

I 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 22-24-198	Wellbore No.	
Well Name	FEDERAL RGU 22-24-198	Common Name	RGU 22-24-198
Project	RG 24-01S-098W	Site	RGU 31-24-198 Pad
Vertical Section Azimuth	260.31 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	1/19/2013	UWI	RGU 22-24-198
Active Datum	KB @6,567.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SDI
Date Started	1/19/2013	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

9967

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 (°)
1/19/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/19/2013	NORMAL	215.0	2.49	278.63	214.93	0.70	-4.62	4.43	1.16	1.16	0.00	278.63
	NORMAL	307.0	4.57	264.54	306.75	0.65	-10.24	9.99	2.43	2.26	-15.32	330.22
	NORMAL	400.0	6.68	260.94	399.30	-0.55	-19.27	19.09	2.30	2.27	-3.87	348.7'
	NORMAL	492.0	8.99	256.29	490.44	-3.10	-31.54	31.61	2.60	2.51	-5.05	342.34
	NORMAL	584.0	11.70	257.77	580.93	-6.78	-47.65	48.11	2.96	2.95	1.61	6.33
	NORMAL	676.0	12.75	257.33	670.85	-10.98	-66.67	67.57	1.15	1.14	-0.48	354.7'
	NORMAL	768.0	12.84	256.98	760.56	-15.51	-86.53	87.91	0.13	0.10	-0.38	319.09
	NORMAL	860.0	11.52	257.95	850.49	-19.73	-105.48	107.29	1.45	-1.43	1.05	171.66
	NORMAL	952.0	11.52	260.67	940.64	-23.14	-123.53	125.66	0.59	0.00	2.96	91.33
	NORMAL	1,050.0	11.70	261.02	1,036.63	-26.28	-143.00	145.38	0.20	0.18	0.36	21.54
	NORMAL	1,145.0	12.13	261.38	1,129.58	-29.28	-162.38	164.99	0.46	0.45	0.38	9.98
	NORMAL	1,239.0	12.57	259.88	1,221.41	-32.55	-182.22	185.10	0.58	0.47	-1.60	323.17
1/20/2013	NORMAL	1,334.0	11.43	257.86	1,314.33	-36.35	-201.60	204.84	1.28	-1.20	-2.13	199.24
	NORMAL	1,428.0	10.38	260.50	1,406.63	-39.71	-219.05	222.61	1.24	-1.12	2.81	155.85
	NORMAL	1,523.0	10.55	261.55	1,500.05	-42.40	-236.10	239.87	0.27	0.18	1.11	48.80
	NORMAL	1,617.0	11.43	260.85	1,592.33	-45.14	-253.81	257.78	0.95	0.94	-0.74	351.03
	NORMAL	1,648.0	11.87	260.50	1,622.69	-46.16	-259.98	264.04	1.44	1.42	-1.13	350.70
	NORMAL	1,744.0	11.52	259.79	1,716.70	-49.49	-279.15	283.50	0.39	-0.36	-0.74	202.00
	NORMAL	1,838.0	12.57	259.62	1,808.63	-52.99	-298.45	303.12	1.12	1.12	-0.18	357.98

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 (°)
1/20/2013	NORMAL	1,933.0	12.75	260.11	1,901.32	-56.66	-318.95	323.94	0.22	0.19	0.52	31.06
	NORMAL	2,027.0	12.49	265.15	1,993.05	-59.30	-339.30	344.44	1.20	-0.28	5.36	105.74
	NORMAL	2,122.0	12.40	263.22	2,085.82	-61.37	-359.66	364.86	0.45	-0.09	-2.03	256.85
