,899.90	-682.23	577.33	887.75	8.02	7.76	-3.33
7,144.00	49.14	269.75	6,966.73	-683.22	509.92	839.24	8.24	8.19	1.35
7,238.00	57.53	270.41	7,022.81	-683.09	434.59	784.18	8.94	8.93	0.70
7,332.00	64.47	270.02	7,068.35	-682.80	352.43	724.01	7.39	7.38	-0.41
7,423.84	70.00	269.63	7,103.88	-683.06	267.77	662.42	6.03	6.02	-0.43
70° @ 7423'MD									
7,426.00	70.13	269.62	7,104.62	-683.07	265.74	660.94	6.03	6.02	-0.41
7,516.40	77.61	268.19	7,129.71	-684.75	178.98	598.77	8.41	8.27	-1.58
460' Hardline Crossing @ 7516'MD (460'FEL & 1585'FSL)									
7,521.00	77.99	268.12	7,130.69	-684.90	174.49	595.59	8.41	8.28	-1.53
7,615.00	80.78	270.99	7,148.00	-685.60	82.12	528.67	4.22	2.97	3.05
7,710.00	84.36	270.46	7,160.29	-684.41	-12.06	459.13	3.81	3.77	-0.56
7,804.00	88.78	269.84	7,165.91	-684.17	-105.87	390.50	4.75	4.70	-0.66
7,898.00	90.72	269.44	7,166.32	-684.76	-199.86	322.31	2.11	2.06	-0.43
7,993.00	90.94	269.44	7,164.94	-685.69	-294.84	253.63	0.23	0.23	0.00
8,087.00	90.68	268.17	7,163.61	-687.65	-388.81	186.39	1.38	-0.28	-1.35
8,182.00	89.40	267.68	7,163.55	-691.09	-483.75	119.46	1.44	-1.35	-0.52
8,276.00	89.93	269.66	7,164.10	-693.27	-577.72	52.38	2.18	0.56	2.11
8,370.00	88.69	268.96	7,165.23	-694.40	-671.70	-15.44	1.51	-1.32	-0.74
8,464.00	90.32	270.06	7,166.04	-695.21	-765.69	-83.48	2.09	1.73	1.17
8,558.00	90.54	269.44	7,165.34	-695.62	-859.68	-151.79	0.70	0.23	-0.66

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Survey

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8,652.00	90.99	271.51	7,164.08	-694.84	-953.67	-220.91	2.25	0.48	2.20
8,747.00	91.25	270.63	7,162.22	-693.06	-1,048.63	-291.43	0.97	0.27	-0.93
8,841.00	91.52	270.77	7,159.95	-691.91	-1,142.60	-360.78	0.32	0.29	0.15
8,934.00	91.87	270.77	7,157.20	-690.67	-1,235.55	-429.47	0.38	0.38	0.00
9,029.00	90.94	270.90	7,154.87	-689.28	-1,330.51	-499.72	0.99	-0.98	0.14
9,122.00	91.65	271.60	7,152.77	-687.25	-1,423.46	-568.94	1.07	0.76	0.75
9,216.00	88.86	270.90	7,152.35	-685.20	-1,517.43	-638.92	3.06	-2.97	-0.74
9,310.00	88.51	271.34	7,154.51	-683.37	-1,611.38	-708.74	0.60	-0.37	0.47
9,405.00	90.81	271.60	7,155.07	-680.93	-1,706.35	-779.70	2.44	2.42	0.27
9,499.00	91.30	271.91	7,153.34	-678.05	-1,800.29	-850.23	0.62	0.52	0.33
9,593.00	90.01	272.31	7,152.27	-674.59	-1,894.21	-921.14	1.44	-1.37	0.43
9,688.00	91.16	272.62	7,151.30	-670.50	-1,989.12	-993.19	1.25	1.21	0.33
9,782.00	90.15	270.77	7,150.22	-667.73	-2,083.07	-1,063.65	2.24	-1.07	-1.97
9,876.00	90.68	271.03	7,149.54	-666.25	-2,177.05	-1,133.25	0.63	0.56	0.28
