

# Deviation Summary

PICEANCE VLY

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	PA 414-2	Wellbore No.	00
Wellbore Legal Name	PA 414-2	Common Wellbore Name	PA 414-2
Project	PA 02-07S-095W	Site	GV 86-2 Pad
Vertical Section Azimuth	211.85 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	4/22/2014	UWI	PA 414-2
Active datum	KB @5,847.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	4/22/2014	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 (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
4/22/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/22/2014	NORMAL	100.0	0.44	292.41	100.00	0.15	-0.35	0.06	0.44	0.44	0.00	292.41
	NORMAL	161.0	1.23	218.85	160.99	-0.27	-0.98	0.75	1.94	1.30	-120.59	265.55
	NORMAL	253.0	4.75	213.49	252.85	-4.22	-3.70	5.54	3.83	3.83	-5.83	352.78
	NORMAL	344.0	8.89	213.84	343.19	-13.21	-9.70	16.34	4.55	4.55	0.38	0.75
	NORMAL	434.0	10.91	213.49	431.85	-26.09	-18.27	31.80	2.25	2.24	-0.39	358.12
	NORMAL	524.0	13.46	210.76	519.81	-42.20	-28.33	50.79	2.90	2.83	-3.03	345.93
4/23/2014	NORMAL	599.0	15.94	210.40	592.35	-58.58	-38.01	69.82	3.31	3.31	-0.48	357.72
	NORMAL	689.0	19.79	210.10	678.00	-82.43	-51.91	97.41	4.28	4.28	-0.33	358.49
	NORMAL	780.0	23.33	210.92	762.62	-111.23	-68.90	130.84	3.90	3.89	0.90	5.25
	NORMAL	861.0	24.65	211.25	836.62	-139.43	-85.91	163.77	1.64	1.63	0.41	5.95
	NORMAL	925.0	24.65	211.25	894.79	-162.25	-99.75	190.46	0.00	0.00	0.00	0.00
4/24/2014	NORMAL	958.0	25.41	210.97	924.69	-174.20	-106.97	204.42	2.33	2.30	-0.85	351.01
	NORMAL	1,053.0	25.85	210.54	1,010.34	-209.52	-127.98	245.50	0.50	0.46	-0.45	336.89
	NORMAL	1,148.0	26.24	211.04	1,095.69	-245.35	-149.33	287.21	0.47	0.41	0.53	29.60
	NORMAL	1,243.0	26.44	210.65	1,180.83	-281.54	-170.94	329.35	0.28	0.21	-0.41	318.96
	NORMAL	1,338.0	26.67	212.12	1,265.81	-317.79	-193.06	371.82	0.73	0.24	1.55	71.37
	NORMAL	1,432.0	25.07	213.96	1,350.39	-352.18	-215.41	412.82	1.90	-1.70	1.96	154.18
	NORMAL	1,528.0	24.71	212.91	1,437.47	-385.89	-237.67	453.21	0.59	-0.38	-1.09	230.36
	NORMAL	1,622.0	24.45	213.26	1,522.95	-418.65	-259.01	492.30	0.32	-0.28	0.37	150.91
	NORMAL	1,717.0	23.92	212.86	1,609.61	-451.27	-280.25	531.21	0.58	-0.56	-0.42	197.00

