

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 523-21	Wellbore No.	1
Well Name	KP 523-21	Common Name	KP 523-21
Project	KP 21-06S-091W	Site	KP 33-21 Pad
Vertical Section Azimuth	271.46 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	9/30/2011	UWI	KP 523-21
Active Datum	KB @6,992.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	Scientific Drilling
Date Started	9/30/2011	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 (°)
9/30/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/30/2011	NORMAL	71.0	0.26	75.59	71.00	0.04	0.16	-0.15	0.37	0.37	0.00	75.59
	NORMAL	163.0	2.11	261.56	162.98	-0.16	-1.32	1.31	2.57	2.01	-189.16	185.32
10/1/2011	NORMAL	255.0	5.19	270.79	254.78	-0.35	-7.15	7.14	3.40	3.35	10.03	15.43
	NORMAL	346.0	6.51	271.05	345.31	-0.20	-16.43	16.42	1.45	1.45	0.29	1.28
	NORMAL	438.0	8.36	267.98	436.53	-0.34	-28.33	28.31	2.06	2.01	-3.34	346.35
	NORMAL	514.0	9.83	268.47	511.57	-0.70	-40.34	40.30	1.94	1.93	0.64	3.26
	NORMAL	605.0	11.43	267.62	601.01	-1.29	-57.11	57.06	1.77	1.76	-0.93	353.98
	NORMAL	696.0	13.59	272.21	689.85	-1.25	-76.81	76.75	2.61	2.37	5.04	26.97
	NORMAL	787.0	16.06	272.25	777.81	-0.34	-100.07	100.03	2.71	2.71	0.04	0.26
	NORMAL	879.0	17.32	271.86	865.93	0.60	-126.47	126.45	1.37	1.37	-0.42	354.73
	NORMAL	970.0	17.15	274.74	952.85	2.15	-153.38	153.39	0.96	-0.19	3.16	102.64
	NORMAL	1,025.0	17.09	275.37	1,005.41	3.58	-169.51	169.55	0.35	-0.11	1.15	108.23
10/2/2011	NORMAL	1,162.0	16.09	274.28	1,136.71	6.88	-208.49	208.59	0.76	-0.73	-0.80	196.77
	NORMAL	1,256.0	16.06	271.98	1,227.03	8.30	-234.47	234.61	0.68	-0.03	-2.45	266.20
	NORMAL	1,351.0	15.93	270.48	1,318.35	8.86	-260.64	260.78	0.46	-0.14	-1.58	251.82
	NORMAL	1,445.0	16.07	270.82	1,408.71	9.16	-286.55	286.69	0.18	0.15	0.36	33.96
	NORMAL	1,540.0	16.24	268.60	1,499.96	9.02	-312.98	313.10	0.67	0.18	-2.34	284.32
	NORMAL	1,634.0	15.04	273.44	1,590.48	9.43	-338.29	338.42	1.88	-1.28	5.15	134.92
	NORMAL	1,728.0	15.55	272.77	1,681.15	10.77	-363.05	363.21	0.57	0.54	-0.71	340.56
	NORMAL	1,823.0	15.86	273.11	1,772.61	12.09	-388.73	388.91	0.34	0.33	0.36	16.70

