

## 1 General

### 1.1 Customer Information

Company	PICEANCE HL
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	RGU 334-23-198	Wellbore No.	00
Wellbore Legal Name	RGU 334-23-198	Common Wellbore Name	RGU 334-23-198
Project	RG 23-01S-098W	Site	RGU 43-23-198 PAD
Vertical Section Azimuth	256.32 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	11/23/2014	UWI	RGU 334-23-198
Active datum	KB @6,592.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	11/23/2014	Ended	
Tool Name	MWD	Engineer	

#### 2.1.1 Tie On Point

MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)
0.0	0.00	0.00	0.00	0.00	0.00

#### 2.1.2 Survey Stations

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
11/23/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/23/2014	NORMAL	172.0	0.79	189.84	171.99	-1.17	-0.20	0.47	0.46	0.46	0.00	189.84
	NORMAL	263.0	0.44	13.36	262.99	-1.45	-0.23	0.56	1.35	-0.38	-193.93	181.26
	NORMAL	354.0	0.97	316.05	353.99	-0.55	-0.68	0.79	0.90	0.58	-62.98	275.87
	NORMAL	446.0	2.38	257.17	445.95	-0.42	-3.09	3.10	2.23	1.53	-64.00	277.29
	NORMAL	537.0	4.93	262.09	536.76	-1.37	-8.80	8.88	2.82	2.80	5.41	9.47
	NORMAL	628.0	5.81	264.43	627.36	-2.36	-17.26	17.33	1.00	0.97	2.57	15.14
	NORMAL	718.0	6.07	263.41	716.88	-3.35	-26.52	26.56	0.31	0.29	-1.13	337.40
	NORMAL	795.0	6.60	262.99	793.40	-4.35	-34.96	35.00	0.69	0.69	-0.55	354.79
	NORMAL	885.0	6.31	254.47	882.84	-6.31	-44.86	45.08	1.11	-0.32	-9.47	248.95
	NORMAL	975.0	5.64	250.74	972.35	-9.09	-53.80	54.42	0.86	-0.74	-4.14	208.25
	NORMAL	1,069.0	4.77	251.53	1,065.96	-11.85	-61.86	62.91	0.93	-0.93	0.84	175.68
	NORMAL	1,164.0	5.19	254.08	1,160.60	-14.28	-69.74	71.14	0.50	0.44	2.68	29.07
	NORMAL	1,259.0	5.36	255.43	1,255.20	-16.58	-78.17	79.87	0.22	0.18	1.42	36.81
	NORMAL	1,354.0	5.54	253.67	1,349.77	-18.98	-86.86	88.89	0.26	0.19	-1.85	316.24
	NORMAL	1,449.0	5.54	246.46	1,444.33	-22.11	-95.47	97.99	0.73	0.00	-7.59	266.41
11/24/2014	NORMAL	1,543.0	6.31	245.53	1,537.82	-26.06	-104.33	107.53	0.83	0.82	-0.99	352.43
	NORMAL	1,623.0	5.69	264.50	1,617.39	-28.26	-112.28	115.78	2.58	-0.77	23.71	116.65
	NORMAL	1,718.0	6.69	268.24	1,711.84	-28.88	-122.50	125.85	1.13	1.05	3.94	23.83
	NORMAL	1,813.0	9.37	267.83	1,805.90	-29.34	-135.76	138.85	2.82	2.82	-0.43	358.57
	NORMAL	1,908.0	11.32	264.51	1,899.35	-30.53	-152.77	155.66	2.15	2.05	-3.49	341.36