9,971.00	92.36	272.22	7,147.02	-663.56	-2,271.97	-1,204.36	2.17	1.77	1.25
10,065.00	91.34	270.41	7,143.99	-661.40	-2,365.90	-1,274.38	2.21	-1.09	-1.93
10,159.00	89.88	269.27	7,142.99	-661.66	-2,459.89	-1,342.79	1.97	-1.55	-1.21
10,253.00	88.86	267.68	7,144.02	-664.16	-2,553.84	-1,409.65	2.01	-1.09	-1.69
10,348.00	89.44	269.84	7,145.43	-666.22	-2,648.80	-1,477.54	2.35	0.61	2.27
10,442.00	91.65	270.19	7,144.54	-666.20	-2,742.79	-1,546.15	2.38	2.35	0.37
10,536.00	91.47	269.80	7,141.98	-666.20	-2,836.76	-1,614.72	0.46	-0.19	-0.41
10,630.00	93.77	269.84	7,137.68	-666.50	-2,930.65	-1,683.04	2.45	2.45	0.04
10,724.00	93.90	268.61	7,131.39	-667.77	-3,024.43	-1,750.61	1.31	0.14	-1.31
10,818.00	92.49	268.91	7,126.15	-669.80	-3,118.26	-1,817.70	1.53	-1.50	0.32
10,912.00	92.84	269.05	7,121.78	-671.47	-3,212.15	-1,885.07	0.40	0.37	0.15
11,007.00	92.05	268.21	7,117.73	-673.74	-3,307.03	-1,952.76	1.21	-0.83	-0.88
11,101.00	92.22	270.24	7,114.23	-675.01	-3,400.95	-2,020.43	2.17	0.18	2.16
11,195.00	93.59	269.40	7,109.46	-675.30	-3,494.83	-2,088.74	1.71	1.46	-0.89
11,289.00	93.73	268.69	7,103.46	-676.87	-3,588.62	-2,156.12	0.77	0.15	-0.76
11,383.00	91.87	269.40	7,098.87	-678.43	-3,682.49	-2,223.55	2.12	-1.98	0.76
11,478.00	93.73	271.07	7,094.23	-678.04	-3,777.37	-2,293.06	2.63	1.96	1.76
11,572.00	92.36	272.13	7,089.24	-675.42	-3,871.20	-2,363.32	1.84	-1.46	1.13
11,667.00	93.28	273.54	7,084.56	-670.73	-3,965.96	-2,435.69	1.77	0.97	1.48
11,761.00	93.50	272.18	7,079.00	-666.05	-4,059.68	-2,507.28	1.46	0.23	-1.45
11,856.00	94.74	273.59	7,072.18	-661.28	-4,154.31	-2,579.60	1.97	1.31	1.48
11,950.00	92.44	272.57	7,066.29	-656.24	-4,247.98	-2,651.41	2.68	-2.45	-1.09
12,044.00	92.93	274.33	7,061.89	-650.59	-4,341.70	-2,723.67	1.94	0.52	1.87
12,138.00	92.36	271.82	7,057.55	-645.55	-4,435.46	-2,795.53	2.74	-0.61	-2.67
12,232.00	93.15	271.78	7,053.03	-642.61	-4,529.31	-2,866.03	0.84	0.84	-0.04
12,326.00	93.64	271.38	7,047.47	-640.02	-4,623.10	-2,936.25	0.67	0.52	-0.43
12,336.72	93.70	271.36	7,046.78	-639.76	-4,633.80	-2,944.23	0.59	0.56	-0.18
Crossing Section 35/34 @ 12336'MD									
12,420.00	94.17	271.21	7,041.07	-637.90	-4,716.86	-3,006.12	0.59	0.56	-0.18

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well HERGERT SOUTH 35W-15-5N
Project:	Weld County, CO (NAD83)	TVD Reference:	KB=25 @ 4908.00ft
Site:	Hergert Pad (Sec 35-T7N-R67W)	MD Reference:	KB=25 @ 4908.00ft
Well:	HERGERT SOUTH 35W-15-5N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,514.00	94.43	270.41	7,034.02	-636.57	-4,810.59	-3,075.43	0.89	0.28	-0.85
