

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	PA 514-4	Wellbore No.	OH
Well Name	PA 514-4	Common Name	PA 514-4
Project	PA 04-07S-095W	Site	GV 80-4 Pad
Vertical Section Azimuth	210.39 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	10/30/2012	UWI	PA 514-4
Active Datum	KB @5,612.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	10/30/2012	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

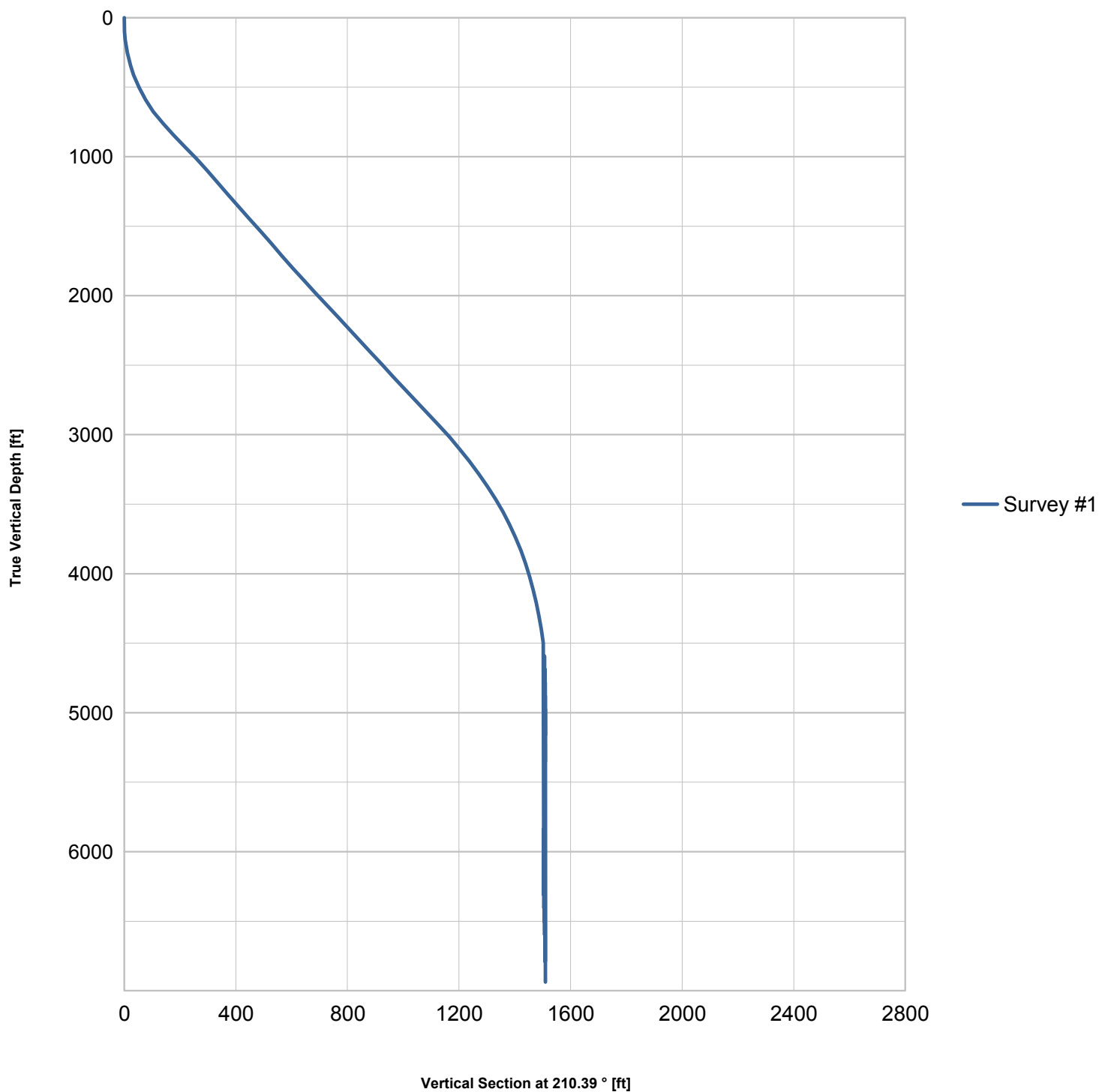
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
10/30/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/30/2012	NORMAL	103.0	1.32	210.76	102.99	-1.02	-0.61	1.19	1.28	1.28	0.00	210.76
	NORMAL	163.0	3.52	217.79	162.93	-3.07	-2.09	3.70	3.69	3.67	11.72	11.21
	NORMAL	254.0	5.89	215.95	253.62	-9.06	-6.54	11.12	2.61	2.60	-2.02	355.44
	NORMAL	344.0	8.27	213.93	342.93	-18.17	-12.87	22.18	2.66	2.64	-2.24	353.02
	NORMAL	416.0	10.70	209.41	413.94	-28.29	-19.04	34.03	3.53	3.38	-6.28	340.72
	NORMAL	507.0	13.89	206.18	502.84	-45.45	-28.01	53.38	3.58	3.51	-3.55	346.25
	NORMAL	597.0	15.70	212.37	589.86	-65.44	-39.30	76.33	2.67	2.01	6.88	44.15
	NORMAL	688.0	20.39	211.07	676.36	-89.43	-54.08	104.50	5.17	5.15	-1.43	354.47
	NORMAL	780.0	23.74	209.76	761.61	-119.24	-71.55	139.05	3.68	3.64	-1.42	351.03
	NORMAL	870.0	25.01	209.40	843.59	-151.54	-89.88	176.19	1.42	1.41	-0.40	353.16
10/31/2012	NORMAL	964.0	26.29	208.27	928.32	-187.19	-109.50	216.86	1.46	1.36	-1.20	338.58
	NORMAL	1,060.0	25.10	210.38	1,014.83	-223.48	-129.86	258.47	1.56	-1.24	2.20	143.39
	NORMAL	1,156.0	23.60	210.91	1,102.29	-257.54	-150.03	298.05	1.58	-1.56	0.55	171.95
	NORMAL	1,251.0	23.47	210.47	1,189.38	-290.16	-169.40	335.99	0.23	-0.14	-0.46	233.30
	NORMAL	1,346.0	23.56	209.86	1,276.50	-322.93	-188.44	373.89	0.27	0.09	-0.64	290.01
	NORMAL	1,441.0	23.69	208.27	1,363.53	-356.20	-206.93	411.95	0.68	0.14	-1.67	280.80
