

I General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 513-29	Wellbore No.	OH
Well Name	RWF 513-29	Common Name	RWF 513-29
Project	RU 29-06S-094W	Site	RWF 14-29 Pad
Vertical Section Azimuth	359.45 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	3/19/2013	UWI	RWF 513-29
Active Datum	KB @5,445.2ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	3/19/2013	Ended	
Tool Name	MWD	Engineer	

2.1.1 Tie On Point

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)
		47.02			

2.1.2 Survey Stations

6097

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
3/18/2013	NORMAL	101.0	1.41	47.02	100.99	0.85	0.91	0.84	1.40	1.40	0.00	47.02
	NORMAL	132.0	1.41	32.96	131.98	1.43	1.40	1.41	1.11	0.00	-45.35	262.97
	NORMAL	163.0	2.38	23.99	162.96	2.34	1.86	2.32	3.26	3.13	-28.94	338.48
	NORMAL	194.0	4.22	34.89	193.91	3.86	2.78	3.83	6.24	5.94	35.16	24.33
	NORMAL	224.0	5.98	31.46	223.79	6.10	4.23	6.06	5.95	5.87	-11.43	348.46
	NORMAL	254.0	6.16	35.24	253.62	8.75	5.97	8.69	1.46	0.60	12.60	67.64
	NORMAL	285.0	7.30	24.35	284.41	11.90	7.74	11.82	5.50	3.68	-35.13	306.28
	NORMAL	316.0	8.09	22.50	315.13	15.71	9.39	15.62	2.67	2.55	-5.97	341.67
	NORMAL	347.0	8.89	17.23	345.79	20.01	10.93	19.91	3.60	2.58	-17.00	313.17
	NORMAL	388.0	11.08	4.29	386.17	26.97	12.17	26.85	7.62	5.34	-31.56	307.87
	NORMAL	419.0	11.61	1.13	416.57	33.06	12.45	32.94	2.63	1.71	-10.19	308.89
	NORMAL	450.0	12.05	0.86	446.91	39.41	12.56	39.29	1.43	1.42	-0.87	352.70
3/19/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	3/19/2013	Ended	
Tool Name	MWD	Engineer	

