

# Deviation Summary

PICEANCE VLY

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	GM 411-12	Wellbore No.	00
Wellbore Legal Name	GM 411-12	Common Wellbore Name	GM 411-12
Project	GV 12-07S-096W	Site	GM 21-12 Pad
Vertical Section Azimuth	323.87 (°)	North reference	True
Origin N/S		Origin EW	
Spud date	12/15/2014	UWI	GM 411-12
Active datum	KB @5,151.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	12/15/2014	Ended	
Tool Name	MWD	Engineer	

#### 2.1.1 Tie On Point

MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	EW (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)	EW (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
12/15/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/15/2014	NORMAL	108.0	1.58	297.69	107.99	0.69	-1.32	1.34	1.46	1.46	0.00	297.69
	NORMAL	138.0	1.94	313.51	137.97	1.23	-2.05	2.21	2.00	1.20	52.73	61.55
	NORMAL	169.0	2.02	317.11	168.95	2.00	-2.81	3.27	0.48	0.26	11.61	59.06
	NORMAL	199.0	2.82	323.96	198.93	2.98	-3.60	4.53	2.83	2.67	22.83	23.32
	NORMAL	229.0	3.78	333.19	228.88	4.46	-4.48	6.24	3.65	3.20	30.77	33.62
	NORMAL	259.0	4.57	334.42	258.80	6.42	-5.44	8.39	2.65	2.63	4.10	7.08
	NORMAL	289.0	5.10	335.48	288.69	8.71	-6.51	10.87	1.79	1.77	3.53	10.10
	NORMAL	350.0	7.21	331.44	349.34	14.54	-9.47	17.33	3.53	3.46	-6.62	346.38
	NORMAL	412.0	8.18	327.57	410.78	21.68	-13.69	25.58	1.77	1.56	-6.24	329.96
	NORMAL	502.0	10.90	319.92	499.53	33.60	-22.61	40.47	3.33	3.02	-8.50	331.20
	NORMAL	592.0	14.33	323.52	587.34	49.07	-34.71	60.10	3.91	3.81	4.00	14.67
	NORMAL	683.0	18.20	323.44	674.69	69.55	-49.88	85.58	4.25	4.25	-0.09	359.63
	NORMAL	773.0	20.79	322.12	759.52	93.45	-68.06	115.61	2.92	2.88	-1.47	349.72
	NORMAL	863.0	22.33	321.77	843.22	119.49	-88.45	148.66	1.72	1.71	-0.39	355.06
	NORMAL	954.0	23.16	321.94	927.14	147.16	-110.18	183.82	0.91	0.91	0.19	4.61
	NORMAL	1,049.0	21.80	323.35	1,014.92	176.02	-132.23	220.13	1.54	-1.43	1.48	159.03
	NORMAL	1,143.0	22.24	323.26	1,102.07	204.28	-153.29	255.37	0.47	0.47	-0.10	355.57
	NORMAL	1,238.0	20.75	323.88	1,190.46	232.28	-173.96	290.18	1.59	-1.57	0.65	171.62
	NORMAL	1,333.0	21.19	324.84	1,279.16	259.91	-193.77	324.18	0.59	0.46	1.01	38.43
	NORMAL	1,429.0	20.88	323.70	1,368.77	287.89	-213.89	358.63	0.53	-0.32	-1.19	232.32



## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
12/17/2014	NORMAL	1,525.0	21.01	323.79	1,458.42	315.56	-234.18	392.95	0.14	0.14	0.09	13.94
	NORMAL	1,618.0	21.41	323.88	1,545.12	342.72	-254.04	426.60	0.43	0.43	0.10	4.70
	NORMAL	1,714.0	21.27	323.79	1,634.54	370.93	-274.65	461.53	0.15	-0.15	-0.09	193.12
	NORMAL	1,809.0	20.79	324.58	1,723.22	398.57	-294.61	495.62	0.59	-0.51	0.83	149.80
	NORMAL	1,904.0	19.87	322.12	1,812.30	425.05	-314.29	528.62	1.32	-0.97	-2.59	221.74
	NORMAL	2,000.0	20.18	322.47	1,902.49	451.06	-334.40	561.48	0.35	0.32	0.36	21.30
	NORMAL	2,095.0	22.02	324.40	1,991.12	478.54	-354.75	595.67	2.07	1.94	2.03	21.59
	NORMAL	2,191.0	21.89	324.49	2,080.16	507.74	-375.62	631.56	0.14	-0.14	0.09	165.53
	NORMAL	2,286.0	21.45	323.88	2,168.45	536.19	-396.14	666.64	0.52	-0.46	-0.64	206.83
	NORMAL	2,382.0	21.06	324.93	2,257.92	564.48	-416.40	701.44	0.57	-0.41	1.09	136.18
	NORMAL	2,477.0	21.10	325.19	2,346.56	592.49	-435.97	735.60	0.11	0.04	0.27	66.96
	NORMAL	2,572.0	20.97	325.90	2,435.23	620.61	-455.26	769.69	0.30	-0.14	0.75	117.36
	NORMAL	2,667.0	21.10	325.63	2,523.90	648.80	-474.45	803.77	0.17	0.14	-0.28	323.17
	NORMAL	2,762.0	19.60	324.75	2,612.97	675.93	-493.30	836.79	1.61	-1.58	-0.93	191.12
	NORMAL	2,857.0	19.43	324.84	2,702.51	701.86	-511.59	868.52	0.18	-0.18	0.09	170.01
	NORMAL	2,953.0	18.07	326.07	2,793.41	727.27	-529.10	899.37	1.48	-1.42	1.28	164.37
	NORMAL	3,048.0	18.02	324.84	2,883.74	751.51	-545.78	928.78	0.40	-0.05	-1.29	261.94
	NORMAL	3,143.0	16.22	325.28	2,974.53	774.43	-561.81	956.74	1.90	-1.89	0.46	176.09
	NORMAL	3,238.0	15.47	327.04	3,065.92	795.96	-576.26	982.66	0.94	-0.79	1.85	148.20
	NORMAL	3,333.0	14.46	326.16	3,157.70	816.45	-589.75	1,007.16	1.09	-1.06	-0.93	192.26
	NORMAL	3,428.0	14.11	325.11	3,249.76	835.80	-602.98	1,030.59	0.46	-0.37	-1.11	216.00
12/18/2014	NORMAL	3,524.0	12.18	326.16	3,343.24	853.81	-615.32	1,052.41	2.03	-2.01	1.09	173.46
	NORMAL	3,619.0	11.52	326.16	3,436.21	870.01	-626.18	1,071.90	0.69	-0.69	0.00	180.00
	NORMAL	3,715.0	10.86	325.02	3,530.39	885.38	-636.70	1,090.52	0.73	-0.69	-1.19	197.97
	NORMAL	3,810.0	10.11	324.75	3,623.80	899.53	-646.65	1,107.81	0.79	-0.79	-0.28	183.62
	NORMAL	3,906.0	8.70	323.79	3,718.51	912.27	-655.80	1,123.49	1.48	-1.47	-1.00	185.88
	NORMAL	4,001.0	6.90	323.17	3,812.63	922.63	-663.47	1,136.38	1.90	-1.89	-0.65	182.37
	NORMAL	4,096.0	5.71	331.26	3,907.05	931.34	-669.16	1,146.78	1.56	-1.25	8.52	147.23
	NORMAL	4,191.0	5.45	328.80	4,001.60	939.35	-673.77	1,155.96	0.37	-0.27	-2.59	221.39
	NORMAL	4,287.0	5.14	327.14	4,097.19	946.86	-678.46	1,164.80	0.36	-0.32	-1.73	205.47
	NORMAL	4,383.0	5.19	324.67	4,192.80	954.01	-683.31	1,173.43	0.24	0.05	-2.57	281.44
	NORMAL	4,478.0	3.82	327.48	4,287.51	960.19	-687.49	1,180.89	1.46	-1.44	2.96	172.25
	NORMAL	4,573.0	3.56	349.45	4,382.32	965.76	-689.73	1,186.70	1.50	-0.27	23.13	111.26
	NORMAL	4,668.0	2.50	357.45	4,477.18	970.73	-690.37	1,191.09	1.20	-1.12	8.42	162.21
	NORMAL	4,764.0	2.46	24.26	4,573.10	974.70	-689.61	1,193.85	1.20	-0.04	27.93	105.33
	NORMAL	4,860.0	2.68	54.14	4,669.00	977.89	-686.95	1,194.86	1.40	0.23	31.13	95.81
12/19/2014	NORMAL	4,955.0	2.24	54.31	4,763.92	980.27	-683.64	1,194.84	0.46	-0.46	0.18	179.13
	NORMAL	5,050.0	2.33	56.51	4,858.84	982.42	-680.52	1,194.73	0.13	0.09	2.32	45.37
	NORMAL	5,145.0	2.02	50.18	4,953.77	984.56	-677.63	1,194.75	0.41	-0.33	-6.66	214.64
	NORMAL	5,240.0	1.54	52.73	5,048.73	986.40	-675.32	1,194.88	0.51	-0.51	2.68	171.90
	NORMAL	5,334.0	1.36	51.77	5,142.70	987.86	-673.44	1,194.95	0.19	-0.19	-1.02	187.21
	NORMAL	5,430.0	1.05	27.51	5,238.68	989.35	-672.14	1,195.38	0.61	-0.32	-25.27	226.97
	NORMAL	5,525.0	0.57	33.48	5,333.67	990.51	-671.48	1,195.93	0.51	-0.51	6.28	173.00
12/20/2014	NORMAL	5,620.0	0.26	39.81	5,428.66	991.07	-671.08	1,196.15	0.33	-0.33	6.66	174.74
	NORMAL	5,715.0	0.26	18.72	5,523.66	991.44	-670.87	1,196.33	0.10	0.00	-22.20	259.46
	NORMAL	5,810.0	1.23	229.04	5,618.66	990.98	-671.57	1,196.37	1.54	1.02	-157.56	205.16
	NORMAL	5,905.0	1.63	223.50	5,713.63	989.33	-673.27	1,196.04	0.45	0.42	-5.83	338.15
	NORMAL	6,001.0	1.76	229.31	5,809.59	987.38	-675.33	1,195.67	0.22	0.14	6.05	55.82
	NORMAL	6,096.0	2.07	234.58	5,904.53	985.43	-677.84	1,195.58	0.37	0.33	5.55	32.25
	NORMAL	6,191.0	2.11	241.35	5,999.47	983.60	-680.77	1,195.83	0.26	0.04	7.13	84.19
	NORMAL	6,285.0	2.07	253.91	6,093.41	982.30	-683.92	1,196.63	0.49	-0.04	13.36	101.25
	NORMAL	6,380.0	2.50	254.71	6,188.33	981.28	-687.57	1,197.96	0.45	0.45	0.84	4.64
	NORMAL	6,421.0	2.33	247.32	6,229.30	980.72	-689.20	1,198.47	0.86	-0.41	-18.02	237.71
	NORMAL	6,476.0	2.33	247.32	6,284.25	979.86	-691.26	1,198.99	0.00	0.00	0.00	0.00