

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 441-28	Wellbore No.	
Well Name	KP 441-28	Common Name	KP 441-28
Project	KP 28-06S-091W	Site	KP 41-28 Pad
Vertical Section Azimuth	201.26 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	11/16/2011	UWI	KP 441-28
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	11/16/2011	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 (°)
11/16/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/16/2011	NORMAL	76.0	0.18	37.97	76.00	0.09	0.07	-0.11	0.24	0.24	0.00	37.97
	NORMAL	162.0	2.55	189.67	161.97	-1.69	-0.16	1.63	3.15	2.76	176.40	153.50
	NORMAL	254.0	3.70	195.56	253.83	-6.56	-1.30	6.59	1.30	1.25	6.40	18.55
	NORMAL	344.0	4.05	202.59	343.63	-12.29	-3.30	12.66	0.65	0.39	7.81	57.16
	NORMAL	435.0	5.63	204.43	434.30	-19.33	-6.39	20.33	1.74	1.74	2.02	6.53
	NORMAL	526.0	7.39	200.04	524.71	-28.89	-10.24	30.64	2.01	1.93	-4.82	342.02
	NORMAL	601.0	7.77	199.97	599.06	-38.19	-13.62	40.53	0.51	0.51	-0.09	358.57
	NORMAL	692.0	7.50	202.57	689.25	-49.45	-18.00	52.61	0.48	-0.30	2.86	129.30
	NORMAL	783.0	6.57	200.79	779.56	-59.80	-22.13	63.76	1.05	-1.02	-1.96	192.31
	NORMAL	875.0	6.76	202.28	870.94	-69.73	-26.05	74.43	0.28	0.21	1.62	43.05
	NORMAL	966.0	7.83	200.21	961.21	-80.51	-30.22	85.99	1.21	1.18	-2.27	345.17
	NORMAL	1,060.0	6.77	200.82	1,054.44	-91.69	-34.40	97.93	1.13	-1.13	0.65	176.12
	NORMAL	1,152.0	7.13	200.88	1,145.77	-102.10	-38.37	109.06	0.39	0.39	0.07	1.19
	NORMAL	1,247.0	6.95	201.67	1,240.05	-112.95	-42.59	120.70	0.22	-0.19	0.83	152.12
11/18/2011	NORMAL	1,285.0	7.34	200.38	1,277.75	-117.36	-44.28	125.43	1.11	1.03	-3.39	337.00
	NORMAL	1,375.0	8.02	202.11	1,366.95	-128.57	-48.65	137.46	0.80	0.76	1.92	19.64
	NORMAL	1,438.0	8.07	203.20	1,429.33	-136.70	-52.05	146.27	0.25	0.08	1.73	72.39
	NORMAL	1,533.0	7.06	199.05	1,523.50	-148.35	-56.58	158.77	1.21	-1.06	-4.37	206.36
	NORMAL	1,627.0	7.48	199.83	1,616.74	-159.57	-60.54	170.66	0.46	0.45	0.83	13.61
	NORMAL	1,721.0	7.03	198.49	1,709.99	-170.78	-64.44	182.52	0.51	-0.48	-1.43	199.95

2.1.2 Survey Stations (Continued)