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (°)
11/24/2014	NORMAL	2,002.0	12.14	257.38	1,991.39	-33.57	-171.60	174.67	1.77	0.87	-7.59	295.97
	NORMAL	2,098.0	14.01	254.58	2,084.90	-38.87	-192.66	196.38	2.06	1.95	-2.92	339.92
	NORMAL	2,192.0	14.26	254.29	2,176.06	-45.03	-214.77	219.33	0.28	0.27	-0.31	344.04
	NORMAL	2,287.0	15.47	254.78	2,267.87	-51.52	-238.26	243.69	1.28	1.27	0.52	6.17
	NORMAL	2,382.0	15.80	257.34	2,359.36	-57.68	-263.10	269.28	0.80	0.35	2.69	65.67
	NORMAL	2,477.0	16.28	257.97	2,450.66	-63.29	-288.75	295.53	0.55	0.52	0.66	19.87
	NORMAL	2,572.0	16.72	258.36	2,541.75	-68.83	-315.17	322.51	0.47	0.45	0.41	14.64
11/25/2014	NORMAL	2,667.0	16.23	255.95	2,632.85	-74.81	-341.43	349.44	0.89	-0.52	-2.54	233.21
	NORMAL	2,762.0	15.33	253.81	2,724.27	-81.53	-366.37	375.26	1.13	-0.95	-2.25	211.86
	NORMAL	2,857.0	15.52	254.75	2,815.84	-88.38	-390.70	400.51	0.33	0.20	0.99	53.22
	NORMAL	2,952.0	14.61	252.34	2,907.58	-95.36	-414.38	425.17	1.16	-0.96	-2.54	213.38
	NORMAL	3,046.0	14.66	251.87	2,998.53	-102.65	-436.98	448.86	0.14	0.05	-0.50	292.61
	NORMAL	3,141.0	13.73	251.86	3,090.63	-109.90	-459.12	472.08	0.98	-0.98	-0.01	180.15
	NORMAL	3,236.0	14.02	255.86	3,182.86	-116.23	-480.99	494.83	1.05	0.31	4.21	75.13
	NORMAL	3,331.0	14.24	255.36	3,274.98	-121.99	-503.45	518.02	0.26	0.23	-0.53	330.73
	NORMAL	3,426.0	13.51	251.93	3,367.21	-128.38	-525.31	540.77	1.16	-0.77	-3.61	226.75
	NORMAL	3,521.0	13.39	258.43	3,459.61	-134.03	-546.63	562.83	1.60	-0.13	6.84	97.69
	NORMAL	3,616.0	14.70	258.48	3,551.77	-138.65	-569.22	585.66	1.38	1.38	0.05	0.55
	NORMAL	3,711.0	15.78	256.76	3,643.43	-144.01	-593.61	610.83	1.23	1.14	-1.81	336.45
	NORMAL	3,806.0	16.41	256.97	3,734.71	-150.00	-619.26	637.16	0.67	0.66	0.22	5.38
	NORMAL	3,901.0	17.09	257.30	3,825.67	-156.09	-645.95	664.54	0.72	0.72	0.35	8.12
11/27/2014	NORMAL	4,009.0	16.64	256.40	3,929.00	-163.25	-676.54	695.98	0.57	-0.52	-0.79	203.48
	NORMAL	4,104.0	15.14	256.27	4,020.37	-169.39	-701.81	721.97	1.58	-1.58	-0.14	181.30
	NORMAL	4,199.0	13.96	252.08	4,112.33	-175.86	-724.77	745.80	1.66	-1.24	-4.41	219.72
	NORMAL	4,294.0	12.77	251.02	4,204.75	-182.80	-745.60	767.68	1.28	-1.25	-1.12	191.12
	NORMAL	4,389.0	12.41	255.99	4,297.47	-188.69	-765.44	788.35	1.20	-0.38	5.23	110.80
	NORMAL	4,484.0	12.65	256.08	4,390.21	-193.66	-785.44	808.96	0.25	0.25	0.09	4.70
	NORMAL	4,579.0	10.06	258.28	4,483.34	-197.85	-803.66	827.66	2.76	-2.73	2.32	171.58