2.1.2 Survey Stations (Continued)

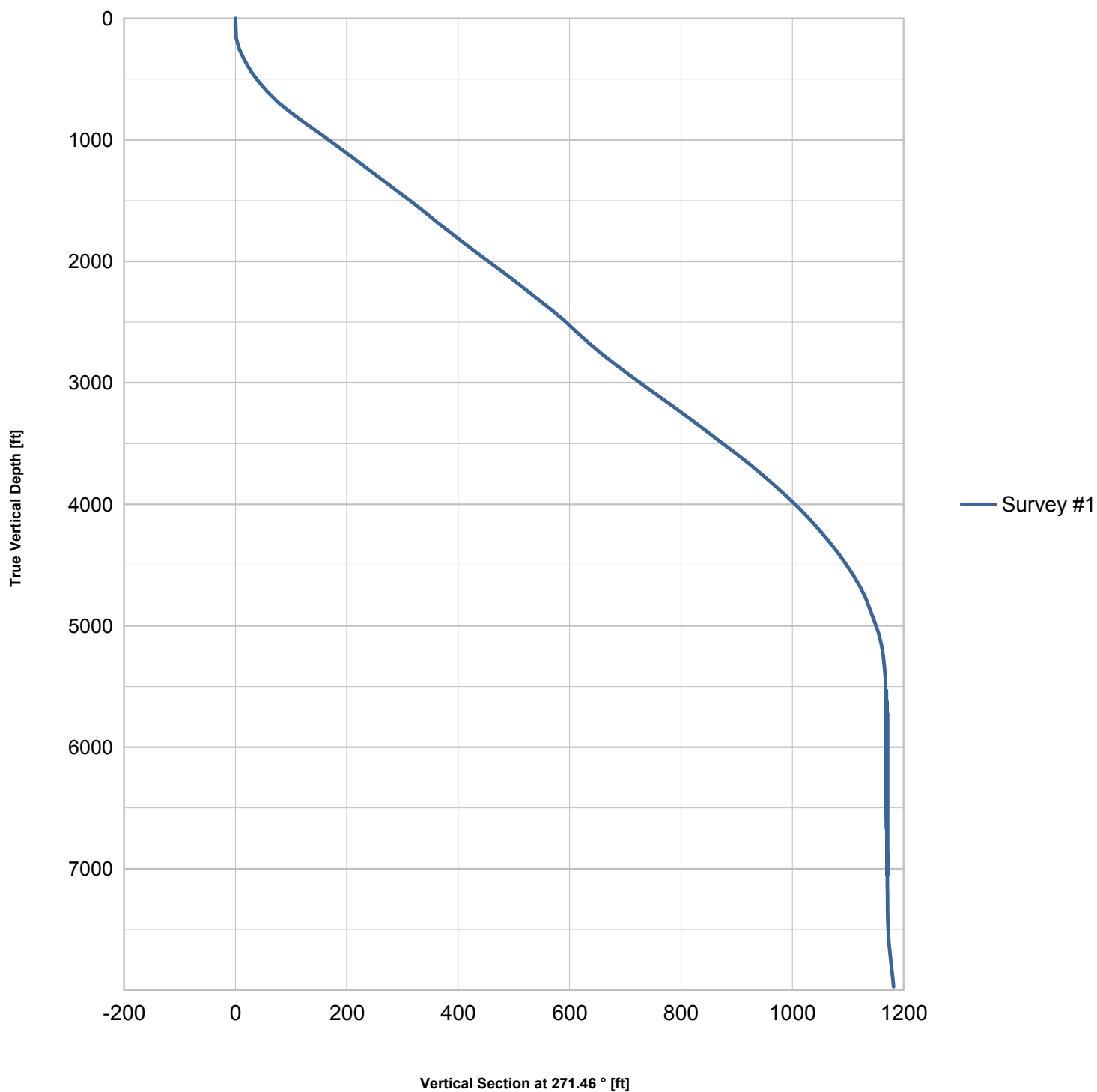
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
10/2/2011	NORMAL	1,916.0	15.87	273.60	1,862.07	13.58	-414.11	414.32	0.14	0.01	0.53	85.97
	NORMAL	2,009.0	16.18	271.24	1,951.45	14.66	-439.76	439.99	0.78	0.33	-2.54	294.31
	NORMAL	2,101.0	16.69	271.47	2,039.69	15.27	-465.78	466.02	0.56	0.55	0.25	7.38
	NORMAL	2,195.0	16.09	271.24	2,129.87	15.90	-492.30	492.54	0.64	-0.64	-0.24	186.06
	NORMAL	2,289.0	15.33	269.55	2,220.36	16.09	-517.75	517.99	0.94	-0.81	-1.80	210.24
	NORMAL	2,381.0	15.71	269.73	2,309.01	15.93	-542.36	542.59	0.42	0.41	0.20	7.31
	NORMAL	2,474.0	15.76	268.61	2,398.52	15.57	-567.58	567.79	0.33	0.05	-1.20	278.81
	NORMAL	2,568.0	13.27	266.89	2,489.51	14.67	-591.12	591.30	2.69	-2.65	-1.83	188.99
	NORMAL	2,661.0	13.18	267.40	2,580.05	13.61	-612.37	612.51	0.16	-0.10	0.55	127.89
	NORMAL	2,755.0	13.94	269.15	2,671.43	12.96	-634.39	634.52	0.92	0.81	1.86	29.22
	NORMAL	2,849.0	15.25	270.72	2,762.39	12.94	-658.08	658.19	1.46	1.39	1.67	17.57
	NORMAL	2,943.0	16.19	272.91	2,852.88	13.77	-683.53	683.66	1.18	1.00	2.33	33.32
10/3/2011	NORMAL	3,037.0	16.11	273.61	2,943.17	15.25	-709.63	709.79	0.22	-0.09	0.74	112.67
	NORMAL	3,132.0	16.93	272.40	3,034.25	16.66	-736.61	736.79	0.94	0.86	-1.27	336.66
	NORMAL	3,225.0	17.06	271.94	3,123.18	17.69	-763.77	763.97	0.20	0.14	-0.49	313.82
	NORMAL	3,319.0	17.19	272.93	3,213.02	18.87	-791.42	791.65	0.34	0.14	1.05	66.44
	NORMAL	3,412.0	16.00	271.15	3,302.14	19.83	-817.96	818.20	1.39	-1.28	-1.91	202.28
	NORMAL	3,507.0	15.92	271.94	3,393.48	20.53	-844.07	844.32	0.24	-0.08	0.83	110.60
	NORMAL	3,601.0	16.09	271.68	3,483.84	21.35	-869.98	870.24	0.20	0.18	-0.28	337.01
	NORMAL	3,697.0	16.36	272.39	3,576.01	22.30	-896.78	897.06	0.35	0.28	0.74	36.65
	NORMAL	3,791.0	15.02	271.21	3,666.51	23.11	-922.19	922.48	1.47	-1.43	-1.26	192.83
	NORMAL	3,886.0	14.49	270.33	3,758.38	23.44	-946.38	946.67	0.61	-0.56	-0.93	202.50
	NORMAL	3,980.0	13.71	271.88	3,849.54	23.87	-969.28	969.57	0.92	-0.83	1.65	154.92
	NORMAL	4,075.0	13.36	270.93	3,941.90	24.42	-991.50	991.80	0.44	-0.37	-1.00	211.96
	NORMAL	4,169.0	12.49	272.39	4,033.52	25.02	-1,012.52	1,012.83	0.99	-0.93	1.55	160.14
	NORMAL	4,263.0	11.09	269.72	4,125.54	25.40	-1,031.71	1,032.03	1.60	-1.49	-2.84	199.99
	NORMAL	4,357.0	10.81	269.71	4,217.83	25.31	-1,049.57	1,049.87	0.30	-0.30	-0.01	180.38
	NORMAL	4,450.0	9.76	267.16	4,309.33	24.88	-1,066.16	1,066.45	1.23	-1.13	-2.74	202.19
