

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	RWF 442-31	Wellbore No.	1
Well Name	RWF 442-31	Common Name	RWF 442-31
Project	RU 32-06S-094W	Site	RWF 11-32 Pad
Vertical Section Azimuth	235.60 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	6/26/2012	UWI	RWF 442-31
Active Datum	KB @5,560.2ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	6/26/2012	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

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 (°)
6/26/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/26/2012	NORMAL	73.0	0.44	269.47	73.00	0.00	-0.28	0.23	0.60	0.60	0.00	269.47
	NORMAL	164.0	4.13	242.23	163.91	-1.53	-3.53	3.78	4.11	4.05	-29.93	329.68
	NORMAL	254.0	6.51	250.40	253.52	-4.76	-11.21	11.93	2.77	2.64	9.08	21.75
6/27/2012	NORMAL	344.0	8.53	244.95	342.74	-9.29	-22.06	23.45	2.38	2.24	-6.06	337.84
	NORMAL	434.0	11.88	238.80	431.31	-16.92	-36.04	39.29	3.91	3.72	-6.83	338.94
	NORMAL	525.0	16.45	236.43	519.52	-28.90	-54.79	61.54	5.06	5.02	-2.60	351.61
	NORMAL	615.0	19.79	236.78	605.04	-44.30	-78.16	89.52	3.71	3.71	0.39	2.03
	NORMAL	706.0	22.35	235.20	689.95	-62.62	-105.26	122.23	2.88	2.81	-1.74	346.75
	NORMAL	777.0	21.90	233.42	755.72	-78.21	-126.98	148.96	1.14	-0.63	-2.51	235.31
	NORMAL	868.0	21.63	236.85	840.24	-97.50	-154.65	182.69	1.43	-0.30	3.77	103.57
	NORMAL	959.0	22.54	236.56	924.56	-116.28	-183.25	216.90	1.01	1.00	-0.32	353.03
	NORMAL	1,053.0	23.44	236.18	1,011.10	-136.62	-213.82	253.61	0.97	0.96	-0.40	350.46
	NORMAL	1,116.0	23.35	235.48	1,068.92	-150.67	-234.51	278.62	0.46	-0.14	-1.11	251.74
6/28/2012	NORMAL	1,209.0	22.85	234.58	1,154.46	-171.58	-264.41	315.11	0.66	-0.54	-0.97	214.82
	NORMAL	1,240.0	23.30	234.74	1,182.98	-178.60	-274.32	327.26	1.47	1.45	0.52	8.01
	NORMAL	1,334.0	23.59	234.08	1,269.22	-200.37	-304.74	364.65	0.42	0.31	-0.70	317.54
	NORMAL	1,428.0	23.83	234.39	1,355.29	-222.46	-335.41	402.43	0.29	0.26	0.33	27.59
	NORMAL	1,521.0	24.09	235.01	1,440.27	-244.29	-366.23	440.20	0.39	0.28	0.67	44.36
	NORMAL	1,615.0	22.85	236.31	1,526.49	-265.41	-397.13	477.63	1.43	-1.32	1.38	157.93
	NORMAL	1,709.0	22.60	236.24	1,613.20	-285.57	-427.34	513.94	0.27	-0.27	-0.07	186.14

## 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 (°)
6/28/2012	NORMAL	1,802.0	23.08	236.14	1,698.90	-305.66	-457.33	550.04	0.52	0.52	-0.11	355.33
	NORMAL	1,896.0	22.95	236.76	1,785.42	-325.97	-487.96	586.78	0.29	-0.14	0.66	118.49
	NORMAL	1,990.0	21.79	236.11	1,872.35	-345.75	-517.77	622.55	1.26	-1.23	-0.69	191.74
	NORMAL	2,084.0	22.27	236.69	1,959.48	-365.26	-547.14	657.81	0.56	0.51	0.62	24.65
	NORMAL	2,178.0	21.54	235.53	2,046.70	-384.80	-576.25	692.87	0.90	-0.78	-1.23	210.12
	NORMAL	2,272.0	22.60	235.09	2,133.81	-404.91	-605.29	728.19	1.14	1.13	-0.47	350.93
6/29/2012	NORMAL	2,367.0	22.82	234.30	2,221.44	-426.10	-635.22	764.86	0.40	0.23	-0.83	305.44
