

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	SP 432-14	Wellbore No.	
Well Name	SP 432-14	Common Name	SP 432-14
Project	PA 14-07S-095W	Site	SP 32-14 Pad
Vertical Section Azimuth	53.07 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	11/21/2011	UWI	SP 432-14
Active Datum	KB @7,662.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	11/21/2011	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 (°)
11/21/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/21/2011	NORMAL	244.0	3.28	54.54	243.87	4.05	5.69	6.98	1.34	1.34	0.00	54.54
	NORMAL	334.0	5.13	56.40	333.62	7.77	11.14	13.57	2.06	2.06	2.07	5.14
	NORMAL	424.0	5.76	52.00	423.21	12.78	18.05	22.10	0.84	0.70	-4.89	324.26
	NORMAL	515.0	6.47	51.74	513.70	18.76	25.67	31.80	0.78	0.78	-0.29	357.64
	NORMAL	607.0	6.86	48.59	605.07	25.61	33.86	42.45	0.58	0.42	-3.42	315.28
	NORMAL	698.0	6.93	51.04	695.42	32.66	42.21	53.36	0.33	0.08	2.69	77.83
	NORMAL	789.0	6.54	54.10	785.79	39.15	50.67	64.03	0.58	-0.43	3.36	138.89
	NORMAL	880.0	6.89	53.72	876.16	45.41	59.27	74.67	0.39	0.38	-0.42	352.58
11/24/2011	NORMAL	971.0	7.46	52.35	966.45	52.25	68.35	86.03	0.65	0.63	-1.51	342.61
	NORMAL	1,062.0	6.44	53.07	1,056.78	58.93	77.11	97.04	1.12	-1.12	0.79	175.48
	NORMAL	1,157.0	6.76	51.27	1,151.15	65.63	85.73	107.96	0.40	0.34	-1.89	326.22
	NORMAL	1,251.0	7.19	55.66	1,244.46	72.41	94.90	119.37	0.73	0.46	4.67	53.30
	NORMAL	1,346.0	8.19	55.75	1,338.60	79.57	105.40	132.06	1.05	1.05	0.09	0.73
	NORMAL	1,440.0	7.33	53.11	1,431.74	86.94	115.73	144.75	0.99	-0.91	-2.81	201.21
	NORMAL	1,535.0	4.82	51.47	1,526.20	93.06	123.70	154.80	2.65	-2.64	-1.73	183.14
	NORMAL	1,629.0	4.88	50.53	1,619.86	98.06	129.88	162.74	0.11	0.06	-1.00	306.58
	NORMAL	1,724.0	5.90	53.68	1,714.44	103.52	136.93	171.66	1.12	1.07	3.32	17.75
	NORMAL	1,818.0	6.79	54.51	1,807.86	109.61	145.35	182.05	0.95	0.95	0.88	6.30
	NORMAL	1,913.0	7.73	54.94	1,902.10	116.54	155.15	194.05	0.99	0.99	0.45	3.52
	NORMAL	2,007.0	7.20	54.78	1,995.30	123.57	165.14	206.25	0.56	-0.56	-0.17	182.17

2.1.2 Survey Stations (Continued)

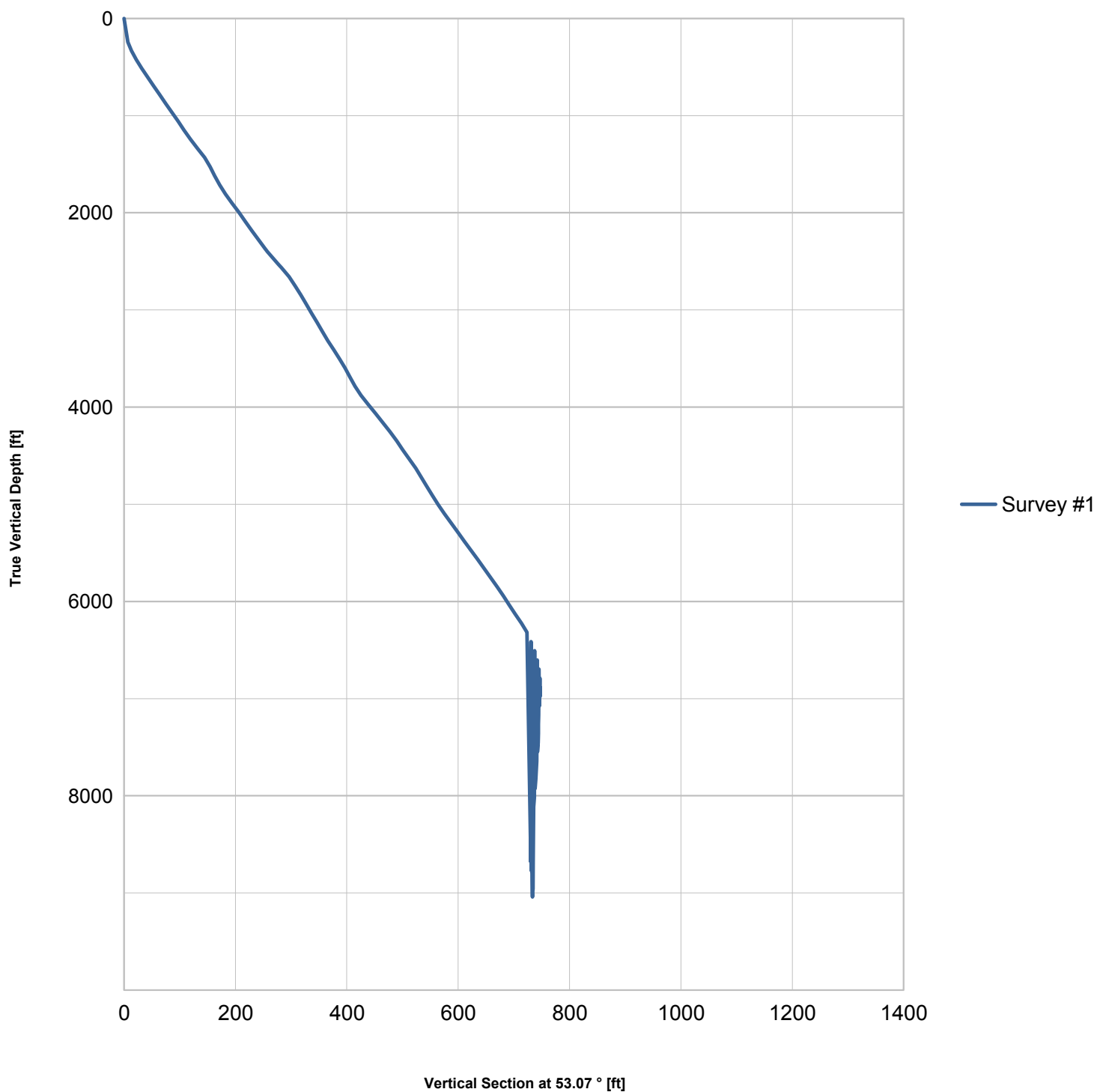
