

**I General****1.1 Customer Information**

Company	PICEANCE VLY
Representative	
Address	

**1.2 Well Information**

Well	RWF 444-36	Wellbore No.	
Well Name	RWF 444-36	Common Name	RWF 444-36
Project	RU 36-06S-094W	Site	RWF 33-36 Pad
Vertical Section Azimuth	156.67 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	7/4/2013	UWI	RWF 444-36
Active Datum	KB @6,554.0ft (above Mean Sea Level)		

**2 Survey Name****2.1 Survey Name: Survey #1**

Survey Name	Survey #1	Company	
Date Started	7/4/2013	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**

1258

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 (°)
7/4/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/4/2013	NORMAL	86.0	0.35	297.77	86.00	0.12	-0.23	-0.20	0.41	0.41	0.00	297.77
	NORMAL	179.0	3.17	155.04	178.96	-2.08	0.60	2.15	3.72	3.03	-153.47	213.76
	NORMAL	269.0	6.69	150.47	268.61	-8.90	4.24	9.85	3.93	3.91	-5.08	351.35
	NORMAL	360.0	8.71	146.25	358.78	-19.24	10.68	21.89	2.30	2.22	-4.64	342.26
7/5/2013	NORMAL	449.0	11.52	148.36	446.39	-32.41	19.09	37.32	3.18	3.16	2.37	8.55
	NORMAL	540.0	14.87	151.96	534.98	-50.46	29.34	57.95	3.79	3.68	3.96	15.54
	NORMAL	611.0	17.15	151.17	603.22	-67.67	38.68	77.46	3.23	3.21	-1.11	354.16
	NORMAL	701.0	20.14	148.01	688.49	-92.44	53.29	105.99	3.51	3.32	-3.51	339.83
	NORMAL	792.0	24.09	147.48	772.78	-121.40	71.58	139.82	4.35	4.34	-0.58	356.86
	NORMAL	883.0	27.87	146.43	854.57	-154.80	93.33	179.10	4.18	4.15	-1.15	352.59
	NORMAL	973.0	28.49	145.64	933.90	-190.04	117.08	220.87	0.80	0.69	-0.88	328.6
	NORMAL	1,064.0	27.08	146.25	1,014.41	-225.19	140.84	262.55	1.58	-1.55	0.67	168.87
	NORMAL	1,133.0	27.70	147.22	1,075.67	-251.73	158.24	293.82	1.11	0.90	1.41	36.18
7/6/2013	NORMAL	1,255.0	28.70	145.81	1,183.19	-299.80	190.06	350.56	0.98	0.82	-1.16	325.70
	NORMAL	1,350.0	29.37	145.83	1,266.25	-337.94	215.96	395.84	0.71	0.71	0.02	0.84
	NORMAL	1,446.0	29.75	148.47	1,349.76	-377.73	241.64	442.54	1.41	0.40	2.75	74.89
	NORMAL	1,541.0	29.07	149.94	1,432.52	-417.79	265.53	488.79	1.04	-0.72	1.55	133.93
	NORMAL	1,637.0	29.79	149.42	1,516.13	-458.51	289.34	535.61	0.80	0.76	-0.54	340.24
	NORMAL	1,733.0	30.68	147.69	1,599.07	-499.74	314.57	583.46	1.30	0.93	-1.80	314.86
	NORMAL	1,828.0	30.66	149.92	1,680.78	-541.19	339.66	631.45	1.20	-0.02	2.35	91.97



