

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 422-32	Wellbore No.	OH
Well Name	RWF 422-32	Common Name	RWF 422-32
Project	RU 32-06S-094W	Site	RWF 11-32 Pad
Vertical Section Azimuth	133.62 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	12/14/2011	UWI	RWF 422-32
Active Datum	KB @5,565.2ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SCIENTIFIC
Date Started	12/14/2011	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

5779

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 (°)
12/14/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/14/2011	NORMAL	87.0	0.70	139.04	87.00	-0.40	0.35	0.53	0.80	0.80	0.00	139.04
	NORMAL	176.0	1.85	108.17	175.98	-1.26	2.07	2.37	1.46	1.29	-34.69	313.09
	NORMAL	267.0	2.90	133.95	266.90	-3.32	5.12	6.00	1.62	1.15	28.33	58.86
	NORMAL	358.0	4.84	133.42	357.69	-7.55	9.57	12.14	2.13	2.13	-0.58	358.68
	NORMAL	448.0	6.42	134.65	447.25	-13.70	15.91	20.97	1.76	1.76	1.37	4.98
12/15/2011	NORMAL	539.0	7.30	137.11	537.60	-21.51	23.46	31.82	1.02	0.97	2.70	19.69
	NORMAL	629.0	6.42	129.02	626.95	-28.87	31.26	42.55	1.45	-0.98	-8.99	223.71
	NORMAL	703.0	7.03	127.32	700.44	-34.22	38.08	51.17	0.87	0.82	-2.30	341.08
	NORMAL	794.0	6.51	131.01	790.81	-40.98	46.40	61.86	0.74	-0.57	4.05	141.91
	NORMAL	885.0	6.86	138.04	881.19	-48.41	53.93	72.43	0.98	0.38	7.73	70.36
	NORMAL	977.0	7.39	142.09	972.48	-57.16	61.23	83.76	0.79	0.58	4.40	45.49
	NORMAL	1,069.0	6.95	134.35	1,063.77	-65.72	68.85	95.18	1.15	-0.48	-8.41	241.71
	NORMAL	1,108.0	7.21	130.92	1,102.47	-68.97	72.39	99.98	1.27	0.67	-8.79	299.88
12/16/2011	NORMAL	1,157.0	7.74	129.43	1,151.05	-73.08	77.26	106.35	1.15	1.08	-3.04	339.17
	NORMAL	1,252.0	7.47	132.15	1,245.22	-81.29	86.78	118.90	0.47	-0.28	2.86	128.21
	NORMAL	1,346.0	7.12	133.65	1,338.46	-89.41	95.52	130.83	0.42	-0.37	1.60	152.19
	NORMAL	1,440.0	6.60	133.82	1,431.78	-97.17	103.64	142.06	0.55	-0.55	0.18	177.85
	NORMAL	1,534.0	7.12	132.95	1,525.11	-104.88	111.80	153.29	0.56	0.55	-0.93	348.27
	NORMAL	1,629.0	6.33	134.44	1,619.45	-112.56	119.85	164.41	0.85	-0.83	1.57	168.28
	NORMAL	1,722.0	6.51	133.74	1,711.87	-119.79	127.32	174.81	0.21	0.19	-0.75	336.15

