

## I General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	PA 443-2	Wellbore No.	
Well Name	PA 443-2	Common Name	PA 443-2
Project	PA 01-07S-095W	Site	GV 84-1 Pad
Vertical Section Azimuth	241.85 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	3/13/2013	UWI	PA 443-2
Active Datum	KB @6,053.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	3/13/2013	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 (°)
3/13/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/13/2013	NORMAL	104.0	0.53	280.72	104.00	0.09	-0.47	0.37	0.51	0.51	0.00	280.72
	NORMAL	135.0	0.97	268.42	135.00	0.11	-0.88	0.72	1.50	1.42	-39.68	333.68
	NORMAL	166.0	0.97	244.86	165.99	-0.01	-1.38	1.22	1.28	0.00	-76.00	258.22
	NORMAL	196.0	1.67	251.46	195.98	-0.26	-2.02	1.90	2.38	2.33	22.00	15.57
	NORMAL	226.0	1.76	238.45	225.97	-0.64	-2.83	2.79	1.33	0.30	-43.37	276.46
	NORMAL	256.0	2.38	232.91	255.95	-1.25	-3.72	3.87	2.17	2.07	-18.47	339.33
	NORMAL	287.0	3.52	244.16	286.91	-2.06	-5.09	5.46	4.11	3.68	36.29	32.62
	NORMAL	317.0	4.22	249.17	316.84	-2.85	-6.95	7.47	2.59	2.33	16.70	28.30
	NORMAL	347.0	4.66	245.39	346.75	-3.75	-9.09	9.78	1.76	1.47	-12.60	324.48
	NORMAL	374.0	5.10	243.54	373.65	-4.74	-11.16	12.08	1.73	1.63	-6.85	339.40
	NORMAL	405.0	5.81	247.24	404.51	-5.96	-13.84	15.01	2.55	2.29	11.94	28.20
3/14/2013	NORMAL	435.0	6.25	240.82	434.35	-7.35	-16.66	18.16	2.68	1.47	-21.40	299.90
	NORMAL	465.0	7.30	241.00	464.14	-9.07	-19.76	21.70	3.50	3.50	0.60	1.25
	NORMAL	496.0	8.01	240.64	494.86	-11.08	-23.36	25.83	2.30	2.29	-1.16	355.96
	NORMAL	526.0	9.50	241.52	524.51	-13.29	-27.36	30.39	4.99	4.97	2.93	5.57
	NORMAL	556.0	11.00	238.62	554.03	-15.96	-31.98	35.73	5.29	5.00	-9.67	339.58
	NORMAL	586.0	12.58	240.91	583.40	-19.04	-37.28	41.85	5.49	5.27	7.63	17.62
	NORMAL	616.0	13.46	239.94	612.62	-22.37	-43.16	48.61	3.02	2.93	-3.23	345.58
	NORMAL	647.0	13.72	241.79	642.76	-25.92	-49.52	55.89	1.63	0.84	5.97	60.02
	NORMAL	677.0	13.64	241.44	671.91	-29.29	-55.76	62.98	0.38	-0.27	-1.17	225.87

## 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 (°)
3/14/2013	NORMAL	708.0	14.52	243.46	701.97	-32.78	-62.45	70.52	3.25	2.84	6.52	30.16
	NORMAL	748.0	15.83	242.84	740.58	-37.51	-71.79	80.99	3.30	3.28	-1.55	352.64
	NORMAL	778.0	15.93	243.59	769.43	-41.21	-79.12	89.20	0.76	0.33	2.50	64.38
