

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	RWF 13-14	Wellbore No.	1
Well Name	RWF 13-14	Common Name	RWF 13-14
Project	RU 14-06S-094W	Site	RWF 22-14 Pad
Vertical Section	220.78 (°)	North Reference	
Azimuth		Origin E/W	
Origin N/S		UWI	RWF 13-14
Spud Date	5/26/2011		
Active Datum	KB @5,516.1ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Started	5/26/2011	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

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
5/26/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/26/2011	NORMAL	74.0	0.35	281.43	74.00	0.04	-0.22	0.11	0.47	0.47	0.00	281.43
	NORMAL	165.0	2.29	247.15	164.97	-0.61	-2.17	1.88	2.21	2.13	-37.67	320.10
	NORMAL	256.0	4.75	250.31	255.79	-2.58	-7.39	6.78	2.71	2.70	3.47	6.09
	NORMAL	348.0	7.74	247.41	347.24	-6.25	-16.70	15.64	3.27	3.25	-3.15	352.53
	NORMAL	440.0	11.00	244.78	438.00	-12.37	-30.37	29.20	3.57	3.54	-2.86	351.22
	NORMAL	531.0	14.34	244.42	526.77	-20.93	-48.39	47.46	3.67	3.67	-0.40	358.47
	NORMAL	622.0	17.16	242.05	614.34	-32.09	-70.42	70.30	3.18	3.10	-2.60	346.01
	NORMAL	714.0	17.68	235.28	702.13	-46.41	-93.89	96.47	2.27	0.57	-7.36	281.14
5/27/2011	NORMAL	789.0	17.80	227.02	773.58	-60.72	-111.64	118.90	3.36	0.16	-11.01	268.79
	NORMAL	880.0	17.67	220.09	860.26	-80.77	-130.71	146.54	2.32	-0.14	-7.62	263.18
	NORMAL	972.0	18.03	220.01	947.84	-102.36	-148.86	174.74	0.39	0.39	-0.09	356.07
	NORMAL	1,068.0	20.31	219.39	1,038.51	-126.61	-168.99	206.25	2.38	2.38	-0.65	354.60
	NORMAL	1,107.0	20.91	220.40	1,075.01	-137.15	-177.79	219.98	1.79	1.54	2.59	31.12
	NORMAL	1,191.0	22.30	218.51	1,153.11	-161.03	-197.43	250.89	1.85	1.65	-2.25	332.52
5/28/2011	NORMAL	1,254.0	22.52	218.78	1,211.35	-179.79	-212.43	274.89	0.39	0.35	0.43	25.20
	NORMAL	1,349.0	20.19	222.29	1,299.82	-206.11	-234.86	309.47	2.80	-2.45	3.69	152.88
	NORMAL	1,443.0	20.47	222.41	1,387.97	-230.24	-256.86	342.12	0.30	0.30	0.13	8.53
	NORMAL	1,538.0	19.41	220.53	1,477.27	-254.51	-278.32	374.51	1.30	-1.12	-1.98	210.29
	NORMAL	1,633.0	19.88	220.48	1,566.74	-278.79	-299.07	406.44	0.50	0.49	-0.05	357.93
	NORMAL	1,728.0	18.83	220.02	1,656.37	-302.82	-319.41	437.93	1.12	-1.11	-0.48	188.04

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
5/28/2011	NORMAL	1,823.0	18.44	217.42	1,746.39	-326.49	-338.40	468.26	0.97	-0.41	-2.74	243.63
	NORMAL	1,917.0	19.18	215.88	1,835.37	-350.81	-356.49	498.48	0.95	0.79	-1.64	325.41
	NORMAL	2,012.0	20.35	216.52	1,924.78	-376.73	-375.46	530.51	1.25	1.23	0.67	10.78
	NORMAL	2,106.0	20.18	219.47	2,012.96	-402.38	-395.50	563.02	1.10	-0.18	3.14	100.83
	NORMAL	2,201.0	21.24	218.88	2,101.82	-428.43	-416.72	596.60	1.14	1.12	-0.62	348.59
	NORMAL	2,296.0	19.94	218.96	2,190.75	-454.42	-437.70	629.99	1.37	-1.37	0.08	178.80
	NORMAL	2,391.0	20.44	218.15	2,279.91	-480.06	-458.14	662.75	0.60	0.53	-0.85	330.41
5/29/2011	NORMAL	2,487.0	19.70	220.36	2,370.08	-505.58	-478.97	695.68	1.10	-0.77	2.30	135.33
