

Deviation Summary

PICEANCE HL

1 General

1.1 Customer Information

Company	PICEANCE HL
Representative	
Address	

1.2 Well/Wellbore Information

Well	AP 424-17-695	Wellbore No.	00
Wellbore Legal Name	AP 424-17-695	Common Wellbore Name	AP 424-17-695
Project	AP 20-06S-095W	Site	AP 21-20-695 Pad
Vertical Section Azimuth	335.92 (°)	North reference	
Origin N/S		Origin E/W	
Spud date	8/14/2014	UWI	AP 424-17-695
Active datum	KB @6,935.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	8/13/2014	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 (°)
8/13/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/14/2014	NORMAL	102.0	0.09	333.54	102.00	0.07	-0.04	0.08	0.09	0.09	0.00	333.54
	NORMAL	132.0	0.26	223.42	132.00	0.04	-0.09	0.08	1.01	0.57	-367.07	233.68
	NORMAL	163.0	0.44	247.32	163.00	-0.05	-0.25	0.05	0.74	0.58	77.10	51.41
	NORMAL	193.0	0.53	293.55	193.00	-0.04	-0.48	0.16	1.30	0.30	154.10	100.85
	NORMAL	223.0	0.62	294.35	223.00	0.08	-0.76	0.38	0.30	0.30	2.67	5.50
	NORMAL	253.0	0.97	299.62	252.99	0.27	-1.13	0.71	1.19	1.17	17.57	14.44
	NORMAL	283.0	1.06	322.29	282.99	0.62	-1.52	1.18	1.36	0.30	75.57	88.86
	NORMAL	313.0	1.58	329.41	312.98	1.19	-1.90	1.86	1.81	1.73	23.73	21.09
	NORMAL	344.0	1.67	336.45	343.97	1.97	-2.30	2.74	0.71	0.29	22.71	69.28
	NORMAL	374.0	2.29	341.72	373.95	2.94	-2.66	3.77	2.15	2.07	17.57	19.01
	NORMAL	404.0	2.90	341.46	403.92	4.23	-3.09	5.13	2.03	2.03	-0.87	358.76
	NORMAL	434.0	3.17	336.80	433.88	5.72	-3.66	6.71	1.22	0.90	-15.53	315.24
	NORMAL	465.0	4.05	332.67	464.82	7.48	-4.50	8.66	2.96	2.84	-13.32	341.47
	NORMAL	527.0	4.57	332.15	526.64	11.60	-6.66	13.31	0.84	0.84	-0.84	355.44
	NORMAL	617.0	4.84	332.84	616.34	18.15	-10.06	20.68	0.31	0.30	0.77	12.18
	NORMAL	708.0	5.37	328.62	706.98	25.20	-14.03	28.74	0.71	0.58	-4.64	322.57
	NORMAL	799.0	5.10	339.96	797.60	32.64	-17.64	37.00	1.17	-0.30	12.46	110.23
	NORMAL	875.0	5.54	338.85	873.27	39.23	-20.12	44.03	0.59	0.58	-1.46	346.28
	NORMAL	966.0	5.67	336.12	963.84	47.44	-23.52	52.91	0.33	0.14	-3.00	294.63
	NORMAL	1,062.0	5.58	332.78	1,059.38	55.93	-27.58	62.31	0.35	-0.09	-3.48	252.97

