

Deviation Summary

PICEANCE VLY

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	PA 532-21	Wellbore No.	OH
Wellbore Legal Name	PA 532-21	Common Wellbore Name	PA 532-21
Project	PA 21-06S-095W	Site	PA 22-21 Pad
Vertical Section Azimuth	254.47 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	2/25/2014	UWI	PA 532-21
Active datum	KB @6,056.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	2/25/2014	Ended	
Tool Name	MWD	Engineer	

2.1.1 Tie On Point

MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)
		32.61			

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 (°)
2/25/2014	NORMAL	102.0	0.18	32.61	102.00	0.13	0.09	-0.12	0.18	0.18	0.00	32.61
	NORMAL	132.0	0.26	349.45	132.00	0.24	0.10	-0.16	0.59	0.27	-143.87	273.11
	NORMAL	162.0	0.26	186.06	162.00	0.24	0.08	-0.14	1.72	0.00	-544.63	188.31
	NORMAL	192.0	0.53	249.61	192.00	0.12	-0.06	0.02	1.58	0.90	211.83	92.89
	NORMAL	223.0	0.53	232.03	223.00	-0.01	-0.31	0.30	0.52	0.00	-56.71	261.21
	NORMAL	253.0	0.44	47.37	253.00	-0.02	-0.33	0.32	3.23	-0.30	584.47	177.89
	NORMAL	283.0	0.79	65.92	283.00	0.14	-0.06	0.02	1.33	1.17	61.83	39.13
	NORMAL	314.0	1.06	5.30	313.99	0.51	0.17	-0.30	3.10	0.87	-195.55	253.71
	NORMAL	344.0	1.23	72.42	343.99	0.89	0.50	-0.72	4.25	0.57	223.73	117.17
	NORMAL	374.0	2.55	86.84	373.97	1.02	1.47	-1.69	4.64	4.40	48.07	27.12
	NORMAL	405.0	2.99	74.09	404.93	1.28	2.94	-3.17	2.43	1.42	-41.13	299.05
	NORMAL	436.0	4.05	71.72	435.88	1.85	4.75	-5.08	3.45	3.42	-7.65	351.00
	NORMAL	466.0	5.10	74.18	465.78	2.54	7.04	-7.47	3.56	3.50	8.20	11.81
2/25/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/26/2014	NORMAL	496.0	5.63	79.37	495.65	3.18	9.77	-10.27	2.39	1.77	17.30	45.08
	NORMAL	526.0	5.01	72.95	525.52	3.83	12.47	-13.04	2.86	-2.07	-21.40	220.67
	NORMAL	557.0	5.51	71.51	556.39	4.70	15.18	-15.88	1.67	1.61	-4.65	344.49
	NORMAL	587.0	5.54	64.86	586.25	5.77	17.85	-18.75	2.14	0.10	-22.17	269.37
	NORMAL	617.0	6.42	63.43	616.09	7.14	20.67	-21.82	2.97	2.93	-4.77	349.68
	NORMAL	648.0	7.04	59.94	646.87	8.87	23.86	-25.36	2.40	2.00	-11.26	324.85
	NORMAL	678.0	7.65	69.61	676.63	10.48	27.32	-29.13	4.59	2.03	32.23	68.59