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
11/24/2011	NORMAL	2,102.0	6.78	52.64	2,089.60	130.41	174.46	217.81	0.52	-0.44	-2.25	210.74
	NORMAL	2,196.0	7.30	49.67	2,182.89	137.64	183.42	229.32	0.68	0.55	-3.16	323.53
	NORMAL	2,291.0	7.12	54.24	2,277.14	144.99	192.80	241.23	0.63	-0.19	4.81	109.68
	NORMAL	2,385.0	7.74	54.62	2,370.35	152.06	202.69	253.39	0.66	0.66	0.40	4.72
	NORMAL	2,417.0	8.01	54.46	2,402.05	154.60	206.26	257.77	0.85	0.84	-0.50	355.28
	NORMAL	2,549.0	9.32	56.78	2,532.54	165.80	222.69	277.63	1.03	0.99	1.76	16.09
	NORMAL	2,581.0	9.25	56.50	2,564.12	168.64	227.00	282.78	0.26	-0.22	-0.88	212.70
	NORMAL	2,675.0	7.30	47.88	2,657.14	176.82	237.73	296.27	2.45	-2.07	-9.17	208.25
	NORMAL	2,770.0	6.01	48.51	2,751.50	184.16	245.93	307.24	1.36	-1.36	0.66	177.07
	NORMAL	2,864.0	6.44	47.24	2,844.94	191.00	253.49	317.39	0.48	0.46	-1.35	341.61
	NORMAL	2,959.0	5.54	53.95	2,939.43	197.32	261.11	327.28	1.20	-0.95	7.06	145.42
	NORMAL	3,053.0	5.86	54.14	3,032.96	202.80	268.67	336.61	0.34	0.34	0.20	3.47
	NORMAL	3,148.0	6.07	53.78	3,127.45	208.61	276.65	346.48	0.22	0.22	-0.38	349.72
	NORMAL	3,242.0	5.63	53.60	3,220.96	214.28	284.37	356.06	0.47	-0.47	-0.19	182.30
	NORMAL	3,337.0	6.51	53.60	3,315.42	220.24	292.46	366.11	0.93	0.93	0.00	0.00
11/26/2011	NORMAL	3,431.0	6.51	51.31	3,408.82	226.73	300.90	376.76	0.28	0.00	-2.44	268.86
	NORMAL	3,526.0	6.04	52.36	3,503.25	233.15	309.07	387.15	0.51	-0.49	1.11	166.80
	NORMAL	3,620.0	5.63	52.81	3,596.76	238.96	316.66	396.70	0.44	-0.44	0.48	173.86
	NORMAL	3,715.0	5.21	52.13	3,691.33	244.42	323.77	405.67	0.45	-0.44	-0.72	188.36
	NORMAL	3,809.0	5.80	56.60	3,784.90	249.66	331.11	414.68	0.78	0.63	4.76	38.25
	NORMAL	3,904.0	7.65	53.42	3,879.24	256.07	340.19	425.80	1.99	1.95	-3.35	347.04
	NORMAL	3,998.0	7.95	53.48	3,972.37	263.67	350.44	438.55	0.32	0.32	0.06	1.58
	NORMAL	4,093.0	7.94	54.74	4,066.46	271.36	361.08	451.68	0.18	-0.01	1.33	93.91
	NORMAL	4,187.0	7.78	50.57	4,159.58	279.15	371.29	464.53	0.63	-0.17	-4.44	252.27
	NORMAL	4,282.0	7.94	53.40	4,253.69	287.15	381.53	477.51	0.44	0.17	2.98	68.94
