

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	PA 324-12	Wellbore No.	OH
Well Name	PA 324-12	Common Name	PA 324-12
Project	PA 12-07S-095W	Site	PA 23-12 Pad
Vertical Section Azimuth	170.69 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	7/24/2013	UWI	PA 324-12
Active Datum	KB @6,533.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	7/24/2013	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 (°)
7/24/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/24/2013	NORMAL	103.0	0.53	85.52	103.00	0.04	0.47	0.04	0.51	0.51	0.00	85.52
	NORMAL	164.0	2.64	164.79	163.98	-1.30	1.12	1.46	4.25	3.46	129.95	90.84
	NORMAL	255.0	3.43	174.02	254.85	-6.03	1.96	6.26	1.02	0.87	10.14	36.41
	NORMAL	346.0	5.54	174.20	345.56	-13.10	2.69	13.37	2.32	2.32	0.20	0.47
	NORMAL	436.0	8.53	164.00	434.88	-23.85	4.97	24.34	3.59	3.32	-11.33	332.20
	NORMAL	526.0	11.79	165.59	523.46	-39.17	9.09	40.13	3.64	3.62	1.77	5.70
	NORMAL	616.0	13.55	166.11	611.26	-58.31	13.91	59.80	1.96	1.96	0.58	3.96
	NORMAL	708.0	15.57	172.18	700.31	-81.01	18.18	82.89	2.75	2.20	6.60	40.03
	NORMAL	798.0	17.51	173.23	786.58	-106.43	21.42	108.49	2.18	2.16	1.17	9.26
7/26/2013	NORMAL	890.0	20.15	172.62	873.65	-135.89	25.09	138.16	2.88	2.87	-0.66	355.45
	NORMAL	981.0	21.11	173.85	958.81	-167.73	28.86	170.19	1.16	1.05	1.35	24.87
	NORMAL	998.0	21.38	171.91	974.66	-173.84	29.62	176.34	4.43	1.59	-11.41	290.11
	NORMAL	1,076.0	21.89	172.21	1,047.16	-202.32	33.59	205.09	0.67	0.65	0.38	12.38
	NORMAL	1,171.0	22.90	171.51	1,135.00	-238.15	38.72	241.28	1.10	1.06	-0.74	344.88
	NORMAL	1,267.0	23.02	170.54	1,223.39	-275.14	44.57	278.72	0.41	0.12	-1.01	287.15
	NORMAL	1,362.0	22.33	169.84	1,311.05	-311.22	50.80	315.34	0.78	-0.73	-0.74	201.04
	NORMAL	1,457.0	21.06	170.10	1,399.32	-345.80	56.92	350.46	1.34	-1.34	0.27	175.79
	NORMAL	1,553.0	20.88	169.84	1,488.96	-379.64	62.90	384.81	0.21	-0.19	-0.27	207.21
	NORMAL	1,648.0	21.80	172.03	1,577.44	-413.77	68.34	419.38	1.28	0.97	2.31	41.92
	NORMAL	1,744.0	21.50	172.74	1,666.67	-448.88	73.03	454.78	0.41	-0.31	0.74	139.20

2.1.2 Survey Stations (Continued)

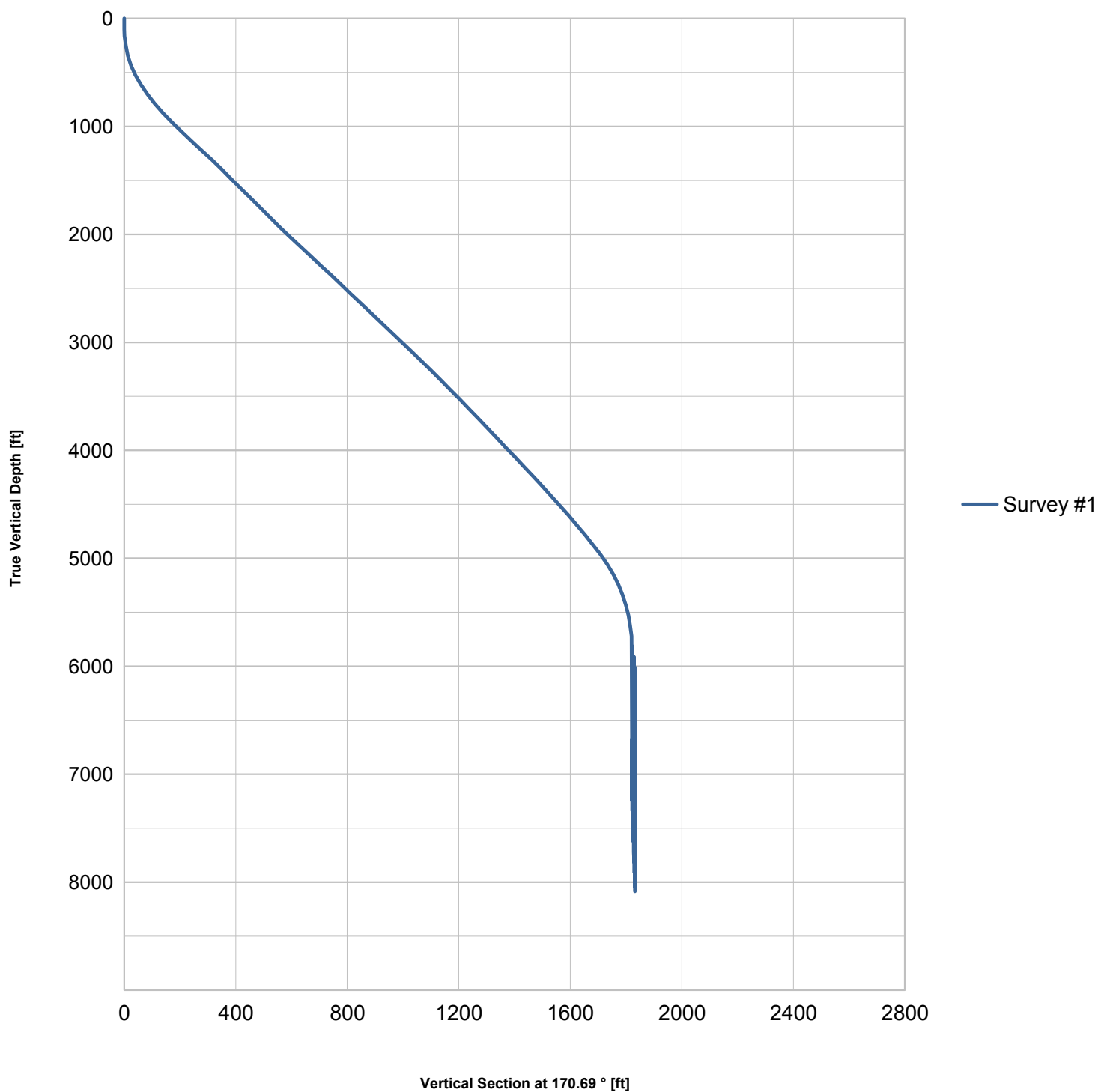
