

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 433-31	Wellbore No.	
Well Name	RWF 433-31	Common Name	RWF 433-31
Project	RU 31-06S-094W	Site	RWF 34-31 Pad
Vertical Section Azimuth	23.08 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	11/29/2011	UWI	RWF 433-31
Active Datum	KB @5,733.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Started	11/29/2011	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

6200

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
11/29/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/29/2011	NORMAL	117.0	0.70	17.84	117.00	0.68	0.22	0.71	0.60	0.60	0.00	17.84
	NORMAL	178.0	1.50	22.68	177.99	1.77	0.64	1.88	1.32	1.31	7.93	9.05
	NORMAL	268.0	3.34	27.77	267.90	5.18	2.32	5.67	2.06	2.04	5.66	9.21
	NORMAL	359.0	7.21	24.87	358.50	12.71	5.95	14.03	4.26	4.25	-3.19	354.61
	NORMAL	450.0	10.65	20.30	448.38	25.78	11.28	28.14	3.86	3.78	-5.02	346.08
	NORMAL	542.0	12.40	24.08	538.53	42.77	18.26	46.51	2.07	1.90	4.11	25.20
	NORMAL	632.0	14.16	23.38	626.12	61.70	26.57	67.18	1.96	1.96	-0.78	354.44
	NORMAL	723.0	14.69	25.14	714.25	82.36	35.89	89.84	0.76	0.58	1.93	40.45
	NORMAL	795.0	14.11	23.14	783.99	98.70	43.21	107.74	1.06	-0.81	-2.78	219.65
	NORMAL	886.0	13.51	22.02	872.35	118.75	51.56	129.46	0.72	-0.66	-1.23	203.47
	NORMAL	977.0	14.38	19.92	960.67	139.23	59.39	151.37	1.11	0.96	-2.31	328.79
	NORMAL	1,073.0	15.11	19.37	1,053.51	162.24	67.61	175.76	0.77	0.76	-0.57	348.88
	NORMAL	1,112.0	15.36	18.97	1,091.14	171.92	70.97	185.98	0.70	0.64	-1.03	337.00
11/30/2011	NORMAL	1,257.0	15.32	20.78	1,230.97	207.99	84.01	224.28	0.33	-0.03	1.25	95.65
	NORMAL	1,352.0	14.29	21.43	1,322.82	230.64	92.75	248.54	1.10	-1.08	0.68	171.15
	NORMAL	1,447.0	13.59	24.80	1,415.02	251.69	101.71	271.41	1.13	-0.74	3.55	132.40
	NORMAL	1,542.0	13.79	31.39	1,507.33	271.49	112.29	293.78	1.65	0.21	6.94	85.90
	NORMAL	1,638.0	12.73	28.73	1,600.77	290.53	123.33	315.62	1.27	-1.10	-2.77	208.63
	NORMAL	1,733.0	12.35	28.63	1,693.50	308.62	133.23	336.15	0.40	-0.40	-0.11	183.22
	NORMAL	1,829.0	12.75	28.41	1,787.21	326.95	143.19	356.92	0.42	0.42	-0.23	353.08

