

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	GM 31-12	Wellbore No.	1
Well Name	GM 31-12	Common Name	GM 31-12
Project	GV 01-07S-096W	Site	GM 44-1 Pad
Vertical Section Azimuth	240.81 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	12/16/2012	UWI	GM 31-12
Active Datum	KB @5,230.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	12/16/2012	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

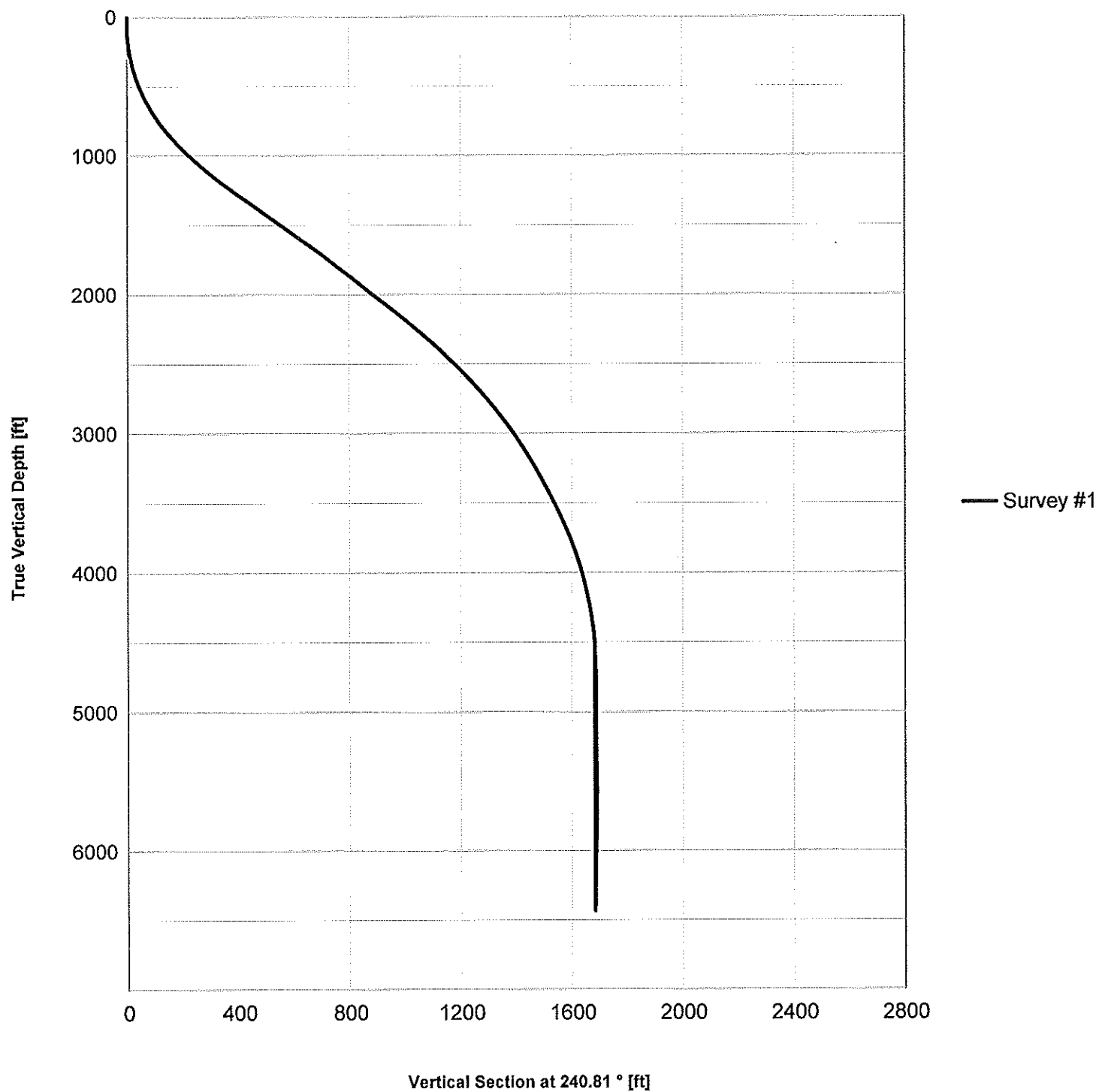
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
12/16/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/16/2012	NORMAL	75.0	0.35	290.65	75.00	0.08	-0.21	0.15	0.47	0.47	0.00	290.65
	NORMAL	105.0	1.41	257.08	105.00	0.03	-0.66	0.56	3.78	3.53	-111.90	316.61
	NORMAL	165.0	3.08	248.20	164.95	-0.73	-2.88	2.87	2.83	2.78	-14.80	343.77
	NORMAL	257.0	4.93	244.16	256.72	-3.37	-8.73	9.27	2.03	2.01	-4.39	349.31
	NORMAL	347.0	6.77	240.03	346.25	-7.71	-16.81	18.43	2.10	2.04	-4.59	345.05
	NORMAL	438.0	9.41	240.38	436.33	-14.07	-27.92	31.24	2.90	2.90	0.38	1.24
	NORMAL	511.0	11.52	238.96	508.12	-20.78	-39.36	44.49	2.91	2.89	-1.95	352.33
	NORMAL	601.0	14.41	238.77	595.81	-31.22	-56.64	64.67	3.21	3.21	-0.21	359.06
	NORMAL	692.0	16.79	239.72	683.45	-43.72	-77.67	89.13	2.63	2.62	1.04	6.58
	NORMAL	783.0	20.31	240.71	769.71	-58.08	-102.80	118.07	3.88	3.87	1.09	5.58
	NORMAL	874.0	23.27	241.55	854.20	-74.37	-132.39	151.85	3.27	3.25	0.92	6.40
	NORMAL	965.0	26.21	241.84	936.84	-92.42	-165.92	189.92	3.23	3.23	0.32	2.50
	NORMAL	1,058.0	28.49	241.60	1,019.44	-112.67	-203.54	232.64	2.45	2.45	-0.26	357.12
12/17/2012	NORMAL	1,152.0	31.13	241.22	1,100.99	-135.03	-244.57	279.36	2.82	2.81	-0.40	355.74
	NORMAL	1,246.0	33.24	241.16	1,180.54	-159.16	-288.43	329.43	2.24	2.24	-0.06	359.11
	NORMAL	1,340.0	34.89	241.60	1,258.41	-184.38	-334.65	382.08	1.77	1.76	0.47	8.68