	NORMAL	1,536.0	24.40	209.07	1,450.29	-390.16	-225.51	450.64	0.82	0.75	0.84	25.03
	NORMAL	1,632.0	23.74	209.15	1,537.94	-424.37	-244.55	489.78	0.69	-0.69	0.08	177.21
	NORMAL	1,727.0	22.99	211.00	1,625.15	-456.98	-263.42	527.45	1.10	-0.79	1.95	136.48
	NORMAL	1,823.0	23.69	209.68	1,713.30	-489.80	-282.63	565.48	0.91	0.73	-1.38	322.63

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 (°)
10/31/2012	NORMAL	1,919.0	23.65	210.21	1,801.22	-523.20	-301.87	604.02	0.23	-0.04	0.55	100.89
	NORMAL	2,014.0	24.84	212.23	1,887.84	-556.55	-322.10	643.02	1.53	1.25	2.13	35.80
	NORMAL	2,110.0	24.75	210.65	1,974.99	-590.89	-343.10	683.27	0.70	-0.09	-1.65	261.55
11/1/2012	NORMAL	2,205.0	25.06	208.98	2,061.16	-625.60	-362.98	723.27	0.81	0.33	-1.76	293.03
	NORMAL	2,301.0	24.70	212.14	2,148.25	-660.37	-383.51	763.65	1.43	-0.38	3.29	106.58
	NORMAL	2,396.0	24.88	210.56	2,234.50	-694.39	-404.23	803.47	0.72	0.19	-1.66	284.48
	NORMAL	2,492.0	24.92	209.15	2,321.58	-729.44	-424.35	843.89	0.62	0.04	-1.47	273.22
	NORMAL	2,588.0	24.79	209.68	2,408.69	-764.59	-444.16	884.23	0.27	-0.14	0.55	120.51
	NORMAL	2,683.0	24.48	212.14	2,495.04	-798.56	-464.50	923.82	1.13	-0.33	2.59	107.94
	NORMAL	2,779.0	24.66	210.38	2,582.35	-832.68	-485.21	963.73	0.79	0.19	-1.83	283.02
	NORMAL	2,875.0	24.84	208.98	2,669.53	-867.60	-505.10	1,003.91	0.64	0.19	-1.46	286.44
	NORMAL	2,970.0	25.32	210.65	2,755.58	-902.53	-525.13	1,044.18	0.90	0.51	1.76	56.62
	NORMAL	3,065.0	25.32	210.03	2,841.45	-937.59	-545.65	1,084.81	0.28	0.00	-0.65	269.72
	NORMAL	3,161.0	25.19	208.80	2,928.27	-973.27	-565.77	1,125.76	0.56	-0.14	-1.28	255.53
	NORMAL	3,257.0	23.56	210.74	3,015.72	-1,007.67	-585.42	1,165.37	1.89	-1.70	2.02	154.72
	NORMAL	3,353.0	21.98	210.38	3,104.23	-1,039.66	-604.31	1,202.52	1.65	-1.65	-0.38	184.87
