

## 1 General

### 1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

### 1.2 Well Information

Well	KP 324-9	Wellbore No.	
Well Name	KP 324-9	Common Name	KP 324-9
Project	KP 16-06S-091W	Site	KP 11-16 Pad
Vertical Section Azimuth	41.68 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	9/22/2012	UWI	KP 324-9
Active Datum	KB @6,658.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	9/22/2012	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 (°)
9/22/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/22/2012	NORMAL	106.0	1.50	54.14	105.99	0.81	1.12	1.35	1.42	1.42	0.00	54.14
	NORMAL	137.0	2.73	45.88	136.97	1.56	1.98	2.49	4.08	3.97	-26.65	341.93
	NORMAL	169.0	3.96	45.35	168.91	2.87	3.32	4.35	3.84	3.84	-1.66	358.30
	NORMAL	198.0	4.84	37.88	197.83	4.54	4.78	6.57	3.62	3.03	-25.76	323.16
	NORMAL	232.0	6.16	41.22	231.67	7.05	6.86	9.83	3.99	3.88	9.82	15.30
	NORMAL	259.0	6.07	40.43	258.51	9.22	8.74	12.70	0.46	-0.33	-2.93	222.69
	NORMAL	289.0	6.69	40.25	288.33	11.76	10.90	16.03	2.07	2.07	-0.60	358.06
	NORMAL	320.0	7.48	39.02	319.09	14.71	13.34	19.85	2.59	2.55	-3.97	348.52
	NORMAL	350.0	8.27	44.12	348.81	17.77	16.07	23.96	3.51	2.63	17.00	44.04
	NORMAL	380.0	8.80	42.45	378.48	21.02	19.12	28.41	1.95	1.77	-5.57	334.11
	NORMAL	411.0	9.68	39.90	409.07	24.77	22.39	33.39	3.13	2.84	-8.23	333.79
	NORMAL	441.0	10.38	42.63	438.62	28.69	25.84	38.61	2.82	2.33	9.10	35.54
	NORMAL	470.0	11.26	42.19	467.10	32.71	29.51	44.05	3.05	3.03	-1.52	354.42
	NORMAL	501.0	12.05	43.15	497.46	37.31	33.76	50.32	2.62	2.55	3.10	14.26
	NORMAL	531.0	13.28	42.80	526.73	42.13	38.24	56.89	4.11	4.10	-1.17	356.26
	NORMAL	562.0	14.87	42.80	556.80	47.66	43.36	64.43	5.13	5.13	0.00	0.00
	NORMAL	591.0	15.66	42.80	584.78	53.26	48.55	72.06	2.72	2.72	0.00	0.00
	NORMAL	622.0	16.80	41.31	614.54	59.69	54.35	80.73	3.91	3.68	-4.81	339.22
	NORMAL	652.0	18.39	39.46	643.14	66.61	60.22	89.79	5.62	5.30	-6.17	339.74
	NORMAL	683.0	20.23	39.55	672.39	74.51	66.74	100.03	5.94	5.94	0.29	0.97

