

# Deviation Summary

PICEANCE HL

## 1 General

### 1.1 Customer Information

Company	PICEANCE HL
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	AP 322-20-695	Wellbore No.	00
Wellbore Legal Name	AP 322-20-695	Common Wellbore Name	AP 322-20-695
Project	AP 20-06S-095W	Site	AP 21-20-695 Pad
Vertical Section Azimuth	216.73 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	6/30/2014	UWI	AP 322-20-695
Active datum	KB @6,935.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	6/30/2014	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 (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
6/30/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/30/2014	NORMAL	105.0	1.23	183.43	104.99	-1.12	-0.07	0.94	1.17	1.17	0.00	183.43
	NORMAL	136.0	2.46	191.07	135.98	-2.11	-0.22	1.82	4.04	3.97	24.65	15.14
	NORMAL	166.0	2.20	186.06	165.95	-3.31	-0.40	2.90	1.10	-0.87	-16.70	215.59
	NORMAL	196.0	1.14	198.19	195.94	-4.17	-0.55	3.67	3.71	-3.53	40.43	167.55
	NORMAL	226.0	0.18	43.07	225.94	-4.42	-0.61	3.91	4.35	-3.20	-517.07	183.33
	NORMAL	257.0	0.70	347.17	256.94	-4.20	-0.62	3.74	1.99	1.68	-180.32	290.13
	NORMAL	286.0	1.14	2.64	285.93	-3.74	-0.65	3.38	1.73	1.52	53.34	37.33
	NORMAL	317.0	1.23	3.78	316.92	-3.10	-0.61	2.85	0.30	0.29	3.68	15.25
	NORMAL	347.0	0.88	22.50	346.92	-2.56	-0.50	2.36	1.62	-1.17	62.40	144.54
	NORMAL	377.0	0.18	161.10	376.92	-2.40	-0.40	2.16	3.41	-2.33	462.00	173.31
	NORMAL	407.0	0.79	184.22	406.92	-2.65	-0.40	2.36	2.09	2.03	77.07	29.58
	NORMAL	437.0	1.41	181.49	436.91	-3.22	-0.43	2.84	2.07	2.07	-9.10	353.80
	NORMAL	468.0	1.94	188.26	467.90	-4.12	-0.51	3.61	1.82	1.71	21.84	23.88
	NORMAL	498.0	2.99	188.17	497.87	-5.40	-0.69	4.74	3.50	3.50	-0.30	359.74
	NORMAL	528.0	4.13	188.09	527.81	-7.24	-0.96	6.38	3.80	3.80	-0.27	359.71
7/1/2014	NORMAL	558.0	5.45	189.67	557.71	-9.72	-1.35	8.60	4.42	4.40	5.27	6.50
	NORMAL	589.0	6.25	192.48	588.55	-12.82	-1.96	11.45	2.74	2.58	9.06	21.10
	NORMAL	619.0	7.57	190.81	618.33	-16.35	-2.68	14.71	4.45	4.40	-5.57	350.52
	NORMAL	649.0	8.80	192.83	648.02	-20.53	-3.56	18.59	4.21	4.10	6.73	14.16
	NORMAL	679.0	10.38	188.70	677.60	-25.44	-4.48	23.07	5.74	5.27	-13.77	334.42

