

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	RWF 911-28D	Wellbore No.	00
Wellbore Legal Name	RWF 911-28D	Common Wellbore Name	RWF 911-28D
Project	RU 21-06S-094W	Site	Clough 2A Pad
Vertical Section Azimuth	183.00 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	11/24/2013	UWI	RWF 911-28D
Active datum	KB @5,297.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	11/24/2013	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

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 (°)
11/24/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/24/2013	NORMAL	146.0	0.61	187.89	146.00	-0.77	-0.11	0.77	0.42	0.42	0.00	187.89
	NORMAL	237.0	2.64	207.93	236.96	-3.10	-1.15	3.16	2.28	2.23	22.02	25.81
11/25/2013	NORMAL	328.0	5.41	194.75	327.72	-9.10	-3.23	9.26	3.19	3.04	-14.48	334.88
	NORMAL	419.0	9.89	183.67	417.90	-21.06	-4.82	21.28	5.16	4.92	-12.18	336.22
	NORMAL	510.0	13.54	181.12	506.99	-39.51	-5.53	39.75	4.05	4.01	-2.80	350.67
	NORMAL	601.0	15.30	182.27	595.12	-62.16	-6.22	62.40	1.96	1.93	1.26	9.80
	NORMAL	692.0	16.79	182.00	682.57	-87.30	-7.15	87.55	1.64	1.64	-0.30	357.00
	NORMAL	782.0	18.59	181.56	768.31	-114.63	-7.99	114.89	2.01	2.00	-0.49	355.54
	NORMAL	873.0	15.87	177.52	855.22	-141.57	-7.85	141.78	3.26	-2.99	-4.44	201.83
	NORMAL	963.0	13.67	178.84	942.24	-164.50	-7.10	164.64	2.47	-2.44	1.47	171.94
	NORMAL	1,058.0	13.85	189.03	1,034.53	-186.95	-8.66	187.15	2.56	0.19	10.73	90.71
	NORMAL	1,154.0	14.95	189.82	1,127.51	-210.50	-12.58	210.87	1.16	1.15	0.82	10.51
	NORMAL	1,249.0	15.87	184.20	1,219.10	-235.53	-15.62	236.03	1.85	0.97	-5.92	298.91
	NORMAL	1,345.0	16.44	178.40	1,311.32	-262.20	-16.20	262.69	1.78	0.59	-6.04	286.65
	NORMAL	1,440.0	14.86	176.11	1,402.79	-287.80	-15.00	288.19	1.79	-1.66	-2.41	200.26
	NORMAL	1,536.0	12.00	182.71	1,496.16	-310.05	-14.63	310.39	3.38	-2.98	6.88	154.99
	NORMAL	1,631.0	13.01	182.62	1,588.91	-330.60	-15.59	330.96	1.06	1.06	-0.09	358.85
	NORMAL	1,717.0	14.02	181.91	1,672.53	-350.68	-16.38	351.06	1.19	1.17	-0.83	350.33
11/27/2013	NORMAL	1,837.0	15.03	180.95	1,788.69	-380.77	-17.12	381.14	0.87	0.84	-0.80	346.13
	NORMAL	1,932.0	14.07	182.35	1,880.64	-404.62	-17.80	405.00	1.08	-1.01	1.47	160.56

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)	Buld Rate (°/100usft)	Turn (°/100usft)	Tface (°)
11/27/2013	NORMAL	2,027.0	13.41	179.63	1,972.92	-427.18	-18.20	427.54	0.97	-0.69	-2.86	223.07
	NORMAL	2,122.0	13.36	181.39	2,065.34	-449.17	-18.40	449.51	0.43	-0.05	1.85	97.85
	NORMAL	2,218.0	13.49	183.67	2,158.72	-471.43	-19.38	471.80	0.57	0.14	2.38	77.31
	NORMAL	2,314.0	13.41	186.92	2,252.09	-493.65	-21.44	494.10	0.79	-0.08	3.39	97.62
11/28/2013	NORMAL	2,410.0	13.58	185.78	2,345.44	-515.92	-23.92	516.46	0.33	0.18	-1.19	302.02
	NORMAL	2,504.0	13.80	184.90	2,436.77	-538.07	-25.99	538.69	0.32	0.23	-0.94	316.14
	NORMAL	2,599.0	14.15	184.38	2,528.96	-560.94	-27.84	561.62	0.39	0.37	-0.55	340.01
	NORMAL	2,693.0	14.11	183.23	2,620.11	-583.83	-29.36	584.57	0.30	-0.04	-1.22	261.33
