

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 444-24-198	Wellbore No.	OH
Well Name	FEDERAL RGU 444-24-198	Common Name	RGU 444-24-198
Project	RG 25-01S-098W	Site	RGU 31-25-198 Pad
Vertical Section Azimuth	66.97 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	12/24/2010	UWI	RGU 444-24-198
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	12/24/2010	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 (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
12/24/2010	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/24/2010	NORMAL	216.0	1.90	57.00	215.96	1.95	3.00	3.53	0.88	0.88	0.00	57.00
	NORMAL	308.0	3.30	71.60	307.86	3.62	6.80	7.67	1.67	1.52	15.87	32.73
12/25/2010	NORMAL	401.0	5.40	67.20	400.59	6.16	13.37	14.71	2.28	2.26	-4.73	348.77
	NORMAL	493.0	7.70	72.40	491.99	9.70	23.24	25.18	2.58	2.50	5.65	17.06
	NORMAL	585.0	10.40	68.60	582.83	14.59	36.85	39.62	3.00	2.93	-4.13	345.63
	NORMAL	677.0	12.40	68.40	673.01	21.26	53.76	57.80	2.17	2.17	-0.22	358.77
	NORMAL	769.0	12.10	68.80	762.92	28.38	71.94	77.31	0.34	-0.33	0.43	164.40
	NORMAL	861.0	12.00	68.40	852.89	35.39	89.82	96.51	0.14	-0.11	-0.43	219.67
	NORMAL	954.0	12.50	65.60	943.77	43.11	107.97	116.23	0.83	0.54	-3.01	308.71
	NORMAL	1,048.0	12.60	63.70	1,035.53	51.85	126.43	136.64	0.45	0.11	-2.02	282.69
	NORMAL	1,143.0	12.70	65.00	1,128.22	60.86	145.18	157.42	0.32	0.11	1.37	71.28
	NORMAL	1,237.0	12.40	63.80	1,219.98	69.68	163.60	177.82	0.42	-0.32	-1.28	220.41
	NORMAL	1,332.0	12.00	61.30	1,312.83	78.93	181.42	197.84	0.70	-0.42	-2.63	231.65
	NORMAL	1,426.0	12.00	58.40	1,404.78	88.74	198.31	217.22	0.64	0.00	-3.09	268.58
	NORMAL	1,520.0	11.70	60.20	1,496.78	98.60	214.91	236.35	0.51	-0.32	1.91	129.94
	NORMAL	1,615.0	11.70	61.10	1,589.80	108.04	231.70	255.50	0.19	0.00	0.95	90.44
12/26/2010	NORMAL	1,709.0	11.60	63.40	1,681.87	116.88	248.49	274.41	0.51	-0.11	2.45	103.28
	NORMAL	1,804.0	11.00	66.30	1,775.02	124.80	265.33	293.01	0.87	-0.63	3.05	137.97
	NORMAL	1,899.0	10.90	66.50	1,868.29	132.02	281.87	311.05	0.11	-0.11	0.21	159.30

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 (°)
12/26/2010	NORMAL	1,993.0	11.20	67.00	1,960.55	139.13	298.42	329.07	0.34	0.32	0.53	17.96
	NORMAL	2,087.0	11.30	67.00	2,052.75	146.30	315.30	347.41	0.11	0.11	0.00	0.00
	NORMAL	2,181.0	11.30	68.30	2,144.92	153.30	332.34	365.82	0.27	0.00	1.38	90.64
	NORMAL	2,274.0	10.70	68.30	2,236.21	159.86	348.82	383.56	0.65	-0.65	0.00	180.00
	NORMAL	2,369.0	11.60	71.20	2,329.42	166.20	366.06	401.91	1.12	0.95	3.05	33.36