	NORMAL	2,581.0	18.00	221.35	2,459.04	-528.55	-498.83	726.04	1.84	-1.81	1.05	169.81
	NORMAL	2,676.0	18.26	221.04	2,549.32	-550.80	-518.30	755.61	0.29	0.27	-0.33	339.50
	NORMAL	2,771.0	18.14	220.92	2,639.57	-573.20	-537.76	785.28	0.13	-0.13	-0.13	197.29
	NORMAL	2,865.0	19.54	218.28	2,728.53	-596.60	-557.08	815.62	1.74	1.49	-2.81	327.41
	NORMAL	2,960.0	20.05	217.72	2,817.92	-621.95	-576.89	847.75	0.57	0.54	-0.59	339.34
	NORMAL	3,056.0	20.30	217.30	2,908.03	-648.21	-597.04	880.81	0.30	0.26	-0.44	329.71
	NORMAL	3,151.0	20.87	217.23	2,996.96	-674.80	-617.27	914.14	0.60	0.60	-0.07	357.49
	NORMAL	3,246.0	19.82	220.20	3,086.04	-700.57	-637.90	947.14	1.55	-1.11	3.13	136.86
	NORMAL	3,341.0	19.19	221.51	3,175.59	-724.57	-658.65	978.86	0.81	-0.66	1.38	145.84
	NORMAL	3,436.0	18.51	221.84	3,265.49	-747.49	-679.05	1,009.55	0.72	-0.72	0.35	171.24
	NORMAL	3,530.0	18.37	217.88	3,354.67	-770.30	-698.10	1,039.26	1.34	-0.15	-4.21	261.75
	NORMAL	3,624.0	19.53	215.72	3,443.57	-794.75	-716.37	1,069.71	1.44	1.23	-2.30	327.81
	NORMAL	3,718.0	19.62	215.62	3,532.14	-820.34	-734.74	1,101.07	0.10	0.10	-0.11	339.53
	NORMAL	3,812.0	19.20	217.36	3,620.80	-845.45	-753.31	1,132.22	0.76	-0.45	1.85	126.81
	NORMAL	3,907.0	20.25	216.94	3,710.22	-871.01	-772.67	1,164.22	1.12	1.11	-0.44	352.11
	NORMAL	4,002.0	20.49	216.58	3,799.28	-897.50	-792.46	1,197.21	0.28	0.25	-0.38	332.26
	NORMAL	4,097.0	20.34	217.77	3,888.31	-923.90	-812.48	1,230.28	0.46	-0.16	1.25	110.43
	NORMAL	4,191.0	20.92	221.15	3,976.29	-949.45	-833.53	1,263.37	1.41	0.62	3.60	65.62
	NORMAL	4,286.0	21.25	219.58	4,064.93	-975.50	-855.66	1,297.55	0.69	0.35	-1.65	299.56
	NORMAL	4,382.0	21.72	221.68	4,154.26	-1,002.17	-878.56	1,332.70	0.94	0.49	2.19	59.55
	NORMAL	4,476.0	20.40	223.07	4,241.98	-1,027.13	-901.31	1,366.46	1.50	-1.40	1.48	159.92
5/30/2011	NORMAL	4,570.0	19.53	222.86	4,330.33	-1,050.62	-923.19	1,398.54	0.93	-0.93	-0.22	184.61
	NORMAL	4,665.0	17.78	219.96	4,420.34	-1,073.38	-943.31	1,428.91	2.08	-1.84	-3.05	206.56
	NORMAL	4,759.0	15.98	219.23	4,510.28	-1,094.40	-960.71	1,456.20	1.93	-1.91	-0.78	186.37
	NORMAL	4,854.0	15.48	218.16	4,601.73	-1,114.50	-976.81	1,481.94	0.61	-0.53	-1.13	209.61
	NORMAL	4,948.0	13.81	216.59	4,692.67	-1,133.37	-991.25	1,505.66	1.83	-1.78	-1.67	192.61
	NORMAL	5,042.0	12.81	215.96	4,784.14	-1,150.82	-1,004.06	1,527.23	1.07	-1.06	-0.67	187.95
	NORMAL	5,137.0	12.58	214.58	4,876.82	-1,167.86	-1,016.11	1,548.01	0.40	-0.24	-1.45	232.15
	NORMAL	5,231.0	11.96	219.05	4,968.67	-1,183.85	-1,028.06	1,567.92	1.21	-0.66	4.76	125.30
	NORMAL	5,325.0	10.65	223.16	5,060.85	-1,197.75	-1,040.14	1,586.34	1.64	-1.39	4.37	150.41
	NORMAL	5,419.0	9.88	227.27	5,153.35	-1,209.56	-1,052.00	1,603.03	1.13	-0.82	4.37	138.44
	NORMAL	5,514.0	8.58	226.88	5,247.11	-1,219.94	-1,063.16	1,618.18	1.37	-1.37	-0.41	182.56
	NORMAL	5,608.0	7.46	219.26	5,340.20	-1,229.45	-1,072.14	1,631.25	1.64	-1.19	-8.11	219.78