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (%/100usft)	Build Rate (%/100usft)	Turn (%/100usft)	Tface (°)
8/15/2014	NORMAL	1,151.0	5.36	335.07	1,147.97	63.55	-31.31	70.79	0.35	-0.25	2.57	136.36
	NORMAL	1,246.0	6.07	335.33	1,242.50	72.13	-35.28	80.25	0.75	0.75	0.27	2.22
	NORMAL	1,342.0	6.66	334.28	1,337.91	81.78	-39.82	90.91	0.65	0.64	-1.09	348.66
	NORMAL	1,437.0	7.17	334.19	1,432.21	92.09	-44.80	102.36	0.52	0.52	-0.09	358.69
	NORMAL	1,533.0	6.46	334.28	1,527.53	102.35	-49.75	113.74	0.74	-0.74	0.09	179.18
	NORMAL	1,628.0	5.54	337.09	1,622.01	111.39	-53.85	123.67	1.02	-0.97	2.96	163.69
	NORMAL	1,723.0	5.89	336.47	1,716.54	120.08	-57.59	133.13	0.37	0.37	-0.65	349.69
	NORMAL	1,864.0	6.02	338.14	1,856.78	133.58	-63.23	147.75	0.15	0.09	1.18	53.95
	NORMAL	1,913.0	6.11	337.09	1,905.51	138.37	-65.20	152.93	0.29	0.18	-2.14	308.53
	NORMAL	2,009.0	5.45	332.78	2,001.02	147.13	-69.27	162.59	0.82	-0.69	-4.49	211.20
	NORMAL	2,104.0	5.32	334.28	2,095.60	155.10	-73.25	171.49	0.20	-0.14	1.58	133.47
	NORMAL	2,199.0	5.54	332.61	2,190.17	163.14	-77.27	180.47	0.29	0.23	-1.76	323.48
	NORMAL	2,294.0	5.36	335.59	2,284.74	171.26	-81.21	189.49	0.35	-0.19	3.14	123.93
	NORMAL	2,389.0	5.36	334.63	2,379.33	179.31	-84.95	198.36	0.09	0.00	-1.01	269.52
	NORMAL	2,484.0	5.10	337.44	2,473.93	187.21	-88.47	207.02	0.38	-0.27	2.96	136.82
8/17/2014	NORMAL	2,519.0	5.23	338.23	2,508.79	190.13	-89.66	210.17	0.42	0.37	2.26	29.08
	NORMAL	2,582.0	4.97	342.80	2,571.54	195.41	-91.53	215.75	0.77	-0.41	7.25	124.88
	NORMAL	2,678.0	4.75	343.77	2,667.20	203.20	-93.87	223.81	0.24	-0.23	1.01	160.00
	NORMAL	2,774.0	5.41	337.09	2,762.82	211.18	-96.74	232.27	0.92	0.69	-6.96	314.77
	NORMAL	2,869.0	4.97	338.06	2,857.43	219.12	-100.02	240.86	0.47	-0.46	1.02	169.20
	NORMAL	2,964.0	4.62	335.86	2,952.10	226.43	-103.12	248.80	0.42	-0.37	-2.32	206.63
	NORMAL	3,060.0	4.31	336.56	3,047.81	233.27	-106.14	256.28	0.33	-0.32	0.73	170.38
	NORMAL	3,155.0	3.60	332.26	3,142.58	239.18	-108.95	262.82	0.81	-0.75	-4.53	200.54
	NORMAL	3,251.0	4.04	339.46	3,238.37	245.02	-111.54	269.21	0.68	0.46	7.50	51.10
	NORMAL	3,344.0	5.36	338.58	3,331.05	252.13	-114.27	276.81	1.42	1.42	-0.95	356.43
	NORMAL	3,439.0	5.54	329.97	3,425.63	260.23	-118.19	285.81	0.88	0.19	-9.06	278.11
	NORMAL	3,535.0	5.10	325.14	3,521.21	267.74	-122.95	294.61	0.65	-0.46	-5.03	223.12
	NORMAL	3,630.0	5.45	340.25	3,615.81	275.46	-126.89	303.26	1.50	0.37	15.91	83.46