	NORMAL	2,463.0	11.60	70.70	2,421.50	172.37	383.93	420.76	0.11	0.00	-0.53	269.76
	NORMAL	2,556.0	11.30	70.20	2,512.65	178.55	401.32	439.19	0.34	-0.32	-0.54	198.06
	NORMAL	2,650.0	11.20	70.00	2,604.84	184.79	418.57	457.50	0.11	-0.11	-0.21	201.22
	NORMAL	2,745.0	11.10	69.10	2,698.05	191.21	435.78	475.85	0.21	-0.11	-0.95	239.68
	NORMAL	2,839.0	11.10	69.10	2,790.29	197.66	452.69	493.94	0.00	0.00	0.00	0.00
	NORMAL	2,933.0	10.90	68.00	2,882.57	204.22	469.38	511.86	0.31	-0.21	-1.17	225.84
	NORMAL	3,028.0	10.60	66.40	2,975.90	211.08	485.72	529.58	0.45	-0.32	-1.68	224.07
12/27/2010	NORMAL	3,122.0	10.40	69.70	3,068.33	217.49	501.60	546.70	0.67	-0.21	3.51	110.01
	NORMAL	3,216.0	11.00	71.70	3,160.69	223.25	518.07	564.12	0.75	0.64	2.13	32.74
	NORMAL	3,310.0	10.00	70.70	3,253.12	228.76	534.29	581.20	1.08	-1.06	-1.06	189.84
	NORMAL	3,405.0	10.20	69.80	3,346.64	234.39	549.96	597.83	0.27	0.21	-0.95	321.28
	NORMAL	3,499.0	11.90	70.80	3,438.90	240.45	566.93	615.81	1.82	1.81	1.06	6.92
	NORMAL	3,593.0	13.50	69.70	3,530.59	247.45	586.37	636.44	1.72	1.70	-1.17	350.87
	NORMAL	3,688.0	13.10	69.40	3,623.05	255.08	606.85	658.28	0.43	-0.42	-0.32	189.64
	NORMAL	3,782.0	14.50	68.50	3,714.33	263.14	627.77	680.68	1.51	1.49	-0.96	350.84
	NORMAL	3,876.0	14.30	67.90	3,805.38	271.82	649.48	704.06	0.27	-0.21	-0.64	216.44
	NORMAL	3,927.0	13.90	67.20	3,854.84	276.57	660.96	716.48	0.85	-0.78	-1.37	202.75
	NORMAL	4,053.0	11.20	72.50	3,977.82	286.11	686.59	743.80	2.33	-2.14	4.21	159.47
	NORMAL	4,148.0	10.40	68.30	4,071.14	292.06	703.36	761.56	1.18	-0.84	-4.42	222.48
12/31/2010	NORMAL	4,242.0	9.90	64.90	4,163.67	298.62	718.56	778.11	0.83	-0.53	-3.62	228.49
	NORMAL	4,336.0	11.20	63.40	4,256.08	306.14	734.04	795.30	1.41	1.38	-1.60	347.33
	NORMAL	4,431.0	12.60	68.00	4,349.04	314.15	751.90	814.87	1.78	1.47	4.84	36.38
	NORMAL	4,526.0	11.90	63.10	4,441.88	322.47	770.24	835.00	1.32	-0.74	-5.16	233.67
	NORMAL	4,611.0	11.60	67.30	4,525.10	329.73	785.94	852.29	1.07	-0.35	4.94	111.38
	NORMAL	4,715.0	12.30	62.90	4,626.85	338.81	805.45	873.80	1.10	0.67	-4.23	305.37
	NORMAL	4,810.0	12.70	64.00	4,719.59	348.00	823.84	894.32	0.49	0.42	1.16	31.30
	NORMAL	4,904.0	11.20	64.90	4,811.55	356.40	841.40	913.77	1.61	-1.60	0.96	173.36
	NORMAL	4,998.0	11.30	64.20	4,903.75	364.28	857.95	932.09	0.18	0.11	-0.74	305.87
	NORMAL	5,093.0	12.00	66.50	4,996.79	372.27	875.39	951.26	0.88	0.74	2.42	34.69
	NORMAL	5,187.0	11.90	67.10	5,088.75	379.94	893.28	970.72	0.17	-0.11	0.64	129.12
	NORMAL	5,281.0	11.30	64.20	5,180.83	387.72	910.50	989.61	0.89	-0.64	-3.09	222.77