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (')	Azl. (')	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (')
7/1/2014	NORMAL	709.0	11.09	193.18	707.08	-30.92	-5.55	28.10	3.65	2.37	14.93	51.82
	NORMAL	783.0	12.92	200.35	779.46	-45.61	-10.05	42.56	3.19	2.47	9.69	42.72
	NORMAL	873.0	14.64	208.35	866.87	-65.06	-18.95	63.47	2.85	1.91	-8.89	51.86
	NORMAL	964.0	16.00	215.29	954.65	-85.42	-31.66	87.39	2.51	1.49	7.63	56.82
	NORMAL	1,060.0	18.33	217.14	1,046.36	-108.25	-48.42	115.72	2.49	2.43	1.93	14.07
	NORMAL	1,156.0	19.96	215.96	1,137.05	-133.55	-67.16	147.20	1.75	1.70	-1.23	346.09
	NORMAL	1,252.0	21.10	214.50	1,226.95	-161.06	-86.57	180.85	1.30	1.19	-1.52	335.13
	NORMAL	1,347.0	22.24	214.24	1,315.24	-190.01	-106.37	215.90	1.20	1.20	-0.27	355.07
	NORMAL	1,443.0	20.66	214.94	1,404.59	-218.91	-128.29	250.98	1.67	-1.65	0.73	171.12
	NORMAL	1,539.0	21.58	213.71	1,494.14	-247.48	-145.79	285.54	1.06	0.96	-1.28	333.70
7/2/2014	NORMAL	1,633.0	20.70	214.24	1,581.81	-275.60	-164.73	319.40	0.96	-0.94	0.56	167.99
	NORMAL	1,729.0	21.06	215.20	1,671.51	-303.72	-184.22	353.59	0.52	0.38	1.00	43.99
	NORMAL	1,825.0	21.93	218.02	1,760.83	-331.94	-205.21	388.76	1.41	0.91	2.94	51.22
	NORMAL	1,920.0	21.32	218.10	1,849.15	-359.50	-226.79	423.76	0.64	-0.64	0.08	177.27
	NORMAL	2,016.0	20.88	220.39	1,938.71	-386.27	-248.64	458.28	0.97	-0.46	2.39	119.16
	NORMAL	2,109.0	20.31	218.37	2,025.77	-411.55	-269.40	490.95	0.98	-0.61	-2.17	230.32
	NORMAL	2,205.0	22.02	220.13	2,115.29	-438.37	-291.35	525.58	1.90	1.78	1.83	21.21
	NORMAL	2,299.0	22.02	217.58	2,202.44	-465.81	-313.45	560.79	1.02	0.00	-2.71	268.82
	NORMAL	2,394.0	21.93	216.96	2,290.53	-494.10	-334.98	596.33	0.26	-0.09	-0.65	248.51
7/3/2014	NORMAL	2,489.0	20.88	215.56	2,378.98	-522.05	-355.49	631.00	1.23	-1.11	-1.47	205.30
	NORMAL	2,584.0	21.06	214.68	2,467.69	-549.86	-375.05	664.99	0.38	0.19	-0.93	289.34
7/4/2014	NORMAL	2,681.0	21.80	216.00	2,557.98	-578.76	-395.55	700.41	0.91	0.76	1.36	33.71
	NORMAL	2,778.0	21.27	213.97	2,648.21	-607.92	-415.97	736.00	0.94	-0.55	-2.09	233.64
	NORMAL	2,875.0	20.31	215.38	2,738.90	-636.24	-435.55	770.40	1.12	-0.99	1.45	153.12
	NORMAL	2,971.0	19.25	215.82	2,829.23	-662.66	-454.46	802.88	1.11	-1.10	0.46	172.21
	NORMAL	3,067.0	18.81	217.84	2,919.99	-687.71	-473.21	834.18	0.83	-0.46	2.10	124.70
	NORMAL	3,164.0	18.37	218.72	3,011.92	-711.99	-492.37	865.09	0.54	-0.45	0.91	147.90
	NORMAL	3,261.0	18.42	222.94	3,103.97	-735.13	-512.37	895.60	1.37	0.05	4.35	89.85