	NORMAL	4,544.0	9.58	266.32	4,402.00	23.98	-1,081.93	1,082.19	0.24	-0.19	-0.89	217.68
	NORMAL	4,639.0	8.40	265.81	4,495.83	22.97	-1,096.74	1,096.97	1.24	-1.24	-0.54	183.61
	NORMAL	4,732.0	7.74	266.23	4,587.91	22.06	-1,109.76	1,109.96	0.71	-0.71	0.45	175.10
	NORMAL	4,827.0	6.99	268.40	4,682.12	21.48	-1,121.92	1,122.11	0.84	-0.79	2.28	160.72
	NORMAL	4,921.0	5.05	259.97	4,775.60	20.60	-1,131.72	1,131.87	2.26	-2.06	-8.97	200.35
	NORMAL	5,015.0	4.95	259.54	4,869.24	19.14	-1,139.78	1,139.90	0.11	-0.11	-0.46	200.33
10/4/2011	NORMAL	5,109.0	4.55	263.49	4,962.92	17.98	-1,147.47	1,147.56	0.55	-0.43	4.20	142.68
	NORMAL	5,204.0	4.00	273.29	5,057.66	17.74	-1,154.52	1,154.60	0.96	-0.58	10.32	131.79
	NORMAL	5,299.0	2.67	275.57	5,152.49	18.15	-1,160.03	1,160.12	1.41	-1.40	2.40	175.44
	NORMAL	5,394.0	1.46	292.97	5,247.43	18.83	-1,163.35	1,163.45	1.42	-1.27	18.32	161.12
	NORMAL	5,489.0	1.18	293.75	5,342.41	19.70	-1,165.36	1,165.48	0.30	-0.29	0.82	176.72
	NORMAL	5,584.0	1.15	281.66	5,437.39	20.29	-1,167.19	1,167.33	0.26	-0.03	-12.73	257.02
	NORMAL	5,679.0	0.78	254.75	5,532.37	20.31	-1,168.75	1,168.88	0.61	-0.39	-28.33	217.84
	NORMAL	5,773.0	0.64	233.99	5,626.37	19.83	-1,169.79	1,169.91	0.31	-0.15	-22.09	231.33
	NORMAL	5,868.0	0.69	209.56	5,721.36	19.02	-1,170.50	1,170.60	0.30	0.05	-25.72	267.64
	NORMAL	5,962.0	0.67	151.56	5,815.35	18.05	-1,170.52	1,170.60	0.70	-0.02	-61.70	239.48
	NORMAL	6,057.0	0.63	77.19	5,910.35	17.68	-1,169.74	1,169.81	0.83	-0.04	-78.28	230.49
	NORMAL	6,153.0	0.72	90.07	6,006.34	17.79	-1,168.63	1,168.70	0.18	0.09	13.42	65.87
10/5/2011	NORMAL	6,248.0	0.03	11.97	6,101.34	17.82	-1,168.02	1,168.10	0.75	-0.73	-82.21	182.35
	NORMAL	6,343.0	0.27	2.67	6,196.34	18.06	-1,168.01	1,168.09	0.25	0.25	-9.79	349.54
	NORMAL	6,439.0	0.52	30.98	6,292.34	18.66	-1,167.77	1,167.87	0.32	0.26	29.49	52.71
	NORMAL	6,536.0	0.62	307.49	6,389.33	19.36	-1,167.96	1,168.08	0.79	0.10	-86.07	233.87
	NORMAL	6,631.0	0.09	192.55	6,484.33	19.60	-1,168.39	1,168.51	0.70	-0.56	-120.99	187.07
	NORMAL	6,726.0	0.26	239.69	6,579.33	19.42	-1,168.59	1,168.70	0.22	0.18	49.62	65.50
	NORMAL	6,820.0	0.40	247.37	6,673.33	19.18	-1,169.08	1,169.19	0.16	0.15	8.17	21.40
	NORMAL	6,915.0	0.60	276.21	6,768.33	19.11	-1,169.88	1,169.98	0.33	0.21	30.36	66.54
	NORMAL	7,010.0	0.03	75.84	6,863.33	19.17	-1,170.35	1,170.46	0.66	-0.60	168.03	179.05
	NORMAL	7,104.0	0.00	10.12	6,957.33	19.18	-1,170.32	1,170.43	0.03	-0.03	0.00	180.00
	NORMAL	7,199.0	0.20	301.87	7,052.33	19.26	-1,170.46	1,170.57	0.21	0.21	0.00	301.87