	NORMAL	4,674.0	11.21	262.44	4,576.71	-200.75	-820.94	845.13	1.45	1.21	4.38	35.78
	NORMAL	4,769.0	10.77	262.09	4,669.97	-203.19	-838.89	863.14	0.47	-0.46	-0.37	188.45
	NORMAL	4,864.0	11.31	258.01	4,763.21	-206.34	-856.79	881.29	1.00	0.57	-4.29	302.64
	NORMAL	4,959.0	10.73	255.62	4,856.46	-210.48	-874.47	899.44	0.78	-0.61	-2.52	217.06
	NORMAL	5,054.0	9.91	252.87	4,949.92	-215.08	-890.85	916.44	1.01	-0.86	-2.89	209.65
	NORMAL	5,149.0	10.36	255.10	5,043.44	-219.68	-906.92	933.14	0.63	0.47	2.35	42.19
	NORMAL	5,244.0	9.64	258.59	5,137.00	-223.45	-922.97	949.63	0.99	-0.76	3.67	141.62
11/28/2014	NORMAL	5,339.0	9.51	255.46	5,230.67	-227.00	-938.36	965.43	0.56	-0.14	-3.29	254.44
	NORMAL	5,434.0	9.79	258.62	5,324.33	-230.56	-953.88	981.35	0.63	0.29	3.33	63.70
	NORMAL	5,529.0	9.78	259.22	5,417.95	-233.66	-969.72	997.47	0.11	-0.01	0.63	95.90
	NORMAL	5,624.0	10.85	262.56	5,511.41	-236.33	-986.52	1,014.42	1.29	1.13	3.52	30.85
	NORMAL	5,719.0	10.16	261.58	5,604.82	-238.72	-1,003.67	1,031.65	0.75	-0.73	-1.03	194.04
	NORMAL	5,815.0	8.95	265.27	5,699.49	-240.57	-1,019.49	1,047.46	1.41	-1.26	3.84	154.96
	NORMAL	5,909.0	9.32	260.71	5,792.30	-242.40	-1,034.29	1,062.28	0.86	0.39	-4.85	294.81
	NORMAL	6,004.0	9.01	259.69	5,886.08	-244.98	-1,049.20	1,077.37	0.37	-0.33	-1.07	207.16
	NORMAL	6,099.0	8.05	254.76	5,980.03	-248.06	-1,062.94	1,091.45	1.27	-1.01	-5.19	214.88
	NORMAL	6,194.0	7.71	252.14	6,074.14	-251.76	-1,075.42	1,104.45	0.52	-0.36	-2.76	225.28
11/30/2014	NORMAL	6,289.0	7.09	251.93	6,168.34	-255.53	-1,087.06	1,116.65	0.65	-0.65	-0.22	182.39
	NORMAL	6,384.0	5.91	262.13	6,262.74	-258.02	-1,097.48	1,127.37	1.73	-1.24	10.74	140.61
	NORMAL	6,479.0	6.30	256.83	6,357.20	-259.88	-1,107.40	1,137.44	0.72	0.41	-5.58	302.03
	NORMAL	6,574.0	6.81	254.81	6,451.58	-262.54	-1,117.91	1,148.29	0.59	0.54	-2.13	334.66
	NORMAL	6,669.0	6.55	251.46	6,545.93	-265.74	-1,128.48	1,159.32	0.49	-0.27	-3.53	234.63
	NORMAL	6,764.0	6.36	248.73	6,640.33	-269.37	-1,138.52	1,169.93	0.38	-0.20	-2.87	236.89
	NORMAL	6,859.0	6.57	249.84	6,734.73	-273.15	-1,148.53	1,180.55	0.26	0.22	1.17	31.31
	NORMAL	6,954.0	5.83	246.04	6,829.17	-276.99	-1,158.04	1,190.69	0.89	-0.78	-4.00	207.13
	NORMAL	7,049.0	5.60	245.70	6,923.70	-280.85	-1,166.67	1,200.00	0.24	-0.24	-0.36	188.20
	NORMAL	7,144.0	5.19	241.94	7,018.28	-284.78	-1,174.69	1,208.72	0.57	-0.43	-3.96	218.91
	NORMAL	7,239.0	4.86	241.84	7,112.91	-288.70	-1,182.03	1,216.77	0.35	-0.35	-0.11	181.47

