

1 General

1.1 Customer Information

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

1.2 Well Information

Well	RGU 434-24-198	Wellbore No.	OH
Well Name	FEDERAL RGU 434-24-198	Common Name	RGU 434-24-198
Project	RG 25-01S-098W	Site	RGU 31-25-198 Pad
Vertical Section Azimuth	1.96 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	1/16/2011	UWI	RGU 434-24-198
Active Datum	KELLY BUSHING @6,661.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Cathedral
Date Started	1/16/2011	Ended	
Tool Name	MWD	Engineer	Adam Bertadnole

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 (°/100ft)	Bulld Rate (°/100ft)	Turn (°/100ft)	TFace (°)
1/16/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/16/2011	NORMAL	212.0	0.40	352.40	212.00	0.73	-0.10	0.73	0.19	0.19	0.00	352.40
	NORMAL	305.0	1.50	357.50	304.98	2.27	-0.19	2.26	1.19	1.18	5.48	6.95
	NORMAL	399.0	2.90	358.00	398.91	5.88	-0.33	5.86	1.49	1.49	0.53	1.04
1/17/2011	NORMAL	2,272.0	4.10	4.60	2,265.93	153.65	9.08	153.87	0.34	-0.22	3.55	131.25
1/17/2011	NORMAL	491.0	4.90	356.80	490.69	12.13	-0.63	12.10	2.18	2.17	-1.30	357.06
	NORMAL	583.0	5.10	356.10	582.34	20.13	-1.13	20.08	0.23	0.22	-0.76	342.69
	NORMAL	675.0	5.10	355.20	673.98	28.28	-1.75	28.21	0.09	0.00	-0.98	269.55
	NORMAL	768.0	5.00	358.50	766.62	36.45	-2.20	36.36	0.33	-0.11	3.55	110.63
	NORMAL	860.0	4.80	0.60	858.28	44.31	-2.27	44.21	0.29	-0.22	2.28	139.15
	NORMAL	952.0	4.80	0.30	949.96	52.01	-2.21	51.90	0.03	0.00	-0.33	269.85
	NORMAL	1,046.0	4.40	2.60	1,043.66	59.54	-2.02	59.44	0.47	-0.43	2.45	156.39
	NORMAL	1,141.0	4.00	2.50	1,138.40	66.49	-1.71	66.40	0.42	-0.42	-0.11	181.00
	NORMAL	1,235.0	4.10	358.50	1,232.17	73.13	-1.66	73.03	0.32	0.11	-4.26	287.49
	NORMAL	1,330.0	4.40	0.30	1,326.91	80.17	-1.73	80.06	0.35	0.32	1.89	24.87
	NORMAL	1,424.0	4.30	356.40	1,420.64	87.29	-1.93	87.17	0.33	-0.11	-4.15	249.38
	NORMAL	1,518.0	5.00	11.90	1,514.33	94.82	-1.30	94.72	1.52	0.74	16.49	68.75
	NORMAL	1,613.0	5.30	15.10	1,608.95	103.10	0.69	103.07	0.44	0.32	3.37	45.36
	NORMAL	1,708.0	5.00	16.10	1,703.56	111.32	2.98	111.35	0.33	-0.32	1.05	163.84
	NORMAL	1,802.0	4.60	10.10	1,797.23	118.96	4.78	119.06	0.68	-0.43	-6.38	228.49

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (%/100ft)	Build Rate (%/100ft)	Turn (%/100ft)	TFace (°)
