

I General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	PA 434-2	Wellbore No.	
Well Name	PA 434-2	Common Name	PA 434-2
Project	PA 01-07S-095W	Site	GV 84-1 Pad
Vertical Section Azimuth	232.27 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	1/13/2013	UWI	PA 434-2
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	1/13/2013	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 (°)
1/13/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/13/2013	NORMAL	104.0	1.14	225.53	103.99	-0.72	-0.74	1.03	1.10	1.10	0.00	225.53
	NORMAL	135.0	1.58	232.73	134.98	-1.20	-1.30	1.76	1.52	1.42	23.23	24.85
	NORMAL	166.0	2.46	237.13	165.96	-1.82	-2.20	2.85	2.88	2.84	14.19	12.20
	NORMAL	197.0	3.61	231.15	196.92	-2.79	-3.52	4.49	3.84	3.71	-19.29	341.6'
	NORMAL	227.0	4.13	233.00	226.85	-4.04	-5.11	6.51	1.78	1.73	6.17	14.43
	NORMAL	257.0	4.40	233.44	256.77	-5.37	-6.90	8.75	0.91	0.90	1.47	7.13
	NORMAL	288.0	5.19	234.49	287.66	-6.89	-9.00	11.34	2.56	2.55	3.39	6.86
	NORMAL	318.0	6.16	231.50	317.51	-8.68	-11.36	14.30	3.38	3.23	-9.97	341.56
	NORMAL	349.0	6.51	228.87	348.32	-10.88	-13.99	17.72	1.47	1.13	-8.48	319.02
	NORMAL	379.0	7.13	228.60	378.11	-13.23	-16.67	21.27	2.07	2.07	-0.90	356.9'
	NORMAL	410.0	7.83	231.24	408.85	-15.82	-19.76	25.31	2.51	2.26	8.52	27.46
1/14/2013	NORMAL	440.0	9.15	230.98	438.52	-18.60	-23.20	29.73	4.40	4.40	-0.87	358.2'
	NORMAL	469.0	10.65	231.50	467.09	-21.72	-27.09	34.72	5.18	5.17	1.79	3.67
	NORMAL	499.0	12.67	233.17	496.47	-25.42	-31.89	40.78	6.83	6.73	5.57	10.30
	NORMAL	529.0	14.08	233.79	525.65	-29.55	-37.47	47.72	4.72	4.70	2.07	6.1'
	NORMAL	559.0	15.40	233.70	554.66	-34.06	-43.63	55.35	4.40	4.40	-0.30	358.96
	NORMAL	590.0	16.19	232.65	584.49	-39.12	-50.38	63.79	2.71	2.55	-3.39	339.6'
	NORMAL	691.0	18.99	232.93	680.76	-57.57	-74.69	94.30	2.77	2.77	0.28	1.86
	NORMAL	782.0	21.54	231.53	766.12	-76.89	-99.59	125.82	2.85	2.80	-1.54	348.57
	NORMAL	873.0	23.39	232.84	850.21	-98.20	-127.06	160.59	2.11	2.03	1.44	15.75

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 (°)
1/14/2013	NORMAL	964.0	27.26	232.41	932.45	-121.83	-157.98	199.50	4.26	4.25	-0.47	357.08
	NORMAL	1,059.0	29.18	231.79	1,016.16	-149.43	-193.43	244.42	2.04	2.02	-0.65	351.04
	NORMAL	1,154.0	32.27	231.97	1,097.81	-179.39	-231.61	292.95	3.25	3.25	0.19	1.78
	NORMAL	1,249.0	35.96	232.23	1,176.45	-212.11	-273.65	346.22	3.89	3.88	0.27	2.37
