

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	RG 414-14-298	Wellbore No.	
Well Name	FEDERAL RG 414-14-298	Common Name	RG 414-14-298
Project	RG 14-02S-098W	Site	RG 24-14-298 Pad
Vertical Section Azimuth	274.46 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	5/13/2012	UWI	RG 414-14-298
Active Datum	KB @6,708.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	5/13/2012	Ended	
Tool Name	MWD	Engineer	

2.1.1 Tie On Point

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)

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 (°)

2.2 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	5/13/2012	Ended	
Tool Name	MWD	Engineer	

2.2.1 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

2.2.2 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 (°)
5/13/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/13/2012	NORMAL	259.0	2.02	258.21	258.95	-0.93	-4.47	4.38	0.78	0.78	0.00	258.21

2.2.2 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 (°)
5/13/2012	NORMAL	351.0	3.08	282.65	350.86	-0.72	-8.47	8.39	1.63	1.15	26.57	58.38
	NORMAL	443.0	5.45	280.89	442.60	0.64	-15.17	15.17	2.58	2.58	-1.91	355.96
	NORMAL	536.0	8.44	278.52	534.90	2.49	-26.26	26.37	3.23	3.22	-2.55	353.35
	NORMAL	628.0	11.26	276.23	625.54	4.47	-41.87	42.09	3.09	3.07	-2.49	350.96
	NORMAL	720.0	13.89	275.70	715.32	6.54	-61.79	62.11	2.86	2.86	-0.58	357.23
	NORMAL	812.0	14.86	272.98	804.44	8.25	-84.56	84.94	1.28	1.05	-2.96	323.83
	NORMAL	909.0	16.09	272.01	897.92	9.37	-110.42	110.81	1.30	1.27	-1.00	347.65
	NORMAL	971.0	15.30	273.86	957.61	10.22	-127.16	127.57	1.51	-1.27	2.98	148.53
	NORMAL	1,066.0	14.33	269.73	1,049.46	11.01	-151.43	151.82	1.51	-1.02	-4.35	225.45
	NORMAL	1,160.0	14.77	274.65	1,140.44	11.92	-175.00	175.40	1.40	0.47	5.23	72.80
5/14/2012	NORMAL	1,255.0	15.12	277.29	1,232.23	14.48	-199.36	199.89	0.81	0.37	2.78	64.07
	NORMAL	1,349.0	15.74	276.58	1,322.84	17.49	-224.19	224.87	0.69	0.66	-0.76	342.71
	NORMAL	1,444.0	17.59	277.81	1,413.85	20.92	-251.21	252.08	1.98	1.95	1.29	11.38
	NORMAL	1,537.0	17.85	278.08	1,502.44	24.83	-279.25	280.33	0.29	0.28	0.29	17.67
	NORMAL	1,632.0	18.20	277.55	1,592.77	28.83	-308.37	309.68	0.41	0.37	-0.56	334.64
	NORMAL	1,726.0	17.50	276.67	1,682.25	32.40	-336.96	338.46	0.80	-0.74	-0.94	200.66
	NORMAL	1,820.0	17.23	276.58	1,771.97	35.64	-364.83	366.50	0.29	-0.29	-0.10	185.64
	NORMAL	1,914.0	17.32	276.85	1,861.72	38.90	-392.55	394.39	0.13	0.10	0.29	41.83
	NORMAL	2,009.0	16.36	272.19	1,952.65	41.10	-419.96	421.89	1.74	-1.01	-4.91	232.37
	NORMAL	2,102.0	16.36	272.01	2,041.89	42.06	-446.14	448.06	0.05	0.00	-0.19	269.91
	NORMAL	2,197.0	15.92	271.13	2,133.14	42.79	-472.54	474.44	0.53	-0.46	-0.93	208.65
	NORMAL	2,291.0	15.44	269.69	2,223.65	42.97	-497.94	499.78	0.66	-0.51	-1.53	218.34
	NORMAL	2,385.0	16.71	269.11	2,313.97	42.69	-523.97	525.70	1.36	1.35	-0.62	352.51