1/17/2011	NORMAL	1,897.0	4.60	8.90	1,891.93	126.48	6.04	126.61	0.10	0.00	-1.26	269.40
	NORMAL	1,991.0	4.10	8.60	1,985.66	133.53	7.12	133.69	0.53	-0.53	-0.32	182.46
	NORMAL	2,085.0	4.00	9.00	2,079.42	140.09	8.14	140.28	0.11	-0.11	0.43	164.42
	NORMAL	2,179.0	4.30	1.30	2,173.18	146.85	8.73	147.06	0.67	0.32	-8.19	294.42
	NORMAL	2,367.0	4.40	3.10	2,360.66	160.67	9.55	160.90	0.34	0.32	-1.58	338.92
	NORMAL	2,554.0	4.00	6.20	2,547.19	174.00	10.61	174.26	0.12	0.00	1.72	90.80
1/18/2011	NORMAL	2,461.0	4.00	4.60	2,454.41	167.54	10.00	167.78	0.44	-0.43	1.60	165.39
	NORMAL	2,648.0	4.10	5.50	2,640.95	180.60	11.29	180.88	0.12	0.11	-0.74	333.34
1/18/2011	NORMAL	2,743.0	4.00	6.10	2,735.71	187.29	11.70	187.58	0.11	-0.11	0.63	157.33
	NORMAL	2,837.0	4.10	1.10	2,829.48	193.91	12.11	194.21	0.39	0.11	-5.32	283.31
	NORMAL	2,932.0	4.00	0.80	2,924.24	200.62	12.23	200.92	0.11	-0.11	-0.32	191.81
	NORMAL	3,026.0	4.00	1.50	3,018.01	207.17	12.36	207.47	0.05	0.00	0.74	90.35
	NORMAL	3,120.0	3.80	1.00	3,111.80	213.56	12.50	213.87	0.22	-0.21	-0.53	189.40
	NORMAL	3,214.0	3.60	1.40	3,205.60	219.63	12.62	219.93	0.21	-0.21	0.43	172.85
	NORMAL	3,308.0	3.50	3.00	3,299.42	225.44	12.85	225.75	0.15	-0.11	1.70	136.06
	NORMAL	3,403.0	4.10	350.10	3,394.21	231.69	12.41	231.97	1.10	0.63	-13.58	298.51
	NORMAL	3,497.0	4.10	346.30	3,487.97	238.26	11.04	238.50	0.29	0.00	-4.04	268.10
	NORMAL	3,592.0	4.00	345.60	3,582.73	244.77	9.41	244.95	0.12	-0.11	-0.74	205.96
	NORMAL	3,686.0	3.90	345.80	3,676.51	251.04	7.81	251.16	0.11	-0.11	0.21	172.26
	NORMAL	3,780.0	3.80	353.80	3,770.30	257.24	6.69	257.32	0.58	-0.11	8.51	104.52
	NORMAL	3,874.0	3.80	355.70	3,864.09	263.44	6.12	263.50	0.13	0.00	2.02	90.95
	NORMAL	3,911.0	3.90	356.40	3,901.01	265.92	5.95	265.97	0.30	0.27	1.89	25.52
1/21/2011	NORMAL	4,051.0	3.70	352.20	4,040.70	275.15	5.04	275.16	0.24	-0.14	-3.00	232.22
	NORMAL	4,146.0	2.90	0.30	4,135.54	280.59	4.64	280.58	0.97	-0.84	8.53	153.77
	NORMAL	4,240.0	2.80	2.80	4,229.43	285.26	4.76	285.26	0.17	-0.11	2.66	130.06
	NORMAL	4,335.0	3.10	4.40	4,324.30	290.14	5.07	290.14	0.33	0.32	1.68	16.15
	NORMAL	4,429.0	2.70	7.20	4,418.18	294.87	5.54	294.89	0.45	-0.43	2.98	161.89
	NORMAL	4,524.0	3.70	8.90	4,513.03	300.12	6.30	300.16	1.06	1.05	1.79	6.27
	NORMAL	4,619.0	3.30	8.00	4,607.85	305.85	7.15	305.92	0.42	-0.42	-0.95	187.37