	NORMAL	3,725.0	5.32	345.35	3,710.40	283.96	-129.52	312.10	0.52	-0.14	5.37	107.72
	NORMAL	3,820.0	5.10	343.51	3,805.00	292.27	-131.84	320.63	0.29	-0.23	-1.94	216.30
8/18/2014	NORMAL	3,916.0	5.76	341.92	3,900.57	300.94	-134.54	329.65	0.71	0.69	-1.66	346.37
	NORMAL	4,011.0	6.81	334.80	3,995.00	310.57	-138.42	340.02	1.37	1.11	-7.49	319.84
	NORMAL	4,107.0	6.77	333.40	4,090.33	320.78	-143.38	351.37	0.18	-0.04	-1.46	255.72
	NORMAL	4,202.0	6.24	332.08	4,184.72	330.35	-148.30	362.11	0.58	-0.56	-1.39	195.10
	NORMAL	4,297.0	5.80	329.35	4,279.19	339.04	-153.17	372.03	0.55	-0.46	-2.87	211.70
	NORMAL	4,392.0	5.76	339.11	4,373.71	347.63	-157.31	381.66	1.03	-0.04	10.27	97.18
	NORMAL	4,488.0	5.32	337.70	4,469.26	356.24	-160.72	390.82	0.48	-0.46	-1.47	196.49
	NORMAL	4,582.0	4.88	334.98	4,562.89	363.90	-164.07	399.17	0.53	-0.47	-2.89	207.44
	NORMAL	4,676.0	4.18	334.63	4,656.60	370.62	-167.22	408.59	0.75	-0.74	-0.37	182.09
	NORMAL	4,771.0	5.28	339.29	4,751.27	377.84	-170.25	414.42	1.23	1.16	4.91	21.59
	NORMAL	4,866.0	5.23	338.76	4,845.88	385.96	-173.37	423.11	0.07	-0.05	-0.56	223.89
	NORMAL	4,960.0	4.70	334.19	4,939.52	393.42	-176.60	431.24	0.70	-0.56	-4.86	214.47
	NORMAL	5,055.0	4.40	332.61	5,034.22	400.16	-179.97	438.76	0.34	-0.32	-1.66	201.89
	NORMAL	5,151.0	5.14	341.48	5,129.89	407.51	-183.03	446.72	1.09	0.77	9.24	49.38
	NORMAL	5,246.0	5.41	342.01	5,224.49	415.80	-185.76	455.41	0.29	0.28	0.56	10.49
8/19/2014	NORMAL	5,341.0	5.19	341.66	5,319.08	424.14	-188.50	464.14	0.23	-0.23	-0.37	188.19
	NORMAL	5,436.0	5.01	339.90	5,413.71	432.11	-191.28	472.55	0.25	-0.19	-1.85	220.12
	NORMAL	5,531.0	5.50	343.33	5,508.31	440.37	-194.01	481.21	0.61	0.52	3.61	34.38
	NORMAL	5,626.0	5.05	343.94	5,602.91	448.75	-196.47	489.86	0.48	-0.47	0.64	173.20
	NORMAL	5,722.0	5.54	342.80	5,698.50	457.24	-199.01	498.64	0.52	0.51	-1.19	347.31
	NORMAL	5,818.0	5.01	344.03	5,794.09	465.69	-201.53	507.40	0.56	-0.55	1.28	168.67
	NORMAL	5,913.0	5.23	339.81	5,888.71	473.75	-204.17	515.82	0.46	0.23	-4.44	298.18
	NORMAL	6,008.0	5.71	334.19	5,983.28	482.06	-207.72	524.87	0.76	0.51	-5.92	309.04
	NORMAL	6,104.0	5.85	330.58	6,078.79	490.62	-212.20	534.51	0.41	0.15	-3.76	289.26
	NORMAL	6,199.0	5.19	325.57	6,173.35	498.39	-217.01	543.56	0.86	-0.69	-5.27	213.66
	NORMAL	6,294.0	3.30	326.98	6,268.09	504.22	-220.93	550.49	1.99	-1.99	1.48	177.54

