

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	SG 413-23	Wellbore No.	
Well Name	SG 413-23	Common Name	SG 413-23
Project	SG 23-07S-096W	Site	SG 23-23 Pad
Vertical Section Azimuth	265.28 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	1/13/2012	UWI	SG 413-23
Active Datum	KB @5,089.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	scientific
Started	1/12/2012	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)	DLeg (°/100ft)	Bulld (°/100ft)	Turn (°/100ft)	TFace (°)
1/12/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/13/2012	NORMAL	83.0	0.44	301.99	83.00	0.17	-0.27	0.26	0.53	0.53	0.00	301.99
	NORMAL	109.0	0.70	242.31	109.00	0.15	-0.50	0.48	2.35	1.00	-229.54	261.84
	NORMAL	140.0	0.88	221.57	140.00	-0.12	-0.82	0.83	1.08	0.58	-66.90	291.54
	NORMAL	171.0	1.32	236.95	170.99	-0.49	-1.28	1.31	1.70	1.42	49.61	41.71
	NORMAL	217.0	1.87	265.49	216.97	-0.84	-2.47	2.53	2.06	1.20	62.04	70.13
	NORMAL	246.0	2.53	265.36	245.95	-0.93	-3.58	3.64	2.28	2.28	-0.45	359.50
	NORMAL	278.0	3.34	264.23	277.91	-1.08	-5.21	5.28	2.54	2.53	-3.53	355.35
	NORMAL	309.0	4.31	269.50	308.84	-1.18	-7.28	7.35	3.32	3.13	17.00	22.56
	NORMAL	337.0	5.40	270.59	336.74	-1.18	-9.64	9.71	3.91	3.89	3.89	5.38
	NORMAL	370.0	6.24	270.17	369.57	-1.15	-12.99	13.04	2.55	2.55	-1.27	356.89
	NORMAL	429.0	8.37	269.32	428.09	-1.20	-20.49	20.52	3.61	3.61	-1.44	356.67
	NORMAL	508.0	7.90	261.60	506.29	-2.06	-31.61	31.67	1.50	-0.59	-9.77	242.93
1/14/2012	NORMAL	608.0	7.48	272.01	605.40	-2.83	-44.92	45.00	1.45	-0.42	10.41	111.89
	NORMAL	699.0	7.19	263.33	695.66	-3.29	-56.49	56.57	1.26	-0.32	-9.54	251.06
	NORMAL	790.0	7.04	260.33	785.96	-4.88	-67.65	67.82	0.44	-0.16	-3.30	246.53
	NORMAL	881.0	6.76	269.42	876.30	-5.88	-78.50	78.72	1.24	-0.31	9.99	108.86
	NORMAL	973.0	7.12	262.64	967.63	-6.66	-89.57	89.81	0.97	0.39	-7.37	290.33
	NORMAL	1,067.0	6.84	266.94	1,060.93	-7.71	-100.94	101.23	0.63	-0.30	4.57	120.31
	NORMAL	1,162.0	6.59	261.70	1,155.28	-8.79	-111.98	112.32	0.70	-0.26	-5.52	245.22
	NORMAL	1,256.0	7.21	264.40	1,248.60	-10.15	-123.19	123.61	0.74	0.66	2.87	28.96

## 2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
1/14/2012	NORMAL	1,351.0	6.68	262.12	1,342.90	-11.49	-134.59	135.08	0.63	-0.56	-2.40	206.35
	NORMAL	1,445.0	8.00	266.07	1,436.13	-12.69	-146.54	147.08	1.50	1.40	4.20	22.89
	NORMAL	1,540.0	7.56	265.72	1,530.25	-13.61	-159.36	159.94	0.47	-0.46	-0.37	185.97
	NORMAL	1,635.0	7.75	276.07	1,624.41	-13.39	-171.97	172.48	1.46	0.20	10.89	87.30
1/15/2012	NORMAL	1,730.0	7.21	269.76	1,718.61	-12.74	-184.30	184.72	1.03	-0.57	-6.64	233.58
	NORMAL	1,824.0	8.21	268.45	1,811.75	-12.95	-196.91	197.30	1.08	1.06	-1.39	349.38
	NORMAL	1,919.0	7.74	267.48	1,905.84	-13.41	-210.08	210.47	0.51	-0.49	-1.02	195.50
	NORMAL	2,013.0	7.21	268.97	1,999.04	-13.80	-222.30	222.68	0.60	-0.56	1.59	160.65
	NORMAL	2,108.0	6.77	265.28	2,093.33	-14.37	-233.84	234.23	0.66	-0.46	-3.88	223.76