	NORMAL	4,713.0	3.00	10.80	4,701.71	310.95	7.99	311.04	0.36	-0.32	2.98	154.24
	NORMAL	4,808.0	2.30	4.30	4,796.61	315.29	8.60	315.40	0.80	-0.74	-6.84	200.01
	NORMAL	4,902.0	3.20	358.20	4,890.50	319.79	8.66	319.90	1.01	0.96	-6.49	338.92
	NORMAL	4,997.0	2.80	2.60	4,985.37	324.76	8.68	324.87	0.49	-0.42	4.63	152.26
	NORMAL	5,091.0	3.80	10.20	5,079.21	330.12	9.34	330.25	1.16	1.06	8.09	27.45
	NORMAL	5,185.0	2.90	9.40	5,173.05	335.53	10.28	335.69	0.96	-0.96	-0.85	182.57
1/22/2011	NORMAL	5,279.0	3.30	356.10	5,266.92	340.58	10.48	340.74	0.87	0.43	-14.15	292.33
	NORMAL	5,374.0	2.80	356.60	5,361.78	345.62	10.16	345.77	0.53	-0.53	0.53	177.20
	NORMAL	5,468.0	3.30	356.90	5,455.65	350.62	9.87	350.75	0.53	0.53	0.32	1.98
	NORMAL	5,563.0	2.80	349.80	5,550.51	355.63	9.32	355.74	0.66	-0.53	-7.47	213.56
	NORMAL	5,658.0	3.50	6.00	5,645.37	360.80	9.21	360.90	1.19	0.74	17.05	60.09
	NORMAL	5,752.0	2.20	359.70	5,739.25	365.46	9.50	365.57	1.42	-1.38	-6.70	190.41
	NORMAL	5,847.0	2.90	5.90	5,834.16	369.67	9.74	369.79	0.79	0.74	6.53	24.62
	NORMAL	5,941.0	2.70	9.00	5,928.05	374.22	10.33	374.36	0.27	-0.21	3.30	144.41
	NORMAL	6,036.0	2.30	7.40	6,022.96	378.32	10.92	378.48	0.43	-0.42	-1.68	189.10
	NORMAL	6,130.0	2.90	7.30	6,116.86	382.55	11.47	382.72	0.64	0.64	-0.11	359.52
	NORMAL	6,224.0	2.30	8.60	6,210.76	386.78	12.05	386.96	0.64	-0.64	1.38	175.04
	NORMAL	6,319.0	2.30	6.40	6,305.68	390.56	12.55	390.76	0.09	0.00	-2.32	268.90
	NORMAL	6,413.0	3.00	347.10	6,399.59	394.83	12.21	395.01	1.20	0.74	-20.53	298.21
	NORMAL	6,507.0	2.90	324.50	6,493.46	399.16	10.28	399.28	1.23	-0.11	-24.04	253.86
1/23/2011	NORMAL	6,602.0	2.50	349.50	6,588.36	403.16	8.51	403.21	1.30	-0.42	26.32	120.97
	NORMAL	6,697.0	3.00	21.30	6,683.26	407.51	9.03	407.58	1.66	0.53	33.47	88.18
	NORMAL	6,791.0	2.20	12.80	6,777.16	411.56	10.33	411.67	0.94	-0.85	-9.04	201.53
	NORMAL	6,886.0	2.00	11.70	6,872.10	414.96	11.07	415.10	0.21	-0.21	-1.16	190.85
	NORMAL	6,981.0	1.60	10.50	6,967.05	417.89	11.64	418.04	0.42	-0.42	-1.26	184.78
	NORMAL	7,075.0	1.50	16.10	7,061.02	420.36	12.22	420.53	0.19	-0.11	5.96	126.21
	NORMAL	7,170.0	1.50	20.20	7,155.98	422.72	13.00	422.92	0.11	0.00	4.32	92.05
	NORMAL	7,264.0	1.40	21.80	7,249.95	424.94	13.85	425.17	0.11	-0.11	1.70	158.76

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
