

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	GM 313-23	Wellbore No.	
Well Name	GM 313-23	Common Name	GM 313-23
Project	GV 23-06S-096W	Site	MV 10-23 Pad
Vertical Section Azimuth	310.55 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	7/10/2011	UWI	GM 313-23
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	7/10/2011	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 (°)
7/10/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/10/2011	NORMAL	85.0	0.18	313.07	85.00	0.09	-0.10	0.13	0.21	0.21	0.00	313.07
	NORMAL	177.0	0.44	320.45	177.00	0.46	-0.43	0.63	0.29	0.28	8.02	12.43
	NORMAL	268.0	1.50	306.39	267.98	1.44	-1.61	2.16	1.19	1.16	-15.45	340.25
	NORMAL	360.0	3.26	303.40	359.90	3.59	-4.76	5.95	1.92	1.91	-3.25	354.47
	NORMAL	451.0	3.26	320.98	450.76	7.03	-8.55	11.07	1.09	0.00	19.32	98.78
	NORMAL	543.0	3.61	317.81	542.59	11.21	-12.14	16.51	0.43	0.38	-3.45	329.92
	NORMAL	614.0	3.12	304.57	613.47	13.96	-15.24	20.65	1.29	-0.69	-18.65	231.27
7/11/2011	NORMAL	706.0	3.69	313.25	705.31	17.41	-19.45	26.10	0.83	0.62	9.43	46.51
	NORMAL	754.0	4.19	310.48	753.19	19.60	-21.91	29.40	1.11	1.04	-5.77	337.77
7/12/2011	NORMAL	975.0	4.32	315.41	973.60	29.54	-34.62	45.51	0.99	0.18	13.19	85.80
	NORMAL	1,070.0	3.34	299.63	1,068.39	33.46	-39.54	51.80	1.51	-1.03	-16.61	219.39
	NORMAL	1,166.0	2.77	312.51	1,164.26	36.41	-43.68	56.86	0.93	-0.59	13.42	136.02
	NORMAL	1,261.0	2.64	330.92	1,259.15	39.87	-46.44	61.21	0.92	-0.14	19.38	107.63
	NORMAL	1,357.0	2.64	328.37	1,355.05	43.69	-48.67	65.38	0.12	0.00	-2.66	268.73
	NORMAL	1,452.0	2.18	307.73	1,449.97	46.66	-51.25	69.27	1.03	-0.48	-21.73	232.02
	NORMAL	1,548.0	2.32	307.57	1,545.89	48.96	-54.23	73.04	0.15	0.15	-0.17	357.35
	NORMAL	1,643.0	2.20	307.01	1,640.82	51.23	-57.21	76.78	0.13	-0.13	-0.59	190.15
	NORMAL	1,739.0	2.29	305.34	1,736.75	53.45	-60.25	80.52	0.12	0.09	-1.74	323.15
	NORMAL	1,835.0	1.93	316.42	1,832.68	55.73	-62.93	84.04	0.57	-0.38	11.54	136.88
	NORMAL	1,929.0	2.20	320.46	1,926.62	58.26	-65.17	87.39	0.33	0.29	4.30	30.36

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 (°)
7/12/2011	NORMAL	2,024.0	2.74	310.15	2,021.53	61.13	-68.06	91.46	0.73	0.57	-10.85	315.33
	NORMAL	2,120.0	2.04	292.28	2,117.45	63.26	-71.40	95.38	1.06	-0.73	-18.61	218.10
	NORMAL	2,215.0	2.09	301.12	2,212.39	64.80	-74.45	98.69	0.34	0.05	9.31	85.51
	NORMAL	2,311.0	1.84	311.48	2,308.33	66.72	-77.10	101.96	0.45	-0.26	10.79	130.24
