

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	PA 22-11	Wellbore No.	
Well Name	PA 22-11	Common Name	PA 22-11
Project	PA 11-07S-095W	Site	PA 22-11 Pad
Vertical Section Azimuth	357.94 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	5/30/2013	UWI	PA 22-11
Active Datum	KB @6,295.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	5/30/2013	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 (°)
5/30/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/30/2013	NORMAL	76.0	0.26	6.33	76.00	0.17	0.02	0.17	0.34	0.34	0.00	6.33
	NORMAL	166.0	1.85	10.63	165.98	1.80	0.31	1.79	1.77	1.77	4.78	5.00
	NORMAL	257.0	3.43	2.55	256.88	5.97	0.70	5.94	1.78	1.74	-8.88	342.69
	NORMAL	347.0	4.66	355.25	346.66	12.30	0.52	12.27	1.48	1.37	-8.11	333.61
	NORMAL	438.0	5.37	355.43	437.31	20.23	-0.13	20.22	0.78	0.78	0.20	1.36
	NORMAL	528.0	7.48	357.54	526.74	30.28	-0.71	30.29	2.36	2.34	2.34	7.43
	NORMAL	619.0	8.45	357.36	616.86	42.88	-1.28	42.89	1.07	1.07	-0.20	358.44
5/31/2013	NORMAL	709.0	9.50	357.01	705.76	56.90	-1.97	56.93	1.17	1.17	-0.39	356.85
	NORMAL	800.0	8.62	354.55	795.62	71.19	-3.01	71.25	1.06	-0.97	-2.70	202.55
	NORMAL	874.0	8.63	354.18	868.78	82.23	-4.10	82.33	0.08	0.01	-0.50	280.03
	NORMAL	902.0	9.08	353.82	896.45	86.52	-4.55	86.63	1.62	1.61	-1.29	352.80
6/1/2013	NORMAL	990.0	8.88	354.96	983.37	100.19	-5.89	100.33	0.30	-0.23	1.30	138.90
	NORMAL	1,052.0	8.46	356.62	1,044.66	109.51	-6.58	109.67	0.79	-0.68	2.68	150.03
	NORMAL	1,146.0	7.88	355.09	1,137.71	122.83	-7.54	123.02	0.66	-0.62	-1.63	199.79
	NORMAL	1,239.0	7.95	355.98	1,229.82	135.60	-8.54	135.82	0.15	0.08	0.96	60.71
	NORMAL	1,334.0	7.92	356.86	1,323.91	148.69	-9.36	148.93	0.13	-0.03	0.93	104.31
	NORMAL	1,428.0	8.04	355.81	1,417.00	161.71	-10.19	161.97	0.20	0.13	-1.12	308.94
	NORMAL	1,523.0	8.05	358.32	1,511.07	174.98	-10.87	175.26	0.37	0.01	2.64	89.61
	NORMAL	1,617.0	7.95	357.15	1,604.15	188.05	-11.39	188.34	0.20	-0.11	-1.24	237.87
	NORMAL	1,711.0	7.74	357.50	1,697.27	200.87	-11.99	201.17	0.23	-0.22	0.37	167.36