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 (°)
11/30/2011	NORMAL	1,924.0	13.90	23.42	1,879.65	346.65	152.72	378.77	1.71	1.21	-5.25	312.55
	NORMAL	2,020.0	14.97	21.29	1,972.62	368.78	161.80	402.69	1.24	1.11	-2.22	332.57
	NORMAL	2,115.0	16.49	21.84	2,064.06	392.73	171.27	428.44	1.61	1.60	0.58	5.87
12/1/2011	NORMAL	2,210.0	14.78	20.91	2,155.54	416.57	180.62	454.03	1.82	-1.80	-0.98	187.89
	NORMAL	2,305.0	14.03	20.53	2,247.56	438.67	188.98	477.64	0.80	-0.79	-0.40	187.00
	NORMAL	2,400.0	13.19	21.29	2,339.89	459.55	196.95	499.98	0.90	-0.88	0.80	168.35
	NORMAL	2,494.0	12.60	22.19	2,431.52	479.04	204.72	520.95	0.66	-0.63	0.96	161.64
	NORMAL	2,589.0	13.63	22.52	2,524.04	498.97	212.92	542.50	1.09	1.08	0.35	4.32
	NORMAL	2,685.0	15.78	23.95	2,616.89	521.36	222.55	566.87	2.27	2.24	1.49	10.28
	NORMAL	2,780.0	17.79	24.41	2,707.84	546.38	233.79	594.30	2.12	2.12	0.48	4.00
	NORMAL	2,876.0	19.50	22.69	2,798.79	574.52	246.04	624.98	1.87	1.78	-1.79	341.36
	NORMAL	2,971.0	21.33	21.07	2,887.82	605.27	258.37	658.11	2.02	1.93	-1.71	342.08
	NORMAL	3,066.0	21.54	21.70	2,976.25	637.60	271.03	692.81	0.33	0.22	0.66	47.92
	NORMAL	3,162.0	22.99	22.64	3,065.09	671.28	284.76	729.18	1.56	1.51	0.98	14.24
	NORMAL	3,257.0	25.33	24.37	3,151.77	706.92	300.29	768.05	2.57	2.46	1.82	17.63
	NORMAL	3,352.0	27.55	22.58	3,236.83	745.72	317.11	810.34	2.48	2.34	-1.88	339.45
	NORMAL	3,447.0	26.66	22.66	3,321.39	785.67	333.76	853.63	0.94	-0.94	0.08	177.69
	NORMAL	3,542.0	26.05	22.53	3,406.52	824.61	349.96	895.80	0.64	-0.64	-0.14	185.35
	NORMAL	3,638.0	27.86	23.17	3,492.09	864.70	366.87	939.31	1.91	1.89	0.67	9.39
	NORMAL	3,733.0	29.66	22.78	3,575.36	906.79	384.70	985.02	1.90	1.89	-0.41	353.88
	NORMAL	3,829.0	29.08	22.66	3,659.02	950.22	402.89	1,032.10	0.61	-0.60	-0.12	185.74
	NORMAL	3,924.0	29.09	22.41	3,742.04	992.87	420.59	1,078.28	0.13	0.01	-0.26	274.59
	NORMAL	4,019.0	27.22	22.79	3,825.80	1,034.25	437.81	1,123.10	1.98	-1.97	0.40	174.69
	NORMAL	4,114.0	25.01	21.85	3,911.10	1,072.93	453.70	1,164.91	2.37	-2.33	-0.99	190.18
	NORMAL	4,209.0	24.15	21.31	3,997.49	1,109.67	468.24	1,204.41	0.94	-0.91	-0.57	194.39
	NORMAL	4,305.0	21.98	24.16	4,085.81	1,144.37	482.73	1,242.01	2.54	-2.26	2.97	154.08
	NORMAL	4,400.0	20.51	23.47	4,174.35	1,175.86	496.63	1,276.43	1.57	-1.55	-0.73	189.33
	NORMAL	4,491.0	19.43	22.50	4,259.88	1,204.46	508.78	1,307.50	1.24	-1.19	-1.07	196.60
	NORMAL	4,590.0	18.06	23.29	4,353.63	1,233.77	521.15	1,339.32	1.41	-1.38	0.80	169.88
	NORMAL	4,685.0	16.87	24.00	4,444.25	1,259.89	532.58	1,367.83	1.27	-1.25	0.75	170.19
	NORMAL	4,780.0	14.02	23.11	4,535.81	1,283.07	542.70	1,393.12	3.01	-3.00	-0.94	184.33
	NORMAL	4,875.0	11.61	25.19	4,628.43	1,302.31	551.29	1,414.19	2.58	-2.54	2.19	170.18
	NORMAL	4,970.0	10.85	25.18	4,721.61	1,319.05	559.16	1,432.67	0.80	-0.80	-0.01	180.14
	NORMAL	5,065.0	9.82	27.56	4,815.07	1,334.33	566.71	1,449.69	1.17	-1.08	2.51	158.65
12/2/2011	NORMAL	5,160.0	9.16	32.01	4,908.77	1,347.92	574.47	1,465.23	1.04	-0.69	4.68	134.15
	NORMAL	5,255.0	10.14	28.54	5,002.43	1,361.68	582.47	1,481.03	1.20	1.03	-3.65	327.59
	NORMAL	5,350.0	9.18	28.50	5,096.08	1,375.69	590.09	1,496.90	1.01	-1.01	-0.04	180.38
	NORMAL	5,444.0	7.62	21.15	5,189.07	1,388.09	595.91	1,510.59	2.01	-1.66	-7.82	210.94
	NORMAL	5,540.0	5.22	10.92	5,284.46	1,398.32	599.04	1,521.22	2.76	-2.50	-10.66	200.46
	NORMAL	5,634.0	3.63	14.46	5,378.18	1,405.40	600.59	1,528.35	1.72	-1.69	3.77	172.01
	NORMAL	5,729.0	3.14	24.48	5,473.02	1,410.68	602.42	1,533.92	0.81	-0.52	10.55	134.56
	NORMAL	5,825.0	3.00	37.50	5,568.88	1,415.06	605.04	1,538.98	0.74	-0.15	13.56	107.81
	NORMAL	5,920.0	3.05	11.60	5,663.75	1,419.51	607.06	1,543.87	1.43	0.05	-27.26	259.13
12/3/2011	NORMAL	6,016.0	2.32	9.25	5,759.65	1,423.93	607.89	1,548.26	0.77	-0.76	-2.45	187.40
	NORMAL	6,111.0	1.13	353.03	5,854.60	1,426.76	608.08	1,550.94	1.34	-1.25	-17.07	194.34
	NORMAL	6,206.0	0.78	269.52	5,949.59	1,427.68	607.32	1,551.49	1.37	-0.37	-87.91	216.65
	NORMAL	6,302.0	1.36	229.13	6,045.58	1,426.93	605.81	1,550.20	0.96	0.60	-42.07	286.19
	NORMAL	6,398.0	0.87	214.97	6,141.56	1,425.59	604.53	1,548.47	0.58	-0.51	-14.75	202.40
	NORMAL	6,492.0	0.47	170.11	6,235.55	1,424.62	604.18	1,547.44	0.67	-0.43	-47.72	211.70
	NORMAL	6,587.0	0.53	198.57	6,330.55	1,423.82	604.11	1,546.68	0.27	0.06	29.96	90.92
12/4/2011	NORMAL	6,682.0	1.01	174.33	6,425.54	1,422.57	604.05	1,545.51	0.60	0.51	-25.52	313.32
	NORMAL	6,777.0	1.18	173.33	6,520.52	1,420.77	604.25	1,543.92	0.18	0.18	-1.05	353.09
	NORMAL	6,873.0	1.20	162.93	6,616.50	1,418.83	604.66	1,542.30	0.23	0.02	-10.83	270.08
	NORMAL	6,968.0	0.77	149.95	6,711.49	1,417.32	605.27	1,541.15	0.51	-0.45	-13.66	201.04
	NORMAL	7,063.0	0.89	146.43	6,806.48	1,416.16	606.00	1,540.37	0.14	0.13	-3.71	335.21
	NORMAL	7,158.0	0.98	144.73	6,901.46	1,414.88	606.88	1,539.53	0.10	0.09	-1.79	342.02
12/5/2011	NORMAL	7,254.0	1.01	160.09	6,997.45	1,413.41	607.64	1,538.48	0.28	0.03	16.00	91.30

