

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 331-17	Wellbore No.	
Well Name	KP 331-17	Common Name	KP 331-17
Project	KP 08-06S-91W	Site	KP 24-8 Pad
Vertical Section Azimuth	121.60 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	1/6/2012	UWI	KP 331-17
Active Datum	KB @6,552.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	1/6/2012	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 (°)
1/6/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/6/2012	NORMAL	104.0	1.76	154.69	103.98	-1.44	0.68	1.34	1.69	1.69	0.00	154.69
	NORMAL	134.0	2.82	135.09	133.96	-2.38	1.40	2.44	4.34	3.53	-65.33	313.48
	NORMAL	165.0	3.34	126.91	164.91	-3.47	2.66	4.08	2.19	1.68	-26.39	315.66
	NORMAL	195.0	3.78	127.18	194.86	-4.59	4.15	5.94	1.47	1.47	0.90	2.32
	NORMAL	256.0	3.96	117.77	255.72	-6.78	7.61	10.04	1.08	0.30	-15.43	281.10
1/7/2012	NORMAL	347.0	6.42	115.84	346.34	-10.47	14.97	18.24	2.71	2.70	-2.12	354.98
	NORMAL	438.0	9.41	120.30	436.46	-16.44	25.98	30.74	3.35	3.29	4.90	13.82
	NORMAL	529.0	13.01	117.23	525.71	-24.88	41.51	48.40	4.01	3.96	-3.37	349.08
	NORMAL	620.0	15.30	117.05	613.94	-35.03	61.32	70.58	2.52	2.52	-0.20	358.81
	NORMAL	711.0	17.59	123.64	701.22	-48.11	83.46	96.30	3.24	2.52	7.24	42.36
	NORMAL	802.0	18.82	122.59	787.67	-63.63	107.28	124.72	1.40	1.35	-1.15	344.57
	NORMAL	893.0	17.15	126.19	874.22	-79.46	130.48	152.77	2.20	-1.84	3.96	148.05
	NORMAL	985.0	18.03	125.67	961.92	-95.78	152.99	180.49	0.97	0.96	-0.57	349.63
	NORMAL	1,081.0	19.26	123.56	1,052.88	-113.19	178.26	211.14	1.46	1.28	-2.20	330.26
	NORMAL	1,177.0	17.76	127.34	1,143.91	-130.83	203.09	241.53	2.00	-1.56	3.94	143.12
	NORMAL	1,270.0	18.03	124.52	1,232.41	-147.59	226.23	270.02	0.98	0.29	-3.03	285.96
1/8/2012	NORMAL	1,341.0	18.50	122.60	1,299.84	-159.88	244.77	292.25	1.08	0.66	-2.70	307.08
	NORMAL	1,437.0	18.80	123.30	1,390.80	-176.58	270.53	322.94	0.39	0.31	0.73	37.06