	NORMAL	1,358.0	35.51	241.79	1,273.12	-189.30	-343.79	392.45	3.50	3.44	1.06	10.10
12/18/2012	NORMAL	1,431.0	36.23	241.08	1,332.27	-209.75	-381.36	435.22	1.14	0.99	-0.97	329.69
	NORMAL	1,525.0	34.63	239.44	1,408.87	-236.76	-428.67	489.71	1.98	-1.70	-1.74	210.05
	NORMAL	1,619.0	34.76	239.40	1,486.15	-263.99	-474.74	543.20	0.14	0.14	-0.04	350.05

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (%/100ft)	Build Rate (%/100ft)	Turn (%/100ft)	TFace (°)
12/18/2012	NORMAL	1,713.0	34.94	238.82	1,563.30	-291.56	-520.83	596.89	0.40	0.19	-0.62	298.27
	NORMAL	1,807.0	34.90	239.16	1,640.37	-319.28	-566.95	650.67	0.21	-0.04	0.36	101.75
	NORMAL	1,901.0	32.95	240.90	1,718.37	-345.50	-612.38	703.12	2.32	-2.07	1.85	154.25
	NORMAL	1,995.0	33.41	240.06	1,797.04	-370.85	-657.14	754.56	0.69	0.49	-0.89	314.67
	NORMAL	2,090.0	32.56	240.65	1,876.73	-396.44	-702.09	806.28	0.96	-0.89	0.62	159.55
	NORMAL	2,185.0	32.48	239.41	1,956.83	-421.95	-746.33	857.34	0.71	-0.08	-1.31	262.63
	NORMAL	2,279.0	32.87	240.87	2,035.96	-447.21	-790.34	908.08	0.94	0.41	1.55	64.29
	NORMAL	2,372.0	32.31	241.36	2,114.32	-471.41	-834.20	958.17	0.67	-0.60	0.53	154.97
	NORMAL	2,466.0	31.16	241.63	2,194.26	-495.01	-877.65	1,007.61	1.23	-1.22	0.29	173.07
	NORMAL	2,559.0	30.27	239.95	2,274.21	-518.18	-919.11	1,055.11	1.33	-0.96	-1.81	223.23
	NORMAL	2,653.0	29.17	240.20	2,355.85	-541.43	-959.50	1,101.70	1.18	-1.17	0.27	173.68
	NORMAL	2,747.0	27.46	240.91	2,438.60	-563.35	-998.32	1,146.29	1.85	-1.82	0.76	169.17
	NORMAL	2,840.0	26.38	240.55	2,521.52	-583.93	-1,035.05	1,188.39	1.17	-1.16	-0.39	188.42
	NORMAL	2,933.0	25.23	241.47	2,605.25	-603.56	-1,070.45	1,228.87	1.31	-1.24	0.99	161.21
12/19/2012	NORMAL	3,028.0	24.12	240.55	2,691.57	-622.77	-1,105.15	1,268.53	1.24	-1.17	-0.97	198.67
	NORMAL	3,121.0	22.70	241.34	2,776.91	-640.72	-1,137.44	1,305.48	1.56	-1.53	0.85	167.90
