

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	PA 11-11	Wellbore No.	1
Well Name	PA 11-11	Common Name	PA 11-11
Project	PA 11-07S-095W	Site	PA 22-11 Pad
Vertical Section Azimuth	327.10 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	3/25/2013	UWI	PA 11-11
Active Datum	KN @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	3/26/2013	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 (°)
3/26/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/26/2013	NORMAL	75.0	0.62	284.85	75.00	0.10	-0.39	0.30	0.83	0.83	0.00	284.85
	NORMAL	105.0	1.23	316.85	104.99	0.38	-0.77	0.74	2.59	2.03	106.67	57.01
	NORMAL	166.0	3.26	338.20	165.95	2.47	-1.86	3.08	3.54	3.33	35.00	33.30
	NORMAL	257.0	6.42	328.01	256.61	9.19	-5.52	10.71	3.59	3.47	-11.20	339.66
	NORMAL	347.0	10.03	326.78	345.67	20.02	-12.48	23.58	4.02	4.01	-1.37	356.60
	NORMAL	420.0	12.62	326.43	417.24	31.98	-20.37	37.92	3.55	3.55	-0.48	358.31
	NORMAL	510.0	15.42	327.14	504.55	50.23	-32.30	59.72	3.12	3.11	0.79	3.86
	NORMAL	601.0	19.26	326.52	591.40	72.92	-47.15	86.83	4.22	4.22	-0.68	356.95
	NORMAL	691.0	23.55	326.75	675.17	100.35	-65.21	119.67	4.77	4.77	0.26	1.23
	NORMAL	782.0	26.48	327.46	757.63	132.66	-86.09	158.15	3.24	3.22	0.78	6.17
	NORMAL	874.0	30.22	328.58	838.58	169.72	-109.20	201.82	4.11	4.07	1.22	8.59
	NORMAL	965.0	33.94	327.38	915.67	210.68	-134.85	250.13	4.15	4.09	-1.32	349.77
	NORMAL	1,075.0	34.74	326.51	1,006.50	262.68	-168.70	312.18	0.85	0.73	-0.79	328.11
4/3/2013	NORMAL	1,150.0	34.04	327.68	1,068.39	298.24	-191.71	354.54	1.28	-0.93	1.56	137.13
	NORMAL	1,243.0	34.82	325.81	1,145.10	342.20	-220.55	407.12	1.41	0.84	-2.01	305.64
	NORMAL	1,337.0	35.06	326.47	1,222.16	386.91	-250.54	460.94	0.48	0.26	0.70	57.86
	NORMAL	1,432.0	34.97	325.61	1,299.96	432.12	-280.99	515.44	0.53	-0.09	-0.91	259.31
	NORMAL	1,527.0	35.91	326.45	1,377.36	477.80	-311.77	570.52	1.11	0.99	0.88	27.73
	NORMAL	1,620.0	34.96	327.43	1,453.14	522.99	-341.18	624.44	1.19	-1.02	1.05	149.52
	NORMAL	1,714.0	34.56	326.52	1,530.36	567.92	-370.39	678.03	0.70	-0.43	-0.97	232.00