## 2.1.2 Survey Stations (Continued)

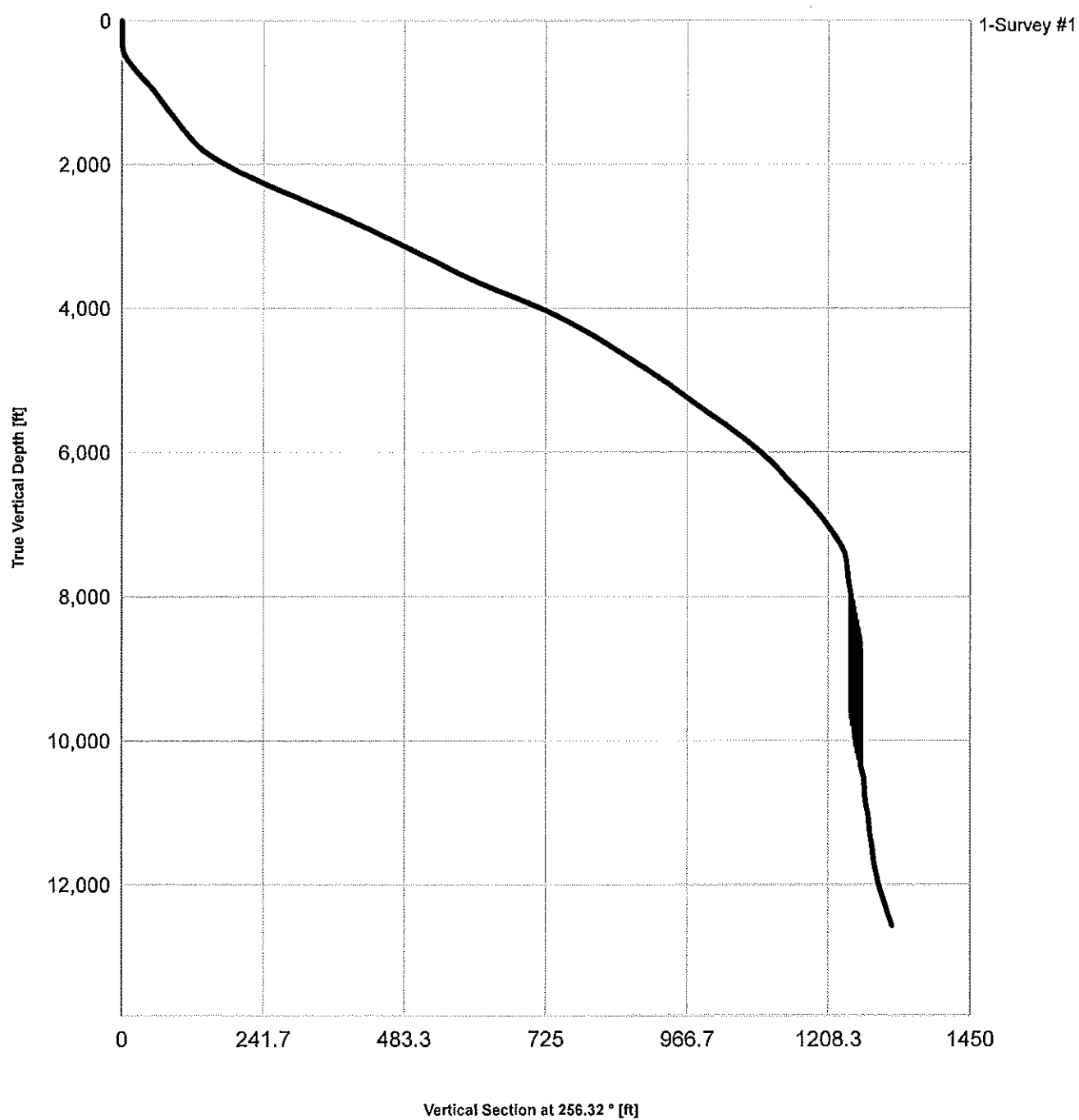
Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (°)
11/30/2014	NORMAL	7,334.0	4.85	241.05	7,207.57	-292.55	-1,189.09	1,224.54	0.07	-0.01	-0.83	261.10
	NORMAL	7,429.0	3.90	255.59	7,302.30	-295.29	-1,195.73	1,231.65	1.53	-1.00	15.31	137.68
	NORMAL	7,523.0	2.50	260.68	7,396.15	-296.42	-1,200.85	1,236.89	1.52	-1.49	5.41	171.06
	NORMAL	7,618.0	0.71	253.96	7,491.11	-296.92	-1,203.46	1,239.54	1.89	-1.88	-7.07	182.65
12/1/2014	NORMAL	7,714.0	1.11	241.78	7,587.10	-297.52	-1,204.85	1,241.04	0.46	0.42	-12.69	328.02
	NORMAL	7,808.0	0.65	224.14	7,681.09	-298.34	-1,206.03	1,242.37	0.56	-0.49	-18.77	201.88
	NORMAL	7,903.0	0.94	239.39	7,776.08	-299.12	-1,207.07	1,243.57	0.38	0.31	16.05	43.90
	NORMAL	7,998.0	1.56	219.50	7,871.05	-300.52	-1,208.57	1,245.35	0.79	0.65	-20.94	314.80
	NORMAL	8,093.0	1.90	220.29	7,966.01	-302.71	-1,210.41	1,247.66	0.36	0.36	0.83	4.41
	NORMAL	8,188.0	1.89	227.51	8,060.96	-304.97	-1,212.58	1,250.31	0.25	-0.01	7.60	96.00
	NORMAL	8,282.0	1.17	267.41	8,154.93	-306.06	-1,214.68	1,252.61	1.32	-0.77	42.45	142.90
	NORMAL	8,377.0	1.55	286.43	8,249.90	-305.74	-1,216.89	1,254.67	0.62	0.40	20.02	59.68
	NORMAL	8,472.0	1.85	271.23	8,344.86	-305.35	-1,219.65	1,257.27	0.57	0.32	-16.00	295.88
	NORMAL	8,567.0	1.47	277.31	8,439.82	-305.16	-1,222.39	1,259.89	0.44	-0.40	6.40	158.15
	NORMAL	8,662.0	1.32	291.56	8,534.79	-304.60	-1,224.62	1,261.92	0.40	-0.16	15.00	120.40
	NORMAL	8,757.0	1.03	311.81	8,629.77	-303.63	-1,226.27	1,263.29	0.53	-0.31	21.32	134.77
12/2/2014	NORMAL	8,852.0	1.00	9.35	8,724.76	-302.24	-1,226.77	1,263.45	1.03	-0.03	60.57	120.31
	NORMAL	8,947.0	0.84	343.91	8,819.75	-300.76	-1,226.83	1,263.16	0.46	-0.17	-26.78	236.21
	NORMAL	9,042.0	2.01	18.29	8,914.72	-298.51	-1,226.50	1,262.31	1.47	1.23	36.19	54.18
