

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	GM 522-23	Wellbore No.	
Well Name	GM 522-23	Common Name	GM 522-23
Project	GV 23-06S-096W	Site	MV 10-23 Pad
Vertical Section Azimuth	35.77 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	9/29/2011	UWI	GM 522-23
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	9/29/2011	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 (°)
9/29/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/29/2011	NORMAL	84.0	0.18	79.01	84.00	0.03	0.13	0.10	0.21	0.21	0.00	79.01
	NORMAL	177.0	1.41	43.77	176.99	0.88	1.06	1.34	1.36	1.32	-37.89	320.06
	NORMAL	269.0	2.90	33.05	268.92	3.65	3.12	4.78	1.67	1.62	-11.65	339.46
	NORMAL	360.0	4.84	37.53	359.71	8.62	6.71	10.92	2.16	2.13	4.92	11.10
	NORMAL	451.0	6.33	37.79	450.28	15.63	12.12	19.77	1.64	1.64	0.29	1.10
	NORMAL	543.0	7.92	33.84	541.56	24.90	18.76	31.17	1.81	1.73	-4.29	340.91
	NORMAL	634.0	10.03	33.75	631.44	36.70	26.66	45.36	2.32	2.32	-0.10	359.57
	NORMAL	726.0	12.14	33.22	721.72	51.46	36.41	63.03	2.30	2.29	-0.58	356.97
	NORMAL	822.0	13.20	34.72	815.38	68.91	48.18	84.08	1.16	1.10	1.56	17.98
	NORMAL	914.0	14.96	39.20	904.62	86.75	61.67	106.44	2.25	1.91	4.87	33.95
9/30/2011	NORMAL	989.0	15.52	39.88	976.98	101.95	74.22	126.11	0.78	0.75	0.91	18.03
	NORMAL	1,085.0	15.23	34.35	1,069.55	122.22	89.57	151.52	1.56	-0.30	-5.76	256.15
	NORMAL	1,180.0	14.49	30.70	1,161.37	142.74	102.68	175.84	1.26	-0.78	-3.84	229.92
	NORMAL	1,276.0	14.25	31.22	1,254.37	163.17	114.94	199.58	0.28	-0.25	0.54	151.98
	NORMAL	1,371.0	14.85	33.77	1,346.32	183.29	127.77	223.40	0.92	0.63	2.68	48.11
	NORMAL	1,467.0	15.28	33.27	1,439.03	204.10	141.54	248.33	0.47	0.45	-0.52	342.94
	NORMAL	1,563.0	14.51	35.23	1,531.80	224.50	155.42	273.00	0.96	-0.80	2.04	147.75
	NORMAL	1,656.0	14.37	34.25	1,621.86	243.55	168.64	296.18	0.30	-0.15	-1.05	239.72
	NORMAL	1,752.0	14.67	39.36	1,714.80	262.80	183.05	320.23	1.37	0.31	5.32	79.30
	NORMAL	1,847.0	15.55	37.45	1,806.51	282.21	198.42	344.96	1.06	0.93	-2.01	329.58

## 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 (°)
9/30/2011	NORMAL	1,943.0	15.82	36.75	1,898.94	302.91	214.08	370.91	0.34	0.28	-0.73	324.64
	NORMAL	2,039.0	16.14	36.41	1,991.23	324.13	229.83	397.33	0.35	0.33	-0.35	343.53
	NORMAL	2,134.0	15.22	37.37	2,082.69	344.67	245.23	423.00	1.01	-0.97	1.01	164.71
	NORMAL	2,229.0	15.77	37.02	2,174.24	364.89	260.58	448.37	0.59	0.58	-0.37	350.18
	NORMAL	2,322.0	14.66	36.26	2,263.98	384.47	275.15	472.78	1.21	-1.19	-0.82	189.82