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 (")
2/26/2014	NORMAL	708.0	8.62	69.43	706.32	11.97	31.30	-33.36	3.23	3.23	-0.60	358.41
	NORMAL	777.0	11.39	77.95	774.27	15.21	42.81	-45.32	4.54	4.01	12.35	32.36
	NORMAL	868.0	12.44	66.96	863.32	20.92	60.62	-64.00	2.74	1.15	-12.08	289.39
	NORMAL	959.0	13.58	64.85	951.99	29.30	79.31	-84.26	1.36	1.25	-2.32	336.35
	NORMAL	1,054.0	16.66	66.96	1,043.69	39.37	101.94	-108.76	3.29	3.24	2.22	11.15
	NORMAL	1,149.0	17.67	66.00	1,134.45	50.56	127.64	-136.52	1.10	1.06	-1.01	343.87
	NORMAL	1,245.0	20.09	64.85	1,225.28	63.50	155.88	-167.19	2.55	2.52	-1.20	350.71
	NORMAL	1,340.0	21.63	65.03	1,314.05	77.83	186.53	-200.55	1.62	1.62	0.19	2.47
	NORMAL	1,435.0	23.78	66.17	1,401.69	92.96	219.92	-236.78	2.31	2.26	1.20	12.09
	NORMAL	1,531.0	25.85	65.12	1,488.82	109.58	256.62	-276.59	2.20	2.16	-1.09	347.50
2/28/2014	NORMAL	1,626.0	27.52	65.12	1,573.70	127.53	295.32	-318.69	1.76	1.76	0.00	0.00
	NORMAL	1,660.0	27.65	64.77	1,603.83	134.20	309.58	-334.21	0.61	0.38	-1.03	308.58
	NORMAL	1,741.0	27.60	64.24	1,675.60	150.37	343.48	-371.20	0.31	-0.06	-0.65	258.27
	NORMAL	1,837.0	27.82	63.36	1,760.59	170.08	383.54	-415.07	0.48	0.23	-0.92	297.87
	NORMAL	1,932.0	27.69	64.59	1,844.66	189.49	423.29	-458.57	0.62	-0.14	1.29	103.33
	NORMAL	2,027.0	27.16	62.92	1,928.98	208.83	462.53	-501.56	0.98	-0.56	-1.76	234.69
	NORMAL	2,123.0	27.65	65.38	2,014.21	228.08	502.29	-545.02	1.29	0.51	2.56	67.69
	NORMAL	2,218.0	27.91	67.05	2,098.26	245.94	542.81	-588.84	0.86	0.27	1.76	72.27
	NORMAL	2,313.0	27.69	65.20	2,182.30	263.87	583.32	-632.67	0.94	-0.23	-1.95	254.88
	NORMAL	2,409.0	28.61	67.67	2,266.95	281.96	624.83	-677.51	1.55	0.96	2.57	52.80
	NORMAL	2,504.0	28.00	63.89	2,350.60	300.41	665.80	-722.02	1.99	-0.64	-3.98	249.55
	NORMAL	2,599.0	28.40	65.03	2,434.32	319.76	706.40	-766.23	0.71	0.42	1.20	53.91
	NORMAL	2,694.0	28.40	65.03	2,517.89	338.84	747.36	-810.80	0.00	0.00	0.00	0.00
	NORMAL	2,790.0	28.13	66.88	2,602.44	357.36	788.87	-855.75	0.95	-0.28	1.93	107.94
	NORMAL	2,885.0	28.31	66.08	2,686.15	375.29	830.06	-900.24	0.44	0.19	-0.84	295.09
	NORMAL	2,980.0	27.60	67.84	2,770.07	392.73	871.04	-944.38	1.15	-0.75	1.85	131.49
	NORMAL	3,076.0	28.35	66.44	2,854.85	410.22	912.53	-989.04	1.04	0.78	-1.46	318.17
	NORMAL	3,171.0	29.36	65.91	2,938.05	428.75	954.46	-1,034.41	1.10	1.06	-0.56	345.56
	NORMAL	3,266.0	28.00	66.96	3,021.40	446.98	996.25	-1,079.55	1.53	-1.43	1.11	160.13
