

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 321-17	Wellbore No.	
Well Name	KP 321-17	Common Name	KP 321-17
Project	KP 08-06S-91W	Site	KP 24-8 Pad
Vertical Section Azimuth	207.59 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	2/7/2012	UWI	KP 321-17
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	2/7/2012	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 (°)
2/7/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/7/2012	NORMAL	105.0	1.06	106.52	104.99	-0.28	0.93	-0.19	1.01	1.01	0.00	106.52
	NORMAL	135.0	1.23	119.90	134.99	-0.52	1.48	-0.23	1.05	0.57	44.60	64.36
	NORMAL	166.0	1.67	134.82	165.98	-1.00	2.09	-0.08	1.86	1.42	48.13	48.25
	NORMAL	196.0	2.02	158.80	195.96	-1.80	2.59	0.40	2.80	1.17	79.93	77.91
	NORMAL	227.0	2.73	167.30	226.94	-3.03	2.95	1.32	2.55	2.29	27.42	30.67
	NORMAL	257.0	2.90	171.12	256.90	-4.48	3.22	2.48	0.84	0.57	12.73	49.74
	NORMAL	287.0	1.06	141.33	286.88	-5.44	3.51	3.20	6.83	-6.13	-99.30	194.90
	NORMAL	317.0	0.09	206.63	316.88	-5.68	3.67	3.33	3.42	-3.23	217.67	175.43
	NORMAL	348.0	0.97	242.84	347.88	-5.82	3.43	3.57	2.90	2.84	116.81	39.60
	NORMAL	378.0	2.55	235.46	377.86	-6.32	2.65	4.37	5.31	5.27	-24.60	348.14
	NORMAL	408.0	3.43	241.00	407.82	-7.13	1.32	5.71	3.08	2.93	18.47	20.96
2/8/2012	NORMAL	439.0	4.49	235.11	438.75	-8.27	-0.49	7.56	3.66	3.42	-19.00	336.05
	NORMAL	469.0	5.89	225.53	468.62	-10.02	-2.55	10.07	5.47	4.67	-31.93	323.41
	NORMAL	500.0	6.69	227.11	499.44	-12.37	-5.01	13.28	2.64	2.58	5.10	13.00
	NORMAL	530.0	7.74	222.54	529.20	-15.05	-7.65	16.88	3.99	3.50	-15.23	329.06
	NORMAL	602.0	11.32	217.94	600.20	-24.19	-15.28	28.52	5.08	4.97	-6.39	345.71
	NORMAL	693.0	14.16	213.20	688.95	-40.56	-26.87	48.39	3.32	3.12	-5.21	337.47
	NORMAL	784.0	14.72	206.28	777.08	-60.24	-38.08	71.02	1.99	0.62	-7.60	284.61
	NORMAL	876.0	13.03	206.86	866.39	-79.97	-47.94	93.08	1.84	-1.84	0.63	175.58
	NORMAL	967.0	13.81	204.16	954.91	-99.03	-57.02	114.18	1.10	0.86	-2.97	319.90

2.1.2 Survey Stations (Continued)