	NORMAL	2,216.0	11.96	261.29	2,177.70	-64.04	-379.31	384.68	0.64	-0.47	-2.05	221.84
	NORMAL	2,310.0	11.52	260.23	2,269.73	-67.11	-398.19	403.80	0.52	-0.47	-1.13	205.59
	NORMAL	2,594.0	10.64	260.67	2,548.44	-76.17	-452.01	458.38	0.31	-0.31	0.15	174.73
	NORMAL	2,969.0	10.11	261.82	2,917.31	-86.46	-518.75	525.90	0.15	-0.14	0.31	159.22
	NORMAL	3,063.0	11.52	263.05	3,009.63	-88.77	-536.23	543.53	1.52	1.50	1.31	9.90
1/21/2013	NORMAL	3,158.0	13.10	263.22	3,102.45	-91.19	-556.34	563.76	1.66	1.66	0.18	1.40
	NORMAL	3,252.0	12.75	261.38	3,194.07	-94.01	-577.18	584.77	0.57	-0.37	-1.96	228.73
	NORMAL	3,347.0	11.70	259.44	3,286.91	-97.34	-597.01	604.88	1.19	-1.11	-2.04	200.42
	NORMAL	3,441.0	13.89	262.61	3,378.57	-100.54	-617.57	625.68	2.45	2.33	3.37	19.33
	NORMAL	3,535.0	14.16	262.69	3,469.77	-103.45	-640.17	648.45	0.29	0.29	0.09	4.15
	NORMAL	3,630.0	13.72	263.40	3,561.97	-106.23	-662.88	671.31	0.50	-0.46	0.75	159.10
	NORMAL	3,724.0	13.81	260.15	3,653.27	-109.43	-685.01	693.66	0.83	0.10	-3.46	275.06
	NORMAL	3,817.0	13.89	257.07	3,743.57	-113.82	-706.83	715.90	0.80	0.09	-3.31	274.70
3/3/2013	NORMAL	3,869.0	13.45	258.91	3,794.10	-116.38	-718.84	728.18	1.19	-0.85	3.54	136.23
	NORMAL	4,002.0	11.61	254.26	3,923.93	-122.99	-746.91	756.95	1.58	-1.38	-3.50	206.48
	NORMAL	4,096.0	11.34	253.11	4,016.05	-128.24	-764.86	775.53	0.38	-0.29	-1.22	219.7'
	NORMAL	4,190.0	10.64	258.30	4,108.33	-132.69	-782.20	793.37	1.29	-0.74	5.52	127.8'
	NORMAL	4,284.0	9.85	260.24	4,200.83	-135.81	-798.62	810.08	0.92	-0.84	2.06	157.36
	NORMAL	4,378.0	11.17	269.99	4,293.26	-137.17	-815.65	827.10	2.35	1.40	10.37	58.28
	NORMAL	4,472.0	12.13	269.73	4,385.32	-137.22	-834.63	845.82	1.02	1.02	-0.28	356.74
	NORMAL	4,566.0	11.78	267.44	4,477.28	-137.70	-854.09	865.08	0.63	-0.37	-2.44	232.46
	NORMAL	4,661.0	13.81	264.45	4,569.92	-139.23	-875.07	886.02	2.25	2.14	-3.15	340.47
	NORMAL	4,755.0	12.49	262.52	4,661.45	-141.64	-896.31	907.37	1.48	-1.40	-2.05	197.46
	NORMAL	4,849.0	11.96	261.73	4,753.32	-144.36	-916.03	927.26	0.59	-0.56	-0.84	197.13
	NORMAL	4,944.0	11.98	258.98	4,846.25	-147.66	-935.45	946.96	0.60	0.02	-2.89	270.66
	NORMAL	5,038.0	12.93	258.56	4,938.04	-151.81	-955.33	967.22	1.02	1.01	-0.45	354.35
	NORMAL	5,133.0	11.02	259.53	5,030.97	-155.37	-974.68	986.93	2.02	-2.01	1.02	174.46
	NORMAL	5,225.0	11.08	259.79	5,121.26	-158.53	-992.03	1,004.56	0.08	0.07	0.28	39.84
	NORMAL	5,320.0	10.66	257.28	5,214.56	-162.09	-1,009.58	1,022.46	0.67	-0.44	-2.64	227.19