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 (°)
10/6/2011	NORMAL	7,293.0	0.18	317.65	7,146.32	19.46	-1,170.70	1,170.82	0.06	-0.02	16.79	118.69
	NORMAL	7,388.0	0.07	236.90	7,241.32	19.54	-1,170.85	1,170.97	0.19	-0.12	-85.00	202.27
	NORMAL	7,481.0	0.17	265.29	7,334.32	19.50	-1,171.04	1,171.15	0.12	0.11	30.53	45.46
	NORMAL	7,575.0	0.44	278.32	7,428.32	19.54	-1,171.53	1,171.65	0.29	0.29	13.86	20.98
	NORMAL	7,670.0	0.58	267.56	7,523.32	19.57	-1,172.37	1,172.49	0.18	0.15	-11.33	320.17
	NORMAL	7,765.0	0.97	261.31	7,618.31	19.43	-1,173.65	1,173.76	0.42	0.41	-6.58	344.63
	NORMAL	7,860.0	1.41	262.19	7,713.29	19.15	-1,175.60	1,175.71	0.46	0.46	0.93	2.82
	NORMAL	7,954.0	1.32	265.44	7,807.26	18.90	-1,177.83	1,177.93	0.13	-0.10	3.46	140.91
	NORMAL	8,054.0	1.41	276.96	7,907.23	18.96	-1,180.20	1,180.30	0.29	0.09	11.52	77.66
	NORMAL	8,119.0	1.47	284.45	7,972.21	19.27	-1,181.80	1,181.91	0.30	0.09	11.52	76.09

3 Charts

3.1 Vertical Section View



3.2 Plan View

