

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	GM 521-13	Wellbore No.	00
Wellbore Legal Name	GM 521-13	Common Wellbore Name	GM 521-13
Project	GV 12-07S-096W	Site	GM 24-12 Pad
Vertical Section Azimuth	140.66 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	5/24/2014	UWI	GM 521-13
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	5/24/2014	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 (°)
5/24/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/24/2014	NORMAL	76.0	0.18	154.07	76.00	-0.11	0.05	0.12	0.24	0.24	0.00	154.07
	NORMAL	106.0	0.18	198.19	106.00	-0.19	0.06	0.19	0.45	0.00	147.07	112.06
	NORMAL	167.0	0.79	146.34	167.00	-0.64	0.26	0.66	1.14	1.00	-85.00	296.37
	NORMAL	197.0	1.32	144.76	196.99	-1.09	0.58	1.21	1.77	1.77	-5.27	356.07
	NORMAL	227.0	1.85	145.72	226.98	-1.77	1.05	2.03	1.77	1.77	3.20	3.35
	NORMAL	258.0	2.73	140.80	257.96	-2.76	1.80	3.27	2.91	2.84	-15.87	344.94
	NORMAL	288.0	3.61	140.89	287.91	-4.04	2.84	4.93	2.93	2.93	0.30	0.37
	NORMAL	319.0	4.40	139.04	318.83	-5.70	4.24	7.09	2.58	2.55	-5.97	349.79
	NORMAL	349.0	5.37	137.29	348.72	-7.60	5.95	9.65	3.27	3.23	-5.83	350.39
	NORMAL	380.0	6.33	139.77	379.56	-9.97	8.03	12.80	3.20	3.10	8.00	15.99
	NORMAL	410.0	7.30	138.60	409.35	-12.66	10.36	16.36	3.27	3.23	-3.90	351.27
	NORMAL	440.0	8.09	137.46	439.08	-15.65	13.05	20.37	2.68	2.63	-3.80	348.50
	NORMAL	470.0	8.80	137.29	468.75	-18.89	16.03	24.77	2.37	2.37	-0.57	357.90
	NORMAL	501.0	9.41	138.69	499.36	-22.54	19.31	29.67	2.09	1.97	4.52	20.65
	NORMAL	531.0	10.21	138.87	528.92	-26.38	22.68	34.78	2.67	2.67	0.60	2.28
	NORMAL	561.0	10.91	140.10	558.42	-30.56	26.25	40.28	2.45	2.33	4.10	18.46
	NORMAL	592.0	11.79	138.69	588.81	-35.19	30.22	46.38	2.98	2.84	-4.55	341.81
	NORMAL	622.0	12.40	139.04	618.14	-39.93	34.36	52.66	2.05	2.03	1.17	7.03
	NORMAL	653.0	13.20	139.75	648.37	-45.14	38.83	59.53	2.63	2.58	2.29	11.47
	NORMAL	683.0	13.72	142.65	677.55	-50.58	43.20	66.51	2.84	1.73	9.67	53.81

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 (")
5/24/2014	NORMAL	714.0	14.43	142.12	707.62	-56.55	47.80	74.04	2.33	2.29	-1.71	349.45
	NORMAL	744.0	14.78	143.44	736.65	-62.58	52.38	81.60	1.61	1.17	4.40	44.20
	NORMAL	775.0	15.04	143.79	766.61	-69.00	57.11	89.57	0.89	0.84	1.13	19.27
	NORMAL	805.0	15.22	143.53	795.57	-75.31	61.75	97.39	0.64	0.60	-0.87	339.22
	NORMAL	834.0	15.57	143.88	823.53	-81.51	66.30	105.07	1.25	1.21	1.21	15.04
	NORMAL	865.0	16.19	143.70	853.34	-88.36	71.32	113.54	2.01	2.00	-0.58	355.37
	NORMAL	895.0	16.89	142.65	882.10	-95.19	76.44	122.08	2.54	2.33	-3.50	336.37
	NORMAL	925.0	17.68	141.59	910.75	-102.23	81.91	130.99	2.83	2.63	-3.53	337.76