## 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 (°)
7/6/2013	NORMAL	1,922.0	30.32	152.07	1,761.79	-582.89	362.79	678.91	1.22	-0.36	2.29	108.24
	NORMAL	2,017.0	28.74	152.73	1,844.44	-624.38	384.49	725.60	1.70	-1.66	0.69	168.65
	NORMAL	2,112.0	27.70	153.98	1,928.15	-664.53	404.64	770.44	1.26	-1.09	1.32	150.94
	NORMAL	2,207.0	28.65	153.88	2,011.89	-704.82	424.35	815.25	1.00	1.00	-0.11	357.11
	NORMAL	2,302.0	29.44	154.34	2,094.95	-746.31	444.49	861.32	0.86	0.83	0.48	15.99
	NORMAL	2,397.0	28.40	153.90	2,178.10	-787.64	464.54	907.22	1.12	-1.09	-0.46	191.37
	NORMAL	2,493.0	27.26	155.13	2,262.99	-828.09	483.83	952.00	1.33	-1.19	1.28	153.81
	NORMAL	2,589.0	27.35	155.13	2,348.30	-868.05	502.35	996.02	0.09	0.09	0.00	0.00
7/7/2013	NORMAL	2,684.0	27.44	155.30	2,432.64	-907.73	520.67	1,039.72	0.13	0.09	0.18	41.07
	NORMAL	2,777.0	27.61	155.65	2,515.12	-946.83	538.51	1,082.69	0.25	0.18	0.38	43.73
	NORMAL	2,871.0	27.79	156.01	2,598.34	-986.70	556.40	1,126.38	0.26	0.19	0.38	43.07
	NORMAL	2,966.0	28.25	156.55	2,682.21	-1,027.56	574.36	1,171.00	0.55	0.48	0.57	29.11
	NORMAL	3,062.0	28.67	156.53	2,766.61	-1,069.62	592.57	1,216.75	0.44	0.44	-0.02	358.69
	NORMAL	3,157.0	28.84	156.71	2,849.89	-1,111.47	610.70	1,262.45	0.20	0.18	0.19	27.07
	NORMAL	3,252.0	28.70	156.49	2,933.16	-1,153.44	628.86	1,308.18	0.18	-0.15	-0.23	217.00
	NORMAL	3,347.0	28.93	157.06	3,016.40	-1,195.51	646.92	1,353.96	0.38	0.24	0.60	50.31
	NORMAL	3,443.0	27.79	159.52	3,100.88	-1,237.86	663.80	1,399.54	1.70	-1.19	2.56	135.37
	NORMAL	3,539.0	28.31	158.64	3,185.61	-1,280.03	679.92	1,444.64	0.69	0.54	-0.92	321.10
	NORMAL	3,634.0	27.17	156.96	3,269.69	-1,320.97	696.61	1,488.84	1.46	-1.20	-1.77	213.7'
	NORMAL	3,730.0	26.50	153.66	3,355.35	-1,360.32	714.73	1,532.15	1.74	-0.70	-3.54	244.9'
	NORMAL	3,825.0	26.91	153.28	3,440.22	-1,398.50	733.83	1,574.78	0.45	0.43	-0.29	342.8'
	NORMAL	3,921.0	27.17	154.07	3,525.73	-1,437.62	753.19	1,618.36	0.46	0.27	0.82	54.45
	NORMAL	4,017.0	27.19	153.75	3,611.13	-1,477.00	772.47	1,662.16	0.15	0.02	-0.33	277.65
	NORMAL	4,112.0	28.46	153.96	3,695.14	-1,516.81	792.01	1,706.45	1.34	1.34	0.22	4.5'
	NORMAL	4,208.0	28.67	153.90	3,779.45	-1,558.04	812.18	1,752.30	0.22	0.22	-0.06	352.16
	NORMAL	4,304.0	29.46	155.13	3,863.36	-1,600.14	832.24	1,798.90	1.03	0.82	1.28	37.64
	NORMAL	4,399.0	29.37	158.03	3,946.12	-1,642.94	850.78	1,845.54	1.50	-0.09	3.05	94.88
	NORMAL	4,495.0	29.81	160.84	4,029.61	-1,687.31	867.42	1,892.88	1.52	0.46	2.93	73.63
7/8/2013	NORMAL	4,590.0	30.25	163.65	4,111.86	-1,732.58	881.91	1,940.19	1.55	0.46	2.96	73.85