## 2.1.2 Survey Stations (Continued)

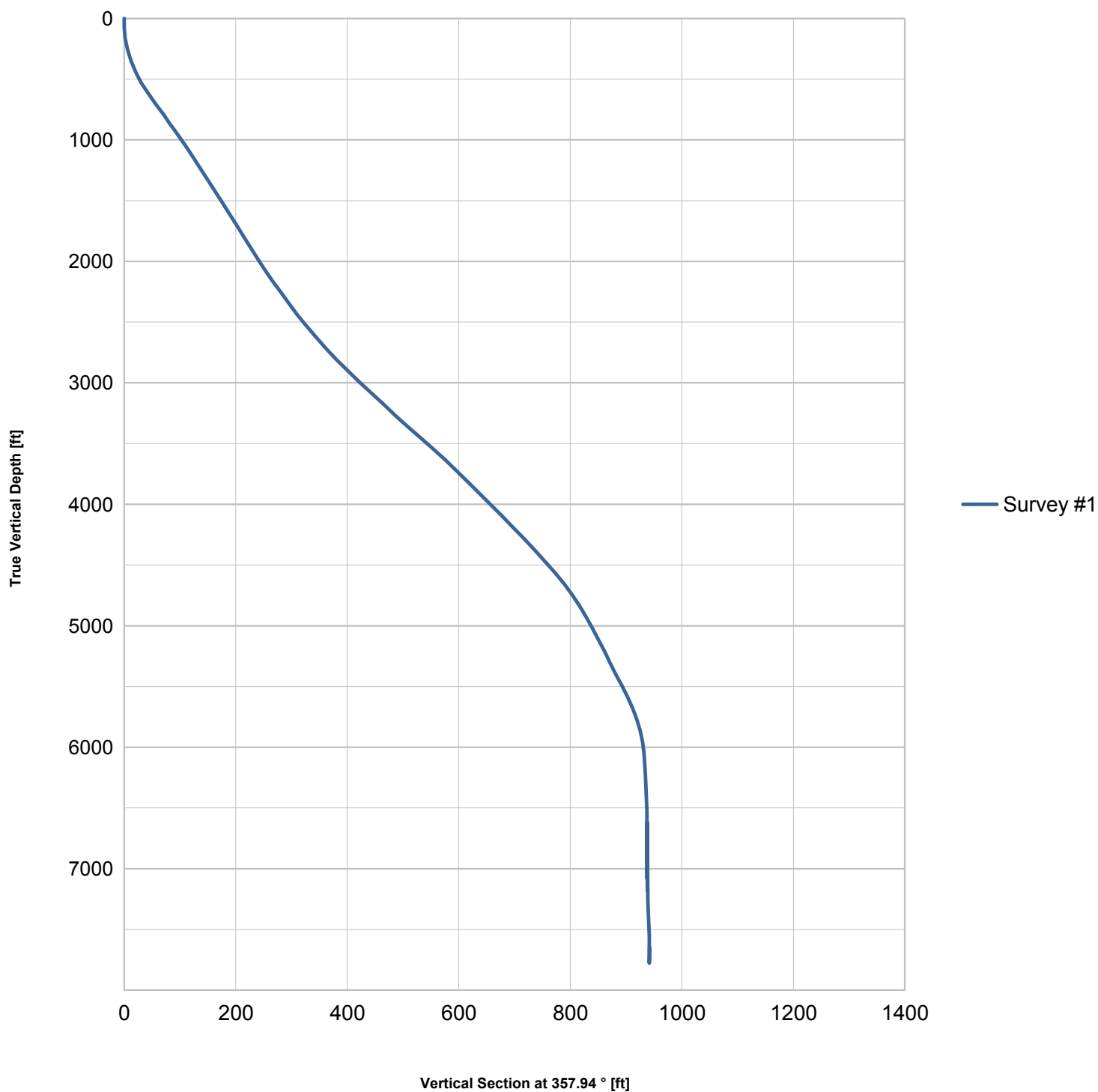
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
6/1/2013	NORMAL	1,804.0	7.74	357.14	1,789.43	213.38	-12.57	213.70	0.05	0.00	-0.39	269.82
	NORMAL	1,899.0	7.47	357.16	1,883.59	225.94	-13.20	226.27	0.28	-0.28	0.02	179.45
	NORMAL	1,992.0	8.00	355.93	1,975.74	238.43	-13.96	238.78	0.60	0.57	-1.32	342.04
	NORMAL	2,086.0	8.13	356.34	2,068.81	251.59	-14.85	251.96	0.15	0.14	0.44	24.07
	NORMAL	2,181.0	9.14	355.85	2,162.74	265.82	-15.82	266.22	1.07	1.06	-0.52	355.59
	NORMAL	2,274.0	9.17	354.78	2,254.55	280.57	-17.03	281.00	0.19	0.03	-1.15	279.47
	NORMAL	2,368.0	8.75	358.21	2,347.40	295.17	-17.93	295.63	0.72	-0.45	3.65	129.86
	NORMAL	2,462.0	9.40	357.80	2,440.23	309.99	-18.45	310.45	0.69	0.69	-0.44	354.12
	NORMAL	2,555.0	10.63	356.52	2,531.81	326.14	-19.26	326.62	1.34	1.32	-1.38	349.11
	NORMAL	2,649.0	10.55	354.78	2,624.21	343.36	-20.57	343.88	0.35	-0.09	-1.85	255.10
	NORMAL	2,744.0	11.36	358.56	2,717.48	361.38	-21.60	361.92	1.14	0.85	3.98	43.43
	NORMAL	2,838.0	12.22	359.09	2,809.49	380.58	-21.99	381.13	0.92	0.91	0.56	7.44
	NORMAL	2,932.0	12.12	358.02	2,901.38	400.39	-22.49	400.94	0.26	-0.11	-1.14	245.57
	NORMAL	3,026.0	13.31	358.77	2,993.07	421.07	-23.06	421.63	1.28	1.27	0.80	8.26
	NORMAL	3,120.0	13.39	358.57	3,084.53	442.77	-23.57	443.33	0.10	0.09	-0.21	329.91
	NORMAL	3,215.0	13.12	358.09	3,177.00	464.54	-24.20	465.11	0.31	-0.28	-0.51	201.94
	NORMAL	3,309.0	12.89	356.97	3,268.59	485.68	-25.11	486.26	0.36	-0.24	-1.19	227.07
	NORMAL	3,402.0	13.95	358.58	3,359.05	507.24	-25.94	507.85	1.21	1.14	1.73	20.20
	NORMAL	3,498.0	14.04	358.50	3,452.20	530.45	-26.53	531.06	0.10	0.09	-0.08	347.83
	NORMAL	3,591.0	14.04	358.09	3,542.42	553.00	-27.20	553.62	0.11	0.00	-0.44	269.80
	NORMAL	3,686.0	12.83	359.19	3,634.82	575.07	-27.73	575.69	1.30	-1.27	1.16	168.61
	NORMAL	3,780.0	12.57	359.81	3,726.52	595.73	-27.91	596.35	0.31	-0.28	0.66	152.64
6/2/2013	NORMAL	3,875.0	12.68	359.99	3,819.23	616.50	-27.95	617.10	0.12	0.12	0.19	19.77
	NORMAL	3,969.0	12.33	359.59	3,911.00	636.85	-28.02	637.44	0.38	-0.37	-0.43	193.70
	NORMAL	4,066.0	12.31	0.32	4,005.76	657.54	-28.04	658.13	0.16	-0.02	0.75	97.67
	NORMAL	4,159.0	11.69	359.98	4,096.73	676.88	-27.99	677.45	0.67	-0.67	-0.37	186.34
	NORMAL	4,253.0	12.04	359.74	4,188.72	696.21	-28.04	696.76	0.38	0.37	-0.26	351.86
	NORMAL	4,348.0	12.05	0.15	4,281.63	716.03	-28.05	716.58	0.09	0.01	0.43	83.53
