

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	GM 311-13	Wellbore No.	00
Wellbore Legal Name	GM 311-13	Common Wellbore Name	GM 311-13
Project	GV 12-07S-096W	Site	GM 24-12 Pad
Vertical Section Azimuth	191.34 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	6/25/2014	UWI	GM 311-13
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	6/25/2014	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 (°)
6/25/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/25/2014	NORMAL	102.0	0.53	162.51	102.00	-0.45	0.14	0.41	0.52	0.52	0.00	162.51
	NORMAL	132.0	1.06	183.78	132.00	-0.86	0.17	0.81	1.99	1.77	70.90	40.03
	NORMAL	162.0	1.50	198.46	161.99	-1.51	0.02	1.47	1.82	1.47	48.93	44.19
	NORMAL	192.0	1.94	190.72	191.97	-2.38	-0.20	2.37	1.66	1.47	-25.80	328.26
	NORMAL	222.0	1.94	200.21	221.96	-3.36	-0.47	3.38	1.07	0.00	31.63	94.74
	NORMAL	252.0	2.73	192.22	251.93	-4.53	-0.79	4.60	2.84	2.63	-26.63	333.58
	NORMAL	283.0	3.70	194.94	282.88	-6.22	-1.21	6.33	3.17	3.13	8.77	10.30
	NORMAL	314.0	3.87	192.83	313.82	-8.20	-1.70	8.38	0.71	0.55	-6.81	319.62
	NORMAL	344.0	4.49	196.44	343.74	-10.32	-2.25	10.56	2.24	2.07	12.03	24.80
	NORMAL	374.0	5.37	193.36	373.62	-12.81	-2.91	13.13	3.06	2.93	-10.27	341.72
	NORMAL	405.0	5.45	192.83	404.49	-15.66	-3.57	16.05	0.30	0.26	-1.71	327.75
	NORMAL	435.0	6.25	191.51	434.33	-18.65	-4.22	19.11	2.70	2.67	-4.40	349.80
	NORMAL	465.0	7.04	191.07	464.13	-22.05	-4.89	22.58	2.64	2.63	-1.47	356.09
	NORMAL	495.0	7.39	188.70	493.89	-25.76	-5.54	26.35	1.53	1.17	-7.90	318.44
	NORMAL	525.0	8.36	192.48	523.61	-29.80	-6.30	30.46	3.66	3.23	12.60	29.98
	NORMAL	556.0	9.24	191.60	554.24	-34.44	-7.29	35.20	2.87	2.84	-2.84	350.87
	NORMAL	586.0	9.33	192.04	583.85	-39.17	-8.28	40.04	0.38	0.30	1.47	38.48
	NORMAL	616.0	10.29	191.51	613.41	-44.18	-9.32	45.15	3.21	3.20	-1.77	354.37
	NORMAL	647.0	11.09	192.22	643.87	-49.81	-10.51	50.90	2.62	2.58	2.29	9.70
	NORMAL	677.0	11.52	191.51	673.29	-55.56	-11.72	56.78	1.51	1.43	-2.37	341.72

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 (°)
6/25/2014	NORMAL	708.0	11.96	191.25	703.64	-61.74	-12.96	63.09	1.43	1.42	-0.84	353.02
	NORMAL	738.0	12.32	190.63	732.97	-67.94	-14.16	69.40	1.28	1.20	-2.07	339.79
	NORMAL	769.0	12.67	190.90	763.24	-74.53	-15.41	76.10	1.14	1.13	0.87	9.61
	NORMAL	799.0	13.81	190.55	792.44	-81.28	-16.69	82.97	3.81	3.80	-1.17	355.81
	NORMAL	829.0	14.43	190.55	821.53	-88.47	-18.03	90.29	2.07	2.07	0.00	0.00
	NORMAL	858.0	14.87	190.63	849.59	-95.68	-19.37	97.63	1.52	1.52	0.28	2.67