	NORMAL	2,481.0	17.06	270.43	2,405.83	42.59	-551.85	553.49	0.54	0.36	1.38	48.24
	NORMAL	2,576.0	16.71	272.80	2,496.74	43.36	-579.43	581.04	0.81	-0.37	2.49	118.08
	NORMAL	2,670.0	17.06	273.42	2,586.68	44.84	-606.69	608.34	0.42	0.37	0.66	27.52
	NORMAL	2,763.0	18.29	275.53	2,675.29	47.06	-634.83	636.57	1.49	1.32	2.27	28.52
	NORMAL	2,858.0	17.59	273.77	2,765.67	49.44	-663.99	665.83	0.93	-0.74	-1.85	216.92
	NORMAL	2,952.0	18.20	273.33	2,855.13	51.23	-692.82	694.71	0.66	0.65	-0.47	347.29
	NORMAL	3,047.0	18.11	274.74	2,945.40	53.31	-722.35	724.30	0.47	-0.09	1.48	102.25
	NORMAL	3,142.0	17.94	274.65	3,035.73	55.72	-751.64	753.70	0.18	-0.18	-0.09	189.26
	NORMAL	3,236.0	17.94	276.06	3,125.16	58.42	-780.47	782.65	0.46	0.00	1.50	90.67
	NORMAL	3,341.0	17.67	273.42	3,225.14	61.07	-812.46	814.75	0.81	-0.26	-2.51	250.25
	NORMAL	3,410.0	16.36	273.33	3,291.12	62.26	-832.61	834.93	1.90	-1.90	-0.13	181.11
	NORMAL	3,505.0	12.13	274.39	3,383.17	63.81	-855.93	858.30	4.46	-4.45	1.12	176.98
	NORMAL	3,599.0	12.95	271.87	3,474.93	64.91	-876.31	878.70	1.05	0.87	-2.68	325.05
	NORMAL	3,694.0	14.62	271.76	3,567.19	65.62	-898.93	901.31	1.76	1.76	-0.12	359.05
	NORMAL	3,788.0	14.16	270.35	3,658.24	66.06	-922.29	924.63	0.62	-0.49	-1.50	216.62
6/6/2012	NORMAL	3,882.0	14.42	273.59	3,749.34	66.86	-945.47	947.80	0.89	0.28	3.45	73.56
	NORMAL	3,977.0	13.63	275.70	3,841.50	68.71	-968.41	970.82	0.99	-0.83	2.22	148.11
6/7/2012	NORMAL	4,070.0	12.93	270.52	3,932.02	69.89	-989.72	992.16	1.48	-0.75	-5.57	237.03
	NORMAL	4,164.0	13.19	271.95	4,023.59	70.35	-1,010.95	1,013.36	0.44	0.28	1.52	51.88
	NORMAL	4,259.0	14.25	279.13	4,115.88	72.58	-1,033.33	1,035.85	2.11	1.12	7.56	61.62
	NORMAL	4,354.0	14.77	281.24	4,207.85	76.79	-1,056.75	1,059.53	0.78	0.55	2.22	46.50
	NORMAL	4,449.0	15.12	279.75	4,299.64	81.25	-1,080.84	1,083.89	0.55	0.37	-1.57	311.61
	NORMAL	4,544.0	14.60	278.34	4,391.46	85.09	-1,104.90	1,108.17	0.67	-0.55	-1.48	214.13
	NORMAL	4,638.0	15.82	277.78	4,482.17	88.54	-1,129.32	1,132.78	1.31	1.30	-0.60	352.86
	NORMAL	4,732.0	14.51	273.16	4,572.90	90.93	-1,153.77	1,157.35	1.90	-1.39	-4.91	220.48
	NORMAL	4,826.0	13.89	277.20	4,664.03	92.99	-1,176.73	1,180.39	1.24	-0.66	4.30	123.98
	NORMAL	4,918.0	11.61	280.19	4,753.75	96.01	-1,196.80	1,200.64	2.58	-2.48	3.25	165.31
	NORMAL	5,013.0	10.02	275.97	4,847.06	98.56	-1,214.43	1,218.41	1.87	-1.67	-4.44	204.41
	NORMAL	5,106.0	9.23	275.53	4,938.75	100.12	-1,229.90	1,233.96	0.85	-0.85	-0.47	185.10
	NORMAL	5,200.0	9.50	275.88	5,031.50	101.64	-1,245.12	1,249.25	0.29	0.29	0.37	12.08
	NORMAL	5,295.0	8.35	275.09	5,125.35	103.06	-1,259.79	1,263.99	1.22	-1.21	-0.83	185.69
	NORMAL	5,387.0	7.30	273.68	5,216.49	104.03	-1,272.27	1,276.51	1.16	-1.14	-1.53	189.66
	NORMAL	5,482.0	6.86	285.72	5,310.77	105.95	-1,283.76	1,288.11	1.63	-0.46	12.67	112.43
	NORMAL	5,576.0	5.45	288.10	5,404.23	108.86	-1,293.41	1,297.95	1.52	-1.50	2.53	170.92

