

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 332-25-198	Wellbore No.	
Well Name	FEDERAL RGU 332-25-198	Common Name	RGU 332-25-198
Project	RG 25-01S-098W	Site	RGU 32-25-198 Pad
Vertical Section Azimuth	329.38 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	2/1/2012	UWI	RGU 332-25-198
Active Datum	KB @6,691.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	2/1/2012	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 (°)
2/1/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/1/2012	NORMAL	223.0	1.55	313.06	222.97	2.06	-2.20	2.89	0.70	0.70	0.00	313.06
	NORMAL	316.0	2.37	328.28	315.92	4.55	-4.13	6.02	1.04	0.88	16.37	40.17
	NORMAL	408.0	2.80	334.24	407.82	8.20	-6.11	10.17	0.55	0.47	6.48	35.01
	NORMAL	504.0	3.17	332.06	503.69	12.65	-8.37	15.15	0.40	0.39	-2.27	341.85
	NORMAL	592.0	3.36	340.72	591.55	17.24	-10.36	20.11	0.60	0.22	9.84	73.29
	NORMAL	685.0	3.59	336.47	684.38	22.48	-12.43	25.67	0.37	0.25	-4.57	309.63
	NORMAL	777.0	3.95	334.54	776.18	27.98	-14.94	31.69	0.41	0.39	-2.10	339.62
	NORMAL	869.0	4.76	336.22	867.92	34.33	-17.84	38.63	0.89	0.88	1.83	9.79
	NORMAL	963.0	4.58	332.46	961.60	41.23	-21.15	46.25	0.38	-0.19	-4.00	237.68
	NORMAL	1,088.0	4.13	335.05	1,086.24	49.74	-25.35	55.72	0.39	-0.36	2.07	157.68
	NORMAL	1,182.0	3.61	328.70	1,180.03	55.34	-28.32	62.04	0.72	-0.55	-6.76	216.36
	NORMAL	1,276.0	3.63	325.71	1,273.84	60.32	-31.53	67.97	0.20	0.02	-3.18	274.55
	NORMAL	1,370.0	3.99	325.64	1,367.63	65.48	-35.06	74.21	0.38	0.38	-0.07	359.22
	NORMAL	1,464.0	4.09	327.48	1,461.40	71.01	-38.70	80.82	0.17	0.11	1.96	53.27
	NORMAL	1,558.0	4.04	323.54	1,555.16	76.50	-42.47	87.46	0.30	-0.05	-4.19	257.89
	NORMAL	1,652.0	4.04	320.02	1,648.93	81.70	-46.57	94.03	0.26	0.00	-3.74	268.24
	NORMAL	1,745.0	3.63	323.83	1,741.72	86.58	-50.41	100.19	0.52	-0.44	4.10	150.7
	NORMAL	1,839.0	4.01	331.01	1,835.51	91.86	-53.76	106.44	0.65	0.40	7.64	F
	NORMAL	1,933.0	4.57	335.66	1,929.25	98.15	-56.90	113.45	0.70	0.60	4.95	

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 (°)
2/1/2012	NORMAL	2,026.0	4.70	332.20	2,021.94	104.90	-60.20	120.94	0.33	0.14	-3.72	292.52
	NORMAL	2,120.0	5.00	334.59	2,115.61	112.01	-63.76	128.86	0.38	0.32	2.54	35.16
	NORMAL	2,214.0	5.60	335.63	2,209.21	119.89	-67.41	137.50	0.65	0.64	1.11	9.61
	NORMAL	2,307.0	5.79	337.79	2,301.75	128.36	-71.05	146.65	0.31	0.20	2.32	49.52
