

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	GM 322-23	Wellbore No.	
Well Name	GM 322-23	Common Name	GM 322-23
Project	GV 23-06S-096W	Site	MV 10-23 Pad
Vertical Section Azimuth	30.43 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	8/30/2011	UWI	GM 322-23
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	8/30/2011	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 (°)
8/30/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/30/2011	NORMAL	86.0	0.35	16.70	86.00	0.25	0.08	0.26	0.41	0.41	0.00	16.70
	NORMAL	177.0	3.34	31.46	176.94	2.78	1.54	3.18	3.30	3.29	16.22	16.46
	NORMAL	268.0	4.84	35.07	267.71	8.18	5.13	9.65	1.67	1.65	3.97	11.54
	NORMAL	360.0	7.13	34.98	359.20	16.04	10.63	19.21	2.49	2.49	-0.10	359.72
	NORMAL	451.0	10.38	31.90	449.13	27.63	18.20	33.04	3.61	3.57	-3.38	350.27
	NORMAL	543.0	12.58	28.92	539.28	43.44	27.43	51.35	2.48	2.39	-3.24	343.45
	NORMAL	634.0	15.66	27.77	627.52	62.98	37.95	73.53	3.40	3.38	-1.26	354.24
	NORMAL	726.0	18.30	31.73	715.51	86.26	51.33	100.38	3.13	2.87	4.30	25.56
8/31/2011	NORMAL	800.0	20.13	30.94	785.38	107.06	63.99	124.73	2.50	2.47	-1.07	351.54
	NORMAL	895.0	22.30	31.26	873.94	136.50	81.75	159.10	2.29	2.28	0.34	3.20
	NORMAL	961.0	23.93	31.76	934.64	158.58	95.29	185.00	2.49	2.47	0.76	7.10
9/1/2011	NORMAL	1,071.0	24.73	32.48	1,034.87	196.96	119.39	230.30	0.78	0.73	0.65	20.67
	NORMAL	1,166.0	24.83	28.96	1,121.13	231.18	139.72	270.10	1.56	0.11	-3.71	272.28
	NORMAL	1,262.0	24.92	28.60	1,208.22	266.57	159.16	310.47	0.18	0.09	-0.38	300.56
	NORMAL	1,357.0	25.10	27.82	1,294.31	301.97	178.15	350.60	0.40	0.19	-0.82	298.27
	NORMAL	1,453.0	24.61	28.48	1,381.42	337.54	197.18	390.92	0.59	-0.51	0.69	150.78
	NORMAL	1,548.0	24.37	27.97	1,467.87	372.24	215.81	430.27	0.34	-0.25	-0.54	221.14
	NORMAL	1,644.0	24.36	30.74	1,555.33	406.75	235.22	469.86	1.19	-0.01	2.89	91.76
	NORMAL	1,740.0	24.25	30.23	1,642.82	440.80	255.26	509.37	0.25	-0.11	-0.53	242.11
	NORMAL	1,835.0	24.61	29.63	1,729.31	474.85	274.87	548.66	0.46	0.38	-0.63	325.15

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 (°)
9/1/2011	NORMAL	1,929.0	24.18	33.07	1,814.92	508.00	295.05	587.46	1.58	-0.46	3.66	108.40
	NORMAL	2,025.0	24.26	33.54	1,902.47	540.92	316.67	626.79	0.22	0.08	0.49	67.68
	NORMAL	2,120.0	24.46	33.67	1,989.02	573.55	338.36	665.92	0.22	0.21	0.14	15.07
	NORMAL	2,216.0	24.75	31.73	2,076.30	607.18	359.95	705.85	0.89	0.30	-2.02	288.87
	NORMAL	2,312.0	24.53	31.66	2,163.56	641.24	380.98	745.87	0.23	-0.23	-0.07	187.52
	NORMAL	2,407.0	24.09	31.16	2,250.14	674.62	401.36	784.97	0.51	-0.46	-0.53	204.84
	NORMAL	2,501.0	23.41	31.04	2,336.17	707.03	420.92	822.83	0.73	-0.72	-0.13	184.01