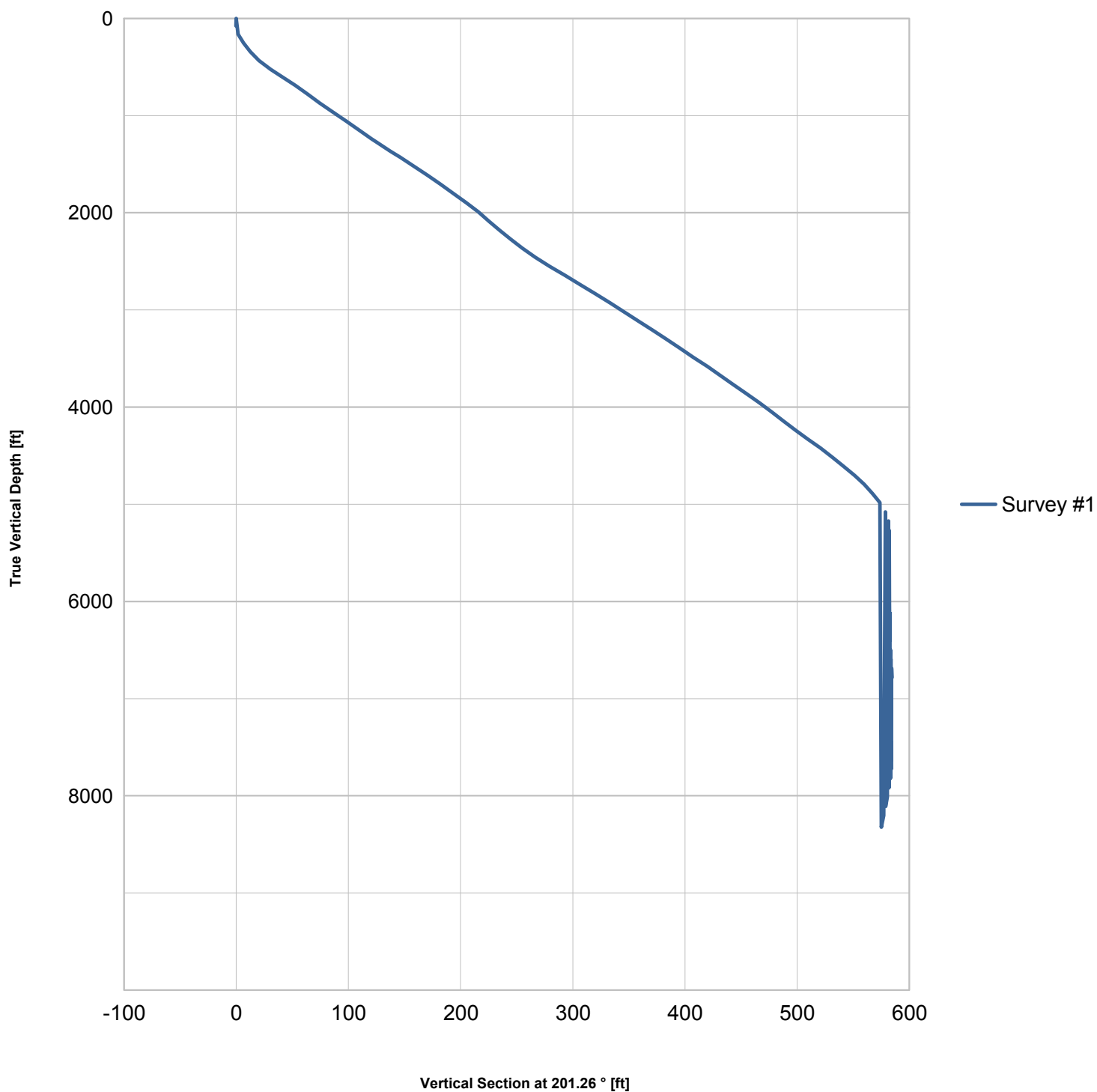
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
11/18/2011	NORMAL	1,816.0	6.70	203.80	1,804.31	-181.36	-68.52	193.86	0.75	-0.35	5.59	120.09
	NORMAL	1,910.0	7.25	204.43	1,897.61	-191.78	-73.19	205.26	0.59	0.59	0.67	8.23
	NORMAL	2,005.0	5.70	201.09	1,992.01	-201.64	-77.36	215.97	1.68	-1.63	-3.52	192.00
	NORMAL	2,100.0	5.47	202.85	2,086.55	-210.21	-80.82	225.21	0.30	-0.24	1.85	144.20
	NORMAL	2,194.0	6.34	198.29	2,180.06	-219.27	-84.19	234.87	1.05	0.93	-4.85	329.38
	NORMAL	2,288.0	5.85	199.67	2,273.52	-228.71	-87.43	244.85	0.54	-0.52	1.47	164.04
	NORMAL	2,381.0	6.81	200.59	2,365.96	-238.33	-90.96	255.10	1.04	1.03	0.99	6.49
	NORMAL	2,475.0	7.18	199.83	2,459.26	-249.08	-94.92	266.54	0.41	0.39	-0.81	345.58
	NORMAL	2,569.0	8.57	203.61	2,552.37	-261.02	-99.71	279.41	1.58	1.48	4.02	22.31
	NORMAL	2,664.0	8.17	201.87	2,646.36	-273.77	-105.06	293.24	0.50	-0.42	-1.83	211.48
	NORMAL	2,758.0	8.14	200.23	2,739.41	-286.21	-109.85	306.57	0.25	-0.03	-1.74	261.84
	NORMAL	2,853.0	8.11	199.04	2,833.45	-298.86	-114.36	319.99	0.18	-0.03	-1.25	259.30
	NORMAL	2,948.0	7.96	202.40	2,927.52	-311.28	-119.06	333.26	0.52	-0.16	3.54	109.37
	NORMAL	3,042.0	7.49	202.26	3,020.67	-322.96	-123.86	345.89	0.50	-0.50	-0.15	182.22
	NORMAL	3,136.0	7.76	202.44	3,113.84	-334.50	-128.60	358.37	0.29	0.29	0.19	5.14
	NORMAL	3,230.0	7.51	201.73	3,207.00	-346.07	-133.30	370.85	0.28	-0.27	-0.76	200.32
	NORMAL	3,324.0	7.47	201.18	3,300.20	-357.47	-137.78	383.11	0.09	-0.04	-0.59	240.57
	NORMAL	3,418.0	7.37	201.03	3,393.41	-368.80	-142.15	395.25	0.11	-0.11	-0.16	190.89
	NORMAL	3,513.0	7.55	203.58	3,487.61	-380.21	-146.83	407.57	0.40	0.19	2.68	62.74
	NORMAL	3,608.0	7.49	203.08	3,581.79	-391.62	-151.76	420.00	0.09	-0.06	-0.53	227.23
	NORMAL	3,702.0	6.78	202.50	3,675.06	-402.39	-156.28	431.67	0.76	-0.76	-0.62	185.51
	NORMAL	3,796.0	7.10	204.64	3,768.37	-412.79	-160.83	443.02	0.44	0.34	2.28	40.01
	NORMAL	3,890.0	7.35	205.06	3,861.63	-423.52	-165.80	454.82	0.27	0.27	0.45	12.14
	NORMAL	3,984.0	6.74	200.84	3,954.92	-434.12	-170.31	466.33	0.85	-0.65	-4.49	218.23
