

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	GM 34-23	Wellbore No.	
Well Name	GM 34-23	Common Name	GM 34-23
Project	GV 23-06S-096W	Site	MV 10-23 Pad
Vertical Section Azimuth	107.45 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	10/13/2011	UWI	GM 34-23
Active Datum	KB @6,002.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Started	10/13/2011	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)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
10/13/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/13/2011	NORMAL	87.0	0.70	169.01	87.00	-0.52	0.10	0.25	0.80	0.80	0.00	169.01
	NORMAL	177.0	1.85	109.34	176.98	-1.54	1.58	1.97	1.79	1.28	-66.30	278.35
	NORMAL	269.0	4.40	107.58	268.83	-3.10	6.34	6.98	2.77	2.77	-1.91	356.97
	NORMAL	360.0	8.62	106.79	359.23	-6.13	16.20	17.30	4.64	4.64	-0.87	358.39
	NORMAL	451.0	12.05	105.82	448.74	-10.69	31.88	33.61	3.77	3.77	-1.07	356.62
	NORMAL	543.0	15.31	107.58	538.11	-16.98	52.70	55.37	3.57	3.54	1.91	8.13
10/14/2011	NORMAL	645.0	19.96	106.50	635.29	-25.99	82.25	86.26	4.57	4.56	-1.06	355.46
	NORMAL	736.0	21.46	106.15	720.41	-35.03	113.13	118.43	1.65	1.65	-0.38	355.12
	NORMAL	834.0	24.18	107.91	810.73	-46.19	149.45	156.43	2.86	2.78	1.80	14.90
	NORMAL	975.0	25.58	106.90	938.64	-63.93	206.06	215.75	1.04	0.99	-0.72	342.66
	NORMAL	1,071.0	24.40	106.87	1,025.66	-75.70	244.87	256.30	1.23	-1.23	-0.03	180.60
	NORMAL	1,166.0	24.97	105.89	1,111.97	-86.89	282.93	295.97	0.74	0.60	-1.03	323.87
	NORMAL	1,262.0	23.65	107.73	1,199.46	-98.30	320.76	335.48	1.59	-1.38	1.92	150.99
	NORMAL	1,357.0	23.21	106.15	1,286.63	-109.31	356.89	373.25	0.81	-0.46	-1.66	234.27
10/15/2011	NORMAL	1,453.0	23.04	108.44	1,374.92	-120.52	392.89	410.95	0.95	-0.18	2.39	101.76
	NORMAL	1,548.0	22.63	107.77	1,462.47	-131.97	427.93	447.81	0.51	-0.43	-0.71	212.07
	NORMAL	1,644.0	23.48	109.28	1,550.80	-143.93	463.57	485.39	1.08	0.89	1.57	35.52
	NORMAL	1,740.0	23.39	107.96	1,638.89	-156.12	499.75	523.56	0.55	-0.09	-1.38	259.67
	NORMAL	1,835.0	24.89	107.21	1,725.58	-167.85	536.79	562.41	1.61	1.58	-0.79	348.10
	NORMAL	1,929.0	24.40	106.90	1,811.01	-179.34	574.26	601.61	0.54	-0.52	-0.33	194.64

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
10/15/2011	NORMAL	2,025.0	25.00	106.26	1,898.23	-190.79	612.71	641.72	0.68	0.63	-0.67	335.69
	NORMAL	2,120.0	24.71	106.06	1,984.43	-201.90	651.06	681.64	0.32	-0.31	-0.21	196.08
	NORMAL	2,216.0	24.97	107.21	2,071.55	-213.45	689.70	721.96	0.57	0.27	1.20	62.23
	NORMAL	2,312.0	23.92	108.26	2,158.94	-225.54	727.54	761.69	1.18	-1.09	1.09	158.00
	NORMAL	2,407.0	24.16	107.65	2,245.70	-237.47	764.35	800.39	0.36	0.25	-0.64	313.72
