

# Deviation Summary

PICEANCE VLY

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	GM 423-13	Wellbore No.	00
Wellbore Legal Name	GM 423-13	Common Wellbore Name	GM 423-13
Project	GV 12-07S-096W	Site	GM 24-12 Pad
Vertical Section Azimuth	174.42 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	5/30/2014	UWI	GM 423-13
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	5/30/2014	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 (°)
5/30/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/30/2014	NORMAL	106.0	0.18	137.99	106.00	-0.12	0.11	0.13	0.17	0.17	0.00	137.99
	NORMAL	136.0	0.35	147.04	136.00	-0.24	0.19	0.25	0.58	0.57	30.17	18.38
	NORMAL	166.0	0.79	183.16	166.00	-0.52	0.23	0.54	1.83	1.47	120.40	58.25
	NORMAL	197.0	1.67	174.73	196.99	-1.18	0.26	1.20	2.89	2.84	-27.19	344.15
	NORMAL	227.0	2.64	175.78	226.97	-2.31	0.35	2.33	3.24	3.23	3.50	2.86
	NORMAL	258.0	3.52	177.45	257.92	-3.97	0.45	3.99	2.85	2.84	5.39	6.66
	NORMAL	288.0	4.31	179.21	287.85	-6.02	0.50	6.04	2.66	2.63	5.87	9.53
	NORMAL	319.0	5.28	177.98	318.74	-8.61	0.57	8.62	3.15	3.13	-3.97	353.34
	NORMAL	349.0	6.51	178.77	348.59	-11.69	0.65	11.70	4.11	4.10	2.63	4.17
	NORMAL	380.0	7.65	178.77	379.35	-15.51	0.74	15.50	3.68	3.68	0.00	0.00
	NORMAL	410.0	9.06	180.18	409.03	-19.87	0.77	19.85	4.75	4.70	4.70	8.97
	NORMAL	440.0	10.12	180.53	438.61	-24.86	0.74	24.82	3.54	3.53	1.17	3.32
	NORMAL	470.0	11.70	178.42	468.07	-30.54	0.80	30.47	5.43	5.27	-7.03	344.78
	NORMAL	500.0	12.93	178.86	497.38	-36.94	0.95	36.85	4.11	4.10	1.47	4.58
	NORMAL	531.0	14.08	177.10	527.52	-44.17	1.21	44.08	3.94	3.71	-5.68	339.48
	NORMAL	561.0	15.75	175.96	556.51	-51.88	1.68	51.79	5.65	5.57	-3.80	349.48
	NORMAL	592.0	17.24	175.43	586.23	-60.65	2.34	60.59	4.83	4.81	-1.71	353.98
	NORMAL	622.0	18.39	174.90	614.79	-69.80	3.12	69.77	3.87	3.83	-1.77	351.72
	NORMAL	694.0	22.20	176.81	682.31	-94.70	4.89	94.73	5.37	5.29	2.65	10.76
	NORMAL	784.0	27.16	175.92	764.06	-132.19	7.30	132.27	5.53	5.51	-0.99	355.31



