

1 General

1.1 Customer Information

Company	PICEANCE HL
Representative	Eric Kolstad
Address	1515 Arapahoe St., Suite 1000 Denver, CO 80202

1.2 Well/Wellbore Information

Well	RGU 523-24-198	Wellbore No.	00
Wellbore Legal Name	RGU 523-24-198	Common Wellbore Name	RGU 523-24-198
Project	RG 24-01S-098W	Site	RGU 33-24-198 Pad
Vertical Section Azimuth	245.60 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	4/17/2014	UWI	RGU 523-24-198
Active datum	KB @6,617.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	4/14/2014	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

10080

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 (°)
4/14/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/17/2014	NORMAL	132.0	0.44	148.10	132.00	-0.43	0.27	-0.07	0.33	0.33	0.00	148.10
	NORMAL	224.0	1.67	235.99	223.99	-1.48	-0.66	1.21	1.86	1.34	95.53	102.77
	NORMAL	316.0	3.34	239.77	315.89	-3.58	-4.08	5.20	1.82	1.82	4.11	7.54
	NORMAL	408.0	4.49	238.80	407.68	-6.79	-9.48	11.44	1.25	1.25	-1.05	356.22
	NORMAL	501.0	5.98	240.03	500.29	-11.10	-16.79	19.88	1.61	1.60	1.32	4.92
	NORMAL	593.0	6.86	244.07	591.71	-15.90	-25.88	30.14	1.07	0.96	4.39	29.19
	NORMAL	685.0	4.93	244.69	683.22	-19.99	-34.40	39.59	2.10	-2.10	0.67	178.42
	NORMAL	777.0	4.84	242.40	774.89	-23.48	-41.41	47.41	0.23	-0.10	-2.49	244.09
	NORMAL	869.0	5.81	249.26	866.49	-26.93	-49.21	55.94	1.26	1.05	7.46	36.73
	NORMAL	962.0	6.60	249.70	958.94	-30.45	-58.62	65.96	0.85	0.85	0.47	3.66
4/18/2014	NORMAL	1,055.0	7.04	250.93	1,051.29	-34.16	-69.02	76.97	0.50	0.47	1.32	18.98
	NORMAL	1,150.0	5.89	242.23	1,145.68	-38.34	-78.84	87.63	1.59	-1.21	-9.16	216.16
	NORMAL	1,245.0	5.81	240.64	1,240.19	-42.97	-87.34	97.29	0.19	-0.08	-1.67	242.94
	NORMAL	1,340.0	5.72	251.72	1,334.71	-46.81	-96.03	106.79	1.17	-0.09	11.66	100.12
	NORMAL	1,434.0	5.45	256.29	1,428.26	-49.34	-104.81	115.83	0.55	-0.29	4.86	123.52
	NORMAL	1,529.0	5.81	246.62	1,522.81	-52.31	-113.61	125.07	1.07	0.38	-10.18	285.92
	NORMAL	1,624.0	5.89	245.65	1,617.31	-56.23	-122.46	134.75	0.13	0.08	-1.02	308.50
	NORMAL	1,693.0	5.63	243.94	1,685.97	-59.18	-128.73	141.68	0.45	-0.38	-2.48	212.58
	NORMAL	1,787.0	5.55	246.01	1,779.52	-63.05	-137.02	150.83	0.23	-0.09	2.20	112.67
	NORMAL	1,882.0	6.87	243.69	1,873.96	-67.44	-146.32	161.11	1.41	1.39	-2.44	348.08