	NORMAL	1,344.0	38.78	232.32	1,251.94	-247.38	-319.25	403.88	2.97	2.97	0.09	1.15
	NORMAL	1,380.0	39.09	232.29	1,279.94	-261.22	-337.15	426.50	0.86	0.86	-0.08	356.51
1/16/2013	NORMAL	1,443.0	40.00	232.67	1,328.52	-285.64	-368.97	466.61	1.49	1.44	0.60	15.04
	NORMAL	1,539.0	38.37	231.53	1,402.93	-322.89	-416.83	527.26	1.86	-1.70	-1.19	203.40
	NORMAL	1,632.0	38.77	230.56	1,475.65	-359.35	-461.92	585.23	0.78	0.43	-1.04	303.10
	NORMAL	1,728.0	38.29	233.02	1,550.75	-396.33	-508.90	645.02	1.67	-0.50	2.56	108.35
	NORMAL	1,826.0	38.42	232.92	1,627.60	-432.96	-557.44	705.83	0.15	0.13	-0.10	334.44
	NORMAL	1,919.0	38.37	232.76	1,700.49	-467.85	-603.47	763.59	0.12	-0.05	-0.17	243.23
	NORMAL	2,013.0	37.89	233.11	1,774.43	-502.83	-649.79	821.62	0.56	-0.51	0.37	155.90
	NORMAL	2,108.0	38.95	232.05	1,848.86	-538.71	-696.67	880.65	1.31	1.12	-1.12	327.73
	NORMAL	2,203.0	39.52	230.91	1,922.44	-576.13	-743.67	940.73	0.97	0.60	-1.20	307.88
	NORMAL	2,299.0	37.49	230.91	1,997.56	-613.81	-790.06	1,000.48	2.11	-2.11	0.00	180.00
	NORMAL	2,394.0	37.45	230.56	2,072.96	-650.39	-834.81	1,058.25	0.23	-0.04	-0.37	259.22
	NORMAL	2,488.0	37.41	233.02	2,147.61	-685.72	-879.69	1,115.37	1.59	-0.04	2.62	92.57
	NORMAL	2,584.0	38.20	233.02	2,223.46	-721.12	-926.70	1,174.21	0.82	0.82	0.00	0.00
	NORMAL	2,680.0	38.37	232.85	2,298.81	-756.97	-974.16	1,233.69	0.21	0.18	-0.18	328.15
	NORMAL	2,775.0	38.51	232.32	2,373.22	-792.86	-1,021.07	1,292.75	0.38	0.15	-0.56	292.87
	NORMAL	2,870.0	38.64	232.05	2,447.49	-829.17	-1,067.86	1,351.98	0.22	0.14	-0.28	307.57
	NORMAL	2,966.0	38.99	232.05	2,522.30	-866.18	-1,115.31	1,412.16	0.36	0.36	0.00	0.00
	NORMAL	3,061.0	39.30	231.17	2,595.97	-903.42	-1,162.32	1,472.12	0.67	0.33	-0.93	298.82
1/17/2013	NORMAL	3,157.0	37.36	231.97	2,671.28	-940.43	-1,208.95	1,531.65	2.09	-2.02	0.83	165.97
	NORMAL	3,253.0	37.14	231.26	2,747.69	-976.51	-1,254.50	1,589.76	0.50	-0.23	-0.74	242.67
	NORMAL	3,348.0	36.75	233.81	2,823.62	-1,011.25	-1,299.81	1,646.84	1.66	-0.41	2.68	105.25
	NORMAL	3,443.0	36.84	233.90	2,899.70	-1,044.81	-1,345.76	1,703.72	0.11	0.09	0.09	30.96
	NORMAL	3,538.0	36.84	233.20	2,975.73	-1,078.65	-1,391.57	1,760.67	0.44	0.00	-0.74	269.72
	NORMAL	3,634.0	37.76	232.76	3,052.09	-1,113.68	-1,438.02	1,818.84	1.00	0.96	-0.46	343.66
	NORMAL	3,728.0	38.59	231.88	3,125.99	-1,149.19	-1,484.00	1,876.93	1.06	0.88	-0.94	326.42