1/1/2011	NORMAL	5,376.0	10.30	66.40	5,274.15	395.17	926.66	1,007.40	1.14	-1.05	2.32	158.67
	NORMAL	5,470.0	11.20	64.50	5,366.50	402.47	942.60	1,024.93	1.03	0.96	-2.02	337.57
	NORMAL	5,565.0	11.60	68.20	5,459.63	409.98	959.80	1,043.69	0.88	0.42	3.89	63.15
	NORMAL	5,660.0	11.20	66.90	5,552.75	417.15	977.15	1,062.47	0.50	-0.42	-1.37	212.08
	NORMAL	5,754.0	11.90	66.30	5,644.85	424.63	994.42	1,081.29	0.76	0.74	-0.64	349.97
	NORMAL	5,849.0	11.90	72.60	5,737.81	431.49	1,012.74	1,100.83	1.37	0.00	6.63	93.08
	NORMAL	5,943.0	9.50	71.50	5,830.17	436.85	1,029.35	1,118.21	2.56	-2.55	-1.17	184.32
	NORMAL	6,038.0	10.30	74.10	5,923.75	441.67	1,044.95	1,134.46	0.96	0.84	2.74	30.48
	NORMAL	6,132.0	11.20	68.60	6,016.11	447.30	1,061.53	1,151.92	1.45	0.96	-5.85	308.54
	NORMAL	6,226.0	11.20	67.30	6,108.32	454.16	1,078.45	1,170.17	0.27	0.00	-1.38	269.36
	NORMAL	6,320.0	11.50	65.70	6,200.48	461.54	1,095.42	1,188.67	0.46	0.32	-1.70	312.83
	NORMAL	6,414.0	11.30	64.90	6,292.62	469.30	1,112.30	1,207.24	0.27	-0.21	-0.85	217.94
1/2/2011	NORMAL	6,509.0	9.50	66.80	6,386.06	476.34	1,127.93	1,224.39	1.93	-1.89	2.00	170.14
	NORMAL	6,604.0	8.70	65.90	6,479.86	482.36	1,141.70	1,239.41	0.86	-0.84	-0.95	189.64
	NORMAL	6,698.0	8.40	60.60	6,572.82	488.63	1,154.17	1,253.34	0.90	-0.32	-5.64	246.55
	NORMAL	6,793.0	7.30	58.40	6,666.93	495.20	1,165.35	1,266.21	1.20	-1.16	-2.32	194.19
	NORMAL	6,888.0	6.50	56.10	6,761.24	501.36	1,174.96	1,277.45	0.89	-0.84	-2.42	197.92
	NORMAL	6,983.0	6.90	54.20	6,855.59	507.70	1,184.05	1,288.30	0.48	0.42	-2.00	330.06
	NORMAL	7,077.0	7.30	58.40	6,948.87	514.13	1,193.72	1,299.71	0.70	0.43	4.47	54.48
	NORMAL	7,171.0	6.80	60.50	7,042.16	520.00	1,203.65	1,311.15	0.60	-0.53	2.23	153.77
	NORMAL	7,266.0	5.60	62.60	7,136.60	524.90	1,212.66	1,321.36	1.29	-1.26	2.21	170.34

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 (°)
1/2/2011	NORMAL	7,360.0	5.90	52.10	7,230.13	529.98	1,220.54	1,330.60	1.16	0.32	-11.17	280.65
	NORMAL	7,455.0	5.30	51.60	7,324.68	535.71	1,227.83	1,339.55	0.63	-0.63	-0.53	184.40
	NORMAL	7,548.0	4.70	54.80	7,417.32	540.57	1,234.31	1,347.42	0.71	-0.65	3.44	156.66
	NORMAL	7,641.0	3.70	57.00	7,510.07	544.40	1,239.94	1,354.10	1.09	-1.08	2.37	171.94
	NORMAL	7,735.0	4.30	62.80	7,603.84	547.67	1,245.62	1,360.60	0.77	0.64	6.17	36.91
	NORMAL	7,828.0	3.40	82.40	7,696.64	549.62	1,251.46	1,366.74	1.70	-0.97	21.08	133.88
1/3/2011	NORMAL	7,922.0	2.90	100.60	7,790.50	549.56	1,256.56	1,371.40	1.18	-0.53	19.36	125.46