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 (°)
4/18/2014	NORMAL	1,977.0	7.09	246.52	1,968.26	-72.29	-156.79	172.65	0.43	0.23	2.98	58.80
	NORMAL	2,072.0	7.08	247.44	2,062.53	-76.87	-167.57	184.36	0.12	-0.01	0.97	95.49
	NORMAL	2,167.0	6.72	247.90	2,156.84	-81.21	-178.13	195.77	0.38	-0.38	0.48	171.50
	NORMAL	2,262.0	7.53	247.49	2,251.11	-85.69	-189.03	207.54	0.85	0.85	-0.43	356.20
	NORMAL	2,356.0	7.31	247.16	2,344.32	-90.36	-200.23	219.67	0.24	-0.23	-0.35	190.80
	NORMAL	2,451.0	7.06	246.28	2,438.58	-95.06	-211.14	231.55	0.29	-0.26	-0.93	203.33
	NORMAL	2,545.0	8.26	247.10	2,531.74	-100.01	-222.65	244.08	1.28	1.28	0.87	5.61
	NORMAL	2,640.0	8.09	245.52	2,625.77	-105.44	-235.02	257.59	0.30	-0.18	-1.66	232.11
	NORMAL	2,735.0	7.80	245.75	2,719.86	-110.85	-246.98	270.72	0.31	-0.31	0.24	173.86
	NORMAL	2,829.0	7.94	244.89	2,812.97	-116.23	-258.68	283.59	0.19	0.15	-0.91	319.51
	NORMAL	2,924.0	8.33	244.78	2,907.02	-121.94	-270.85	297.03	0.41	0.41	-0.12	357.66
	NORMAL	3,018.0	8.27	243.71	3,000.03	-127.84	-283.07	310.60	0.18	-0.06	-1.14	248.24
4/19/2014	NORMAL	3,113.0	8.82	240.88	3,093.98	-134.41	-295.56	324.68	0.73	0.58	-2.98	321.20
	NORMAL	3,208.0	9.56	240.43	3,187.76	-141.85	-308.78	339.80	0.78	0.78	-0.47	354.23
	NORMAL	3,303.0	9.81	245.32	3,281.41	-149.12	-322.99	355.75	0.90	0.26	5.15	75.52
	NORMAL	3,397.0	10.86	251.10	3,373.88	-155.33	-338.65	372.57	1.57	1.12	6.15	47.51
	NORMAL	3,492.0	12.87	252.87	3,466.85	-161.35	-357.23	391.98	2.15	2.12	1.86	11.13
	NORMAL	3,587.0	14.10	250.61	3,559.23	-168.31	-378.26	414.00	1.41	1.29	-2.38	335.70
	NORMAL	3,682.0	14.57	249.12	3,651.27	-176.41	-400.34	437.46	0.63	0.49	-1.57	321.15
	NORMAL	3,776.0	14.46	248.67	3,742.27	-184.89	-422.32	460.98	0.17	-0.12	-0.48	225.50
	NORMAL	3,871.0	14.00	247.14	3,834.36	-193.67	-443.95	484.31	0.63	-0.48	-1.61	218.53
	NORMAL	4,018.0	12.66	245.52	3,977.39	-207.25	-475.00	518.19	0.95	-0.91	-1.10	194.79
	NORMAL	4,113.0	15.18	247.85	4,069.60	-216.26	-496.00	541.03	2.72	2.65	2.45	13.67
	NORMAL	4,207.0	16.47	242.39	4,160.04	-227.07	-519.21	566.64	2.09	1.37	-5.81	308.26
6/7/2014	NORMAL	4,302.0	16.78	241.19	4,251.07	-239.92	-543.16	593.76	0.49	0.33	-1.26	311.50
	NORMAL	4,397.0	17.32	241.40	4,341.89	-253.30	-567.59	621.53	0.57	0.57	0.22	6.61
	NORMAL	4,492.0	20.95	247.33	4,431.64	-266.62	-595.69	652.63	4.33	3.82	6.24	31.00
	NORMAL	4,586.0	20.20	246.10	4,519.64	-279.68	-626.03	685.65	0.92	-0.80	-1.31	209.38