	NORMAL	3,214.0	21.37	240.97	2,863.12	-657.55	-1,168.00	1,340.37	1.44	-1.43	-0.40	185.79
	NORMAL	3,309.0	20.21	241.19	2,951.93	-673.86	-1,197.52	1,374.09	1.22	-1.22	0.23	176.25
	NORMAL	3,403.0	18.08	243.78	3,040.73	-688.13	-1,224.83	1,404.89	2.44	-2.27	2.76	159.48
	NORMAL	3,496.0	17.75	243.33	3,129.22	-700.87	-1,250.45	1,433.47	0.38	-0.35	-0.48	202.54
	NORMAL	3,590.0	16.17	242.93	3,219.13	-713.26	-1,274.91	1,460.87	1.69	-1.68	-0.43	184.03
	NORMAL	3,684.0	15.92	243.44	3,309.47	-724.98	-1,298.09	1,486.82	0.31	-0.27	0.54	150.83
	NORMAL	3,779.0	14.62	241.08	3,401.11	-736.60	-1,320.24	1,511.83	1.52	-1.37	-2.48	204.42
	NORMAL	3,873.0	14.60	241.64	3,492.07	-747.97	-1,341.05	1,535.54	0.15	-0.02	0.60	98.33
	NORMAL	3,967.0	13.19	240.28	3,583.32	-758.91	-1,360.79	1,558.11	1.54	-1.50	-1.45	192.38
	NORMAL	4,060.0	12.21	240.06	3,674.04	-769.08	-1,378.53	1,578.55	1.06	-1.05	-0.24	182.72
	NORMAL	4,154.0	11.47	241.71	3,766.04	-778.47	-1,395.37	1,597.84	0.87	-0.79	1.76	156.22
	NORMAL	4,247.0	9.77	240.40	3,857.45	-786.75	-1,410.38	1,614.98	1.85	-1.83	-1.41	187.44
12/20/2012	NORMAL	4,341.0	8.43	241.26	3,950.26	-794.01	-1,423.35	1,629.84	1.43	-1.43	0.91	174.63
	NORMAL	4,436.0	6.95	239.31	4,044.40	-800.29	-1,434.40	1,642.55	1.58	-1.56	-2.05	189.03
	NORMAL	4,530.0	6.80	239.07	4,137.73	-806.05	-1,444.07	1,653.80	0.16	-0.16	-0.26	190.72
	NORMAL	4,623.0	5.91	242.62	4,230.16	-811.08	-1,453.04	1,664.09	1.05	-0.96	3.82	157.94
	NORMAL	4,718.0	4.36	238.66	4,324.77	-815.21	-1,460.47	1,672.59	1.67	-1.63	-4.17	190.91
	NORMAL	4,811.0	3.46	242.32	4,417.55	-818.35	-1,465.97	1,678.92	1.00	-0.97	3.94	166.32
	NORMAL	4,903.0	1.87	232.36	4,509.45	-820.56	-1,469.62	1,683.18	1.79	-1.73	-10.83	191.30
	NORMAL	4,997.0	0.88	225.51	4,603.42	-822.00	-1,471.35	1,685.40	1.07	-1.05	-7.29	186.01