	NORMAL	3,448.0	21.06	210.30	3,192.61	-1,069.73	-621.91	1,237.37	0.97	-0.97	-0.08	181.79
	NORMAL	3,544.0	19.82	213.81	3,282.57	-1,098.15	-639.67	1,270.87	1.82	-1.29	3.66	136.97
	NORMAL	3,639.0	18.90	214.69	3,372.19	-1,124.18	-657.39	1,302.29	1.02	-0.97	0.93	162.82
	NORMAL	3,735.0	16.66	215.66	3,463.60	-1,148.15	-674.27	1,331.50	2.35	-2.33	1.01	172.93
	NORMAL	3,830.0	15.52	213.29	3,554.88	-1,169.84	-689.18	1,357.75	1.38	-1.20	-2.49	208.81
	NORMAL	3,924.0	13.58	209.42	3,645.86	-1,189.97	-701.51	1,381.35	2.31	-2.06	-4.12	204.75
	NORMAL	4,020.0	12.18	211.26	3,739.45	-1,208.44	-712.30	1,402.75	1.52	-1.46	1.92	164.57
	NORMAL	4,116.0	10.90	211.53	3,833.50	-1,224.84	-722.30	1,421.95	1.33	-1.33	0.28	177.72
	NORMAL	4,211.0	9.36	212.85	3,927.02	-1,238.98	-731.19	1,438.65	1.64	-1.62	1.39	172.08
	NORMAL	4,307.0	8.40	209.59	4,021.87	-1,251.64	-738.89	1,453.46	1.13	-1.00	-3.40	206.06
	NORMAL	4,403.0	6.99	210.65	4,117.00	-1,262.76	-745.33	1,466.31	1.48	-1.47	1.10	174.78
	NORMAL	4,498.0	5.85	215.31	4,211.41	-1,271.69	-751.07	1,476.92	1.32	-1.20	4.91	157.74
11/2/2012	NORMAL	4,593.0	5.45	214.34	4,305.94	-1,279.36	-756.42	1,486.24	0.43	-0.42	-1.02	192.95
	NORMAL	4,689.0	5.10	217.33	4,401.54	-1,286.52	-761.58	1,495.02	0.46	-0.36	3.11	143.34
	NORMAL	4,785.0	3.34	227.00	4,497.27	-1,291.82	-766.21	1,501.94	1.97	-1.83	10.07	162.76
	NORMAL	4,880.0	2.20	219.09	4,592.16	-1,295.12	-769.38	1,506.39	1.26	-1.20	-8.33	194.61
	NORMAL	4,975.0	0.35	234.91	4,687.13	-1,296.71	-770.77	1,508.46	1.96	-1.95	16.65	177.07
	NORMAL	5,070.0	0.13	195.97	4,782.13	-1,296.98	-771.04	1,508.83	0.28	-0.23	-40.99	198.17
	NORMAL	5,165.0	0.18	270.06	4,877.13	-1,297.08	-771.22	1,509.01	0.20	0.05	77.99	114.98
	NORMAL	5,261.0	0.26	296.78	4,973.13	-1,296.98	-771.56	1,509.10	0.13	0.08	27.83	65.92
	NORMAL	5,357.0	0.13	328.16	5,069.13	-1,296.79	-771.81	1,509.06	0.17	-0.14	32.69	155.57