	NORMAL	2,202.0	6.95	268.09	2,186.66	-15.01	-245.05	245.45	0.41	0.19	2.99	63.20
	NORMAL	2,297.0	6.54	266.09	2,281.00	-15.57	-256.19	256.60	0.50	-0.43	-2.11	208.82
	NORMAL	2,391.0	5.90	261.05	2,374.45	-16.69	-266.30	266.77	0.89	-0.68	-5.36	217.98
	NORMAL	2,486.0	6.24	261.96	2,468.91	-18.17	-276.24	276.79	0.37	0.36	0.96	16.26
	NORMAL	2,581.0	6.95	267.39	2,563.29	-19.15	-287.09	287.69	0.99	0.75	5.72	44.01
	NORMAL	2,676.0	7.30	265.90	2,657.55	-19.85	-298.85	299.47	0.42	0.37	-1.57	331.42
	NORMAL	2,769.0	7.65	261.06	2,749.76	-21.23	-310.86	311.55	0.77	0.38	-5.20	296.65
	NORMAL	2,864.0	6.51	263.44	2,844.04	-22.83	-322.46	323.24	1.24	-1.20	2.51	166.75
	NORMAL	2,958.0	6.16	263.96	2,937.46	-23.97	-332.77	333.61	0.38	-0.37	0.55	170.95
	NORMAL	3,053.0	5.19	269.41	3,032.00	-24.55	-342.13	342.99	1.17	-1.02	5.74	153.64
	NORMAL	3,147.0	4.19	276.43	3,125.68	-24.21	-349.80	350.60	1.22	-1.06	7.47	153.61
	NORMAL	3,242.0	4.33	276.36	3,220.42	-23.42	-356.81	357.53	0.15	0.15	-0.07	357.84
	NORMAL	3,336.0	3.43	278.29	3,314.20	-22.62	-363.12	363.75	0.97	-0.96	2.05	172.71
	NORMAL	3,431.0	2.36	305.95	3,409.09	-21.07	-367.51	368.00	1.82	-1.13	29.12	140.72
	NORMAL	3,525.0	0.80	291.19	3,503.05	-19.69	-369.69	370.06	1.70	-1.66	-15.70	187.32
	NORMAL	3,620.0	1.03	245.75	3,598.04	-19.80	-371.09	371.46	0.78	0.24	-47.83	263.99
	NORMAL	3,714.0	0.44	225.19	3,692.03	-20.40	-372.12	372.53	0.68	-0.63	-21.87	194.04
	NORMAL	3,809.0	0.97	51.79	3,787.02	-20.16	-371.74	372.14	1.48	0.56	-182.53	184.54
	NORMAL	3,903.0	1.14	64.01	3,881.01	-19.26	-370.28	370.61	0.30	0.18	13.00	59.14
	NORMAL	3,998.0	1.38	342.53	3,975.99	-17.76	-369.77	369.98	1.74	0.25	-85.77	235.58
	NORMAL	4,093.0	1.06	327.60	4,070.97	-15.92	-370.59	370.64	0.47	-0.34	-15.72	217.51
	NORMAL	4,187.0	1.32	297.89	4,164.95	-14.68	-372.01	371.96	0.70	0.28	-31.61	277.53
	NORMAL	4,281.0	1.23	279.82	4,258.93	-14.00	-373.96	373.84	0.44	-0.10	-19.22	248.45
	NORMAL	4,376.0	1.43	274.16	4,353.90	-13.74	-376.15	376.00	0.25	0.21	-5.96	323.85
	NORMAL	4,470.0	0.87	184.77	4,447.89	-14.37	-377.38	377.28	1.77	-0.60	-95.10	211.48
	NORMAL	4,565.0	1.14	188.11	4,542.87	-16.03	-377.57	377.61	0.29	0.28	3.52	13.91
	NORMAL	4,659.0	0.44	238.12	4,636.87	-17.14	-378.01	378.14	0.98	-0.74	53.20	158.53
	NORMAL	4,754.0	0.70	250.25	4,731.86	-17.53	-378.86	379.02	0.30	0.27	12.77	31.04
	NORMAL	4,848.0	0.96	258.63	4,825.85	-17.88	-380.18	380.36	0.30	0.28	8.91	29.26
	NORMAL	4,943.0	1.49	247.70	4,920.83	-18.51	-382.10	382.33	0.61	0.56	-11.51	330.68
	NORMAL	5,037.0	1.93	254.21	5,014.79	-19.40	-384.75	385.05	0.51	0.47	6.93	27.10
	NORMAL	5,131.0	2.02	244.93	5,108.73	-20.53	-387.78	388.15	0.35	0.10	-9.87	281.05
	NORMAL	5,226.0	2.55	241.99	5,203.66	-22.23	-391.16	391.66	0.57	0.56	-3.09	346.06
	NORMAL	5,277.0	2.55	235.40	5,254.61	-23.41	-393.10	393.69	0.57	0.00	-12.92	266.71
	NORMAL	5,334.0	2.55	235.40	5,311.55	-24.85	-395.18	395.89	0.00	0.00	0.00	0.00