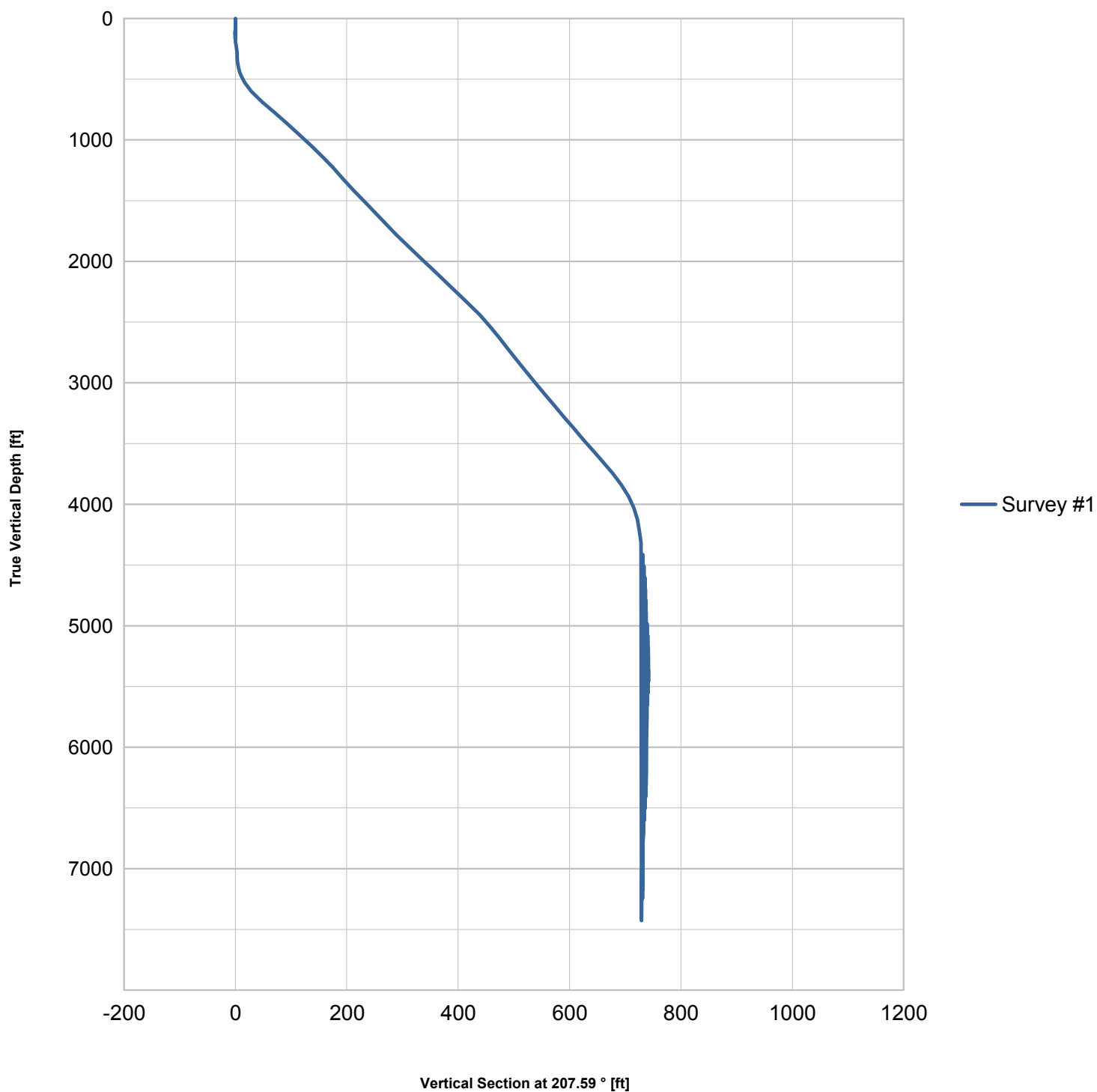
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
2/8/2012	NORMAL	1,062.0	12.62	206.26	1,047.39	-118.69	-66.26	135.88	1.35	-1.25	2.21	159.05
	NORMAL	1,158.0	12.90	207.77	1,141.02	-137.57	-75.89	157.08	0.45	0.29	1.57	50.72
	NORMAL	1,244.0	10.99	207.31	1,225.15	-153.35	-84.12	174.87	2.22	-2.22	-0.53	182.63
2/9/2012	NORMAL	1,341.0	10.60	208.90	1,320.44	-169.38	-92.68	193.04	0.51	-0.40	1.64	143.41
	NORMAL	1,437.0	12.10	203.00	1,414.56	-186.37	-100.88	211.90	1.97	1.56	-6.15	319.34
	NORMAL	1,533.0	12.00	202.60	1,508.45	-204.85	-108.64	231.87	0.14	-0.10	-0.42	219.67
	NORMAL	1,628.0	11.80	201.90	1,601.40	-222.98	-116.06	251.37	0.26	-0.21	-0.74	215.48
	NORMAL	1,723.0	11.70	201.40	1,694.41	-240.96	-123.20	270.62	0.15	-0.11	-0.53	225.27
	NORMAL	1,819.0	12.50	204.90	1,788.28	-259.44	-131.13	290.67	1.13	0.83	3.65	44.24
2/10/2012	NORMAL	1,914.0	12.90	209.10	1,880.96	-278.04	-140.61	311.54	1.06	0.42	4.42	68.64
	NORMAL	2,010.0	12.80	206.70	1,974.56	-296.90	-150.60	332.89	0.57	-0.10	-2.50	258.22
	NORMAL	2,105.0	13.20	210.30	2,067.12	-315.67	-160.80	354.24	0.95	0.42	3.79	65.48
	NORMAL	2,201.0	13.00	208.90	2,160.62	-334.58	-171.55	375.99	0.39	-0.21	-1.46	237.10
	NORMAL	2,296.0	12.70	208.90	2,253.24	-353.08	-181.76	397.11	0.32	-0.32	0.00	180.00
	NORMAL	2,391.0	12.60	208.40	2,345.94	-371.34	-191.74	417.91	0.16	-0.11	-0.53	227.35
	NORMAL	2,487.0	12.10	208.60	2,439.72	-389.38	-201.53	438.44	0.52	-0.52	0.21	175.21
	NORMAL	2,582.0	10.20	206.30	2,532.92	-405.67	-210.03	456.81	2.05	-2.00	-2.42	192.05
	NORMAL	2,676.0	9.90	206.30	2,625.48	-420.37	-217.30	473.21	0.32	-0.32	0.00	180.00
	NORMAL	2,771.0	9.70	205.30	2,719.09	-434.93	-224.33	489.37	0.28	-0.21	-1.05	219.91
	NORMAL	2,867.0	9.50	203.80	2,813.75	-449.49	-230.99	505.36	0.33	-0.21	-1.56	230.62
	NORMAL	2,962.0	10.30	208.60	2,907.33	-464.12	-238.22	521.67	1.21	0.84	5.05	48.27
	NORMAL	3,057.0	10.10	207.70	3,000.83	-478.95	-246.16	538.49	0.27	-0.21	-0.95	218.11