	NORMAL	2,401.0	6.27	339.85	2,395.23	137.57	-74.61	156.39	0.56	0.51	2.19	25.29
	NORMAL	2,495.0	6.60	341.74	2,488.63	147.52	-78.08	166.72	0.42	0.35	2.01	33.64
2/2/2012	NORMAL	2,589.0	6.60	343.22	2,582.01	157.82	-81.33	177.24	0.18	0.00	1.57	90.74
	NORMAL	2,682.0	6.93	335.47	2,674.37	168.04	-85.20	188.01	1.04	0.35	-8.33	286.00
	NORMAL	2,776.0	7.50	332.18	2,767.62	178.63	-90.42	199.77	0.75	0.61	-3.50	322.42
	NORMAL	2,870.0	7.94	334.22	2,860.77	189.90	-96.10	212.37	0.55	0.47	2.17	32.93
	NORMAL	2,964.0	7.76	328.63	2,953.89	201.16	-102.23	225.19	0.83	-0.19	-5.95	253.98
	NORMAL	3,058.0	6.27	321.30	3,047.19	210.59	-108.74	236.61	1.85	-1.59	-7.80	207.40
	NORMAL	3,151.0	5.18	326.09	3,139.72	218.04	-114.26	245.83	1.28	-1.17	5.15	158.70
	NORMAL	3,245.0	4.96	327.53	3,233.35	224.99	-118.81	254.13	0.27	-0.23	1.53	150.67
	NORMAL	3,339.0	4.25	325.57	3,327.05	231.29	-122.96	261.67	0.77	-0.76	-2.09	191.52
	NORMAL	3,432.0	4.33	329.92	3,419.79	237.17	-126.67	268.62	0.36	0.09	4.68	78.36
	NORMAL	3,527.0	4.20	329.41	3,514.53	243.27	-130.24	275.68	0.14	-0.14	-0.54	196.01
	NORMAL	3,621.0	4.12	329.55	3,608.28	249.14	-133.70	282.50	0.09	-0.09	0.15	172.83
	NORMAL	3,715.0	3.96	329.51	3,702.04	254.85	-137.06	289.12	0.17	-0.17	-0.04	180.99
	NORMAL	3,808.0	4.04	330.48	3,794.82	260.47	-140.30	295.61	0.11	0.09	1.04	40.71
	NORMAL	3,868.0	3.69	333.03	3,854.68	264.03	-142.22	299.65	0.65	-0.58	4.25	155.11
2/25/2012	NORMAL	3,988.0	3.16	327.98	3,974.47	270.27	-145.72	306.81	0.51	-0.44	-4.21	207.15
2/25/2012	NORMAL	4,082.0	2.29	331.61	4,068.36	274.12	-147.99	311.28	0.94	-0.93	3.86	170.59
	NORMAL	4,176.0	2.35	304.20	4,162.29	276.86	-150.48	314.90	1.17	0.06	-29.16	259.34
	NORMAL	4,269.0	1.96	293.71	4,255.22	278.57	-153.51	317.92	0.59	-0.42	-11.28	220.16
	NORMAL	4,363.0	2.59	311.75	4,349.15	280.63	-156.57	321.25	1.01	0.67	19.19	57.91
	NORMAL	4,457.0	2.07	340.95	4,443.07	283.65	-158.71	324.93	1.36	-0.55	31.06	127.78
	NORMAL	4,551.0	1.36	340.12	4,537.03	286.30	-159.64	327.69	0.76	-0.76	-0.88	181.59
	NORMAL	4,645.0	1.39	311.05	4,631.00	288.10	-160.88	329.87	0.73	0.03	-30.93	257.88
	NORMAL	4,739.0	1.04	305.96	4,724.98	289.35	-162.43	331.74	0.39	-0.37	-5.41	194.60
	NORMAL	4,833.0	1.22	318.83	4,818.96	290.60	-163.78	333.50	0.33	0.19	13.69	61.20
	NORMAL	4,927.0	0.92	306.60	4,912.95	291.81	-165.04	335.18	0.40	-0.32	-13.01	211.27
	NORMAL	5,021.0	0.72	307.18	5,008.94	292.61	-166.12	336.42	0.21	-0.21	0.62	177.91