2.2.1 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

2.2.2 Survey Stations

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
3/19/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/19/2013	NORMAL	101.0	1.41	47.02	100.99	0.85	0.91	0.84	1.40	1.40	0.00	47.02
	NORMAL	132.0	1.41	32.96	131.98	1.43	1.40	1.41	1.11	0.00	-45.35	262.97
	NORMAL	163.0	2.38	23.99	162.96	2.34	1.86	2.32	3.26	3.13	-28.94	338.48
	NORMAL	194.0	4.22	34.89	193.91	3.86	2.78	3.83	6.24	5.94	35.16	24.33
	NORMAL	224.0	5.89	31.46	223.79	6.08	4.21	6.04	5.65	5.57	-11.43	348.03
	NORMAL	254.0	6.16	35.24	253.63	8.71	5.95	8.65	1.60	0.90	12.60	57.65
	NORMAL	285.0	7.30	24.35	284.41	11.86	7.72	11.78	5.50	3.68	-35.13	306.28
	NORMAL	316.0	8.09	22.50	315.14	15.67	9.36	15.58	2.67	2.55	-5.97	341.67
	NORMAL	347.0	8.89	17.23	345.80	19.97	10.91	19.87	3.60	2.58	-17.00	313.17
	NORMAL	388.0	11.08	4.29	386.18	26.93	12.14	26.81	7.62	5.34	-31.56	307.81
	NORMAL	419.0	11.61	1.13	416.57	33.02	12.43	32.90	2.63	1.71	-10.19	308.89
	NORMAL	511.0	12.66	3.76	507.44	45.91	12.80	45.79	42.20	42.20	0.00	3.76
3/20/2013	NORMAL	602.0	16.80	9.30	595.44	68.85	15.58	68.70	4.80	4.55	6.09	21.49
	NORMAL	693.0	21.98	7.28	681.25	98.74	19.87	98.55	5.74	5.69	-2.22	351.67
	NORMAL	785.0	25.15	0.42	765.58	135.39	22.19	135.17	4.55	3.45	-7.46	315.95
	NORMAL	877.0	25.94	357.70	848.59	175.04	21.53	174.83	1.54	0.86	-2.96	302.73
	NORMAL	969.0	23.83	356.20	932.04	213.70	19.49	213.50	2.39	-2.29	-1.63	195.98
	NORMAL	1,064.0	24.53	356.91	1,018.71	252.54	17.16	252.36	0.80	0.74	0.75	22.88
	NORMAL	1,140.0	26.03	356.55	1,087.43	284.94	15.30	284.78	1.98	1.97	-0.47	353.99
3/21/2013	NORMAL	1,260.0	26.33	347.13	1,195.16	337.19	7.79	337.10	3.47	0.25	-7.85	269.89
	NORMAL	1,356.0	25.36	1.04	1,281.64	378.54	3.41	378.49	6.38	-1.01	14.49	105.3'
	NORMAL	1,451.0	25.67	0.69	1,367.38	419.46	4.03	419.40	0.36	0.33	-0.37	333.9'
	NORMAL	1,546.0	24.40	3.67	1,453.45	459.62	5.53	459.54	1.88	-1.34	3.14	136.55
	NORMAL	1,641.0	24.22	4.55	1,540.03	498.62	8.34	498.52	0.43	-0.19	0.93	116.82
	NORMAL	1,737.0	23.69	2.27	1,627.76	537.53	10.66	537.40	1.11	-0.55	-2.38	239.17
	NORMAL	1,832.0	23.96	2.79	1,714.67	575.86	12.36	575.72	0.36	0.28	0.55	38.12
	NORMAL	1,927.0	23.30	358.93	1,801.71	613.92	12.95	613.76	1.77	-0.69	-4.06	245.14
	NORMAL	2,023.0	23.65	359.72	1,889.76	652.15	12.50	652.00	0.49	0.36	0.82	42.32
	NORMAL	2,118.0	23.43	357.96	1,976.86	690.09	11.73	689.94	0.78	-0.23	-1.85	251.82
	NORMAL	2,213.0	23.34	357.35	2,064.05	727.76	10.19	727.63	0.27	-0.09	-0.64	249.33
3/22/2013	NORMAL	2,308.0	23.39	356.38	2,151.26	765.38	8.13	765.26	0.41	0.05	-1.02	276.96
	NORMAL	2,404.0	24.61	359.63	2,238.96	804.39	6.80	804.28	1.87	1.27	3.39	48.79
	NORMAL	2,499.0	24.57	0.25	2,325.35	843.92	6.75	843.81	0.27	-0.04	0.65	99.09
	NORMAL	2,594.0	24.70	358.84	2,411.70	883.51	6.44	883.41	0.63	0.14	-1.48	281.83
	NORMAL	2,690.0	23.78	1.48	2,499.24	922.92	6.53	922.81	1.48	-0.96	2.75	131.52
	NORMAL	2,785.0	24.18	1.65	2,586.04	961.51	7.59	961.40	0.43	0.42	0.18	9.88
	NORMAL	2,880.0	24.61	0.25	2,672.56	1,000.74	8.23	1,000.62	0.76	0.45	-1.47	306.00
	NORMAL	2,976.0	23.03	358.58	2,760.38	1,039.51	7.86	1,039.38	1.79	-1.65	-1.74	202.35
	NORMAL	3,071.0	23.12	357.96	2,847.78	1,076.72	6.73	1,076.61	0.27	0.09	-0.65	290.04
	NORMAL	3,165.0	22.37	1.92	2,934.47	1,113.05	6.67	1,112.93	1.81	-0.80	4.21	117.92
	NORMAL	3,261.0	23.03	1.74	3,023.04	1,150.07	7.86	1,149.95	0.69	0.69	-0.19	353.9'
	NORMAL	3,356.0	24.35	359.37	3,110.03	1,188.23	8.20	1,188.10	1.71	1.39	-2.49	323.10
	NORMAL	3,451.0	24.26	358.22	3,196.61	1,227.32	7.38	1,227.20	0.51	-0.09	-1.21	258.7'
	NORMAL	3,547.0	24.75	356.99	3,283.97	1,267.11	5.72	1,266.99	0.74	0.51	-1.28	313.28
	NORMAL	3,642.0	24.48	356.03	3,370.33	1,306.60	3.31	1,306.51	0.51	-0.28	-1.01	235.54
	NORMAL	3,738.0	23.52	359.02	3,458.04	1,345.60	1.60	1,345.52	1.61	-1.00	3.11	129.65
	NORMAL	3,833.0	23.12	0.95	3,545.28	1,383.20	1.59	1,383.12	0.91	-0.42	2.03	118.52
	NORMAL	3,928.0	22.99	0.77	3,632.69	1,420.40	2.15	1,420.31	0.16	-0.14	-0.19	208.36
	NORMAL	4,024.0	22.73	359.37	3,721.15	1,457.69	2.20	1,457.60	0.63	-0.27	-1.46	243.8'