	NORMAL	3,357.0	18.42	222.50	3,195.05	-757.42	-532.95	925.77	0.14	0.00	-0.46	269.79
	NORMAL	3,454.0	18.07	222.15	3,287.18	-779.87	-553.40	956.00	0.38	-0.36	-0.36	197.22
	NORMAL	3,550.0	18.50	221.01	3,378.33	-802.40	-573.38	986.01	0.58	0.45	-1.19	319.70
	NORMAL	3,647.0	18.77	219.51	3,470.25	-826.06	-593.41	1,016.94	0.57	0.28	-1.55	288.68
	NORMAL	3,744.0	19.56	219.77	3,561.87	-850.58	-613.73	1,048.74	0.82	0.81	0.27	6.29
	NORMAL	3,840.0	19.78	221.01	3,652.27	-875.19	-634.67	1,080.99	0.49	0.23	1.29	62.79
	NORMAL	3,936.0	20.22	220.39	3,742.48	-900.08	-656.07	1,113.74	0.51	0.46	-0.65	333.98
	NORMAL	4,032.0	21.36	219.60	3,832.23	-926.19	-677.97	1,147.76	1.22	1.19	-0.82	345.81
	NORMAL	4,129.0	21.14	219.77	3,922.63	-953.24	-700.42	1,182.87	0.24	-0.23	0.18	164.43
7/5/2014	NORMAL	4,225.0	21.50	218.46	4,012.06	-980.33	-722.44	1,217.74	0.62	0.38	-1.36	306.47
	NORMAL	4,322.0	21.45	217.93	4,102.33	-1,008.23	-744.39	1,253.24	0.21	-0.05	-0.55	255.30
	NORMAL	4,417.0	21.71	216.88	4,190.67	-1,035.99	-765.62	1,288.18	0.49	0.27	-1.11	303.46
	NORMAL	4,512.0	21.67	216.44	4,278.94	-1,064.15	-786.58	1,323.29	0.18	-0.04	-0.46	255.98
	NORMAL	4,607.0	22.02	216.35	4,367.12	-1,092.61	-807.55	1,358.64	0.37	0.37	-0.09	354.49
	NORMAL	4,703.0	20.97	216.08	4,456.45	-1,120.99	-828.34	1,393.81	1.10	-1.09	-0.28	185.26
	NORMAL	4,798.0	21.41	216.44	4,545.02	-1,148.68	-848.65	1,428.15	0.48	0.46	0.38	16.64
	NORMAL	4,894.0	20.22	216.00	4,634.75	-1,176.19	-868.81	1,462.26	1.25	-1.24	-0.46	187.28
	NORMAL	4,989.0	20.53	214.68	4,723.81	-1,203.18	-887.94	1,495.33	0.58	0.33	-1.39	303.38
	NORMAL	5,084.0	20.00	215.73	4,812.93	-1,230.06	-906.90	1,528.22	0.68	-0.56	1.11	146.03
	NORMAL	5,179.0	19.65	218.19	4,902.30	-1,255.81	-926.26	1,560.43	0.95	-0.37	2.59	113.91
	NORMAL	5,274.0	19.74	218.90	4,991.75	-1,280.85	-946.22	1,592.43	0.27	0.09	0.75	69.72
	NORMAL	5,370.0	20.09	218.63	5,082.00	-1,306.34	-966.69	1,625.11	0.38	0.36	-0.28	345.15
	NORMAL	5,466.0	19.03	217.67	5,172.46	-1,331.61	-986.55	1,657.24	1.15	-1.10	-1.00	196.42
	NORMAL	5,561.0	17.93	216.44	5,262.56	-1,355.64	-1,004.70	1,687.35	1.23	-1.16	-1.29	198.93
	NORMAL	5,656.0	17.10	215.29	5,353.16	-1,378.80	-1,021.45	1,715.93	0.95	-0.87	-1.21	202.09
7/6/2014	NORMAL	5,752.0	16.40	215.56	5,445.09	-1,401.35	-1,037.49	1,743.59	0.73	-0.73	0.28	173.79
	NORMAL	5,848.0	15.30	216.08	5,537.43	-1,422.61	-1,052.83	1,769.81	1.16	-1.15	0.54	172.89
	NORMAL	5,943.0	14.81	216.61	5,629.17	-1,442.49	-1,067.45	1,794.48	0.54	-0.52	0.56	164.56