## 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 (")
4/24/2014	NORMAL	1,812.0	23.57	212.81	1,696.57	-483.41	-300.99	569.46	0.37	-0.37	-0.05	183.27
	NORMAL	1,907.0	23.08	212.77	1,783.81	-515.04	-321.36	607.07	0.52	-0.52	-0.04	181.83
	NORMAL	2,001.0	22.34	213.79	1,870.52	-545.38	-341.27	643.35	0.89	-0.79	1.09	152.45
	NORMAL	2,096.0	22.31	211.56	1,958.40	-575.75	-360.75	679.42	0.89	-0.03	-2.35	266.94
	NORMAL	2,191.0	23.31	211.46	2,045.97	-607.14	-379.99	716.25	1.05	1.05	-0.11	357.73
	NORMAL	2,286.0	23.30	211.41	2,133.22	-639.21	-399.60	753.83	0.02	-0.01	-0.05	243.16
	NORMAL	2,381.0	24.18	210.01	2,220.18	-672.10	-419.12	792.07	1.10	0.93	-1.47	326.72
	NORMAL	2,476.0	24.09	210.45	2,306.88	-705.66	-438.68	830.90	0.21	-0.09	0.46	116.78
	NORMAL	2,571.0	23.87	209.40	2,393.68	-739.12	-457.94	869.48	0.51	-0.23	-1.11	242.25
	NORMAL	2,666.0	23.21	210.80	2,480.77	-771.95	-476.96	907.41	0.91	-0.69	1.47	140.37
	NORMAL	2,760.0	23.95	210.73	2,566.92	-804.26	-496.19	945.00	0.79	0.79	-0.07	357.80
	NORMAL	2,855.0	23.04	210.97	2,654.05	-836.77	-515.61	982.87	0.96	-0.96	0.25	174.11
	NORMAL	2,950.0	23.99	209.58	2,741.16	-869.51	-534.71	1,020.76	1.16	1.00	-1.46	329.09
	NORMAL	3,045.0	23.92	209.83	2,827.97	-903.01	-553.83	1,059.30	0.13	-0.07	0.26	124.71
	NORMAL	3,140.0	23.83	211.41	2,914.85	-936.10	-573.41	1,097.74	0.68	-0.09	1.66	98.73
	NORMAL	3,235.0	23.74	211.33	3,001.78	-968.81	-593.35	1,136.05	0.10	-0.09	-0.08	199.69
	NORMAL	3,330.0	22.07	211.77	3,089.28	-1,000.32	-612.70	1,173.02	1.77	-1.76	0.46	174.35
	NORMAL	3,425.0	21.28	210.71	3,177.57	-1,030.32	-630.90	1,208.11	0.93	-0.83	-1.12	205.87
	NORMAL	3,520.0	20.27	210.70	3,266.39	-1,059.29	-648.10	1,241.80	1.06	-1.06	-0.01	180.20
	NORMAL	3,615.0	20.31	211.85	3,355.49	-1,087.44	-665.20	1,274.74	0.42	0.04	1.21	84.81
	NORMAL	3,709.0	20.14	211.33	3,443.70	-1,115.13	-682.23	1,307.23	0.26	-0.18	-0.55	226.36
	NORMAL	3,804.0	20.14	212.29	3,532.89	-1,142.92	-699.47	1,339.94	0.35	0.00	1.01	90.45
	NORMAL	3,899.0	20.05	211.33	3,622.11	-1,170.66	-716.67	1,372.58	0.36	-0.09	-1.01	254.29
4/25/2014	NORMAL	3,994.0	19.35	213.31	3,711.55	-1,197.72	-733.78	1,404.60	1.02	-0.74	2.08	137.29
	NORMAL	4,089.0	17.94	212.73	3,801.56	-1,223.18	-750.34	1,434.96	1.50	-1.48	-0.61	187.22
	NORMAL	4,184.0	16.94	211.01	3,892.19	-1,247.35	-765.38	1,463.43	1.18	-1.05	-1.81	206.45
	NORMAL	4,279.0	15.83	210.62	3,983.33	-1,270.37	-779.11	1,490.23	1.17	-1.17	-0.41	185.47
	NORMAL	4,374.0	15.08	211.34	4,074.90	-1,292.07	-792.14	1,515.54	0.81	-0.79	0.76	166.00
	NORMAL	4,468.0	13.28	209.57	4,166.03	-1,311.91	-803.83	1,538.56	1.97	-1.91	-1.88	192.69
	NORMAL	4,563.0	12.84	208.69	4,258.57	-1,330.66	-814.28	1,560.00	0.51	-0.46	-0.93	203.89
	NORMAL	4,658.0	12.49	210.89	4,351.26	-1,348.74	-824.62	1,580.81	0.63	-0.37	2.32	127.03
	NORMAL	4,753.0	10.15	210.52	4,444.41	-1,364.76	-834.15	1,599.45	2.46	-2.46	-0.39	181.60