	NORMAL	9,136.0	2.82	44.70	9,008.64	-295.30	-1,224.36	1,259.46	1.44	0.86	28.10	67.63
	NORMAL	9,231.0	2.41	35.25	9,103.54	-292.01	-1,221.56	1,255.97	0.62	-0.43	-9.95	221.79
	NORMAL	9,326.0	1.87	38.90	9,198.47	-289.17	-1,219.44	1,253.23	0.59	-0.57	3.84	167.65
	NORMAL	9,421.0	1.44	16.11	9,293.43	-286.81	-1,218.13	1,251.41	0.82	-0.45	-23.99	225.80
	NORMAL	9,516.0	1.05	45.35	9,388.41	-285.06	-1,217.18	1,250.07	0.77	-0.41	30.78	135.60
12/3/2014	NORMAL	9,610.0	0.91	90.52	9,482.40	-284.46	-1,215.82	1,248.61	0.81	-0.15	48.05	122.33
	NORMAL	9,705.0	0.33	170.63	9,577.40	-284.73	-1,215.02	1,247.89	0.96	-0.61	84.33	159.14
	NORMAL	9,800.0	0.97	240.69	9,672.39	-285.40	-1,215.68	1,248.69	0.96	0.67	73.75	89.95
	NORMAL	9,895.0	1.56	244.97	9,767.37	-286.34	-1,217.55	1,250.73	0.63	0.62	4.51	11.24
	NORMAL	9,990.0	0.97	255.01	9,862.34	-287.09	-1,219.50	1,252.80	0.66	-0.62	10.57	164.38
	NORMAL	10,085.0	0.91	272.18	9,957.33	-287.27	-1,221.03	1,254.33	0.30	-0.06	18.07	110.52
	NORMAL	10,180.0	1.37	268.85	10,052.31	-287.27	-1,222.92	1,256.17	0.49	0.48	-3.51	350.14
	NORMAL	10,275.0	1.51	263.16	10,147.28	-287.44	-1,225.30	1,258.52	0.21	0.15	-5.99	311.53
12/4/2014	NORMAL	10,370.0	1.65	268.35	10,242.25	-287.63	-1,227.91	1,261.10	0.21	0.15	5.46	48.24
	NORMAL	10,465.0	1.68	254.55	10,337.21	-288.04	-1,230.62	1,263.83	0.42	0.03	-14.53	267.36
	NORMAL	10,560.0	2.18	254.05	10,432.15	-288.91	-1,233.70	1,267.03	0.53	0.53	-0.53	357.82
12/5/2014	NORMAL	10,655.0	1.71	205.66	10,527.11	-290.68	-1,236.05	1,269.73	1.74	-0.49	-50.94	230.76
	NORMAL	10,750.0	1.39	152.02	10,622.08	-292.98	-1,236.12	1,270.34	1.50	-0.34	-56.46	231.65
	NORMAL	10,845.0	0.59	268.77	10,717.07	-294.00	-1,236.07	1,270.54	1.83	-0.84	122.89	162.34
	NORMAL	10,940.0	1.07	248.17	10,812.06	-294.34	-1,237.38	1,271.89	0.59	0.51	-21.68	317.55
	NORMAL	11,035.0	1.14	250.79	10,907.04	-294.98	-1,239.10	1,273.71	0.09	0.07	2.76	37.14