	NORMAL	2,595.0	22.79	31.44	2,422.64	738.56	440.04	859.70	0.68	-0.66	0.43	165.98
	NORMAL	2,690.0	24.07	30.17	2,509.80	771.01	459.38	897.47	1.45	1.35	-1.34	337.89
	NORMAL	2,786.0	24.02	29.03	2,597.47	805.02	478.70	936.58	0.49	-0.05	-1.19	263.34
	NORMAL	2,881.0	24.86	29.19	2,683.96	839.36	497.82	975.88	0.89	0.88	0.17	4.58
	NORMAL	2,977.0	24.92	29.43	2,771.04	874.59	517.60	1,016.27	0.12	0.06	0.25	59.40
	NORMAL	3,070.0	24.35	28.93	2,855.58	908.44	536.50	1,055.03	0.65	-0.61	-0.54	199.86
	NORMAL	3,163.0	23.14	28.76	2,940.70	941.24	554.57	1,092.46	1.30	-1.30	-0.18	183.16
	NORMAL	3,258.0	23.70	29.09	3,027.88	974.29	572.83	1,130.21	0.61	0.59	0.35	13.33
	NORMAL	3,354.0	24.60	29.62	3,115.47	1,008.52	592.09	1,169.48	0.96	0.94	0.55	13.79
	NORMAL	3,449.0	24.41	30.81	3,201.92	1,042.57	611.91	1,208.88	0.56	-0.20	1.25	111.59
	NORMAL	3,545.0	24.60	30.70	3,289.27	1,076.79	632.28	1,248.70	0.20	0.20	-0.11	346.45
	NORMAL	3,640.0	25.53	30.38	3,375.32	1,111.45	652.72	1,288.94	0.99	0.98	-0.34	351.56
	NORMAL	3,736.0	25.60	29.71	3,461.92	1,147.31	673.47	1,330.37	0.31	0.07	-0.70	283.31
	NORMAL	3,831.0	25.14	29.75	3,547.76	1,182.66	693.65	1,371.07	0.48	-0.48	0.04	177.88
	NORMAL	3,925.0	24.43	29.87	3,633.10	1,216.85	713.24	1,410.47	0.76	-0.76	0.13	176.00
9/2/2011	NORMAL	4,021.0	24.45	29.50	3,720.50	1,251.35	732.91	1,450.19	0.16	0.02	-0.39	277.27
	NORMAL	4,116.0	24.61	29.34	3,806.93	1,285.71	752.28	1,489.62	0.18	0.17	-0.17	337.38
	NORMAL	4,211.0	24.18	28.82	3,893.45	1,320.00	771.36	1,528.85	0.51	-0.45	-0.55	206.30
	NORMAL	4,306.0	23.14	29.35	3,980.46	1,353.32	789.88	1,566.96	1.12	-1.09	0.56	168.68
	NORMAL	4,400.0	22.90	29.12	4,066.97	1,385.39	807.84	1,603.71	0.27	-0.26	-0.24	200.44
	NORMAL	4,495.0	21.56	30.14	4,154.91	1,416.64	825.60	1,639.65	1.47	-1.41	1.07	164.41
	NORMAL	4,590.0	21.29	29.52	4,243.35	1,446.74	842.86	1,674.35	0.37	-0.28	-0.65	219.70
	NORMAL	4,686.0	19.69	33.27	4,333.27	1,475.43	860.32	1,707.93	2.16	-1.67	3.91	142.38
	NORMAL	4,781.0	18.42	32.85	4,423.07	1,501.42	877.24	1,738.91	1.34	-1.34	-0.44	185.96
	NORMAL	4,877.0	17.25	31.35	4,514.45	1,526.32	892.88	1,768.30	1.31	-1.22	-1.56	200.73
	NORMAL	4,972.0	16.02	30.72	4,605.47	1,549.62	906.90	1,795.49	1.31	-1.29	-0.66	188.04
	NORMAL	5,068.0	14.11	29.13	4,698.17	1,571.23	919.37	1,820.44	2.04	-1.99	-1.66	191.44
	NORMAL	5,163.0	14.06	27.78	4,790.31	1,591.56	930.38	1,843.54	0.35	-0.05	-1.42	260.69
	NORMAL	5,259.0	12.84	34.61	4,883.69	1,610.65	941.88	1,865.83	2.08	-1.27	7.11	130.81
	NORMAL	5,354.0	11.11	32.15	4,976.62	1,627.09	952.74	1,885.51	1.90	-1.82	-2.59	195.24
