

**1 General**

**1.1 Customer Information**

Company	PICEANCE VLY
Representative	
Address	

**1.2 Well Information**

Well	PA 13-29	Wellbore No.	
Well Name	PA 13-29	Common Name	PA 13-29
Project	PA 29-06S-095W	Site	DOE 3-W-29 Pad
Vertical Section Azimuth	309.25 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	3/3/2012	UWI	PA 13-29
Active Datum	KB @5,702.0ft (above Mean Sea Level)		

**2 Survey Name**

**2.1 Survey Name: Survey #1**

Survey Name	Survey #1	Company	SCIENTIFIC
Date Started	3/3/2012	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 (°)
3/3/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/3/2012	NORMAL	83.0	0.44	56.87	83.00	0.17	0.27	-0.10	0.53	0.53	0.00	56.87
	NORMAL	174.0	1.06	340.93	173.99	1.16	0.28	0.51	1.15	0.68	-83.45	259.94
	NORMAL	265.0	2.11	318.43	264.96	3.21	-1.10	2.88	1.32	1.15	-24.73	317.77
	NORMAL	357.0	5.10	320.19	356.76	7.62	-4.84	8.57	3.25	3.25	1.91	3.00
	NORMAL	448.0	8.09	314.38	447.15	15.21	-12.01	18.92	3.36	3.29	-6.38	344.52
	NORMAL	539.0	11.26	317.81	536.85	26.19	-22.65	34.11	3.52	3.48	2.88	9.20
3/4/2012	NORMAL	630.0	12.67	316.93	625.87	40.06	-35.43	52.78	1.56	1.55	-0.97	352.20
	NORMAL	721.0	15.04	315.53	714.22	55.78	-50.52	74.41	2.63	2.60	-1.54	351.27
	NORMAL	793.0	15.51	312.21	783.67	68.91	-64.20	93.31	1.38	0.65	-4.61	296.64
	NORMAL	884.0	17.81	309.34	870.85	85.91	-83.97	119.39	2.68	2.53	-3.15	338.94
	NORMAL	976.0	20.21	310.53	957.82	105.16	-106.94	149.35	2.64	2.61	1.29	9.74
	NORMAL	1,071.0	23.03	311.60	1,046.13	128.17	-133.31	184.33	3.00	2.97	1.13	8.46
	NORMAL	1,167.0	26.83	310.27	1,133.17	154.65	-163.90	224.77	4.00	3.96	-1.39	351.00
	NORMAL	1,262.0	26.86	309.48	1,217.93	182.15	-196.82	267.66	0.38	0.03	-0.83	274.45
	NORMAL	1,357.0	26.69	311.35	1,302.75	209.89	-229.40	310.44	0.90	-0.18	1.97	102.24
	NORMAL	1,452.0	28.06	314.51	1,387.11	239.65	-261.35	354.02	2.10	1.44	3.33	48.10
	NORMAL	1,547.0	28.84	312.10	1,470.64	270.68	-294.29	399.16	1.46	0.82	-2.54	303.13
	NORMAL	1,642.0	27.74	305.45	1,554.32	298.87	-329.31	444.11	3.51	-1.16	-7.00	247.85
	NORMAL	1,738.0	28.39	304.70	1,639.03	324.82	-366.27	489.16	0.77	0.68	-0.78	331.17
	NORMAL	1,833.0	27.13	304.64	1,723.09	349.99	-402.67	533.26	1.33	-1.33	-0.06	181.24