	NORMAL	869.0	18.03	241.89	856.46	-53.40	-102.73	115.77	2.37	2.31	-1.87	345.88
	NORMAL	960.0	21.02	240.30	942.22	-68.12	-129.33	146.17	3.34	3.29	-1.75	349.17
	NORMAL	1,055.0	22.80	239.10	1,030.36	-86.02	-159.93	181.59	1.93	1.87	-1.26	345.32
	NORMAL	1,151.0	24.62	240.40	1,118.25	-105.45	-193.28	220.16	1.97	1.90	1.35	16.62
	NORMAL	1,180.0	25.59	240.91	1,144.51	-111.48	-204.00	232.47	3.43	3.34	1.76	12.81
3/15/2013	NORMAL	1,242.0	24.40	243.11	1,200.70	-123.78	-227.13	258.66	2.44	-1.92	3.55	143.00
	NORMAL	1,338.0	24.61	240.74	1,288.06	-142.52	-262.25	298.47	1.05	0.22	-2.47	280.98
	NORMAL	1,433.0	24.84	242.49	1,374.35	-161.40	-297.21	338.20	0.81	0.24	1.84	73.35
	NORMAL	1,527.0	24.09	242.40	1,459.91	-179.41	-331.72	377.13	0.80	-0.80	-0.10	182.80
	NORMAL	1,623.0	24.61	242.49	1,547.37	-197.72	-366.81	416.71	0.54	0.54	0.09	4.12
	NORMAL	1,718.0	23.43	241.88	1,634.14	-215.76	-401.02	455.37	1.27	-1.24	-0.64	191.60
	NORMAL	1,814.0	23.87	241.35	1,722.08	-234.07	-434.89	493.88	0.51	0.46	-0.55	333.97
	NORMAL	1,910.0	24.00	240.30	1,809.82	-253.06	-468.90	532.82	0.46	0.14	-1.09	286.49
	NORMAL	2,004.0	23.16	242.23	1,895.98	-271.14	-501.86	570.42	1.21	-0.89	2.05	138.29
	NORMAL	2,099.0	23.30	240.82	1,983.27	-289.01	-534.80	607.89	0.60	0.15	-1.48	283.48
	NORMAL	2,195.0	22.68	243.11	2,071.65	-306.63	-567.88	645.37	1.13	-0.65	2.39	125.78
	NORMAL	2,290.0	23.60	241.96	2,159.01	-323.86	-601.00	682.70	1.08	0.97	-1.21	333.3'
	NORMAL	2,385.0	24.09	240.65	2,245.90	-342.30	-634.68	721.10	0.76	0.52	-1.38	312.18
	NORMAL	2,480.0	25.32	239.33	2,332.20	-362.17	-669.06	760.78	1.42	1.29	-1.39	335.24
	NORMAL	2,575.0	25.32	243.28	2,418.08	-381.66	-704.68	801.39	1.78	0.00	4.16	91.79
	NORMAL	2,671.0	23.82	244.16	2,505.39	-399.35	-740.46	841.28	1.61	-1.56	0.92	166.69
	NORMAL	2,766.0	24.35	243.81	2,592.12	-416.35	-775.30	880.02	0.58	0.56	-0.37	344.76
3/16/2013	NORMAL	2,861.0	22.59	243.63	2,679.25	-433.10	-809.23	917.84	1.85	-1.85	-0.19	182.25
	NORMAL	2,955.0	22.99	243.46	2,765.92	-449.32	-841.83	954.23	0.43	0.43	-0.18	350.57
	NORMAL	3,049.0	22.81	242.93	2,852.51	-465.82	-874.47	990.80	0.29	-0.19	-0.56	228.64
	NORMAL	3,144.0	22.90	242.93	2,940.05	-482.61	-907.33	1,027.69	0.09	0.09	0.00	0.00
	NORMAL	3,239.0	22.77	242.84	3,027.60	-499.41	-940.15	1,064.55	0.14	-0.14	-0.09	195.00