12,608.00	92.71	269.93	7,028.16	-636.30	-4,904.40	-3,144.08	1.90	-1.83	-0.51
12,703.00	93.28	269.66	7,023.20	-636.63	-4,999.27	-3,213.08	0.66	0.60	-0.28
12,796.00	93.20	269.31	7,017.94	-637.47	-5,092.12	-3,280.27	0.39	-0.09	-0.38
12,890.00	92.75	268.56	7,013.07	-639.21	-5,185.97	-3,347.57	0.93	-0.48	-0.80
12,985.00	92.49	269.40	7,008.72	-640.90	-5,280.86	-3,415.66	0.92	-0.27	0.88
13,079.00	93.81	267.81	7,003.56	-643.19	-5,374.68	-3,482.57	2.20	1.40	-1.69
13,173.00	94.92	271.03	6,996.40	-644.14	-5,468.39	-3,550.31	3.61	1.18	3.43
13,267.00	94.30	271.69	6,988.85	-641.91	-5,562.06	-3,620.18	0.96	-0.66	0.70
13,361.00	94.52	270.63	6,981.62	-640.02	-5,655.76	-3,689.86	1.15	0.23	-1.13
13,454.00	93.81	271.60	6,974.86	-638.21	-5,748.50	-3,758.77	1.29	-0.76	1.04
13,549.00	92.18	271.12	6,969.90	-635.96	-5,843.34	-3,829.52	1.79	-1.72	-0.51
13,643.00	91.87	271.96	6,966.58	-633.44	-5,937.24	-3,899.78	0.95	-0.33	0.89
13,737.00	93.02	272.48	6,962.57	-629.80	-6,031.08	-3,970.75	1.34	1.22	0.55
13,831.00	93.99	270.06	6,956.82	-627.72	-6,124.88	-4,040.62	2.77	1.03	-2.57
13,924.00	93.42	269.66	6,950.81	-627.94	-6,217.68	-4,108.19	0.75	-0.61	-0.43
14,019.00	91.78	270.77	6,946.50	-627.59	-6,312.58	-4,177.69	2.08	-1.73	1.17
14,113.00	91.91	271.69	6,943.47	-625.57	-6,406.51	-4,247.61	0.99	0.14	0.98
14,207.00	91.34	269.53	6,940.81	-624.57	-6,500.46	-4,316.86	2.38	-0.61	-2.30
14,302.00	92.09	269.75	6,937.97	-625.17	-6,595.41	-4,385.75	0.82	0.79	0.23
14,396.00	89.62	270.81	6,936.56	-624.71	-6,689.39	-4,454.65	2.86	-2.63	1.13
14,490.00	89.62	272.92	6,937.19	-621.65	-6,783.34	-4,525.29	2.24	0.00	2.24
14,584.00	89.66	272.66	6,937.78	-617.07	-6,877.22	-4,596.94	0.28	0.04	-0.28
14,679.00	90.59	274.82	6,937.57	-610.88	-6,972.01	-4,670.35	2.48	0.98	2.27
14,771.00	91.16	273.41	6,936.17	-604.28	-7,063.76	-4,741.82	1.65	0.62	-1.53
Last MWD Survey @ 14771'MD									
14,843.00	91.16	273.41	6,934.71	-599.99	-7,135.62	-4,797.19	0.00	0.00	0.00
PTB @ TD @ 14843'MD									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,510.00	1,503.88	-55.62	59.37	Tie in to Surface Surveys
1,652.00	1,643.39	-73.26	79.06	First MWD Survey @ 1652'MD
7,423.84	7,103.88	-683.06	267.77	70° @ 7423'MD
7,516.40	7,129.71	-684.75	178.98	460' Hardline Crossing @ 7516'MD (460'FEL & 1585'FSL)
12,336.72	7,046.78	-639.76	-4,633.80	Crossing Section 35/34 @ 12336'MD
14,771.00	6,936.17	-604.28	-7,063.76	Last MWD Survey @ 14771'MD
14,843.00	6,934.71	-599.99	-7,135.62	PTB @ TD @ 14843'MD

Checked By: _____ Approved By: _____ Date: _____