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
7/26/2013	NORMAL	1,840.0	21.14	171.33	1,756.10	-483.44	77.86	489.67	0.65	-0.38	-1.47	234.27
	NORMAL	1,935.0	21.41	172.03	1,844.63	-517.55	82.85	524.13	0.39	0.28	0.74	43.58
	NORMAL	2,030.0	21.32	171.24	1,933.10	-551.79	87.88	558.74	0.32	-0.09	-0.83	252.27
	NORMAL	2,126.0	22.55	171.07	2,022.15	-587.22	93.40	594.60	1.28	1.28	-0.18	356.97
	NORMAL	2,222.0	22.73	170.89	2,110.75	-623.72	99.19	631.55	0.20	0.19	-0.19	338.86
	NORMAL	2,318.0	22.29	171.24	2,199.44	-660.03	104.90	668.30	0.48	-0.46	0.36	163.22
	NORMAL	2,413.0	22.68	170.89	2,287.22	-695.92	110.55	704.63	0.43	0.41	-0.37	340.90
	NORMAL	2,508.0	22.29	170.71	2,374.99	-731.78	116.36	740.96	0.42	-0.41	-0.19	189.93
	NORMAL	2,604.0	22.15	170.10	2,463.86	-767.58	122.41	777.27	0.28	-0.15	-0.64	238.46
	NORMAL	2,699.0	21.93	170.71	2,551.92	-802.73	128.35	812.92	0.33	-0.23	0.64	134.15
	NORMAL	2,795.0	22.33	169.13	2,640.85	-838.33	134.68	849.07	0.75	0.42	-1.65	303.17
	NORMAL	2,890.0	22.33	168.87	2,728.73	-873.76	141.57	885.15	0.10	0.00	-0.27	269.88
	NORMAL	2,985.0	22.37	169.75	2,816.59	-909.26	148.27	921.27	0.35	0.04	0.93	83.59
	NORMAL	3,081.0	22.20	167.73	2,905.42	-944.96	155.38	957.64	0.82	-0.18	-2.10	256.55
	NORMAL	3,177.0	22.02	167.09	2,994.36	-980.22	163.25	993.72	0.31	-0.19	-0.67	232.94
	NORMAL	3,272.0	22.29	166.76	3,082.35	-1,015.12	171.36	1,029.47	0.31	0.28	-0.35	335.10
	NORMAL	3,368.0	21.71	167.20	3,171.36	-1,050.15	179.46	1,065.35	0.63	-0.60	0.46	164.34
	NORMAL	3,463.0	21.80	166.50	3,259.59	-1,084.44	187.47	1,100.48	0.29	0.09	-0.74	288.81
	NORMAL	3,559.0	21.06	169.22	3,348.96	-1,118.72	194.86	1,135.50	1.29	-0.77	2.83	127.93
	NORMAL	3,654.0	20.70	172.65	3,437.72	-1,152.14	200.20	1,169.35	1.34	-0.38	3.61	108.01
	NORMAL	3,750.0	20.84	171.15	3,527.48	-1,185.84	205.00	1,203.38	0.57	0.15	-1.56	284.04
	NORMAL	3,845.0	20.31	174.58	3,616.43	-1,218.95	209.15	1,236.73	1.39	-0.56	3.61	115.33
	NORMAL	3,941.0	20.53	172.91	3,706.39	-1,252.24	212.80	1,270.18	0.65	0.23	-1.74	289.90
	NORMAL	4,037.0	20.44	172.03	3,796.32	-1,285.55	217.21	1,303.75	0.33	-0.09	-0.92	253.30
