

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 323-14	Wellbore No.	1
Well Name	RWF 323-14	Common Name	RWF 323-14
Project	RU 14-06S-094W	Site	RWF 22-14 Pad
Vertical Section Azimuth	224.02 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	5/16/2011	UWI	RWF 323-14
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	5/16/2011	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

5336

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
5/16/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/16/2011	NORMAL	74.0	0.26	352.09	74.00	0.17	-0.02	-0.10	0.35	0.35	0.00	352.09
	NORMAL	165.0	1.94	255.06	164.98	-0.03	-1.54	1.09	2.19	1.85	-106.63	255.52
	NORMAL	256.0	3.87	252.69	255.86	-1.34	-5.96	5.10	2.12	2.12	-2.60	355.25
	NORMAL	348.0	5.81	256.82	347.53	-3.32	-13.46	11.74	2.14	2.11	4.49	12.25
	NORMAL	440.0	7.92	254.18	438.86	-6.11	-24.09	21.14	2.32	2.29	-2.87	350.18
	NORMAL	521.0	9.92	250.61	518.88	-9.95	-36.04	32.20	2.56	2.47	-4.41	342.76
	NORMAL	612.0	11.15	244.32	608.35	-16.37	-51.37	47.47	1.85	1.35	-6.91	313.80
	NORMAL	704.0	12.25	244.67	698.44	-24.40	-68.21	64.94	1.20	1.20	0.38	3.86
	NORMAL	794.0	12.49	239.70	786.35	-33.39	-85.24	83.25	1.21	0.27	-5.52	280.27
	NORMAL	885.0	13.19	234.24	875.08	-44.43	-102.16	102.94	1.54	0.77	-6.00	297.30
	NORMAL	977.0	13.71	229.55	964.56	-57.63	-118.98	124.12	1.31	0.57	-5.10	293.19
5/17/2011	NORMAL	1,073.0	14.79	224.64	1,057.60	-73.73	-136.25	147.70	1.69	1.13	-5.11	309.39
5/18/2011	NORMAL	1,156.0	15.57	223.35	1,137.71	-89.37	-151.34	169.43	1.02	0.94	-1.55	335.96
	NORMAL	1,251.0	16.80	219.58	1,228.94	-109.23	-168.84	195.87	1.70	1.29	-3.97	317.67
	NORMAL	1,345.0	16.86	218.66	1,318.92	-130.34	-186.01	222.99	0.29	0.06	-0.98	282.25
	NORMAL	1,440.0	16.70	217.90	1,409.87	-151.87	-203.00	250.27	0.29	-0.17	-0.80	233.54
	NORMAL	1,534.0	16.88	220.37	1,499.87	-172.92	-220.14	277.32	0.78	0.19	2.63	77.03
	NORMAL	1,630.0	16.18	222.04	1,591.90	-193.48	-238.12	304.60	0.88	-0.73	1.74	146.63
	NORMAL	1,725.0	16.18	221.16	1,683.14	-213.27	-255.70	331.05	0.26	0.00	-0.93	269.58
	NORMAL	1,820.0	15.91	221.68	1,774.43	-232.96	-273.07	357.28	0.32	-0.28	0.55	152.22