	NORMAL	4,682.0	19.93	245.45	4,609.81	-293.19	-656.07	718.59	0.36	-0.28	-0.68	219.25
	NORMAL	4,776.0	21.17	247.26	4,697.83	-306.41	-686.30	751.58	1.48	1.32	1.93	27.98
	NORMAL	4,871.0	19.16	243.38	4,787.01	-320.02	-716.05	784.30	2.55	-2.13	-4.08	211.69
	NORMAL	4,966.0	18.30	247.27	4,876.99	-332.77	-743.74	814.78	1.59	-0.89	4.09	126.07
	NORMAL	5,061.0	18.71	244.42	4,967.08	-345.11	-771.24	844.92	1.05	0.43	-3.00	293.03
	NORMAL	5,155.0	20.53	247.17	5,055.62	-358.02	-800.03	876.48	2.17	1.94	2.93	28.20
	NORMAL	5,250.0	19.60	246.54	5,144.85	-370.82	-830.01	909.06	1.01	-0.98	-0.66	192.79
	NORMAL	5,345.0	21.10	244.64	5,233.92	-384.49	-860.08	942.09	1.73	1.58	-2.00	335.33
6/8/2014	NORMAL	5,439.0	21.86	242.51	5,321.39	-399.82	-890.89	976.49	1.16	0.81	-2.27	313.26
	NORMAL	5,534.0	22.83	242.23	5,409.26	-416.57	-922.89	1,012.54	1.03	1.02	-0.29	353.61
	NORMAL	5,629.0	21.72	242.92	5,497.17	-433.16	-954.85	1,048.50	1.20	-1.17	0.73	167.06
	NORMAL	5,724.0	22.33	243.55	5,585.23	-449.20	-986.66	1,084.10	0.69	0.64	0.66	21.46
	NORMAL	5,819.0	23.39	246.26	5,672.77	-464.83	-1,020.08	1,120.99	1.57	1.12	2.85	46.06
	NORMAL	5,913.0	22.00	244.33	5,759.49	-479.97	-1,053.03	1,157.25	1.68	-1.48	-2.05	207.29
	NORMAL	6,008.0	21.89	245.50	5,847.61	-495.02	-1,085.18	1,192.75	0.47	-0.12	1.23	104.66
	NORMAL	6,103.0	22.25	246.50	5,935.65	-509.54	-1,117.79	1,228.45	0.55	0.38	1.05	46.69
	NORMAL	6,198.0	20.76	247.47	6,024.04	-523.16	-1,149.84	1,263.26	1.61	-1.57	1.02	167.03
	NORMAL	6,292.0	19.69	244.97	6,112.24	-536.24	-1,179.58	1,295.75	1.46	-1.14	-2.66	217.76
	NORMAL	6,387.0	17.21	244.87	6,202.35	-548.99	-1,206.81	1,325.81	2.61	-2.61	-0.11	180.68
	NORMAL	6,482.0	14.58	244.02	6,293.71	-560.19	-1,230.28	1,351.82	2.78	-2.77	-0.89	184.65
	NORMAL	6,577.0	13.59	247.91	6,385.86	-569.63	-1,251.37	1,374.92	1.44	-1.04	4.09	138.16
6/9/2014	NORMAL	6,671.0	12.61	245.33	6,477.41	-578.07	-1,270.93	1,396.22	1.21	-1.04	-2.74	209.57
	NORMAL	6,766.0	11.93	244.39	6,570.24	-586.64	-1,289.21	1,416.41	0.75	-0.72	-0.99	195.91
	NORMAL	6,861.0	12.56	244.15	6,663.08	-595.39	-1,307.36	1,436.55	0.67	0.66	-0.25	355.26
	NORMAL	6,955.0	11.18	242.02	6,755.07	-604.12	-1,324.61	1,455.86	1.54	-1.47	-2.27	196.57
	NORMAL	7,050.0	11.34	248.82	6,848.24	-611.82	-1,341.45	1,474.38	1.41	0.17	7.16	86.47
	NORMAL	7,145.0	11.44	258.38	6,941.38	-617.41	-1,359.32	1,492.96	1.57	0.11	7.96	89.88
	NORMAL	7,240.0	10.67	255.31	7,034.61	-621.86	-1,376.98	1,510.89	0.84	-0.81	-1.13	194.40