	NORMAL	2,459.0	22.42	234.13	2,306.37	-446.79	-663.92	800.24	0.44	-0.43	-0.18	189.21
	NORMAL	2,552.0	22.42	233.95	2,392.34	-467.62	-692.63	835.69	0.07	0.00	-0.19	269.92
	NORMAL	2,646.0	21.45	234.18	2,479.53	-488.23	-721.06	870.79	1.04	-1.03	0.24	175.04
	NORMAL	2,740.0	22.80	234.84	2,566.61	-508.78	-749.89	906.19	1.46	1.44	0.70	10.74
	NORMAL	2,833.0	22.16	233.88	2,652.54	-529.50	-778.79	941.74	0.79	-0.69	-1.03	209.39
	NORMAL	2,926.0	21.58	234.46	2,738.85	-549.78	-806.88	976.37	0.67	-0.62	0.62	159.84
	NORMAL	3,020.0	22.46	233.75	2,825.99	-570.44	-835.43	1,011.60	0.98	0.94	-0.76	342.84
	NORMAL	3,114.0	21.42	232.90	2,913.18	-591.41	-863.60	1,046.69	1.16	-1.11	-0.90	196.59
	NORMAL	3,207.0	22.34	234.13	2,999.48	-612.02	-891.46	1,081.33	1.11	0.99	1.32	27.06
	NORMAL	3,301.0	23.02	235.88	3,086.21	-632.79	-921.16	1,117.57	1.02	0.72	1.86	45.59
	NORMAL	3,395.0	22.24	236.53	3,172.97	-652.91	-951.21	1,153.73	0.87	-0.83	0.69	162.52
	NORMAL	3,488.0	23.65	236.33	3,258.61	-672.96	-981.42	1,189.98	1.52	1.52	-0.22	356.74
	NORMAL	3,582.0	22.60	236.68	3,345.06	-693.34	-1,012.20	1,226.90	1.13	-1.12	0.37	172.70
	NORMAL	3,676.0	21.37	235.94	3,432.22	-712.85	-1,041.49	1,262.08	1.34	-1.31	-0.79	192.35
	NORMAL	3,770.0	22.69	236.76	3,519.36	-732.38	-1,070.84	1,297.34	1.44	1.40	0.87	13.50
	NORMAL	3,864.0	22.45	235.70	3,606.16	-752.43	-1,100.83	1,333.41	0.50	-0.26	-1.13	238.97
	NORMAL	3,958.0	21.81	235.01	3,693.23	-772.56	-1,129.96	1,368.82	0.73	-0.68	-0.73	201.78
	NORMAL	4,051.0	22.25	235.62	3,779.44	-792.41	-1,158.65	1,403.70	0.53	0.47	0.66	27.76
	NORMAL	4,146.0	22.81	236.90	3,867.19	-812.62	-1,188.92	1,440.10	0.78	0.59	1.35	41.80
	NORMAL	4,239.0	22.69	237.03	3,952.96	-832.23	-1,219.07	1,476.05	0.14	-0.13	0.14	157.33
	NORMAL	4,332.0	22.07	236.72	4,038.95	-851.58	-1,248.72	1,511.45	0.68	-0.67	-0.33	190.64
	NORMAL	4,426.0	21.98	237.73	4,126.09	-870.66	-1,278.36	1,546.69	0.41	-0.10	1.07	103.83
	NORMAL	4,520.0	20.22	234.92	4,213.79	-889.39	-1,306.53	1,580.52	2.16	-1.87	-2.99	208.58
	NORMAL	4,614.0	19.26	233.86	4,302.26	-907.87	-1,332.35	1,612.26	1.09	-1.02	-1.13	199.95
	NORMAL	4,706.0	18.94	233.12	4,389.20	-925.78	-1,356.54	1,642.34	0.44	-0.35	-0.80	216.77
	NORMAL	4,799.0	17.23	238.00	4,477.61	-942.14	-1,380.30	1,671.18	2.45	-1.84	5.25	140.76
	NORMAL	4,892.0	16.62	236.15	4,566.58	-956.85	-1,403.03	1,698.24	0.87	-0.66	-1.99	220.56
	NORMAL	4,986.0	15.90	237.53	4,656.82	-971.25	-1,425.06	1,724.56	0.87	-0.77	1.47	152.44
	NORMAL	5,080.0	15.83	237.12	4,747.24	-985.12	-1,446.69	1,750.24	0.14	-0.07	-0.44	237.82
6/30/2012	NORMAL	5,174.0	14.25	237.03	4,838.02	-998.38	-1,467.16	1,774.62	1.68	-1.68	-0.10	180.80
	NORMAL	5,268.0	13.14	236.41	4,929.34	-1,010.59	-1,485.77	1,796.87	1.19	-1.18	-0.66	187.23
	NORMAL	5,363.0	11.47	233.50	5,022.16	-1,022.18	-1,502.36	1,817.11	1.87	-1.76	-3.06	198.96
	NORMAL	5,459.0	11.26	231.49	5,116.28	-1,033.69	-1,517.36	1,836.00	0.47	-0.22	-2.09	241.09