2.2.2 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 (°)
6/7/2012	NORMAL	5,670.0	5.12	283.29	5,497.83	111.21	-1,301.73	1,306.44	0.59	-0.35	-5.12	230.94
	NORMAL	5,764.0	4.57	289.33	5,591.49	113.41	-1,309.35	1,314.20	0.80	-0.59	6.43	140.14
	NORMAL	5,860.0	3.25	288.27	5,687.27	115.53	-1,315.54	1,320.54	1.38	-1.38	-1.10	182.61
6/8/2012	NORMAL	5,955.0	2.55	283.79	5,782.14	116.88	-1,320.15	1,325.24	0.77	-0.74	-4.72	195.71
	NORMAL	6,049.0	1.23	267.71	5,876.09	117.34	-1,323.19	1,328.31	1.50	-1.40	-17.11	193.98
	NORMAL	6,143.0	0.88	250.22	5,970.08	117.05	-1,324.88	1,329.97	0.50	-0.37	-18.61	214.10
	NORMAL	6,238.0	1.23	247.75	6,065.06	116.42	-1,326.51	1,331.54	0.37	0.37	-2.60	351.36
	NORMAL	6,332.0	0.35	303.92	6,159.05	116.20	-1,327.68	1,332.69	1.14	-0.94	59.76	164.31
	NORMAL	6,427.0	0.26	259.71	6,254.05	116.32	-1,328.13	1,333.16	0.26	-0.09	-46.54	227.93
	NORMAL	6,522.0	0.44	244.59	6,349.05	116.13	-1,328.67	1,333.68	0.21	0.19	-15.92	325.14
	NORMAL	6,617.0	0.62	47.28	6,444.05	116.32	-1,328.62	1,333.65	1.10	0.19	171.25	169.86
	NORMAL	6,712.0	0.60	52.57	6,539.04	116.97	-1,327.85	1,332.93	0.06	-0.02	5.57	112.18
	NORMAL	6,806.0	0.45	77.60	6,633.04	117.35	-1,327.10	1,332.21	0.29	-0.16	26.63	135.28
	NORMAL	6,899.0	0.34	138.81	6,726.04	117.22	-1,326.56	1,331.66	0.44	-0.12	65.82	133.85
	NORMAL	6,994.0	0.59	214.66	6,821.03	116.61	-1,326.65	1,331.71	0.64	0.26	79.84	108.89
	NORMAL	7,089.0	1.06	225.69	6,916.02	115.59	-1,327.56	1,332.53	0.52	0.49	11.61	24.24
	NORMAL	7,183.0	0.97	280.63	7,010.01	115.13	-1,328.97	1,333.89	1.00	-0.10	58.45	122.34
	NORMAL	7,277.0	1.20	8.08	7,104.00	116.25	-1,329.61	1,334.62	1.61	0.24	93.03	127.40
	NORMAL	7,372.0	1.21	11.67	7,198.98	118.22	-1,329.27	1,334.43	0.08	0.01	3.78	84.25
	NORMAL	7,466.0	0.71	340.15	7,292.96	119.74	-1,329.26	1,334.55	0.75	-0.53	-33.53	211.54
	NORMAL	7,561.0	0.62	309.54	7,387.96	120.62	-1,329.86	1,335.21	0.38	-0.09	-32.22	240.81
	NORMAL	7,656.0	0.62	272.01	7,482.95	120.96	-1,330.77	1,336.15	0.42	0.00	-39.51	251.24
	NORMAL	7,751.0	0.79	256.19	7,577.95	120.83	-1,331.92	1,337.28	0.27	0.18	-16.65	303.04
	NORMAL	7,845.0	0.79	260.41	7,671.94	120.56	-1,333.20	1,338.54	0.06	0.00	4.49	92.11
6/9/2012	NORMAL	7,940.0	0.97	247.49	7,766.93	120.14	-1,334.59	1,339.89	0.28	0.19	-13.60	305.63
	NORMAL	8,035.0	1.05	242.09	7,861.91	119.43	-1,336.10	1,341.35	0.13	0.08	-5.68	307.33
	NORMAL	8,129.0	1.14	231.14	7,955.89	118.44	-1,337.59	1,342.75	0.24	0.10	-11.65	287.73
	NORMAL	8,224.0	1.23	242.74	8,050.87	117.38	-1,339.24	1,344.31	0.27	0.09	12.21	75.30
	NORMAL	8,319.0	1.14	290.91	8,145.86	117.25	-1,341.03	1,346.08	1.02	-0.09	50.71	118.94
