

## 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 323-24-198	Wellbore No.	00
Wellbore Legal Name	RGU 323-24-198	Common Wellbore Name	RGU 323-24-198
Project	RG 24-01S-098VW	Site	RGU 33-24-196 Pad
Vertical Section Azimuth	270.23 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	4/20/2014	UWI	RGU 323-24-198
Active datum	KB @6,617.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SDI
Date Started	4/20/2014	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

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Bulld Rate (°/100usft)	Turn (°/100usft)	Tface (°)
4/20/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/20/2014	NORMAL	142.0	0.53	102.39	142.00	-0.14	0.64	-0.64	0.37	0.37	0.00	102.39
	NORMAL	224.0	2.55	263.58	223.98	-0.43	-0.80	0.80	3.73	2.46	196.57	164.39
	NORMAL	316.0	4.49	262.44	315.80	-1.13	-6.41	6.40	2.11	2.11	-1.24	357.36
	NORMAL	408.0	4.31	268.15	407.53	-1.71	-13.43	13.42	0.51	-0.20	6.21	115.17
	NORMAL	501.0	5.45	268.68	500.19	-1.93	-21.34	21.33	1.23	1.23	0.57	2.53
	NORMAL	593.0	5.63	266.84	591.76	-2.28	-30.21	30.20	0.27	0.20	-2.00	314.46
	NORMAL	685.0	5.37	268.59	683.34	-2.63	-39.02	39.01	0.34	-0.28	1.90	148.04
	NORMAL	762.0	5.20	267.39	760.01	-2.88	-46.11	46.10	0.28	-0.22	-1.56	212.43
	NORMAL	870.0	6.51	267.63	867.44	-3.36	-57.12	57.10	1.21	1.21	0.22	1.19
	NORMAL	962.0	6.42	263.76	958.86	-4.13	-67.44	67.42	0.48	-0.10	-4.21	256.41
4/21/2014	NORMAL	1,056.0	7.21	275.45	1,052.20	-4.14	-78.54	78.52	1.69	0.84	12.44	66.23
	NORMAL	1,150.0	7.04	275.27	1,145.47	-3.05	-90.15	90.13	0.18	-0.18	-0.19	187.39
	NORMAL	1,245.0	6.77	270.62	1,239.78	-2.46	-101.54	101.53	0.65	-0.28	-4.89	241.92
	NORMAL	1,340.0	6.42	271.05	1,334.16	-2.30	-112.45	112.44	0.37	-0.37	0.45	172.18
	NORMAL	1,435.0	6.16	270.35	1,428.58	-2.17	-122.86	122.85	0.29	-0.27	-0.74	196.09
	NORMAL	1,529.0	6.07	266.40	1,522.05	-2.45	-132.86	132.85	0.46	-0.10	-4.20	255.97
	NORMAL	1,624.0	6.25	278.00	1,616.51	-2.05	-143.00	142.99	1.32	0.19	12.21	87.57
	NORMAL	1,693.0	5.96	280.06	1,685.11	-0.90	-150.24	150.24	0.53	-0.42	2.99	143.95
	NORMAL	1,787.0	6.10	277.88	1,778.59	0.64	-160.00	160.00	0.29	0.15	-2.32	300.35
	NORMAL	1,882.0	5.89	277.09	1,873.07	1.93	-169.83	169.84	0.24	-0.22	-0.83	201.06

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (°)
4/21/2014	NORMAL	1,977.0	5.46	278.26	1,967.61	3.18	-179.14	179.15	0.47	-0.45	1.23	165.52
	NORMAL	2,072.0	5.49	279.78	2,062.18	4.60	-188.09	188.11	0.16	0.03	1.60	79.07