	NORMAL	889.0	15.40	191.87	879.51	-103.62	-20.96	105.72	2.00	1.71	4.00	32.02
	NORMAL	960.0	16.22	191.77	947.83	-122.55	-24.92	125.06	1.16	1.15	-0.14	358.05
	NORMAL	1,057.0	17.61	192.98	1,040.63	-150.12	-30.98	153.28	1.48	1.43	1.25	14.79
	NORMAL	1,151.0	18.44	190.60	1,130.02	-178.59	-36.91	182.36	1.18	0.88	-2.53	317.28
6/26/2014	NORMAL	1,245.0	19.97	190.14	1,218.78	-209.00	-42.47	213.27	1.64	1.63	-0.49	354.13
	NORMAL	1,265.0	20.35	190.19	1,237.56	-215.79	-43.68	220.16	1.90	1.90	0.25	2.62
	NORMAL	1,358.0	21.10	189.81	1,324.54	-248.20	-49.40	253.07	0.82	0.81	-0.41	349.66
	NORMAL	1,452.0	19.39	192.89	1,412.73	-280.09	-55.74	285.58	2.13	-1.82	3.20	150.06
	NORMAL	1,546.0	19.16	193.95	1,501.46	-310.27	-62.92	316.59	0.47	-0.24	1.20	122.19
	NORMAL	1,640.0	18.55	190.43	1,590.42	-339.95	-69.35	346.95	1.37	-0.65	-3.74	240.14
	NORMAL	1,735.0	17.14	188.76	1,680.85	-368.65	-74.22	376.05	1.58	-1.48	-1.76	199.16
	NORMAL	1,829.0	16.79	189.55	1,770.76	-395.73	-78.58	403.45	0.45	-0.37	0.84	147.01
	NORMAL	1,923.0	18.02	193.59	1,860.45	-423.25	-84.25	431.55	1.83	1.31	4.30	46.43
	NORMAL	2,018.0	18.99	191.57	1,950.54	-452.68	-90.80	461.69	1.22	1.02	-2.13	325.58
6/27/2014	NORMAL	2,112.0	18.90	190.52	2,039.45	-482.63	-96.65	492.21	0.38	-0.10	-1.12	254.71
	NORMAL	2,206.0	19.12	189.64	2,128.32	-512.77	-102.01	522.82	0.38	0.23	-0.94	307.09
	NORMAL	2,300.0	19.25	188.50	2,217.10	-543.28	-106.87	553.69	0.42	0.14	-1.21	288.60
	NORMAL	2,394.0	19.39	188.08	2,305.81	-574.05	-111.35	584.74	0.21	0.15	-0.47	313.67
	NORMAL	2,488.0	17.23	186.74	2,395.05	-603.33	-115.17	614.20	2.34	-2.30	-1.40	190.24
	NORMAL	2,583.0	14.90	188.50	2,486.33	-629.39	-118.63	640.43	2.51	-2.45	1.85	169.04
	NORMAL	2,677.0	14.59	188.76	2,577.23	-653.04	-122.22	664.32	0.34	-0.33	0.28	168.08
	NORMAL	2,771.0	14.73	188.58	2,668.17	-676.56	-125.81	688.09	0.16	0.15	-0.19	341.89
	NORMAL	2,866.0	13.10	185.49	2,760.38	-699.22	-128.64	710.86	1.89	-1.72	-3.25	203.01
	NORMAL	2,960.0	12.92	187.00	2,851.97	-720.25	-130.94	731.94	0.41	-0.19	1.61	118.64
6/28/2014	NORMAL	3,054.0	12.40	186.65	2,943.69	-740.71	-133.39	752.48	0.56	-0.55	-0.37	188.22
	NORMAL	3,148.0	11.39	189.81	3,035.67	-759.88	-136.14	771.81	1.28	-1.07	3.36	148.72
	NORMAL	3,242.0	11.34	188.85	3,127.82	-778.16	-139.14	790.33	0.21	-0.05	-1.02	254.72
	NORMAL	3,337.0	9.41	194.21	3,221.27	-794.92	-142.49	807.42	2.27	-2.03	5.64	156.05
	NORMAL	3,431.0	8.84	196.67	3,314.08	-809.29	-146.44	822.28	0.73	-0.61	2.62	146.82
