

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	PA 323-6	Wellbore No.	00
Wellbore Legal Name	PA 323-6	Common Wellbore Name	PA 323-6
Project	PA 06-07S-095W	Site	PA 14-6 Pad
Vertical Section Azimuth	37.34 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	3/21/2014	UWI	PA 323-6
Active datum	KB @5,179.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	3/21/2014	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 (°)
3/21/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/21/2014	NORMAL	104.0	0.26	88.59	104.00	0.01	0.24	0.15	0.25	0.25	0.00	88.59
	NORMAL	134.0	0.70	16.70	134.00	0.18	0.36	0.36	2.22	1.47	-239.63	266.35
	NORMAL	164.0	1.58	26.46	163.99	0.73	0.59	0.94	2.99	2.93	32.53	17.35
	NORMAL	195.0	1.85	31.38	194.98	1.54	1.04	1.86	0.99	0.87	15.87	31.08
	NORMAL	225.0	2.64	40.61	224.96	2.48	1.75	3.03	2.89	2.63	30.77	29.25
	NORMAL	255.0	3.26	43.51	254.92	3.62	2.78	4.57	2.13	2.07	9.67	14.99
3/22/2014	NORMAL	285.0	4.49	39.46	284.85	5.15	4.12	6.59	4.20	4.10	-13.50	345.43
	NORMAL	315.0	5.37	41.13	314.74	7.11	5.79	9.16	2.97	2.93	5.57	10.10
	NORMAL	346.0	6.51	39.20	345.57	9.56	7.85	12.37	3.73	3.68	-6.23	349.10
	NORMAL	376.0	7.48	32.78	375.35	12.52	9.98	16.01	4.15	3.23	-21.40	317.91
	NORMAL	406.0	8.62	33.75	405.05	16.03	12.29	20.20	3.83	3.80	3.23	7.28
	NORMAL	437.0	9.68	32.87	435.65	20.16	15.00	25.12	3.45	3.42	-2.84	352.04
	NORMAL	467.0	10.65	31.20	465.18	24.65	17.80	30.39	3.38	3.23	-5.57	342.28
	NORMAL	498.0	11.96	34.01	495.58	29.76	21.08	36.45	4.58	4.23	9.06	24.19
	NORMAL	528.0	12.76	34.54	524.89	35.06	24.70	42.86	2.69	2.67	1.77	8.33
	NORMAL	559.0	13.99	36.39	555.05	40.90	28.86	50.02	4.20	3.97	5.97	20.09
	NORMAL	589.0	15.48	35.77	584.06	47.07	33.35	57.65	4.99	4.97	-2.07	353.66
	NORMAL	619.0	16.28	37.62	612.91	53.65	38.26	65.86	3.16	2.67	6.17	33.22
	NORMAL	649.0	17.33	38.06	641.63	60.50	43.58	74.53	3.53	3.50	1.47	7.12
	NORMAL	679.0	18.04	38.58	670.21	67.65	49.23	83.64	2.42	2.37	1.73	12.79

## 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 (°)
3/22/2014	NORMAL	710.0	19.09	38.84	699.60	75.34	55.41	93.51	3.41	3.39	1.16	6.40
	NORMAL	740.0	20.41	38.76	727.83	83.24	61.77	103.65	4.40	4.40	-0.60	357.28
	NORMAL	800.0	21.55	37.88	783.86	100.09	75.09	125.12	1.97	1.90	-1.47	344.14
	NORMAL	871.0	23.61	37.38	849.41	121.69	91.73	152.38	2.91	2.90	-0.70	354.44
	NORMAL	963.0	25.76	37.62	933.00	152.16	115.12	190.80	2.34	2.34	0.26	2.78
	NORMAL	1,058.0	29.02	37.62	1,017.34	186.78	141.79	234.50	3.43	3.43	0.00	0.00
	NORMAL	1,153.0	31.57	36.83	1,099.36	224.94	170.77	282.42	2.72	2.68	-0.83	350.78
	NORMAL	1,249.0	31.86	38.39	1,181.02	264.91	201.57	332.88	0.91	0.30	1.63	71.19
	NORMAL	1,344.0	33.80	38.87	1,260.85	305.14	233.73	384.37	2.06	2.04	0.51	7.84