	NORMAL	5,701.0	6.92	216.77	5,432.46	-1,238.62	-1,079.32	1,642.87	0.67	-0.58	-2.68	208.76
5/31/2011	NORMAL	5,796.0	6.28	209.58	5,526.84	-1,247.72	-1,085.31	1,653.68	1.10	-0.67	-7.57	228.71
	NORMAL	5,889.0	6.38	210.63	5,619.27	-1,256.59	-1,090.45	1,663.75	0.16	0.11	1.13	49.70
	NORMAL	5,983.0	5.75	209.13	5,712.74	-1,265.20	-1,095.41	1,673.51	0.69	-0.67	-1.60	193.38
	NORMAL	6,077.0	4.81	214.03	5,806.34	-1,272.58	-1,099.90	1,682.03	1.11	-1.00	5.21	156.80
	NORMAL	6,172.0	2.03	220.10	5,901.17	-1,277.16	-1,103.22	1,687.67	2.95	-2.93	6.39	175.60
	NORMAL	6,265.0	0.62	60.75	5,994.15	-1,278.18	-1,103.84	1,688.85	2.82	-1.52	-171.34	184.79
	NORMAL	6,360.0	1.18	43.47	6,089.14	-1,277.22	-1,102.72	1,687.39	0.65	0.59	-18.19	325.33
	NORMAL	6,455.0	0.62	80.09	6,184.13	-1,276.42	-1,101.54	1,686.01	0.82	-0.59	38.55	151.54
	NORMAL	6,549.0	0.70	163.20	6,278.12	-1,276.88	-1,100.87	1,685.93	0.93	0.09	88.41	127.64
	NORMAL	6,642.0	0.24	231.17	6,371.12	-1,277.55	-1,100.86	1,686.42	0.70	-0.49	73.09	159.96
6/1/2011	NORMAL	6,737.0	0.62	39.39	6,466.12	-1,277.28	-1,100.69	1,686.10	0.90	0.40	177.07	171.50
	NORMAL	6,831.0	0.88	6.27	6,560.11	-1,276.16	-1,100.29	1,685.00	0.53	0.28	-35.23	283.68
	NORMAL	6,925.0	0.56	314.52	6,654.10	-1,275.13	-1,100.54	1,684.38	0.74	-0.34	-55.05	219.51
	NORMAL	7,021.0	0.78	320.71	6,750.10	-1,274.29	-1,101.28	1,684.23	0.24	0.23	6.45	21.32
	NORMAL	7,115.0	0.48	76.17	6,844.09	-1,273.70	-1,101.31	1,683.80	1.15	-0.32	122.83	156.28

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
6/1/2011	NORMAL	7,211.0	0.35	121.22	6,940.09	-1,273.76	-1,100.67	1,683.43	0.35	-0.14	46.93	133.21
	NORMAL	7,304.0	0.67	162.34	7,033.09	-1,274.42	-1,100.26	1,683.66	0.50	0.34	44.22	70.65
6/2/2011	NORMAL	7,398.0	0.12	70.57	7,127.09	-1,274.91	-1,100.00	1,683.86	0.73	-0.59	-97.63	190.10
	NORMAL	7,492.0	0.54	355.29	7,221.08	-1,274.44	-1,099.94	1,683.47	0.56	0.45	-80.09	271.89
	NORMAL	7,586.0	0.52	263.65	7,315.08	-1,274.04	-1,100.40	1,683.47	0.81	-0.02	-97.49	223.13
	NORMAL	7,680.0	0.45	263.76	7,409.08	-1,274.13	-1,101.19	1,684.05	0.07	-0.07	0.12	179.29
	NORMAL	7,776.0	0.38	73.35	7,505.08	-1,274.08	-1,101.26	1,684.06	0.86	-0.07	176.66	175.24
	NORMAL	7,869.0	0.34	214.18	7,598.08	-1,274.22	-1,101.12	1,684.08	0.73	-0.04	151.43	161.55
	NORMAL	7,962.0	1.72	210.41	7,691.06	-1,275.65	-1,101.98	1,685.72	1.48	1.48	-4.05	355.30
	NORMAL	8,056.0	1.88	247.02	7,785.02	-1,277.47	-1,104.12	1,688.49	1.21	0.17	38.95	100.64
6/3/2011	NORMAL	8,151.0	0.68	349.77	7,880.00	-1,277.53	-1,105.65	1,689.54	2.25	-1.26	108.16	161.90
	NORMAL	8,245.0	1.58	51.67	7,973.98	-1,276.17	-1,104.74	1,687.91	1.48	0.96	65.85	87.36
	NORMAL	8,339.0	1.15	95.29	8,067.96	-1,275.46	-1,102.78	1,686.09	1.16	-0.46	46.40	133.29
	NORMAL	8,430.0	0.87	146.36	8,158.94	-1,276.12	-1,101.49	1,685.75	1.00	-0.31	56.12	131.71
	NORMAL	8,490.0	0.87	146.36	8,218.94	-1,276.87	-1,100.98	1,685.99	0.00	0.00	0.00	0.00