	NORMAL	3,525.0	7.65	200.10	3,407.11	-822.08	-150.67	835.66	1.37	-1.27	3.65	159.23
	NORMAL	3,619.0	6.64	196.67	3,500.38	-833.16	-154.38	847.25	1.17	-1.07	-3.65	201.20
	NORMAL	3,714.0	5.98	185.33	3,594.80	-843.35	-156.41	857.64	1.48	-0.69	-11.94	236.54
	NORMAL	3,808.0	4.31	178.74	3,688.42	-851.76	-156.79	865.96	1.88	-1.78	-7.01	196.23
	NORMAL	3,902.0	2.59	174.43	3,782.25	-857.41	-156.50	871.44	1.85	-1.83	-4.59	186.43
6/29/2014	NORMAL	3,996.0	0.79	181.90	3,876.20	-860.17	-156.32	874.11	1.93	-1.91	7.95	176.75
	NORMAL	4,091.0	0.97	224.18	3,971.19	-861.40	-156.90	875.43	0.69	0.19	44.51	96.32
	NORMAL	4,185.0	0.75	74.77	4,065.19	-861.81	-156.86	875.83	1.77	-0.23	-158.95	193.29
	NORMAL	4,279.0	0.83	85.66	4,159.18	-861.60	-155.59	875.37	0.18	0.09	11.59	67.47
	NORMAL	4,374.0	0.70	96.74	4,254.17	-861.61	-154.33	875.14	0.21	-0.14	11.66	136.76
	NORMAL	4,466.0	0.97	107.64	4,346.16	-861.91	-153.03	875.18	0.34	0.29	11.85	35.99
	NORMAL	4,561.0	0.83	128.91	4,441.15	-862.59	-151.73	875.58	0.38	-0.15	22.39	123.13
	NORMAL	4,655.0	0.61	173.29	4,535.14	-863.51	-151.14	876.37	0.62	-0.23	47.21	132.72
	NORMAL	4,749.0	0.70	183.79	4,629.14	-864.58	-151.12	877.42	0.16	0.10	11.17	58.46
	NORMAL	4,843.0	1.19	193.68	4,723.13	-866.10	-151.39	878.96	0.55	0.52	10.52	23.40
6/29/2014	NORMAL	4,937.0	0.13	63.34	4,817.12	-867.01	-151.52	879.87	1.36	-1.13	-138.66	184.45
	NORMAL	5,031.0	0.31	211.88	4,911.12	-867.17	-151.56	880.05	0.45	0.19	158.02	157.70
	NORMAL	5,126.0	1.05	352.06	5,006.11	-866.53	-151.82	879.46	1.37	0.78	147.56	148.94
	NORMAL	5,220.0	1.05	337.91	5,100.10	-864.88	-152.26	877.93	0.28	0.00	-15.05	262.93
	NORMAL	5,314.0	1.14	311.54	5,194.08	-863.46	-153.28	876.74	0.54	0.10	-28.05	266.77
	NORMAL	5,408.0	0.75	289.52	5,288.07	-862.63	-154.56	876.19	0.56	-0.41	-23.43	212.31

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 (°)
6/29/2014	NORMAL	5,503.0	0.70	282.63	5,383.06	-862.30	-155.71	876.08	0.11	-0.05	-7.25	236.75
	NORMAL	5,596.0	1.05	260.74	5,476.05	-862.31	-157.11	876.37	0.51	0.38	-23.54	305.02
	NORMAL	5,691.0	1.05	245.71	5,571.04	-862.81	-158.76	877.18	0.29	0.00	-15.82	262.49
	NORMAL	5,785.0	1.23	243.60	5,665.02	-863.61	-160.45	878.30	0.20	0.19	-2.24	345.82
	NORMAL	5,879.0	1.05	247.65	5,759.00	-864.39	-162.15	879.40	0.21	-0.19	4.31	157.90
	NORMAL	5,974.0	1.27	243.16	5,853.98	-865.20	-163.90	880.53	0.25	0.23	-4.73	335.30
	NORMAL	6,030.0	1.36	240.35	5,909.96	-865.81	-165.03	881.35	0.20	0.16	-5.02	322.97
	NORMAL	6,080.0	1.36	240.35	5,959.95	-866.39	-166.06	882.13	0.00	0.00	0.00	0.00