3/4/2013	NORMAL	5,414.0	10.31	260.12	5,306.99	-165.45	-1,026.35	1,039.56	0.66	-0.37	3.02	125.50
	NORMAL	5,509.0	11.34	255.49	5,400.30	-169.24	-1,043.77	1,057.36	1.42	1.08	-4.87	317.54
	NORMAL	5,603.0	11.63	259.84	5,492.42	-173.23	-1,062.04	1,076.05	0.97	0.31	4.63	73.63
	NORMAL	5,697.0	12.19	256.64	5,584.40	-177.20	-1,081.02	1,095.43	0.92	0.60	-3.40	308.72
	NORMAL	5,792.0	11.52	255.93	5,677.37	-181.82	-1,099.98	1,114.89	0.72	-0.71	-0.75	191.93
	NORMAL	5,886.0	10.82	254.34	5,769.59	-186.48	-1,117.59	1,133.03	0.81	-0.74	-1.69	202.97
	NORMAL	5,981.0	10.64	261.29	5,862.93	-190.22	-1,134.84	1,150.67	1.37	-0.19	7.32	101.32
	NORMAL	6,075.0	11.17	258.30	5,955.23	-193.38	-1,152.34	1,168.44	0.82	0.56	-3.18	311.66
	NORMAL	6,169.0	10.99	261.02	6,047.48	-196.62	-1,170.10	1,186.50	0.59	-0.19	2.89	110.33
	NORMAL	6,264.0	11.70	261.99	6,140.63	-199.38	-1,188.58	1,205.19	0.77	0.75	1.02	15.52
	NORMAL	6,358.0	10.29	261.64	6,232.90	-201.93	-1,206.33	1,223.11	1.50	-1.50	-0.37	182.54
	NORMAL	6,452.0	8.79	261.90	6,325.60	-204.16	-1,221.75	1,238.68	1.60	-1.60	0.28	178.48
	NORMAL	6,546.0	8.09	261.38	6,418.58	-206.16	-1,235.40	1,252.47	0.75	-0.74	-0.55	185.97
	NORMAL	6,640.0	8.09	259.35	6,511.64	-208.38	-1,248.44	1,265.70	0.30	0.00	-2.16	269.00
	NORMAL	6,735.0	8.18	263.66	6,605.69	-210.36	-1,261.72	1,279.13	0.65	0.09	4.54	83.74
	NORMAL	6,829.0	8.27	267.79	6,698.72	-211.36	-1,275.13	1,292.51	0.64	0.10	4.39	83.39
3/5/2013	NORMAL	6,923.0	7.56	266.03	6,791.82	-212.05	-1,288.05	1,305.36	0.80	-0.76	-1.87	197.98
	NORMAL	7,018.0	6.95	266.03	6,886.06	-212.88	-1,300.02	1,317.30	0.64	-0.64	0.00	180.00
	NORMAL	7,112.0	6.42	266.12	6,979.42	-213.63	-1,310.94	1,328.19	0.56	-0.56	0.10	178.9'
	NORMAL	7,207.0	5.89	266.12	7,073.88	-214.32	-1,321.10	1,338.32	0.56	-0.56	0.00	180.00
	NORMAL	7,301.0	5.36	264.36	7,167.42	-215.08	-1,330.28	1,347.50	0.59	-0.56	-1.87	197.16
	NORMAL	7,396.0	4.66	260.23	7,262.06	-216.17	-1,338.50	1,355.79	0.83	-0.74	-4.35	205.2'
	NORMAL	7,491.0	3.08	262.69	7,356.84	-217.15	-1,344.83	1,362.20	1.67	-1.66	2.59	175.23
	NORMAL	7,585.0	2.29	253.20	7,450.74	-218.01	-1,349.14	1,366.58	0.96	-0.84	-10.10	204.68
	NORMAL	7,679.0	1.85	247.58	7,544.68	-219.13	-1,352.34	1,369.93	0.51	-0.47	-5.98	201.98

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 (°)
3/5/2013	NORMAL	7,773.0	1.14	278.07	7,638.64	-219.58	-1,354.66	1,372.30	1.11	-0.76	32.44	146.31
	NORMAL	7,868.0	0.70	277.02	7,733.63	-219.38	-1,356.18	1,373.75	0.46	-0.46	-1.11	181.67