	NORMAL	4,684.0	30.34	163.74	4,193.02	-1,778.10	895.22	1,987.25	0.11	0.10	0.10	26.8'
	NORMAL	4,780.0	29.19	166.55	4,276.36	-1,824.14	907.46	2,034.38	1.88	-1.20	2.93	130.7'
	NORMAL	4,875.0	29.36	165.70	4,359.22	-1,869.24	918.60	2,080.20	0.47	0.18	-0.89	291.87
	NORMAL	4,971.0	27.61	167.08	4,443.60	-1,913.73	929.39	2,125.33	1.95	-1.82	1.44	159.96
	NORMAL	5,067.0	27.86	168.41	4,528.57	-1,957.39	938.87	2,169.17	0.70	0.26	1.39	68.60
	NORMAL	5,162.0	27.17	165.23	4,612.83	-2,000.11	948.86	2,212.35	1.71	-0.73	-3.35	243.44
	NORMAL	5,258.0	27.44	164.27	4,698.13	-2,042.60	960.44	2,255.95	0.54	0.28	-1.00	301.09
	NORMAL	5,354.0	26.64	165.59	4,783.64	-2,084.73	971.79	2,299.14	1.04	-0.83	1.38	143.7'
	NORMAL	5,480.0	25.42	166.34	4,866.86	-2,138.37	985.21	2,353.71	1.00	-0.97	0.60	165.24
7/9/2013	NORMAL	5,574.0	23.65	166.73	4,982.37	-2,176.33	994.30	2,392.16	1.89	-1.88	0.41	174.95
	NORMAL	5,639.0	23.74	166.38	5,041.89	-2,201.74	1,000.38	2,417.90	0.26	0.14	-0.54	302.45
	NORMAL	5,733.0	21.43	167.07	5,128.67	-2,236.87	1,008.68	2,453.44	2.47	-2.46	0.73	173.77
	NORMAL	5,829.0	18.82	166.54	5,218.80	-2,269.02	1,016.21	2,485.95	2.73	-2.72	-0.55	183.75
	NORMAL	5,922.0	17.85	163.83	5,307.08	-2,297.30	1,023.67	2,514.87	1.39	-1.04	-2.91	220.03
	NORMAL	6,017.0	17.50	164.53	5,397.60	-2,325.05	1,031.53	2,543.47	0.43	-0.37	0.74	149.07
	NORMAL	6,112.0	15.22	164.14	5,488.75	-2,350.82	1,038.75	2,569.99	2.40	-2.40	-0.41	182.57
	NORMAL	6,208.0	13.50	166.51	5,581.74	-2,373.84	1,044.81	2,593.52	1.89	-1.79	2.47	162.28
7/10/2013	NORMAL	6,303.0	12.22	166.82	5,674.36	-2,394.41	1,049.69	2,614.35	1.35	-1.35	0.33	177.07
	NORMAL	6,399.0	10.01	166.03	5,768.55	-2,412.40	1,054.02	2,632.58	2.31	-2.30	-0.82	183.55
	NORMAL	6,494.0	7.95	163.27	5,862.38	-2,426.71	1,057.91	2,647.26	2.21	-2.17	-2.91	190.45
	NORMAL	6,589.0	6.58	159.02	5,956.62	-2,438.08	1,061.75	2,659.22	1.55	-1.44	-4.47	199.32
	NORMAL	6,683.0	5.10	149.24	6,050.13	-2,446.70	1,065.81	2,668.75	1.89	-1.57	-10.40	209.12
	NORMAL	6,778.0	3.43	143.09	6,144.87	-2,452.60	1,069.68	2,675.70	1.82	-1.76	-6.47	192.26
	NORMAL	6,874.0	1.41	128.67	6,240.78	-2,455.64	1,072.32	2,679.53	2.18	-2.10	-15.02	189.65
	NORMAL	6,969.0	1.41	51.77	6,335.75	-2,455.65	1,074.16	2,680.26	1.85	0.00	-80.95	231.56
	NORMAL	7,064.0	1.49	47.37	6,430.72	-2,454.09	1,075.98	2,679.55	0.14	0.08	-4.63	303.49
	NORMAL	7,160.0	1.14	50.80	6,526.70	-2,452.64	1,077.64	2,678.88	0.37	-0.36	3.57	169.04
	NORMAL	7,254.0	0.88	47.90	6,620.68	-2,451.56	1,078.90	2,678.39	0.28	-0.28	-3.09	189.68