	NORMAL	11,130.0	1.87	242.36	11,002.01	-296.01	-1,241.37	1,276.16	0.80	0.77	-8.87	338.89
	NORMAL	11,225.0	0.67	314.27	11,096.99	-296.35	-1,243.14	1,277.96	1.87	-1.26	75.69	159.03
	NORMAL	11,320.0	0.74	303.73	11,191.98	-295.62	-1,244.04	1,278.67	0.15	0.07	-11.09	293.02
12/6/2014	NORMAL	11,415.0	1.16	287.89	11,286.97	-294.98	-1,245.47	1,279.90	0.52	0.44	-16.67	319.90
	NORMAL	11,510.0	1.72	292.83	11,381.93	-294.13	-1,247.70	1,281.87	0.60	0.59	5.20	14.98
	NORMAL	11,605.0	0.74	257.98	11,476.91	-293.71	-1,249.61	1,283.62	1.25	-1.03	-36.68	200.81
	NORMAL	11,701.0	0.98	255.71	11,572.90	-294.04	-1,251.01	1,285.07	0.25	0.25	-2.36	350.78
	NORMAL	11,796.0	0.95	245.86	11,667.89	-294.56	-1,252.52	1,286.65	0.18	-0.03	-10.37	254.85
	NORMAL	11,891.0	1.45	238.45	11,762.87	-295.51	-1,254.26	1,288.57	0.55	0.53	-7.80	339.03
	NORMAL	11,986.0	1.73	239.91	11,857.83	-296.86	-1,256.53	1,291.09	0.30	0.29	1.54	8.96
	NORMAL	12,082.0	1.71	237.24	11,953.79	-298.36	-1,258.99	1,293.83	0.09	-0.02	-2.78	254.66
12/7/2014	NORMAL	12,176.0	2.06	247.31	12,047.74	-299.77	-1,261.73	1,296.83	0.51	0.37	10.71	48.53
	NORMAL	12,272.0	2.24	246.05	12,143.67	-301.20	-1,265.03	1,300.38	0.19	0.19	-1.31	344.66
	NORMAL	12,367.0	2.37	249.16	12,238.59	-302.65	-1,268.56	1,304.15	0.19	0.14	3.27	45.46
	NORMAL	12,462.0	2.30	247.91	12,333.52	-304.07	-1,272.17	1,307.99	0.09	-0.07	-1.32	215.41
	NORMAL	12,557.0	2.34	250.82	12,428.44	-305.42	-1,275.76	1,311.80	0.13	0.04	3.06	72.70

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Buid Rate (°/100usft)	Turn (°/100usft)	Tface (°)
12/7/2014	NORMAL	12,643.0	2.45	250.30	12,514.38	-306.62	-1,279.15	1,315.38	0.13	0.13	-0.60	348.57
	NORMAL	12,691.0	2.45	250.30	12,562.32	-307.31	-1,281.08	1,317.42	0.00	0.00	0.00	0.00

### 3 Charts

#### 3.1 Vertical Section View



## 3.2 Plan View

