

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	RWF 411-35	Wellbore No.	00
Wellbore Legal Name	RWF 411-35	Common Wellbore Name	RWF 411-35
Project	RU 35-06S-094W	Site	RWF 11-35 Pad
Vertical Section Azimuth	264.38 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	9/15/2013	UWI	RWF 411-35
Active datum	KB @5,494.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	9/15/2013	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

5518

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
9/15/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/15/2013	NORMAL	76.0	0.62	75.50	76.00	0.10	0.40	-0.41	0.82	0.82	0.00	75.50
	NORMAL	167.0	2.55	242.84	166.97	-0.70	-0.93	0.99	3.47	2.12	183.89	169.80
	NORMAL	239.0	4.29	257.80	238.84	-2.00	-4.98	5.16	2.70	2.42	20.78	34.75
	NORMAL	329.0	5.67	266.57	328.50	-2.98	-12.71	12.94	1.75	1.53	9.74	33.30
	NORMAL	419.0	6.81	268.81	417.97	-3.35	-22.49	22.71	1.29	1.27	2.49	13.17
9/16/2013	NORMAL	509.0	8.03	272.50	507.22	-3.19	-34.10	34.25	1.45	1.36	4.10	23.17
	NORMAL	600.0	7.47	265.08	597.39	-3.42	-46.35	46.46	1.26	-0.62	-8.15	237.12
	NORMAL	690.0	7.56	262.51	686.61	-4.69	-58.06	58.24	0.39	0.12	-2.86	286.82
	NORMAL	781.0	7.07	266.27	776.87	-5.84	-69.60	69.84	0.77	-0.56	4.13	138.63
	NORMAL	871.0	5.80	265.59	866.30	-6.55	-79.66	79.92	1.41	-1.41	-0.76	183.10
	NORMAL	962.0	5.95	264.33	956.82	-7.37	-88.94	89.23	0.22	0.16	-1.38	318.68
	NORMAL	1,075.0	7.24	265.39	1,069.07	-8.52	-101.86	102.21	1.15	1.14	0.94	5.92
9/17/2013	NORMAL	1,149.0	7.90	266.27	1,142.43	-9.23	-111.59	111.95	0.91	0.89	1.19	10.40
	NORMAL	1,243.0	7.26	264.05	1,235.61	-10.26	-123.94	124.35	0.75	-0.68	-2.36	203.49
	NORMAL	1,338.0	6.20	264.32	1,329.95	-11.39	-135.02	135.48	1.12	-1.12	0.28	178.42
	NORMAL	1,432.0	5.47	262.77	1,423.46	-12.46	-144.51	145.04	0.79	-0.78	-1.65	191.41
	NORMAL	1,526.0	5.72	261.46	1,517.02	-13.72	-153.59	154.19	0.30	0.27	-1.39	332.29
	NORMAL	1,621.0	5.52	262.88	1,611.56	-14.99	-162.81	163.49	0.26	-0.21	1.49	145.89
	NORMAL	1,715.0	5.63	264.21	1,705.11	-16.01	-171.88	172.62	0.18	0.12	1.41	50.25
	NORMAL	1,810.0	5.54	263.39	1,799.66	-17.01	-181.07	181.87	0.13	-0.09	-0.86	221.16

