

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 344-21	Wellbore No.	
Well Name	KP 344-21	Common Name	KP 344-21
Project	KP 28-06S-091W	Site	KP 41-28 Pad
Vertical Section Azimuth	352.22 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	1/14/2012	UWI	KP 344-21
Active Datum	KB @7,079.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	1/14/2012	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 (°)
1/14/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/14/2012	NORMAL	81.0	0.18	157.15	81.00	-0.12	0.05	-0.12	0.22	0.22	0.00	157.15
	NORMAL	162.0	1.32	15.64	161.99	0.66	0.35	0.61	1.81	1.41	-174.70	214.11
	NORMAL	254.0	2.02	3.96	253.95	3.30	0.75	3.17	0.84	0.76	-12.70	328.15
	NORMAL	345.0	4.05	349.63	344.82	8.06	0.28	7.95	2.36	2.23	-15.75	332.25
	NORMAL	436.0	5.89	347.17	435.48	15.78	-1.34	15.81	2.04	2.02	-2.70	352.17
	NORMAL	527.0	7.92	349.80	525.81	26.50	-3.48	26.73	2.26	2.23	2.89	10.16
	NORMAL	617.0	9.50	353.67	614.77	39.99	-5.40	40.35	1.87	1.76	4.30	22.27
	NORMAL	709.0	11.00	352.18	705.30	56.23	-7.43	56.72	1.66	1.63	-1.62	349.24
	NORMAL	799.0	12.40	351.74	793.43	74.30	-9.99	74.97	1.56	1.56	-0.49	356.14
	NORMAL	874.0	14.09	351.43	866.43	91.30	-12.51	92.15	2.26	2.25	-0.41	357.44
	NORMAL	965.0	15.74	351.14	954.36	114.45	-16.06	115.57	1.82	1.81	-0.32	357.27
	NORMAL	1,060.0	16.26	350.29	1,045.68	140.29	-20.28	141.74	0.60	0.55	-0.89	335.34
1/15/2012	NORMAL	1,154.0	16.94	348.98	1,135.76	166.70	-25.12	168.57	0.83	0.72	-1.39	330.54
	NORMAL	1,249.0	16.18	351.17	1,226.82	193.37	-29.80	195.62	1.04	-0.80	2.31	141.65
	NORMAL	1,305.0	15.52	353.75	1,280.70	208.53	-31.81	210.91	1.72	-1.18	4.61	134.36
1/18/2012	NORMAL	1,442.0	16.41	355.18	1,412.41	246.03	-35.43	248.56	0.71	0.65	1.04	24.53
	NORMAL	1,538.0	15.71	352.50	1,504.66	272.43	-38.27	275.10	1.06	-0.73	-2.79	225.36
	NORMAL	1,633.0	16.23	352.74	1,596.00	298.35	-41.63	301.24	0.55	0.55	0.25	7.35
	NORMAL	1,728.0	16.71	352.23	1,687.10	325.05	-45.15	328.17	0.53	0.51	-0.54	342.99
	NORMAL	1,824.0	15.66	352.59	1,779.29	351.58	-48.69	354.93	1.10	-1.09	0.38	174.71

2.1.2 Survey Stations (Continued)