	NORMAL	8,414.0	0.88	16.25	8,240.85	118.29	-1,341.70	1,346.84	1.46	-0.27	89.83	140.61
6/10/2012	NORMAL	8,508.0	2.04	52.09	8,334.82	120.01	-1,340.18	1,345.46	1.51	1.23	38.13	57.06
	NORMAL	8,602.0	1.67	50.53	8,428.77	121.90	-1,337.80	1,343.23	0.40	-0.39	-1.66	186.99
	NORMAL	8,697.0	1.41	53.87	8,523.73	123.47	-1,335.79	1,341.35	0.29	-0.27	3.52	162.62
	NORMAL	8,792.0	1.14	60.90	8,618.71	124.62	-1,334.02	1,339.67	0.33	-0.28	7.40	153.40
	NORMAL	8,885.0	0.97	86.12	8,711.69	125.13	-1,332.43	1,338.12	0.53	-0.18	27.12	122.42
	NORMAL	8,980.0	0.62	94.30	8,806.68	125.14	-1,331.11	1,336.81	0.39	-0.37	8.61	166.09
	NORMAL	9,074.0	0.35	247.49	8,900.68	124.99	-1,330.87	1,336.56	1.01	-0.29	162.97	170.39
	NORMAL	9,168.0	0.70	142.29	8,994.68	124.43	-1,330.79	1,336.43	0.92	0.37	-111.91	231.70
	NORMAL	9,262.0	0.88	182.01	9,088.67	123.25	-1,330.46	1,336.02	0.60	0.19	42.26	92.35
6/11/2012	NORMAL	9,357.0	1.57	214.27	9,183.65	121.45	-1,331.22	1,336.63	1.00	0.73	33.96	61.88
	NORMAL	9,451.0	0.97	223.94	9,277.63	119.81	-1,332.50	1,337.78	0.68	-0.64	10.29	165.13
	NORMAL	9,545.0	1.39	275.10	9,371.61	119.34	-1,334.18	1,339.42	1.16	0.45	54.43	95.18
	NORMAL	9,639.0	1.58	346.19	9,465.58	120.70	-1,335.63	1,340.97	1.84	0.20	75.63	120.42
	NORMAL	9,733.0	1.88	13.56	9,559.54	123.46	-1,335.58	1,341.13	0.92	0.32	29.12	84.08
	NORMAL	9,828.0	1.85	125.94	9,654.52	124.07	-1,333.97	1,339.58	3.26	-0.03	118.29	146.48
	NORMAL	9,922.0	2.11	140.26	9,748.46	121.85	-1,331.63	1,337.08	0.59	0.28	15.23	69.56
	NORMAL	10,017.0	1.06	184.65	9,843.43	119.63	-1,330.59	1,335.86	1.62	-1.11	46.73	151.26
	NORMAL	10,111.0	1.14	218.05	9,937.41	118.03	-1,331.23	1,336.38	0.68	0.09	35.53	99.79
	NORMAL	10,205.0	1.67	238.17	10,031.38	116.57	-1,332.97	1,338.00	0.76	0.56	21.40	53.30
	NORMAL	10,299.0	1.58	249.25	10,125.34	115.39	-1,335.35	1,340.28	0.35	-0.10	11.79	111.47
	NORMAL	10,394.0	1.82	242.13	10,220.30	114.22	-1,337.91	1,342.74	0.34	0.25	-7.49	315.05
6/12/2012	NORMAL	10,488.0	1.67	238.17	10,314.26	112.80	-1,340.39	1,345.10	0.20	-0.16	-4.21	216.83
	NORMAL	10,582.0	1.23	247.32	10,408.23	111.69	-1,342.49	1,347.11	0.53	-0.47	9.73	156.77
	NORMAL	10,676.0	1.41	239.58	10,502.20	110.71	-1,344.41	1,348.95	0.27	0.19	-8.23	311.36
	NORMAL	10,771.0	1.85	238.61	10,597.16	109.32	-1,346.73	1,351.15	0.46	0.46	-1.02	355.93
	NORMAL	10,865.0	2.02	237.82	10,691.11	107.65	-1,349.43	1,353.71	0.18	0.18	-0.84	350.69
	NORMAL	10,900.0	2.29	235.63	10,726.09	106.93	-1,350.53	1,354.75	0.81	0.77	-6.26	341.94

2.2.2 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 (°)
6/12/2012	NORMAL	10,956.0	2.29	235.63	10,782.04	105.66	-1,352.37	1,356.50	0.00	0.00	0.00	0.00