

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 344-8	Wellbore No.	
Well Name	KP 344-8	Common Name	KP 344-8
Project	KP 16-06S-091W	Site	KP 11-16 Pad
Vertical Section Azimuth	316.13 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	9/5/2012	UWI	KP 344-8
Active Datum	KB @6,658.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	9/5/2012	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 (°)
9/5/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/5/2012	NORMAL	105.0	0.97	266.04	104.99	-0.06	-0.89	0.57	0.92	0.92	0.00	266.04
	NORMAL	136.0	1.67	289.34	135.99	0.07	-1.57	1.14	2.80	2.26	75.16	49.51
	NORMAL	166.0	2.38	281.95	165.97	0.34	-2.60	2.05	2.52	2.37	-24.63	336.09
	NORMAL	196.0	2.90	292.32	195.94	0.76	-3.91	3.26	2.35	1.73	34.57	47.83
	NORMAL	226.0	3.70	295.58	225.89	1.47	-5.48	4.86	2.74	2.67	10.87	14.83
	NORMAL	256.0	4.40	305.68	255.81	2.56	-7.29	6.90	3.32	2.33	33.67	50.65
	NORMAL	287.0	6.07	300.94	286.68	4.09	-9.66	9.65	5.56	5.39	-15.29	343.11
	NORMAL	317.0	7.39	298.92	316.47	5.84	-12.71	13.02	4.47	4.40	-6.73	348.83
	NORMAL	347.0	8.36	300.41	346.19	7.88	-16.28	16.96	3.30	3.23	4.97	12.62
	NORMAL	377.0	9.94	301.03	375.81	10.32	-20.38	21.56	5.28	5.27	2.07	3.88
	NORMAL	408.0	11.09	302.61	406.29	13.30	-25.19	27.05	3.82	3.71	5.10	14.85
	NORMAL	439.0	12.05	305.24	436.66	16.78	-30.34	33.12	3.53	3.10	8.48	30.08
	NORMAL	449.0	12.66	306.81	446.43	18.04	-32.07	35.23	6.96	6.10	15.70	29.61
	NORMAL	479.0	13.86	308.12	475.62	22.22	-37.53	42.03	4.12	4.00	4.37	14.70
	NORMAL	510.0	15.20	311.52	505.63	27.21	-43.49	49.76	5.12	4.32	10.97	34.13
	NORMAL	540.0	17.08	314.66	534.45	32.91	-49.57	58.08	6.91	6.27	10.47	26.42
9/6/2012	NORMAL	570.0	18.62	315.45	563.01	39.42	-56.07	67.28	5.20	5.13	2.63	9.31
	NORMAL	600.0	19.92	315.66	591.32	46.49	-63.00	77.18	4.34	4.33	0.70	3.15
	NORMAL	631.0	21.14	314.89	620.35	54.22	-70.65	88.05	4.03	3.94	-2.48	347.16
