

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	KP 442-18	Wellbore No.	
Well Name	KP 442-18	Common Name	KP 442-18
Project	KP 17-06S-091W	Site	KP 13-17 Pad
Vertical Section	325.11 (°)	North Reference	True
Azimuth		Origin E/W	
Spud Date	8/18/2011	UWI	KP 442-18
Active Datum	KB @6,224.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Started	8/18/2011	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)	DLeg (°/100ft)	Bulld (°/100ft)	Turn (°/100ft)	TFace (°)
8/18/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/18/2011	NORMAL	156.0	2.31	10.31	155.96	3.09	0.56	2.22	1.48	1.48	0.00	10.31
	NORMAL	248.0	4.31	8.13	247.80	8.34	1.38	6.05	2.18	2.17	-2.37	355.31
	NORMAL	338.0	6.42	347.83	337.41	16.61	0.80	13.17	3.12	2.34	-22.56	307.62
	NORMAL	430.0	8.18	326.82	428.67	27.12	-3.87	24.45	3.44	1.91	-22.84	292.67
	NORMAL	521.0	9.94	320.93	518.54	38.63	-12.36	38.76	2.18	1.93	-6.47	329.28
	NORMAL	612.0	13.63	324.27	607.61	53.44	-23.58	57.32	4.12	4.05	3.67	12.11
	NORMAL	703.0	17.06	320.40	695.35	72.44	-38.35	81.35	3.93	3.77	-4.25	341.50
	NORMAL	795.0	19.43	321.81	782.72	94.87	-56.42	110.08	2.62	2.58	1.53	11.22
	NORMAL	886.0	20.40	323.83	868.28	119.57	-75.14	141.05	1.31	1.07	2.22	36.30
	NORMAL	980.0	22.34	323.30	955.81	147.12	-95.48	175.29	2.07	2.06	-0.56	354.07
	NORMAL	1,056.0	23.65	323.74	1,025.77	170.99	-113.13	204.97	1.74	1.72	0.58	7.68
8/19/2011	NORMAL	1,159.0	23.92	322.60	1,120.02	204.24	-138.03	246.48	0.52	0.26	-1.11	299.90
	NORMAL	1,254.0	25.58	324.52	1,206.29	236.24	-161.64	286.23	1.94	1.75	2.02	26.71
	NORMAL	1,348.0	25.77	324.08	1,291.01	269.31	-185.40	326.96	0.29	0.20	-0.47	314.71
	NORMAL	1,442.0	26.32	323.50	1,375.47	302.61	-209.79	368.22	0.64	0.59	-0.62	334.89
	NORMAL	1,536.0	25.68	325.33	1,459.96	336.12	-233.77	409.42	1.09	-0.68	1.95	129.40
	NORMAL	1,628.0	25.73	324.77	1,542.85	368.82	-256.63	449.32	0.27	0.05	-0.61	281.38
	NORMAL	1,722.0	23.82	325.22	1,628.20	401.08	-279.23	488.71	2.04	-2.03	0.48	174.57
8/20/2011	NORMAL	1,817.0	23.74	324.45	1,715.13	432.40	-301.29	527.01	0.34	-0.08	-0.81	255.20
	NORMAL	1,911.0	23.74	322.60	1,801.18	462.83	-323.78	564.84	0.79	0.00	-1.97	269.15

## 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)	Buld (°/100ft)	Turn (°/100ft)	TFace (°)
8/20/2011	NORMAL	2,004.0	24.97	325.15	1,885.90	493.81	-346.37	603.17	1.74	1.32	2.74	41.70
	NORMAL	2,099.0	25.32	325.77	1,971.90	527.06	-369.26	643.54	0.46	0.37	0.65	37.25
	NORMAL	2,193.0	25.15	324.62	2,056.93	559.97	-392.13	683.61	0.55	-0.18	-1.22	250.36
	NORMAL	2,286.0	25.76	324.27	2,140.90	592.48	-415.37	723.58	0.68	0.66	-0.38	346.99
