

I General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 33-36	Wellbore No.	
Well Name	RWF 33-36	Common Name	RWF 33-36
Project	RU 36-06S-094W	Site	RWF 33-36 Pad
Vertical Section Azimuth	148.29 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	6/2/2013	UWI	RWF 33-36
Active Datum	KB @6,554.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SCIENTIFIC
Date Started	6/2/2013	Ended	
Tool Name	MWD	Engineer	PAT CAHILL

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

6946

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 (°)
6/2/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/2/2013	NORMAL	87.0	0.18	345.76	87.00	0.13	-0.03	-0.13	0.21	0.21	0.00	345.76
	NORMAL	179.0	2.64	154.25	178.97	-1.64	0.85	1.84	3.06	2.67	183.14	169.22
	NORMAL	270.0	4.75	151.08	269.78	-6.82	3.58	7.69	2.33	2.32	-3.48	352.88
6/3/2013	NORMAL	360.0	7.48	143.44	359.26	-14.79	8.88	17.25	3.16	3.03	-8.49	339.58
	NORMAL	451.0	9.68	150.21	449.23	-26.19	16.21	30.80	2.66	2.42	7.44	28.03
	NORMAL	520.0	12.40	148.07	516.95	-37.51	23.01	44.01	3.99	3.94	-3.10	350.38
	NORMAL	611.0	14.81	147.23	605.39	-55.59	34.47	65.41	2.66	2.65	-0.92	354.90
	NORMAL	702.0	15.77	149.83	693.17	-76.06	46.98	89.40	1.30	1.05	2.86	36.79
	NORMAL	792.0	16.66	147.20	779.59	-97.48	60.12	114.53	1.28	0.99	-2.92	319.20
	NORMAL	883.0	17.85	145.38	866.49	-119.92	75.11	141.50	1.44	1.31	-2.00	334.73
	NORMAL	974.0	17.27	148.52	953.26	-142.92	90.09	168.94	1.22	-0.64	3.45	122.97
	NORMAL	1,064.0	18.03	145.65	1,039.02	-165.81	104.92	196.21	1.28	0.84	-3.19	309.76
6/5/2013	NORMAL	1,160.0	18.99	145.53	1,130.05	-190.96	122.15	226.65	1.00	1.00	-0.12	357.67
	NORMAL	1,255.0	18.31	148.83	1,220.07	-216.47	138.62	257.01	1.32	-0.72	3.47	124.35
	NORMAL	1,350.0	17.68	148.30	1,310.42	-241.51	153.92	286.36	0.69	-0.66	-0.56	194.32
	NORMAL	1,446.0	16.77	149.19	1,402.11	-265.81	168.68	314.79	0.99	-0.95	0.93	164.27
	NORMAL	1,542.0	15.79	147.51	1,494.26	-288.72	182.79	341.70	1.13	-1.02	-1.75	204.86
	NORMAL	1,637.0	15.61	151.02	1,585.72	-310.80	195.92	367.39	1.02	-0.19	3.69	102.42
	NORMAL	1,733.0	16.25	149.69	1,678.03	-333.70	208.96	393.72	0.77	0.67	-1.39	329.66
	NORMAL	1,828.0	17.38	148.46	1,768.97	-357.27	223.09	421.20	1.25	1.19	-1.29	341.93