	NORMAL	4,376.0	6.89	50.36	4,346.90	294.62	391.08	489.64	1.19	-1.12	-3.23	198.99
	NORMAL	4,471.0	6.70	49.03	4,441.23	301.89	399.66	500.86	0.26	-0.20	-1.40	218.97
	NORMAL	4,565.0	7.42	45.87	4,534.52	309.71	408.15	512.35	0.87	0.77	-3.36	330.08
	NORMAL	4,660.0	6.54	49.08	4,628.82	317.52	416.64	523.83	1.01	-0.93	3.38	157.68
	NORMAL	4,755.0	5.72	57.82	4,723.27	323.59	424.74	533.95	1.31	-0.86	9.20	135.59
	NORMAL	4,849.0	6.07	62.09	4,816.78	328.41	433.10	543.53	0.60	0.37	4.54	53.54
	NORMAL	4,944.0	6.48	51.66	4,911.21	334.09	441.74	553.85	1.27	0.43	-10.98	284.55
	NORMAL	5,038.0	6.43	54.28	5,004.62	340.45	450.17	564.41	0.32	-0.05	2.79	100.93
	NORMAL	5,133.0	7.10	52.00	5,098.95	347.17	459.12	575.60	0.76	0.71	-2.40	337.02
	NORMAL	5,322.0	7.47	54.83	5,286.43	361.44	478.37	599.56	0.27	0.20	1.50	45.53
11/27/2011	NORMAL	5,416.0	6.80	54.22	5,379.70	368.21	487.88	611.23	0.72	-0.71	-0.65	186.15
	NORMAL	5,511.0	7.47	53.78	5,473.96	375.15	497.42	623.03	0.71	0.71	-0.46	355.12
	NORMAL	5,605.0	7.21	54.65	5,567.19	382.17	507.16	635.03	0.30	-0.28	0.93	157.28
	NORMAL	5,700.0	6.84	51.32	5,661.48	389.16	516.44	646.65	0.58	-0.39	-3.51	226.10
	NORMAL	5,794.0	7.38	53.18	5,754.76	396.27	525.64	658.28	0.62	0.57	1.98	24.01
	NORMAL	5,889.0	6.77	55.36	5,849.03	403.11	535.13	669.98	0.70	-0.64	2.29	157.32
	NORMAL	5,983.0	6.60	53.25	5,942.39	409.49	544.02	680.91	0.32	-0.18	-2.24	234.27
	NORMAL	6,078.0	6.59	49.66	6,036.77	416.29	552.55	691.82	0.43	-0.01	-3.78	266.83
	NORMAL	6,172.0	6.63	55.12	6,130.14	422.88	561.11	702.62	0.67	0.04	5.81	89.07
	NORMAL	6,267.0	6.67	54.14	6,224.50	429.25	570.08	713.62	0.13	0.04	-1.03	288.93
11/28/2011	NORMAL	6,361.0	5.23	53.47	6,317.99	435.00	577.95	723.36	1.53	-1.53	-0.71	182.43
	NORMAL	6,456.0	4.04	58.70	6,412.68	439.32	584.29	731.02	1.33	-1.25	5.51	163.04
	NORMAL	6,551.0	3.64	65.31	6,507.47	442.32	589.89	737.30	0.63	-0.42	6.96	135.37
	NORMAL	6,645.0	2.32	66.79	6,601.34	444.31	594.35	742.07	1.41	-1.40	1.57	177.40
	NORMAL	6,740.0	1.56	61.91	6,696.29	445.68	597.26	745.21	0.82	-0.80	-5.14	189.83
	NORMAL	6,834.0	0.58	49.36	6,790.27	446.59	598.75	746.95	1.07	-1.04	-13.35	187.23