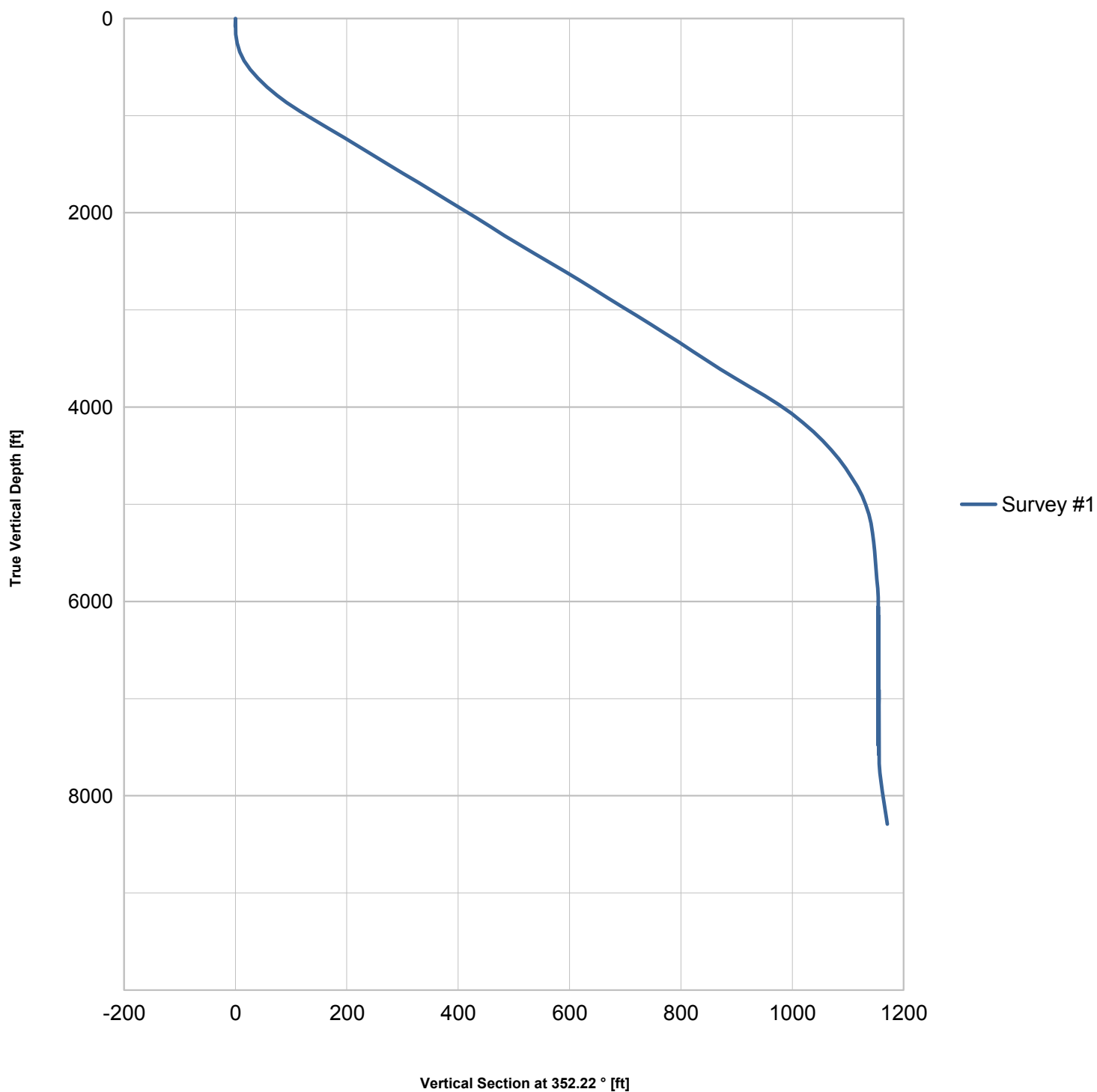
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
1/18/2012	NORMAL	1,919.0	15.83	350.80	1,870.73	377.08	-52.41	380.70	0.54	0.18	-1.88	288.43
	NORMAL	2,014.0	16.24	350.37	1,962.03	402.97	-56.71	406.94	0.45	0.43	-0.45	343.64
	NORMAL	2,109.0	15.45	351.60	2,053.42	428.58	-60.78	432.87	0.90	-0.83	1.29	157.56
	NORMAL	2,204.0	15.47	350.92	2,144.99	453.61	-64.63	458.19	0.19	0.02	-0.72	275.97
	NORMAL	2,299.0	15.79	350.35	2,236.47	478.87	-68.79	483.77	0.37	0.34	-0.60	334.09
	NORMAL	2,395.0	16.10	354.55	2,328.78	504.99	-72.25	510.13	1.24	0.32	4.38	76.99
	NORMAL	2,490.0	16.46	353.63	2,419.97	531.48	-74.99	536.74	0.47	0.38	-0.97	323.94
	NORMAL	2,585.0	17.06	353.15	2,510.94	558.70	-78.15	564.13	0.65	0.63	-0.51	346.78
	NORMAL	2,680.0	16.00	355.13	2,602.01	585.58	-80.92	591.14	1.26	-1.12	2.08	152.96
	NORMAL	2,776.0	16.29	353.02	2,694.23	612.12	-83.68	617.82	0.68	0.30	-2.20	295.29
	NORMAL	2,869.0	15.34	353.26	2,783.70	637.29	-86.71	643.16	1.02	-1.02	0.26	176.18
	NORMAL	2,965.0	15.58	354.76	2,876.23	662.74	-89.38	668.74	0.49	0.25	1.56	59.75
	NORMAL	3,060.0	15.75	353.33	2,967.70	688.25	-92.04	694.37	0.44	0.18	-1.51	293.07
	NORMAL	3,155.0	16.27	353.46	3,059.02	714.28	-95.05	720.57	0.55	0.55	0.14	4.01
	NORMAL	3,251.0	15.30	351.79	3,151.40	740.17	-98.39	746.68	1.12	-1.01	-1.74	204.29
	NORMAL	3,346.0	15.39	351.00	3,243.01	765.03	-102.15	771.82	0.24	0.09	-0.83	292.91
	NORMAL	3,441.0	15.43	349.41	3,334.59	789.90	-106.45	797.04	0.45	0.04	-1.67	274.64
	NORMAL	3,536.0	14.77	353.06	3,426.32	814.35	-110.23	821.77	1.22	-0.69	3.84	126.52
	NORMAL	3,631.0	14.77	352.76	3,518.18	838.38	-113.22	845.99	0.08	0.00	-0.32	269.85
	NORMAL	3,725.0	15.76	353.15	3,608.86	862.94	-116.26	870.74	1.06	1.05	0.41	6.11
	NORMAL	3,820.0	16.09	352.49	3,700.21	888.80	-119.52	896.80	0.40	0.35	-0.69	330.93
	NORMAL	3,915.0	16.53	351.53	3,791.39	915.22	-123.23	923.48	0.54	0.46	-1.01	328.04
	NORMAL	4,010.0	16.27	352.49	3,882.53	941.78	-126.96	950.30	0.40	-0.27	1.01	134.27
1/19/2012	NORMAL	4,106.0	14.82	354.60	3,975.01	967.34	-129.87	976.02	1.62	-1.51	2.20	159.71