	NORMAL	3,824.0	38.15	232.14	3,201.25	-1,185.87	-1,530.96	1,936.52	0.49	-0.46	0.27	159.96
	NORMAL	3,920.0	39.12	232.58	3,276.24	-1,222.47	-1,578.42	1,996.46	1.05	1.01	0.46	15.98
	NORMAL	4,015.0	38.90	232.05	3,350.06	-1,259.03	-1,625.75	2,056.26	0.42	-0.23	-0.56	236.35
	NORMAL	4,110.0	38.81	230.30	3,424.04	-1,296.39	-1,672.18	2,115.84	1.16	-0.09	-1.84	264.63
	NORMAL	4,205.0	38.68	232.14	3,498.14	-1,333.62	-1,718.52	2,175.28	1.22	-0.14	1.94	97.16
	NORMAL	4,300.0	38.42	234.25	3,572.44	-1,369.09	-1,765.91	2,234.47	1.41	-0.27	2.22	102.07
	NORMAL	4,395.0	38.77	233.55	3,646.69	-1,404.01	-1,813.80	2,293.71	0.59	0.37	-0.74	308.44
	NORMAL	4,491.0	36.88	235.22	3,722.52	-1,438.30	-1,861.64	2,352.53	2.24	-1.97	1.74	152.27
	NORMAL	4,585.0	37.14	234.34	3,797.58	-1,470.94	-1,907.86	2,409.06	0.63	0.28	-0.94	295.76
	NORMAL	4,680.0	35.21	232.67	3,874.26	-1,504.27	-1,952.95	2,465.12	2.28	-2.03	-1.76	206.38
	NORMAL	4,775.0	33.14	231.53	3,952.86	-1,537.03	-1,995.06	2,518.47	2.28	-2.18	-1.20	196.72
	NORMAL	4,871.0	31.60	232.76	4,033.94	-1,568.58	-2,035.63	2,569.87	1.74	-1.60	1.28	157.37
	NORMAL	4,966.0	29.45	232.93	4,115.77	-1,597.72	-2,074.08	2,618.11	2.26	-2.26	0.18	177.77
1/18/2013	NORMAL	5,061.0	27.96	231.79	4,199.09	-1,625.58	-2,110.22	2,663.74	1.67	-1.57	-1.20	199.68
	NORMAL	5,157.0	25.58	233.02	4,284.79	-1,651.97	-2,144.47	2,706.97	2.55	-2.48	1.28	167.44
	NORMAL	5,252.0	24.66	233.55	4,370.81	-1,676.08	-2,176.79	2,747.29	1.00	-0.97	0.56	166.50
	NORMAL	5,348.0	22.42	229.15	4,458.82	-1,699.96	-2,206.75	2,785.60	2.96	-2.33	-4.58	216.17
	NORMAL	5,443.0	20.09	227.66	4,547.35	-1,722.80	-2,232.52	2,819.96	2.52	-2.45	-1.57	192.36
	NORMAL	5,538.0	18.90	232.05	4,636.91	-1,743.25	-2,256.72	2,851.61	1.99	-1.25	4.62	131.14
	NORMAL	5,634.0	17.93	232.93	4,727.99	-1,761.72	-2,280.77	2,881.94	1.05	-1.01	0.92	164.43
	NORMAL	5,729.0	15.25	228.28	4,819.03	-1,778.86	-2,301.77	2,909.03	3.15	-2.82	-4.89	204.14
	NORMAL	5,824.0	13.10	235.04	4,911.14	-1,793.34	-2,319.92	2,932.25	2.85	-2.26	7.12	145.65
	NORMAL	5,919.0	11.52	235.48	5,003.96	-1,804.89	-2,336.56	2,952.48	1.67	-1.66	0.46	176.82
	NORMAL	6,014.0	9.58	234.43	5,097.35	-1,814.86	-2,350.81	2,969.85	2.05	-2.04	-1.11	185.14
1/19/2013	NORMAL	6,109.0	8.79	233.55	5,191.13	-1,823.78	-2,363.08	2,985.01	0.84	-0.83	-0.93	189.65
	NORMAL	6,204.0	7.17	234.25	5,285.20	-1,831.55	-2,373.73	2,998.19	1.71	-1.71	0.74	176.97

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 (°)