## 2.1.2 Survey Stations (Continued)

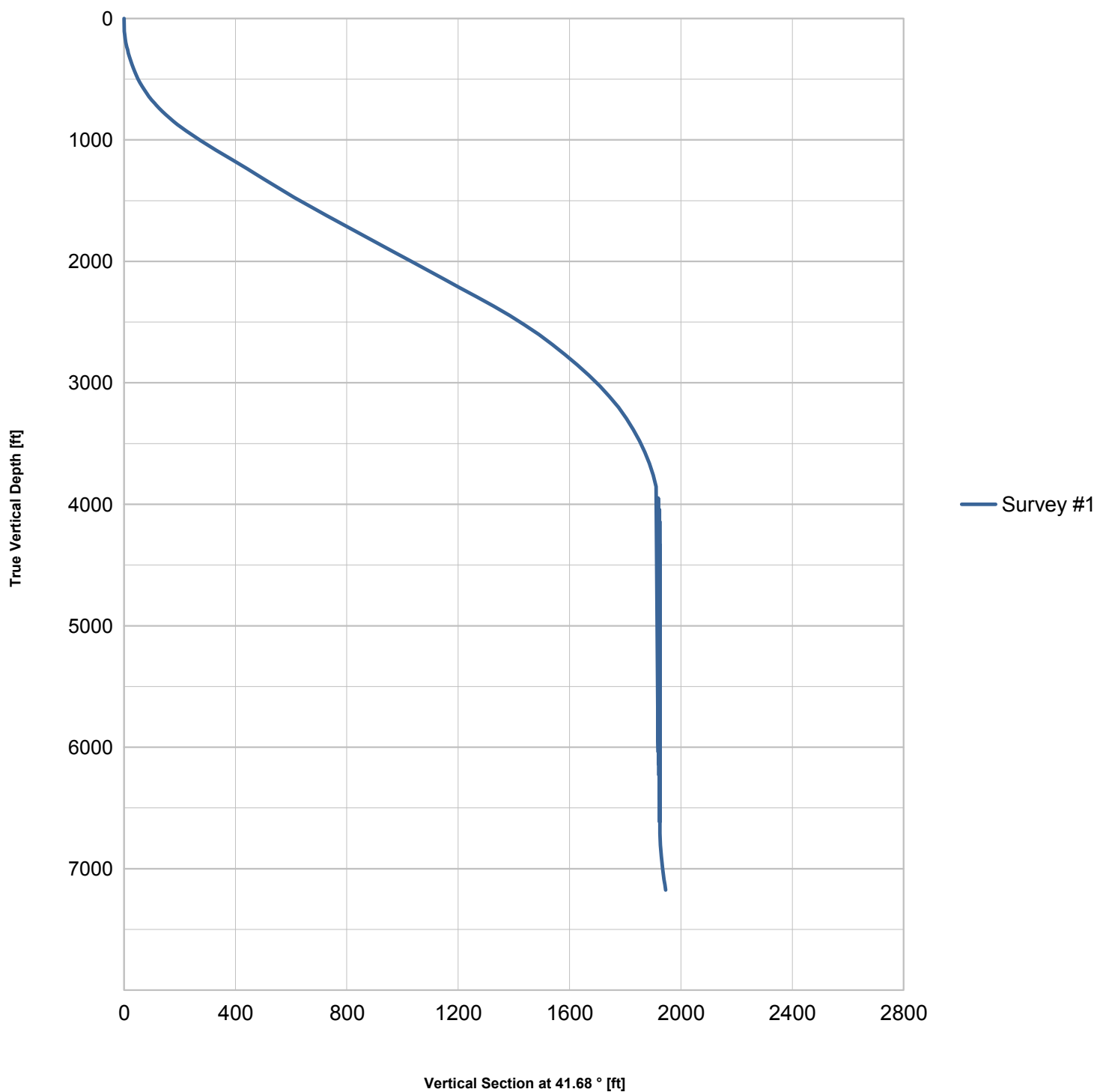
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
9/22/2012	NORMAL	713.0	21.03	40.34	700.47	82.62	73.53	110.60	2.82	2.67	2.63	19.55
	NORMAL	723.0	21.40	40.13	709.79	85.38	75.87	114.22	3.78	3.70	-2.10	348.30
	NORMAL	753.0	22.80	40.32	737.58	94.00	83.16	125.50	4.67	4.67	0.63	3.01
9/23/2012	NORMAL	784.0	23.94	42.01	766.04	103.25	91.25	137.79	4.27	3.68	5.45	31.24
	NORMAL	814.0	25.45	43.00	793.30	112.49	99.72	150.33	5.22	5.03	3.30	15.77
	NORMAL	845.0	26.72	42.96	821.14	122.46	109.01	163.95	4.10	4.10	-0.13	359.19
	NORMAL	875.0	28.06	42.38	847.77	132.61	118.37	177.75	4.55	4.47	-1.93	348.48
	NORMAL	905.0	29.41	41.96	874.08	143.30	128.05	192.17	4.55	4.50	-1.40	351.31
	NORMAL	935.0	30.77	42.01	900.04	154.48	138.11	207.21	4.53	4.53	0.17	1.08
	NORMAL	965.0	31.48	42.72	925.72	165.93	148.56	222.72	2.66	2.37	2.37	27.64
	NORMAL	1,061.0	34.23	41.83	1,006.35	204.48	183.58	274.79	2.91	2.86	-0.93	349.67
	NORMAL	1,157.0	36.15	41.21	1,084.81	245.90	220.24	330.11	2.03	2.00	-0.65	349.20
	NORMAL	1,252.0	37.02	41.81	1,161.09	288.30	257.77	386.73	0.99	0.92	0.63	22.59
	NORMAL	1,347.0	34.91	41.18	1,237.97	330.08	294.74	442.52	2.25	-2.22	-0.66	189.69
	NORMAL	1,395.0	35.07	41.13	1,277.30	350.80	312.86	470.04	0.34	0.33	-0.10	349.82
	NORMAL	1,450.0	35.07	41.13	1,322.31	374.61	333.64	501.64	0.00	0.00	0.00	0.00
9/24/2012	NORMAL	1,540.0	35.79	40.76	1,395.65	414.02	367.83	553.81	0.83	0.80	-0.41	343.26
	NORMAL	1,636.0	37.20	40.94	1,472.82	457.20	405.18	610.90	1.47	1.47	0.19	4.41
	NORMAL	1,731.0	38.16	41.99	1,548.01	500.71	443.63	668.97	1.22	1.01	1.11	34.18