	NORMAL	2,380.0	23.92	322.60	2,226.20	624.21	-438.88	763.05	2.09	-1.96	-1.78	200.11
	NORMAL	2,473.0	23.74	322.25	2,311.27	653.99	-461.79	800.58	0.25	-0.19	-0.38	217.99
	NORMAL	2,567.0	23.21	321.11	2,397.49	683.37	-485.00	837.96	0.74	-0.56	-1.21	220.07
	NORMAL	2,661.0	23.53	322.85	2,483.78	712.74	-507.97	875.18	0.81	0.34	1.85	65.93
	NORMAL	2,755.0	23.74	326.56	2,569.90	743.49	-529.73	912.85	1.60	0.22	3.95	83.67
	NORMAL	2,849.0	24.18	326.47	2,655.80	775.32	-550.79	951.01	0.47	0.47	-0.10	355.21
	NORMAL	2,942.0	24.18	326.56	2,740.64	807.10	-571.80	989.09	0.04	0.00	0.10	90.04
	NORMAL	3,037.0	24.54	326.17	2,827.18	839.72	-593.51	1,028.27	0.42	0.38	-0.41	335.75
	NORMAL	3,129.0	25.32	325.68	2,910.61	871.84	-615.24	1,067.04	0.88	0.85	-0.53	344.95
	NORMAL	3,223.0	23.74	326.20	2,996.13	904.16	-637.10	1,106.06	1.70	-1.68	0.55	172.46
	NORMAL	3,317.0	22.07	326.73	3,082.71	934.66	-657.31	1,142.64	1.79	-1.78	0.56	173.20
	NORMAL	3,409.0	20.22	325.77	3,168.51	962.25	-675.74	1,175.81	2.05	-2.01	-1.04	190.16
	NORMAL	3,502.0	18.99	325.41	3,256.12	988.00	-693.37	1,207.02	1.33	-1.32	-0.39	185.44
	NORMAL	3,597.0	16.68	324.20	3,346.55	1,011.78	-710.12	1,236.11	2.46	-2.43	-1.27	188.54
	NORMAL	3,691.0	13.48	324.86	3,437.30	1,031.69	-724.32	1,260.56	3.41	-3.40	0.70	177.25
	NORMAL	3,784.0	13.19	325.68	3,527.79	1,049.32	-736.54	1,282.01	0.37	-0.31	0.88	147.29
	NORMAL	3,879.0	12.03	327.06	3,620.50	1,066.58	-748.04	1,302.74	1.26	-1.22	1.45	166.11
8/21/2011	NORMAL	3,973.0	9.94	324.18	3,712.77	1,081.38	-758.12	1,320.65	2.30	-2.22	-3.06	193.30
	NORMAL	4,067.0	8.71	322.95	3,805.53	1,093.64	-767.15	1,335.87	1.33	-1.31	-1.31	188.60
	NORMAL	4,161.0	6.40	324.47	3,898.71	1,103.58	-774.49	1,348.23	2.47	-2.46	1.62	175.81
	NORMAL	4,161.0	6.40	324.47	3,898.71	1,103.58	-774.49	1,348.23	0.00	0.00	0.00	0.00
	NORMAL	4,254.0	5.10	324.71	3,991.24	1,111.18	-779.89	1,357.54	1.40	-1.40	0.26	179.06
	NORMAL	4,348.0	4.48	326.12	4,084.91	1,117.64	-784.35	1,365.39	0.67	-0.66	1.50	169.95
	NORMAL	4,442.0	3.25	314.25	4,178.69	1,122.54	-788.30	1,371.68	1.55	-1.31	-12.63	207.22
	NORMAL	4,536.0	1.93	303.44	4,272.60	1,125.27	-791.53	1,375.77	1.49	-1.40	-11.50	194.96
	NORMAL	4,630.0	1.14	321.37	4,366.56	1,126.88	-793.44	1,378.17	0.97	-0.84	19.07	157.45
	NORMAL	4,724.0	0.97	320.76	4,460.55	1,128.22	-794.52	1,379.90	0.18	-0.18	-0.65	183.47
	NORMAL	4,818.0	0.88	0.83	4,554.53	1,129.56	-795.02	1,381.28	0.68	-0.10	42.63	117.63
	NORMAL	4,912.0	0.35	274.79	4,648.53	1,130.31	-795.29	1,382.05	0.98	-0.56	-91.53	202.20
