

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	PA 513-29	Wellbore No.	OH
Well Name	PA 513-29	Common Name	PA 513-29
Project	PA 29-06S-095W	Site	DOE 3-W-29 Pad
Vertical Section Azimuth	316.01 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	4/15/2012	UWI	PA 513-29
Active Datum	KB @5,702.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	4/15/2012	Ended	4/23/2012
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 (°)
4/15/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/15/2012	NORMAL	103.0	0.35	4.83	103.00	0.31	0.03	0.21	0.34	0.34	0.00	4.83
	NORMAL	164.0	2.29	23.83	163.98	1.61	0.53	0.79	3.22	3.18	31.15	22.33
	NORMAL	255.0	4.75	5.75	254.80	7.03	1.65	3.91	2.93	2.70	-19.87	326.51
	NORMAL	346.0	8.27	5.10	345.20	17.30	2.61	10.63	3.87	3.87	-0.71	358.48
	NORMAL	420.0	12.00	5.70	418.04	30.26	3.84	19.10	5.04	5.04	0.81	1.92
	NORMAL	511.0	14.00	358.10	506.71	50.68	4.42	33.39	2.89	2.20	-8.35	315.73
	NORMAL	602.0	16.80	348.50	594.44	74.57	1.43	52.66	4.15	3.08	-10.55	312.98
	NORMAL	694.0	18.80	332.50	682.09	100.77	-8.07	78.11	5.72	2.17	-17.39	284.49
	NORMAL	785.0	21.10	324.90	767.64	127.18	-24.27	108.36	3.80	2.53	-8.35	307.95
	NORMAL	877.0	23.00	323.50	852.90	155.18	-44.48	142.54	2.14	2.07	-1.52	343.89
	NORMAL	967.0	23.80	321.60	935.50	183.55	-66.22	178.05	1.22	0.89	-2.11	315.80
	NORMAL	1,062.0	25.30	322.40	1,021.91	214.66	-90.51	217.30	1.62	1.58	0.84	12.86
	NORMAL	1,158.0	26.60	322.30	1,108.23	247.92	-116.17	259.05	1.35	1.35	-0.10	358.03
	NORMAL	1,253.0	28.30	320.70	1,192.53	282.17	-143.45	302.64	1.95	1.79	-1.68	335.83
4/16/2012	NORMAL	1,348.0	30.00	321.20	1,275.50	318.11	-172.59	348.74	1.81	1.79	0.53	8.37
	NORMAL	1,443.0	32.50	320.30	1,356.71	356.26	-203.78	397.85	2.68	2.63	-0.95	349.04
	NORMAL	1,539.0	35.20	319.10	1,436.43	397.03	-238.38	451.21	2.90	2.81	-1.25	345.60
	NORMAL	1,635.0	37.90	317.70	1,513.54	439.76	-276.35	508.32	2.94	2.81	-1.46	342.28
	NORMAL	1,731.0	39.10	317.70	1,588.67	483.96	-316.57	568.06	1.25	1.25	0.00	0.00
	NORMAL	1,826.0	40.80	316.80	1,661.50	528.75	-357.98	629.04	1.89	1.79	-0.95	340.88