1/23/2011	NORMAL	7,358.0	1.30	38.20	7,343.93	426.85	14.94	427.11	0.42	-0.11	17.45	112.61
	NORMAL	7,453.0	1.20	41.40	7,438.90	428.44	16.26	428.75	0.13	-0.11	3.37	146.67
	NORMAL	7,546.0	1.00	46.20	7,531.89	429.73	17.49	430.08	0.24	-0.22	5.16	157.65
	NORMAL	7,639.0	0.50	51.00	7,624.88	430.55	18.39	430.93	0.54	-0.54	5.16	175.23
	NORMAL	7,733.0	0.70	280.60	7,718.88	430.91	18.14	431.28	1.16	0.21	-138.72	209.20
	NORMAL	7,826.0	0.30	290.40	7,811.87	431.10	17.36	431.44	0.44	-0.43	10.54	172.80
	NORMAL	7,920.0	0.40	284.80	7,905.87	431.27	16.81	431.60	0.11	0.11	-5.96	338.30
	NORMAL	8,013.0	0.30	256.50	7,998.87	431.30	16.26	431.60	0.21	-0.11	-30.43	226.31
	NORMAL	8,106.0	0.60	233.90	8,091.87	430.96	15.63	431.24	0.37	0.32	-24.30	317.76
	NORMAL	8,199.0	0.50	227.30	8,184.86	430.39	14.94	430.65	0.13	-0.11	-7.10	209.08
	NORMAL	8,292.0	0.70	242.40	8,277.86	429.85	14.14	430.09	0.27	0.22	16.24	46.04
	NORMAL	8,386.0	0.80	228.00	8,371.85	429.15	13.14	429.35	0.23	0.11	-15.32	290.62
	NORMAL	8,480.0	1.00	209.70	8,465.84	428.00	12.25	428.17	0.37	0.21	-19.47	295.45
	NORMAL	8,573.0	0.40	198.40	8,558.83	426.98	11.74	427.14	0.66	-0.65	-12.15	187.35
	NORMAL	8,667.0	0.50	183.80	8,652.83	426.26	11.61	426.41	0.16	0.11	-15.53	303.64
1/24/2011	NORMAL	8,760.0	0.60	173.90	8,745.82	425.38	11.64	425.52	0.15	0.11	-10.65	311.44
	NORMAL	8,853.0	0.70	118.80	8,838.82	424.62	12.18	424.79	0.65	0.11	-59.25	250.84
	NORMAL	8,947.0	1.00	121.30	8,932.81	423.91	13.39	424.12	0.32	0.32	2.66	8.30
	NORMAL	9,040.0	1.60	136.20	9,025.78	422.56	14.98	422.82	0.74	0.65	16.02	36.98
	NORMAL	9,134.0	2.00	137.50	9,119.74	420.40	17.00	420.73	0.43	0.43	1.38	6.48
	NORMAL	9,227.0	1.40	145.80	9,212.70	418.26	18.73	418.66	0.70	-0.65	8.92	161.80
	NORMAL	9,320.0	1.20	158.50	9,305.67	416.42	19.73	416.85	0.38	-0.22	13.66	131.00
	NORMAL	9,414.0	0.80	188.70	9,399.66	414.85	19.99	415.29	0.69	-0.43	32.13	141.65
	NORMAL	9,507.0	1.10	197.20	9,492.64	413.36	19.63	413.79	0.36	0.32	9.14	29.45
	NORMAL	9,601.0	0.90	180.40	9,586.63	411.76	19.36	412.18	0.38	-0.21	-17.87	227.49
	NORMAL	9,694.0	1.30	176.70	9,679.61	409.97	19.41	410.40	0.44	0.43	-3.98	348.08
1/25/2011	NORMAL	9,788.0	1.00	142.40	9,773.60	408.26	19.97	408.70	0.78	-0.32	-36.49	229.94
	NORMAL	9,882.0	0.40	170.00	9,867.59	407.29	20.53	407.75	0.71	-0.64	29.36	163.98