2.1.2 Survey Stations (Continued)

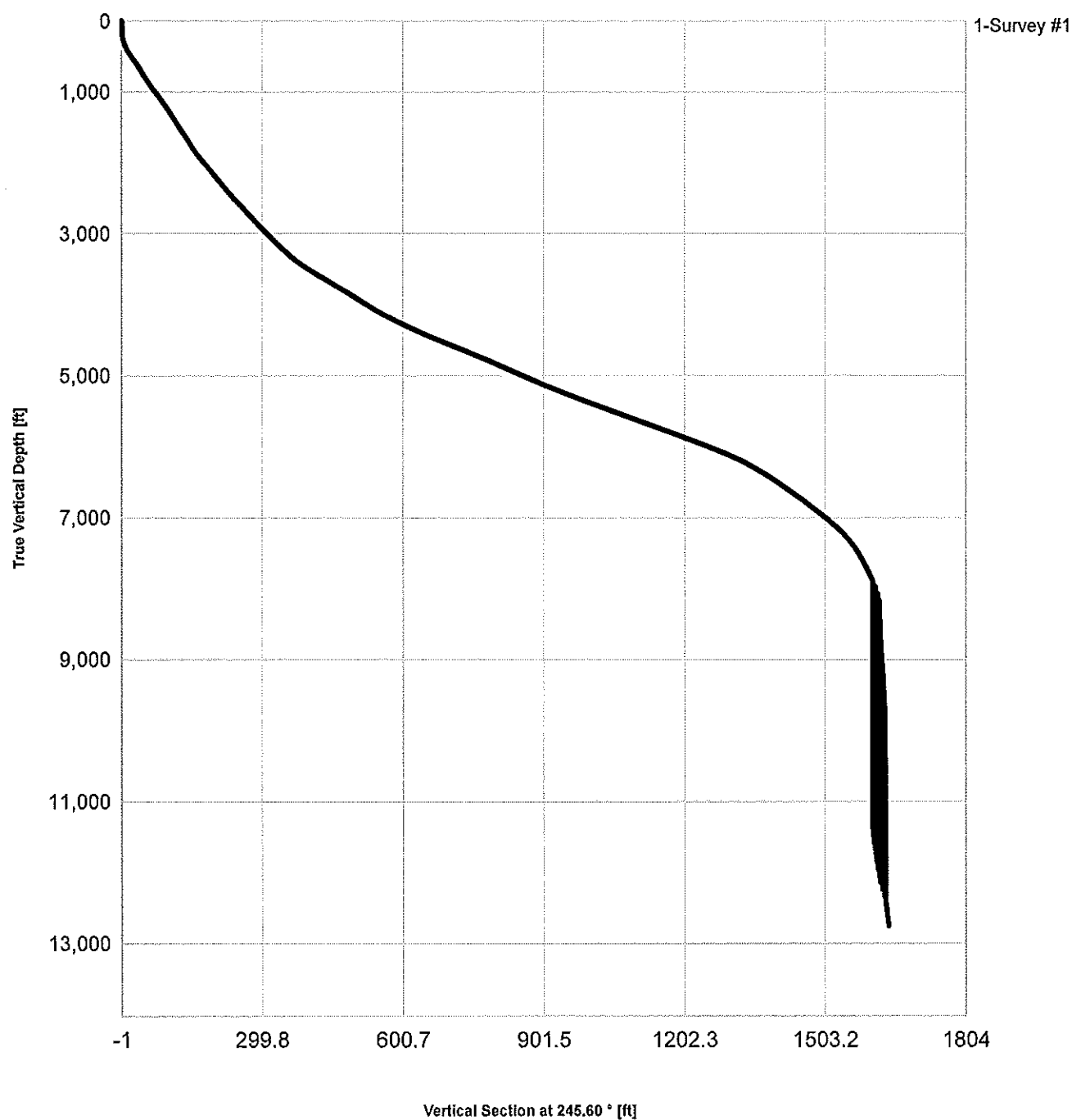
Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
6/10/2014	NORMAL	7,335.0	9.54	250.43	7,128.14	-626.73	-1,392.91	1,527.40	1.49	-1.19	-5.14	214.77
	NORMAL	7,430.0	8.52	254.65	7,221.96	-631.23	-1,407.11	1,542.20	1.28	-1.07	4.44	149.07
	NORMAL	7,524.0	7.14	250.65	7,315.08	-635.00	-1,419.34	1,554.89	1.58	-1.47	-4.26	199.58
	NORMAL	7,619.0	6.37	254.15	7,409.42	-638.40	-1,429.98	1,565.98	0.92	-0.81	3.68	153.60
	NORMAL	7,714.0	5.25	250.97	7,503.94	-641.26	-1,439.16	1,575.52	1.23	-1.18	-3.35	194.46
6/11/2014	NORMAL	7,808.0	4.65	248.47	7,597.58	-644.06	-1,446.77	1,583.61	0.68	-0.64	-2.66	198.53
	NORMAL	7,903.0	4.07	256.92	7,692.31	-646.23	-1,453.63	1,590.76	0.91	-0.61	8.89	136.24
	NORMAL	7,998.0	4.82	254.31	7,787.02	-648.08	-1,460.76	1,598.01	0.82	0.79	-2.75	343.60
	NORMAL	8,093.0	4.04	245.25	7,881.74	-650.56	-1,467.64	1,605.31	1.10	-0.82	-9.54	217.44
	NORMAL	8,188.0	3.28	246.51	7,976.55	-653.04	-1,473.17	1,611.37	0.80	-0.80	1.33	174.59
	NORMAL	8,283.0	2.17	253.57	8,071.44	-654.63	-1,477.39	1,615.87	1.22	-1.17	7.43	166.68
	NORMAL	8,377.0	1.99	290.30	8,165.38	-654.57	-1,480.63	1,618.79	1.41	-0.19	39.07	115.78
	NORMAL	8,472.0	0.76	163.42	8,260.36	-654.60	-1,482.00	1,620.05	2.65	-1.29	-133.56	193.96
	NORMAL	8,566.0	0.92	171.34	8,354.35	-655.94	-1,481.71	1,620.34	0.21	0.17	8.43	39.97
	NORMAL	8,661.0	0.91	175.59	8,449.34	-657.45	-1,481.53	1,620.80	0.07	-0.01	4.47	100.50
	NORMAL	8,756.0	0.69	167.30	8,544.33	-658.76	-1,481.35	1,621.18	0.26	-0.23	-8.73	203.65
	NORMAL	8,851.0	0.99	176.59	8,639.32	-660.14	-1,481.17	1,621.59	0.35	0.32	9.78	29.11
	NORMAL	8,946.0	0.72	224.31	8,734.31	-661.38	-1,481.54	1,622.44	0.77	-0.28	50.23	133.50
	NORMAL	9,041.0	0.84	180.15	8,829.31	-662.51	-1,481.96	1,623.28	0.63	0.13	-46.48	258.66
