

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 41-31	Wellbore No.	
Well Name	RWF 41-31	Common Name	RWF 41-31
Project	RU 32-06S-094W	Site	RWF 11-32 Pad
Vertical Section Azimuth	294.79 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	2/1/2012	UWI	RWF 41-31
Active Datum	KB @5,565.2ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	2/1/2012	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

6395

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 (°)
2/1/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/1/2012	NORMAL	86.0	1.58	313.24	85.99	0.81	-0.86	1.12	1.84	1.84	0.00	313.24
2/2/2012	NORMAL	176.0	4.75	311.92	175.84	4.15	-4.54	5.86	3.52	3.52	-1.47	358.02
	NORMAL	267.0	6.51	311.40	266.40	10.08	-11.21	14.41	1.93	1.93	-0.57	358.08
	NORMAL	358.0	8.89	305.68	356.57	17.60	-20.80	26.26	2.74	2.62	-6.29	339.30
	NORMAL	449.0	11.52	294.35	446.13	25.45	-34.79	42.25	3.62	2.89	-12.45	316.98
	NORMAL	519.0	13.63	297.02	514.45	32.08	-48.51	57.49	3.13	3.01	3.81	16.71
	NORMAL	609.0	16.80	291.92	601.29	41.75	-70.03	81.08	3.82	3.52	-5.67	334.63
	NORMAL	700.0	20.75	290.34	687.43	52.27	-97.35	110.30	4.38	4.34	-1.74	351.91
	NORMAL	790.0	24.01	296.58	770.65	66.01	-128.69	144.51	4.48	3.62	6.93	39.00
	NORMAL	881.0	25.94	297.19	853.14	83.39	-162.96	182.90	2.14	2.12	0.67	7.88
	NORMAL	974.0	27.44	295.70	936.23	101.98	-200.36	224.65	1.77	1.61	-1.60	335.29
	NORMAL	1,067.0	28.14	293.33	1,018.50	119.96	-239.81	268.01	1.41	0.75	-2.55	301.30
2/3/2012	NORMAL	1,154.0	29.19	293.77	1,094.84	136.63	-278.06	309.73	1.23	1.21	0.51	11.56
	NORMAL	1,248.0	29.90	291.83	1,176.62	154.58	-320.79	356.05	1.27	0.76	-2.06	305.74
	NORMAL	1,343.0	30.88	291.09	1,258.57	172.16	-365.52	404.02	1.10	1.03	-0.78	338.77
	NORMAL	1,436.0	29.72	293.41	1,338.86	189.91	-408.94	450.89	1.77	-1.25	2.49	135.74
	NORMAL	1,530.0	28.05	294.73	1,421.17	208.41	-450.40	496.29	1.90	-1.78	1.40	159.68
	NORMAL	1,625.0	26.47	294.91	1,505.61	226.68	-489.90	539.80	1.67	-1.66	0.19	177.09
	NORMAL	1,719.0	26.50	295.29	1,589.75	244.46	-527.86	581.72	0.18	0.03	0.40	80.13
2/4/2012	NORMAL	1,812.0	26.31	294.30	1,673.05	261.81	-565.40	623.07	0.52	-0.20	-1.06	246.21