	NORMAL	4,132.0	20.09	170.54	3,885.44	-1,318.07	222.19	1,336.65	0.66	-0.37	-1.57	235.16
7/27/2013	NORMAL	4,227.0	20.09	173.53	3,974.66	-1,350.38	226.71	1,369.27	1.08	0.00	3.15	91.40
	NORMAL	4,323.0	20.13	171.68	4,064.81	-1,383.11	230.96	1,402.25	0.66	0.04	-1.93	272.73
	NORMAL	4,417.0	19.91	170.89	4,153.13	-1,414.92	235.83	1,434.43	0.37	-0.23	-0.84	230.50
	NORMAL	4,513.0	20.40	170.98	4,243.25	-1,447.58	241.04	1,467.51	0.51	0.51	0.09	3.66
	NORMAL	4,608.0	19.65	169.13	4,332.51	-1,479.62	246.65	1,500.03	1.03	-0.79	-1.95	219.32
	NORMAL	4,703.0	19.34	166.67	4,422.07	-1,510.61	253.29	1,531.69	0.92	-0.33	-2.59	248.16
	NORMAL	4,799.0	19.03	171.07	4,512.74	-1,541.55	259.39	1,563.20	1.54	-0.32	4.58	104.17
	NORMAL	4,894.0	18.99	172.38	4,602.56	-1,572.17	263.84	1,594.14	0.45	-0.04	1.38	95.97
	NORMAL	4,990.0	17.54	173.53	4,693.72	-1,602.02	267.54	1,624.20	1.56	-1.51	1.20	166.59
	NORMAL	5,085.0	17.85	173.26	4,784.22	-1,630.71	270.86	1,653.04	0.34	0.33	-0.28	345.04
	NORMAL	5,179.0	16.88	173.09	4,873.94	-1,658.56	274.20	1,681.07	1.03	-1.03	-0.18	182.91
	NORMAL	5,274.0	16.35	175.46	4,964.97	-1,685.58	276.91	1,708.18	0.91	-0.56	2.49	129.16
	NORMAL	5,370.0	14.20	174.93	5,057.58	-1,710.79	279.02	1,733.39	2.24	-2.24	-0.55	183.46
	NORMAL	5,466.0	11.82	173.18	5,151.11	-1,732.28	281.23	1,754.96	2.51	-2.48	-1.82	188.55
	NORMAL	5,561.0	9.71	174.85	5,244.43	-1,749.92	283.11	1,772.67	2.24	-2.22	1.76	172.41
	NORMAL	5,657.0	8.18	177.75	5,339.26	-1,764.81	284.10	1,787.52	1.66	-1.59	3.02	165.01
	NORMAL	5,752.0	6.37	173.44	5,433.49	-1,776.80	284.97	1,799.50	1.99	-1.91	-4.54	194.65
7/28/2013	NORMAL	5,848.0	4.44	173.70	5,529.06	-1,785.79	285.99	1,808.53	2.01	-2.01	0.27	179.40
	NORMAL	5,944.0	3.12	173.79	5,624.85	-1,792.08	286.68	1,814.85	1.38	-1.38	0.09	179.79
	NORMAL	6,040.0	2.50	154.19	5,720.74	-1,796.56	287.87	1,819.46	1.18	-0.65	-20.42	227.64
	NORMAL	6,135.0	2.59	155.51	5,815.64	-1,800.38	289.66	1,823.52	0.11	0.09	1.39	33.74
	NORMAL	6,231.0	3.12	126.68	5,911.53	-1,803.91	292.66	1,827.50	1.57	0.55	-30.03	275.46
	NORMAL	6,326.0	2.99	110.95	6,006.39	-1,806.34	297.04	1,830.60	0.89	-0.14	-16.56	253.39