	NORMAL	7,962.0	0.88	282.22	7,827.62	-219.15	-1,357.45	1,374.97	0.21	0.19	5.53	24.33
	NORMAL	8,056.0	0.69	276.88	7,921.61	-218.93	-1,358.72	1,376.18	0.22	-0.20	-5.68	198.40
	NORMAL	8,151.0	0.53	283.08	8,016.61	-218.76	-1,359.71	1,377.14	0.18	-0.17	6.53	160.66
	NORMAL	8,246.0	0.44	277.02	8,111.61	-218.62	-1,360.50	1,377.89	0.11	-0.09	-6.38	206.67
3/6/2013	NORMAL	8,340.0	0.35	248.63	8,205.60	-218.68	-1,361.13	1,378.52	0.23	-0.10	-30.20	231.56
	NORMAL	8,433.0	0.79	267.53	8,298.60	-218.81	-1,362.04	1,379.43	0.51	0.47	20.32	32.78
	NORMAL	8,527.0	1.02	260.56	8,392.59	-218.98	-1,363.51	1,380.91	0.27	0.24	-7.41	330.91
	NORMAL	8,621.0	1.23	263.40	8,486.57	-219.23	-1,365.34	1,382.76	0.23	0.22	3.02	16.29
	NORMAL	8,715.0	1.23	242.39	8,580.55	-219.81	-1,367.23	1,384.72	0.48	0.00	-22.35	259.50
	NORMAL	8,810.0	0.88	219.54	8,675.53	-220.85	-1,368.60	1,386.25	0.57	-0.37	-24.05	219.20
	NORMAL	8,904.0	0.35	171.38	8,769.53	-221.69	-1,369.02	1,386.80	0.74	-0.56	-51.23	201.97
	NORMAL	8,999.0	0.62	153.80	8,864.52	-222.44	-1,368.75	1,386.66	0.32	0.28	-18.51	322.16
	NORMAL	9,093.0	0.70	137.19	8,958.52	-223.31	-1,368.13	1,386.20	0.22	0.09	-17.67	284.24
	NORMAL	9,187.0	0.62	102.91	9,052.51	-223.85	-1,367.25	1,385.42	0.42	-0.09	-36.47	241.74
	NORMAL	9,282.0	0.70	113.02	9,147.50	-224.19	-1,366.21	1,384.45	0.15	0.08	10.64	60.64
	NORMAL	9,376.0	0.68	143.26	9,241.50	-224.86	-1,365.35	1,383.72	0.38	-0.02	32.17	108.19
	NORMAL	9,470.0	0.88	87.88	9,335.49	-225.28	-1,364.29	1,382.75	0.79	0.21	-58.91	256.04
	NORMAL	9,564.0	0.44	98.16	9,429.48	-225.31	-1,363.21	1,381.69	0.48	-0.47	10.94	170.04
3/7/2013	NORMAL	9,658.0	0.18	65.99	9,523.48	-225.30	-1,362.72	1,381.20	0.32	-0.28	-34.22	198.43
	NORMAL	9,752.0	0.18	5.79	9,617.48	-225.09	-1,362.57	1,381.02	0.19	0.00	-64.04	239.90
	NORMAL	9,846.0	0.26	277.99	9,711.48	-224.92	-1,362.77	1,381.18	0.33	0.09	-93.40	236.80
	NORMAL	9,940.0	0.26	228.42	9,805.48	-225.03	-1,363.14	1,381.57	0.23	0.00	-52.73	245.22
	NORMAL	10,033.0	0.53	223.76	9,898.48	-225.48	-1,363.59	1,382.09	0.29	0.29	-5.01	350.88
	NORMAL	10,128.0	0.79	229.65	9,993.47	-226.22	-1,364.40	1,383.01	0.28	0.27	6.20	17.58
	NORMAL	10,222.0	1.14	228.07	10,087.46	-227.26	-1,365.59	1,384.36	0.37	0.37	-1.68	354.86
	NORMAL	10,316.0	0.97	214.09	10,181.44	-228.55	-1,366.73	1,385.70	0.33	-0.18	-14.87	229.70
	NORMAL	10,411.0	0.57	152.95	10,276.44	-229.63	-1,366.96	1,386.11	0.90	-0.42	-64.36	215.70