	NORMAL	1,826.0	37.90	41.99	1,622.84	544.21	482.79	727.49	0.27	-0.27	0.00	180.00
	NORMAL	1,922.0	39.31	40.94	1,697.86	589.10	522.44	787.39	1.62	1.47	-1.09	334.67
	NORMAL	2,018.0	39.13	39.88	1,772.23	635.32	561.79	848.07	0.72	-0.19	-1.10	254.56
	NORMAL	2,113.0	38.95	40.94	1,846.02	680.88	600.58	907.89	0.73	-0.19	1.12	105.50
	NORMAL	2,209.0	38.69	41.99	1,920.82	725.98	640.42	968.07	0.74	-0.27	1.09	111.96
	NORMAL	2,304.0	38.60	41.47	1,995.01	770.25	679.91	1,027.40	0.35	-0.09	-0.55	254.31
	NORMAL	2,400.0	38.78	42.70	2,069.95	814.78	720.13	1,087.40	0.82	0.19	1.28	77.30
	NORMAL	2,496.0	38.52	41.82	2,144.92	859.16	760.45	1,147.36	0.63	-0.27	-0.92	244.34
	NORMAL	2,591.0	39.31	42.70	2,218.84	903.32	800.59	1,207.03	1.01	0.83	0.93	35.32
	NORMAL	2,687.0	39.13	41.82	2,293.21	948.24	841.41	1,267.72	0.61	-0.19	-0.92	251.73
	NORMAL	2,782.0	37.64	42.87	2,367.68	991.84	881.13	1,326.71	1.71	-1.57	1.11	156.78
	NORMAL	2,878.0	36.05	43.23	2,444.50	1,033.91	920.43	1,384.25	1.67	-1.66	0.38	172.41
	NORMAL	2,973.0	34.03	43.05	2,522.28	1,073.71	957.72	1,438.78	2.13	-2.13	-0.19	182.86
	NORMAL	3,068.0	31.30	43.40	2,602.24	1,111.07	992.83	1,490.03	2.88	-2.87	0.37	176.19
	NORMAL	3,163.0	29.55	43.57	2,684.16	1,145.98	1,025.94	1,538.11	1.84	-1.84	0.18	177.26
	NORMAL	3,259.0	28.14	42.34	2,768.25	1,179.86	1,057.50	1,584.41	1.59	-1.47	-1.28	202.29
9/25/2012	NORMAL	3,353.0	26.38	41.64	2,851.80	1,211.86	1,086.31	1,627.46	1.90	-1.87	-0.74	190.01
	NORMAL	3,449.0	25.24	41.11	2,938.23	1,243.22	1,113.94	1,669.26	1.21	-1.19	-0.55	191.20
	NORMAL	3,544.0	22.69	41.11	3,025.03	1,272.29	1,139.31	1,707.84	2.68	-2.68	0.00	180.00