	NORMAL	5,114.0	0.67	327.90	5,099.93	293.43	-166.87	337.51	0.27	-0.05	22.28	111.49
2/26/2012	NORMAL	5,208.0	0.29	7.66	5,193.93	294.13	-167.13	338.25	0.51	-0.40	42.30	157.47
	NORMAL	5,302.0	1.52	326.05	5,287.91	295.40	-167.80	339.68	1.40	1.31	-44.27	309.99
	NORMAL	5,395.0	1.19	317.96	5,380.89	297.14	-169.13	341.85	0.41	-0.35	-8.70	206.10
	NORMAL	5,489.0	0.48	346.67	5,474.88	298.25	-169.88	343.19	0.85	-0.76	30.54	163.31
	NORMAL	5,583.0	1.39	349.75	5,568.87	299.75	-170.17	344.63	0.97	0.97	3.28	4.70
	NORMAL	5,677.0	1.28	344.28	5,662.84	301.88	-170.66	346.72	0.18	-0.12	-5.82	226.49
	NORMAL	5,771.0	0.90	2.97	5,756.82	303.63	-170.91	348.35	0.55	-0.40	19.88	145.99
	NORMAL	5,864.0	1.21	17.35	5,849.81	305.30	-170.58	349.61	0.44	0.33	15.46	47.84
	NORMAL	5,958.0	1.08	334.75	5,943.79	307.05	-170.66	351.16	0.89	-0.14	-45.32	240.42
	NORMAL	6,052.0	0.84	328.82	6,037.78	308.44	-171.39	352.73	0.28	-0.26	-6.31	199.54
	NORMAL	6,145.0	0.71	314.64	6,130.77	309.43	-172.16	353.97	0.25	-0.14	-15.25	228.92
	NORMAL	6,239.0	0.45	307.47	6,224.76	310.06	-172.86	354.87	0.29	-0.28	-7.63	192.03
	NORMAL	6,332.0	0.40	344.55	6,317.76	310.60	-173.24	355.53	0.30	-0.05	39.87	118.49
	NORMAL	6,426.0	0.71	320.60	6,411.76	311.36	-173.70	356.42	0.41	0.33	-25.48	310.81
	NORMAL	6,520.0	0.17	302.55	6,505.75	311.89	-174.18	357.12	0.59	-0.57	-19.20	185.49
	NORMAL	6,614.0	0.37	67.27	6,599.75	312.08	-174.02	357.20	0.52	0.21	132.68	141.38
	NORMAL	6,708.0	1.85	78.13	6,693.73	312.51	-172.26	356.67	1.58	1.57	11.55	13.54
	NORMAL	6,802.0	1.78	87.24	6,787.69	312.89	-169.31	355.50	0.32	-0.07	9.69	108.16
	NORMAL	6,895.0	0.35	293.25	6,880.67	313.07	-168.13	355.06	2.26	-1.54	-165.58	184.19
	NORMAL	6,990.0	0.75	278.88	6,975.67	313.28	-169.01	355.69	0.44	0.42	-15.13	333.70
	NORMAL	7,085.0	0.71	269.25	7,070.66	313.37	-170.21	356.37	0.14	-0.04	-10.14	247.17
	NORMAL	7,179.0	0.78	264.82	7,164.65	313.31	-171.43	356.94	0.10	0.07	-4.71	318.32
	NORMAL	7,273.0	0.61	255.75	7,258.65	313.13	-172.56	357.35	0.21	-0.18	-9.65	208.43

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 (°)
2/26/2012	NORMAL	7,368.0	1.38	289.16	7,353.63	313.38	-174.13	358.37	0.98	0.81	35.17	54.50
	NORMAL	7,462.0	1.21	284.68	7,447.61	314.00	-176.16	359.94	0.21	-0.18	-4.77	208.55
	NORMAL	7,557.0	0.68	270.71	7,542.59	314.26	-177.69	360.95	0.60	-0.56	-14.71	196.62
	NORMAL	7,651.0	0.88	357.81	7,636.59	314.99	-178.28	361.87	1.15	0.21	92.66	125.87