4/22/2014	NORMAL	2,167.0	5.82	265.45	2,156.72	4.99	-197.37	197.39	1.52	0.35	-15.08	275.96
	NORMAL	2,262.0	5.95	261.67	2,251.22	3.90	-207.05	207.06	0.43	0.14	-3.98	286.66
	NORMAL	2,356.0	5.82	264.78	2,344.72	2.76	-216.61	216.62	0.37	-0.14	3.31	113.72
	NORMAL	2,451.0	7.00	269.04	2,439.13	2.22	-227.20	227.21	1.34	1.24	4.48	24.08
	NORMAL	2,545.0	7.45	270.98	2,532.38	2.23	-239.02	239.03	0.54	0.48	2.06	29.43
	NORMAL	2,640.0	7.50	267.72	2,626.58	2.09	-251.37	251.38	0.45	0.05	-3.43	275.11
	NORMAL	2,735.0	7.23	265.75	2,720.79	1.40	-263.53	263.53	0.39	-0.28	-2.07	222.11
	NORMAL	2,830.0	6.85	265.38	2,815.08	0.50	-275.14	275.14	0.40	-0.40	-0.39	186.62
	NORMAL	2,924.0	7.91	265.24	2,908.30	-0.49	-287.17	287.17	1.13	1.13	-0.15	358.96
	NORMAL	3,019.0	7.45	264.03	3,002.44	-1.67	-299.81	299.80	0.51	-0.48	-1.27	198.77
	NORMAL	3,113.0	7.79	269.60	3,095.62	-2.35	-312.24	312.23	0.86	0.36	5.93	68.06
	NORMAL	3,208.0	9.15	268.97	3,189.58	-2.53	-326.23	326.22	1.43	1.43	-0.66	355.79
	NORMAL	3,303.0	8.79	264.96	3,283.42	-3.30	-341.02	341.00	0.76	-0.38	-4.22	238.10
	NORMAL	3,398.0	9.38	263.66	3,377.22	-4.80	-355.94	355.92	0.66	0.62	-1.37	340.17
	NORMAL	3,492.0	10.18	264.84	3,469.86	-6.39	-371.83	371.80	0.88	0.85	1.26	14.65
	NORMAL	3,587.0	11.33	264.89	3,563.19	-7.97	-389.49	389.45	1.21	1.21	0.05	0.49
	NORMAL	3,682.0	12.11	271.72	3,656.21	-8.51	-408.74	408.71	1.67	0.82	7.19	64.03
	NORMAL	3,776.0	11.56	272.38	3,748.21	-7.82	-428.01	427.97	0.60	-0.59	0.70	166.50
	NORMAL	3,872.0	11.01	270.78	3,842.36	-7.30	-446.79	446.75	0.66	-0.57	-1.67	208.87
5/29/2014	NORMAL	4,012.0	11.70	270.64	3,979.62	-6.96	-474.35	474.32	0.49	0.49	-0.10	357.64
	NORMAL	4,107.0	13.76	265.51	4,072.28	-7.73	-495.25	495.21	2.47	2.17	-5.40	328.72
	NORMAL	4,202.0	14.91	268.94	4,164.32	-8.84	-518.73	518.69	1.50	1.21	3.61	38.11
	NORMAL	4,297.0	16.32	271.15	4,255.81	-8.80	-544.30	544.26	1.61	1.48	2.33	23.94
	NORMAL	4,391.0	17.27	271.43	4,345.80	-8.19	-571.45	571.41	1.01	1.01	0.30	5.00
	NORMAL	4,486.0	18.76	272.68	4,436.14	-7.12	-600.81	600.78	1.62	1.57	1.32	15.14
	NORMAL	4,581.0	18.14	271.35	4,526.26	-6.06	-630.85	630.82	0.79	-0.65	-1.40	213.54
	NORMAL	4,676.0	19.38	271.48	4,616.21	-5.30	-661.40	661.37	1.31	1.31	0.14	1.99
	NORMAL	4,771.0	20.19	271.22	4,705.60	-4.55	-693.54	693.52	0.86	0.85	-0.27	353.68
	NORMAL	4,866.0	19.03	268.96	4,795.09	-4.48	-725.42	725.40	1.46	-1.22	-2.38	212.12
	NORMAL	4,960.0	17.85	269.60	4,884.27	-4.86	-755.15	755.13	1.27	-1.26	0.68	170.57