	NORMAL	662.0	22.08	314.32	649.18	62.23	-78.78	99.46	3.11	3.03	-1.84	347.15

2.1.2 Survey Stations (Continued)

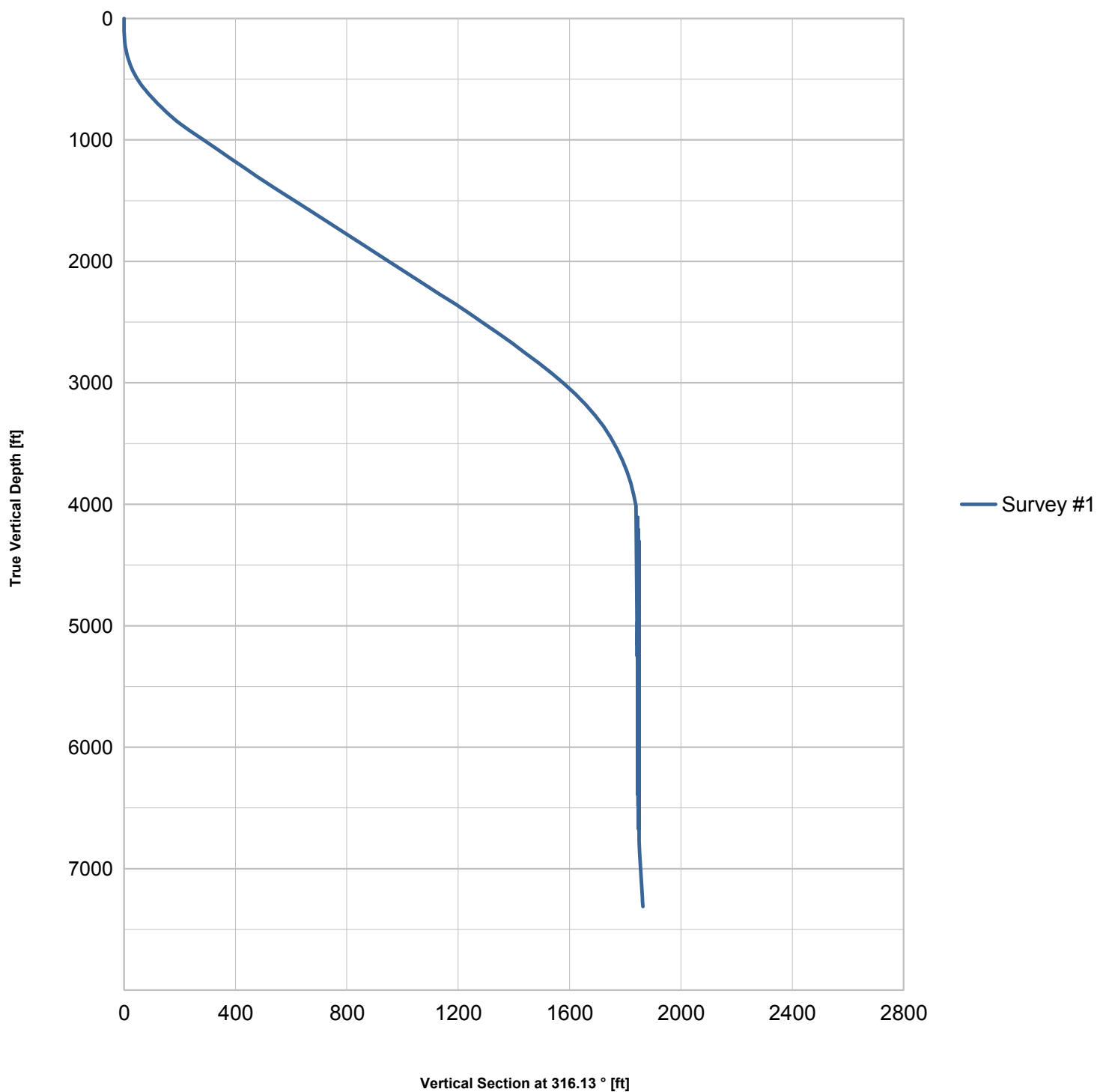
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
9/6/2012	NORMAL	692.0	22.57	313.63	676.93	70.14	-86.98	110.85	1.85	1.63	-2.30	331.54
	NORMAL	722.0	23.19	314.06	704.57	78.22	-95.39	122.50	2.14	2.07	1.43	15.29
	NORMAL	753.0	24.03	314.64	732.97	86.90	-104.27	134.91	2.81	2.71	1.87	15.72
	NORMAL	783.0	24.87	314.55	760.28	95.62	-113.11	147.32	2.80	2.80	-0.30	357.42
	NORMAL	814.0	25.93	315.80	788.28	105.05	-122.48	160.62	3.83	3.42	4.03	27.40
	NORMAL	843.0	26.94	316.25	814.25	114.35	-131.45	173.53	3.55	3.48	1.55	11.42
	NORMAL	874.0	27.67	317.18	841.80	124.70	-141.19	187.75	2.73	2.35	3.00	30.72
	NORMAL	904.0	29.75	316.72	868.11	135.23	-151.03	202.16	6.97	6.93	-1.53	353.73
	NORMAL	964.0	32.06	316.02	919.59	157.53	-172.30	232.97	3.90	3.85	-1.17	350.85
	NORMAL	1,060.0	33.76	316.40	1,000.18	195.18	-208.39	285.13	1.78	1.77	0.40	7.08
	NORMAL	1,155.0	31.77	316.43	1,080.06	232.42	-243.83	336.54	2.09	-2.09	0.03	179.55
	NORMAL	1,251.0	32.94	317.08	1,161.15	269.84	-279.03	387.91	1.27	1.22	0.68	16.83
	NORMAL	1,347.0	32.29	315.37	1,242.02	307.21	-314.82	439.65	1.17	-0.68	-1.78	234.09
	NORMAL	1,416.0	33.13	314.99	1,300.07	333.65	-341.10	476.93	1.25	1.22	-0.55	346.10
9/7/2012	NORMAL	1,541.0	34.56	312.34	1,403.89	381.69	-391.47	546.46	1.64	1.14	-2.12	312.99
	NORMAL	1,637.0	34.38	314.98	1,483.04	419.19	-430.77	600.74	1.57	-0.19	2.75	97.96
	NORMAL	1,732.0	34.21	313.57	1,561.53	456.56	-469.10	654.23	0.86	-0.18	-1.48	257.34
	NORMAL	1,827.0	33.85	315.86	1,640.26	493.95	-506.87	707.37	1.40	-0.38	2.41	106.64
	NORMAL	1,922.0	34.47	317.44	1,718.87	532.74	-543.48	760.71	1.14	0.65	1.66	55.71
	NORMAL	2,017.0	34.03	319.55	1,797.40	572.78	-578.91	814.12	1.33	-0.46	2.22	111.20