2.1.2 Survey Stations (Continued)

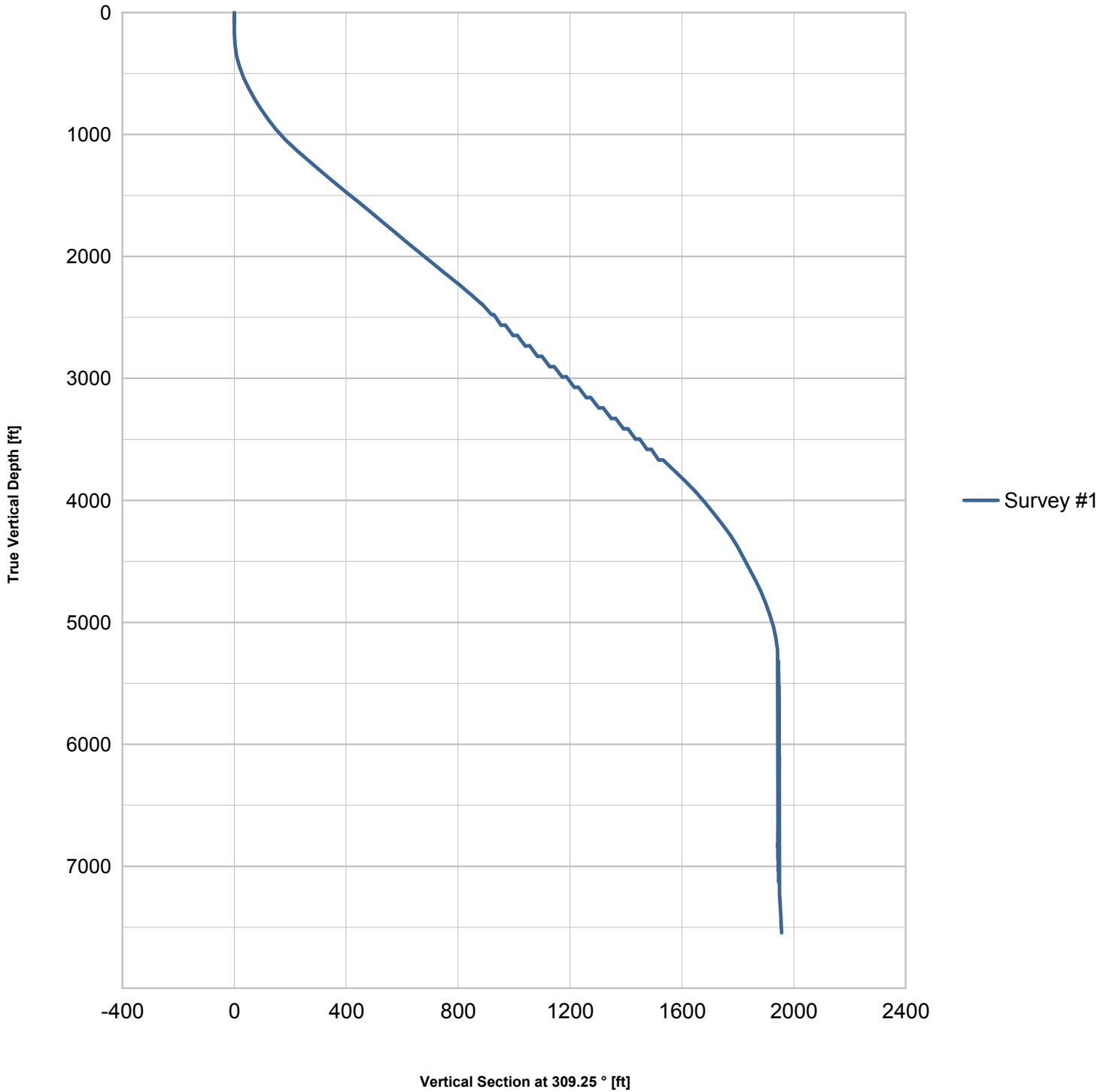
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
3/4/2012	NORMAL	1,929.0	27.86	307.60	1,808.25	376.12	-438.45	577.51	1.61	0.76	3.08	63.21
	NORMAL	2,024.0	27.40	308.95	1,892.42	403.41	-473.03	621.55	0.82	-0.48	1.42	126.90
	NORMAL	2,120.0	28.27	308.93	1,977.31	431.58	-507.90	666.38	0.91	0.91	-0.02	359.38
	NORMAL	2,216.0	29.09	309.91	2,061.53	460.84	-543.49	712.45	0.98	0.85	1.02	30.27
3/5/2012	NORMAL	2,311.0	28.05	310.47	2,145.34	491.59	-575.94	757.03	1.13	-1.09	0.59	165.81
	NORMAL	2,397.0	28.74	309.74	2,221.00	517.93	-607.22	797.92	0.90	0.80	-0.85	332.97
	NORMAL	2,492.0	26.73	309.53	2,305.08	546.13	-641.26	842.13	2.12	-2.12	-0.22	182.69
	NORMAL	2,588.0	26.33	311.91	2,390.97	574.10	-673.76	884.99	1.18	-0.42	2.48	111.68
	NORMAL	2,684.0	25.70		2,478.19	609.52	-689.78	919.80	21.46	-0.66	50.09	113.46
	NORMAL	2,779.0	26.04	311.02	2,564.62	644.18	-705.69	954.06	21.94	0.36	-51.56	248.57
	NORMAL	2,874.0	26.78	310.26	2,649.70	671.70	-737.75	996.30	0.86	0.78	-0.80	335.11
	NORMAL	2,970.0	27.75	309.30	2,735.04	699.83	-771.55	1,040.27	1.11	1.01	-1.00	335.18
	NORMAL	3,066.0	26.99	308.20	2,820.29	727.46	-805.97	1,084.40	0.95	-0.79	-1.15	213.15
	NORMAL	3,161.0	27.86	309.35	2,904.61	754.87	-840.07	1,128.16	1.07	0.92	1.21	31.85
	NORMAL	3,256.0	27.29	309.17	2,988.82	782.70	-874.12	1,172.13	0.61	-0.60	-0.19	188.24
	NORMAL	3,351.0	26.47	308.69	3,073.56	809.69	-907.53	1,215.08	0.89	-0.86	-0.51	194.61
	NORMAL	3,447.0	27.66	310.71	3,159.05	837.60	-941.13	1,258.75	1.57	1.24	2.10	38.58
	NORMAL	3,543.0	27.77	310.15	3,244.03	866.55	-975.11	1,303.39	0.29	0.11	-0.58	292.65