	NORMAL	2,789.0	13.80	184.20	2,713.28	-606.93	-30.86	607.72	0.40	-0.32	1.01	143.43
	NORMAL	2,884.0	13.63	182.09	2,805.57	-629.42	-32.10	630.24	0.56	-0.18	-2.22	250.21
	NORMAL	2,980.0	13.67	183.41	2,898.86	-652.05	-33.19	652.89	0.33	0.04	1.38	83.32
	NORMAL	3,075.0	14.46	188.42	2,991.01	-674.99	-35.59	675.92	1.53	0.83	5.27	59.47
	NORMAL	3,170.0	13.98	187.54	3,083.10	-698.10	-38.83	699.17	0.55	-0.51	-0.93	203.82
	NORMAL	3,266.0	13.71	187.10	3,176.31	-720.88	-41.76	722.08	0.30	-0.28	-0.46	201.09
	NORMAL	3,361.0	15.25	184.64	3,268.29	-744.51	-44.16	745.80	1.75	1.62	-2.59	337.03
	NORMAL	3,456.0	15.39	183.23	3,359.92	-769.55	-45.88	770.89	0.42	0.15	-1.48	289.92
	NORMAL	3,552.0	15.65	182.27	3,452.42	-795.20	-47.12	796.58	0.38	0.27	-1.00	314.88
	NORMAL	3,648.0	15.30	181.91	3,544.94	-820.80	-48.05	822.19	0.38	-0.36	-0.38	195.17
	NORMAL	3,743.0	15.56	182.27	3,636.51	-846.06	-48.97	847.46	0.29	0.27	0.38	20.40
	NORMAL	3,838.0	15.60	181.21	3,728.02	-871.56	-49.75	872.97	0.30	0.04	-1.12	277.49
	NORMAL	3,935.0	14.95	180.68	3,821.60	-897.11	-50.17	898.51	0.69	-0.67	-0.55	191.87
	NORMAL	4,030.0	13.54	182.44	3,913.67	-920.48	-50.79	921.87	1.55	-1.48	1.85	163.78
	NORMAL	4,125.0	13.41	181.39	4,006.06	-942.60	-51.53	944.01	0.29	-0.14	-1.11	241.51
	NORMAL	4,220.0	13.06	181.56	4,098.53	-964.34	-52.09	965.75	0.37	-0.37	0.18	173.74
	NORMAL	4,316.0	13.76	184.29	4,191.92	-986.57	-53.24	988.01	0.98	0.73	2.84	43.46
	NORMAL	4,411.0	14.24	184.55	4,284.10	-1,009.49	-55.01	1,010.98	0.51	0.51	0.27	7.59
	NORMAL	4,507.0	14.29	184.73	4,377.14	-1,033.08	-56.93	1,034.63	0.07	0.05	0.19	41.66
	NORMAL	4,603.0	14.64	185.78	4,470.09	-1,056.94	-59.12	1,058.59	0.46	0.36	1.09	37.36
	NORMAL	4,698.0	14.20	185.17	4,562.10	-1,080.49	-61.38	1,082.22	0.49	-0.46	-0.64	188.75
	NORMAL	4,794.0	13.93	181.47	4,655.22	-1,103.77	-62.74	1,105.54	0.98	-0.28	-3.85	251.50
	NORMAL	4,888.0	12.92	183.23	4,746.65	-1,125.57	-63.62	1,127.36	1.16	-1.07	1.87	158.83
11/29/2013	NORMAL	4,984.0	13.01	180.68	4,840.21	-1,147.08	-64.36	1,148.89	0.60	0.09	-2.66	277.70
	NORMAL	5,079.0	13.98	180.51	4,932.58	-1,169.26	-64.59	1,171.04	1.02	1.02	-0.18	357.58
	NORMAL	5,175.0	14.24	180.07	5,025.69	-1,192.66	-64.70	1,194.42	0.29	0.27	-0.46	337.37
	NORMAL	5,270.0	15.34	183.50	5,117.54	-1,216.89	-65.48	1,218.65	1.48	1.16	3.61	40.19
	NORMAL	5,365.0	15.30	184.90	5,209.16	-1,241.92	-67.32	1,243.74	0.39	-0.04	1.47	96.85
	NORMAL	5,460.0	15.52	185.96	5,300.75	-1,267.05	-69.71	1,268.96	0.38	0.23	1.12	52.52
	NORMAL	5,555.0	14.95	184.99	5,392.41	-1,291.90	-72.10	1,293.90	0.66	-0.60	-1.02	203.63
	NORMAL	5,651.0	14.86	181.39	5,485.18	-1,316.54	-73.47	1,318.58	0.97	-0.09	-3.75	262.71
	NORMAL	5,746.0	14.86	181.74	5,577.00	-1,340.90	-74.14	1,342.94	0.09	0.00	0.37	80.17
	NORMAL	5,842.0	14.95	182.09	5,669.77	-1,365.58	-74.96	1,367.63	0.13	0.09	0.36	45.18
	NORMAL	5,937.0	14.68	180.68	5,761.62	-1,389.86	-75.55	1,391.91	0.47	-0.28	-1.48	232.49