2.2.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
3/22/2013	NORMAL	4,119.0	22.33	359.02	3,808.90	1,494.09	1.68	1,494.00	0.44	-0.42	-0.37	198.37
	NORMAL	4,214.0	22.29	358.49	3,896.79	1,530.14	0.90	1,530.06	0.22	-0.04	-0.56	258.51
	NORMAL	4,309.0	22.15	356.55	3,984.73	1,566.03	-0.65	1,565.96	0.79	-0.15	-2.04	258.30
3/23/2013	NORMAL	4,404.0	21.93	1.30	4,072.80	1,601.65	-1.33	1,601.58	1.89	-0.23	5.00	99.23
	NORMAL	4,500.0	21.58	1.74	4,161.96	1,637.21	-0.38	1,637.14	0.40	-0.36	0.46	155.22
	NORMAL	4,595.0	20.88	1.13	4,250.51	1,671.60	0.48	1,671.52	0.77	-0.74	-0.64	197.23
	NORMAL	4,690.0	19.47	359.45	4,339.68	1,704.36	0.66	1,704.28	1.60	-1.48	-1.77	201.55
	NORMAL	4,785.0	19.47	359.81	4,429.25	1,736.03	0.46	1,735.94	0.13	0.00	0.38	90.17
	NORMAL	4,881.0	17.27	0.77	4,520.35	1,766.28	0.60	1,766.19	2.31	-2.29	1.00	172.62
	NORMAL	4,976.0	14.64	359.72	4,611.69	1,792.39	0.73	1,792.30	2.78	-2.77	-1.11	185.76
	NORMAL	5,071.0	14.07	0.69	4,703.72	1,815.94	0.81	1,815.85	0.65	-0.60	1.02	157.59
	NORMAL	5,166.0	11.74	359.81	4,796.31	1,837.16	0.91	1,837.06	2.46	-2.45	-0.93	184.39
	NORMAL	5,262.0	9.36	0.77	4,890.68	1,854.73	0.99	1,854.64	2.49	-2.48	1.00	176.25
	NORMAL	5,357.0	8.35	1.30	4,984.55	1,869.35	1.25	1,869.25	1.07	-1.06	0.56	175.64
	NORMAL	5,452.0	6.77	3.59	5,078.72	1,881.84	1.75	1,881.73	1.69	-1.66	2.41	170.34
3/24/2013	NORMAL	5,547.0	4.26	7.45	5,173.27	1,890.93	2.56	1,890.81	2.67	-2.64	4.06	173.5'
	NORMAL	5,642.0	4.18	2.88	5,268.02	1,897.88	3.19	1,897.76	0.36	-0.08	-4.81	254.35
	NORMAL	5,737.0	1.93	25.56	5,362.88	1,902.78	4.06	1,902.66	2.64	-2.37	23.87	162.76
	NORMAL	5,833.0	2.07	24.50	5,458.82	1,905.82	5.48	1,905.68	0.15	0.15	-1.10	344.67
	NORMAL	5,928.0	0.83	357.96	5,553.79	1,908.07	6.16	1,907.92	1.45	-1.31	-27.94	195.6'
	NORMAL	6,023.0	0.66	335.37	5,648.78	1,909.25	5.91	1,909.11	0.35	-0.18	-23.78	228.97
	NORMAL	6,118.0	0.70	358.40	5,743.77	1,910.33	5.67	1,910.19	0.29	0.04	24.24	93.30
	NORMAL	6,214.0	0.53	341.26	5,839.77	1,911.34	5.51	1,911.20	0.26	-0.18	-17.85	218.9'