	NORMAL	1,532.0	19.00	119.80	1,480.68	-192.67	296.75	353.70	1.21	0.21	-3.68	278.35
	NORMAL	1,627.0	18.60	123.00	1,570.61	-208.61	322.87	384.31	1.16	-0.42	3.37	112.71

2.1.2 Survey Stations (Continued)

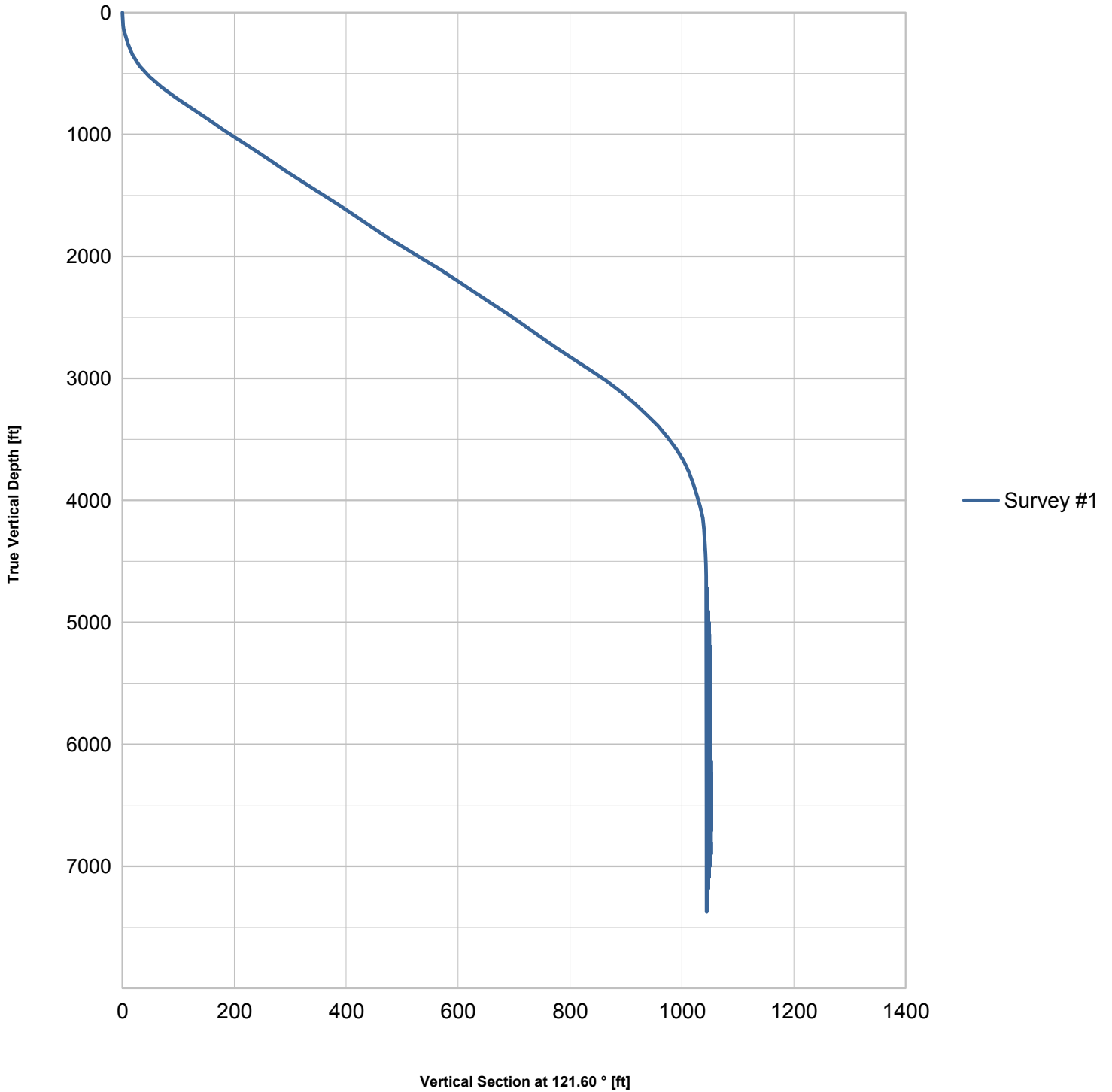
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
1/8/2012	NORMAL	1,723.0	18.30	117.50	1,661.68	-223.91	349.08	414.65	1.84	-0.31	-5.73	257.62
	NORMAL	1,818.0	17.30	119.70	1,752.14	-237.79	374.58	443.64	1.27	-1.05	2.32	147.12
	NORMAL	1,913.0	19.40	115.00	1,842.31	-251.46	401.16	473.44	2.70	2.21	-4.95	322.58
	NORMAL	2,009.0	19.60	114.90	1,932.80	-264.98	430.21	505.27	0.21	0.21	-0.10	350.48
	NORMAL	2,105.0	20.30	117.20	2,023.04	-279.37	459.63	537.86	1.10	0.73	2.40	49.35
	NORMAL	2,200.0	19.00	118.80	2,112.51	-294.36	487.84	569.74	1.48	-1.37	1.68	158.27
	NORMAL	2,295.0	17.90	123.20	2,202.63	-309.80	513.61	599.79	1.87	-1.16	4.63	130.38
1/9/2012	NORMAL	2,391.0	18.50	122.30	2,293.82	-326.02	538.83	629.76	0.69	0.63	-0.94	334.47
	NORMAL	2,487.0	18.30	123.20	2,384.92	-342.41	564.31	660.06	0.36	-0.21	0.94	125.57
	NORMAL	2,582.0	17.90	121.80	2,475.21	-358.27	589.20	689.57	0.62	-0.42	-1.47	226.73
	NORMAL	2,677.0	17.30	121.40	2,565.77	-373.32	613.67	718.29	0.64	-0.63	-0.42	191.21
	NORMAL	2,773.0	16.80	120.90	2,657.55	-387.88	637.75	746.44	0.54	-0.52	-0.52	196.10
	NORMAL	2,867.0	18.00	121.40	2,747.24	-402.43	661.81	774.55	1.29	1.28	0.53	7.34
	NORMAL	2,963.0	18.70	120.20	2,838.36	-417.90	687.77	804.76	0.83	0.73	-1.25	331.07
	NORMAL	3,058.0	18.70	122.30	2,928.35	-433.70	713.81	835.22	0.71	0.00	2.21	90.99
	NORMAL	3,154.0	17.30	122.80	3,019.65	-449.65	738.81	864.88	1.47	-1.46	0.52	173.94
	NORMAL	3,249.0	15.30	129.30	3,110.83	-465.25	760.39	891.43	2.85	-2.11	6.84	140.72
	NORMAL	3,345.0	13.40	129.10	3,203.83	-480.28	778.83	915.01	1.98	-1.98	-0.21	181.40
	NORMAL	3,441.0	13.40	127.60	3,297.22	-494.09	796.27	937.10	0.36	0.00	-1.56	269.27