1/19/2013	NORMAL	6,299.0	5.76	240.32	5,379.60	-1,837.38	-2,382.68	3,008.84	1.65	-1.48	6.39	157.13
	NORMAL	6,395.0	5.10	241.46	5,475.17	-1,841.80	-2,390.61	3,017.82	0.70	-0.69	1.19	171.28
1/20/2013	NORMAL	6,484.0	2.64	248.93	5,563.96	-1,844.43	-2,396.00	3,023.69	2.82	-2.76	8.39	172.13
	NORMAL	6,579.0	0.83	100.39	5,658.93	-1,845.34	-2,397.37	3,025.32	3.55	-1.91	-156.36	187.38
	NORMAL	6,675.0	0.70	100.13	5,754.92	-1,845.57	-2,396.11	3,024.47	0.14	-0.14	-0.27	181.40
	NORMAL	6,770.0	0.97	134.14	5,849.91	-1,846.23	-2,394.96	3,023.96	0.58	0.28	35.80	79.14
	NORMAL	6,865.0	1.01	42.56	5,944.90	-1,846.17	-2,393.81	3,023.03	1.49	0.04	-96.40	225.34
1/21/2013	NORMAL	6,960.0	1.01	28.23	6,039.89	-1,844.82	-2,392.85	3,021.44	0.27	0.00	-15.08	262.84
	NORMAL	7,055.0	0.57	40.54	6,134.88	-1,843.72	-2,392.15	3,020.21	0.49	-0.46	12.96	164.99
	NORMAL	7,150.0	0.48	335.15	6,229.88	-1,843.00	-2,392.01	3,019.66	0.60	-0.09	-68.83	229.70
	NORMAL	7,245.0	0.35	113.05	6,324.87	-1,842.75	-2,391.91	3,019.43	0.82	-0.14	145.16	162.40
	NORMAL	7,340.0	0.48	155.15	6,419.87	-1,843.23	-2,391.48	3,019.37	0.34	0.14	44.32	88.90
	NORMAL	7,435.0	0.40	96.70	6,514.87	-1,843.63	-2,390.98	3,019.23	0.46	-0.08	-61.53	231.55
	NORMAL	7,531.0	0.53	160.42	6,610.87	-1,844.09	-2,390.50	3,019.12	0.52	0.14	66.38	109.18
	NORMAL	7,626.0	0.53	239.00	6,705.86	-1,844.73	-2,390.73	3,019.70	0.71	0.00	82.72	129.29
	NORMAL	7,721.0	1.05	254.47	6,800.85	-1,845.19	-2,391.94	3,020.94	0.59	0.55	16.28	30.16
	NORMAL	7,816.0	1.41	246.56	6,895.83	-1,845.88	-2,393.85	3,022.88	0.42	0.38	-8.33	330.76
1/22/2013	NORMAL	7,911.0	1.36	254.11	6,990.81	-1,846.66	-2,396.01	3,025.06	0.20	-0.05	7.95	109.08
	NORMAL	8,007.0	1.41	221.86	7,086.78	-1,847.85	-2,397.89	3,027.28	0.80	0.05	-33.59	257.45
	NORMAL	8,103.0	1.67	222.30	7,182.74	-1,849.76	-2,399.62	3,029.82	0.27	0.27	0.46	2.82
	NORMAL	8,198.0	2.33	236.62	7,277.69	-1,851.85	-2,402.17	3,033.10	0.87	0.69	15.07	44.43
	NORMAL	8,293.0	2.24	239.79	7,372.61	-1,853.85	-2,405.38	3,036.87	0.16	-0.09	3.34	127.03
	NORMAL	8,389.0	2.46	239.50	7,468.53	-1,855.84	-2,408.78	3,040.77	0.23	0.23	-0.30	356.76
	NORMAL	8,484.0	3.03	229.86	7,563.42	-1,858.49	-2,412.46	3,045.31	0.77	0.60	-10.15	316.1'
1/23/2013	NORMAL	8,579.0	2.90	233.55	7,658.29	-1,861.54	-2,416.31	3,050.22	0.24	-0.14	3.88	126.09
	NORMAL	8,655.0	2.90	233.55	7,734.20	-1,863.82	-2,419.40	3,054.06	0.00	0.00	0.00	0.00