## 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 (°)
5/30/2014	NORMAL	874.0	32.14	175.51	842.25	-176.57	10.63	176.77	5.54	5.53	-0.46	357.49
5/31/2014	NORMAL	966.0	37.37	174.68	917.82	-228.81	15.14	229.20	5.71	5.68	-0.90	354.49
	NORMAL	1,059.0	41.76	172.19	989.50	-287.62	21.97	288.40	5.02	4.72	-2.68	339.17
	NORMAL	1,153.0	44.42	172.92	1,058.14	-351.29	30.28	352.57	2.88	2.83	0.78	10.89
	NORMAL	1,247.0	47.05	173.36	1,123.74	-418.12	38.31	419.87	2.82	2.80	0.47	6.99
	NORMAL	1,341.0	48.46	173.08	1,186.94	-487.22	46.53	489.43	1.52	1.50	-0.30	351.54
	NORMAL	1,410.0	49.97	172.23	1,232.01	-539.03	53.21	541.65	2.38	2.19	-1.23	336.64
6/1/2014	NORMAL	1,543.0	51.69	170.05	1,316.02	-640.89	69.12	644.58	1.81	1.29	-1.64	314.81
	NORMAL	1,638.0	50.64	171.54	1,375.59	-713.94	80.96	718.42	1.65	-1.11	1.57	132.60
	NORMAL	1,732.0	49.93	172.33	1,435.65	-785.53	91.11	790.66	0.99	-0.76	0.84	139.69
	NORMAL	1,826.0	49.32	173.48	1,496.55	-856.59	99.96	862.25	1.14	-0.65	1.22	125.22
	NORMAL	1,921.0	47.87	174.53	1,559.38	-927.45	107.40	933.50	1.74	-1.53	1.11	151.84
	NORMAL	2,015.0	46.42	176.11	1,623.31	-996.12	113.04	1,002.39	1.97	-1.54	1.68	141.92
	NORMAL	2,110.0	46.15	174.79	1,688.96	-1,064.57	118.48	1,071.04	1.04	-0.28	-1.39	253.74
	NORMAL	2,203.0	46.86	173.56	1,752.98	-1,131.68	125.33	1,138.50	1.23	0.76	-1.32	308.09
	NORMAL	2,297.0	46.24	175.32	1,817.62	-1,199.59	131.95	1,206.74	1.51	-0.66	1.87	116.49
	NORMAL	2,392.0	46.51	174.62	1,883.17	-1,268.10	137.98	1,275.50	0.60	0.28	-0.74	297.81
	NORMAL	2,486.0	45.32	175.85	1,948.57	-1,335.38	143.60	1,343.01	1.58	-1.27	1.31	143.83
	NORMAL	2,580.0	45.32	175.15	2,014.66	-1,402.01	148.84	1,409.84	0.53	0.00	-0.74	269.75
	NORMAL	2,675.0	45.93	174.27	2,081.10	-1,469.62	155.10	1,477.74	0.92	0.64	-0.93	313.81
	NORMAL	2,769.0	45.01	174.71	2,147.02	-1,536.32	161.54	1,544.75	1.03	-0.98	0.47	161.33
	NORMAL	2,863.0	44.70	174.62	2,213.66	-1,602.34	167.70	1,611.05	0.34	-0.33	-0.10	191.54
6/2/2014	NORMAL	2,958.0	43.60	174.62	2,281.82	-1,668.21	173.91	1,677.22	1.16	-1.16	0.00	180.00
	NORMAL	3,052.0	41.67	175.85	2,350.97	-1,731.66	179.21	1,740.88	2.24	-2.05	1.31	157.10
	NORMAL	3,146.0	39.56	176.11	2,422.32	-1,792.69	183.50	1,802.04	2.25	-2.24	0.28	175.51
	NORMAL	3,240.0	39.03	174.35	2,495.07	-1,852.01	188.45	1,861.56	1.31	-0.56	-1.87	243.89
	NORMAL	3,334.0	38.02	174.88	2,568.61	-1,910.30	193.94	1,920.11	1.13	-1.07	0.56	162.11
	NORMAL	3,428.0	35.52	175.15	2,643.90	-1,966.35	198.84	1,976.37	2.67	-2.66	0.29	176.41
	NORMAL	3,522.0	32.40	176.55	2,721.86	-2,018.71	202.66	2,028.85	3.42	-3.32	1.49	166.51
	NORMAL	3,617.0	30.90	176.20	2,802.73	-2,068.46	205.81	2,078.67	1.59	-1.58	-0.37	186.83
	NORMAL	3,711.0	28.40	175.06	2,884.42	-2,114.82	209.34	2,125.16	2.73	-2.66	-1.21	192.22
	NORMAL	3,805.0	27.16	174.18	2,967.58	-2,158.44	213.44	2,168.97	1.39	-1.32	-0.94	197.91
	NORMAL	3,900.0	25.71	173.13	3,052.65	-2,200.47	218.10	2,211.25	1.60	-1.53	-1.11	197.40
	NORMAL	3,994.0	23.82	173.74	3,138.00	-2,239.59	222.61	2,250.62	2.03	-2.01	0.65	172.58
	NORMAL	4,088.0	21.27	175.50	3,224.81	-2,275.46	226.02	2,286.65	2.81	-2.71	1.87	165.99
	NORMAL	4,182.0	19.78	177.43	3,312.84	-2,308.35	228.07	2,319.59	1.74	-1.59	2.05	156.48
	NORMAL	4,277.0	18.33	177.52	3,402.63	-2,339.33	229.44	2,350.56	1.53	-1.53	0.09	178.88
	NORMAL	4,371.0	17.41	178.05	3,492.10	-2,368.16	230.55	2,379.35	0.99	-0.98	0.56	170.23
	NORMAL	4,464.0	16.70	177.26	3,581.01	-2,395.41	231.67	2,406.58	0.80	-0.76	-0.85	197.70
	NORMAL	4,558.0	16.35	177.61	3,671.12	-2,422.12	232.86	2,433.28	0.39	-0.37	0.37	164.29
	NORMAL	4,652.0	14.42	175.32	3,761.75	-2,447.00	234.37	2,458.20	2.15	-2.05	-2.44	196.37
	NORMAL	4,746.0	12.40	174.88	3,853.18	-2,468.72	236.23	2,480.00	2.15	-2.15	-0.47	182.68
	NORMAL	4,841.0	10.73	176.55	3,946.25	-2,487.71	237.67	2,499.03	1.79	-1.76	1.76	169.48
6/3/2014	NORMAL	4,935.0	8.53	179.19	4,038.92	-2,503.42	238.29	2,514.73	2.39	-2.34	2.81	169.95
	NORMAL	5,029.0	5.50	183.76	4,132.21	-2,514.89	238.10	2,526.12	3.28	-3.22	4.86	171.83
	NORMAL	5,123.0	3.65	181.39	4,225.90	-2,522.38	237.73	2,533.54	1.98	-1.97	-2.52	184.65
	NORMAL	5,217.0	1.80	162.49	4,319.80	-2,526.78	238.10	2,537.95	2.16	-1.97	-20.11	196.67
	NORMAL	5,312.0	1.05	96.48	4,414.77	-2,528.30	239.41	2,539.60	1.76	-0.79	-69.48	214.95
	NORMAL	5,406.0	1.01	100.18	4,508.76	-2,528.54	241.09	2,540.00	0.08	-0.04	3.94	122.86
	NORMAL	5,500.0	0.61	117.14	4,602.75	-2,528.91	242.35	2,540.50	0.49	-0.43	18.04	157.36
	NORMAL	5,595.0	0.61	51.75	4,697.74	-2,528.83	243.19	2,540.50	0.69	0.00	-68.83	237.31
	NORMAL	5,688.0	1.98	36.89	4,790.72	-2,527.24	244.55	2,539.04	1.50	1.47	-15.98	338.72
	NORMAL	5,782.0	2.07	39.80	4,884.66	-2,524.64	246.61	2,536.65	0.15	0.10	3.10	50.27
	NORMAL	5,877.0	1.41	43.22	4,979.61	-2,522.47	248.51	2,534.68	0.70	-0.69	3.60	172.76
	NORMAL	5,970.0	0.92	66.87	5,072.59	-2,521.34	249.98	2,533.70	0.73	-0.53	25.43	146.95
	NORMAL	6,065.0	0.44	97.54	5,167.59	-2,521.09	251.04	2,533.55	0.62	-0.51	32.28	157.49