	NORMAL	3,361.0	28.70	66.35	3,105.00	464.86	1,037.66	-1,124.24	0.80	0.74	-0.64	337.25
	NORMAL	3,457.0	26.90	67.31	3,189.92	482.48	1,078.82	-1,168.61	1.93	-1.88	1.00	166.46
	NORMAL	3,552.0	26.64	64.06	3,274.74	500.09	1,117.80	-1,210.89	1.56	-0.27	-3.42	258.48
	NORMAL	3,647.0	26.64	63.36	3,359.66	518.96	1,155.99	-1,252.73	0.33	0.00	-0.74	269.69
	NORMAL	3,743.0	26.55	63.18	3,445.50	538.29	1,194.37	-1,294.89	0.13	-0.09	-0.19	221.76
	NORMAL	3,838.0	26.42	62.48	3,530.53	557.63	1,232.07	-1,336.39	0.36	-0.14	-0.74	247.08
	NORMAL	3,933.0	26.55	66.17	3,615.56	575.98	1,270.23	-1,378.07	1.74	0.14	3.88	87.14
	NORMAL	4,029.0	25.89	66.00	3,701.69	593.17	1,309.01	-1,420.03	0.69	-0.69	-0.18	186.42
	NORMAL	4,124.0	25.98	65.64	3,787.12	610.19	1,346.91	-1,461.11	0.19	0.09	-0.38	299.59
	NORMAL	4,219.0	26.81	64.68	3,872.21	627.94	1,385.23	-1,502.78	0.98	0.87	-1.01	332.36
	NORMAL	4,314.0	27.69	63.80	3,956.67	646.84	1,424.40	-1,545.59	1.02	0.93	-0.93	335.01
3/1/2014	NORMAL	4,410.0	27.60	63.10	4,041.71	666.75	1,464.25	-1,589.31	0.35	-0.09	-0.73	254.20
	NORMAL	4,505.0	26.73	66.79	4,126.24	685.13	1,503.51	-1,632.06	2.00	-0.92	3.88	118.95
	NORMAL	4,601.0	27.03	66.79	4,211.87	702.24	1,543.40	-1,675.07	0.31	0.31	0.00	0.00
	NORMAL	4,696.0	26.77	66.44	4,296.59	719.30	1,582.86	-1,717.65	0.32	-0.27	-0.37	211.19
	NORMAL	4,791.0	27.39	66.52	4,381.17	736.55	1,622.51	-1,760.48	0.65	0.65	0.08	3.40
	NORMAL	4,887.0	27.60	66.08	4,466.33	754.37	1,663.09	-1,804.35	0.30	0.22	-0.46	315.76
	NORMAL	4,982.0	27.52	65.82	4,550.55	772.28	1,703.23	-1,847.82	0.15	-0.08	-0.27	236.26
	NORMAL	5,078.0	27.43	66.52	4,635.72	790.18	1,743.74	-1,891.65	0.35	-0.09	0.73	105.88
	NORMAL	5,173.0	25.58	65.47	4,720.73	807.41	1,782.48	-1,933.58	2.01	-1.95	-1.11	193.74
	NORMAL	5,268.0	25.58	65.12	4,806.42	824.55	1,819.74	-1,974.07	0.16	0.00	-0.37	269.84
	NORMAL	5,364.0	23.69	66.00	4,893.68	841.12	1,856.16	-2,013.60	2.01	-1.97	0.92	169.42
	NORMAL	5,459.0	22.90	65.47	4,980.93	856.56	1,890.41	-2,050.73	0.86	-0.83	-0.56	194.62
	NORMAL	5,554.0	21.36	63.27	5,068.94	872.01	1,922.68	-2,085.96	1.84	-1.62	-2.32	207.27
	NORMAL	5,649.0	18.90	60.02	5,158.13	887.49	1,951.47	-2,117.84	2.84	-2.59	-3.42	202.93
	NORMAL	5,744.0	18.20	61.34	5,248.19	902.29	1,977.81	-2,147.19	0.86	-0.74	1.39	149.66
	NORMAL	5,839.0	18.07	62.83	5,338.47	916.13	2,003.94	-2,176.07	0.51	-0.14	1.57	106.37