	NORMAL	2,113.0	33.85	318.50	1,877.05	613.24	-614.06	867.65	0.64	-0.19	-1.09	252.50
	NORMAL	2,209.0	34.12	317.62	1,956.65	653.16	-649.92	921.28	0.58	0.28	-0.92	298.40
	NORMAL	2,304.0	34.29	316.91	2,035.22	692.38	-686.16	974.68	0.46	0.18	-0.75	292.78
	NORMAL	2,399.0	34.12	318.32	2,113.79	731.82	-722.16	1,028.06	0.85	-0.18	1.48	102.69
	NORMAL	2,495.0	33.94	317.09	2,193.35	771.56	-758.31	1,081.76	0.74	-0.19	-1.28	254.84
	NORMAL	2,591.0	34.38	316.74	2,272.78	810.93	-795.14	1,135.66	0.50	0.46	-0.36	335.79
	NORMAL	2,686.0	34.38	319.00	2,351.19	850.71	-831.12	1,189.27	1.34	0.00	2.38	90.93
	NORMAL	2,782.0	32.27	318.32	2,431.40	890.31	-865.94	1,241.96	2.23	-2.20	-0.71	189.76
9/8/2012	NORMAL	2,877.0	32.80	318.32	2,511.49	928.47	-899.92	1,293.01	0.56	0.56	0.00	0.00
	NORMAL	2,972.0	32.10	317.27	2,591.66	966.23	-934.16	1,343.96	0.95	-0.74	-1.11	218.39
	NORMAL	3,068.0	30.43	317.62	2,673.72	1,002.93	-967.85	1,393.77	1.75	-1.74	0.36	173.94
	NORMAL	3,162.0	30.51	316.74	2,754.73	1,037.89	-1,000.25	1,441.43	0.48	0.09	-0.94	279.78
	NORMAL	3,258.0	29.81	319.02	2,837.74	1,073.65	-1,032.60	1,489.63	1.40	-0.73	2.38	122.41
	NORMAL	3,353.0	28.14	317.79	2,920.85	1,108.07	-1,063.14	1,535.61	1.87	-1.76	-1.29	199.10
	NORMAL	3,448.0	26.64	317.62	3,005.19	1,140.40	-1,092.55	1,579.30	1.58	-1.58	-0.18	182.91
	NORMAL	3,543.0	24.36	316.04	3,090.94	1,170.24	-1,120.51	1,620.18	2.50	-2.40	-1.66	195.90
	NORMAL	3,639.0	21.98	313.57	3,179.19	1,196.88	-1,147.27	1,657.94	2.68	-2.48	-2.57	201.08
	NORMAL	3,734.0	19.87	310.59	3,267.92	1,219.64	-1,172.42	1,691.77	2.49	-2.22	-3.14	205.38
	NORMAL	3,829.0	17.06	313.75	3,358.02	1,239.79	-1,194.75	1,721.77	3.14	-2.96	3.33	161.89
	NORMAL	3,924.0	14.68	312.34	3,449.40	1,257.53	-1,213.72	1,747.71	2.54	-2.51	-1.48	188.53
	NORMAL	4,020.0	12.75	312.69	3,542.65	1,272.91	-1,230.50	1,770.42	2.01	-2.01	0.36	177.71