2/27/2012	NORMAL	7,745.0	1.08	2.72	7,730.57	316.59	-178.26	363.25	0.23	0.21	5.22	25.24
	NORMAL	7,841.0	0.92	349.97	7,826.56	318.26	-178.35	364.72	0.28	-0.17	-13.28	228.02
	NORMAL	7,935.0	0.79	339.58	7,920.55	319.61	-178.71	366.07	0.21	-0.14	-11.05	224.90
	NORMAL	8,029.0	0.55	356.87	8,014.54	320.67	-178.96	367.11	0.33	-0.26	18.39	148.32
	NORMAL	8,124.0	0.42	5.53	8,109.54	321.47	-178.95	367.79	0.16	-0.14	9.12	154.87
2/28/2012	NORMAL	8,219.0	0.14	328.06	8,204.54	321.91	-178.98	368.19	0.34	-0.29	-39.44	195.42
	NORMAL	8,313.0	0.12	127.46	8,298.54	321.95	-178.96	368.21	0.27	-0.02	169.57	170.50
	NORMAL	8,407.0	0.37	231.06	8,392.54	321.70	-179.12	368.08	0.44	0.27	110.21	119.92
	NORMAL	8,502.0	0.52	170.12	8,487.54	321.08	-179.29	367.63	0.49	0.16	-64.15	255.52
	NORMAL	8,595.0	0.50	156.84	8,580.53	320.29	-179.05	366.83	0.13	-0.02	-14.28	253.80
	NORMAL	8,690.0	0.46	162.59	8,675.53	319.55	-178.78	366.05	0.07	-0.04	6.05	132.56
	NORMAL	8,784.0	0.67	179.63	8,769.52	318.64	-178.66	365.21	0.28	0.22	18.13	47.39
	NORMAL	8,879.0	0.52	143.23	8,864.52	317.74	-178.40	364.30	0.42	-0.16	-38.32	230.82
	NORMAL	8,974.0	0.36	143.51	8,959.52	317.15	-177.96	363.57	0.17	-0.17	0.29	179.37
2/29/2012	NORMAL	9,068.0	0.47	156.79	9,053.51	316.56	-177.64	362.90	0.15	0.12	14.13	47.93
	NORMAL	9,163.0	0.00	10.47	9,148.51	316.20	-177.48	362.51	0.49	-0.49	0.00	180.00
	NORMAL	9,257.0	0.67	299.18	9,242.51	316.47	-177.96	362.99	0.71	0.71	0.00	299.18
	NORMAL	9,352.0	1.04	294.02	9,337.50	317.09	-179.23	364.17	0.40	0.39	-5.43	345.66
	NORMAL	9,445.0	1.11	300.49	9,430.48	317.89	-180.78	365.65	0.15	0.08	6.96	63.29
	NORMAL	9,539.0	1.24	295.20	9,524.46	318.79	-182.49	367.29	0.18	0.14	-5.63	317.49
	NORMAL	9,634.0	1.25	321.61	9,619.44	320.04	-184.06	369.16	0.60	0.01	27.80	102.22
	NORMAL	9,729.0	1.03	332.94	9,714.42	321.61	-185.09	371.04	0.33	-0.23	11.93	139.87
	NORMAL	9,823.0	1.05	349.25	9,808.41	323.21	-185.64	372.69	0.31	0.02	17.35	94.31
	NORMAL	9,917.0	0.88	339.09	9,902.39	324.73	-186.05	374.22	0.26	-0.18	-10.81	220.18
	NORMAL	10,011.0	0.60	353.22	9,996.39	325.89	-186.37	375.38	0.35	-0.30	15.03	153.84
	NORMAL	10,106.0	0.30	102.75	10,091.38	326.33	-186.19	375.66	0.79	-0.32	115.29	158.01
	NORMAL	10,200.0	1.07	232.98	10,185.38	325.75	-186.65	375.40	1.37	0.82	138.54	140.50
3/1/2012	NORMAL	10,294.0	2.03	244.28	10,279.34	324.50	-188.85	375.44	1.07	1.02	12.02	23.36