	NORMAL	1,439.0	35.28	37.74	1,339.10	347.41	267.10	438.22	1.70	1.56	-1.19	336.13
3/23/2014	NORMAL	1,475.0	36.15	37.55	1,368.33	364.05	279.94	459.24	2.44	2.42	-0.53	352.66
	NORMAL	1,535.0	37.23	36.39	1,416.44	392.70	301.49	495.08	2.14	1.80	-1.93	326.84
	NORMAL	1,630.0	36.79	35.51	1,492.30	438.99	335.07	552.25	0.72	-0.46	-0.93	229.94
	NORMAL	1,725.0	37.27	36.39	1,568.14	485.30	368.66	609.45	0.75	0.51	0.93	48.18
	NORMAL	1,821.0	38.29	36.91	1,644.02	532.48	403.77	668.25	1.11	1.06	0.54	17.55
	NORMAL	1,916.0	38.64	35.95	1,718.40	580.03	438.86	727.34	0.73	0.37	-1.01	300.00
	NORMAL	2,011.0	37.49	36.56	1,793.20	627.26	473.49	785.90	1.27	-1.21	0.64	162.13
	NORMAL	2,106.0	36.53	38.41	1,869.06	672.64	508.28	843.08	1.55	-1.01	1.95	131.50
	NORMAL	2,201.0	35.16	37.00	1,946.07	716.64	542.31	898.70	1.68	-1.44	-1.48	210.51
	NORMAL	2,297.0	34.64	36.91	2,024.80	760.54	575.33	953.63	0.54	-0.54	-0.09	185.62
3/24/2014	NORMAL	2,392.0	32.97	36.74	2,103.74	802.84	607.01	1,006.48	1.76	-1.76	-0.18	183.17
	NORMAL	2,488.0	30.77	38.32	2,185.26	843.05	637.87	1,057.16	2.45	-2.29	1.65	159.90
	NORMAL	2,583.0	30.64	38.14	2,266.94	881.15	667.88	1,105.66	0.17	-0.14	-0.19	215.18
	NORMAL	2,678.0	29.50	36.74	2,349.16	918.94	696.83	1,153.26	1.41	-1.20	-1.47	211.00
	NORMAL	2,774.0	27.69	37.53	2,433.45	955.57	724.56	1,199.20	1.93	-1.89	0.82	168.55
	NORMAL	2,869.0	26.86	39.11	2,517.88	989.73	751.54	1,242.73	1.16	-0.87	1.66	139.60
	NORMAL	2,964.0	25.32	38.06	2,603.20	1,022.38	777.61	1,284.49	1.69	-1.62	-1.11	196.22
	NORMAL	3,060.0	24.31	35.95	2,690.34	1,054.54	801.86	1,324.78	1.40	-1.05	-2.20	220.29
	NORMAL	3,156.0	23.03	35.95	2,778.26	1,085.74	824.49	1,363.31	1.33	-1.33	0.00	180.00
	NORMAL	3,251.0	21.01	34.28	2,866.33	1,114.86	844.99	1,398.89	2.23	-2.13	-1.76	196.45
3/25/2014	NORMAL	3,346.0	19.74	37.35	2,955.38	1,141.69	864.32	1,431.94	1.75	-1.34	3.23	141.35
	NORMAL	3,442.0	20.04	38.23	3,045.66	1,167.49	884.33	1,464.60	0.44	0.31	0.92	45.36
	NORMAL	3,537.0	17.67	36.91	3,135.55	1,191.81	903.07	1,495.30	2.53	-2.49	-1.39	189.58
	NORMAL	3,632.0	17.63	36.74	3,226.08	1,214.87	920.33	1,524.10	0.07	-0.04	-0.18	232.11
	NORMAL	3,727.0	16.13	38.14	3,316.99	1,236.78	937.09	1,551.69	1.64	-1.58	1.47	165.51
	NORMAL	3,823.0	14.20	38.50	3,409.64	1,256.48	952.66	1,576.79	2.01	-2.01	0.38	177.38
	NORMAL	3,917.0	12.88	35.68	3,501.03	1,274.02	965.94	1,598.80	1.57	-1.40	-3.00	205.21
	NORMAL	4,013.0	11.96	38.58	3,594.78	1,290.48	978.39	1,619.44	1.16	-0.96	3.02	147.27
	NORMAL	4,109.0	10.33	41.05	3,688.97	1,304.75	990.25	1,637.97	1.77	-1.70	2.57	164.88
	NORMAL	4,205.0	9.76	42.28	3,783.50	1,317.26	1,001.37	1,654.67	0.63	-0.59	1.28	159.98