	NORMAL	4,848.0	8.88	211.46	4,538.10	-1,378.23	-842.23	1,615.15	1.35	-1.34	0.99	173.49
	NORMAL	4,943.0	7.40	215.43	4,632.14	-1,389.47	-849.60	1,628.59	1.67	-1.56	4.18	161.16
	NORMAL	5,037.0	6.24	212.29	4,725.47	-1,398.72	-855.84	1,639.74	1.30	-1.23	-3.34	196.27
	NORMAL	5,132.0	5.63	206.77	4,819.97	-1,407.25	-860.69	1,649.55	0.88	-0.64	-5.81	220.37
	NORMAL	5,227.0	4.93	205.48	4,914.56	-1,415.09	-864.55	1,658.25	0.75	-0.74	-1.36	188.98
	NORMAL	5,322.0	3.32	214.59	5,009.31	-1,421.04	-867.87	1,665.05	1.82	-1.69	9.59	162.35
	NORMAL	5,416.0	2.30	195.78	5,103.20	-1,425.10	-869.93	1,669.58	1.45	-1.09	-20.01	212.98
	NORMAL	5,511.0	0.62	188.65	5,198.17	-1,427.44	-870.52	1,671.89	1.78	-1.77	-7.51	182.62
	NORMAL	5,606.0	0.53	189.35	5,293.16	-1,428.38	-870.67	1,672.77	0.10	-0.09	0.74	175.89
	NORMAL	5,701.0	1.21	58.01	5,388.16	-1,428.29	-869.89	1,672.27	1.69	0.72	-138.25	214.35
	NORMAL	5,796.0	1.20	42.03	5,483.14	-1,427.02	-868.37	1,670.39	0.35	-0.01	-16.82	260.32
	NORMAL	5,891.0	0.88	48.11	5,578.12	-1,425.79	-867.17	1,668.71	0.36	-0.34	6.40	164.00
	NORMAL	5,985.0	0.57	24.26	5,672.11	-1,424.88	-866.44	1,667.56	0.45	-0.33	-25.37	212.72
	NORMAL	6,080.0	0.62	308.80	5,767.11	-1,424.13	-866.64	1,667.03	0.77	0.05	-79.43	235.38
	NORMAL	6,175.0	0.50	261.62	5,862.11	-1,423.87	-867.45	1,667.23	0.49	-0.13	-49.66	232.63
4/26/2014	NORMAL	6,270.0	0.62	265.29	5,957.10	-1,423.97	-868.38	1,667.80	0.13	0.13	3.86	18.48
	NORMAL	6,365.0	0.79	216.95	6,052.10	-1,424.53	-869.28	1,668.76	0.63	0.18	-50.88	260.87
	NORMAL	6,460.0	0.88	223.85	6,147.09	-1,425.58	-870.18	1,670.13	0.14	0.09	7.26	51.65
	NORMAL	6,555.0	1.44	232.24	6,242.07	-1,426.84	-871.63	1,671.96	0.61	0.59	8.83	21.10
	NORMAL	6,649.0	0.79	275.57	6,336.05	-1,427.50	-873.21	1,673.36	1.09	-0.69	46.10	147.93
	NORMAL	6,744.0	0.97	224.77	6,431.04	-1,428.01	-874.43	1,674.43	0.81	0.19	-53.47	256.76
	NORMAL	6,839.0	1.58	220.99	6,526.02	-1,429.57	-875.85	1,676.51	0.65	0.64	-3.98	350.26
	NORMAL	6,934.0	2.11	235.14	6,620.97	-1,431.56	-878.15	1,679.41	0.73	0.56	14.89	47.90
	NORMAL	7,029.0	2.64	220.38	6,715.89	-1,434.22	-881.00	1,683.18	0.85	0.56	-15.54	303.38

## 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 (°)
4/26/2014	NORMAL	7,124.0	4.10	217.03	6,810.72	-1,438.60	-884.46	1,688.72	1.56	1.54	-3.53	350.64
	NORMAL	7,219.0	4.66	227.76	6,905.44	-1,443.91	-889.36	1,695.82	1.04	0.59	11.29	61.08
	NORMAL	7,314.0	5.28	234.53	7,000.09	-1,449.04	-895.78	1,703.56	0.90	0.65	7.13	46.82
	NORMAL	7,409.0	5.82	232.83	7,094.64	-1,454.48	-903.18	1,712.09	0.59	0.57	-1.79	342.22
	NORMAL	7,504.0	5.90	234.49	7,189.15	-1,460.23	-910.99	1,721.09	0.20	0.08	1.75	65.58
	NORMAL	7,599.0	5.78	237.75	7,283.65	-1,465.62	-919.01	1,729.90	0.37	-0.13	3.43	111.50
	NORMAL	7,649.0	5.76	237.20	7,333.40	-1,468.32	-923.25	1,734.44	0.12	-0.04	-1.10	249.84
	NORMAL	7,715.0	5.76	237.20	7,399.07	-1,471.91	-928.82	1,740.42	0.00	0.00	0.00	0.00