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 (°)
2/4/2012	NORMAL	1,905.0	27.03	293.37	1,756.15	278.67	-603.59	664.81	0.89	0.77	-1.00	329.48
	NORMAL	1,999.0	28.05	293.41	1,839.50	295.92	-643.48	708.26	1.09	1.09	0.04	1.06
	NORMAL	2,094.0	28.85	292.85	1,923.03	313.70	-685.10	753.50	0.89	0.84	-0.59	341.31
	NORMAL	2,187.0	28.14	294.38	2,004.76	331.46	-725.75	797.85	1.09	-0.76	1.65	134.88
	NORMAL	2,281.0	28.49	294.38	2,087.51	349.87	-766.36	842.44	0.37	0.37	0.00	0.00
	NORMAL	2,375.0	28.84	294.03	2,169.99	368.36	-807.48	887.52	0.41	0.37	-0.37	334.22
	NORMAL	2,468.0	27.00	295.70	2,252.16	386.65	-847.00	931.06	2.15	-1.98	1.80	157.71
	NORMAL	2,562.0	26.92	295.81	2,335.95	405.16	-885.38	973.68	0.10	-0.09	0.12	148.11
	NORMAL	2,657.0	26.20	295.79	2,420.92	423.65	-923.62	1,016.15	0.76	-0.76	-0.02	180.70
	NORMAL	2,750.0	27.22	296.27	2,504.00	442.00	-961.18	1,057.94	1.12	1.10	0.52	12.16
	NORMAL	2,846.0	27.77	296.19	2,589.15	461.59	-1,000.94	1,102.24	0.57	0.57	-0.08	356.12
	NORMAL	2,940.0	28.46	295.49	2,672.06	480.89	-1,040.81	1,146.53	0.81	0.73	-0.74	334.14
	NORMAL	3,034.0	28.89	295.82	2,754.53	500.42	-1,081.47	1,191.63	0.49	0.46	0.35	20.36
	NORMAL	3,126.0	29.28	295.79	2,834.93	519.89	-1,121.73	1,236.35	0.42	0.42	-0.03	357.85
	NORMAL	3,221.0	27.76	295.31	2,918.40	539.45	-1,162.65	1,281.70	1.62	-1.60	-0.51	188.36
	NORMAL	3,316.0	27.52	295.70	3,002.56	558.43	-1,202.42	1,325.77	0.32	-0.25	0.41	143.16
	NORMAL	3,410.0	27.52	295.79	3,085.92	577.30	-1,241.55	1,369.20	0.04	0.00	0.10	90.04
	NORMAL	3,504.0	27.70	295.70	3,169.22	596.22	-1,280.79	1,412.75	0.20	0.19	-0.10	346.91
	NORMAL	3,598.0	27.96	295.70	3,252.35	615.25	-1,320.33	1,456.63	0.28	0.28	0.00	0.00
	NORMAL	3,692.0	28.75	295.52	3,335.07	634.55	-1,360.59	1,501.27	0.85	0.84	-0.19	353.74
	NORMAL	3,786.0	29.46	295.61	3,417.20	654.28	-1,401.83	1,546.99	0.76	0.76	0.10	3.57
	NORMAL	3,879.0	28.31	296.23	3,498.63	673.91	-1,442.24	1,591.90	1.28	-1.24	0.67	165.67
	NORMAL	3,974.0	26.91	294.47	3,582.81	692.77	-1,482.01	1,635.92	1.71	-1.47	-1.85	209.45
	NORMAL	4,067.0	27.44	294.91	3,665.54	710.51	-1,520.61	1,678.40	0.61	0.57	0.47	20.96
	NORMAL	4,160.0	26.56	292.71	3,748.41	727.57	-1,559.22	1,720.60	1.43	-0.95	-2.37	227.64
	NORMAL	4,255.0	25.59	291.83	3,833.74	743.40	-1,597.86	1,762.32	1.10	-1.02	-0.93	201.35
	NORMAL	4,348.0	23.74	294.73	3,918.25	758.70	-1,633.51	1,801.10	2.38	-1.99	3.12	148.12
	NORMAL	4,442.0	21.63	294.38	4,004.98	773.77	-1,666.48	1,837.35	2.25	-2.24	-0.37	183.50
2/5/2012	NORMAL	4,536.0	21.90	294.47	4,092.27	788.18	-1,698.22	1,872.21	0.29	0.29	0.10	7.09
	NORMAL	4,629.0	20.02	293.68	4,179.12	801.76	-1,728.59	1,905.47	2.04	-2.02	-0.85	188.18
	NORMAL	4,723.0	18.73	295.08	4,267.79	814.62	-1,756.99	1,936.65	1.46	-1.37	1.49	160.86
	NORMAL	4,818.0	17.41	293.33	4,358.11	828.71	-1,783.86	1,966.11	1.50	-1.39	-1.84	201.52
	NORMAL	4,912.0	15.61	296.14	4,448.23	837.86	-1,808.13	1,992.82	2.09	-1.91	2.99	157.42
	NORMAL	5,007.0	15.92	293.85	4,539.65	848.76	-1,831.52	2,018.62	0.73	0.33	-2.41	295.38
	NORMAL	5,101.0	14.51	295.08	4,630.36	858.96	-1,853.98	2,043.29	1.54	-1.50	1.31	167.70
	NORMAL	5,195.0	10.99	300.22	4,722.03	868.46	-1,872.39	2,063.99	3.93	-3.74	5.47	164.63
	NORMAL	5,290.0	10.20	301.15	4,815.41	877.37	-1,887.41	2,081.37	0.85	-0.83	0.98	168.24
	NORMAL	5,381.0	10.47	301.41	4,904.93	885.85	-1,901.37	2,097.59	0.30	0.30	0.29	9.93
	NORMAL	5,476.0	8.88	301.06	4,998.58	894.13	-1,915.01	2,113.45	1.67	-1.67	-0.37	181.95
	NORMAL	5,569.0	6.68	299.39	5,090.72	900.49	-1,925.88	2,125.98	2.38	-2.37	-1.80	185.04
	NORMAL	5,663.0	4.84	295.08	5,184.24	904.86	-1,934.23	2,135.40	2.01	-1.96	-4.59	191.09
2/6/2012	NORMAL	5,756.0	3.43	291.57	5,276.99	907.54	-1,940.37	2,142.10	1.54	-1.52	-3.77	188.43
	NORMAL	5,821.0	3.17	291.13	5,341.89	908.90	-1,943.86	2,145.83	0.40	-0.40	-0.68	185.34
	NORMAL	5,944.0	3.29	290.13	5,464.69	911.35	-1,950.35	2,152.74	0.11	0.10	-0.81	334.35
	NORMAL	6,039.0	2.73	269.24	5,559.56	912.25	-1,955.17	2,157.50	1.29	-0.59	-21.99	232.78
	NORMAL	6,133.0	2.29	236.90	5,653.48	911.20	-1,958.98	2,160.52	1.55	-0.47	-34.40	237.02
	NORMAL	6,227.0	1.32	212.82	5,747.43	909.26	-1,961.14	2,161.67	1.29	-1.03	-25.62	206.40
	NORMAL	6,321.0	0.62	184.87	5,841.42	907.85	-1,961.77	2,161.65	0.88	-0.74	-29.73	200.62
	NORMAL	6,415.0	0.88	152.79	5,935.41	906.70	-1,961.48	2,160.91	0.51	0.28	-34.13	285.05
	NORMAL	6,509.0	1.58	157.89	6,029.39	904.85	-1,960.66	2,159.39	0.75	0.74	5.43	11.44
2/7/2012	NORMAL	6,603.0	1.14	187.77	6,123.36	902.73	-1,960.30	2,158.17	0.87	-0.47	31.79	136.16
	NORMAL	6,697.0	0.44	252.46	6,217.35	901.69	-1,960.77	2,158.16	1.10	-0.74	68.82	157.32
	NORMAL	6,789.0	0.62	258.78	6,309.35	901.49	-1,961.60	2,158.83	0.21	0.20	6.87	21.17
	NORMAL	6,883.0	0.44	261.77	6,403.34	901.34	-1,962.46	2,159.54	0.19	-0.19	3.18	172.76
	NORMAL	6,977.0	0.88	251.49	6,497.34	901.06	-1,963.50	2,160.37	0.48	0.47	-10.94	339.76
	NORMAL	7,071.0	0.62	201.74	6,591.33	900.36	-1,964.37	2,160.87	0.72	-0.28	-52.93	224.63
2/8/2012	NORMAL	7,165.0	0.26	243.23	6,685.33	899.79	-1,964.75	2,160.97	0.49	-0.38	44.14	157.95