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 (°)
12/16/2011	NORMAL	1,816.0	6.33	133.47	1,805.28	-127.04	134.93	185.32	0.19	-0.19	-0.29	189.39
	NORMAL	1,909.0	5.45	133.30	1,897.79	-133.60	141.86	194.87	0.95	-0.95	-0.18	181.05
	NORMAL	2,003.0	5.72	128.46	1,991.34	-139.57	148.78	203.99	0.58	0.29	-5.15	297.40
	NORMAL	2,098.0	5.63	126.00	2,085.88	-145.26	156.26	213.33	0.27	-0.09	-2.59	248.48
	NORMAL	2,191.0	5.45	129.78	2,178.44	-150.77	163.34	222.26	0.44	-0.19	4.06	118.13
	NORMAL	2,285.0	5.36	136.02	2,272.03	-156.78	169.82	231.10	0.63	-0.10	6.64	101.80
	NORMAL	2,378.0	5.72	134.53	2,364.59	-163.16	176.14	240.07	0.42	0.39	-1.60	337.48
	NORMAL	2,472.0	6.33	132.15	2,458.07	-169.92	183.32	249.94	0.70	0.65	-2.53	336.54
	NORMAL	2,566.0	6.24	136.20	2,551.51	-177.08	190.70	260.22	0.48	-0.10	4.31	103.48
	NORMAL	2,660.0	5.72	141.56	2,645.00	-184.44	197.15	269.96	0.81	-0.55	5.70	135.60
	NORMAL	2,754.0	6.24	140.94	2,738.49	-192.08	203.28	279.67	0.56	0.55	-0.66	352.61
	NORMAL	2,849.0	5.72	135.05	2,832.97	-199.44	209.88	289.52	0.85	-0.55	-6.20	226.82
	NORMAL	2,943.0	6.07	133.47	2,926.47	-206.17	216.79	299.18	0.41	0.37	-1.68	334.34
12/17/2011	NORMAL	3,037.0	6.16	133.03	3,019.94	-213.03	224.09	309.19	0.11	0.10	-0.47	332.27
	NORMAL	3,131.0	6.33	132.33	3,113.38	-219.96	231.61	319.41	0.20	0.18	-0.74	335.52
	NORMAL	3,224.0	5.10	135.14	3,205.92	-226.34	238.31	328.67	1.36	-1.32	3.02	168.58
	NORMAL	3,319.0	5.63	136.72	3,300.50	-232.73	244.48	337.54	0.58	0.56	1.66	16.36
	NORMAL	3,414.0	6.24	136.99	3,394.99	-239.90	251.20	347.35	0.64	0.64	0.28	2.75
	NORMAL	3,508.0	6.16	133.91	3,488.44	-247.13	258.32	357.49	0.36	-0.09	-3.28	254.95
	NORMAL	3,602.0	6.77	135.67	3,581.84	-254.59	265.82	368.07	0.68	0.65	1.87	18.87
	NORMAL	3,695.0	5.80	135.58	3,674.28	-261.87	272.94	378.25	1.04	-1.04	-0.10	180.54
	NORMAL	3,789.0	5.89	134.97	3,767.79	-268.67	279.68	387.82	0.12	0.10	-0.65	325.08
	NORMAL	3,883.0	5.98	135.14	3,861.29	-275.55	286.55	397.53	0.10	0.10	0.18	11.14
	NORMAL	3,977.0	6.68	135.41	3,954.72	-282.91	293.84	407.89	0.75	0.74	0.29	2.57
	NORMAL	4,070.0	6.77	135.05	4,047.08	-290.65	301.51	418.78	0.11	0.10	-0.39	334.72
	NORMAL	4,164.0	6.24	132.15	4,140.47	-298.00	309.21	429.43	0.66	-0.56	-3.09	210.36
	NORMAL	4,258.0	5.63	131.28	4,233.97	-304.47	316.46	439.14	0.66	-0.65	-0.93	187.96
	NORMAL	4,352.0	5.19	127.06	4,327.55	-310.07	323.32	447.97	0.63	-0.47	-4.49	220.03
	NORMAL	4,446.0	5.63	126.27	4,421.13	-315.36	330.43	456.77	0.47	0.47	-0.84	350.00
	NORMAL	4,539.0	5.72	127.41	4,513.67	-320.87	337.79	465.90	0.16	0.10	1.23	51.97
	NORMAL	4,633.0	6.07	124.24	4,607.18	-326.52	345.62	475.46	0.51	0.37	-3.37	315.49
12/18/2011	NORMAL	4,727.0	5.80	125.30	4,700.67	-332.06	353.61	485.06	0.31	-0.29	1.13	158.43
	NORMAL	4,822.0	5.01	130.31	4,795.25	-337.52	360.69	493.95	0.97	-0.83	5.27	151.63
	NORMAL	4,916.0	4.66	131.54	4,888.91	-342.70	366.67	501.87	0.39	-0.37	1.31	164.11
	NORMAL	5,011.0	4.66	133.38	4,983.60	-347.91	372.37	509.58	0.16	0.00	1.94	90.92
	NORMAL	5,105.0	4.13	133.21	5,077.32	-352.85	377.61	516.79	0.56	-0.56	-0.18	181.32
	NORMAL	5,199.0	3.87	133.30	5,171.10	-357.35	382.39	523.34	0.28	-0.28	0.10	178.66
	NORMAL	5,293.0	3.25	134.70	5,264.91	-361.40	386.59	529.18	0.67	-0.66	1.49	172.72
12/19/2011	NORMAL	5,385.0	1.67	159.49	5,356.83	-364.49	388.91	532.99	2.03	-1.72	26.95	158.01
	NORMAL	5,479.0	0.53	202.55	5,450.81	-366.17	389.22	534.38	1.42	-1.21	45.81	164.24
	NORMAL	5,573.0	0.70	264.08	5,544.81	-366.63	388.49	534.17	0.69	0.18	65.46	107.69
	NORMAL	5,666.0	0.79	263.90	5,637.80	-366.76	387.28	533.38	0.10	0.10	-0.19	358.42
	NORMAL	5,760.0	0.88	259.07	5,731.79	-366.96	385.93	532.55	0.12	0.10	-5.14	319.54
	NORMAL	5,854.0	0.88	259.42	5,825.78	-367.23	384.51	531.70	0.01	0.00	0.37	90.17
	NORMAL	5,948.0	1.06	259.68	5,919.76	-367.52	382.95	530.77	0.19	0.19	0.28	1.53
	NORMAL	6,042.0	0.88	256.61	6,013.75	-367.84	381.39	529.87	0.20	-0.19	-3.27	194.57
	NORMAL	6,136.0	0.09	316.90	6,107.75	-367.96	380.64	529.40	0.89	-0.84	64.14	174.65
	NORMAL	6,230.0	0.00	276.38	6,201.75	-367.90	380.59	529.33	0.10	-0.10	0.00	180.00
12/20/2011	NORMAL	6,325.0	0.18	224.88	6,296.75	-368.01	380.48	529.32	0.19	0.19	0.00	224.88
	NORMAL	6,419.0	0.53	87.24	6,390.74	-368.09	380.81	529.62	0.72	0.37	-146.43	211.99
	NORMAL	6,513.0	0.53	97.96	6,484.74	-368.13	381.68	530.27	0.11	0.00	11.40	95.36
	NORMAL	6,607.0	0.70	95.42	6,578.74	-368.25	382.68	531.08	0.18	0.18	-2.70	349.62
	NORMAL	6,700.0	0.70	93.22	6,671.73	-368.33	383.81	531.96	0.03	0.00	-2.37	268.90
	NORMAL	6,793.0	0.62	86.63	6,764.72	-368.33	384.88	532.73	0.12	-0.09	-7.09	220.23
	NORMAL	6,886.0	1.23	94.01	6,857.71	-368.37	386.38	533.84	0.67	0.66	7.94	14.76
	NORMAL	6,980.0	1.76	104.38	6,951.68	-368.80	388.78	535.88	0.63	0.56	11.03	32.29
12/21/2011	NORMAL	7,074.0	1.85	114.40	7,045.63	-369.79	391.56	538.57	0.35	0.10	10.66	79.13