	NORMAL	4,442.0	11.14	358.49	4,373.71	734.92	-28.27	735.46	1.03	-0.97	-1.77	199.32
	NORMAL	4,537.0	11.03	0.21	4,466.94	753.18	-28.48	753.72	0.37	-0.12	1.81	109.24
	NORMAL	4,630.0	11.09	359.33	4,558.21	771.02	-28.55	771.55	0.19	0.06	-0.95	289.13
	NORMAL	4,725.0	9.56	359.66	4,651.67	788.05	-28.70	788.57	1.61	-1.61	0.35	177.95
	NORMAL	4,819.0	8.88	0.32	4,744.45	803.11	-28.71	803.62	0.73	-0.72	0.70	171.49
	NORMAL	4,913.0	7.47	358.83	4,837.50	816.48	-28.79	816.98	1.52	-1.50	-1.59	187.81
	NORMAL	5,006.0	7.27	356.22	4,929.73	828.39	-29.30	828.91	0.42	-0.22	-2.81	237.86
	NORMAL	5,099.0	6.33	356.82	5,022.07	839.38	-29.98	839.92	1.01	-1.01	0.65	175.98
	NORMAL	5,194.0	6.71	351.59	5,116.46	850.10	-31.08	850.67	0.74	0.40	-5.51	300.00
	NORMAL	5,288.0	6.40	347.46	5,209.85	860.65	-33.02	861.28	0.60	-0.33	-4.39	234.63
	NORMAL	5,381.0	5.79	347.64	5,302.32	870.29	-35.15	870.99	0.66	-0.66	0.19	178.29
	NORMAL	5,476.0	6.80	356.32	5,396.75	880.58	-36.54	881.33	1.46	1.06	9.14	47.67
	NORMAL	5,570.0	6.53	356.35	5,490.11	891.47	-37.23	892.23	0.29	-0.29	0.03	179.28
6/3/2013	NORMAL	5,665.0	6.02	352.60	5,584.54	901.80	-38.22	902.59	0.69	-0.54	-3.95	216.93
	NORMAL	5,759.0	5.01	359.80	5,678.11	910.80	-38.87	911.60	1.30	-1.07	7.66	149.13
	NORMAL	5,853.0	4.40	8.06	5,771.79	918.47	-38.38	919.26	0.97	-0.65	8.79	136.06
	NORMAL	5,946.0	3.17	10.17	5,864.59	924.53	-37.42	925.28	1.33	-1.32	2.27	174.59
	NORMAL	6,039.0	2.37	20.46	5,957.48	928.87	-36.30	929.57	1.01	-0.86	11.06	153.20
	NORMAL	6,133.0	1.79	57.75	6,051.42	931.47	-34.37	932.10	1.53	-0.62	39.67	131.09
	NORMAL	6,226.0	1.12	42.91	6,144.39	932.91	-32.53	933.48	0.82	-0.72	-15.96	202.07
	NORMAL	6,320.0	0.81	29.54	6,238.38	934.16	-31.57	934.69	0.41	-0.33	-14.22	209.43
	NORMAL	6,414.0	0.48	24.93	6,332.37	935.10	-31.08	935.61	0.36	-0.35	-4.90	186.64
	NORMAL	6,508.0	1.01	41.24	6,426.36	936.08	-30.37	936.56	0.60	0.56	17.35	30.10
6/4/2013	NORMAL	6,601.0	0.58	56.13	6,519.35	936.96	-29.44	937.41	0.51	-0.46	16.01	161.66
	NORMAL	6,696.0	0.41	22.87	6,614.35	937.54	-28.91	937.97	0.34	-0.18	-35.01	223.48
	NORMAL	6,790.0	0.14	309.50	6,708.35	937.92	-28.86	938.35	0.42	-0.29	-78.05	199.93
	NORMAL	6,884.0	0.82	246.56	6,802.35	937.73	-29.57	938.18	0.82	0.72	-66.96	287.70
	NORMAL	6,979.0	1.24	274.27	6,897.33	937.53	-31.22	938.05	0.67	0.44	29.17	64.27
	NORMAL	7,073.0	0.79	252.48	6,991.32	937.41	-32.85	937.99	0.62	-0.48	-23.18	210.07