	NORMAL	955.0	18.65	140.01	939.25	-109.47	87.82	140.34	3.63	3.23	-5.27	332.33
	NORMAL	986.0	19.53	139.13	968.55	-117.19	94.40	150.47	2.99	2.84	-2.84	341.47
	NORMAL	1,067.0	21.95	139.80	1,044.29	-138.99	113.03	179.15	3.00	2.99	0.83	5.91
5/25/2014	NORMAL	1,154.0	24.33	139.35	1,124.29	-165.01	135.21	213.33	2.74	2.74	-0.52	355.54
	NORMAL	1,248.0	28.14	141.90	1,209.31	-196.00	160.60	253.39	2.25	1.93	2.71	32.15
	NORMAL	1,343.0	30.83	140.83	1,292.79	-231.36	188.90	298.69	4.97	4.94	-1.13	353.32
	NORMAL	1,437.0	32.69	140.44	1,372.71	-269.61	220.29	348.16	1.99	1.98	-0.41	353.54
	NORMAL	1,531.0	34.70	140.90	1,450.92	-309.95	253.33	400.31	2.16	2.14	0.49	7.43
	NORMAL	1,625.0	35.88	140.33	1,527.64	-351.92	287.79	454.61	1.30	1.26	-0.61	344.17
5/26/2014	NORMAL	1,732.0	34.99	138.40	1,614.82	-399.00	328.18	516.62	1.34	-0.83	-1.80	230.72
	NORMAL	1,826.0	32.22	135.06	1,693.11	-436.90	363.79	568.51	3.54	-2.95	-3.55	212.34
	NORMAL	1,921.0	32.26	134.71	1,773.47	-472.66	399.69	618.93	0.20	0.04	-0.37	281.94
	NORMAL	2,015.0	34.95	139.19	1,851.76	-510.70	435.13	670.82	3.89	2.86	4.77	44.55
	NORMAL	2,110.0	34.73	140.24	1,929.73	-552.10	470.22	725.08	0.67	-0.23	1.11	110.57
	NORMAL	2,203.0	35.82	142.18	2,005.66	-593.97	503.85	778.78	1.68	1.17	2.09	46.58
	NORMAL	2,298.0	37.10	140.60	2,082.06	-638.07	539.09	835.22	1.67	1.35	-1.66	323.10
	NORMAL	2,392.0	36.22	141.91	2,157.47	-681.84	574.22	891.34	1.25	-0.94	1.39	138.89
	NORMAL	2,486.0	36.44	144.38	2,233.20	-726.39	607.61	946.97	1.57	0.23	2.63	82.45
	NORMAL	2,580.0	35.45	144.55	2,309.30	-771.29	639.68	1,002.02	1.06	-1.05	0.18	174.31
	NORMAL	2,675.0	34.42	143.58	2,387.18	-815.34	671.60	1,056.33	1.23	-1.08	-1.02	207.94
	NORMAL	2,769.0	32.88	142.88	2,465.43	-857.07	702.77	1,108.36	1.69	-1.64	-0.74	193.85
5/27/2014	NORMAL	2,863.0	32.31	139.54	2,544.63	-896.53	734.48	1,158.97	2.01	-0.61	-3.55	251.02
	NORMAL	2,958.0	31.21	139.37	2,625.41	-934.53	766.98	1,208.97	1.16	-1.16	-0.18	184.58
	NORMAL	3,052.0	29.63	138.93	2,706.46	-970.53	798.11	1,256.54	1.70	-1.68	-0.47	187.84
	NORMAL	3,146.0	27.65	137.78	2,788.96	-1,004.21	828.03	1,301.56	2.19	-2.11	-1.22	195.05
	NORMAL	3,240.0	25.58	136.11	2,872.99	-1,034.99	856.76	1,343.58	2.34	-2.20	-1.78	199.13
	NORMAL	3,334.0	23.69	136.90	2,958.43	-1,063.40	883.74	1,382.65	2.04	-2.01	0.84	170.47
	NORMAL	3,429.0	24.13	136.73	3,045.28	-1,091.48	910.09	1,421.07	0.47	0.46	-0.18	351.02
	NORMAL	3,523.0	22.73	138.40	3,131.53	-1,119.05	935.32	1,458.39	1.65	-1.49	1.78	155.39
	NORMAL	3,617.0	20.31	138.93	3,218.97	-1,144.93	958.09	1,492.85	2.58	-2.57	0.56	175.65
	NORMAL	3,711.0	18.42	135.23	3,307.65	-1,167.78	979.27	1,523.94	2.40	-2.01	-3.94	211.25
	NORMAL	3,806.0	13.89	139.10	3,398.88	-1,187.06	997.32	1,550.29	4.90	-4.77	4.07	168.48