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)	Bulld Rate (%/100ft)	Turn (%/100ft)	TFace (°)
12/21/2011	NORMAL	7,169.0	1.14	125.12	7,140.60	-370.97	393.73	540.96	0.80	-0.75	11.28	163.80
	NORMAL	7,263.0	0.70	148.68	7,234.59	-371.99	394.80	542.43	0.61	-0.47	25.06	150.69
	NORMAL	7,355.0	0.88	164.06	7,326.58	-373.15	395.28	543.59	0.30	0.20	16.72	57.53
12/22/2011	NORMAL	7,449.0	0.88	164.06	7,420.57	-374.54	395.68	544.83	0.00	0.00	0.00	0.00
	NORMAL	7,543.0	1.23	185.24	7,514.55	-376.24	395.79	546.08	0.55	0.37	22.53	59.01
	NORMAL	7,636.0	1.49	190.60	7,607.52	-378.42	395.47	547.36	0.31	0.28	5.76	28.77
	NORMAL	7,731.0	1.67	204.49	7,702.49	-380.90	394.67	548.49	0.44	0.19	14.62	71.88
	NORMAL	7,824.0	1.85	210.90	7,795.44	-383.42	393.34	549.26	0.29	0.19	6.89	50.80
	NORMAL	7,895.0	1.85	209.76	7,866.41	-385.40	392.18	549.79	0.05	0.00	-1.61	269.43
	NORMAL	7,947.0	1.85	209.76	7,918.38	-386.85	391.35	550.19	0.00	0.00	0.00	0.00