2.1.2 Survey Stations (Continued)

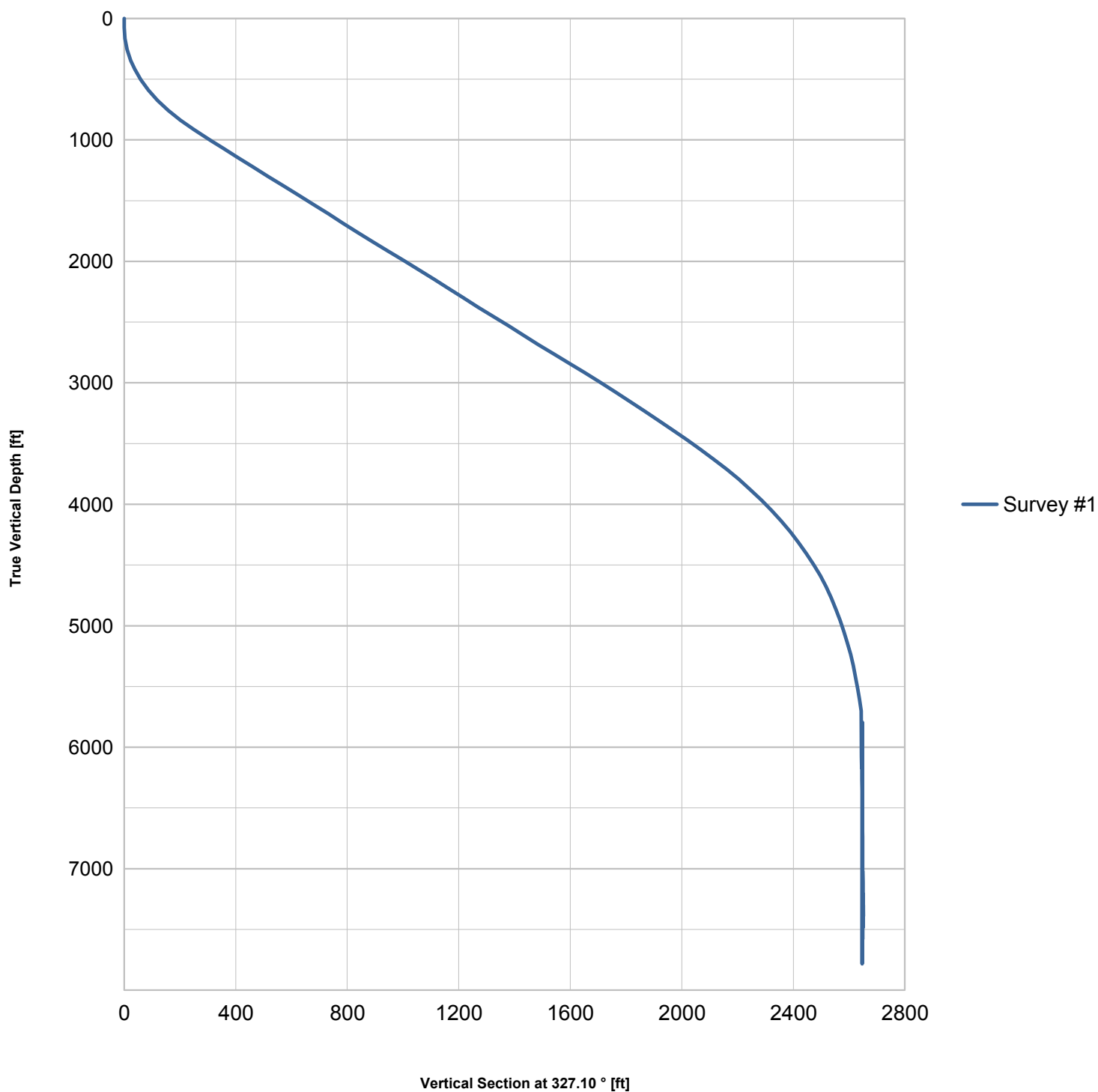
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
4/3/2013	NORMAL	1,808.0	34.86	328.03	1,607.64	612.95	-399.32	731.55	0.97	0.32	1.61	71.39
	NORMAL	1,902.0	33.90	326.73	1,685.22	657.66	-427.93	784.62	1.29	-1.02	-1.38	216.87
	NORMAL	1,996.0	34.03	326.60	1,763.18	701.54	-456.79	837.14	0.16	0.14	-0.14	330.75
	NORMAL	2,090.0	36.28	327.45	1,840.03	746.94	-486.23	891.26	2.45	2.39	0.90	12.62
	NORMAL	2,184.0	36.21	326.52	1,915.84	793.55	-516.51	946.83	0.59	-0.07	-0.99	262.37
	NORMAL	2,278.0	35.79	325.56	1,991.89	839.37	-547.38	1,002.07	0.75	-0.45	-1.02	232.95
	NORMAL	2,372.0	35.26	327.83	2,068.39	885.01	-577.37	1,056.68	1.51	-0.56	2.41	112.81
	NORMAL	2,466.0	34.56	326.83	2,145.48	930.30	-606.40	1,110.48	0.96	-0.74	-1.06	218.86
	NORMAL	2,559.0	34.68	328.65	2,222.01	974.97	-634.60	1,163.30	1.12	0.13	1.96	84.13
	NORMAL	2,652.0	34.21	327.83	2,298.71	1,019.70	-662.29	1,215.90	0.71	-0.51	-0.88	224.28
4/4/2013	NORMAL	2,747.0	34.89	328.42	2,376.95	1,065.45	-690.73	1,269.76	0.80	0.72	0.62	26.44
	NORMAL	2,842.0	35.61	328.19	2,454.53	1,112.10	-719.54	1,324.58	0.77	0.76	-0.24	349.46
	NORMAL	2,936.0	35.17	328.27	2,531.16	1,158.38	-748.20	1,379.01	0.47	-0.47	0.09	174.02
	NORMAL	3,029.0	34.39	327.59	2,607.55	1,203.34	-776.37	1,432.05	0.94	-0.84	-0.73	206.16
	NORMAL	3,124.0	35.02	326.75	2,685.65	1,248.79	-805.69	1,486.14	0.83	0.66	-0.88	322.45
	NORMAL	3,219.0	36.22	327.05	2,762.87	1,295.14	-835.91	1,541.46	1.28	1.26	0.32	8.41
	NORMAL	3,313.0	35.27	325.36	2,839.17	1,340.77	-866.44	1,596.37	1.46	-1.01	-1.80	225.42
	NORMAL	3,406.0	35.84	327.05	2,914.83	1,385.71	-896.51	1,650.43	1.22	0.61	1.82	60.57
	NORMAL	3,502.0	34.62	329.29	2,993.25	1,432.74	-925.73	1,705.79	1.85	-1.27	2.33	134.27
	NORMAL	3,595.0	34.05	328.72	3,070.04	1,477.71	-952.74	1,758.22	0.70	-0.61	-0.61	209.19
	NORMAL	3,690.0	33.15	328.36	3,149.17	1,522.55	-980.17	1,810.77	0.97	-0.95	-0.38	192.33
	NORMAL	3,784.0	33.62	327.77	3,227.66	1,566.45	-1,007.53	1,862.49	0.61	0.50	-0.63	325.12
	NORMAL	3,879.0	33.41	327.22	3,306.86	1,610.69	-1,035.72	1,914.94	0.39	-0.22	-0.58	235.11
	NORMAL	3,973.0	32.53	327.92	3,385.72	1,653.86	-1,063.16	1,966.09	1.02	-0.94	0.74	156.89
	NORMAL	4,069.0	32.18	327.48	3,466.82	1,697.29	-1,090.61	2,017.47	0.44	-0.36	-0.46	213.75
	NORMAL	4,163.0	30.43	327.92	3,547.13	1,738.57	-1,116.71	2,066.30	1.88	-1.86	0.47	172.74
	NORMAL	4,257.0	30.21	326.99	3,628.27	1,778.57	-1,142.24	2,113.75	0.55	-0.23	-0.99	244.49
	NORMAL	4,352.0	29.07	327.35	3,710.84	1,818.04	-1,167.71	2,160.74	1.21	-1.20	0.38	171.28