	NORMAL	10,505.0	0.35	131.47	10,370.43	-230.24	-1,366.54	1,385.79	0.29	-0.23	-22.85	207.68
	NORMAL	10,600.0	0.35	124.00	10,465.43	-230.59	-1,366.08	1,385.40	0.05	0.00	-7.86	266.27
	NORMAL	10,694.0	0.35	62.04	10,559.43	-230.62	-1,365.59	1,384.92	0.38	0.00	-65.91	239.02
	NORMAL	10,788.0	0.44	76.10	10,653.43	-230.40	-1,364.98	1,384.29	0.14	0.10	14.96	54.30
	NORMAL	10,883.0	0.44	46.22	10,748.42	-230.06	-1,364.37	1,383.62	0.24	0.00	-31.45	255.06
3/8/2013	NORMAL	10,979.0	0.48	94.32	10,844.42	-229.83	-1,363.70	1,382.93	0.39	0.04	50.10	108.48
	NORMAL	11,074.0	0.26	232.11	10,939.42	-230.00	-1,363.47	1,382.73	0.73	-0.23	145.04	165.44
	NORMAL	11,168.0	0.44	278.16	11,033.42	-230.08	-1,364.00	1,383.26	0.34	0.19	48.99	81.85
	NORMAL	11,262.0	0.70	327.03	11,127.42	-229.54	-1,364.67	1,383.83	0.56	0.28	51.99	87.78
	NORMAL	11,357.0	0.09	280.89	11,222.41	-229.04	-1,365.06	1,384.13	0.67	-0.64	-48.57	185.81
	NORMAL	11,451.0	0.62	23.72	11,316.41	-228.56	-1,364.92	1,383.92	0.69	0.56	109.39	110.64
	NORMAL	11,545.0	0.26	103.00	11,410.41	-228.15	-1,364.51	1,383.45	0.67	-0.38	84.34	155.92
	NORMAL	11,640.0	0.35	231.49	11,505.41	-228.37	-1,364.53	1,383.50	0.58	0.09	135.25	150.17
3/9/2013	NORMAL	11,735.0	0.53	50.70	11,600.41	-228.28	-1,364.42	1,383.37	0.93	0.19	188.64	179.52
	NORMAL	11,829.0	0.26	183.07	11,694.41	-228.21	-1,364.09	1,383.04	0.78	-0.29	140.82	164.76
	NORMAL	11,923.0	0.35	273.33	11,788.40	-228.41	-1,364.39	1,383.37	0.46	0.10	96.02	126.77
	NORMAL	12,016.0	0.53	54.83	11,881.40	-228.15	-1,364.32	1,383.26	0.90	0.19	152.15	156.66
	NORMAL	12,111.0	0.09	102.82	11,976.40	-227.91	-1,363.89	1,382.79	0.50	-0.46	50.52	171.90
	NORMAL	12,205.0	0.35	234.66	12,070.40	-228.09	-1,364.05	1,382.98	0.44	0.28	140.26	141.13
	NORMAL	12,299.0	0.43	266.40	12,164.40	-228.28	-1,364.64	1,383.59	0.24	0.09	33.77	86.03
3/11/2013	NORMAL	12,393.0	0.79	305.06	12,258.39	-227.93	-1,365.52	1,384.40	0.56	0.38	41.13	69.26
	NORMAL	12,491.0	0.79	278.16	12,356.39	-227.45	-1,366.74	1,385.53	0.37	0.00	-27.45	256.55
	NORMAL	12,584.0	0.97	300.75	12,449.37	-226.95	-1,368.05	1,386.74	0.42	0.19	24.29	74.18
	NORMAL	12,677.0	0.88	312.53	12,542.36	-226.07	-1,369.26	1,387.77	0.23	-0.10	12.67	121.14
	NORMAL	12,771.0	0.53	301.54	12,636.36	-225.35	-1,370.16	1,388.54	0.40	-0.37	-11.69	195.69
	NORMAL	12,802.0	0.70	306.29	12,667.35	-225.17	-1,370.43	1,388.78	0.57	0.55	15.32	19.08
	NORMAL	12,849.0	0.70	306.29	12,714.35	-224.83	-1,370.90	1,389.18	0.00	0.00	0.00	0.00