	NORMAL	5,092.0	0.74	247.82	4,698.41	-822.75	-1,472.44	1,686.71	0.36	-0.15	23.48	124.82
	NORMAL	5,186.0	0.26	88.58	4,792.41	-822.97	-1,472.79	1,687.12	1.05	-0.51	-169.40	185.36
	NORMAL	5,280.0	0.22	67.14	4,886.41	-822.89	-1,472.41	1,686.76	0.10	-0.04	-22.81	235.52
	NORMAL	5,374.0	0.22	138.21	4,980.41	-822.96	-1,472.12	1,686.54	0.27	0.00	75.61	125.53
	NORMAL	5,468.0	0.62	163.92	5,074.41	-823.58	-1,471.86	1,686.61	0.46	0.43	27.35	38.46
	NORMAL	5,561.0	1.14	155.61	5,167.40	-824.91	-1,471.34	1,686.80	0.57	0.56	-8.94	342.03
12/21/2012	NORMAL	5,656.0	0.89	189.79	5,262.38	-826.50	-1,471.08	1,687.35	0.68	-0.26	35.98	128.92
	NORMAL	5,750.0	0.63	262.44	5,356.38	-827.28	-1,471.71	1,688.29	0.98	-0.28	77.29	139.42
	NORMAL	5,845.0	0.92	281.52	5,451.37	-827.20	-1,472.98	1,689.35	0.40	0.31	20.08	51.47
	NORMAL	5,940.0	0.32	326.05	5,546.36	-826.83	-1,473.87	1,689.95	0.77	-0.63	46.87	162.03
	NORMAL	6,034.0	0.43	64.84	5,640.36	-826.46	-1,473.70	1,689.62	0.61	0.12	105.10	132.23
	NORMAL	6,129.0	0.40	85.06	5,735.36	-826.28	-1,473.05	1,688.96	0.16	-0.03	21.28	111.57
	NORMAL	6,223.0	0.52	113.17	5,829.36	-826.42	-1,472.33	1,688.40	0.27	0.13	29.90	76.53
	NORMAL	6,317.0	0.71	94.16	5,923.35	-826.63	-1,471.35	1,687.66	0.29	0.20	-20.22	303.19
	NORMAL	6,409.0	0.65	110.80	6,015.34	-826.86	-1,470.30	1,686.85	0.22	-0.07	18.09	115.11
	NORMAL	6,503.0	0.79	112.57	6,109.34	-827.29	-1,469.20	1,686.10	0.15	0.15	1.88	9.91
	NORMAL	6,598.0	0.73	109.00	6,204.33	-827.74	-1,468.02	1,685.29	0.08	-0.06	-3.76	216.51
	NORMAL	6,692.0	1.18	120.96	6,298.32	-828.44	-1,466.63	1,684.41	0.52	0.48	12.72	29.95
	NORMAL	6,762.0	1.14	133.49	6,368.30	-829.29	-1,465.51	1,683.85	0.37	-0.06	17.90	105.19
	NORMAL	6,827.0	1.14	133.49	6,433.29	-830.18	-1,464.57	1,683.46	0.00	0.00	0.00	0.00

### 3 Charts

#### 3.1 Vertical Section View



### 3.2 Plan View