	NORMAL	8,015.0	1.80	116.00	7,883.42	548.48	1,260.18	1,374.32	1.35	-1.18	16.56	157.69
	NORMAL	8,108.0	1.10	125.10	7,976.39	547.33	1,262.22	1,375.75	0.79	-0.75	9.78	166.30
	NORMAL	8,201.0	0.40	132.40	8,069.38	546.60	1,263.19	1,376.35	0.76	-0.75	7.85	175.87
	NORMAL	8,294.0	0.10	132.40	8,162.38	546.32	1,263.49	1,376.52	0.32	-0.32	0.00	180.00
	NORMAL	8,388.0	0.00	229.10	8,256.38	546.27	1,263.56	1,376.56	0.11	-0.11	0.00	180.00
1/4/2011	NORMAL	8,482.0	0.30	270.10	8,350.38	546.27	1,263.31	1,376.33	0.32	0.32	0.00	270.10
	NORMAL	8,576.0	0.70	250.00	8,444.37	546.07	1,262.52	1,375.53	0.46	0.43	-21.38	326.05
	NORMAL	8,669.0	0.60	26.50	8,537.37	546.31	1,262.21	1,375.33	1.30	-0.11	146.77	160.01
	NORMAL	8,762.0	0.30	36.10	8,630.37	546.95	1,262.57	1,375.91	0.33	-0.32	10.32	170.66
	NORMAL	8,855.0	0.30	72.50	8,723.37	547.22	1,262.94	1,376.36	0.20	0.00	39.14	108.20
	NORMAL	8,949.0	0.60	76.30	8,817.37	547.41	1,263.66	1,377.10	0.32	0.32	4.04	7.58
	NORMAL	9,042.0	0.80	90.70	8,910.36	547.51	1,264.78	1,378.17	0.28	0.22	15.48	48.69
	NORMAL	9,136.0	1.00	109.90	9,004.35	547.23	1,266.21	1,379.37	0.38	0.21	20.43	66.30
1/5/2011	NORMAL	9,229.0	0.90	194.00	9,097.34	546.24	1,266.79	1,379.53	1.37	-0.11	90.43	135.39
	NORMAL	9,323.0	1.30	242.10	9,191.32	545.03	1,265.67	1,378.02	1.03	0.43	51.17	91.88
	NORMAL	9,416.0	1.20	241.30	9,284.30	544.06	1,263.88	1,376.00	0.11	-0.11	-0.86	189.50
	NORMAL	9,509.0	1.10	249.20	9,377.28	543.28	1,262.20	1,374.14	0.20	-0.11	8.49	126.15
	NORMAL	9,603.0	0.90	250.50	9,471.27	542.71	1,260.66	1,372.50	0.21	-0.21	1.38	174.18
	NORMAL	9,697.0	1.10	243.40	9,565.25	542.06	1,259.15	1,370.86	0.25	0.21	-7.55	324.64
	NORMAL	9,790.0	1.10	237.70	9,658.24	541.19	1,257.60	1,369.09	0.12	0.00	-6.13	267.15
	NORMAL	9,884.0	0.60	226.20	9,752.22	540.36	1,256.48	1,367.74	0.56	-0.53	-12.23	193.15
1/6/2011	NORMAL	9,978.0	0.60	177.80	9,846.22	539.53	1,256.15	1,367.10	0.52	0.00	-51.49	245.80
	NORMAL	10,072.0	0.50	148.00	9,940.22	538.69	1,256.38	1,366.99	0.32	-0.11	-31.70	236.24
	NORMAL	10,166.0	0.70	133.40	10,034.21	537.95	1,257.02	1,367.29	0.27	0.21	-15.53	315.15
	NORMAL	10,260.0	1.10	120.50	10,128.20	537.10	1,258.21	1,368.05	0.47	0.43	-13.72	326.59
	NORMAL	10,355.0	1.00	127.30	10,223.18	536.13	1,259.66	1,369.00	0.17	-0.11	7.16	132.11
	NORMAL	10,449.0	0.90	142.40	10,317.17	535.05	1,260.76	1,369.60	0.29	-0.11	16.06	119.21
1/7/2011	NORMAL	10,542.0	1.10	144.40	10,410.16	533.74	1,261.73	1,369.97	0.22	0.22	2.15	10.90
	NORMAL	10,636.0	1.10	144.70	10,504.14	532.27	1,262.77	1,370.36	0.01	0.00	0.32	90.15