	NORMAL	5,553.0	10.42	236.28	5,208.60	-1,044.13	-1,531.62	1,853.65	1.31	-0.89	5.10	135.33
	NORMAL	5,648.0	9.02	234.80	5,302.23	-1,053.19	-1,544.85	1,869.69	1.50	-1.47	-1.56	189.39
	NORMAL	5,744.0	7.81	234.93	5,397.20	-1,061.27	-1,556.34	1,883.74	1.26	-1.26	0.14	179.16
	NORMAL	5,839.0	5.44	236.59	5,491.56	-1,067.46	-1,565.38	1,894.70	2.50	-2.49	1.75	176.20
	NORMAL	5,935.0	4.26	243.50	5,587.21	-1,071.56	-1,572.37	1,902.78	1.37	-1.23	7.20	157.07
	NORMAL	6,031.0	3.08	242.13	5,683.01	-1,074.36	-1,577.84	1,908.87	1.23	-1.23	-1.43	183.57
7/1/2012	NORMAL	6,127.0	2.11	236.59	5,778.91	-1,076.54	-1,581.60	1,913.20	1.04	-1.01	-5.77	191.74
	NORMAL	6,223.0	0.44	114.25	5,874.89	-1,077.66	-1,582.73	1,914.78	2.47	-1.74	-127.44	189.01
	NORMAL	6,319.0	0.88	132.53	5,970.89	-1,078.31	-1,581.86	1,914.42	0.50	0.46	19.04	34.90
	NORMAL	6,416.0	0.64	128.12	6,067.88	-1,079.15	-1,580.88	1,914.09	0.25	-0.25	-4.55	191.50
	NORMAL	6,511.0	0.79	345.75	6,162.88	-1,078.84	-1,580.62	1,913.70	1.43	0.16	-149.86	200.86
	NORMAL	6,607.0	0.26	116.09	6,258.87	-1,078.30	-1,580.59	1,913.37	1.02	-0.55	135.77	168.32
	NORMAL	6,701.0	0.28	46.98	6,352.87	-1,078.23	-1,580.23	1,913.04	0.33	0.02	-73.52	238.52
	NORMAL	6,796.0	0.70	148.52	6,447.87	-1,078.57	-1,579.76	1,912.84	0.85	0.44	106.88	121.48
	NORMAL	6,890.0	0.22	108.76	6,541.87	-1,079.12	-1,579.29	1,912.76	0.58	-0.51	-42.30	194.84
	NORMAL	6,985.0	0.67	214.36	6,636.86	-1,079.63	-1,579.43	1,913.17	0.80	0.47	111.16	121.80
	NORMAL	7,080.0	0.45	170.27	6,731.86	-1,080.46	-1,579.68	1,913.84	0.49	-0.23	-46.41	222.08

## 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 (°)
7/1/2012	NORMAL	7,174.0	0.79	133.14	6,825.86	-1,081.27	-1,579.14	1,913.85	0.54	0.36	-39.50	290.66
	NORMAL	7,267.0	1.23	150.42	6,918.84	-1,082.57	-1,578.18	1,913.80	0.57	0.47	18.58	43.54
7/2/2012	NORMAL	7,361.0	0.09	232.06	7,012.83	-1,083.50	-1,577.74	1,913.96	1.30	-1.21	86.85	175.81
	NORMAL	7,456.0	0.53	208.02	7,107.83	-1,083.93	-1,578.01	1,914.42	0.47	0.46	-25.31	331.28
	NORMAL	7,549.0	0.38	268.66	7,200.83	-1,084.32	-1,578.52	1,915.06	0.51	-0.16	65.20	136.06
	NORMAL	7,644.0	0.28	93.73	7,295.83	-1,084.34	-1,578.60	1,915.14	0.69	-0.11	-184.14	182.15
	NORMAL	7,738.0	0.88	209.08	7,389.83	-1,084.99	-1,578.72	1,915.61	1.10	0.64	122.71	129.55
	NORMAL	7,831.0	0.44	149.79	7,482.82	-1,085.92	-1,578.89	1,916.27	0.81	-0.47	-63.75	210.00
	NORMAL	7,925.0	0.00	73.11	7,576.82	-1,086.23	-1,578.71	1,916.30	0.47	-0.47	0.00	180.00
7/3/2012	NORMAL	8,019.0	0.63	61.70	7,670.82	-1,085.98	-1,578.26	1,915.79	0.67	0.67	0.00	61.70
	NORMAL	8,113.0	1.06	110.73	7,764.81	-1,086.05	-1,576.99	1,914.77	0.85	0.46	52.16	85.35
	NORMAL	8,207.0	0.62	184.29	7,858.80	-1,086.86	-1,576.21	1,914.60	1.13	-0.47	78.26	146.09
	NORMAL	8,233.0	0.72	155.58	7,884.80	-1,087.15	-1,576.15	1,914.71	1.33	0.38	-110.42	271.90
	NORMAL	8,298.0	0.97	83.61	7,949.79	-1,087.46	-1,575.44	1,914.30	1.56	0.38	-110.72	245.53