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 (°)
12/5/2011	NORMAL	7,349.0	1.22	172.86	7,092.43	1,411.62	608.05	1,537.00	0.34	0.22	13.44	56.30
	NORMAL	7,444.0	0.97	170.52	7,187.41	1,409.82	608.31	1,535.45	0.27	-0.26	-2.46	188.97
	NORMAL	7,540.0	1.18	168.59	7,283.40	1,408.05	608.64	1,533.95	0.22	0.22	-2.01	349.25
	NORMAL	7,635.0	0.77	149.01	7,378.38	1,406.55	609.16	1,532.77	0.55	-0.43	-20.61	209.58
	NORMAL	7,730.0	0.58	137.04	7,473.38	1,405.65	609.81	1,532.20	0.25	-0.20	-12.60	210.70
	NORMAL	7,825.0	0.95	121.15	7,568.37	1,404.89	610.82	1,531.89	0.45	0.39	-16.73	322.07
	NORMAL	7,921.0	0.87	112.79	7,664.36	1,404.20	612.17	1,531.78	0.16	-0.08	-8.71	234.80
	NORMAL	8,016.0	0.72	109.67	7,759.35	1,403.72	613.40	1,531.82	0.16	-0.16	-3.28	194.54
12/6/2011	NORMAL	8,112.0	0.79	110.93	7,855.34	1,403.28	614.58	1,531.88	0.07	0.07	1.31	13.97
	NORMAL	8,207.0	0.71	105.19	7,950.33	1,402.89	615.76	1,531.99	0.12	-0.08	-6.04	220.36
	NORMAL	8,303.0	0.56	127.14	8,046.33	1,402.45	616.71	1,531.95	0.29	-0.16	22.86	132.32
	NORMAL	8,360.0	0.56	127.14	8,103.32	1,402.11	617.15	1,531.82	0.00	0.00	0.00	0.00