	NORMAL	4,115.0	10.73	311.99	3,635.66	1,285.94	-1,244.78	1,789.71	2.13	-2.13	-0.74	183.69
	NORMAL	4,210.0	9.23	310.59	3,729.22	1,296.81	-1,257.14	1,806.11	1.60	-1.58	-1.47	188.50
9/9/2012	NORMAL	4,305.0	7.21	316.74	3,823.24	1,306.11	-1,267.01	1,819.66	2.32	-2.13	6.47	159.50
	NORMAL	4,401.0	5.80	314.63	3,918.62	1,313.90	-1,274.59	1,830.53	1.49	-1.47	-2.20	188.58
	NORMAL	4,497.0	4.22	303.20	4,014.26	1,319.25	-1,281.00	1,838.83	1.94	-1.65	-11.91	206.68
	NORMAL	4,592.0	2.73	322.54	4,109.08	1,322.96	-1,285.30	1,844.48	1.97	-1.57	20.36	151.19
	NORMAL	4,687.0	1.14	288.96	4,204.03	1,325.06	-1,287.57	1,847.57	1.99	-1.67	-35.35	199.51
	NORMAL	4,782.0	0.62	338.54	4,299.02	1,325.85	-1,288.65	1,848.89	0.92	-0.55	52.19	147.40
	NORMAL	4,878.0	0.35	182.44	4,395.01	1,326.04	-1,288.85	1,849.17	0.99	-0.28	-162.60	188.58
	NORMAL	4,973.0	0.62	233.24	4,490.01	1,325.44	-1,289.28	1,849.03	0.51	0.28	53.47	85.02
	NORMAL	5,068.0	0.09	344.69	4,585.01	1,325.20	-1,289.71	1,849.16	0.69	-0.56	117.32	172.69
	NORMAL	5,163.0	1.05	154.84	4,680.00	1,324.49	-1,289.36	1,848.40	1.20	1.01	179.11	170.92
	NORMAL	5,258.0	1.14	163.10	4,774.99	1,322.79	-1,288.71	1,846.73	0.19	0.09	8.69	64.48
	NORMAL	5,353.0	0.88	130.23	4,869.97	1,321.42	-1,287.88	1,845.16	0.66	-0.27	-34.60	229.99
	NORMAL	5,449.0	0.62	103.16	4,965.97	1,320.83	-1,286.81	1,843.99	0.45	-0.27	-28.20	220.71
	NORMAL	5,544.0	0.88	66.43	5,060.96	1,321.00	-1,285.64	1,843.31	0.56	0.27	-38.66	279.21

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 (°)
9/10/2012	NORMAL	5,639.0	1.50	50.43	5,155.94	1,322.08	-1,284.02	1,842.96	0.73	0.65	-16.84	323.66
	NORMAL	5,734.0	0.70	348.56	5,250.92	1,323.44	-1,283.17	1,843.36	1.39	-0.84	-65.13	207.82
	NORMAL	5,828.0	1.32	347.50	5,344.91	1,325.06	-1,283.52	1,844.77	0.66	0.66	-1.13	357.74
	NORMAL	5,923.0	0.26	91.39	5,439.90	1,326.13	-1,283.54	1,845.55	1.48	-1.12	109.36	169.65