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 (°)
2/8/2012	NORMAL	7,259.0	0.26	308.79	6,779.33	899.82	-1,965.11	2,161.31	0.30	0.00	69.74	122.78
	NORMAL	7,351.0	0.00	25.96	6,871.33	899.96	-1,965.27	2,161.52	0.28	-0.28	0.00	180.00
	NORMAL	7,446.0	0.35	74.04	6,966.33	900.04	-1,964.99	2,161.30	0.37	0.37	0.00	74.04
	NORMAL	7,539.0	0.62	45.12	7,059.32	900.47	-1,964.36	2,160.91	0.38	0.29	-31.10	302.73
	NORMAL	7,632.0	0.62	66.39	7,152.32	901.03	-1,963.54	2,160.40	0.25	0.00	22.87	100.63
	NORMAL	7,727.0	0.62	70.26	7,247.31	901.40	-1,962.59	2,159.69	0.04	0.00	4.07	91.93
	NORMAL	7,820.0	0.79	80.02	7,340.30	901.69	-1,961.48	2,158.80	0.22	0.18	10.49	40.18
	NORMAL	7,914.0	1.41	78.08	7,434.29	902.04	-1,959.71	2,157.34	0.66	0.66	-2.06	355.59
	NORMAL	8,009.0	1.41	69.12	7,529.26	902.69	-1,957.48	2,155.59	0.23	0.00	-9.43	265.52
2/9/2012	NORMAL	8,102.0	1.32	61.56	7,622.23	903.61	-1,955.47	2,154.15	0.22	-0.10	-8.13	239.70
	NORMAL	8,196.0	1.32	53.38	7,716.21	904.77	-1,953.64	2,152.98	0.20	0.00	-8.70	265.91
	NORMAL	8,290.0	1.14	70.70	7,810.19	905.73	-1,951.89	2,151.79	0.44	-0.19	18.43	124.32
	NORMAL	8,384.0	1.14	77.47	7,904.17	906.24	-1,950.10	2,150.38	0.14	0.00	7.20	93.38
	NORMAL	8,435.0	1.14	77.47	7,955.16	906.46	-1,949.11	2,149.57	0.00	0.00	0.00	0.00