	NORMAL	5,055.0	18.64	271.15	4,974.49	-4.65	-784.89	784.87	0.98	0.83	1.63	32.30
	NORMAL	5,150.0	18.58	271.23	5,064.52	-4.03	-815.20	815.18	0.07	-0.06	0.08	156.99
	NORMAL	5,244.0	18.46	270.98	5,153.66	-3.45	-845.05	845.03	0.15	-0.13	-0.27	213.38
	NORMAL	5,339.0	19.22	271.47	5,243.57	-2.79	-875.72	875.71	0.82	0.80	0.52	11.99
	NORMAL	5,434.0	19.71	271.73	5,333.14	-1.91	-907.37	907.35	0.52	0.52	0.27	10.15
	NORMAL	5,529.0	17.88	270.40	5,423.07	-1.32	-937.97	937.95	1.98	-1.93	-1.40	192.55
	NORMAL	5,623.0	19.22	270.38	5,512.18	-1.12	-967.87	967.86	1.43	1.43	-0.02	359.72
	NORMAL	5,718.0	20.54	274.22	5,601.52	0.21	-1,000.13	1,000.12	1.95	1.39	4.04	46.51
	NORMAL	5,813.0	18.77	272.60	5,690.98	2.13	-1,032.02	1,032.02	1.95	-1.86	-1.71	196.35
5/30/2014	NORMAL	5,908.0	17.81	274.25	5,781.18	3.90	-1,061.78	1,061.79	1.15	-1.01	1.74	152.44
	NORMAL	6,002.0	19.14	273.10	5,870.34	5.80	-1,091.50	1,091.52	1.47	1.41	-1.22	344.13
	NORMAL	6,097.0	18.60	272.42	5,960.23	7.28	-1,122.19	1,122.21	0.61	-0.57	-0.72	201.84
	NORMAL	6,192.0	16.31	271.25	6,050.85	8.21	-1,150.67	1,150.69	2.44	-2.41	-1.23	188.16
	NORMAL	6,287.0	14.53	269.10	6,142.43	8.32	-1,175.93	1,175.95	1.97	-1.87	-2.26	196.77
	NORMAL	6,382.0	14.58	270.25	6,234.38	8.18	-1,199.80	1,199.82	0.31	0.05	1.21	80.74
	NORMAL	6,476.0	12.42	269.75	6,325.78	8.19	-1,221.74	1,221.76	2.30	-2.30	-0.53	182.85
	NORMAL	6,571.0	14.48	269.35	6,418.17	8.01	-1,243.84	1,243.86	2.17	2.17	-0.42	357.22
	NORMAL	6,666.0	8.94	267.56	6,511.16	7.56	-1,263.10	1,263.12	5.84	-5.83	-1.88	182.88
	NORMAL	6,761.0	8.86	272.08	6,605.01	7.51	-1,277.79	1,277.81	0.74	-0.08	4.76	98.76
5/31/2014	NORMAL	6,855.0	8.30	273.27	6,697.96	8.16	-1,291.80	1,291.82	0.62	-0.60	1.27	163.00
	NORMAL	6,950.0	9.04	272.24	6,791.88	8.85	-1,306.10	1,306.12	0.80	0.78	-1.08	347.64
	NORMAL	7,045.0	10.46	268.63	6,885.50	8.93	-1,322.18	1,322.20	1.63	1.49	-3.80	334.92
	NORMAL	7,140.0	10.50	268.29	6,978.92	8.47	-1,339.45	1,339.48	0.08	0.04	-0.36	302.73
	NORMAL	7,234.0	10.18	267.73	7,071.39	7.88	-1,356.31	1,356.33	0.36	-0.34	-0.60	197.16

## 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 (°)
5/31/2014	NORMAL	7,329.0	10.14	267.86	7,164.90	7.24	-1,373.06	1,373.08	0.05	-0.04	0.14	150.24
	NORMAL	7,424.0	9.40	266.88	7,258.52	6.50	-1,389.16	1,389.18	0.80	-0.78	-1.03	192.18
	NORMAL	7,519.0	8.37	269.64	7,352.38	6.04	-1,403.82	1,403.84	1.17	-1.08	2.91	158.88
	NORMAL	7,614.0	7.79	270.97	7,446.44	6.10	-1,417.18	1,417.19	0.64	-0.61	1.40	162.79