	NORMAL	4,446.0	26.47	327.57	3,794.01	1,854.96	-1,191.27	2,204.53	2.77	-2.77	0.23	177.84
	NORMAL	4,541.0	25.50	328.45	3,879.41	1,890.26	-1,213.32	2,246.14	1.10	-1.02	0.93	158.72
	NORMAL	4,636.0	24.10	328.53	3,965.64	1,924.23	-1,234.15	2,285.98	1.47	-1.47	0.08	178.66
	NORMAL	4,729.0	22.08	325.43	4,051.19	1,954.82	-1,253.98	2,322.44	2.53	-2.17	-3.33	209.62
	NORMAL	4,823.0	20.83	326.35	4,138.68	1,983.28	-1,273.27	2,356.81	1.38	-1.33	0.98	165.36
	NORMAL	4,917.0	19.35	327.13	4,226.95	2,010.28	-1,290.98	2,389.10	1.60	-1.57	0.83	170.10
	NORMAL	5,010.0	17.67	324.93	4,315.14	2,034.77	-1,307.46	2,418.61	1.96	-1.81	-2.37	201.53
	NORMAL	5,103.0	16.36	326.96	4,404.07	2,057.30	-1,322.71	2,445.81	1.55	-1.41	2.18	156.58
4/5/2013	NORMAL	5,198.0	15.65	325.46	4,495.39	2,079.08	-1,337.27	2,472.00	0.86	-0.75	-1.58	209.50
	NORMAL	5,292.0	14.17	326.73	4,586.22	2,099.14	-1,350.77	2,496.18	1.61	-1.57	1.35	168.16
	NORMAL	5,385.0	12.42	330.92	4,676.72	2,117.40	-1,361.88	2,517.55	2.15	-1.88	4.51	153.19
	NORMAL	5,480.0	10.33	327.61	4,769.85	2,133.52	-1,371.40	2,536.26	2.30	-2.20	-3.48	195.73
	NORMAL	5,574.0	9.65	327.95	4,862.43	2,147.32	-1,380.10	2,552.56	0.73	-0.72	0.36	175.21
	NORMAL	5,669.0	8.88	324.24	4,956.19	2,160.02	-1,388.61	2,567.85	1.03	-0.81	-3.91	215.98
	NORMAL	5,763.0	8.04	322.11	5,049.17	2,171.09	-1,396.89	2,581.65	0.95	-0.89	-2.27	199.41
	NORMAL	5,856.0	7.23	322.99	5,141.34	2,180.90	-1,404.40	2,593.96	0.88	-0.87	0.95	172.22
	NORMAL	5,950.0	7.07	333.87	5,234.61	2,190.81	-1,410.51	2,605.61	1.45	-0.17	11.57	102.12
	NORMAL	6,043.0	4.89	330.58	5,327.10	2,199.41	-1,414.98	2,615.25	2.37	-2.34	-3.54	187.30
4/6/2013	NORMAL	6,137.0	4.69	323.93	5,420.78	2,206.00	-1,419.21	2,623.08	0.63	-0.21	-7.07	246.90
	NORMAL	6,230.0	4.20	318.99	5,513.50	2,211.65	-1,423.69	2,630.25	0.67	-0.53	-5.31	215.56
	NORMAL	6,324.0	4.35	322.12	5,607.23	2,217.06	-1,428.13	2,637.21	0.30	0.16	3.33	58.83
	NORMAL	6,418.0	3.52	339.19	5,701.01	2,222.57	-1,431.35	2,643.58	1.52	-0.88	18.16	133.63
	NORMAL	6,512.0	1.79	20.78	5,794.92	2,226.64	-1,431.85	2,647.28	2.64	-1.84	44.24	151.41
	NORMAL	6,605.0	1.52	90.16	5,887.89	2,227.99	-1,430.10	2,647.46	2.04	-0.29	74.60	131.40
	NORMAL	6,700.0	1.41	162.16	5,982.86	2,226.88	-1,428.48	2,645.65	1.82	-0.12	75.79	128.95
	NORMAL	6,794.0	0.17	350.07	6,076.85	2,225.91	-1,428.15	2,644.66	1.68	-1.32	-183.07	180.85
	NORMAL	6,888.0	0.27	316.73	6,170.85	2,226.21	-1,428.33	2,645.00	0.17	0.11	-35.47	290.53
	NORMAL	6,983.0	0.88	16.20	6,265.85	2,227.08	-1,428.28	2,645.70	0.82	0.64	62.60	76.85
	NORMAL	7,077.0	0.97	31.99	6,359.84	2,228.44	-1,427.66	2,646.51	0.29	0.10	16.80	78.56