	NORMAL	3,900.0	13.89	139.10	3,490.13	-1,204.12	1,012.09	1,572.85	0.00	0.00	0.00	0.00
	NORMAL	3,994.0	12.53	139.80	3,581.64	-1,220.44	1,026.06	1,594.33	1.46	-1.45	0.74	173.63
	NORMAL	4,088.0	11.39	136.47	3,673.60	-1,234.96	1,039.04	1,613.78	1.42	-1.21	-3.54	209.57
	NORMAL	4,183.0	10.42	136.29	3,766.88	-1,247.97	1,051.44	1,631.70	1.02	-1.02	-0.19	181.92
	NORMAL	4,277.0	8.35	138.93	3,859.62	-1,259.26	1,061.80	1,647.00	2.25	-2.20	2.81	169.55
	NORMAL	4,370.0	6.42	139.10	3,951.85	-1,268.28	1,069.64	1,658.95	2.08	-2.08	0.18	179.44
	NORMAL	4,464.0	4.84	135.85	4,045.39	-1,275.10	1,075.84	1,668.16	1.71	-1.68	-3.46	189.79
	NORMAL	4,558.0	4.62	138.05	4,139.07	-1,280.76	1,081.13	1,675.89	0.30	-0.23	2.34	141.58
	NORMAL	4,652.0	3.47	136.38	4,232.83	-1,285.63	1,085.63	1,682.51	1.23	-1.22	-1.78	185.02
	NORMAL	4,746.0	2.24	127.68	4,326.72	-1,288.82	1,089.04	1,687.14	1.38	-1.31	-9.26	195.10
5/28/2014	NORMAL	4,841.0	0.79	107.29	4,421.68	-1,290.15	1,091.14	1,689.49	1.60	-1.53	-21.46	190.40
	NORMAL	4,935.0	1.50	58.42	4,515.66	-1,289.69	1,092.80	1,690.20	1.22	0.76	-51.99	279.88
	NORMAL	5,029.0	2.07	50.33	4,609.62	-1,287.97	1,095.16	1,690.36	0.66	0.61	-8.61	332.07
	NORMAL	5,123.0	1.71	57.54	4,703.57	-1,286.13	1,097.65	1,690.51	0.46	-0.38	7.67	150.12
	NORMAL	5,218.0	1.41	57.98	4,798.53	-1,284.75	1,099.84	1,690.83	0.32	-0.32	0.46	177.93
	NORMAL	5,312.0	1.10	58.07	4,892.51	-1,283.66	1,101.58	1,691.10	0.33	-0.33	0.10	179.68

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (')	Azl. (')	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (')
5/28/2014	NORMAL	5,406.0	0.75	76.96	4,986.50	-1,283.04	1,102.95	1,691.48	0.49	-0.37	20.10	148.12
	NORMAL	5,500.0	0.40	79.86	5,080.49	-1,282.85	1,103.87	1,691.92	0.37	-0.37	3.09	176.70
	NORMAL	5,594.0	0.26	168.72	5,174.49	-1,283.00	1,104.24	1,692.27	0.50	-0.15	94.53	146.64
	NORMAL	5,688.0	0.57	190.17	5,268.49	-1,283.67	1,104.19	1,692.76	0.36	0.33	22.82	37.61
	NORMAL	5,782.0	0.88	208.36	5,362.48	-1,284.76	1,103.77	1,693.34	0.41	0.33	19.35	45.92
	NORMAL	5,877.0	1.58	223.92	5,457.46	-1,286.35	1,102.51	1,693.77	0.81	0.74	16.38	33.42
	NORMAL	5,971.0	1.93	237.72	5,551.41	-1,288.13	1,100.28	1,693.72	0.58	0.37	14.68	57.40
	NORMAL	6,065.0	2.15	238.95	5,645.35	-1,289.88	1,097.43	1,693.27	0.24	0.23	1.31	11.87
	NORMAL	6,160.0	2.29	245.80	5,740.28	-1,291.58	1,094.17	1,692.52	0.32	0.15	7.21	65.63
	NORMAL	6,254.0	2.50	244.48	5,834.20	-1,293.23	1,090.61	1,691.54	0.23	0.22	-1.40	344.62
5/29/2014	NORMAL	6,340.0	2.20	252.04	5,920.13	-1,294.55	1,087.34	1,690.49	0.50	-0.35	8.79	137.80
	NORMAL	6,390.0	2.20	252.04	5,970.09	-1,295.14	1,085.52	1,689.79	0.00	0.00	0.00	0.00