	NORMAL	7,708.0	6.15	269.37	7,539.74	6.16	-1,428.58	1,428.59	1.76	-1.74	-1.70	185.96
	NORMAL	7,803.0	4.57	283.37	7,634.33	6.98	-1,437.35	1,437.37	2.15	-1.66	14.74	147.21
	NORMAL	7,898.0	4.45	283.43	7,729.03	8.71	-1,444.62	1,444.64	0.13	-0.13	0.06	177.78
	NORMAL	7,993.0	3.36	286.02	7,823.81	10.33	-1,450.88	1,450.91	1.16	-1.15	2.73	172.10
	NORMAL	8,087.0	2.52	293.58	7,917.69	11.92	-1,455.42	1,455.46	0.98	-0.89	8.04	158.96
6/1/2014	NORMAL	8,182.0	2.09	286.62	8,012.61	13.25	-1,459.00	1,459.04	0.54	-0.45	-7.33	209.62
	NORMAL	8,277.0	1.78	287.31	8,107.56	14.18	-1,462.06	1,462.11	0.33	-0.33	0.73	176.05
	NORMAL	8,372.0	0.75	283.37	8,202.53	14.77	-1,464.08	1,464.13	1.09	-1.08	-4.15	182.86
	NORMAL	8,466.0	0.33	295.80	8,296.53	15.03	-1,464.92	1,464.97	0.46	-0.45	13.22	170.57
	NORMAL	8,561.0	0.31	191.56	8,391.53	14.89	-1,465.22	1,465.27	0.53	-0.02	-109.73	216.49
	NORMAL	8,656.0	1.06	139.53	8,486.52	13.97	-1,464.70	1,464.74	0.95	0.79	-54.77	292.27
	NORMAL	8,750.0	1.16	133.29	8,580.50	12.66	-1,463.44	1,463.48	0.17	0.11	-6.64	306.45
	NORMAL	8,845.0	0.94	135.30	8,675.49	11.45	-1,462.19	1,462.23	0.23	-0.23	2.12	171.50
	NORMAL	8,940.0	0.88	137.41	8,770.48	10.35	-1,461.15	1,461.18	0.07	-0.06	2.22	151.87
	NORMAL	9,035.0	0.87	150.25	8,865.47	9.19	-1,460.30	1,460.33	0.21	-0.01	13.52	99.33
	NORMAL	9,130.0	1.02	140.45	8,960.45	7.91	-1,459.40	1,459.42	0.23	0.16	-10.32	307.89
	NORMAL	9,225.0	0.87	158.76	9,055.44	6.59	-1,458.60	1,458.62	0.35	-0.16	19.27	125.37
	NORMAL	9,319.0	1.02	184.99	9,149.43	5.09	-1,458.42	1,458.43	0.48	0.16	27.90	84.30
	NORMAL	9,414.0	0.65	239.24	9,244.42	3.97	-1,458.96	1,458.96	0.87	-0.39	57.11	140.51
	NORMAL	9,509.0	0.79	241.50	9,339.41	3.38	-1,459.99	1,460.00	0.15	0.15	2.38	12.60
	NORMAL	9,604.0	1.19	235.49	9,434.40	2.51	-1,461.38	1,461.38	0.43	0.42	-6.33	342.43
	NORMAL	9,698.0	0.59	243.23	9,528.39	1.74	-1,462.62	1,462.61	0.65	-0.64	8.23	172.52
	NORMAL	9,793.0	0.59	212.12	9,623.38	1.11	-1,463.32	1,463.31	0.33	0.00	-32.75	254.45
	NORMAL	9,888.0	0.62	209.48	9,718.38	0.25	-1,463.83	1,463.82	0.04	0.03	-2.78	315.78
	NORMAL	9,983.0	0.98	208.27	9,813.37	-0.92	-1,464.47	1,464.45	0.38	0.38	-1.27	356.71
6/2/2014	NORMAL	10,077.0	0.20	183.28	9,907.36	-1.79	-1,464.86	1,464.84	0.85	-0.83	-26.59	186.04
	NORMAL	10,172.0	0.20	189.25	10,002.36	-2.12	-1,464.89	1,464.87	0.02	0.00	6.28	92.98
	NORMAL	10,267.0	0.34	202.70	10,097.36	-2.54	-1,465.03	1,465.01	0.16	0.15	14.16	31.18
	NORMAL	10,366.0	0.84	198.16	10,196.36	-3.50	-1,465.37	1,465.34	0.51	0.51	-4.59	352.39