	NORMAL	4,201.0	13.10	353.81	4,067.20	990.14	-132.17	998.92	1.82	-1.81	-0.83	185.94
	NORMAL	4,296.0	11.59	353.85	4,160.00	1,010.33	-134.36	1,019.22	1.59	-1.59	0.04	179.70
	NORMAL	4,392.0	10.90	351.53	4,254.16	1,028.90	-136.73	1,037.94	0.86	-0.72	-2.42	212.12
	NORMAL	4,486.0	9.85	350.56	4,346.62	1,045.62	-139.36	1,054.86	1.13	-1.12	-1.03	188.97
	NORMAL	4,582.0	8.72	352.61	4,441.36	1,060.94	-141.64	1,070.35	1.23	-1.18	2.14	164.69
	NORMAL	4,677.0	7.72	352.23	4,535.39	1,074.40	-143.43	1,083.93	1.05	-1.05	-0.40	182.92
	NORMAL	4,772.0	6.67	352.74	4,629.64	1,086.20	-144.99	1,095.83	1.11	-1.11	0.54	176.77
	NORMAL	4,867.0	6.60	354.67	4,724.00	1,097.11	-146.19	1,106.80	0.25	-0.07	2.03	108.38
	NORMAL	4,962.0	5.76	356.32	4,818.45	1,107.30	-147.00	1,117.01	0.90	-0.88	1.74	168.88
	NORMAL	5,057.0	4.50	354.05	4,913.07	1,115.77	-147.70	1,125.49	1.34	-1.33	-2.39	188.02
	NORMAL	5,152.0	3.52	351.44	5,007.83	1,122.36	-148.52	1,132.13	1.05	-1.03	-2.75	189.25
	NORMAL	5,247.0	2.90	2.07	5,102.68	1,127.64	-148.86	1,137.41	0.90	-0.65	11.19	141.39
	NORMAL	5,342.0	2.21	17.94	5,197.59	1,131.79	-148.21	1,141.43	1.03	-0.73	16.71	142.03
	NORMAL	5,437.0	1.28	358.60	5,292.54	1,134.59	-147.68	1,144.14	1.15	-0.98	-20.36	202.93
	NORMAL	5,532.0	1.05	345.71	5,387.53	1,136.49	-147.92	1,146.06	0.37	-0.24	-13.57	222.41
	NORMAL	5,627.0	1.07	340.08	5,482.51	1,138.17	-148.43	1,147.79	0.11	0.02	-5.93	278.05
	NORMAL	5,723.0	0.81	339.93	5,578.50	1,139.65	-148.97	1,149.33	0.27	-0.27	-0.16	180.47
	NORMAL	5,818.0	0.74	337.35	5,673.49	1,140.85	-149.44	1,150.58	0.08	-0.07	-2.72	205.21
1/20/2012	NORMAL	5,914.0	1.14	36.26	5,769.48	1,142.19	-149.11	1,151.86	1.03	0.42	61.36	98.81
	NORMAL	6,009.0	1.16	33.81	5,864.46	1,143.75	-148.02	1,153.26	0.06	0.02	-2.58	290.91
	NORMAL	6,104.0	0.30	12.41	5,959.45	1,144.79	-147.43	1,154.21	0.93	-0.91	-22.53	187.09
	NORMAL	6,200.0	0.38	274.93	6,055.45	1,145.07	-147.69	1,154.52	0.54	0.08	-101.54	227.15
	NORMAL	6,295.0	0.44	264.78	6,150.45	1,145.06	-148.37	1,154.60	0.10	0.06	-10.68	304.41
	NORMAL	6,360.0	0.48	257.84	6,215.44	1,144.98	-148.88	1,154.60	0.11	0.06	-10.68	302.17