## 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 (°)
7/10/2013	NORMAL	7,349.0	1.06	48.34	6,715.67	-2,450.49	1,080.10	2,677.88	0.19	0.19	0.46	2.59
	NORMAL	7,445.0	0.97	43.15	6,811.66	-2,449.31	1,081.32	2,677.28	0.13	-0.09	-5.41	223.03
	NORMAL	7,540.0	1.14	52.56	6,906.64	-2,448.14	1,082.62	2,676.73	0.25	0.18	9.91	50.31
7/11/2013	NORMAL	7,636.0	0.97	54.67	7,002.62	-2,447.09	1,084.04	2,676.33	0.18	-0.18	2.20	168.18
	NORMAL	7,731.0	0.79	70.66	7,097.61	-2,446.41	1,085.31	2,676.20	0.32	-0.19	16.83	134.06
	NORMAL	7,827.0	1.14	66.97	7,193.60	-2,445.82	1,086.82	2,676.26	0.37	0.36	-3.84	348.08
	NORMAL	7,923.0	1.32	62.84	7,289.58	-2,444.94	1,088.68	2,676.19	0.21	0.19	-4.30	331.70
	NORMAL	8,018.0	1.23	48.87	7,384.55	-2,443.77	1,090.42	2,675.80	0.34	-0.09	-14.71	246.95
	NORMAL	8,114.0	0.88	62.75	7,480.54	-2,442.76	1,091.85	2,675.44	0.45	-0.36	14.46	150.67
	NORMAL	8,210.0	0.26	202.94	7,576.53	-2,442.62	1,092.42	2,675.54	1.14	-0.65	146.03	171.24
	NORMAL	8,306.0	0.70	218.94	7,672.53	-2,443.28	1,091.97	2,675.96	0.47	0.46	16.67	25.05
	NORMAL	8,400.0	0.88	211.38	7,766.52	-2,444.34	1,091.23	2,676.64	0.22	0.19	-8.04	326.11
	NORMAL	8,493.0	1.49	226.76	7,859.50	-2,445.78	1,089.98	2,677.47	0.73	0.66	16.54	35.37
	NORMAL	8,589.0	1.87	227.29	7,955.46	-2,447.69	1,087.92	2,678.41	0.40	0.40	0.55	2.61
	NORMAL	8,684.0	1.58	225.79	8,050.42	-2,449.66	1,085.84	2,679.39	0.31	-0.31	-1.58	188.10
7/12/2013	NORMAL	8,780.0	1.32	228.78	8,146.38	-2,451.31	1,084.06	2,680.21	0.28	-0.27	3.11	165.27
	NORMAL	8,876.0	1.85	208.92	8,242.35	-2,453.39	1,082.48	2,681.49	0.79	0.55	-20.69	303.76
	NORMAL	8,971.0	2.81	195.56	8,337.27	-2,456.98	1,081.11	2,684.25	1.15	1.01	-14.06	323.7'
	NORMAL	9,067.0	3.17	194.85	8,433.14	-2,461.81	1,079.80	2,688.16	0.38	0.38	-0.74	353.77
	NORMAL	9,162.0	3.43	204.43	8,527.98	-2,466.94	1,077.95	2,692.14	0.64	0.27	10.08	69.59
	NORMAL	9,258.0	3.43	210.59	8,623.81	-2,472.03	1,075.31	2,695.76	0.38	0.00	6.42	93.07
	NORMAL	9,418.0	3.69	213.75	8,783.50	-2,480.43	1,070.01	2,701.38	0.20	0.16	1.98	38.63