	NORMAL	10,461.0	0.97	206.95	10,291.34	-4.88	-1,465.95	1,465.92	0.20	0.14	9.25	51.33
6/3/2014	NORMAL	10,551.0	1.33	232.68	10,381.33	-6.19	-1,467.13	1,467.09	0.69	0.40	28.59	68.44
	NORMAL	10,646.0	1.22	266.80	10,476.30	-6.92	-1,469.01	1,468.97	0.80	-0.12	35.92	115.06
	NORMAL	10,741.0	1.83	311.26	10,571.27	-5.97	-1,471.16	1,471.13	1.35	0.64	46.80	86.15
	NORMAL	10,835.0	1.12	350.97	10,665.24	-4.08	-1,472.43	1,472.41	1.28	-0.76	42.24	143.54
	NORMAL	10,930.0	0.54	18.91	10,760.23	-2.74	-1,472.44	1,472.41	0.73	-0.61	29.41	158.52
	NORMAL	11,025.0	1.20	340.36	10,855.22	-1.38	-1,472.62	1,472.61	0.89	0.69	-40.58	298.05
	NORMAL	11,119.0	2.02	345.19	10,949.19	1.15	-1,473.38	1,473.37	0.88	0.87	5.14	11.82
	NORMAL	11,214.0	1.57	348.94	11,044.14	4.05	-1,474.06	1,474.06	0.49	-0.47	3.95	167.24
	NORMAL	11,308.0	0.89	8.24	11,138.12	6.03	-1,474.20	1,474.21	0.84	-0.72	20.53	158.05
	NORMAL	11,403.0	1.26	350.87	11,233.10	7.80	-1,474.26	1,474.28	0.51	0.39	-18.28	309.73
	NORMAL	11,498.0	1.16	333.37	11,328.08	9.69	-1,474.86	1,474.88	0.40	-0.11	-18.42	246.22
	NORMAL	11,593.0	0.87	322.45	11,423.07	11.12	-1,475.73	1,475.76	0.37	-0.31	-11.49	208.33
	NORMAL	11,688.0	0.30	336.61	11,518.06	11.92	-1,476.26	1,476.30	0.61	-0.60	14.91	172.78
6/4/2014	NORMAL	11,782.0	0.34	313.16	11,612.06	12.34	-1,476.57	1,476.60	0.14	0.04	-24.95	275.03
	NORMAL	11,877.0	0.41	254.37	11,707.06	12.44	-1,477.10	1,477.14	0.39	0.07	-61.88	250.01
	NORMAL	11,971.0	0.49	244.40	11,801.06	12.17	-1,477.78	1,477.82	0.12	0.09	-10.61	310.56
	NORMAL	12,066.0	0.20	3.49	11,896.05	12.16	-1,478.14	1,478.18	0.64	-0.31	125.36	163.43
	NORMAL	12,161.0	0.24	11.68	11,991.05	12.52	-1,478.09	1,478.13	0.05	0.04	8.62	42.32
	NORMAL	12,256.0	0.67	358.59	12,086.05	13.27	-1,478.06	1,478.11	0.46	0.45	-13.78	339.81
	NORMAL	12,350.0	0.43	307.09	12,180.05	14.03	-1,478.36	1,478.40	0.56	-0.26	-54.79	219.91
	NORMAL	12,445.0	0.07	139.58	12,275.05	14.21	-1,478.61	1,478.65	0.52	-0.38	-176.33	181.74
	NORMAL	12,539.0	0.10	273.73	12,369.05	14.17	-1,478.65	1,478.70	0.17	0.03	142.71	152.81

## 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 (°)
6/4/2014	NORMAL	12,634.0	0.20	257.05	12,464.05	14.14	-1,478.89	1,478.94	0.11	0.11	-17.56	327.92
	NORMAL	12,729.0	0.35	182.03	12,559.05	13.81	-1,479.07	1,479.11	0.37	0.16	-78.97	252.05
6/5/2014	NORMAL	12,824.0	0.24	335.75	12,654.05	13.70	-1,479.16	1,479.20	0.61	-0.12	161.81	169.35
	NORMAL	12,909.0	0.24	335.75	12,739.04	14.02	-1,479.30	1,479.35	0.00	0.00	0.00	0.00