	NORMAL	3,639.0	21.37	42.87	3,113.09	1,298.78	1,163.13	1,743.47	1.55	-1.39	1.85	154.24
	NORMAL	3,734.0	18.73	42.87	3,202.33	1,322.65	1,185.29	1,776.03	2.78	-2.78	0.00	180.00
	NORMAL	3,830.0	16.00	42.34	3,293.94	1,343.73	1,204.69	1,804.67	2.85	-2.84	-0.55	183.06
	NORMAL	3,925.0	14.51	41.82	3,385.59	1,362.28	1,221.44	1,829.67	1.58	-1.57	-0.55	185.00
	NORMAL	4,020.0	11.96	41.47	3,478.06	1,378.53	1,235.90	1,851.42	2.69	-2.68	-0.37	181.63
	NORMAL	4,115.0	10.99	42.52	3,571.16	1,392.58	1,248.54	1,870.31	1.04	-1.02	1.11	168.36
	NORMAL	4,210.0	9.32	41.99	3,664.67	1,404.97	1,259.81	1,887.06	1.76	-1.76	-0.56	182.94
	NORMAL	4,306.0	7.21	40.40	3,759.67	1,415.33	1,268.91	1,900.86	2.21	-2.20	-1.66	185.40
	NORMAL	4,401.0	5.28	42.17	3,854.10	1,423.12	1,275.71	1,911.19	2.04	-2.03	1.86	175.18
	NORMAL	4,497.0	3.52	41.11	3,949.81	1,428.61	1,280.62	1,918.56	1.84	-1.83	-1.10	182.12
	NORMAL	4,592.0	1.50	43.05	4,044.72	1,431.72	1,283.38	1,922.72	2.13	-2.13	2.04	178.56
	NORMAL	4,688.0	0.88	122.32	4,140.70	1,432.24	1,284.86	1,924.09	1.66	-0.65	82.57	147.09
	NORMAL	4,783.0	1.41	142.54	4,235.68	1,430.92	1,286.19	1,923.99	0.69	0.56	21.28	47.72
9/26/2012	NORMAL	4,878.0	1.23	127.95	4,330.66	1,429.37	1,287.70	1,923.84	0.40	-0.19	-15.36	234.66
	NORMAL	4,973.0	0.53	161.52	4,425.65	1,428.32	1,288.65	1,923.68	0.89	-0.74	35.34	159.61
	NORMAL	5,068.0	0.35	73.10	4,520.64	1,427.99	1,289.07	1,923.71	0.66	-0.19	-93.07	213.92
	NORMAL	5,163.0	0.97	232.36	4,615.64	1,427.58	1,288.71	1,923.17	1.37	0.65	167.64	164.72
	NORMAL	5,259.0	0.62	237.46	4,711.63	1,426.81	1,287.62	1,921.87	0.37	-0.36	5.31	171.11
	NORMAL	5,354.0	0.35	267.16	4,806.63	1,426.52	1,286.90	1,921.17	0.38	-0.28	31.26	151.24

