

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	PA 512-2	Wellbore No.	00
Wellbore Legal Name	PA 512-2	Common Wellbore Name	PA 512-2
Project	PA 02-07S-095W	Site	GV 86-2 Pad
Vertical Section Azimuth	324.27 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	2/10/2014	UWI	PA 512-2
Active datum	KB @5,847.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	2/10/2014	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)	Buidl Rate (°/100usft)	Turn (°/100usft)	Tface (°)
2/10/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/10/2014	NORMAL	101.0	0.09	168.49	101.00	-0.08	0.02	-0.07	0.09	0.09	0.00	168.49
	NORMAL	162.0	0.53	330.21	162.00	0.12	-0.11	0.16	1.01	0.72	265.11	164.35
	NORMAL	251.0	2.20	336.53	250.97	2.04	-1.00	2.24	1.88	1.88	7.10	8.32
	NORMAL	342.0	3.61	327.30	341.85	6.06	-3.24	6.81	1.63	1.55	-10.14	337.00
	NORMAL	433.0	5.45	319.83	432.57	11.77	-7.58	13.98	2.12	2.02	-8.21	338.47
	NORMAL	524.0	7.83	322.47	522.95	19.99	-14.14	24.49	2.64	2.62	2.90	8.62
	NORMAL	601.0	9.59	328.12	599.06	29.60	-20.73	36.13	2.54	2.29	7.34	28.74
	NORMAL	691.0	10.59	325.26	687.67	42.76	-29.40	51.88	1.24	1.11	-3.18	331.97
	NORMAL	783.0	10.68	323.60	778.09	56.57	-39.28	68.86	0.35	0.10	-1.80	285.55
	NORMAL	855.0	10.78	323.20	848.83	67.33	-47.27	82.26	0.17	0.14	-0.56	323.13
2/11/2014	NORMAL	961.0	10.52	322.08	953.00	82.90	-59.15	101.84	0.31	-0.25	-1.06	217.97
	NORMAL	1,056.0	10.36	321.31	1,046.43	96.41	-69.82	119.04	0.22	-0.17	-0.81	220.71
	NORMAL	1,151.0	10.35	320.53	1,139.88	109.67	-80.59	136.08	0.15	-0.01	-0.82	265.54
	NORMAL	1,246.0	10.43	327.64	1,233.33	123.52	-90.62	153.18	1.35	0.08	7.48	89.93
	NORMAL	1,341.0	9.86	327.61	1,326.84	137.65	-99.57	169.89	0.60	-0.60	-0.03	180.52
	NORMAL	1,436.0	9.42	325.83	1,420.50	150.95	-108.30	185.78	0.56	-0.46	-1.87	213.24
	NORMAL	1,531.0	9.23	326.28	1,514.25	163.72	-116.89	201.17	0.21	-0.20	0.47	159.23
	NORMAL	1,625.0	10.09	322.92	1,606.91	176.56	-126.04	216.93	1.09	0.91	-3.57	325.09
	NORMAL	1,720.0	9.91	323.09	1,700.47	189.74	-135.97	233.43	0.19	-0.19	0.18	170.77
	NORMAL	1,815.0	9.19	322.10	1,794.15	202.26	-145.54	249.18	0.78	-0.76	-1.04	192.36

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azl. (°)	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (°)
2/11/2014	NORMAL	1,910.0	10.64	321.56	1,887.73	215.11	-155.65	265.52	1.53	1.53	-0.57	356.06
2/12/2014	NORMAL	2,004.0	10.47	319.55	1,980.14	228.41	-166.59	282.70	0.43	-0.18	-2.14	244.23
	NORMAL	2,099.0	11.08	325.31	2,073.47	242.49	-177.39	300.43	1.30	0.64	6.06	63.32