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 (°)
3/1/2014	NORMAL	5,935.0	16.31	61.78	5,430.18	929.31	2,029.07	-2,203.80	1.86	-1.83	-1.09	189.50
3/2/2014	NORMAL	6,030.0	15.78	62.83	5,521.48	941.51	2,052.31	-2,229.47	0.64	-0.56	1.11	151.80
	NORMAL	6,126.0	15.30	63.01	5,613.97	953.22	2,075.21	-2,254.67	0.50	-0.50	0.19	174.35
	NORMAL	6,221.0	14.46	64.15	5,705.79	964.08	2,097.06	-2,278.62	0.94	-0.88	1.20	161.34
	NORMAL	6,316.0	14.55	65.73	5,797.76	974.16	2,118.61	-2,302.08	0.43	0.09	1.66	77.95
	NORMAL	6,412.0	13.19	63.01	5,890.86	984.09	2,139.36	-2,324.74	1.57	-1.42	-2.83	204.30
	NORMAL	6,507.0	12.13	63.27	5,983.65	993.50	2,157.94	-2,345.15	1.12	-1.12	0.27	177.05
	NORMAL	6,602.0	10.02	61.43	6,076.87	1,001.94	2,174.11	-2,363.00	2.25	-2.22	-1.94	188.61
	NORMAL	6,697.0	8.88	64.41	6,170.58	1,009.06	2,187.98	-2,378.27	1.31	-1.20	3.14	158.24
3/3/2014	NORMAL	6,793.0	7.21	68.19	6,265.63	1,014.50	2,200.26	-2,391.55	1.82	-1.74	3.94	164.29
	NORMAL	6,888.0	6.90	62.57	6,359.92	1,019.34	2,210.86	-2,403.06	0.80	-0.33	-5.92	243.04
	NORMAL	6,983.0	5.85	57.29	6,454.33	1,024.59	2,220.00	-2,413.27	1.26	-1.11	-5.56	206.57
	NORMAL	7,079.0	5.19	58.61	6,549.88	1,029.49	2,227.82	-2,422.12	0.70	-0.69	1.38	169.77
	NORMAL	7,174.0	5.32	60.28	6,644.48	1,033.91	2,235.31	-2,430.53	0.21	0.14	1.76	50.47
	NORMAL	7,269.0	4.62	65.47	6,739.13	1,037.68	2,242.62	-2,438.57	0.88	-0.74	5.46	149.85
	NORMAL	7,365.0	3.96	60.55	6,834.86	1,040.92	2,249.02	-2,445.61	0.79	-0.69	-5.13	206.71
	NORMAL	7,460.0	3.65	65.03	6,929.65	1,043.81	2,254.62	-2,451.78	0.45	-0.33	4.72	138.42
	NORMAL	7,556.0	3.03	53.52	7,025.49	1,046.61	2,259.43	-2,457.16	0.95	-0.65	-11.99	221.60
	NORMAL	7,651.0	2.29	57.65	7,120.38	1,049.12	2,263.05	-2,461.32	0.80	-0.78	4.35	167.54
	NORMAL	7,747.0	1.98	59.49	7,216.32	1,050.98	2,266.10	-2,464.76	0.33	-0.32	1.92	168.45
3/4/2014	NORMAL	7,842.0	2.42	43.41	7,311.25	1,053.27	2,268.89	-2,468.06	0.79	0.46	-16.93	297.27
	NORMAL	7,937.0	2.46	38.57	7,406.16	1,056.33	2,271.54	-2,471.43	0.22	0.04	-5.09	278.56
	NORMAL	8,032.0	1.98	37.70	7,501.09	1,059.22	2,273.82	-2,474.40	0.51	-0.51	-0.92	183.58
	NORMAL	8,128.0	1.19	41.12	7,597.05	1,061.28	2,275.49	-2,476.56	0.83	-0.82	3.56	174.88
	NORMAL	8,223.0	1.19	47.01	7,692.03	1,062.70	2,276.86	-2,478.26	0.13	0.00	6.20	92.94
	NORMAL	8,318.0	0.79	38.84	7,787.02	1,063.88	2,277.99	-2,479.67	0.45	-0.42	-8.60	195.38
	NORMAL	8,413.0	0.22	67.67	7,882.01	1,064.46	2,278.57	-2,480.38	0.64	-0.60	30.35	169.93
	NORMAL	8,509.0	0.26	157.32	7,978.01	1,064.33	2,278.82	-2,480.59	0.35	0.04	93.39	130.03
	NORMAL	8,604.0	0.40	190.45	8,073.01	1,063.80	2,278.85	-2,480.47	0.24	0.15	34.87	71.07
	NORMAL	8,699.0	0.57	195.46	8,168.01	1,063.02	2,278.66	-2,480.09	0.18	0.18	5.27	16.52
	NORMAL	8,795.0	1.01	196.78	8,264.00	1,061.75	2,278.29	-2,479.39	0.46	0.46	1.38	3.03
3/5/2014	NORMAL	8,890.0	1.85	200.56	8,358.97	1,059.51	2,277.51	-2,478.04	0.89	0.88	3.98	8.30
	NORMAL	8,985.0	2.55	206.18	8,453.90	1,056.18	2,276.04	-2,475.73	0.77	0.74	5.92	19.95
	NORMAL	9,105.0	2.86	214.09	8,573.76	1,051.31	2,273.18	-2,471.67	0.40	0.26	6.59	54.29
	NORMAL	9,176.0	3.12	220.51	8,644.67	1,048.37	2,270.94	-2,468.72	0.60	0.37	9.04	55.41
	NORMAL	9,271.0	3.74	223.14	8,739.50	1,044.14	2,267.14	-2,463.93	0.67	0.65	2.77	15.56
	NORMAL	9,344.0	3.74	223.14	8,812.34	1,040.67	2,263.88	-2,459.86	0.00	0.00	0.00	0.00