	NORMAL	2,418.0	13.18	36.13	2,357.16	403.10	288.79	495.87	1.54	-1.54	-0.14	181.15
	NORMAL	2,513.0	13.37	35.32	2,449.62	420.81	301.52	517.68	0.28	0.20	-0.85	315.22
	NORMAL	2,609.0	12.80	34.45	2,543.13	438.64	313.95	539.42	0.63	-0.59	-0.91	198.64
	NORMAL	2,704.0	13.90	36.88	2,635.56	456.45	326.76	561.35	1.30	1.16	2.56	28.21
	NORMAL	2,798.0	14.28	36.95	2,726.73	474.74	340.50	584.23	0.40	0.40	0.07	2.60
	NORMAL	2,890.0	14.55	35.14	2,815.83	493.26	353.97	607.12	0.57	0.29	-1.97	300.05
10/1/2011	NORMAL	2,985.0	13.95	34.74	2,907.91	512.43	367.37	630.51	0.64	-0.63	-0.42	189.13
	NORMAL	3,081.0	13.12	33.67	3,001.24	531.01	380.00	652.97	0.90	-0.86	-1.11	196.27
	NORMAL	3,176.0	13.39	34.67	3,093.71	549.03	392.24	674.74	0.37	0.28	1.05	40.83
	NORMAL	3,272.0	13.93	37.48	3,187.00	567.34	405.59	697.40	0.89	0.56	2.93	52.23
	NORMAL	3,367.0	14.58	37.41	3,279.07	585.91	419.81	720.78	0.68	0.68	-0.07	358.45
	NORMAL	3,463.0	13.97	37.16	3,372.11	604.74	434.15	744.45	0.64	-0.64	-0.26	185.65
	NORMAL	3,558.0	13.93	36.14	3,464.31	623.12	447.82	767.35	0.26	-0.04	-1.07	260.27
	NORMAL	3,652.0	14.51	35.66	3,555.43	641.82	461.36	790.44	0.63	0.62	-0.51	348.28
	NORMAL	3,748.0	14.68	35.40	3,648.33	661.51	475.42	814.63	0.19	0.18	-0.27	338.80
	NORMAL	3,843.0	15.23	35.01	3,740.11	681.54	489.55	839.14	0.59	0.58	-0.41	349.44
	NORMAL	3,939.0	14.95	34.08	3,832.80	702.12	503.73	864.13	0.39	-0.29	-0.97	220.40
	NORMAL	4,034.0	13.89	33.38	3,924.81	721.80	516.87	887.77	1.13	-1.12	-0.74	189.00
	NORMAL	4,127.0	13.80	34.57	4,015.10	740.25	529.30	910.01	0.32	-0.10	1.28	108.12
	NORMAL	4,222.0	14.45	37.47	4,107.23	758.99	542.94	933.19	1.01	0.68	3.05	48.85
	NORMAL	4,317.0	14.07	37.24	4,199.30	777.59	557.14	956.58	0.40	-0.40	-0.24	188.37
	NORMAL	4,413.0	14.11	35.95	4,292.42	796.35	571.07	979.95	0.33	0.04	-1.34	276.63
	NORMAL	4,508.0	13.63	35.40	4,384.65	814.85	584.35	1,002.72	0.52	-0.51	-0.58	195.09
	NORMAL	4,604.0	13.90	35.88	4,477.89	833.41	597.66	1,025.56	0.31	0.28	0.50	23.16
	NORMAL	4,699.0	13.81	36.72	4,570.13	851.75	611.13	1,048.31	0.23	-0.09	0.88	114.51
	NORMAL	4,795.0	12.37	35.61	4,663.63	869.29	623.97	1,070.05	1.52	-1.50	-1.16	189.36
	NORMAL	4,890.0	10.17	36.63	4,756.79	884.30	634.90	1,088.61	2.33	-2.32	1.07	175.32
	NORMAL	4,986.0	9.76	36.85	4,851.34	897.61	644.84	1,105.22	0.43	-0.43	0.23	174.80
	NORMAL	5,081.0	9.16	38.76	4,945.05	909.95	654.40	1,120.83	0.71	-0.63	2.01	153.32
	NORMAL	5,177.0	8.10	34.37	5,039.96	921.49	663.00	1,135.22	1.30	-1.10	-4.57	209.70