	NORMAL	3,334.0	22.07	241.44	3,115.42	-516.34	-972.18	1,100.78	0.93	-0.74	-1.47	216.69
	NORMAL	3,429.0	20.48	242.58	3,203.95	-532.52	-1,002.61	1,135.25	1.73	-1.67	1.20	165.95
	NORMAL	3,525.0	19.56	241.00	3,294.14	-548.05	-1,031.57	1,168.11	1.11	-0.96	-1.65	209.7'
	NORMAL	3,620.0	17.80	240.56	3,384.14	-562.90	-1,058.13	1,198.53	1.86	-1.85	-0.46	184.37
	NORMAL	3,716.0	16.22	241.00	3,475.93	-576.61	-1,082.64	1,226.61	1.65	-1.65	0.46	175.55
	NORMAL	3,811.0	15.12	242.49	3,567.40	-588.76	-1,105.23	1,252.27	1.23	-1.16	1.57	160.62
	NORMAL	3,907.0	14.11	241.00	3,660.30	-600.22	-1,126.57	1,276.49	1.12	-1.05	-1.55	199.70
	NORMAL	4,002.0	12.70	242.32	3,752.70	-610.69	-1,145.95	1,298.51	1.52	-1.48	1.39	168.40
	NORMAL	4,097.0	11.65	244.16	3,845.57	-619.72	-1,163.83	1,318.54	1.18	-1.11	1.94	160.6'
	NORMAL	4,193.0	10.81	243.28	3,939.73	-627.99	-1,180.59	1,337.22	0.89	-0.88	-0.92	191.10
	NORMAL	4,288.0	9.41	239.15	4,033.25	-635.98	-1,195.22	1,353.89	1.66	-1.47	-4.35	205.35
	NORMAL	4,383.0	9.41	241.53	4,126.97	-643.66	-1,208.71	1,369.41	0.41	0.00	2.51	91.17
	NORMAL	4,479.0	8.44	245.22	4,221.81	-650.36	-1,222.01	1,384.29	1.17	-1.01	3.84	151.27
	NORMAL	4,575.0	6.77	248.73	4,316.96	-655.36	-1,233.68	1,396.94	1.80	-1.74	3.66	166.19
	NORMAL	4,670.0	4.92	250.32	4,411.47	-658.77	-1,242.73	1,406.53	1.95	-1.95	1.67	175.79
3/17/2013	NORMAL	4,765.0	3.52	245.48	4,506.21	-661.35	-1,249.22	1,413.47	1.52	-1.47	-5.09	191.87
	NORMAL	4,861.0	2.42	239.88	4,602.08	-663.59	-1,253.66	1,418.44	1.18	-1.15	-5.83	191.99
	NORMAL	4,956.0	0.79	264.73	4,697.04	-664.66	-1,256.05	1,421.05	1.83	-1.72	26.16	168.97
	NORMAL	5,051.0	0.53	32.08	4,792.03	-664.35	-1,256.46	1,421.27	1.25	-0.27	134.05	159.24
	NORMAL	5,147.0	0.31	39.20	4,888.03	-663.77	-1,256.06	1,420.64	0.24	-0.23	7.42	170.20
	NORMAL	5,242.0	0.88	96.42	4,983.03	-663.65	-1,255.18	1,419.81	0.80	0.60	60.23	77.32
	NORMAL	5,337.0	1.01	113.21	5,078.01	-664.06	-1,253.68	1,418.68	0.32	0.14	17.67	73.40
	NORMAL	5,432.0	0.88	133.25	5,173.00	-664.89	-1,252.38	1,417.93	0.37	-0.14	21.09	121.29
	NORMAL	5,527.0	1.10	157.33	5,267.99	-666.23	-1,251.50	1,417.78	0.49	0.23	25.35	74.52
	NORMAL	5,623.0	1.19	165.76	5,363.97	-668.05	-1,250.90	1,418.11	0.20	0.09	8.78	66.14
	NORMAL	5,719.0	1.36	186.07	5,459.94	-670.15	-1,250.77	1,418.99	0.50	0.18	21.16	79.74
	NORMAL	5,814.0	1.89	234.23	5,554.91	-672.19	-1,252.16	1,421.18	1.49	0.56	50.69	94.02