	NORMAL	9,976.0	0.80	219.10	9,961.58	406.45	20.17	406.91	0.66	0.43	52.23	78.43
	NORMAL	10,070.0	1.40	279.30	10,055.57	406.13	18.63	406.53	1.30	0.64	64.04	94.90
1/26/2011	NORMAL	10,070.0	1.40	279.30	10,055.57	406.13	18.63	406.53	1.30	0.64	64.04	94.90
1/27/2011	NORMAL	10,164.0	1.50	300.80	10,149.54	406.95	16.44	407.27	0.58	0.11	22.87	90.45
	NORMAL	10,259.0	1.10	290.30	10,244.51	407.90	14.51	408.16	0.49	-0.42	-11.05	205.60
	NORMAL	10,353.0	0.70	273.20	10,338.50	408.24	13.09	408.45	0.51	-0.43	-18.19	205.53
	NORMAL	10,447.0	0.80	280.60	10,432.49	408.40	11.87	408.56	0.15	0.11	7.87	47.83
	NORMAL	10,540.0	0.80	285.50	10,525.49	408.69	10.61	408.81	0.07	0.00	5.27	92.45
	NORMAL	10,634.0	0.90	301.30	10,619.48	409.25	9.35	409.33	0.27	0.11	16.81	74.93
	NORMAL	10,728.0	1.00	319.10	10,713.46	410.25	8.18	410.29	0.33	0.11	18.94	80.32
	NORMAL	10,822.0	1.30	302.90	10,807.44	411.45	6.75	411.44	0.47	0.32	-17.23	304.41
	NORMAL	10,915.0	1.60	287.30	10,900.41	412.41	4.62	412.33	0.53	0.32	-16.77	299.27
	NORMAL	11,009.0	1.30	277.50	10,994.38	412.94	2.31	412.78	0.41	-0.32	-10.43	214.75
1/28/2011	NORMAL	11,102.0	1.30	289.90	11,087.36	413.44	0.27	413.20	0.30	0.00	13.33	96.20
	NORMAL	11,196.0	0.90	312.10	11,181.34	414.30	-1.28	414.01	0.61	-0.43	23.62	143.92
	NORMAL	11,290.0	0.80	7.50	11,275.33	415.44	-1.74	415.14	0.85	-0.11	58.94	124.09
	NORMAL	11,384.0	1.60	12.00	11,369.31	417.38	-1.38	417.08	0.86	0.85	4.79	8.97
	NORMAL	11,478.0	1.60	22.20	11,463.28	419.87	-0.61	419.61	0.30	0.00	10.85	95.10
1/31/2011	NORMAL	11,571.0	1.00	39.50	11,556.25	421.70	0.40	421.47	0.76	-0.65	18.60	155.26
	NORMAL	11,665.0	0.70	40.90	11,650.24	422.77	1.29	422.57	0.32	-0.32	1.49	176.74
	NORMAL	11,759.0	1.10	63.30	11,744.23	423.61	2.48	423.45	0.56	0.43	23.83	52.90
2/3/2011	NORMAL	11,854.0	1.20	87.40	11,839.21	424.06	4.28	423.96	0.52	0.11	25.37	90.53
2/4/2011	NORMAL	11,948.0	1.10	85.50	11,933.19	424.18	6.17	424.14	0.11	-0.11	-2.02	199.93
	NORMAL	12,042.0	0.80	85.90	12,027.18	424.30	7.72	424.31	0.32	-0.32	0.43	178.93
	NORMAL	12,136.0	1.00	86.90	12,121.17	424.39	9.19	424.45	0.21	0.21	1.06	4.99
	NORMAL	12,230.0	0.80	104.30	12,215.16	424.27	10.65	424.39	0.36	-0.21	18.51	134.68
2/5/2011	NORMAL	12,324.0	0.60	113.90	12,309.15	423.91	11.74	424.06	0.25	-0.21	10.21	154.35
	NORMAL	12,418.0	1.20	130.00	12,403.11	421.06	15.86	421.35	0.20	0.19	5.00	31.04