	NORMAL	2,194.0	10.90	324.99	2,166.73	257.35	-187.74	318.54	0.20	-0.19	-0.34	198.57
	NORMAL	2,289.0	10.64	323.23	2,260.06	271.73	-198.14	336.29	0.44	-0.27	-1.85	230.81
	NORMAL	2,384.0	11.17	327.10	2,353.34	286.48	-208.39	354.25	0.95	0.56	4.07	56.01
	NORMAL	2,479.0	11.17	326.31	2,446.54	301.87	-218.49	372.64	0.16	0.00	-0.83	269.61
	NORMAL	2,574.0	10.55	325.43	2,539.84	316.68	-228.53	390.53	0.68	-0.65	-0.93	194.54
	NORMAL	2,669.0	10.99	327.36	2,633.17	331.47	-238.35	408.27	0.60	0.46	2.03	40.29
	NORMAL	2,763.0	11.13	326.22	2,725.42	346.56	-248.22	426.28	0.28	0.15	-1.21	302.07
	NORMAL	2,858.0	11.26	325.52	2,818.61	361.82	-258.57	444.72	0.20	0.14	-0.74	313.38
	NORMAL	2,953.0	11.09	325.12	2,911.81	376.96	-269.05	463.13	0.20	-0.18	-0.42	204.32
	NORMAL	3,048.0	10.64	325.43	3,005.11	391.68	-279.25	481.03	0.48	-0.47	0.33	172.75
	NORMAL	3,143.0	10.30	323.82	3,098.53	405.76	-289.24	498.29	0.47	-0.36	-1.69	219.92
	NORMAL	3,238.0	10.20	324.00	3,192.01	419.42	-299.20	515.20	0.11	-0.11	0.19	162.33
	NORMAL	3,333.0	9.32	322.35	3,285.64	432.31	-308.84	531.30	0.97	-0.93	-1.74	196.82
	NORMAL	3,428.0	10.50	324.74	3,379.22	445.47	-318.54	547.64	1.32	1.24	2.52	20.40
	NORMAL	3,523.0	9.88	323.73	3,472.72	459.11	-328.36	564.45	0.68	-0.65	-1.06	195.58
	NORMAL	3,618.0	10.99	327.01	3,566.15	473.28	-338.11	581.64	1.32	1.17	3.45	29.78
	NORMAL	3,712.0	10.65	325.73	3,658.48	487.97	-347.88	599.28	0.44	-0.36	-1.36	214.62
	NORMAL	3,807.0	11.16	325.02	3,751.76	502.76	-358.09	617.24	0.56	0.54	-0.75	344.90
	NORMAL	3,903.0	10.76	323.96	3,846.01	517.62	-368.69	635.49	0.47	-0.42	-1.10	206.22
	NORMAL	3,998.0	11.16	326.41	3,939.28	532.45	-378.99	653.55	0.65	0.42	2.58	50.55
	NORMAL	4,093.0	9.85	329.47	4,032.69	547.11	-388.21	670.83	1.50	-1.38	3.22	158.43
2/13/2014	NORMAL	4,188.0	9.84	332.06	4,126.29	561.28	-396.14	686.97	0.47	-0.01	2.73	92.57
	NORMAL	4,283.0	9.67	332.20	4,219.91	575.51	-403.67	702.91	0.18	-0.18	0.15	172.13
	NORMAL	4,378.0	9.61	330.73	4,313.57	589.48	-411.26	718.69	0.27	-0.06	-1.55	255.58
	NORMAL	4,472.0	9.32	329.03	4,406.29	602.85	-419.02	734.07	0.43	-0.31	-1.81	223.11
	NORMAL	4,567.0	8.88	328.33	4,500.10	615.69	-426.83	749.05	0.48	-0.46	-0.74	193.78
	NORMAL	4,662.0	8.16	328.77	4,594.05	627.70	-434.17	763.09	0.76	-0.76	0.46	175.04
	NORMAL	4,757.0	6.68	322.53	4,688.25	637.85	-441.03	775.34	1.77	-1.56	-6.57	205.50
	NORMAL	4,852.0	6.12	329.54	4,782.66	646.60	-446.96	785.90	1.01	-0.59	7.38	129.08
	NORMAL	4,947.0	5.46	338.77	4,877.18	655.18	-451.16	795.32	1.20	-0.69	9.72	129.86