	NORMAL	3,535.0	11.30	126.70	3,389.04	-506.24	812.29	957.11	2.24	-2.23	-0.96	184.80
	NORMAL	3,631.0	9.60	126.00	3,483.44	-516.57	826.30	974.46	1.78	-1.77	-0.73	183.93
	NORMAL	3,726.0	8.80	126.20	3,577.22	-525.51	838.58	989.60	0.84	-0.84	0.21	177.81
	NORMAL	3,821.0	7.00	126.80	3,671.32	-533.27	849.08	1,002.61	1.90	-1.89	0.63	177.67
	NORMAL	3,916.0	5.00	123.50	3,765.79	-539.03	857.17	1,012.51	2.14	-2.11	-3.47	188.15
	NORMAL	4,012.0	4.10	117.00	3,861.49	-542.89	863.71	1,020.12	1.08	-0.94	-6.77	206.60
	NORMAL	4,107.0	4.00	107.00	3,956.25	-545.40	869.91	1,026.71	0.75	-0.11	-10.53	256.97
	NORMAL	4,202.0	3.50	126.80	4,051.05	-548.11	875.40	1,032.80	1.45	-0.53	20.84	120.80
	NORMAL	4,297.0	1.90	120.90	4,145.94	-550.66	879.07	1,037.27	1.71	-1.68	-6.21	186.92
	NORMAL	4,392.0	1.90	184.50	4,240.90	-553.04	880.30	1,039.56	2.11	0.00	66.95	121.79
	NORMAL	4,487.0	1.80	183.80	4,335.85	-556.09	880.08	1,040.97	0.11	-0.11	-0.74	192.38
	NORMAL	4,583.0	0.70	141.80	4,431.83	-558.06	880.34	1,042.22	1.42	-1.15	-43.75	200.10
	NORMAL	4,678.0	0.50	81.50	4,526.82	-558.45	881.11	1,043.09	0.66	-0.21	-63.47	223.84
	NORMAL	4,774.0	0.80	55.70	4,622.82	-558.01	882.08	1,043.68	0.43	0.31	-26.88	302.32
	NORMAL	4,869.0	0.70	122.80	4,717.81	-557.96	883.11	1,044.53	0.88	-0.11	70.63	129.29
1/10/2012	NORMAL	4,963.0	0.90	93.10	4,811.80	-558.31	884.33	1,045.75	0.48	0.21	-31.60	280.39
	NORMAL	5,058.0	1.00	173.30	4,906.79	-559.17	885.17	1,046.92	1.29	0.11	84.42	126.52
	NORMAL	5,153.0	0.90	162.90	5,001.78	-560.71	885.49	1,048.00	0.21	-0.11	-10.95	234.76
	NORMAL	5,249.0	0.70	122.60	5,097.77	-561.74	886.21	1,049.15	0.61	-0.21	-41.98	231.04
	NORMAL	5,344.0	1.00	79.70	5,192.76	-561.91	887.51	1,050.35	0.72	0.32	-45.16	272.74
	NORMAL	5,439.0	0.30	148.10	5,287.76	-561.97	888.46	1,051.19	0.98	-0.74	72.00	162.59
	NORMAL	5,534.0	1.10	244.40	5,382.75	-562.58	887.77	1,050.92	1.23	0.84	101.37	111.04
	NORMAL	5,627.0	1.00	269.11	5,475.74	-562.97	886.15	1,049.75	0.49	-0.11	26.57	114.62
