

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	GM 23-13	Wellbore No.	00
Wellbore Legal Name	GM 23-13	Common Wellbore Name	GM 23-13
Project	GV 12-07S-096W	Site	GM 24-12 Pad
Vertical Section Azimuth	173.24 (°)	North reference	
Origin N/S		Origin EW	
Spud date	6/6/2014	UWI	GM 23-13
Active datum	KB @5,165.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	6/6/2014	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 (°)
6/6/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/6/2014	NORMAL	75.0	0.09	193.10	75.00	-0.06	-0.01	0.06	0.12	0.12	0.00	193.10
	NORMAL	105.0	0.70	187.56	105.00	-0.26	-0.04	0.26	2.03	2.03	-18.47	353.64
	NORMAL	135.0	1.32	181.14	134.99	-0.79	-0.07	0.77	2.10	2.07	-21.40	346.44
	NORMAL	165.0	1.94	185.10	164.98	-1.64	-0.13	1.61	2.10	2.07	13.20	12.28
	NORMAL	195.0	3.08	176.31	194.95	-2.95	-0.12	2.92	4.00	3.80	-29.30	336.92
	NORMAL	225.0	4.57	174.55	224.89	-4.94	0.05	4.92	4.98	4.97	-5.87	354.62
	NORMAL	256.0	5.37	177.10	255.77	-7.62	0.24	7.60	2.68	2.58	8.23	16.71
	NORMAL	286.0	6.86	172.71	285.60	-10.80	0.54	10.79	5.20	4.97	-14.63	340.38
	NORMAL	317.0	8.18	175.17	316.33	-14.84	0.96	14.85	4.38	4.26	7.94	14.93
	NORMAL	347.0	8.80	170.42	346.00	-19.23	1.52	19.27	3.12	2.07	-15.83	309.11
6/7/2014	NORMAL	378.0	9.50	163.74	376.61	-24.02	2.63	24.16	4.10	2.26	-21.55	300.06
	NORMAL	408.0	10.21	165.50	406.16	-28.97	3.99	29.24	2.57	2.37	5.87	23.86
	NORMAL	438.0	10.73	170.16	435.67	-34.30	5.13	34.66	3.31	1.73	15.53	60.75
	NORMAL	468.0	12.05	170.77	465.07	-40.14	6.11	40.58	4.42	4.40	2.03	5.51
	NORMAL	499.0	13.64	174.99	495.30	-46.98	6.95	47.47	5.95	5.13	13.61	32.61
	NORMAL	529.0	15.13	173.06	524.36	-54.39	7.73	54.92	5.22	4.97	-6.43	341.22
	NORMAL	559.0	16.01	175.34	553.26	-62.40	8.54	62.97	3.57	2.93	7.60	35.92
	NORMAL	590.0	17.07	172.09	582.97	-71.16	9.51	71.79	4.54	3.42	-10.48	317.32
	NORMAL	620.0	18.12	172.35	611.57	-80.15	10.74	80.86	3.51	3.50	0.87	4.40
	NORMAL	651.0	19.62	174.02	640.90	-90.10	11.92	90.88	5.14	4.84	5.39	20.59

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 (°)
6/7/2014	NORMAL	681.0	20.85	170.68	669.05	-100.38	13.31	101.25	5.62	4.10	-11.13	315.22
	NORMAL	712.0	21.47	170.16	697.96	-111.42	15.18	112.43	2.09	2.00	-1.68	342.91
	NORMAL	742.0	22.35	170.68	725.79	-122.45	17.04	123.61	3.00	2.93	1.73	12.68
	NORMAL	773.0	23.40	171.83	754.36	-134.36	18.87	135.65	3.68	3.39	3.71	23.59
	NORMAL	803.0	24.11	172.62	781.81	-146.34	20.50	147.73	2.59	2.37	2.63	24.50
	NORMAL	832.0	25.69	173.94	808.12	-158.46	21.93	159.94	5.78	5.45	4.55	19.98
	NORMAL	862.0	26.66	174.73	835.04	-171.63	23.23	173.17	3.44	3.23	2.63	20.12
	NORMAL	893.0	27.98	174.73	862.58	-185.80	24.54	187.40	4.26	4.26	0.00	0.00