	NORMAL	5,041.0	4.48	355.49	4,970.83	663.00	-453.07	802.79	1.85	-1.04	17.79	132.22
	NORMAL	5,136.0	4.31	359.44	5,065.55	670.27	-453.40	808.88	0.37	-0.18	4.16	121.28
	NORMAL	5,231.0	2.64	0.23	5,160.37	676.03	-453.42	813.57	1.76	-1.76	0.83	178.75
	NORMAL	5,326.0	1.84	344.88	5,255.30	679.69	-453.81	816.77	1.05	-0.84	-16.16	209.36
	NORMAL	5,420.0	1.45	338.02	5,349.26	682.25	-454.65	819.34	0.46	-0.41	-7.30	203.39
	NORMAL	5,515.0	1.14	324.58	5,444.24	684.14	-455.65	821.45	0.45	-0.33	-14.15	217.83
	NORMAL	5,610.0	0.73	316.73	5,539.22	685.35	-456.61	822.99	0.45	-0.43	-8.26	193.45
	NORMAL	5,705.0	0.44	306.49	5,634.22	686.00	-457.32	823.94	0.32	-0.31	-10.78	194.75
	NORMAL	5,800.0	0.88	270.76	5,729.21	686.23	-458.34	824.72	0.61	0.46	-37.61	298.10
	NORMAL	5,895.0	0.65	273.58	5,824.21	686.27	-459.61	825.50	0.25	-0.24	2.97	172.11
2/14/2014	NORMAL	5,989.0	0.79	254.68	5,918.20	686.14	-460.76	826.06	0.29	0.15	-20.11	290.84
	NORMAL	6,084.0	0.97	244.66	6,013.19	685.62	-462.12	826.43	0.25	0.19	-10.55	314.39
	NORMAL	6,179.0	0.44	56.82	6,108.18	685.47	-462.54	826.56	1.48	-0.56	181.22	177.56
	NORMAL	6,274.0	0.09	165.47	6,203.18	685.60	-462.22	826.48	0.50	-0.37	114.37	169.69
	NORMAL	6,369.0	1.14	270.76	6,298.18	685.54	-463.15	826.97	1.23	1.11	110.83	109.56
	NORMAL	6,464.0	0.35	330.53	6,393.17	685.81	-464.23	827.82	1.06	-0.83	62.92	162.58
	NORMAL	6,559.0	0.60	292.02	6,488.17	686.25	-464.84	828.53	0.41	0.26	-40.54	287.74
	NORMAL	6,654.0	0.97	283.95	6,583.16	686.63	-466.08	829.56	0.41	0.39	-8.49	339.30
	NORMAL	6,748.0	1.39	255.03	6,677.14	686.52	-467.95	830.57	0.76	0.45	-30.77	290.16
	NORMAL	6,843.0	1.41	231.74	6,772.11	685.50	-469.98	830.93	0.60	0.02	-24.52	260.34
2/15/2014	NORMAL	6,938.0	1.75	241.93	6,867.08	684.10	-472.18	831.07	0.46	0.36	10.73	44.74
	NORMAL	7,033.0	1.73	244.52	6,962.03	682.80	-474.76	831.52	0.09	-0.02	2.73	105.56
	NORMAL	7,128.0	2.21	226.29	7,056.98	680.91	-477.38	831.52	0.82	0.51	-19.19	298.11

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	EW (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (°)
2/15/2014	NORMAL	7,223.0	2.13	217.23	7,151.91	678.24	-479.77	830.75	0.37	-0.08	-9.54	252.37
	NORMAL	7,318.0	2.74	223.55	7,246.82	675.19	-482.40	829.81	0.70	0.64	6.65	26.94
	NORMAL	7,413.0	3.12	224.31	7,341.70	671.70	-485.77	828.94	0.40	0.40	0.80	6.22
	NORMAL	7,508.0	3.25	225.85	7,436.55	667.97	-489.51	828.10	0.16	0.14	1.62	34.12
	NORMAL	7,570.0	3.67	228.65	7,498.44	665.43	-492.26	827.65	0.73	0.68	4.52	23.32
	NORMAL	7,635.0	3.67	228.65	7,563.31	662.69	-495.38	827.24	0.00	0.00	0.00	0.00