	NORMAL	5,272.0	6.36	35.08	5,134.20	931.32	669.81	1,147.17	1.83	-1.83	0.75	177.41
10/2/2011	NORMAL	5,368.0	5.16	36.45	5,229.72	939.15	675.43	1,156.80	1.26	-1.25	1.43	174.14
	NORMAL	5,464.0	4.75	39.14	5,325.36	945.70	680.50	1,165.09	0.49	-0.43	2.80	151.80
	NORMAL	5,559.0	4.22	41.02	5,420.07	951.39	685.28	1,172.50	0.58	-0.56	1.98	165.43
	NORMAL	5,654.0	3.74	40.00	5,514.84	956.40	689.56	1,179.07	0.51	-0.51	-1.07	187.88
	NORMAL	5,737.0	2.86	39.51	5,597.70	960.07	692.62	1,183.83	1.06	-1.06	-0.59	181.59
	NORMAL	5,832.0	2.95	49.67	5,692.58	963.48	695.99	1,188.57	0.55	0.09	10.69	85.18
	NORMAL	5,927.0	2.28	40.73	5,787.48	966.50	699.09	1,192.83	0.82	-0.71	-9.41	206.92
	NORMAL	6,023.0	1.38	35.97	5,883.43	968.88	701.01	1,195.89	0.95	-0.94	-4.96	187.21
	NORMAL	6,118.0	0.92	45.56	5,978.41	970.34	702.23	1,197.78	0.52	-0.48	10.09	162.04
	NORMAL	6,214.0	0.97	37.60	6,074.40	971.52	703.28	1,199.35	0.15	0.05	-8.29	286.84
	NORMAL	6,310.0	1.18	41.40	6,170.38	972.91	704.43	1,201.15	0.23	0.22	3.96	20.66
10/3/2011	NORMAL	6,405.0	0.68	27.13	6,265.37	974.14	705.33	1,202.68	0.58	-0.53	-15.02	197.83
	NORMAL	6,501.0	0.12	299.38	6,361.37	974.70	705.50	1,203.23	0.71	-0.58	-91.41	190.07
	NORMAL	6,596.0	0.12	267.31	6,456.37	974.74	705.32	1,203.16	0.07	0.00	-33.76	253.97
	NORMAL	6,692.0	0.83	8.01	6,552.36	975.43	705.31	1,203.71	0.90	0.74	104.90	108.58
	NORMAL	6,786.0	0.79	13.95	6,646.35	976.73	705.56	1,204.92	0.10	-0.04	6.32	118.42
	NORMAL	6,881.0	0.96	52.43	6,741.34	977.85	706.35	1,206.29	0.63	0.18	40.51	93.68
	NORMAL	6,977.0	0.35	34.08	6,837.34	978.59	707.15	1,207.35	0.66	-0.64	-19.11	189.95
	NORMAL	7,072.0	0.88	221.81	6,932.33	978.28	706.83	1,206.91	1.29	0.56	-181.34	185.53
	NORMAL	7,168.0	0.77	199.91	7,028.32	977.13	706.12	1,205.56	0.35	-0.11	-22.81	240.04
	NORMAL	7,262.0	0.42	109.03	7,122.32	976.42	706.23	1,205.05	0.94	-0.37	-96.68	208.41

## 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 (°)
10/3/2011	NORMAL	7,357.0	0.66	103.13	7,217.31	976.18	707.09	1,205.36	0.26	0.25	-6.21	343.99
	NORMAL	7,452.0	1.49	99.12	7,312.30	975.86	708.84	1,206.13	0.88	0.87	-4.22	352.81
	NORMAL	7,547.0	1.61	112.13	7,407.26	975.16	711.30	1,207.00	0.39	0.13	13.69	77.75
	NORMAL	7,643.0	1.41	161.58	7,503.23	973.53	712.92	1,206.62	1.33	-0.21	51.51	122.90
10/4/2011	NORMAL	7,738.0	1.86	198.02	7,598.20	970.96	712.81	1,204.47	1.17	0.47	38.36	85.52
	NORMAL	7,764.0	2.11	197.91	7,624.18	970.10	712.54	1,203.61	0.96	0.96	-0.42	359.07
10/5/2011	NORMAL	7,820.0	2.11	197.91	7,680.14	968.14	711.90	1,201.65	0.00	0.00	0.00	0.00