	NORMAL	9,135.0	0.77	207.57	8,923.30	-663.76	-1,482.26	1,624.07	0.41	-0.07	29.17	113.81
6/12/2014	NORMAL	9,230.0	0.90	199.83	9,018.29	-665.02	-1,482.80	1,625.09	0.18	0.14	-8.15	315.14
	NORMAL	9,325.0	1.22	190.81	9,113.27	-666.72	-1,483.25	1,626.19	0.38	0.34	-9.49	327.90
	NORMAL	9,419.0	0.88	183.62	9,207.25	-668.42	-1,483.48	1,627.11	0.39	-0.36	-7.65	197.61
	NORMAL	9,514.0	1.08	209.11	9,302.24	-669.93	-1,483.96	1,628.17	0.50	0.21	26.83	78.46
	NORMAL	9,609.0	0.19	279.61	9,397.24	-670.69	-1,484.55	1,629.02	1.09	-0.94	74.21	170.01
	NORMAL	9,704.0	0.66	281.43	9,492.23	-670.55	-1,485.24	1,629.60	0.49	0.49	1.92	2.56
	NORMAL	9,799.0	0.69	302.38	9,587.23	-670.14	-1,486.26	1,630.35	0.26	0.03	22.05	93.62
	NORMAL	9,893.0	0.82	280.32	9,681.22	-669.72	-1,487.40	1,631.22	0.34	0.14	-23.47	282.80
	NORMAL	9,988.0	1.51	44.99	9,776.21	-668.71	-1,487.19	1,630.60	2.20	0.73	131.23	143.51
	NORMAL	10,083.0	1.64	31.19	9,871.17	-666.66	-1,485.60	1,628.31	0.42	0.14	-14.53	281.94
	NORMAL	10,178.0	1.27	39.73	9,966.14	-664.69	-1,484.22	1,626.24	0.45	-0.39	8.99	153.85
	NORMAL	10,273.0	1.44	49.13	10,061.12	-663.10	-1,482.65	1,624.15	0.29	0.18	9.89	57.35
	NORMAL	10,367.0	1.86	33.14	10,155.08	-661.05	-1,480.92	1,621.73	0.66	0.45	-17.01	304.19
	NORMAL	10,462.0	1.43	44.27	10,250.04	-658.91	-1,479.25	1,619.32	0.56	-0.45	11.72	148.86
6/13/2014	NORMAL	10,557.0	1.67	60.85	10,345.00	-657.38	-1,477.21	1,616.84	0.53	0.25	17.45	70.30
	NORMAL	10,652.0	1.87	57.60	10,439.96	-655.88	-1,474.69	1,613.93	0.24	0.21	-3.42	331.72
	NORMAL	10,746.0	0.72	29.73	10,533.93	-654.55	-1,473.11	1,611.93	1.36	-1.22	-29.65	195.26
	NORMAL	10,841.0	0.32	65.91	10,628.93	-653.92	-1,472.57	1,611.18	0.53	-0.42	38.08	157.75
	NORMAL	10,936.0	0.28	152.99	10,723.93	-654.02	-1,472.22	1,610.90	0.44	-0.04	91.66	137.55
6/14/2014	NORMAL	11,031.0	0.59	102.70	10,818.93	-654.33	-1,471.64	1,610.50	0.49	0.33	-52.94	282.06