2.1.2 Survey Stations (Continued)

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 (°)
8/19/2014	NORMAL	6,388.0	4.40	332.08	6,361.87	509.68	-224.09	556.76	1.22	1.17	5.43	19.85
	NORMAL	6,484.0	3.96	336.91	6,457.62	515.98	-227.12	563.75	0.59	-0.46	5.03	143.73
	NORMAL	6,579.0	3.43	331.55	6,552.42	521.50	-229.76	569.86	0.67	-0.56	-5.64	210.44
	NORMAL	6,674.0	4.22	341.31	6,647.21	527.31	-232.23	576.17	1.07	0.83	10.27	44.43
8/20/2014	NORMAL	6,770.0	3.69	338.94	6,742.98	533.54	-234.47	582.77	0.58	-0.55	-2.47	195.96
	NORMAL	6,866.0	3.08	327.25	6,838.81	538.59	-236.98	588.41	0.96	-0.64	-12.18	222.80
	NORMAL	6,961.0	3.30	327.07	6,933.67	543.03	-239.85	593.63	0.23	0.23	-0.19	357.30
	NORMAL	7,056.0	3.21	357.30	7,028.52	547.98	-241.46	598.81	1.79	-0.09	31.82	108.02
	NORMAL	7,152.0	2.59	350.45	7,124.40	552.81	-241.94	603.42	0.74	-0.65	-7.14	205.81
	NORMAL	7,247.0	1.71	340.34	7,219.33	556.26	-242.78	606.91	1.01	-0.93	-10.64	198.32
	NORMAL	7,343.0	0.92	338.41	7,315.31	558.32	-243.54	609.10	0.82	-0.82	-2.01	182.24
	NORMAL	7,438.0	2.11	7.67	7,410.27	560.77	-243.59	611.35	1.46	1.25	30.80	48.23
	NORMAL	7,533.0	1.71	1.52	7,505.22	563.92	-243.32	614.12	0.47	-0.42	-6.47	204.08
	NORMAL	7,628.0	1.45	357.48	7,600.18	566.53	-243.33	616.52	0.30	-0.27	-4.25	201.18
	NORMAL	7,724.0	2.46	16.82	7,696.13	569.72	-242.79	619.20	1.24	1.05	20.15	43.07
	NORMAL	7,819.0	2.73	38.79	7,791.03	573.43	-240.78	621.77	1.08	0.28	23.13	85.97
8/21/2014	NORMAL	7,914.0	1.71	32.28	7,885.96	576.40	-238.61	623.59	1.10	-1.07	-6.85	190.65
	NORMAL	8,009.0	2.20	60.59	7,980.91	578.49	-236.26	624.55	1.12	0.52	29.80	77.72
	NORMAL	8,104.0	1.85	62.26	8,075.85	580.10	-233.32	624.81	0.37	-0.37	1.76	171.26
	NORMAL	8,199.0	1.76	61.90	8,170.80	581.50	-230.67	625.01	0.10	-0.09	-0.38	187.00
	NORMAL	8,294.0	1.10	75.61	8,265.77	582.41	-228.50	624.96	0.78	-0.69	14.43	159.34
	NORMAL	8,389.0	0.31	64.45	8,360.76	582.75	-227.39	624.82	0.84	-0.83	-11.75	184.31
	NORMAL	8,484.0	0.92	208.94	8,455.76	582.19	-227.53	624.36	1.25	0.64	152.09	153.22
	NORMAL	8,579.0	1.54	207.80	8,550.74	580.40	-228.49	623.12	0.65	0.65	-1.20	357.17
	NORMAL	8,675.0	2.15	202.79	8,646.69	577.60	-229.79	621.09	0.66	0.64	-5.22	342.68
	NORMAL	8,770.0	2.99	207.71	8,741.59	573.76	-231.63	618.34	0.91	0.88	5.18	17.18
	NORMAL	8,866.0	4.00	211.58	8,837.41	568.69	-234.55	614.90	1.08	1.05	4.03	15.08
	NORMAL	8,961.0	4.66	207.27	8,932.14	562.44	-238.05	610.62	0.77	0.69	-4.54	331.59
8/22/2014	NORMAL	9,056.0	4.31	206.22	9,026.85	555.81	-241.40	605.93	0.38	-0.37	-1.11	192.68
	NORMAL	9,152.0	5.10	208.94	9,122.53	548.83	-245.06	601.06	0.85	0.82	2.83	17.13
	NORMAL	9,247.0	4.40	205.43	9,217.20	541.85	-248.67	596.15	0.80	-0.74	-3.69	200.81
	NORMAL	9,343.0	3.17	209.12	9,312.99	536.20	-251.54	592.17	1.31	-1.28	3.84	170.64
	NORMAL	9,438.0	3.21	210.18	9,407.84	531.61	-254.15	589.05	0.08	0.04	1.12	56.39
	NORMAL	9,510.0	3.25	209.47	9,479.73	528.09	-256.17	586.66	0.08	0.06	-0.99	314.64
	NORMAL	9,555.0	3.25	209.47	9,524.66	525.87	-257.43	585.14	0.00	0.00	0.00	0.00