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 (°)
6/5/2013	NORMAL	1,922.0	16.88	147.32	1,858.80	-380.72	237.80	448.88	0.64	-0.53	-1.21	213.34
	NORMAL	2,017.0	16.27	147.94	1,949.85	-403.61	252.31	475.98	0.67	-0.64	0.65	164.13
	NORMAL	2,113.0	16.00	146.52	2,042.07	-426.04	266.75	502.65	0.50	-0.28	-1.48	234.94
	NORMAL	2,207.0	17.15	147.14	2,132.16	-448.49	281.42	529.46	1.24	1.22	0.66	9.04
	NORMAL	2,302.0	16.71	146.52	2,223.05	-471.65	296.55	557.11	0.50	-0.46	-0.65	202.01
	NORMAL	2,398.0	17.41	148.72	2,314.82	-495.43	311.62	585.27	0.99	0.73	2.29	43.73
	NORMAL	2,493.0	17.32	148.46	2,405.49	-519.63	326.40	613.62	0.13	-0.09	-0.27	220.64
	NORMAL	2,589.0	16.88	149.16	2,497.25	-543.78	341.02	641.85	0.51	-0.46	0.73	155.26
	NORMAL	2,685.0	17.23	149.42	2,589.03	-567.98	355.40	670.00	0.37	0.36	0.27	12.42
	NORMAL	2,777.0	16.88	149.78	2,676.98	-591.26	369.05	696.97	0.40	-0.38	0.39	163.39
	NORMAL	2,871.0	16.44	150.22	2,767.03	-614.59	382.53	723.91	0.49	-0.47	0.47	164.21
	NORMAL	2,966.0	17.67	150.30	2,857.86	-638.79	396.35	751.76	1.29	1.29	0.08	1.13
	NORMAL	3,062.0	17.41	150.57	2,949.39	-663.95	410.62	780.67	0.28	-0.27	0.28	162.75
	NORMAL	3,157.0	17.06	149.69	3,040.13	-688.36	424.64	808.80	0.46	-0.37	-0.93	216.27
	NORMAL	3,252.0	16.53	149.60	3,131.07	-712.05	438.51	836.24	0.56	-0.56	-0.09	182.77
	NORMAL	3,348.0	18.29	148.81	3,222.67	-736.71	453.23	864.96	1.85	1.83	-0.82	351.97
	NORMAL	3,443.0	18.47	148.72	3,312.83	-762.33	468.76	894.92	0.19	0.19	-0.09	351.00
	NORMAL	3,539.0	18.03	148.81	3,404.00	-788.03	484.35	924.98	0.46	-0.46	0.09	176.38
	NORMAL	3,635.0	17.50	149.07	3,495.42	-813.12	499.46	954.27	0.56	-0.55	0.27	171.67
	NORMAL	3,730.0	17.06	149.16	3,586.13	-837.34	513.95	982.48	0.46	-0.46	0.09	176.57
	NORMAL	3,826.0	18.20	147.05	3,677.62	-862.01	529.32	1,011.55	1.36	1.19	-2.20	329.72
6/6/2013	NORMAL	3,921.0	18.29	146.52	3,767.85	-886.90	545.61	1,041.29	0.20	0.09	-0.56	298.22
	NORMAL	4,017.0	17.76	146.61	3,859.13	-911.69	561.98	1,070.98	0.55	-0.55	0.09	177.03
	NORMAL	4,112.0	17.06	146.26	3,949.78	-935.37	577.70	1,099.39	0.75	-0.74	-0.37	188.34
	NORMAL	4,208.0	16.88	145.29	4,041.60	-958.54	593.45	1,127.38	0.35	-0.19	-1.01	237.09
	NORMAL	4,304.0	16.85	145.26	4,133.47	-981.43	609.32	1,155.19	0.03	-0.03	-0.03	196.16
	NORMAL	4,400.0	16.80	144.33	4,225.36	-1,004.13	625.34	1,182.93	0.29	-0.05	-0.97	259.03
	NORMAL	4,495.0	16.44	145.73	4,316.39	-1,026.40	640.91	1,210.05	0.57	-0.38	1.47	132.63
	NORMAL	4,591.0	17.50	145.91	4,408.21	-1,049.58	656.65	1,238.04	1.11	1.10	0.19	2.92
	NORMAL	4,684.0	17.67	146.79	4,496.87	-1,072.97	672.22	1,266.13	0.34	0.18	0.95	57.82
	NORMAL	4,780.0	17.50	145.91	4,588.38	-1,097.11	688.29	1,295.11	0.33	-0.18	-0.92	236.99
	NORMAL	4,876.0	17.15	145.65	4,680.03	-1,120.75	704.37	1,323.67	0.37	-0.36	-0.27	192.35
	NORMAL	4,971.0	16.53	147.23	4,770.95	-1,143.68	719.59	1,351.18	0.81	-0.65	1.66	144.32
	NORMAL	5,078.0	16.18	146.52	4,873.62	-1,168.91	736.05	1,381.30	0.38	-0.33	-0.66	209.40
6/7/2013	NORMAL	5,163.0	15.38	148.83	4,955.42	-1,188.43	748.42	1,404.41	1.20	-0.94	2.72	142.97
	NORMAL	5,258.0	15.83	147.75	5,046.92	-1,210.17	761.85	1,429.96	0.56	0.47	-1.14	326.63
	NORMAL	5,354.0	15.65	146.52	5,139.32	-1,232.04	775.98	1,456.00	0.39	-0.19	-1.28	241.06
	NORMAL	5,448.0	13.98	145.21	5,230.19	-1,251.95	789.45	1,480.01	1.81	-1.78	-1.39	190.77
	NORMAL	5,544.0	13.37	146.70	5,323.47	-1,270.75	802.16	1,502.68	0.73	-0.64	1.55	150.72
	NORMAL	5,639.0	11.70	143.98	5,416.20	-1,287.72	813.86	1,523.27	1.86	-1.76	-2.86	198.14
	NORMAL	5,733.0	11.61	144.50	5,508.26	-1,303.13	824.96	1,542.21	0.15	-0.10	0.55	130.84
	NORMAL	5,829.0	9.15	141.43	5,602.69	-1,316.96	835.33	1,559.43	2.63	-2.56	-3.20	191.17
6/8/2013	NORMAL	5,923.0	6.95	140.81	5,695.75	-1,327.22	843.58	1,572.49	2.34	-2.34	-0.66	181.95
	NORMAL	6,017.0	6.60	142.83	5,789.10	-1,335.93	850.44	1,583.51	0.45	-0.37	2.15	146.75
	NORMAL	6,113.0	4.92	140.37	5,884.61	-1,343.50	856.40	1,593.08	1.77	-1.75	-2.56	187.14
	NORMAL	6,208.0	3.43	139.76	5,979.35	-1,348.80	860.83	1,599.92	1.57	-1.57	-0.64	181.40
	NORMAL	6,303.0	3.25	145.29	6,074.19	-1,353.19	864.20	1,605.42	0.39	-0.19	5.82	121.93
	NORMAL	6,399.0	1.93	146.44	6,170.09	-1,356.77	866.65	1,609.76	1.38	-1.38	1.20	178.32
	NORMAL	6,494.0	1.23	145.91	6,265.06	-1,358.95	868.10	1,612.37	0.74	-0.74	-0.56	180.93
	NORMAL	6,590.0	1.06	63.47	6,361.04	-1,359.40	869.47	1,613.48	1.58	-0.18	-85.87	223.94
	NORMAL	6,683.0	1.32	54.33	6,454.02	-1,358.39	871.11	1,613.49	0.35	0.28	-9.83	319.24
	NORMAL	6,779.0	1.06	64.96	6,550.00	-1,357.37	872.82	1,613.51	0.35	-0.27	11.07	144.90
	NORMAL	6,874.0	0.70	80.78	6,644.99	-1,356.91	874.19	1,613.84	0.45	-0.38	16.65	153.72
	NORMAL	6,969.0	0.70	88.34	6,739.98	-1,356.80	875.34	1,614.35	0.10	0.00	7.96	93.78
6/9/2013	NORMAL	7,064.0	0.70	92.38	6,834.98	-1,356.81	876.50	1,614.97	0.05	0.00	4.25	92.02
	NORMAL	7,160.0	0.53	94.14	6,930.97	-1,356.86	877.53	1,615.56	0.18	-0.18	1.83	174.54
	NORMAL	7,254.0	0.35	115.76	7,024.97	-1,357.02	878.22	1,616.05	0.26	-0.19	23.00	147.78