	NORMAL	2,502.0	23.32	108.12	2,332.66	-249.21	800.75	838.63	0.91	-0.88	0.49	167.52
	NORMAL	2,595.0	23.48	108.41	2,418.01	-260.79	835.82	875.56	0.21	0.17	0.31	35.88
	NORMAL	2,690.0	22.78	109.06	2,505.38	-272.77	871.16	912.87	0.78	-0.74	0.68	160.26
	NORMAL	2,786.0	23.03	108.69	2,593.81	-284.86	906.52	950.22	0.30	0.26	-0.39	329.89
	NORMAL	2,881.0	23.82	107.87	2,680.98	-296.70	942.38	987.98	0.90	0.83	-0.86	337.20
	NORMAL	2,977.0	24.28	107.08	2,768.64	-308.45	979.70	1,027.11	0.58	0.48	-0.82	324.65
	NORMAL	3,070.0	23.44	105.05	2,853.70	-318.87	1,015.84	1,064.71	1.26	-0.90	-2.18	223.42
	NORMAL	3,163.0	23.68	103.65	2,938.95	-328.08	1,051.85	1,101.82	0.65	0.26	-1.51	292.57
	NORMAL	3,258.0	23.57	103.87	3,025.98	-337.13	1,088.83	1,139.82	0.15	-0.12	0.23	141.39
	NORMAL	3,354.0	23.74	106.50	3,113.92	-347.22	1,125.99	1,178.29	1.11	0.18	2.74	82.05
	NORMAL	3,449.0	23.74	109.31	3,200.88	-358.98	1,162.38	1,216.53	1.19	0.00	2.96	91.29
	NORMAL	3,545.0	24.80	109.93	3,288.40	-372.23	1,199.54	1,255.96	1.14	1.10	0.65	13.80
	NORMAL	3,640.0	25.32	108.96	3,374.46	-385.62	1,237.48	1,296.17	0.70	0.55	-1.02	321.25
	NORMAL	3,736.0	25.94	109.67	3,461.01	-399.36	1,276.67	1,337.67	0.72	0.65	0.74	26.67
	NORMAL	3,831.0	25.32	108.26	3,546.66	-412.72	1,315.53	1,378.75	0.92	-0.65	-1.48	223.90
	NORMAL	3,925.0	24.97	109.23	3,631.75	-425.55	1,353.35	1,418.68	0.58	-0.37	1.03	130.78
	NORMAL	4,021.0	24.62	107.12	3,718.91	-438.11	1,391.60	1,458.93	0.99	-0.36	-2.20	247.46
	NORMAL	4,116.0	23.65	108.44	3,805.60	-449.97	1,428.58	1,497.77	1.17	-1.02	1.39	151.51
10/16/2011	NORMAL	4,211.0	23.62	107.73	3,892.63	-461.79	1,464.79	1,535.86	0.30	-0.03	-0.75	263.66
	NORMAL	4,307.0	23.74	108.17	3,980.55	-473.67	1,501.47	1,574.41	0.22	0.12	0.46	56.02
	NORMAL	4,400.0	23.83	107.82	4,065.65	-485.26	1,537.14	1,611.92	0.18	0.10	-0.38	302.36
	NORMAL	4,495.0	22.59	105.14	4,152.96	-495.90	1,573.03	1,649.34	1.71	-1.31	-2.82	219.20
	NORMAL	4,590.0	20.96	106.21	4,241.18	-505.41	1,606.96	1,684.56	1.77	-1.72	1.13	166.81
	NORMAL	4,686.0	19.67	106.06	4,331.21	-514.67	1,638.97	1,717.88	1.34	-1.34	-0.16	182.24
	NORMAL	4,781.0	18.82	105.10	4,420.90	-523.09	1,669.13	1,749.18	0.95	-0.89	-1.01	199.97
	NORMAL	4,877.0	18.00	106.29	4,511.99	-531.28	1,698.32	1,779.48	0.94	-0.85	1.24	155.94
	NORMAL	4,972.0	16.17	109.65	4,602.79	-539.85	1,724.87	1,807.38	2.19	-1.93	3.54	153.26
	NORMAL	5,068.0	15.65	110.19	4,695.11	-548.81	1,749.61	1,833.67	0.56	-0.54	0.56	164.37
	NORMAL	5,163.0	14.51	109.84	4,786.84	-557.27	1,772.83	1,858.36	1.20	-1.20	-0.37	184.40
	NORMAL	5,259.0	13.37	111.60	4,880.01	-565.44	1,794.47	1,881.44	1.27	-1.19	1.83	160.45