### 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 (°)
6/4/2013	NORMAL	7,167.0	1.58	265.31	7,085.30	937.11	-34.76	937.76	0.88	0.84	13.65	25.05
	NORMAL	7,261.0	1.06	301.70	7,179.27	937.46	-36.79	938.18	1.02	-0.55	38.71	139.13
	NORMAL	7,355.0	1.38	294.70	7,273.25	938.39	-38.56	939.17	0.37	0.34	-7.45	331.50
	NORMAL	7,450.0	2.11	284.47	7,368.21	939.31	-41.29	940.18	0.83	0.77	-10.77	331.72
	NORMAL	7,543.0	2.64	276.92	7,461.13	939.99	-45.08	941.01	0.66	0.57	-8.12	325.64
	NORMAL	7,638.0	2.73	274.63	7,556.02	940.44	-49.50	941.61	0.15	0.09	-2.41	308.85
	NORMAL	7,732.0	3.34	270.06	7,649.89	940.62	-54.47	941.97	0.70	0.65	-4.86	336.07
	NORMAL	7,795.0	3.43	264.35	7,712.78	940.44	-58.18	941.92	0.55	0.14	-9.06	282.08
	NORMAL	7,860.0	3.43	264.79	7,777.66	940.07	-62.06	941.69	0.04	0.00	0.68	90.22

### 3 Charts

#### 3.1 Vertical Section View



### 3.2 Plan View