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 (°)
6/9/2013	NORMAL	7,349.0	0.35	161.47	7,119.97	-1,357.42	878.57	1,616.58	0.29	0.00	48.12	112.85
	NORMAL	7,445.0	0.62	170.43	7,215.96	-1,358.21	878.75	1,617.35	0.29	0.28	9.33	20.20
6/10/2013	NORMAL	7,540.0	0.35	268.52	7,310.96	-1,358.73	878.55	1,617.68	0.79	-0.28	103.25	152.63
	NORMAL	7,636.0	0.62	276.25	7,406.96	-1,358.68	877.74	1,617.21	0.29	0.28	8.05	17.51
	NORMAL	7,732.0	0.79	294.88	7,502.95	-1,358.34	876.62	1,616.34	0.30	0.18	19.41	63.00
	NORMAL	7,827.0	0.79	269.92	7,597.94	-1,358.07	875.37	1,615.45	0.36	0.00	-26.27	257.52
6/11/2013	NORMAL	7,923.0	1.14	257.44	7,693.93	-1,358.28	873.78	1,614.79	0.42	0.36	-13.00	322.67
	NORMAL	8,019.0	1.58	247.95	7,789.90	-1,358.98	871.62	1,614.25	0.51	0.46	-9.89	328.09
	NORMAL	8,114.0	2.11	230.20	7,884.85	-1,360.59	869.06	1,614.28	0.81	0.56	-18.68	303.74
	NORMAL	8,210.0	2.55	227.12	7,980.77	-1,363.18	866.14	1,614.94	0.48	0.46	-3.21	342.57
	NORMAL	8,306.0	3.25	230.20	8,076.65	-1,366.37	862.48	1,615.74	0.75	0.73	3.21	14.09
	NORMAL	8,400.0	3.61	227.21	8,170.48	-1,370.09	858.27	1,616.68	0.43	0.38	-3.18	332.08
	NORMAL	8,493.0	3.96	221.49	8,263.28	-1,374.48	853.99	1,618.17	0.55	0.38	-6.15	309.95
	NORMAL	8,589.0	3.96	222.11	8,359.05	-1,379.42	849.57	1,620.05	0.04	0.00	0.65	90.31
	NORMAL	8,685.0	3.87	224.04	8,454.82	-1,384.21	845.10	1,621.77	0.17	-0.09	2.01	125.29
	NORMAL	8,780.0	3.69	225.71	8,549.62	-1,388.65	840.68	1,623.23	0.22	-0.19	1.76	149.38
	NORMAL	8,876.0	3.96	222.55	8,645.40	-1,393.25	836.23	1,624.80	0.36	0.28	-3.29	320.44
	NORMAL	9,060.0	3.96	222.11	8,828.96	-1,402.64	827.67	1,628.30	0.02	0.00	-0.24	269.78