1/22/2012	NORMAL	6,390.0	0.50	296.78	6,245.44	1,145.21	-149.10	1,154.86	0.28	0.06	33.68	93.45
	NORMAL	6,486.0	0.31	279.96	6,341.44	1,145.45	-149.73	1,155.17	0.23	-0.20	-17.52	203.81
	NORMAL	6,579.0	0.37	237.30	6,434.44	1,145.33	-150.23	1,155.12	0.27	0.06	-45.87	261.40
	NORMAL	6,674.0	0.24	159.83	6,529.44	1,144.98	-150.42	1,154.80	0.42	-0.14	-81.55	216.39
	NORMAL	6,768.0	0.30	212.82	6,623.44	1,144.58	-150.49	1,154.42	0.26	0.06	56.37	103.93
	NORMAL	6,863.0	0.38	40.55	6,718.44	1,144.61	-150.42	1,154.44	0.71	0.08	-181.34	184.32
	NORMAL	6,958.0	0.47	337.53	6,813.43	1,145.21	-150.36	1,155.03	0.47	0.09	-66.34	248.29
	NORMAL	7,053.0	0.12	33.49	6,908.43	1,145.66	-150.46	1,155.48	0.44	-0.37	58.91	166.13
	NORMAL	7,148.0	0.56	91.51	7,003.43	1,145.73	-149.94	1,155.48	0.53	0.46	61.07	69.61

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 (°)
1/22/2012	NORMAL	7,243.0	0.22	126.51	7,098.43	1,145.61	-149.33	1,155.28	0.42	-0.36	36.84	161.62
1/23/2012	NORMAL	7,339.0	0.13	178.36	7,194.43	1,145.39	-149.18	1,155.04	0.18	-0.09	54.01	143.80
	NORMAL	7,434.0	0.17	209.42	7,289.43	1,145.16	-149.24	1,154.82	0.09	0.04	32.69	79.90
	NORMAL	7,529.0	0.24	191.41	7,384.43	1,144.84	-149.35	1,154.52	0.10	0.07	-18.96	308.13
	NORMAL	7,624.0	0.40	289.35	7,479.43	1,144.76	-149.70	1,154.48	0.52	0.17	103.09	126.70
	NORMAL	7,720.0	0.44	317.50	7,575.42	1,145.14	-150.27	1,154.94	0.22	0.04	29.32	93.32
	NORMAL	7,815.0	0.78	325.80	7,670.42	1,145.94	-150.88	1,155.82	0.37	0.36	8.74	18.74
	NORMAL	7,910.0	1.09	340.42	7,765.41	1,147.33	-151.54	1,157.28	0.41	0.33	15.39	45.04
	NORMAL	8,005.0	1.34	344.70	7,860.38	1,149.25	-152.14	1,159.27	0.28	0.26	4.51	22.10
1/24/2012	NORMAL	8,100.0	1.59	340.51	7,955.35	1,151.56	-152.87	1,161.66	0.29	0.26	-4.41	334.70
	NORMAL	8,196.0	1.62	331.13	8,051.32	1,154.01	-153.97	1,164.23	0.28	0.03	-9.77	271.81
	NORMAL	8,291.0	1.79	326.22	8,146.27	1,156.42	-155.45	1,166.82	0.24	0.18	-5.17	316.85
	NORMAL	8,370.0	1.74	327.74	8,225.24	1,158.46	-156.77	1,169.02	0.09	-0.06	1.92	137.64
	NORMAL	8,435.0	1.74	327.74	8,290.21	1,160.13	-157.83	1,170.81	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