3/26/2014	NORMAL	4,300.0	7.78	34.37	3,877.38	1,328.53	1,010.42	1,669.11	2.44	-2.08	-8.33	207.48
	NORMAL	4,396.0	7.52	34.54	3,972.53	1,339.07	1,017.65	1,681.88	0.27	-0.27	0.18	175.11
	NORMAL	4,491.0	5.58	41.84	4,066.91	1,347.63	1,024.26	1,692.69	2.22	-2.04	7.68	160.37
	NORMAL	4,587.0	4.26	34.10	4,162.55	1,354.06	1,029.37	1,700.90	1.54	-1.38	-8.06	202.88
	NORMAL	4,683.0	3.74	37.97	4,258.32	1,359.48	1,033.29	1,707.59	0.61	-0.54	4.03	154.49
	NORMAL	4,778.0	3.03	35.07	4,353.15	1,363.98	1,036.64	1,713.20	0.77	-0.75	-3.05	192.11
	NORMAL	4,873.0	1.54	38.67	4,448.07	1,367.03	1,038.88	1,716.99	1.57	-1.57	3.79	176.29
	NORMAL	4,968.0	0.35	343.92	4,543.06	1,368.31	1,039.60	1,718.44	1.44	-1.25	-57.63	192.06
	NORMAL	5,062.0	0.61	352.09	4,637.06	1,369.08	1,039.45	1,718.96	0.29	0.28	8.69	18.86
	NORMAL	5,160.0	0.22	328.01	4,735.06	1,369.75	1,039.28	1,719.39	0.43	-0.40	-24.57	192.37
3/26/2014	NORMAL	5,253.0	0.31	318.98	4,828.05	1,370.10	1,039.02	1,719.51	0.11	0.10	-9.73	330.49
	NORMAL	5,348.0	0.44	260.07	4,923.05	1,370.23	1,038.49	1,719.29	0.41	0.14	-61.99	257.62
	NORMAL	5,443.0	0.31	259.19	5,018.05	1,370.12	1,037.88	1,718.83	0.14	-0.14	-0.93	182.10
	NORMAL	5,539.0	0.44	259.19	5,114.05	1,370.00	1,037.26	1,718.36	0.14	0.14	0.00	0.00
	NORMAL	5,633.0	0.75	217.27	5,208.04	1,369.44	1,036.54	1,717.48	0.55	0.33	-44.60	283.26
	NORMAL	5,728.0	0.75	232.03	5,303.04	1,368.56	1,035.67	1,716.26	0.20	0.00	15.54	97.38

## 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 (°)
3/26/2014	NORMAL	5,823.0	0.79	225.53	5,398.03	1,367.72	1,034.71	1,715.01	0.10	0.04	-6.84	291.33
	NORMAL	5,918.0	1.14	225.79	5,493.02	1,366.60	1,033.57	1,713.42	0.37	0.37	0.27	0.85
3/27/2014	NORMAL	6,013.0	1.19	203.56	5,588.00	1,365.04	1,032.50	1,711.53	0.48	0.05	-23.40	265.12
	NORMAL	6,109.0	1.41	208.57	5,683.97	1,363.09	1,031.53	1,709.40	0.26	0.23	5.22	29.84
	NORMAL	6,204.0	1.67	202.94	5,778.94	1,360.79	1,030.44	1,708.90	0.32	0.27	-5.93	326.97
	NORMAL	6,299.0	1.93	215.60	5,873.89	1,358.21	1,028.96	1,703.96	0.50	0.27	13.33	63.26
	NORMAL	6,395.0	1.71	212.96	5,969.84	1,355.70	1,027.24	1,700.92	0.25	-0.23	-2.75	199.55
	NORMAL	6,490.0	2.02	200.83	6,064.79	1,352.94	1,025.88	1,697.90	0.53	0.33	-12.77	301.98
	NORMAL	6,586.0	2.68	206.72	6,160.71	1,349.36	1,024.27	1,694.07	0.73	0.69	6.14	23.06
	NORMAL	6,681.0	2.73	209.09	6,255.61	1,345.40	1,022.17	1,689.65	0.13	0.05	2.49	67.10
	NORMAL	6,774.0	2.20	216.04	6,348.52	1,342.02	1,020.04	1,685.67	0.65	-0.57	7.47	154.02
	NORMAL	6,870.0	1.89	226.23	6,444.46	1,339.43	1,017.81	1,682.26	0.50	-0.32	10.61	135.47
	NORMAL	6,965.0	1.85	214.45	6,539.41	1,337.08	1,015.82	1,679.18	0.41	-0.04	-12.40	258.19
	NORMAL	7,010.0	1.85	214.45	6,584.39	1,335.89	1,014.99	1,677.73	0.00	0.00	0.00	0.00