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 (°)
5/18/2011	NORMAL	1,913.0	15.65	220.46	1,863.93	-252.03	-289.68	382.53	0.45	-0.28	-1.31	231.33
	NORMAL	2,008.0	16.10	222.71	1,955.31	-271.46	-306.93	408.49	0.80	0.47	2.37	54.91
	NORMAL	2,103.0	15.79	224.41	2,046.65	-290.37	-324.91	434.59	0.59	-0.33	1.79	124.39
	NORMAL	2,198.0	17.31	222.86	2,137.71	-309.96	-343.57	461.64	1.67	1.60	-1.63	343.06
	NORMAL	2,293.0	17.06	223.01	2,228.47	-330.51	-362.69	489.71	0.27	-0.26	0.16	170.02
	NORMAL	2,388.0	16.73	221.52	2,319.37	-350.94	-381.26	517.30	0.57	-0.35	-1.57	231.98
	NORMAL	2,483.0	16.82	220.81	2,410.33	-371.58	-399.31	544.69	0.24	0.09	-0.75	293.37
	NORMAL	2,577.0	16.81	221.55	2,500.31	-392.05	-417.21	571.84	0.23	-0.01	0.79	93.03
	NORMAL	2,672.0	16.62	221.42	2,591.30	-412.52	-435.31	599.14	0.20	-0.20	-0.14	191.07
	NORMAL	2,767.0	16.18	220.72	2,682.43	-432.74	-452.93	625.93	0.51	-0.46	-0.74	203.85
	NORMAL	2,862.0	15.87	222.12	2,773.74	-452.40	-470.28	652.12	0.52	-0.33	1.47	129.40
	NORMAL	2,957.0	15.38	221.52	2,865.23	-471.47	-487.34	677.69	0.54	-0.52	-0.63	197.96
	NORMAL	3,052.0	16.44	223.88	2,956.59	-490.59	-505.01	703.72	1.31	1.12	2.48	32.54
	NORMAL	3,147.0	15.86	224.33	3,047.84	-509.57	-523.40	730.15	0.62	-0.61	0.47	168.04
5/19/2011	NORMAL	3,243.0	17.18	223.69	3,139.88	-529.20	-542.36	757.44	1.39	1.38	-0.67	351.84
	NORMAL	3,338.0	16.62	222.57	3,230.77	-549.35	-561.25	785.05	0.68	-0.59	-1.18	209.64
	NORMAL	3,432.0	16.62	220.90	3,320.85	-569.42	-579.14	811.92	0.51	0.00	-1.78	269.20
	NORMAL	3,526.0	16.97	219.84	3,410.84	-590.11	-596.73	839.02	0.49	0.37	-1.13	318.30
	NORMAL	3,620.0	16.97	219.69	3,500.74	-611.20	-614.28	866.38	0.05	0.00	-0.16	269.93
	NORMAL	3,715.0	15.89	223.55	3,591.87	-631.29	-632.10	893.21	1.62	-1.14	4.06	136.53
	NORMAL	3,809.0	15.83	222.57	3,682.29	-650.06	-649.64	918.90	0.29	-0.06	-1.04	256.90
	NORMAL	3,904.0	15.66	222.24	3,773.72	-669.10	-667.02	944.66	0.20	-0.18	-0.35	207.62
	NORMAL	3,999.0	15.54	222.95	3,865.22	-687.90	-684.31	970.20	0.24	-0.13	0.75	122.49
	NORMAL	4,094.0	15.60	221.67	3,956.74	-706.76	-701.47	995.69	0.37	0.06	-1.35	279.29
	NORMAL	4,187.0	15.56	221.34	4,046.32	-725.47	-718.03	1,020.64	0.10	-0.04	-0.35	245.55
	NORMAL	4,283.0	15.39	220.28	4,138.84	-744.85	-734.77	1,046.22	0.34	-0.18	-1.10	238.48
	NORMAL	4,378.0	15.06	219.20	4,230.51	-764.03	-750.72	1,071.10	0.46	-0.35	-1.14	220.16
	NORMAL	4,472.0	14.45	220.64	4,321.41	-782.40	-766.07	1,094.97	0.76	-0.65	1.53	149.68
5/20/2011	NORMAL	4,566.0	15.58	222.09	4,412.20	-800.67	-782.18	1,119.30	1.27	1.20	1.54	19.09
	NORMAL	4,661.0	15.51	220.31	4,503.72	-819.82	-798.94	1,144.72	0.51	-0.07	-1.87	260.80
	NORMAL	4,756.0	15.73	222.09	4,595.21	-839.06	-815.79	1,170.27	0.56	0.23	1.87	66.20
	NORMAL	4,850.0	14.99	222.07	4,685.86	-857.54	-832.48	1,195.15	0.79	-0.79	-0.02	180.40
	NORMAL	4,945.0	13.08	224.34	4,778.02	-874.35	-848.23	1,218.18	2.09	-2.01	2.39	165.02
	NORMAL	5,039.0	12.75	223.53	4,869.64	-889.48	-862.80	1,239.19	0.40	-0.35	-0.86	208.36
	NORMAL	5,134.0	11.12	224.75	4,962.58	-903.59	-876.47	1,258.84	1.74	-1.72	1.28	171.80
	NORMAL	5,228.0	10.67	224.56	5,054.89	-916.22	-888.96	1,276.60	0.48	-0.48	-0.20	184.47
	NORMAL	5,322.0	8.90	226.03	5,147.52	-927.47	-900.30	1,292.57	1.90	-1.88	1.56	172.69
	NORMAL	5,416.0	7.59	218.21	5,240.55	-937.40	-909.38	1,306.02	1.83	-1.39	-8.32	216.74
	NORMAL	5,511.0	7.12	217.20	5,334.76	-947.02	-916.82	1,318.10	0.51	-0.49	-1.06	194.88
	NORMAL	5,605.0	6.68	219.40	5,428.08	-955.89	-923.81	1,329.34	0.55	-0.47	2.34	150.10
	NORMAL	5,698.0	5.59	222.22	5,520.55	-963.42	-930.29	1,339.26	1.22	-1.17	3.03	165.94
	NORMAL	5,792.0	4.51	223.38	5,614.18	-969.50	-935.90	1,347.53	1.15	-1.15	1.23	175.18
5/21/2011	NORMAL	5,885.0	4.05	222.33	5,706.92	-974.58	-940.62	1,354.47	0.50	-0.49	-1.13	189.14
	NORMAL	5,979.0	3.16	218.49	5,800.74	-979.06	-944.47	1,360.37	0.98	-0.95	-4.09	193.27
	NORMAL	6,074.0	1.92	215.43	5,895.64	-982.41	-947.02	1,364.55	1.31	-1.31	-3.22	184.71
	NORMAL	6,168.0	1.06	221.86	5,989.61	-984.34	-948.52	1,366.97	0.93	-0.91	6.84	172.20
	NORMAL	6,261.0	0.19	288.22	6,082.60	-984.93	-949.24	1,367.90	1.07	-0.94	71.35	169.97
	NORMAL	6,357.0	0.31	260.41	6,178.60	-984.93	-949.65	1,368.18	0.17	0.12	-28.97	300.21
	NORMAL	6,451.0	0.30	271.26	6,272.60	-984.96	-950.14	1,368.55	0.06	-0.01	11.54	105.22
	NORMAL	6,545.0	0.18	247.13	6,366.60	-985.02	-950.52	1,368.85	0.16	-0.13	-25.67	208.46
	NORMAL	6,639.0	0.26	133.79	6,460.60	-985.22	-950.51	1,368.99	0.39	0.09	-120.57	220.15
	NORMAL	6,733.0	0.36	48.43	6,554.60	-985.17	-950.13	1,368.69	0.45	0.11	-90.81	237.24
	NORMAL	6,827.0	0.44	36.17	6,648.60	-984.69	-949.70	1,368.04	0.12	0.09	-13.04	306.83
	NORMAL	6,922.0	0.12	341.03	6,743.60	-984.30	-949.51	1,367.63	0.40	-0.34	-58.04	194.85
	NORMAL	7,017.0	0.09	67.95	6,838.60	-984.18	-949.48	1,367.52	0.15	-0.03	91.49	142.03
	NORMAL	7,112.0	0.45	78.54	6,933.59	-984.07	-949.04	1,367.14	0.38	0.38	11.15	13.21
5/23/2011	NORMAL	7,207.0	0.53	93.37	7,028.59	-984.02	-948.24	1,366.55	0.16	0.08	15.61	65.32