	NORMAL	11,125.0	0.99	103.21	10,912.92	-654.62	-1,470.37	1,609.47	0.43	0.43	0.54	1.26
	NORMAL	11,220.0	0.84	135.66	11,007.91	-655.31	-1,469.09	1,608.59	0.56	-0.16	34.16	121.95
	NORMAL	11,314.0	0.89	109.27	11,101.90	-656.04	-1,467.92	1,607.82	0.42	0.05	-28.07	263.83
	NORMAL	11,409.0	1.31	96.98	11,196.88	-656.42	-1,466.14	1,606.36	0.50	0.44	-12.94	324.44
	NORMAL	11,504.0	0.78	147.56	11,291.87	-657.10	-1,464.72	1,605.35	1.07	-0.56	53.24	143.51
	NORMAL	11,599.0	1.14	194.56	11,386.85	-658.56	-1,464.61	1,605.85	0.88	0.38	49.47	90.17
	NORMAL	11,693.0	0.37	212.85	11,480.85	-659.72	-1,465.01	1,606.69	0.85	-0.82	19.46	171.62
	NORMAL	11,788.0	1.35	246.54	11,575.83	-660.42	-1,466.20	1,608.07	1.12	1.03	35.46	44.83
	NORMAL	11,883.0	1.69	255.54	11,670.80	-661.22	-1,468.59	1,610.57	0.44	0.36	9.47	39.63
	NORMAL	11,977.0	1.17	233.70	11,764.77	-662.13	-1,470.70	1,612.87	0.79	-0.55	-23.23	215.78
	NORMAL	12,072.0	0.95	246.84	11,859.76	-663.01	-1,472.21	1,614.61	0.34	-0.23	13.83	138.59
	NORMAL	12,167.0	1.51	252.91	11,954.73	-663.69	-1,474.13	1,616.64	0.60	0.59	6.39	16.14
	NORMAL	12,261.0	1.84	267.97	12,048.69	-664.11	-1,476.82	1,619.26	0.58	0.35	16.02	60.83
	NORMAL	12,356.0	2.01	248.75	12,143.64	-664.77	-1,479.90	1,622.34	0.70	0.18	-20.23	275.01
	NORMAL	12,451.0	2.78	261.50	12,238.56	-665.71	-1,483.73	1,626.21	0.98	0.81	13.42	41.16
	NORMAL	12,545.0	2.56	258.82	12,332.46	-666.45	-1,488.04	1,630.45	0.27	-0.23	-2.85	208.24

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 (°)
6/14/2014	NORMAL	12,640.0	1.49	254.13	12,427.40	-667.20	-1,491.31	1,633.74	1.14	-1.13	-4.94	186.47
	NORMAL	12,734.0	0.96	263.62	12,521.35	-667.63	-1,493.27	1,635.69	0.60	-0.56	10.10	163.75
	NORMAL	12,829.0	1.12	259.88	12,616.33	-667.88	-1,494.97	1,637.35	0.18	0.17	-3.94	335.13
	NORMAL	12,966.0	1.12	259.88	12,753.31	-668.35	-1,497.61	1,639.95	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