	NORMAL	2,407.0	2.20	318.50	2,404.27	69.12	-79.47	105.33	0.45	0.38	7.31	38.04
	NORMAL	2,501.0	2.97	309.62	2,498.18	72.03	-82.55	109.55	0.92	0.82	-9.45	328.04
	NORMAL	2,595.0	2.63	309.86	2,592.06	74.96	-86.08	114.14	0.36	-0.36	0.26	178.14
	NORMAL	2,690.0	2.44	301.34	2,686.97	77.41	-89.48	118.32	0.44	-0.20	-8.97	239.03
	NORMAL	2,785.0	1.85	304.31	2,781.90	79.33	-92.47	121.84	0.63	-0.62	3.13	170.81
	NORMAL	2,881.0	2.77	313.74	2,877.82	81.81	-95.43	125.69	1.03	0.96	9.82	27.20
	NORMAL	2,976.0	2.63	302.39	2,972.72	84.56	-98.93	130.14	0.58	-0.15	-11.95	249.70
	NORMAL	3,070.0	3.15	309.57	3,066.60	87.36	-102.74	134.86	0.67	0.55	7.64	38.47
	NORMAL	3,162.0	3.11	320.06	3,158.46	90.89	-106.29	139.85	0.62	-0.04	11.40	99.22
	NORMAL	3,258.0	3.05	324.66	3,254.33	94.97	-109.44	144.89	0.26	-0.06	4.79	105.93
	NORMAL	3,353.0	2.64	320.69	3,349.21	98.72	-112.29	149.50	0.48	-0.43	-4.18	203.70
	NORMAL	3,449.0	3.60	313.54	3,445.07	102.51	-115.87	154.68	1.08	1.00	-7.45	334.34
7/12/2011	NORMAL	884.0	4.16	303.41	882.85	25.28	-29.46	38.82	0.40	-0.02	-5.44	263.14
7/13/2011	NORMAL	3,544.0	2.99	301.12	3,539.91	105.84	-120.16	160.11	0.98	-0.64	-13.07	223.40
	NORMAL	3,639.0	2.60	296.68	3,634.80	108.09	-124.20	164.64	0.47	-0.41	-4.67	206.83
	NORMAL	3,735.0	2.51	314.73	3,730.70	110.55	-127.64	168.85	0.84	-0.09	18.80	105.35
	NORMAL	3,830.0	2.46	308.42	3,825.61	113.28	-130.72	172.97	0.29	-0.05	-6.64	256.50
	NORMAL	3,925.0	2.45	312.79	3,920.53	115.92	-133.80	177.03	0.20	-0.01	4.60	95.24
	NORMAL	4,020.0	2.62	312.81	4,015.43	118.78	-136.89	181.23	0.18	0.18	0.02	0.31
	NORMAL	4,115.0	2.18	316.49	4,110.35	121.57	-139.72	185.20	0.49	-0.46	3.87	162.53
	NORMAL	4,211.0	2.49	311.66	4,206.27	124.28	-142.54	189.10	0.38	0.32	-5.03	325.16
	NORMAL	4,306.0	2.47	309.79	4,301.18	126.96	-145.65	193.21	0.09	-0.02	-1.97	255.18
	NORMAL	4,400.0	2.83	302.98	4,395.08	129.52	-149.16	197.53	0.51	0.38	-7.24	315.39
	NORMAL	4,495.0	3.03	311.73	4,489.96	132.46	-153.00	202.37	0.52	0.21	9.21	70.32
	NORMAL	4,589.0	3.58	308.81	4,583.80	135.96	-157.14	207.79	0.61	0.59	-3.11	341.52
	NORMAL	4,685.0	2.55	307.80	4,679.66	139.15	-161.16	212.92	1.07	-1.07	-1.05	182.50
	NORMAL	4,781.0	2.59	330.56	4,775.57	142.34	-163.91	217.09	1.06	0.04	23.71	99.15
	NORMAL	4,876.0	2.26	336.27	4,870.48	145.93	-165.72	220.79	0.43	-0.35	6.01	146.62
	NORMAL	4,972.0	1.86	334.13	4,966.42	149.06	-167.17	223.93	0.42	-0.42	-2.23	189.82
	NORMAL	5,067.0	2.02	317.91	5,061.37	151.69	-168.96	227.00	0.60	0.17	-17.07	278.04