	NORMAL	6,309.0	0.44	334.85	5,934.77	1,912.08	5.21	1,911.95	0.11	-0.09	-6.75	207.9'
	NORMAL	6,404.0	0.70	354.80	6,029.76	1,912.99	5.00	1,912.86	0.34	0.27	21.00	47.6'
3/25/2013	NORMAL	6,499.0	0.35	151.59	6,124.76	1,913.31	5.09	1,913.18	1.09	-0.37	165.04	172.3'
	NORMAL	6,595.0	0.57	183.06	6,220.76	1,912.58	5.20	1,912.44	0.34	0.23	32.78	65.4'
	NORMAL	6,690.0	0.88	196.51	6,315.75	1,911.41	4.97	1,911.27	0.37	0.33	14.16	35.60
	NORMAL	6,785.0	1.27	201.08	6,410.73	1,909.73	4.38	1,909.60	0.42	0.41	4.81	14.66
	NORMAL	6,880.0	0.66	308.30	6,505.72	1,909.08	3.58	1,908.96	1.68	-0.64	112.86	156.72
	NORMAL	6,976.0	0.57	344.43	6,601.72	1,909.89	3.01	1,909.77	0.41	-0.09	37.64	120.7'
	NORMAL	7,071.0	1.01	143.16	6,696.71	1,909.67	3.39	1,909.55	1.64	0.46	167.08	166.37
	NORMAL	7,166.0	1.23	163.81	6,791.70	1,908.02	4.18	1,907.89	0.48	0.23	21.74	71.99
	NORMAL	7,262.0	0.26	226.30	6,887.69	1,906.88	4.31	1,906.75	1.18	-1.01	65.09	168.26
	NORMAL	7,357.0	0.48	6.05	6,982.69	1,907.13	4.19	1,907.00	0.74	0.23	147.11	153.66
3/26/2013	NORMAL	7,452.0	0.26	47.71	7,077.69	1,907.67	4.39	1,907.54	0.35	-0.23	43.85	148.83
	NORMAL	7,547.0	0.53	26.26	7,172.68	1,908.21	4.75	1,908.08	0.32	0.28	-22.58	320.28
	NORMAL	7,643.0	0.31	344.16	7,268.68	1,908.86	4.87	1,908.72	0.38	-0.23	-43.85	214.7'
	NORMAL	7,738.0	0.44	6.13	7,363.68	1,909.47	4.84	1,909.33	0.20	0.14	23.13	59.22
	NORMAL	7,834.0	0.35	352.34	7,459.68	1,910.12	4.84	1,909.99	0.14	-0.09	-14.36	219.8'
	NORMAL	7,929.0	0.22	74.87	7,554.68	1,910.46	4.98	1,910.32	0.41	-0.14	86.87	145.84
	NORMAL	8,024.0	0.61	154.49	7,649.67	1,910.05	5.37	1,909.91	0.64	0.41	83.81	100.40
	NORMAL	8,119.0	0.66	158.19	7,744.67	1,909.09	5.79	1,908.94	0.07	0.05	3.89	41.22
	NORMAL	8,215.0	0.83	149.75	7,840.66	1,907.97	6.35	1,907.82	0.21	0.18	-8.79	322.86
	NORMAL	8,280.0	1.10	147.38	7,905.65	1,907.04	6.92	1,906.89	0.42	0.42	-3.65	350.40
3/27/2013	NORMAL	8,325.0	1.10	147.38	7,950.64	1,906.31	7.39	1,906.15	0.00	0.00	0.00	0.00