	NORMAL	5,005.0	0.53	21.31	4,741.53	1,130.73	-795.42	1,382.47	0.77	0.19	114.54	134.58
	NORMAL	5,099.0	0.62	48.82	4,835.52	1,131.47	-794.88	1,382.76	0.31	0.10	29.27	86.02
	NORMAL	5,193.0	1.06	45.75	4,929.51	1,132.41	-793.87	1,382.96	0.47	0.47	-3.27	352.62
	NORMAL	5,287.0	0.44	88.20	5,023.51	1,133.03	-792.89	1,382.91	0.84	-0.66	45.16	158.01
	NORMAL	5,381.0	0.70	168.79	5,117.50	1,132.48	-792.42	1,382.18	0.81	0.28	85.73	115.24
	NORMAL	5,474.0	1.32	184.96	5,210.49	1,130.86	-792.40	1,380.84	0.73	0.67	17.39	32.92
	NORMAL	5,568.0	1.06	175.65	5,304.47	1,128.91	-792.43	1,379.26	0.34	-0.28	-9.90	212.04
	NORMAL	5,662.0	0.88	179.87	5,398.45	1,127.32	-792.36	1,377.92	0.21	-0.19	4.49	160.45
8/22/2011	NORMAL	5,756.0	0.35	126.34	5,492.45	1,126.43	-792.13	1,377.05	0.78	-0.56	-56.95	202.73
	NORMAL	5,850.0	0.26	58.93	5,586.45	1,126.37	-791.71	1,376.77	0.37	-0.10	-71.71	223.82
	NORMAL	5,944.0	0.88	134.69	5,680.44	1,125.97	-791.02	1,376.04	0.91	0.66	80.60	92.92
	NORMAL	6,039.0	1.14	131.88	5,775.43	1,124.83	-789.79	1,374.41	0.28	0.27	-2.96	347.81
	NORMAL	6,132.0	1.23	104.02	5,868.41	1,123.97	-788.14	1,372.75	0.62	0.10	-29.96	264.78
	NORMAL	6,225.0	1.58	83.80	5,961.38	1,123.86	-785.89	1,371.39	0.65	0.38	-21.74	294.83
	NORMAL	6,319.0	0.62	84.15	6,055.36	1,124.06	-784.10	1,370.52	1.02	-1.02	0.37	179.77
	NORMAL	6,413.0	0.26	172.40	6,149.36	1,123.90	-783.56	1,370.08	0.71	-0.38	93.88	156.99
8/23/2011	NORMAL	6,506.0	0.26	358.11	6,242.36	1,123.90	-783.54	1,370.07	0.56	0.00	-187.41	182.86
	NORMAL	6,601.0	0.79	24.83	6,337.36	1,124.71	-783.28	1,370.58	0.60	0.56	28.13	38.56
	NORMAL	6,694.0	1.76	38.71	6,430.33	1,126.41	-782.11	1,371.31	1.09	1.04	14.92	24.68
	NORMAL	6,788.0	1.89	38.97	6,524.29	1,128.74	-780.24	1,372.15	0.14	0.14	0.28	3.77
	NORMAL	6,884.0	1.58	57.17	6,620.24	1,130.68	-778.13	1,372.54	0.65	-0.32	18.96	128.25
	NORMAL	6,978.0	1.14	18.50	6,714.22	1,132.27	-776.74	1,373.05	1.05	-0.47	-41.14	225.92
	NORMAL	7,072.0	1.67	4.26	6,808.19	1,134.53	-776.34	1,374.67	0.67	0.56	-15.15	319.37
	NORMAL	7,167.0	2.55	356.88	6,903.12	1,138.02	-776.36	1,377.54	0.97	0.93	-7.77	339.13

## 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 (°)
8/24/2011	NORMAL	7,261.0	3.52	342.38	6,996.99	1,142.86	-777.34	1,382.07	1.31	1.03	-15.43	314.25
	NORMAL	7,354.0	4.22	343.61	7,089.78	1,148.86	-779.17	1,388.04	0.76	0.75	1.32	7.38
	NORMAL	7,450.0	4.48	342.29	7,185.50	1,155.82	-781.31	1,394.98	0.29	0.27	-1.38	338.28
	NORMAL	7,542.0	4.48	347.21	7,277.22	1,162.75	-783.20	1,401.74	0.42	0.00	5.35	92.45
	NORMAL	7,600.0	4.48	347.21	7,335.04	1,167.17	-784.20	1,405.93	0.00	0.00	0.00	0.00