	NORMAL	4,078.0	6.43	203.92	4,048.30	-444.09	-174.40	477.10	0.50	-0.33	3.28	132.80
	NORMAL	4,172.0	6.34	198.29	4,141.72	-453.83	-178.17	487.55	0.67	-0.10	-5.99	259.03
	NORMAL	4,266.0	6.66	197.58	4,235.11	-463.95	-181.44	498.17	0.35	0.34	-0.76	345.55
	NORMAL	4,360.0	7.03	200.30	4,328.44	-474.54	-185.08	509.36	0.52	0.39	2.89	42.58
	NORMAL	4,453.0	6.86	203.11	4,420.76	-484.99	-189.24	520.60	0.41	-0.18	3.02	117.97
	NORMAL	4,548.0	6.04	200.61	4,515.16	-494.89	-193.22	531.27	0.91	-0.86	-2.63	197.67
	NORMAL	4,642.0	6.18	199.99	4,608.62	-504.27	-196.69	541.27	0.16	0.15	-0.66	334.45
11/19/2011	NORMAL	4,736.0	5.81	198.17	4,702.11	-513.55	-199.91	551.08	0.44	-0.39	-1.94	206.29
	NORMAL	4,829.0	4.81	192.56	4,794.71	-521.82	-202.22	559.64	1.21	-1.08	-6.03	204.66
	NORMAL	4,923.0	4.40	192.82	4,888.41	-529.19	-203.88	567.10	0.44	-0.44	0.28	177.21
	NORMAL	5,018.0	3.58	190.62	4,983.18	-535.66	-205.24	573.62	0.88	-0.86	-2.32	189.48
	NORMAL	5,113.0	2.53	199.71	5,078.04	-540.54	-206.49	578.63	1.21	-1.11	9.57	159.73
	NORMAL	5,208.0	0.82	185.70	5,173.00	-543.20	-207.26	581.38	1.84	-1.80	-14.75	186.53
	NORMAL	5,302.0	0.68	113.28	5,266.99	-544.09	-206.82	582.05	0.95	-0.15	-77.04	226.53
	NORMAL	5,397.0	0.52	100.25	5,361.98	-544.38	-205.88	581.99	0.22	-0.17	-13.72	214.07
	NORMAL	5,493.0	0.57	89.04	5,457.98	-544.45	-204.97	581.72	0.12	0.05	-11.68	289.45
	NORMAL	5,588.0	0.43	95.05	5,552.98	-544.48	-204.14	581.45	0.16	-0.15	6.33	162.45
	NORMAL	5,683.0	0.75	89.44	5,647.97	-544.50	-203.17	581.11	0.34	0.34	-5.91	346.95
	NORMAL	5,777.0	0.31	26.59	5,741.97	-544.27	-202.44	580.63	0.71	-0.47	-66.86	204.38
	NORMAL	5,873.0	0.26	145.80	5,837.97	-544.22	-202.20	580.50	0.51	-0.05	124.18	152.55
	NORMAL	5,968.0	0.71	234.79	5,932.96	-544.74	-202.56	581.11	0.79	0.47	93.67	109.22
	NORMAL	6,061.0	1.14	255.05	6,025.95	-545.31	-203.92	582.14	0.57	0.46	21.78	47.68
11/20/2011	NORMAL	6,156.0	0.74	290.67	6,120.94	-545.33	-205.41	582.70	0.73	-0.42	37.49	141.33
	NORMAL	6,250.0	0.42	105.72	6,214.94	-545.21	-205.65	582.68	1.23	-0.34	186.22	178.21