	NORMAL	6,422.0	2.81	82.65	6,102.28	-1,806.94	301.72	1,831.95	1.49	-0.19	-29.48	248.85
	NORMAL	6,517.0	2.86	74.21	6,197.16	-1,805.99	306.31	1,831.76	0.44	0.05	-8.88	272.60
	NORMAL	6,613.0	3.25	47.75	6,293.03	-1,803.51	310.63	1,830.01	1.51	0.41	-27.56	271.98
	NORMAL	6,708.0	3.30	53.47	6,387.87	-1,800.07	314.82	1,827.29	0.35	0.05	6.02	84.16
	NORMAL	6,804.0	1.76	44.06	6,483.78	-1,797.37	318.06	1,825.15	1.66	-1.60	-9.80	190.43
7/29/2013	NORMAL	6,899.0	1.27	22.44	6,578.74	-1,795.35	319.48	1,823.38	0.78	-0.52	-22.76	218.93
	NORMAL	6,995.0	0.53	16.47	6,674.73	-1,793.94	320.01	1,822.08	0.78	-0.77	-6.22	184.24
	NORMAL	7,090.0	0.31	331.82	6,769.73	-1,793.29	320.01	1,821.44	0.40	-0.23	-47.00	215.15
	NORMAL	7,186.0	0.31	262.21	6,865.73	-1,793.10	319.63	1,821.19	0.37	0.00	-72.51	235.20

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 (°)
7/30/2013	NORMAL	7,281.0	0.44	251.84	6,960.73	-1,793.25	319.03	1,821.24	0.15	0.14	-10.92	327.18
	NORMAL	7,375.0	0.35	229.51	7,054.72	-1,793.55	318.47	1,821.44	0.19	-0.10	-23.76	228.84
	NORMAL	7,471.0	0.57	253.51	7,150.72	-1,793.87	317.79	1,821.65	0.30	0.23	25.00	53.63
	NORMAL	7,566.0	0.79	239.01	7,245.71	-1,794.34	316.78	1,821.95	0.29	0.23	-15.26	314.57
	NORMAL	7,661.0	1.05	226.00	7,340.70	-1,795.28	315.59	1,822.69	0.35	0.27	-13.69	314.60
	NORMAL	7,755.0	1.63	230.04	7,434.68	-1,796.74	313.94	1,823.86	0.62	0.62	4.30	11.27
	NORMAL	7,851.0	2.02	235.49	7,530.63	-1,798.58	311.50	1,825.28	0.44	0.41	5.68	26.73
	NORMAL	7,946.0	2.15	238.74	7,625.56	-1,800.45	308.60	1,826.66	0.18	0.14	3.42	43.92
	NORMAL	8,041.0	2.11	243.05	7,720.50	-1,802.17	305.52	1,827.85	0.17	-0.04	4.54	106.17
	NORMAL	8,136.0	2.37	241.29	7,815.43	-1,803.90	302.24	1,829.04	0.28	0.27	-1.85	344.30
7/31/2013	NORMAL	8,232.0	2.42	246.74	7,911.34	-1,805.66	298.63	1,830.18	0.24	0.05	5.68	80.35
	NORMAL	8,327.0	2.55	245.77	8,006.25	-1,807.32	294.86	1,831.21	0.14	0.14	-1.02	341.59
	NORMAL	8,360.0	2.59	244.81	8,039.22	-1,807.94	293.52	1,831.60	0.18	0.12	-2.91	312.42
	NORMAL	8,405.0	2.59	244.81	8,084.17	-1,808.80	291.68	1,832.16	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