	NORMAL	5,449.0	9.78	33.73	5,070.04	1,641.55	962.10	1,902.71	1.43	-1.40	1.66	168.62
	NORMAL	5,545.0	8.09	29.52	5,164.87	1,654.21	969.95	1,917.61	1.89	-1.76	-4.39	199.08
	NORMAL	5,641.0	7.71	30.59	5,259.96	1,665.64	976.56	1,930.80	0.42	-0.40	1.11	159.37
	NORMAL	5,737.0	6.11	30.43	5,355.26	1,675.58	982.42	1,942.35	1.67	-1.67	-0.17	180.61
9/3/2011	NORMAL	5,832.0	4.80	31.61	5,449.83	1,683.33	987.07	1,951.38	1.38	-1.38	1.24	175.69
	NORMAL	5,927.0	3.78	36.38	5,544.56	1,689.24	991.01	1,958.47	1.14	-1.07	5.02	163.09
	NORMAL	6,023.0	2.59	21.53	5,640.41	1,693.80	993.68	1,963.76	1.50	-1.24	-15.47	207.47
	NORMAL	6,118.0	1.51	17.13	5,735.35	1,696.99	994.84	1,967.10	1.15	-1.14	-4.63	186.10
	NORMAL	6,214.0	0.71	5.81	5,831.33	1,698.80	995.27	1,968.87	0.86	-0.83	-11.79	189.72
	NORMAL	6,310.0	0.38	282.98	5,927.33	1,699.46	995.02	1,969.32	0.79	-0.34	-86.28	209.64
	NORMAL	6,405.0	0.62	46.05	6,022.33	1,699.89	995.08	1,969.72	0.93	0.25	129.55	144.12
	NORMAL	6,501.0	0.35	114.67	6,118.32	1,700.12	995.72	1,970.25	0.62	-0.28	71.48	146.50
9/4/2011	NORMAL	6,595.0	0.43	167.04	6,212.32	1,699.66	996.06	1,970.02	0.37	0.09	55.71	104.40
	NORMAL	6,692.0	0.67	193.38	6,309.32	1,698.75	996.01	1,969.21	0.35	0.25	27.15	60.17
	NORMAL	6,786.0	1.05	188.50	6,403.31	1,697.37	995.76	1,967.89	0.41	0.40	-5.19	346.64
	NORMAL	6,881.0	1.59	205.56	6,498.28	1,695.32	995.06	1,965.77	0.70	0.57	17.96	44.78
	NORMAL	6,976.0	1.23	221.47	6,593.25	1,693.36	993.82	1,963.46	0.56	-0.38	16.75	140.37
	NORMAL	7,072.0	0.94	304.83	6,689.24	1,693.04	992.49	1,962.50	1.52	-0.30	86.83	140.21
	NORMAL	7,167.0	0.48	64.48	6,784.24	1,693.66	992.21	1,962.89	1.31	-0.48	125.95	160.49
	NORMAL	7,262.0	0.45	125.89	6,879.23	1,693.61	992.87	1,963.19	0.50	-0.03	64.64	123.81

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 (°)
9/4/2011	NORMAL	7,357.0	0.10	108.64	6,974.23	1,693.37	993.25	1,963.17	0.37	-0.37	-18.16	184.78
	NORMAL	7,452.0	0.26	3.33	7,069.23	1,693.55	993.34	1,963.38	0.32	0.17	-110.85	236.08
	NORMAL	7,547.0	0.88	205.65	7,164.23	1,693.11	993.04	1,962.84	1.18	0.65	-165.98	197.28
	NORMAL	7,643.0	1.49	141.49	7,260.21	1,691.47	993.50	1,961.66	1.42	0.64	-66.83	260.25
9/5/2011	NORMAL	7,643.0	1.49	141.49	7,260.21	1,691.47	993.50	1,961.66	0.00	0.00	0.00	0.00
	NORMAL	7,738.0	3.34	178.23	7,355.13	1,687.74	994.35	1,958.87	2.45	1.95	38.67	59.27
	NORMAL	7,832.0	3.30	179.99	7,448.97	1,682.30	994.44	1,954.22	0.12	-0.04	1.87	112.30
	NORMAL	7,928.0	1.11	189.82	7,544.89	1,678.62	994.28	1,950.97	2.31	-2.28	10.24	175.09
	NORMAL	8,021.0	0.88	181.47	7,637.88	1,677.01	994.11	1,949.50	0.29	-0.25	-8.98	208.10
	NORMAL	8,085.0	0.70	173.48	7,701.87	1,676.13	994.14	1,948.76	0.33	-0.28	-12.48	207.51