	NORMAL	6,343.0	0.22	355.19	6,307.94	-545.13	-205.33	582.48	0.58	-0.22	-118.85	202.51
	NORMAL	6,438.0	0.96	131.60	6,402.93	-545.47	-204.75	582.59	1.19	0.78	143.59	144.13
	NORMAL	6,532.0	0.99	121.92	6,496.92	-546.43	-203.48	583.02	0.18	0.03	-10.30	275.46
	NORMAL	6,627.0	0.65	164.73	6,591.91	-547.38	-202.64	583.60	0.71	-0.36	45.06	139.28
	NORMAL	6,723.0	0.28	162.42	6,687.91	-548.13	-202.42	584.22	0.39	-0.39	-2.41	181.75
	NORMAL	6,817.0	0.27	255.13	6,781.91	-548.40	-202.57	584.53	0.42	-0.01	98.63	137.35
	NORMAL	6,912.0	0.78	4.57	6,876.90	-547.82	-202.73	584.05	0.95	0.54	115.20	125.75
	NORMAL	7,006.0	0.87	38.48	6,970.89	-546.62	-202.24	582.75	0.52	0.10	36.07	96.81
	NORMAL	7,102.0	0.45	41.34	7,066.89	-545.77	-201.53	581.70	0.44	-0.44	2.98	176.94

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 (°)
11/20/2011	NORMAL	7,197.0	0.75	136.60	7,161.88	-545.94	-200.86	581.62	0.96	0.32	100.27	124.78
11/21/2011	NORMAL	7,292.0	0.96	120.91	7,256.87	-546.80	-199.75	582.02	0.33	0.22	-16.52	303.87
	NORMAL	7,387.0	0.76	183.24	7,351.87	-547.84	-199.10	582.75	0.95	-0.21	65.61	132.05
	NORMAL	7,480.0	0.40	188.14	7,444.86	-548.77	-199.18	583.65	0.39	-0.39	5.27	174.60
	NORMAL	7,575.0	0.18	14.85	7,539.86	-548.96	-199.19	583.83	0.61	-0.23	-182.41	182.08
	NORMAL	7,668.0	0.09	306.73	7,632.86	-548.77	-199.21	583.66	0.18	-0.10	-73.25	209.69
	NORMAL	7,763.0	0.44	292.93	7,727.86	-548.59	-199.61	583.63	0.37	0.37	-14.53	342.72
	NORMAL	7,858.0	0.84	343.32	7,822.85	-547.78	-200.15	583.07	0.69	0.42	53.04	81.60
	NORMAL	7,953.0	1.63	321.93	7,917.83	-546.05	-201.18	581.83	0.95	0.83	-22.52	318.75
	NORMAL	8,049.0	1.53	326.05	8,013.79	-543.91	-202.74	580.41	0.16	-0.10	4.29	133.40
	NORMAL	8,144.0	2.01	321.76	8,108.75	-541.55	-204.48	578.84	0.52	0.51	-4.52	342.42
	NORMAL	8,238.0	2.28	317.61	8,202.68	-538.87	-206.76	577.17	0.33	0.29	-4.41	328.00
	NORMAL	8,298.0	2.09	321.10	8,262.64	-537.14	-208.25	576.10	0.39	-0.32	5.82	146.73
11/23/2011	NORMAL	8,358.0	2.09	321.10	8,322.60	-535.44	-209.62	575.01	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