## 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 (°)
6/3/2014	NORMAL	6,160.0	0.09	14.40	5,262.59	-2,521.06	251.42	2,533.57	0.46	-0.37	-87.52	191.76
	NORMAL	6,254.0	0.09	179.37	5,356.59	-2,521.07	251.44	2,533.57	0.19	0.00	175.50	172.48
6/4/2014	NORMAL	6,348.0	0.48	207.40	5,450.58	-2,521.42	251.33	2,533.97	0.43	0.41	29.82	34.06
	NORMAL	6,443.0	1.27	202.48	5,545.57	-2,522.75	250.74	2,535.17	0.83	0.83	-5.18	352.10
	NORMAL	6,537.0	1.63	207.31	5,639.56	-2,522.37	250.35	2,537.22	3.03	0.38	167.57	167.34
6/6/2014	NORMAL	6,631.0	2.17	216.20	5,733.51	-2,525.00	248.68	2,537.21	0.65	0.57	9.46	33.12
	NORMAL	6,725.0	2.56	220.92	5,827.43	-2,528.02	246.25	2,539.99	0.46	0.41	5.02	28.91
	NORMAL	6,760.0	2.59	226.04	5,862.39	-2,529.16	245.17	2,541.01	0.66	0.09	14.63	85.13
	NORMAL	6,810.0	2.59	226.04	5,912.34	-2,530.73	243.55	2,542.42	0.00	0.00	0.00	0.00