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 (°)
5/23/2011	NORMAL	7,301.0	0.68	99.52	7,122.59	-984.14	-947.25	1,365.95	0.17	0.16	6.54	26.50
	NORMAL	7,394.0	0.41	320.97	7,215.58	-983.98	-946.92	1,365.60	1.10	-0.29	-148.98	195.37
	NORMAL	7,488.0	0.50	319.47	7,309.58	-983.40	-947.40	1,365.52	0.10	0.10	-1.60	351.71
	NORMAL	7,583.0	0.42	306.65	7,404.58	-982.88	-947.95	1,365.52	0.14	-0.08	-13.49	225.85
	NORMAL	7,677.0	0.62	252.27	7,498.57	-982.83	-948.71	1,366.02	0.54	0.21	-57.85	263.33
	NORMAL	7,772.0	0.55	250.74	7,593.57	-983.14	-949.63	1,366.88	0.08	-0.07	-1.61	191.82
5/24/2011	NORMAL	7,865.0	0.65	229.01	7,686.56	-983.63	-950.45	1,367.80	0.27	0.11	-23.37	282.61
	NORMAL	7,958.0	0.30	283.75	7,779.56	-983.92	-951.08	1,368.45	0.58	-0.38	58.86	152.81
	NORMAL	8,053.0	0.62	267.83	7,874.56	-983.88	-951.84	1,368.94	0.36	0.34	-16.76	330.14
	NORMAL	8,147.0	1.09	272.35	7,968.55	-983.86	-953.24	1,369.91	0.50	0.50	4.81	10.43
	NORMAL	8,242.0	1.35	271.11	8,063.53	-983.80	-955.26	1,371.27	0.28	0.27	-1.31	353.58
	NORMAL	8,336.0	1.49	266.34	8,157.50	-983.86	-957.59	1,372.93	0.19	0.15	-5.07	317.42
	NORMAL	8,383.0	1.76	261.24	8,204.48	-984.01	-958.91	1,373.95	0.65	0.57	-10.85	329.26
	NORMAL	8,443.0	2.10	254.73	8,264.44	-984.44	-960.88	1,375.63	0.67	0.57	-10.85	323.90