1/8/2011	NORMAL	10,730.0	1.10	134.50	10,598.12	530.91	1,263.94	1,370.90	0.21	0.00	-10.85	264.90
	NORMAL	10,823.0	1.30	123.70	10,691.10	529.70	1,265.45	1,371.82	0.32	0.22	-11.61	306.00
1/9/2011	NORMAL	10,967.0	1.10	124.80	10,835.07	528.00	1,267.95	1,373.45	0.14	-0.14	0.76	173.98
	NORMAL	11,011.0	1.10	120.00	10,879.06	527.55	1,268.66	1,373.93	0.21	0.00	-10.91	267.60
	NORMAL	11,104.0	1.80	193.00	10,972.04	525.68	1,269.10	1,373.61	1.95	0.75	78.49	108.42
	NORMAL	11,198.0	1.20	229.30	11,066.01	523.60	1,268.02	1,371.80	1.16	-0.64	38.62	139.53
1/10/2011	NORMAL	11,292.0	1.50	276.30	11,159.98	523.09	1,266.06	1,369.79	1.18	0.32	50.00	99.16
	NORMAL	11,386.0	1.10	289.20	11,253.96	523.52	1,263.98	1,368.05	0.52	-0.43	13.72	150.14
	NORMAL	11,480.0	0.90	295.90	11,347.95	524.14	1,262.46	1,366.90	0.25	-0.21	7.13	153.01
	NORMAL	11,574.0	1.10	287.70	11,441.93	524.74	1,260.94	1,365.73	0.26	0.21	-8.72	320.27
	NORMAL	11,667.0	0.90	271.90	11,534.92	525.03	1,259.36	1,364.39	0.36	-0.22	-16.99	226.32
	NORMAL	11,761.0	0.70	310.90	11,628.91	525.43	1,258.19	1,363.47	0.60	-0.21	41.49	128.94
	NORMAL	11,856.0	0.90	284.30	11,723.90	526.00	1,257.03	1,362.62	0.44	0.21	-28.00	284.57
	NORMAL	11,950.0	1.00	313.70	11,817.89	526.75	1,255.72	1,361.71	0.52	0.11	31.28	93.35
1/11/2011	NORMAL	12,044.0	1.00	313.70	11,911.87	527.88	1,254.53	1,361.06	0.00	0.00	0.00	0.00
	NORMAL	12,138.0	0.90	328.40	12,005.86	529.08	1,253.55	1,360.63	0.28	-0.11	15.64	119.55
	NORMAL	12,232.0	1.00	315.70	12,099.85	530.29	1,252.59	1,360.22	0.25	0.11	-13.51	288.96
	NORMAL	12,326.0	0.70	283.90	12,193.84	531.02	1,251.46	1,359.46	0.58	-0.32	-33.83	222.32
	NORMAL	12,446.0			12,313.83	531.27	1,250.67	1,358.55	0.65	-0.65	0.00	180.00
1/12/2011	NORMAL	12,421.0	0.60	291.20	12,288.83	531.34	1,250.44	1,358.64	0.14	-0.11	7.68	143.98
	NORMAL	12,515.0	0.50	308.80	12,382.83	531.77	1,249.66	1,358.69	0.21	-0.11	18.72	129.22

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 (°)
1/12/2011	NORMAL	12,609.0	0.30	24.20	12,476.83	532.25	1,249.44	1,358.08	0.55	-0.21	80.21	145.62
1/13/2011	NORMAL	12,703.0	0.30	349.70	12,570.82	532.72	1,249.49	1,358.32	0.19	0.00	-36.70	252.75
	NORMAL	12,797.0			12,664.82	532.96	1,249.45	1,358.37	0.32	-0.32	0.00	180.00
	NORMAL	12,891.0			12,758.82	532.96	1,249.45	1,358.83	0.00	0.00	0.00	0.00
1/14/2011	NORMAL	12,798.0	0.20	14.00	12,665.82	532.96	1,249.45	1,358.37	20.00	20.00	0.00	14.00
	NORMAL	12,875.0	0.50	43.40	12,742.82	533.34	1,249.71	1,358.76	0.44	0.39	38.18	46.17
	NORMAL	12,925.0	0.70	43.40	12,792.82	533.11	1,249.59	1,358.56	2.06	2.06	0.00	43.40