11/29/2011	NORMAL	6,929.0	0.39	137.91	6,885.27	446.66	599.33	747.46	0.73	-0.20	93.21	145.63
	NORMAL	7,023.0	0.53	209.25	6,979.26	446.05	599.33	747.09	0.58	0.15	75.89	113.70
	NORMAL	7,118.0	1.01	211.60	7,074.25	444.95	598.68	745.91	0.51	0.51	2.47	4.94
	NORMAL	7,212.0	0.54	234.20	7,168.25	443.99	597.88	744.69	0.59	-0.50	24.04	157.92
	NORMAL	7,307.0	0.44	319.60	7,263.24	444.00	597.28	744.23	0.70	-0.11	89.89	139.01
	NORMAL	7,401.0	1.01	316.10	7,357.24	444.87	596.48	744.10	0.61	0.61	-3.72	353.81

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 (°)
11/29/2011	NORMAL	7,496.0	0.71	282.01	7,452.22	445.60	595.32	743.61	0.61	-0.32	-35.88	223.32
	NORMAL	7,590.0	0.94	253.50	7,546.22	445.50	594.01	742.51	0.49	0.24	-30.33	284.50
	NORMAL	7,685.0	0.66	262.87	7,641.21	445.21	592.72	741.30	0.32	-0.29	9.86	159.59
	NORMAL	7,780.0	0.56	248.27	7,736.20	444.97	591.75	740.38	0.19	-0.11	-15.37	230.09
	NORMAL	7,874.0	0.83	253.94	7,830.19	444.61	590.67	739.30	0.30	0.29	6.03	17.14
11/30/2011	NORMAL	7,969.0	0.71	234.64	7,925.19	444.08	589.52	738.07	0.30	-0.13	-20.32	235.73
	NORMAL	8,063.0	0.88	228.52	8,019.18	443.27	588.51	736.77	0.20	0.18	-6.51	330.38
	NORMAL	8,158.0	0.71	208.45	8,114.17	442.27	587.68	735.51	0.34	-0.18	-21.13	228.82
	NORMAL	8,252.0	1.26	221.42	8,208.15	440.98	586.72	733.97	0.63	0.59	13.80	28.64
	NORMAL	8,347.0	1.11	221.12	8,303.13	439.50	585.42	732.04	0.16	-0.16	-0.32	182.22
	NORMAL	8,441.0	0.88	246.74	8,397.12	438.53	584.16	730.45	0.53	-0.24	27.26	129.75
	NORMAL	8,536.0	0.44	344.08	8,492.11	438.60	583.39	729.87	1.09	-0.46	102.46	155.01
12/1/2011	NORMAL	8,630.0	0.94	333.56	8,586.11	439.63	582.95	730.14	0.55	0.53	-11.19	340.48
	NORMAL	8,725.0	1.41	337.22	8,681.09	441.41	582.15	730.57	0.50	0.49	3.85	10.91
	NORMAL	8,819.0	1.81	5.79	8,775.05	443.95	581.85	731.86	0.94	0.43	30.39	78.27
	NORMAL	8,914.0	1.23	15.90	8,870.02	446.43	582.28	733.69	0.67	-0.61	10.64	160.18
	NORMAL	9,008.0	0.44	235.36	8,964.01	447.19	582.26	734.13	1.70	-0.84	-149.51	190.10
	NORMAL	9,085.0	0.44	235.36	9,041.01	446.85	581.78	733.54	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