	NORMAL	5,722.0	0.50	283.80	5,570.73	-562.89	884.92	1,048.65	0.56	-0.53	15.46	166.20
	NORMAL	5,817.0	0.30	4.20	5,665.73	-562.54	884.53	1,048.15	0.57	-0.21	84.63	146.68
	NORMAL	5,913.0	0.50	26.50	5,761.72	-561.92	884.74	1,047.99	0.26	0.21	23.23	49.40
	NORMAL	6,008.0	1.10	41.80	5,856.71	-560.86	885.53	1,048.12	0.66	0.63	16.11	27.36
1/11/2012	NORMAL	6,101.0	1.30	103.10	5,949.70	-560.44	887.15	1,049.28	1.33	0.22	65.91	112.64
	NORMAL	6,194.0	1.10	131.80	6,042.68	-561.27	888.85	1,051.15	0.67	-0.22	30.86	122.39
	NORMAL	6,290.0	1.30	218.10	6,138.66	-562.74	888.86	1,051.94	1.72	0.21	89.90	128.06
	NORMAL	6,385.0	1.00	215.10	6,233.64	-564.27	887.72	1,051.77	0.32	-0.32	-3.16	189.85
	NORMAL	6,480.0	0.40	204.70	6,328.64	-565.25	887.11	1,051.75	0.64	-0.63	-10.95	186.79
	NORMAL	6,575.0	0.10	243.90	6,423.63	-565.59	886.89	1,051.75	0.35	-0.32	41.26	168.91
	NORMAL	6,671.0	0.20	352.90	6,519.63	-565.46	886.80	1,051.60	0.26	0.10	113.54	131.13
	NORMAL	6,767.0	0.70	45.60	6,615.63	-564.88	887.20	1,051.64	0.63	0.52	54.90	68.07
	NORMAL	6,862.0	1.10	39.30	6,710.62	-563.77	888.19	1,051.90	0.43	0.42	-6.63	342.94
	NORMAL	6,957.0	1.50	39.80	6,805.59	-562.11	889.56	1,052.20	0.42	0.42	0.53	1.87
	NORMAL	7,052.0	1.90	23.00	6,900.55	-559.70	890.97	1,052.14	0.67	0.42	-17.68	300.15

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 (°)
1/11/2012	NORMAL	7,148.0	3.20	8.90	6,996.46	-555.59	892.01	1,050.87	1.49	1.35	-14.69	327.08
1/12/2012	NORMAL	7,243.0	3.90	13.30	7,091.27	-549.83	893.16	1,048.83	0.79	0.74	4.63	23.47
	NORMAL	7,339.0	3.30	12.40	7,187.08	-543.95	894.51	1,046.90	0.63	-0.63	-0.94	184.93
	NORMAL	7,435.0	4.00	19.80	7,282.89	-538.10	896.23	1,045.30	0.88	0.73	7.71	37.67
	NORMAL	7,480.0	4.20	22.60	7,327.77	-535.10	897.40	1,044.73	0.63	0.44	6.22	46.43
	NORMAL	7,525.0	4.20	22.60	7,372.65	-532.06	898.67	1,044.21	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