	NORMAL	10,387.0	1.86	231.81	10,372.29	322.85	-191.52	375.38	0.49	-0.18	-13.41	241.96
	NORMAL	10,481.0	1.74	217.59	10,466.25	320.78	-193.59	374.65	0.49	-0.13	-15.13	247.93
3/2/2012	NORMAL	10,576.0	0.93	217.78	10,561.22	319.02	-194.94	373.83	0.85	-0.85	0.20	179.78
3/3/2012	NORMAL	10,670.0	1.06	42.91	10,655.21	319.06	-194.82	373.80	2.11	0.14	-186.03	182.73
	NORMAL	10,765.0	0.46	341.92	10,750.21	320.06	-194.34	374.42	0.98	-0.63	-64.20	205.67
	NORMAL	10,859.0	1.81	355.51	10,844.19	321.90	-194.57	376.12	1.45	1.44	14.46	18.12
	NORMAL	10,953.0	1.72	354.91	10,938.14	324.79	-194.81	378.73	0.10	-0.10	-0.64	191.30
	NORMAL	11,047.0	0.26	289.52	11,032.13	326.26	-195.14	380.16	1.73	-1.55	-69.56	188.34
	NORMAL	11,140.0	0.53	257.88	11,125.12	326.24	-195.76	380.46	0.36	0.29	-34.02	304.52
	NORMAL	11,234.0	0.97	275.90	11,219.12	326.23	-196.97	381.07	0.53	0.47	19.17	37.40
	NORMAL	11,329.0	0.44	301.33	11,314.11	326.51	-198.08	381.87	0.63	-0.56	26.77	161.74
	NORMAL	11,424.0	0.79	329.43	11,409.10	327.26	-198.73	382.85	0.48	0.37	29.58	55.38
	NORMAL	11,519.0	0.26	101.00	11,504.10	327.78	-198.85	383.36	1.03	-0.56	138.49	168.57
	NORMAL	11,613.0	0.18	200.49	11,598.10	327.60	-198.69	383.13	0.36	-0.09	105.84	148.50
	NORMAL	11,707.0	0.79	244.96	11,692.10	327.19	-199.33	383.10	0.72	0.65	47.31	55.26
	NORMAL	11,801.0	0.76	125.69	11,786.09	326.55	-199.41	382.59	1.42	-0.03	-126.88	209.72
3/4/2012	NORMAL	11,894.0	0.72	116.39	11,879.08	325.93	-198.39	381.53	0.14	-0.04	-10.00	246.97
	NORMAL	11,989.0	0.70	88.69	11,974.08	325.68	-197.27	380.75	0.36	-0.02	-29.16	252.88
	NORMAL	12,083.0	0.44	160.68	12,068.07	325.35	-196.58	380.11	0.75	-0.28	76.59	143.42
	NORMAL	12,178.0	0.35	159.88	12,163.07	324.74	-196.36	379.47	0.09	-0.09	-0.84	183.11
	NORMAL	12,272.0	0.44	116.38	12,257.07	324.31	-195.94	378.89	0.32	0.10	-46.28	264.19
	NORMAL	12,367.0	0.64	124.22	12,352.06	323.85	-195.17	378.10	0.22	0.21	8.25	24.23
	NORMAL	12,461.0	0.82	123.71	12,446.06	323.18	-194.18	377.02	0.19	0.19	-0.54	357.68
	NORMAL	12,555.0	0.70	127.72	12,540.05	322.45	-193.16	375.88	0.14	-0.13	4.27	158.09
	NORMAL	12,649.0	0.44	164.98	12,634.04	321.75	-192.62	375.00	0.47	-0.28	39.64	142.71

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 (°)
3/5/2012	NORMAL	12,750.0	0.53	132.73	12,735.04	321.06	-192.17	374.18	0.28	0.09	-31.93	271.67
	NORMAL	12,805.0	0.53	132.73	12,790.04	320.72	-191.80	373.69	0.00	0.00	0.00	0.00