	NORMAL	923.0	29.30	173.76	888.91	-200.11	25.98	201.77	4.66	4.40	-3.23	340.17
	NORMAL	953.0	30.44	173.50	914.93	-214.95	27.64	216.71	3.82	3.80	-0.87	353.41
	NORMAL	984.0	32.02	174.02	941.43	-230.93	29.39	232.78	5.17	5.10	1.68	9.91
	NORMAL	1,058.0	33.78	173.96	1,003.56	-270.90	33.59	272.97	2.38	2.38	-0.08	358.91
	NORMAL	1,153.0	34.91	173.20	1,082.00	-324.16	39.59	326.57	1.27	1.19	-0.80	338.91
	NORMAL	1,247.0	34.17	174.27	1,159.43	-377.14	45.41	379.86	1.02	-0.79	1.14	141.09
	NORMAL	1,341.0	35.79	173.97	1,236.45	-430.74	50.94	433.74	1.73	1.72	-0.32	353.82
	NORMAL	1,345.0	35.55	175.14	1,239.70	-433.06	51.16	436.07	18.08	-6.00	29.25	109.86
6/8/2014	NORMAL	1,451.0	35.78	175.40	1,325.81	-494.65	56.25	497.84	0.26	0.22	0.25	33.49
	NORMAL	1,545.0	34.68	172.68	1,402.60	-548.57	61.87	552.04	2.04	-1.17	-2.89	233.86
	NORMAL	1,640.0	33.14	171.18	1,481.44	-601.05	69.29	605.02	1.84	-1.62	-1.58	207.90
	NORMAL	1,734.0	31.43	169.86	1,560.91	-650.57	77.55	655.17	1.97	-1.82	-1.40	201.85
	NORMAL	1,828.0	30.59	168.90	1,641.47	-698.16	86.47	703.49	1.04	-0.89	-1.02	210.08
	NORMAL	1,923.0	29.58	169.95	1,723.67	-744.97	95.21	751.00	1.20	-1.06	1.11	152.93
	NORMAL	2,017.0	30.86	171.80	1,804.90	-791.68	102.70	798.27	1.68	1.36	1.97	36.84
	NORMAL	2,111.0	32.57	173.29	1,884.86	-840.68	109.09	847.68	2.00	1.82	1.59	25.25
	NORMAL	2,205.0	34.42	175.14	1,963.25	-892.28	114.30	899.53	2.25	1.97	1.97	29.67
	NORMAL	2,299.0	34.33	174.35	2,040.83	-945.13	119.16	952.59	0.48	-0.10	-0.84	258.27
	NORMAL	2,393.0	34.07	174.08	2,118.58	-997.70	124.49	1,005.42	0.32	-0.28	-0.29	210.16
	NORMAL	2,488.0	34.24	173.91	2,197.19	-1,050.74	130.07	1,058.75	0.21	0.18	-0.18	330.62
	NORMAL	2,582.0	34.64	172.68	2,274.72	-1,103.54	136.28	1,111.91	0.85	0.43	-1.31	299.39
6/9/2014	NORMAL	2,676.0	35.38	171.53	2,351.71	-1,156.95	143.69	1,165.82	1.05	0.79	-1.22	317.81
	NORMAL	2,771.0	33.41	170.48	2,430.10	-1,209.96	152.07	1,219.44	2.17	-2.07	-1.11	196.32
	NORMAL	2,865.0	33.67	169.78	2,508.45	-1,261.12	160.97	1,271.30	0.50	0.28	-0.74	303.62
	NORMAL	2,959.0	32.53	170.92	2,587.19	-1,311.73	169.58	1,322.57	1.38	-1.21	1.21	151.84
	NORMAL	3,054.0	30.15	172.06	2,668.33	-1,360.58	176.91	1,371.95	2.58	-2.51	1.20	166.50
	NORMAL	3,148.0	28.44	170.48	2,750.30	-1,406.04	183.87	1,417.91	2.00	-1.82	-1.68	203.64
	NORMAL	3,241.0	26.37	173.55	2,832.87	-1,448.41	189.86	1,460.69	2.69	-2.23	3.30	147.04
	NORMAL	3,336.0	25.76	173.29	2,918.20	-1,489.88	194.64	1,502.43	0.65	-0.64	-0.27	190.49
	NORMAL	3,430.0	23.60	173.64	3,003.61	-1,528.87	199.11	1,541.68	2.30	-2.30	0.37	176.29
	NORMAL	3,524.0	23.87	173.03	3,089.66	-1,566.45	203.50	1,579.52	0.39	0.29	-0.65	317.44
	NORMAL	3,619.0	21.67	174.35	3,177.25	-1,602.99	207.56	1,616.28	2.38	-2.32	1.39	167.53