	NORMAL	6,018.0	0.70	100.00	5,534.89	1,326.02	-1,282.76	1,844.93	0.47	0.46	9.06	13.63
	NORMAL	6,114.0	0.44	311.64	5,630.89	1,326.16	-1,282.45	1,844.82	1.14	-0.27	-154.54	192.12
	NORMAL	6,209.0	0.70	306.54	5,725.89	1,326.75	-1,283.19	1,845.76	0.28	0.27	-5.37	346.40
9/11/2012	NORMAL	6,303.0	1.32	239.57	5,819.88	1,326.55	-1,284.59	1,846.58	1.31	0.66	-71.24	261.41
	NORMAL	6,398.0	1.50	92.79	5,914.86	1,325.93	-1,284.29	1,845.93	2.85	0.19	-154.51	197.71
	NORMAL	6,493.0	0.62	165.22	6,009.85	1,325.37	-1,282.92	1,844.57	1.52	-0.93	76.24	155.76
	NORMAL	6,588.0	0.62	255.39	6,104.85	1,324.75	-1,283.28	1,844.38	0.92	0.00	94.92	135.08
	NORMAL	6,683.0	0.53	310.23	6,199.84	1,324.90	-1,284.12	1,845.06	0.56	-0.09	57.73	126.00
	NORMAL	6,779.0	0.09	112.31	6,295.84	1,325.16	-1,284.39	1,845.44	0.64	-0.46	168.83	177.42
	NORMAL	6,874.0	1.58	232.72	6,390.83	1,324.34	-1,285.36	1,845.52	1.71	1.57	126.75	123.14
9/12/2012	NORMAL	6,969.0	1.67	246.25	6,485.79	1,322.99	-1,287.67	1,846.14	0.41	0.09	14.24	83.62
	NORMAL	7,064.0	0.88	290.90	6,580.77	1,322.69	-1,289.62	1,847.28	1.28	-0.83	47.00	149.35
	NORMAL	7,160.0	0.70	324.65	6,676.76	1,323.43	-1,290.64	1,848.53	0.51	-0.19	35.16	127.46
	NORMAL	7,256.0	0.79	336.07	6,772.75	1,324.51	-1,291.25	1,849.73	0.18	0.09	11.90	64.57
	NORMAL	7,351.0	1.50	339.06	6,867.73	1,326.27	-1,291.96	1,851.49	0.75	0.75	3.15	6.31
	NORMAL	7,445.0	1.85	344.86	6,961.69	1,328.89	-1,292.80	1,853.95	0.41	0.37	6.17	28.76
	NORMAL	7,541.0	2.11	2.62	7,057.64	1,332.15	-1,293.12	1,856.53	0.69	0.27	18.50	76.08
	NORMAL	7,636.0	2.46	6.13	7,152.56	1,335.92	-1,292.82	1,859.04	0.40	0.37	3.69	23.55
	NORMAL	7,732.0	2.90	15.80	7,248.46	1,340.31	-1,291.94	1,861.60	0.66	0.46	10.07	50.68
	NORMAL	7,749.0	3.08	15.45	7,265.43	1,341.16	-1,291.70	1,862.05	1.06	1.06	-2.06	354.03
	NORMAL	7,794.0	3.08	15.45	7,310.37	1,343.49	-1,291.06	1,863.28	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