	NORMAL	3,639.0	27.45	309.98	3,329.10	895.19	-1,009.16	1,347.88	0.34	-0.33	-0.18	193.76
	NORMAL	3,734.0	27.09	309.52	3,413.54	923.02	-1,042.62	1,391.40	0.44	-0.38	-0.48	210.14
	NORMAL	3,829.0	26.34	308.98	3,498.40	950.05	-1,075.70	1,434.11	0.83	-0.79	-0.57	197.69
	NORMAL	3,924.0	26.11	308.95	3,583.62	976.45	-1,108.34	1,476.09	0.24	-0.24	-0.03	183.29
	NORMAL	4,019.0	25.00	307.85	3,669.33	1,001.91	-1,140.45	1,517.06	1.27	-1.17	-1.16	202.65
3/6/2012	NORMAL	2,311.0	28.05	310.47	2,144.97	490.15	-578.19	757.87	1.13	-1.09	0.59	165.81
	NORMAL	2,397.0	28.74	309.74	2,220.62	516.50	-609.48	798.76	0.90	0.80	-0.85	332.97
	NORMAL	2,492.0	26.73	309.53	2,304.70	544.70	-643.52	842.97	2.12	-2.12	-0.22	182.69
	NORMAL	2,588.0	26.33	311.91	2,390.59	572.66	-676.02	885.83	1.18	-0.42	2.48	111.68
	NORMAL	2,684.0	25.70	310.68	2,476.87	600.45	-707.65	927.91	0.86	-0.66	-1.28	220.02
	NORMAL	2,779.0	26.04	311.02	2,562.35	627.57	-739.00	969.34	0.39	0.36	0.36	23.73
	NORMAL	2,874.0	26.78	310.26	2,647.43	655.08	-771.07	1,011.58	0.86	0.78	-0.80	335.11
	NORMAL	2,970.0	27.75	309.30	2,732.76	683.22	-804.87	1,055.56	1.11	1.01	-1.00	335.18
	NORMAL	3,066.0	26.99	308.20	2,818.02	710.84	-839.28	1,099.69	0.95	-0.79	-1.15	213.15
	NORMAL	3,161.0	27.86	309.35	2,902.34	738.25	-873.39	1,143.44	1.07	0.92	1.21	31.85
	NORMAL	3,256.0	27.29	309.17	2,986.55	766.08	-907.44	1,187.42	0.61	-0.60	-0.19	188.24
	NORMAL	3,351.0	26.47	308.69	3,071.28	793.07	-940.85	1,230.37	0.89	-0.86	-0.51	194.61
	NORMAL	3,447.0	27.66	310.71	3,156.77	820.98	-974.44	1,274.04	1.57	1.24	2.10	38.58
	NORMAL	3,543.0	27.77	310.15	3,241.76	849.93	-1,008.43	1,318.68	0.29	0.11	-0.58	292.65
	NORMAL	3,639.0	27.45	309.98	3,326.83	878.57	-1,042.48	1,363.16	0.34	-0.33	-0.18	193.76