	NORMAL	6,033.0	14.73	183.15	5,854.47	-1,414.21	-76.37	1,416.27	0.66	0.05	2.57	86.64
11/30/2013	NORMAL	6,128.0	14.15	183.50	5,946.47	-1,437.86	-77.74	1,439.96	0.62	-0.61	0.37	171.61
	NORMAL	6,223.0	13.63	185.25	6,038.69	-1,460.60	-79.47	1,462.75	0.70	-0.55	1.84	141.91
	NORMAL	6,319.0	14.11	186.04	6,131.89	-1,483.50	-81.74	1,485.74	0.54	0.50	0.82	21.92
	NORMAL	6,415.0	14.33	187.19	6,224.95	-1,506.92	-84.46	1,509.28	0.37	0.23	1.20	52.65
	NORMAL	6,511.0	14.51	187.19	6,317.93	-1,530.64	-87.45	1,533.12	0.19	0.19	0.00	0.00
12/1/2013	NORMAL	6,607.0	14.15	185.69	6,410.94	-1,554.25	-90.12	1,556.83	0.54	-0.38	-1.56	225.16
	NORMAL	6,702.0	13.58	184.99	6,503.17	-1,576.91	-92.24	1,579.58	0.63	-0.60	-0.74	196.06
	NORMAL	6,798.0	12.57	182.44	6,596.68	-1,598.58	-93.67	1,601.29	1.21	-1.05	-2.66	208.50
	NORMAL	6,893.0	11.78	181.30	6,689.55	-1,618.60	-94.33	1,621.32	0.87	-0.83	-1.20	196.37
	NORMAL	6,988.0	10.55	182.62	6,782.75	-1,636.99	-94.94	1,639.71	1.32	-1.29	1.39	168.91
	NORMAL	7,084.0	9.28	182.53	6,877.31	-1,653.50	-95.69	1,656.24	1.32	-1.32	-0.09	180.65
	NORMAL	7,180.0	8.26	180.95	6,972.19	-1,668.13	-96.14	1,670.87	1.09	-1.06	-1.65	192.51
	NORMAL	7,275.0	6.90	179.81	7,066.36	-1,680.66	-96.24	1,683.39	1.44	-1.43	-1.20	185.74

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (")	Azi. (")	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (")
12/1/2013	NORMAL	7,370.0	5.50	172.25	7,160.80	-1,690.87	-95.61	1,693.56	1.70	-1.47	-7.96	206.53
12/2/2013	NORMAL	7,466.0	3.69	167.68	7,256.49	-1,698.45	-94.33	1,701.06	1.92	-1.89	-4.76	189.16
	NORMAL	7,561.0	2.42	164.60	7,351.35	-1,703.37	-93.14	1,705.91	1.35	-1.34	-3.24	185.83
	NORMAL	7,656.0	1.45	176.64	7,446.30	-1,706.51	-92.54	1,709.01	1.10	-1.02	12.67	163.20
	NORMAL	7,752.0	0.31	58.95	7,542.29	-1,707.58	-92.24	1,710.07	1.68	-1.19	-122.59	189.77
	NORMAL	7,847.0	0.44	63.35	7,637.28	-1,707.29	-91.70	1,709.75	0.14	0.14	4.63	14.70
	NORMAL	7,943.0	0.48	75.57	7,733.28	-1,707.02	-90.98	1,709.45	0.11	0.04	12.73	74.00
	NORMAL	8,038.0	0.40	66.60	7,828.28	-1,706.79	-90.29	1,709.18	0.11	-0.08	-9.44	216.30
	NORMAL	8,134.0	0.09	340.03	7,924.28	-1,706.59	-90.01	1,708.96	0.42	-0.32	-90.18	192.83
	NORMAL	8,230.0	0.09	277.80	8,020.28	-1,706.51	-90.11	1,708.88	0.10	0.00	-64.82	238.89
	NORMAL	8,325.0	0.40	240.10	8,115.28	-1,706.66	-90.47	1,709.06	0.35	0.33	-39.68	312.80
	NORMAL	8,420.0	0.26	198.35	8,210.27	-1,707.03	-90.82	1,709.45	0.28	-0.15	-43.95	220.04
	NORMAL	8,516.0	0.57	133.57	8,306.27	-1,707.57	-90.55	1,709.97	0.54	0.32	-67.48	268.10
12/3/2013	NORMAL	8,611.0	0.66	154.23	8,401.27	-1,708.39	-89.97	1,710.75	0.25	0.09	21.75	78.46
	NORMAL	8,706.0	0.97	167.50	8,496.26	-1,709.66	-89.55	1,712.01	0.38	0.33	13.97	38.08
	NORMAL	8,802.0	1.23	176.47	8,592.24	-1,711.49	-89.32	1,713.82	0.32	0.27	9.34	38.06
	NORMAL	8,897.0	1.41	179.19	8,687.21	-1,713.67	-89.24	1,715.99	0.20	0.19	2.86	20.56
	NORMAL	8,953.0	1.41	179.19	8,743.20	-1,715.05	-89.22	1,717.37	0.00	0.00	0.00	0.00