	NORMAL	5,354.0	11.52	114.15	4,972.78	-573.37	1,813.34	1,901.82	2.03	-1.95	2.68	164.70
	NORMAL	5,450.0	11.17	111.86	5,066.90	-580.75	1,830.71	1,920.61	0.59	-0.36	-2.39	231.04
10/17/2011	NORMAL	5,545.0	9.34	111.18	5,160.38	-586.96	1,846.44	1,937.48	1.93	-1.93	-0.72	183.45
	NORMAL	5,641.0	9.06	108.70	5,255.15	-592.20	1,860.87	1,952.81	0.51	-0.29	-2.58	233.55
	NORMAL	5,737.0	8.23	105.82	5,350.05	-596.50	1,874.64	1,967.24	0.97	-0.86	-3.00	206.13
	NORMAL	5,832.0	8.18	108.79	5,444.08	-600.53	1,887.58	1,980.79	0.45	-0.05	3.13	98.20
	NORMAL	5,927.0	6.86	106.68	5,538.26	-604.33	1,899.41	1,993.22	1.42	-1.39	-2.22	190.77
	NORMAL	6,023.0	6.42	108.44	5,633.62	-607.68	1,910.00	2,004.32	0.50	-0.46	1.83	156.05
	NORMAL	6,118.0	5.36	108.88	5,728.12	-610.79	1,919.23	2,014.07	1.12	-1.12	0.46	177.78
	NORMAL	6,214.0	3.96	102.37	5,823.80	-612.95	1,926.71	2,021.85	1.56	-1.46	-6.78	197.47
10/18/2011	NORMAL	6,310.0	3.13	106.42	5,919.61	-614.40	1,932.47	2,027.78	0.90	-0.86	4.22	165.23
	NORMAL	6,405.0	2.02	99.65	6,014.52	-615.42	1,936.60	2,032.03	1.21	-1.17	-7.13	191.96
	NORMAL	6,501.0	1.28	72.52	6,110.48	-615.38	1,939.30	2,034.58	1.10	-0.77	-28.26	213.53
	NORMAL	6,596.0	1.06	355.76	6,205.46	-614.18	1,940.24	2,035.13	1.54	-0.23	-80.80	224.86
	NORMAL	6,692.0	1.06	342.75	6,301.45	-612.45	1,939.91	2,034.29	0.25	0.00	-13.55	263.50
	NORMAL	6,786.0	2.02	326.23	6,395.41	-610.24	1,938.73	2,032.51	1.11	1.02	-17.57	326.77
	NORMAL	6,881.0	1.85	312.52	6,490.36	-607.82	1,936.67	2,029.81	0.52	-0.18	-14.43	243.07
	NORMAL	6,977.0	1.67	308.74	6,586.31	-605.89	1,934.44	2,027.11	0.22	-0.19	-3.94	210.94
	NORMAL	7,072.0	1.49	326.49	6,681.28	-604.00	1,932.68	2,024.86	0.55	-0.19	18.68	118.92
	NORMAL	7,168.0	1.41	293.45	6,777.25	-602.49	1,930.91	2,022.71	0.86	-0.08	-34.42	248.17
	NORMAL	7,262.0	1.58	256.09	6,871.22	-602.34	1,928.59	2,020.46	1.03	0.18	-39.74	260.87
10/19/2011	NORMAL	7,357.0	2.11	233.68	6,966.17	-603.69	1,925.91	2,018.30	0.93	0.56	-23.59	294.75

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Bulld (°/100ft)	Turn (°/100ft)	TFace (°)
10/20/2011	NORMAL	7,452.0	2.69	228.25	7,061.09	-606.21	1,922.83	2,016.13	0.66	0.61	-5.72	335.87
	NORMAL	7,547.0	1.13	218.16	7,156.03	-608.43	1,920.59	2,014.66	1.67	-1.64	-10.62	187.15
	NORMAL	7,643.0	0.62	69.86	7,252.02	-608.99	1,920.50	2,014.73	1.76	-0.53	-154.48	191.12
	NORMAL	7,738.0	0.53	72.31	7,347.02	-608.68	1,921.40	2,015.50	0.10	-0.09	2.58	165.94
	NORMAL	7,832.0	0.19	113.13	7,441.02	-608.61	1,921.95	2,016.01	0.43	-0.36	43.43	162.17
	NORMAL	7,943.0	0.62	171.72	7,552.02	-609.28	1,922.21	2,016.45	0.49	0.39	52.78	75.88
10/21/2011	NORMAL	8,000.0	0.62	171.72	7,609.01	-609.89	1,922.39	2,016.72	0.00	0.00	0.00	0.00