	NORMAL	3,734.0	27.09	309.52	3,411.27	906.41	-1,075.94	1,406.69	0.44	-0.38	-0.48	210.14
	NORMAL	3,829.0	26.34	308.98	3,496.13	933.43	-1,109.01	1,449.40	0.83	-0.79	-0.57	197.69
	NORMAL	3,924.0	26.11	308.95	3,581.35	959.83	-1,141.65	1,491.37	0.24	-0.24	-0.03	183.29
	NORMAL	4,019.0	25.00	307.85	3,667.05	985.29	-1,173.76	1,532.35	1.27	-1.17	-1.16	202.65
	NORMAL	4,114.0	24.40	310.47	3,753.36	1,010.34	-1,204.54	1,572.04	1.31	-0.63	2.76	119.91
3/7/2012	NORMAL	4,210.0	24.29	311.01	3,840.83	1,036.17	-1,234.53	1,611.60	0.26	-0.11	0.56	116.54
	NORMAL	4,305.0	21.73	311.07	3,928.26	1,060.55	-1,262.53	1,648.71	2.69	-2.69	0.06	179.50
	NORMAL	4,401.0	19.87	314.00	4,018.00	1,083.56	-1,287.67	1,682.74	2.22	-1.94	3.05	152.14
	NORMAL	4,497.0	19.08	313.25	4,108.51	1,105.64	-1,310.83	1,714.65	0.86	-0.82	-0.78	197.21
	NORMAL	4,592.0	18.82	312.35	4,198.36	1,126.61	-1,333.47	1,745.44	0.41	-0.27	-0.95	227.92
	NORMAL	4,688.0	16.30	311.77	4,289.88	1,146.01	-1,354.96	1,774.36	2.63	-2.63	-0.60	183.70
	NORMAL	4,783.0	14.01	310.16	4,381.57	1,162.31	-1,373.70	1,799.18	2.45	-2.41	-1.69	189.64
	NORMAL	4,878.0	12.73	306.63	4,474.00	1,175.98	-1,390.89	1,821.14	1.60	-1.35	-3.72	210.82
	NORMAL	4,973.0	13.17	310.07	4,566.58	1,189.19	-1,407.57	1,842.42	0.93	0.46	3.62	61.97
	NORMAL	5,068.0	12.40	310.77	4,659.22	1,202.81	-1,423.58	1,863.43	0.83	-0.81	0.74	168.97
	NORMAL	5,164.0	11.44	308.02	4,753.15	1,215.41	-1,438.88	1,883.26	1.16	-1.00	-2.86	209.27
	NORMAL	5,259.0	9.19	306.38	4,846.61	1,225.71	-1,452.41	1,900.25	2.39	-2.37	-1.73	186.63
	NORMAL	5,354.0	8.44	314.81	4,940.49	1,235.13	-1,463.47	1,914.77	1.57	-0.79	8.87	124.26
	NORMAL	5,450.0	6.40	325.68	5,035.69	1,244.51	-1,471.48	1,926.92	2.57	-2.13	11.32	150.78