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
9/17/2013	NORMAL	1,903.0	5.25	261.45	1,892.25	-18.16	-189.74	190.60	0.37	-0.31	-2.09	211.21
	NORMAL	1,997.0	5.89	264.79	1,985.81	-19.24	-198.79	199.72	0.76	0.68	3.55	28.53
	NORMAL	2,091.0	6.30	268.26	2,079.28	-19.83	-208.75	209.69	0.59	0.44	3.69	43.68
	NORMAL	2,185.0	6.34	268.33	2,172.71	-20.14	-219.09	220.01	0.04	0.04	0.07	10.94
	NORMAL	2,279.0	6.67	265.51	2,266.10	-20.72	-229.72	230.65	0.49	0.35	-3.00	314.52
	NORMAL	2,374.0	6.78	266.46	2,360.45	-21.50	-240.82	241.77	0.16	0.12	1.00	45.80
	NORMAL	2,469.0	6.79	262.45	2,454.78	-22.58	-251.99	252.99	0.50	0.01	-4.22	269.22
	NORMAL	2,563.0	6.77	265.67	2,548.13	-23.73	-263.02	264.08	0.40	-0.02	3.43	94.61
	NORMAL	2,655.0	6.70	264.84	2,639.49	-24.62	-273.77	274.87	0.13	-0.08	-0.90	233.87
	NORMAL	2,750.0	6.59	264.87	2,733.85	-25.61	-284.72	285.86	0.12	-0.12	0.03	178.21
	NORMAL	2,844.0	6.59	266.66	2,827.23	-26.41	-295.48	296.64	0.22	0.00	1.90	90.89
9/18/2013	NORMAL	2,938.0	5.91	262.81	2,920.67	-27.33	-305.66	306.87	0.85	-0.72	-4.10	209.74
	NORMAL	3,032.0	5.89	261.81	3,014.19	-28.59	-315.08	316.36	0.26	-0.23	-1.06	204.17
	NORMAL	3,126.0	5.73	262.97	3,107.73	-29.83	-324.35	325.71	0.13	0.04	1.23	71.46
	NORMAL	3,220.0	5.62	263.90	3,201.27	-30.90	-333.58	335.00	0.15	-0.12	0.99	140.57
	NORMAL	3,312.0	6.19	262.63	3,292.78	-32.01	-342.98	344.47	0.64	0.62	-1.38	346.46
	NORMAL	3,406.0	6.25	270.79	3,386.23	-32.59	-353.12	354.62	0.94	0.06	8.68	90.18
	NORMAL	3,499.0	6.13	270.61	3,478.68	-32.47	-363.15	364.58	0.13	-0.13	-0.19	189.10
	NORMAL	3,593.0	6.67	271.11	3,572.10	-32.31	-373.63	374.99	0.58	0.57	0.53	6.14
	NORMAL	3,687.0	7.07	271.75	3,665.42	-32.03	-384.87	386.15	0.43	0.43	0.68	11.15
	NORMAL	3,780.0	6.74	273.02	3,757.75	-31.56	-396.04	397.22	0.39	-0.35	1.37	155.80
	NORMAL	3,873.0	6.35	269.75	3,850.14	-31.30	-406.63	407.74	0.58	-0.42	-3.52	222.09
	NORMAL	3,968.0	6.26	266.29	3,944.57	-31.66	-417.05	418.15	0.41	-0.09	-3.64	254.96
	NORMAL	4,060.0	5.43	271.17	4,036.09	-31.89	-426.41	427.48	1.05	-0.90	5.30	151.50
	NORMAL	4,156.0	5.62	273.99	4,131.85	-31.47	-435.64	436.63	0.35	0.20	2.94	56.42
	NORMAL	4,250.0	4.84	275.61	4,225.25	-30.77	-444.18	445.06	0.84	-0.83	1.72	170.09
	NORMAL	4,344.0	4.31	272.61	4,318.95	-30.22	-451.65	452.44	0.62	-0.56	-3.19	202.81
	NORMAL	4,438.0	3.40	270.76	4,412.74	-30.02	-457.97	458.71	0.98	-0.97	-1.97	186.86
	NORMAL	4,532.0	1.21	253.84	4,506.66	-30.26	-461.71	462.45	2.41	-2.33	-18.00	188.93
9/19/2013	NORMAL	4,624.0	1.06	242.41	4,598.64	-30.92	-463.40	464.20	0.29	-0.16	-12.42	230.85
	NORMAL	4,718.0	0.26	198.53	4,692.64	-31.53	-464.24	465.09	0.95	-0.85	-46.68	191.67
	NORMAL	4,812.0	0.62	103.09	4,786.63	-31.85	-463.81	464.70	0.74	0.38	-101.53	242.69