	NORMAL	3,713.0	20.31	177.42	3,265.02	-1,636.56	210.01	1,649.90	1.86	-1.45	3.27	142.47
	NORMAL	3,807.0	17.71	174.52	3,353.88	-1,667.10	212.11	1,680.47	2.94	-2.77	-3.09	198.60
	NORMAL	3,902.0	15.39	171.27	3,444.94	-1,693.94	215.40	1,707.52	2.63	-2.44	-3.42	200.20
	NORMAL	3,996.0	13.80	177.25	3,535.91	-1,717.47	217.83	1,731.17	2.33	-1.69	6.36	139.40
	NORMAL	4,090.0	12.62	174.52	3,627.42	-1,738.89	219.35	1,752.63	1.42	-1.26	-2.90	206.54
	NORMAL	4,184.0	10.99	171.89	3,719.43	-1,757.99	221.60	1,771.85	1.83	-1.73	-2.80	196.98
	NORMAL	4,279.0	9.14	172.59	3,812.97	-1,774.44	223.85	1,788.45	1.95	-1.95	0.74	176.56
	NORMAL	4,373.0	6.81	171.45	3,906.05	-1,787.35	225.64	1,801.49	2.48	-2.48	-1.21	183.32
	NORMAL	4,466.0	4.97	167.75	3,998.56	-1,796.74	227.31	1,811.01	2.02	-1.98	-3.98	189.82
6/10/2014	NORMAL	4,560.0	3.74	174.61	4,092.28	-1,803.77	228.47	1,818.13	1.42	-1.31	7.30	160.44
	NORMAL	4,654.0	2.33	165.47	4,186.15	-1,808.68	229.23	1,823.09	1.58	-1.50	-9.72	194.42
	NORMAL	4,748.0	2.42	173.38	4,280.07	-1,812.50	229.94	1,826.96	0.36	0.10	8.41	78.62
	NORMAL	4,842.0	2.15	149.65	4,374.00	-1,815.99	231.06	1,830.56	1.04	-0.29	-25.24	242.43
	NORMAL	4,937.0	2.07	112.12	4,468.94	-1,818.17	233.55	1,833.03	1.43	-0.08	-39.51	248.05
	NORMAL	5,031.0	1.80	111.33	4,562.88	-1,819.35	236.50	1,834.54	0.29	-0.29	-0.84	185.25
	NORMAL	5,125.0	1.45	131.19	4,656.85	-1,820.67	238.77	1,836.12	0.70	-0.37	21.13	131.53

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 (°)
6/10/2014	NORMAL	5,219.0	1.54	144.11	4,750.82	-1,822.48	240.40	1,838.11	0.37	0.10	13.74	81.57
	NORMAL	5,313.0	0.92	83.91	4,844.80	-1,823.42	241.89	1,839.22	1.43	-0.66	-64.04	216.41
	NORMAL	5,408.0	0.92	96.30	4,939.78	-1,823.42	243.41	1,839.40	0.21	0.00	13.04	96.19
	NORMAL	5,502.0	0.44	98.50	5,033.78	-1,823.56	244.52	1,839.66	0.51	-0.51	2.34	177.99
	NORMAL	5,596.0	0.48	186.83	5,127.78	-1,824.00	244.83	1,840.14	0.68	0.04	93.97	131.60
	NORMAL	5,690.0	0.48	200.80	5,221.77	-1,824.76	244.64	1,840.87	0.12	0.00	14.86	96.98
	NORMAL	5,784.0	0.79	239.03	5,315.77	-1,825.46	243.95	1,841.49	0.54	0.33	40.67	73.96
	NORMAL	5,879.0	1.19	283.07	5,410.75	-1,825.58	242.42	1,841.42	0.87	0.42	46.36	85.47
6/11/2014	NORMAL	5,973.0	1.23	256.61	5,504.73	-1,825.59	240.49	1,841.21	0.59	0.04	-28.15	260.79
	NORMAL	6,067.0	2.20	242.46	5,598.69	-1,826.66	237.91	1,841.96	1.12	1.03	-15.05	329.24
	NORMAL	6,162.0	2.81	233.85	5,693.60	-1,828.88	234.41	1,843.75	0.75	0.64	-9.06	323.98
	NORMAL	6,256.0	3.52	235.34	5,787.46	-1,831.88	230.18	1,846.24	0.76	0.76	1.59	7.35
	NORMAL	6,350.0	4.62	234.20	5,881.22	-1,835.73	224.73	1,849.42	1.17	1.17	-1.21	355.22
	NORMAL	6,445.0	4.70	232.18	5,975.90	-1,840.36 ✓	218.56 ✓	1,853.29	0.19	0.08	-2.13	294.98