## 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 (°)
3/17/2013	NORMAL	5,910.0	2.07	250.67	5,650.85	-673.68	-1,255.08	1,424.46	0.62	0.19	17.13	80.75
	NORMAL	6,005.0	1.67	265.17	5,745.80	-674.37	-1,258.08	1,427.43	0.65	-0.42	15.26	137.31
3/18/2013	NORMAL	6,101.0	1.32	282.13	5,841.77	-674.25	-1,260.56	1,429.55	0.58	-0.36	17.67	136.62
	NORMAL	6,197.0	1.41	264.99	5,937.74	-674.13	-1,262.82	1,431.48	0.43	0.09	-17.85	273.77
	NORMAL	6,291.0	0.57	304.98	6,031.73	-673.96	-1,264.35	1,432.76	1.11	-0.89	42.54	159.37
	NORMAL	6,386.0	1.41	8.09	6,126.72	-672.53	-1,264.57	1,432.28	1.33	0.88	66.43	86.91
	NORMAL	6,482.0	1.32	349.63	6,222.69	-670.27	-1,264.61	1,431.24	0.47	-0.09	-19.23	249.30
	NORMAL	6,578.0	1.10	346.82	6,318.67	-668.29	-1,265.02	1,430.67	0.24	-0.23	-2.93	193.69
	NORMAL	6,673.0	0.88	317.55	6,413.66	-666.86	-1,265.72	1,430.61	0.57	-0.23	-30.81	232.32
3/19/2013	NORMAL	6,769.0	1.36	354.82	6,509.64	-665.18	-1,266.32	1,430.35	0.88	0.50	38.82	76.20
	NORMAL	6,864.0	1.10	26.19	6,604.62	-663.24	-1,266.02	1,429.17	0.75	-0.27	33.02	126.31
	NORMAL	6,960.0	0.79	18.63	6,700.60	-661.79	-1,265.40	1,427.94	0.35	-0.32	-7.88	198.16
	NORMAL	7,055.0	1.41	80.60	6,795.59	-660.98	-1,264.03	1,426.36	1.32	0.65	65.23	95.84
	NORMAL	7,150.0	1.36	89.92	6,890.56	-660.78	-1,261.75	1,424.25	0.24	-0.05	9.81	107.15
	NORMAL	7,245.0	1.23	107.32	6,985.54	-661.09	-1,259.65	1,422.54	0.43	-0.14	18.32	116.86
	NORMAL	7,340.0	1.27	122.79	7,080.51	-661.96	-1,257.79	1,421.32	0.36	0.04	16.28	91.01
	NORMAL	7,436.0	1.14	148.36	7,176.49	-663.35	-1,256.40	1,420.74	0.57	-0.14	26.64	116.16
	NORMAL	7,531.0	1.27	172.88	7,271.47	-665.20	-1,255.77	1,421.06	0.56	0.14	25.81	88.32
	NORMAL	7,626.0	1.58	190.20	7,366.44	-667.53	-1,255.87	1,422.25	0.56	0.33	18.23	63.12
	NORMAL	7,721.0	1.98	204.00	7,461.40	-670.32	-1,256.77	1,424.36	0.61	0.42	14.53	54.02
	NORMAL	7,816.0	2.24	212.61	7,556.33	-673.38	-1,258.44	1,427.28	0.43	0.27	9.06	55.00
3/20/2013	NORMAL	7,911.0	2.55	215.25	7,651.25	-676.67	-1,260.66	1,430.79	0.35	0.33	2.78	20.91
	NORMAL	8,006.0	3.25	218.85	7,746.13	-680.50	-1,263.57	1,435.16	0.76	0.74	3.79	16.39
	NORMAL	8,070.0	3.52	219.99	7,810.02	-683.41	-1,265.97	1,438.65	0.43	0.42	1.78	14.57
	NORMAL	8,115.0	3.52	219.99	7,854.93	-685.53	-1,267.75	1,441.21	0.00	0.00	0.00	0.00