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 (°)
4/7/2013	NORMAL	7,171.0	0.12	349.62	6,453.83	2,229.22	-1,427.25	2,646.94	0.94	-0.90	-45.07	185.24
	NORMAL	7,265.0	0.52	13.59	6,547.83	2,229.73	-1,427.17	2,647.33	0.44	0.43	25.50	30.75
	NORMAL	7,359.0	0.79	280.02	6,641.83	2,230.25	-1,427.71	2,648.06	1.03	0.29	-99.54	234.18
	NORMAL	7,453.0	0.10	146.64	6,735.82	2,230.30	-1,428.30	2,648.42	0.92	-0.73	-141.89	184.84
	NORMAL	7,547.0	0.35	294.00	6,829.82	2,230.35	-1,428.52	2,648.58	0.47	0.27	156.77	154.44
	NORMAL	7,642.0	0.52	220.78	6,924.82	2,230.14	-1,429.07	2,648.70	0.56	0.18	-77.07	248.13
	NORMAL	7,736.0	1.14	31.29	7,018.82	2,230.62	-1,428.86	2,648.99	1.76	0.66	181.39	173.48
	NORMAL	7,830.0	1.23	35.25	7,112.80	2,232.24	-1,427.79	2,649.77	0.13	0.10	4.21	44.29
	NORMAL	7,924.0	0.67	23.39	7,206.78	2,233.57	-1,426.99	2,650.45	0.63	-0.60	-12.62	193.48
	NORMAL	8,017.0	0.63	27.25	7,299.78	2,234.52	-1,426.54	2,651.01	0.06	-0.04	4.15	134.33
	NORMAL	8,110.0	0.78	165.28	7,392.77	2,234.36	-1,426.15	2,650.66	1.42	0.16	148.42	156.68
	NORMAL	8,204.0	0.62	203.64	7,486.77	2,233.28	-1,426.19	2,649.77	0.52	-0.17	40.81	127.37
	NORMAL	8,298.0	1.23	200.39	7,580.76	2,231.87	-1,426.74	2,648.89	0.65	0.65	-3.46	353.46
	NORMAL	8,393.0	1.29	214.71	7,675.73	2,230.03	-1,427.71	2,647.87	0.34	0.06	15.07	86.43
	NORMAL	8,435.0	1.32	217.07	7,717.72	2,229.26	-1,428.27	2,647.53	0.15	0.07	5.62	62.01
	NORMAL	8,500.0	1.37	220.72	7,782.70	2,228.07	-1,429.23	2,647.05	0.15	0.08	5.62	61.56

3 Charts

3.1 Vertical Section View



3.2 Plan View