	NORMAL	4,905.0	0.67	101.23	4,879.63	-32.06	-462.79	463.70	0.06	0.05	-2.00	336.35
	NORMAL	4,999.0	0.57	117.08	4,973.62	-32.38	-461.83	462.78	0.21	-0.11	16.86	128.01
	NORMAL	5,093.0	0.60	152.39	5,067.62	-33.03	-461.19	462.20	0.38	0.03	37.56	103.05
	NORMAL	5,186.0	0.71	188.87	5,160.61	-34.03	-461.05	462.17	0.45	0.12	39.23	93.94
	NORMAL	5,281.0	0.82	180.90	5,255.60	-35.30	-461.15	462.39	0.16	0.12	-8.39	311.92
	NORMAL	5,374.0	0.44	214.96	5,348.60	-36.25	-461.37	462.70	0.56	-0.41	36.62	151.59
	NORMAL	5,469.0	0.67	222.88	5,443.60	-36.96	-461.95	463.35	0.25	0.24	8.34	22.43
	NORMAL	5,563.0	0.26	287.56	5,537.59	-37.30	-462.53	463.96	0.64	-0.44	68.81	157.19
9/20/2013	NORMAL	5,657.0	0.64	301.20	5,631.59	-36.96	-463.18	464.58	0.42	0.40	14.51	22.63
	NORMAL	5,750.0	0.31	122.01	5,724.59	-36.83	-463.41	464.79	1.02	-0.35	-192.68	180.26
	NORMAL	5,846.0	0.41	140.01	5,820.59	-37.23	-462.97	464.39	0.16	0.10	18.75	57.75
	NORMAL	5,939.0	0.65	156.81	5,913.58	-37.97	-462.55	464.04	0.30	0.26	18.06	41.51
	NORMAL	6,034.0	0.72	178.65	6,008.58	-39.06	-462.32	463.93	0.28	0.07	22.99	86.09
	NORMAL	6,129.0	0.66	156.99	6,103.57	-40.16	-462.10	463.81	0.28	-0.06	-22.80	246.37
	NORMAL	6,223.0	0.77	177.36	6,197.56	-41.29	-461.86	463.68	0.29	0.12	21.67	77.00
	NORMAL	6,317.0	0.75	226.40	6,291.56	-42.34	-462.27	464.20	0.67	-0.02	52.17	116.17
	NORMAL	6,411.0	0.68	280.58	6,385.55	-42.67	-463.27	465.22	0.70	-0.07	57.64	122.55
	NORMAL	6,504.0	0.70	290.72	6,478.54	-42.36	-464.34	466.26	0.13	0.02	10.90	85.79
	NORMAL	6,598.0	0.98	277.58	6,572.53	-42.05	-465.67	467.55	0.36	0.30	-13.98	318.79
9/21/2013	NORMAL	6,693.0	0.97	267.70	6,667.52	-41.98	-467.28	469.15	0.18	-0.01	-10.40	261.67
	NORMAL	6,788.0	1.07	243.38	6,762.51	-42.41	-468.88	470.78	0.46	0.11	-25.60	270.66
	NORMAL	6,883.0	1.34	249.82	6,857.48	-43.19	-470.71	472.68	0.32	0.28	6.78	29.88
	NORMAL	6,978.0	1.06	249.06	6,952.46	-43.89	-472.58	474.60	0.30	-0.29	-0.80	182.87
	NORMAL	7,073.0	0.73	243.58	7,047.45	-44.47	-473.94	476.02	0.36	-0.35	-5.77	191.81

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
9/21/2013	NORMAL	7,166.0	0.67	240.37	7,140.45	-45.00	-474.94	477.07	0.08	-0.06	-3.45	211.57
	NORMAL	7,260.0	1.00	223.88	7,234.44	-45.87	-475.99	478.19	0.43	0.35	-17.54	315.50
	NORMAL	7,354.0	0.97	210.89	7,328.42	-47.14	-476.97	479.29	0.24	-0.03	-13.82	255.89
	NORMAL	7,448.0	1.23	214.21	7,422.40	-48.66	-477.94	480.41	0.28	0.28	3.53	15.44
	NORMAL	7,543.0	1.87	212.34	7,517.37	-50.81	-479.34	482.02	0.68	0.67	-1.97	354.55
	NORMAL	7,637.0	2.20	210.04	7,611.31	-53.67	-481.07	484.01	0.36	0.35	-2.45	344.95
	NORMAL	7,731.0	2.47	217.57	7,705.23	-56.83	-483.21	486.45	0.43	0.29	8.01	52.45
	NORMAL	7,796.0	2.66	222.78	7,770.17	-59.05	-485.09	488.54	0.46	0.29	8.02	53.45