## 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 (°)
9/26/2012	NORMAL	5,450.0	0.35	206.51	4,902.63	1,426.24	1,286.48	1,920.69	0.37	0.00	-63.18	239.68
	NORMAL	5,544.0	0.26	302.14	4,996.63	1,426.10	1,286.17	1,920.37	0.49	-0.10	101.73	145.43
	NORMAL	5,639.0	0.70	358.39	5,091.62	1,426.79	1,285.97	1,920.76	0.63	0.46	59.21	77.51
	NORMAL	5,734.0	0.26	36.01	5,186.62	1,427.55	1,286.08	1,921.40	0.55	-0.46	39.60	162.19
	NORMAL	5,829.0	0.70	1.03	5,281.62	1,428.30	1,286.22	1,922.05	0.54	0.46	-36.82	308.00
	NORMAL	5,924.0	0.53	113.35	5,376.61	1,428.71	1,286.63	1,922.63	1.08	-0.18	118.23	151.45
	NORMAL	6,018.0	0.62	56.92	5,470.61	1,428.81	1,287.46	1,923.26	0.58	0.10	-60.03	250.09
	NORMAL	6,114.0	1.14	284.74	5,566.60	1,429.34	1,286.97	1,923.33	1.69	0.54	-137.69	211.38
9/27/2012	NORMAL	6,209.0	1.58	284.03	5,661.58	1,429.90	1,284.78	1,922.29	0.46	0.46	-0.75	357.45
	NORMAL	6,305.0	1.32	278.41	5,757.54	1,430.38	1,282.41	1,921.07	0.31	-0.27	-5.85	205.89
	NORMAL	6,399.0	2.20	167.14	5,851.52	1,428.78	1,281.74	1,919.43	3.14	0.94	-118.37	224.08
	NORMAL	6,494.0	1.94	143.94	5,946.46	1,425.70	1,283.09	1,918.03	0.92	-0.27	-24.42	241.39
9/28/2012	NORMAL	6,589.0	1.05	92.43	6,041.43	1,424.36	1,284.91	1,918.24	1.61	-0.94	-54.22	212.58
	NORMAL	6,685.0	1.14	79.77	6,137.41	1,424.50	1,286.72	1,919.55	0.27	0.09	-13.19	284.00
	NORMAL	6,780.0	1.50	61.67	6,232.39	1,425.25	1,288.75	1,921.46	0.58	0.38	-19.05	301.52
	NORMAL	6,876.0	0.53	344.15	6,328.37	1,426.28	1,289.73	1,922.88	1.54	-1.01	-80.75	200.48
	NORMAL	6,971.0	1.32	357.86	6,423.36	1,427.79	1,289.57	1,923.90	0.86	0.83	14.43	22.58
9/29/2012	NORMAL	7,066.0	0.70	270.50	6,518.35	1,428.89	1,288.95	1,924.31	1.54	-0.65	-91.96	208.51
	NORMAL	7,162.0	0.62	300.20	6,614.34	1,429.16	1,287.92	1,923.82	0.36	-0.08	30.94	117.72
	NORMAL	7,258.0	0.97	9.46	6,710.34	1,430.22	1,287.60	1,924.41	0.99	0.36	72.15	106.95
	NORMAL	7,353.0	2.29	354.52	6,805.30	1,432.90	1,287.55	1,926.38	1.45	1.39	-15.73	334.59
	NORMAL	7,447.0	3.25	358.56	6,899.18	1,437.44	1,287.30	1,929.60	1.04	1.02	4.30	13.52
	NORMAL	7,542.0	3.69	4.54	6,994.01	1,443.18	1,287.48	1,934.00	0.60	0.46	6.29	42.45
	NORMAL	7,638.0	4.22	13.33	7,089.78	1,449.69	1,288.54	1,939.57	0.84	0.55	9.16	53.28
9/30/2012	NORMAL	7,680.0	4.57	13.51	7,131.66	1,452.82	1,289.29	1,942.41	0.83	0.83	0.43	2.35
	NORMAL	7,725.0	4.57	13.51	7,176.52	1,456.31	1,290.12	1,945.57	0.00	0.00	0.00	0.00

### 3 Charts

#### 3.1 Vertical Section View



### 3.2 Plan View