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 (°)
3/7/2012	NORMAL	5,545.0	4.68	324.21	5,130.24	1,252.03	-1,476.74	1,935.74	1.82	-1.81	-1.55	183.99
	NORMAL	5,641.0	2.77	322.68	5,226.04	1,257.05	-1,480.43	1,941.78	1.99	-1.99	-1.59	182.22
3/8/2012	NORMAL	5,736.0	1.03	303.74	5,320.98	1,259.35	-1,482.54	1,944.86	1.92	-1.83	-19.94	190.55
	NORMAL	5,831.0	0.33	11.69	5,415.97	1,260.09	-1,483.19	1,945.84	1.01	-0.74	71.53	161.35
	NORMAL	5,927.0	0.42	152.85	5,511.97	1,260.05	-1,482.97	1,945.65	0.74	0.09	147.04	158.16
	NORMAL	6,022.0	0.77	275.32	5,606.97	1,259.80	-1,483.45	1,945.86	1.11	0.37	128.92	142.06
	NORMAL	6,115.0	0.62	290.89	5,699.96	1,260.04	-1,484.54	1,946.85	0.26	-0.16	16.74	136.07
	NORMAL	6,147.0	0.44	32.63	5,731.96	1,260.20	-1,484.64	1,947.03	2.59	-0.56	317.94	148.73
	NORMAL	6,211.0	0.40	41.85	5,795.96	1,260.58	-1,484.36	1,947.05	0.12	-0.06	14.41	125.17
	NORMAL	6,306.0	0.57	213.88	5,890.96	1,260.43	-1,484.40	1,946.99	1.02	0.18	181.08	175.32
	3/9/2012	NORMAL	6,401.0	0.41	325.35	5,985.96	1,260.32	-1,484.86	1,947.27	0.86	-0.17	117.34
NORMAL		6,497.0	0.40	270.72	6,081.96	1,260.61	-1,485.39	1,947.86	0.39	-0.01	-56.91	241.32
NORMAL		6,592.0	1.91	52.34	6,176.94	1,261.58	-1,484.46	1,947.77	2.36	1.59	149.07	147.99
NORMAL		6,688.0	1.38	63.42	6,272.90	1,263.07	-1,482.16	1,946.93	0.64	-0.55	11.54	154.49
NORMAL		6,783.0	0.44	94.91	6,367.89	1,263.55	-1,480.78	1,946.16	1.08	-0.99	33.15	167.12
NORMAL		6,878.0	0.86	206.44	6,462.88	1,262.88	-1,480.73	1,945.70	1.16	0.44	117.40	133.36
NORMAL		6,974.0	1.37	183.38	6,558.87	1,261.09	-1,481.12	1,944.87	0.70	0.53	-24.02	306.74
NORMAL		7,069.0	1.18	216.01	6,653.84	1,259.17	-1,481.76	1,944.15	0.78	-0.20	34.35	120.59
NORMAL		7,165.0	0.39	200.81	6,749.83	1,258.06	-1,482.46	1,943.99	0.84	-0.82	-15.83	187.25
NORMAL		7,228.0	0.78	208.26	6,812.83	1,257.48	-1,482.74	1,943.84	0.63	0.62	11.83	14.78
NORMAL		7,260.0	1.05	210.66	6,844.83	1,257.04	-1,482.99	1,943.75	0.85	0.84	7.50	9.28
NORMAL		7,355.0	1.19	236.52	6,939.81	1,255.75	-1,484.26	1,943.92	0.55	0.15	27.22	87.70
NORMAL		7,451.0	1.43	256.18	7,035.78	1,254.91	-1,486.25	1,944.93	0.53	0.25	20.48	71.96
NORMAL		7,546.0	1.64	270.40	7,130.75	1,254.64	-1,488.76	1,946.70	0.46	0.22	14.97	68.36
NORMAL		7,641.0	1.65	290.89	7,225.71	1,255.14	-1,491.40	1,949.06	0.62	0.01	21.57	99.28
3/10/2012		NORMAL	7,738.0	1.49	303.91	7,322.68	1,256.34	-1,493.75	1,951.64	0.40	-0.16	13.42
	NORMAL	7,834.0	1.32	277.41	7,418.65	1,257.18	-1,495.88	1,953.82	0.69	-0.18	-27.60	242.34
	NORMAL	7,902.0	1.34	274.50	7,486.63	1,257.34	-1,497.45	1,955.14	0.10	0.03	-4.28	285.04
	NORMAL	7,960.0	1.34	274.50	7,544.61	1,257.45	-1,498.81	1,956.26	0.00	0.00	0.00	0.00

### 3 Charts

#### 3.1 Vertical Section View



3.2 Plan View