	NORMAL	3,153.0	10.90	206.30	3,095.22	-494.54	-254.09	555.98	0.87	0.83	-1.46	341.62
	NORMAL	3,247.0	9.80	206.70	3,187.69	-509.66	-261.62	572.87	1.17	-1.17	0.43	176.46
	NORMAL	3,343.0	10.80	210.20	3,282.15	-524.73	-269.82	590.02	1.23	1.04	3.65	33.77
	NORMAL	3,438.0	10.70	209.30	3,375.48	-540.11	-278.61	607.73	0.21	-0.11	-0.95	238.78
	NORMAL	3,533.0	10.40	208.60	3,468.87	-555.33	-287.03	625.12	0.34	-0.32	-0.74	202.79
	NORMAL	3,628.0	11.30	208.60	3,562.17	-571.03	-295.59	643.00	0.95	0.95	0.00	0.00
	NORMAL	3,721.0	10.60	209.30	3,653.48	-586.49	-304.14	660.66	0.77	-0.75	0.75	169.59
	NORMAL	3,816.0	10.10	208.60	3,746.93	-601.43	-312.40	677.72	0.54	-0.53	-0.74	193.77
	NORMAL	3,911.0	8.70	208.40	3,840.65	-615.06	-319.81	693.23	1.47	-1.47	-0.21	181.24
	NORMAL	4,006.0	6.80	210.50	3,934.78	-626.23	-326.08	706.04	2.02	-2.00	2.21	172.56
	NORMAL	4,102.0	4.80	214.70	4,030.29	-634.43	-331.25	715.70	2.13	-2.08	4.38	170.10
	NORMAL	4,198.0	2.70	224.40	4,126.08	-639.35	-335.12	721.85	2.28	-2.19	10.10	167.99
	NORMAL	4,293.0	2.00	229.90	4,221.00	-642.01	-337.95	725.53	0.77	-0.74	5.79	164.88
	NORMAL	4,389.0	1.70	231.80	4,316.95	-643.97	-340.36	728.37	0.32	-0.31	1.98	169.39
	NORMAL	4,485.0	1.90	190.70	4,412.90	-646.42	-341.77	731.20	1.33	0.21	-42.81	257.89
	NORMAL	4,579.0	1.50	173.80	4,506.86	-649.17	-341.93	733.71	0.68	-0.43	-17.98	223.17
	NORMAL	4,675.0	1.00	165.90	4,602.84	-651.23	-341.59	735.38	0.55	-0.52	-8.23	195.10
	NORMAL	4,770.0	0.70	154.10	4,697.83	-652.56	-341.13	736.34	0.36	-0.32	-12.42	204.45
	NORMAL	4,865.0	0.70	99.60	4,792.82	-653.18	-340.31	736.51	0.67	0.00	-57.37	242.75
	NORMAL	4,960.0	1.30	187.80	4,887.81	-654.34	-339.88	737.34	1.53	0.63	92.84	116.89
	NORMAL	5,055.0	1.10	181.30	4,982.79	-656.32	-340.05	739.18	0.25	-0.21	-6.84	211.02
	NORMAL	5,151.0	0.80	164.70	5,078.78	-657.89	-339.89	740.49	0.42	-0.31	-17.29	214.44
2/11/2012	NORMAL	5,246.0	0.40	160.60	5,173.77	-658.84	-339.61	741.21	0.42	-0.42	-4.32	184.08
	NORMAL	5,341.0	0.20	225.10	5,268.77	-659.27	-339.61	741.59	0.38	-0.21	67.89	150.10