	NORMAL	5,452.0	0.26	326.40	5,164.13	-1,296.52	-771.99	1,508.92	0.14	0.14	-1.85	356.48
	NORMAL	5,547.0	0.18	302.85	5,259.13	-1,296.26	-772.23	1,508.82	0.13	-0.08	-24.79	217.13
	NORMAL	5,643.0	0.31	62.82	5,355.13	-1,296.06	-772.13	1,508.59	0.45	0.14	124.97	141.27
	NORMAL	5,739.0	0.44	60.53	5,451.13	-1,295.76	-771.58	1,508.05	0.14	0.14	-2.39	352.28
	NORMAL	5,835.0	0.57	67.21	5,547.12	-1,295.39	-770.82	1,507.35	0.15	0.14	6.96	27.73
	NORMAL	5,930.0	0.44	54.91	5,642.12	-1,295.00	-770.08	1,506.64	0.18	-0.14	-12.95	213.78
11/4/2012	NORMAL	6,026.0	0.57	11.40	5,738.12	-1,294.32	-769.69	1,505.85	0.41	0.14	-45.32	266.12
	NORMAL	6,121.0	0.75	15.44	5,833.11	-1,293.26	-769.43	1,504.81	0.20	0.19	4.25	16.52
	NORMAL	6,217.0	0.35	73.80	5,929.11	-1,292.57	-768.98	1,503.99	0.67	-0.42	60.79	152.25
	NORMAL	6,313.0	0.53	94.37	6,025.10	-1,292.52	-768.25	1,503.58	0.25	0.19	21.43	51.86
	NORMAL	6,408.0	0.44	127.94	6,120.10	-1,292.78	-767.53	1,503.43	0.31	-0.09	35.34	123.88
	NORMAL	6,503.0	0.40	152.73	6,215.10	-1,293.30	-767.09	1,503.66	0.19	-0.04	26.09	114.62
	NORMAL	6,599.0	0.75	165.91	6,311.09	-1,294.21	-766.78	1,504.29	0.39	0.36	13.73	27.38
	NORMAL	6,694.0	0.88	151.15	6,406.08	-1,295.45	-766.28	1,505.10	0.26	0.14	-15.54	294.24
	NORMAL	6,790.0	1.32	143.85	6,502.07	-1,296.99	-765.27	1,505.92	0.48	0.46	-7.60	338.66
	NORMAL	6,886.0	1.89	141.39	6,598.03	-1,299.12	-763.63	1,506.93	0.60	0.59	-2.56	351.88
	NORMAL	6,982.0	1.93	140.42	6,693.97	-1,301.60	-761.61	1,508.05	0.05	0.04	-1.01	320.57
	NORMAL	7,077.0	1.54	141.04	6,788.93	-1,303.83	-759.79	1,509.05	0.41	-0.41	0.65	177.55
	NORMAL	7,173.0	1.27	132.07	6,884.90	-1,305.54	-758.19	1,509.72	0.36	-0.28	-9.34	214.74
	NORMAL	7,225.0	1.27	132.07	6,936.89	-1,306.31	-757.33	1,509.95	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