	NORMAL	5,163.0	2.22	313.04	5,157.30	154.22	-171.45	230.53	0.28	0.21	-5.07	315.54
	NORMAL	5,259.0	1.20	337.44	5,253.26	156.41	-173.20	233.29	1.28	-1.06	25.42	156.26
	NORMAL	5,354.0	0.97	314.22	5,348.24	157.89	-174.16	234.98	0.52	-0.24	-24.44	231.10
	NORMAL	5,449.0	0.91	313.62	5,443.23	158.97	-175.28	236.53	0.06	-0.06	-0.63	189.02
7/14/2011	NORMAL	5,545.0	0.56	296.79	5,539.22	159.71	-176.25	237.75	0.42	-0.36	-17.53	203.44
	NORMAL	5,640.0	1.28	226.23	5,634.21	159.19	-177.43	238.31	1.28	0.76	-74.27	263.67
	NORMAL	5,736.0	0.74	233.01	5,730.19	158.07	-178.70	238.55	0.58	-0.56	7.06	170.90
	NORMAL	5,832.0	0.97	248.04	5,826.18	157.40	-179.95	239.06	0.33	0.24	15.66	51.96
	NORMAL	5,927.0	0.23	258.29	5,921.18	157.06	-180.88	239.54	0.78	-0.78	10.79	176.85
	NORMAL	6,022.0	0.44	180.89	6,016.18	156.65	-181.07	239.43	0.47	0.22	-81.47	252.67
	NORMAL	6,118.0	0.22	38.37	6,112.18	156.43	-180.96	239.20	0.66	-0.23	-148.46	192.29
	NORMAL	6,214.0	1.43	28.65	6,208.16	157.62	-180.28	239.45	1.26	1.26	-10.13	348.53
7/15/2011	NORMAL	6,309.0	0.67	16.13	6,303.15	159.20	-179.55	239.93	0.83	-0.80	-13.18	190.60
	NORMAL	6,405.0	0.44	297.61	6,399.14	159.91	-179.72	240.52	0.75	-0.24	-81.79	216.52
	NORMAL	6,500.0	0.88	219.91	6,494.14	159.52	-180.51	240.87	0.94	0.46	-81.79	253.63
	NORMAL	6,595.0	1.06	214.29	6,589.13	158.23	-181.48	240.76	0.21	0.19	-5.92	329.31
	NORMAL	6,691.0	0.47	60.03	6,685.12	157.70	-181.64	240.53	1.56	-0.61	-160.69	187.84
	NORMAL	6,785.0	0.34	325.76	6,779.12	158.12	-181.46	240.67	0.64	-0.14	-100.29	214.39
	NORMAL	6,881.0	0.53	254.63	6,875.12	158.24	-182.05	241.20	0.55	0.20	-74.09	251.42
	NORMAL	6,976.0	0.61	210.93	6,970.11	157.69	-182.73	241.36	0.45	0.08	-46.00	258.08
	NORMAL	7,071.0	1.49	217.27	7,065.10	156.27	-183.74	241.20	0.93	0.93	6.67	10.70
	NORMAL	7,167.0	0.53	251.99	7,161.08	155.14	-184.92	241.36	1.14	-1.00	36.17	164.02
	NORMAL	7,261.0	1.14	264.74	7,255.07	154.92	-186.26	242.24	0.67	0.65	13.56	23.38

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 (°)
7/15/2011	NORMAL	7,357.0	1.67	247.34	7,351.04	154.29	-188.50	243.54	0.70	0.55	-18.13	312.25
	NORMAL	7,451.0	2.29	238.98	7,444.99	152.80	-191.38	244.75	0.73	0.66	-8.89	330.80
	NORMAL	7,547.0	2.19	228.02	7,540.91	150.58	-194.38	245.60	0.46	-0.10	-11.42	251.42
	NORMAL	7,566.0	1.96	231.37	7,559.90	150.14	-194.91	245.70	1.37	-1.21	17.63	153.86
	NORMAL	7,622.0	1.28	241.24	7,615.88	149.24	-196.20	246.10	1.31	-1.21	17.63	162.57