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (')	Azl. (')	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Bulld Rate (°/100usft)	Turn (°/100usft)	Tface (')
7/6/2014	NORMAL	6,039.0	13.85	214.76	5,722.19	-1,461.77	-1,081.32	1,818.24	1.11	-1.00	-1.93	204.61
	NORMAL	6,134.0	12.48	213.54	5,814.69	-1,479.67	-1,093.48	1,839.85	1.47	-1.44	-1.28	190.87
7/7/2014	NORMAL	6,230.0	12.44	215.73	5,908.43	-1,496.71	-1,105.25	1,860.55	0.49	-0.04	2.28	95.91
	NORMAL	6,325.0	11.69	215.38	6,001.33	-1,512.87	-1,116.79	1,880.40	0.79	-0.79	-0.37	185.40
	NORMAL	6,420.0	11.12	218.63	6,094.45	-1,527.87	-1,128.09	1,899.18	0.90	-0.60	3.42	133.16
	NORMAL	6,516.0	9.98	223.91	6,188.83	-1,541.10	-1,139.63	1,916.68	1.56	-1.19	5.50	142.28
	NORMAL	6,611.0	9.05	225.40	6,282.52	-1,552.27	-1,150.66	1,932.24	1.01	-0.98	1.57	165.90
	NORMAL	6,706.0	7.34	224.96	6,376.55	-1,561.81	-1,160.27	1,945.63	1.80	-1.80	-0.46	181.88
7/8/2014	NORMAL	6,801.0	5.54	218.98	6,470.95	-1,569.67	-1,167.45	1,956.22	2.02	-1.89	-6.29	197.48
	NORMAL	6,894.0	4.09	209.05	6,563.62	-1,576.06	-1,171.88	1,963.99	1.79	-1.56	-10.68	205.01
	NORMAL	6,989.0	2.77	206.24	6,658.45	-1,581.08	-1,174.54	1,969.61	1.40	-1.39	-2.96	185.86
	NORMAL	7,085.0	1.98	220.57	6,754.37	-1,584.42	-1,176.65	1,973.54	1.02	-0.82	14.93	150.08
7/9/2014	NORMAL	7,180.0	2.02	268.64	6,849.31	-1,585.71	-1,179.39	1,976.21	1.72	0.04	50.60	112.74
	NORMAL	7,275.0	2.15	308.28	6,944.26	-1,584.65	-1,182.46	1,977.20	1.49	0.14	41.73	104.86
	NORMAL	7,371.0	0.35	51.03	7,040.23	-1,583.35	-1,183.65	1,976.87	2.35	-1.88	107.03	171.28
	NORMAL	7,466.0	0.09	126.61	7,135.23	-1,583.21	-1,183.36	1,976.58	0.36	-0.27	79.56	165.10
	NORMAL	7,561.0	0.61	33.27	7,230.23	-1,582.83	-1,183.02	1,976.08	0.65	0.55	-98.25	258.35
	NORMAL	7,657.0	2.07	27.56	7,326.20	-1,580.86	-1,181.94	1,973.86	1.53	1.52	-5.95	351.92
	NORMAL	7,752.0	1.63	29.14	7,421.15	-1,578.16	-1,180.49	1,970.82	0.47	-0.46	1.66	174.18
	NORMAL	7,848.0	1.05	13.50	7,517.13	-1,576.12	-1,179.62	1,968.66	0.71	-0.60	-16.29	204.58
7/10/2014	NORMAL	7,942.0	0.92	36.26	7,611.11	-1,574.67	-1,178.97	1,967.12	0.44	-0.14	24.21	119.53
	NORMAL	8,038.0	0.48	30.28	7,707.11	-1,573.70	-1,178.31	1,965.95	0.46	-0.46	-6.23	186.45
	NORMAL	8,133.0	1.80	88.73	7,802.09	-1,573.32	-1,176.62	1,964.63	1.69	1.39	61.53	73.24
	NORMAL	8,228.0	1.36	92.69	7,897.05	-1,573.34	-1,174.00	1,963.08	0.48	-0.46	4.17	168.04
	NORMAL	8,323.0	1.58	116.15	7,992.02	-1,573.97	-1,171.70	1,962.21	0.67	0.23	24.69	81.91
	NORMAL	8,419.0	1.63	124.41	8,087.98	-1,575.33	-1,169.39	1,961.91	0.25	0.05	8.60	81.95
	NORMAL	8,515.0	1.63	137.16	8,183.95	-1,577.10	-1,167.33	1,962.10	0.38	0.00	13.28	96.37
	NORMAL	8,610.0	1.58	150.25	8,278.91	-1,579.23	-1,165.76	1,962.87	0.39	-0.05	13.78	104.27
7/11/2014	NORMAL	8,705.0	1.76	150.87	8,373.87	-1,581.64	-1,164.40	1,963.99	0.19	0.19	0.65	6.04
	NORMAL	8,801.0	1.85	157.72	8,469.82	-1,584.36	-1,163.10	1,965.39	0.24	0.09	7.14	70.81
	NORMAL	8,896.0	2.11	163.26	8,564.77	-1,587.46	-1,162.01	1,967.22	0.34	0.27	5.83	39.15
	NORMAL	8,991.0	2.02	179.52	8,659.70	-1,590.81	-1,161.49	1,969.60	0.62	-0.09	17.12	106.80
	NORMAL	9,085.0	2.33	194.81	8,753.64	-1,594.31	-1,161.97	1,972.69	0.70	0.33	16.27	69.67
	NORMAL	9,180.0	2.50	205.10	8,848.55	-1,598.05	-1,163.34	1,976.51	0.49	0.18	10.83	73.78
	NORMAL	9,274.0	2.68	202.55	8,942.46	-1,601.94	-1,165.05	1,980.65	0.23	0.19	-2.71	326.10
	NORMAL	9,368.0	2.68	207.47	9,036.36	-1,605.92	-1,166.91	1,984.95	0.24	0.00	5.23	92.46
	NORMAL	9,464.0	2.86	206.94	9,132.24	-1,610.04	-1,169.03	1,989.52	0.19	0.19	-0.55	351.64
	NORMAL	9,559.0	3.08	210.63	9,227.12	-1,614.35	-1,171.40	1,994.40	0.31	0.23	3.88	42.84
	NORMAL	9,652.0	3.08	212.57	9,319.98	-1,618.61	-1,174.02	1,999.37	0.11	0.00	2.09	90.97
	NORMAL	9,697.0	3.08	212.57	9,364.92	-1,620.65	-1,175.32	2,001.78	0.00	0.00	0.00	0.00