	NORMAL	5,436.0	0.10	282.60	5,363.77	-659.37	-339.81	741.77	0.18	-0.11	60.53	150.03
	NORMAL	5,531.0	0.50	324.40	5,458.77	-659.01	-340.13	741.60	0.45	0.42	44.00	50.70
	NORMAL	5,627.0	0.60	350.30	5,554.77	-658.18	-340.46	741.02	0.28	0.10	26.98	81.38
	NORMAL	5,722.0	1.00	11.20	5,649.76	-656.88	-340.38	739.82	0.51	0.42	22.00	46.87
	NORMAL	5,818.0	0.40	124.60	5,745.75	-656.24	-339.95	739.06	1.27	-0.63	118.13	162.42
	NORMAL	5,913.0	0.30	37.60	5,840.75	-656.23	-339.52	738.86	0.51	-0.11	-91.58	217.94
	NORMAL	6,008.0	1.10	30.70	5,935.74	-655.25	-338.90	737.70	0.85	0.84	-7.26	350.53
	NORMAL	6,103.0	1.10	327.60	6,030.73	-653.70	-338.93	736.33	1.21	0.00	-66.42	238.45
2/12/2012	NORMAL	6,198.0	0.70	235.00	6,125.72	-653.26	-339.89	736.39	1.40	-0.42	-97.47	211.71
	NORMAL	6,293.0	0.40	221.40	6,220.72	-653.84	-340.59	737.23	0.34	-0.32	-14.32	196.82
	NORMAL	6,388.0	0.20	29.50	6,315.71	-653.95	-340.72	737.39	0.63	-0.21	176.95	176.04

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 (°)
2/12/2012	NORMAL	6,483.0	0.70	55.00	6,410.71	-653.47	-340.17	736.71	0.55	0.53	26.84	34.91
	NORMAL	6,578.0	0.50	43.40	6,505.71	-652.84	-339.41	735.79	0.25	-0.21	-12.21	205.56
	NORMAL	6,673.0	1.00	26.70	6,600.70	-651.80	-338.75	734.56	0.57	0.53	-17.58	327.89
	NORMAL	6,768.0	0.70	353.10	6,695.69	-650.48	-338.45	733.26	0.60	-0.32	-35.37	222.89
	NORMAL	6,863.0	1.10	352.40	6,790.68	-649.00	-338.64	732.03	0.42	0.42	-0.74	358.08
	NORMAL	6,958.0	0.80	359.10	6,885.66	-647.43	-338.77	730.71	0.34	-0.32	7.05	163.01
	NORMAL	7,054.0	0.80	282.60	6,981.66	-646.62	-339.43	730.29	1.03	0.00	-79.69	231.75
	NORMAL	7,149.0	0.70	250.00	7,076.65	-646.67	-340.62	730.89	0.45	-0.11	-34.32	240.86
	NORMAL	7,243.0	0.50	284.50	7,170.64	-646.76	-341.56	731.41	0.43	-0.21	36.70	135.47
2/13/2012	NORMAL	7,319.0	0.70	358.70	7,246.64	-646.22	-341.89	731.08	0.98	0.26	97.63	114.67
	NORMAL	7,500.0	0.70	358.70	7,427.63	-644.01	-341.94	729.14	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