2.1.2 Survey Stations (Continued)

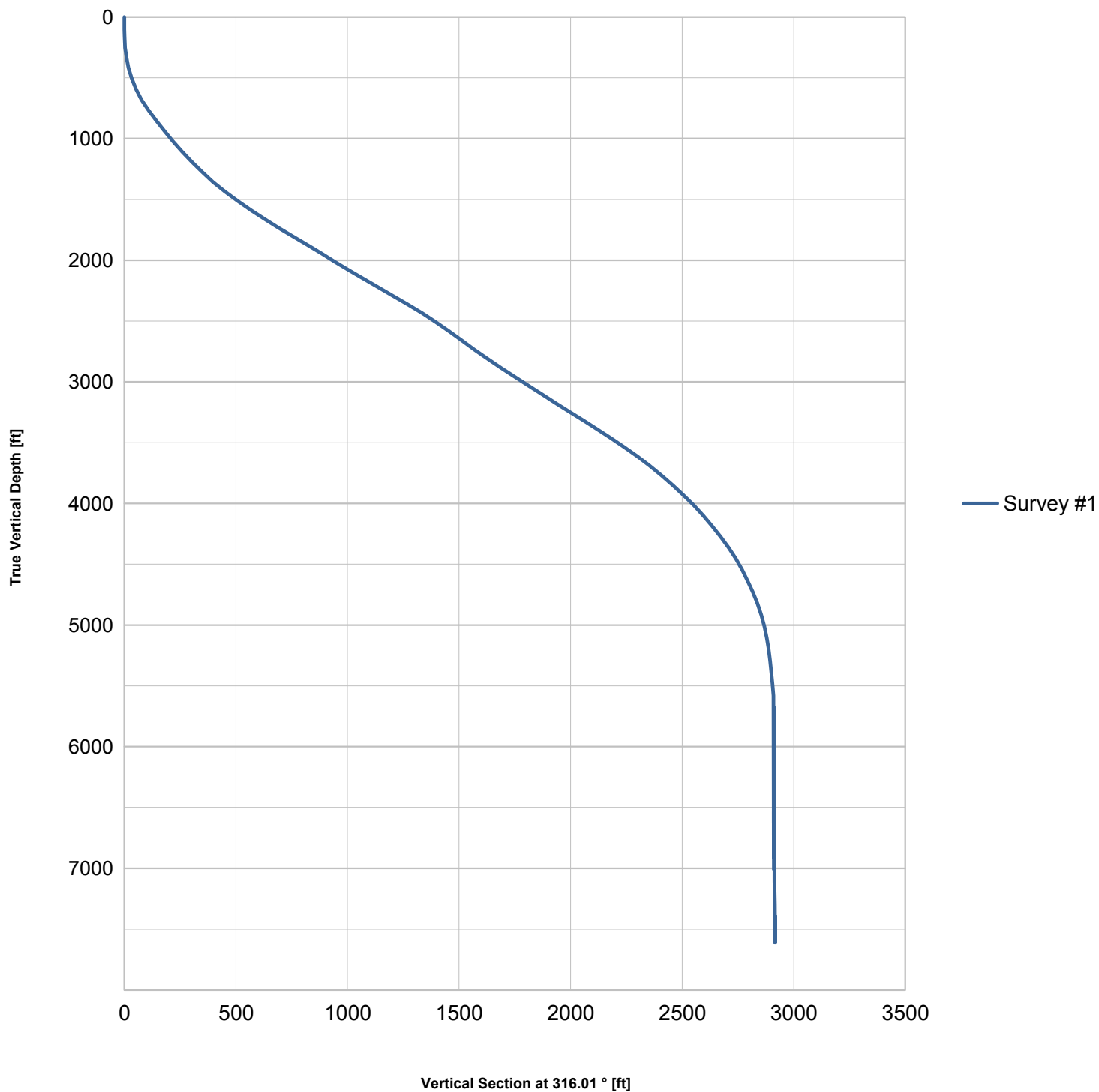
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
4/16/2012	NORMAL	1,920.0	41.40	316.30	1,732.33	573.61	-400.48	690.83	0.73	0.64	-0.53	331.10
	NORMAL	2,014.0	43.10	315.40	1,801.91	618.95	-444.50	754.03	1.92	1.81	-0.96	340.07
	NORMAL	2,110.0	42.60	315.90	1,872.29	665.63	-490.14	819.31	0.63	-0.52	0.52	145.96
	NORMAL	2,203.0	41.50	313.80	1,941.35	709.56	-534.29	881.58	1.92	-1.18	-2.26	231.20
	NORMAL	2,299.0	41.60	312.80	2,013.20	753.23	-580.63	945.18	0.70	0.10	-1.04	278.20
	NORMAL	2,395.0	42.60	314.00	2,084.43	797.46	-627.38	1,009.48	1.34	1.04	1.25	39.26
4/18/2012	NORMAL	2,490.0	42.60	313.80	2,154.36	842.04	-673.72	1,073.74	0.14	0.00	-0.21	269.93
	NORMAL	2,587.0	43.33	314.71	2,225.34	888.18	-721.06	1,139.81	0.99	0.75	0.94	40.69
	NORMAL	2,682.0	43.68	315.06	2,294.25	934.33	-767.40	1,205.20	0.45	0.37	0.37	34.67
	NORMAL	2,778.0	43.37	314.71	2,363.85	980.99	-814.24	1,271.30	0.41	-0.32	-0.36	217.74
	NORMAL	2,873.0	41.09	315.50	2,434.19	1,026.21	-859.31	1,335.14	2.46	-2.40	0.83	167.18
	NORMAL	2,968.0	38.32	317.79	2,507.28	1,070.30	-900.99	1,395.81	3.30	-2.92	2.41	153.04
	NORMAL	3,064.0	37.53	316.30	2,583.00	1,113.49	-941.19	1,454.80	1.26	-0.82	-1.55	228.63
	NORMAL	3,159.0	36.78	316.21	2,658.72	1,154.94	-980.86	1,512.17	0.79	-0.79	-0.09	184.11
	NORMAL	3,255.0	37.40	318.23	2,735.30	1,197.43	-1,020.17	1,570.05	1.42	0.65	2.10	63.83
	NORMAL	3,350.0	38.89	318.32	2,810.01	1,241.22	-1,059.23	1,628.68	1.57	1.57	0.09	2.17
	NORMAL	3,446.0	39.42	316.91	2,884.45	1,285.99	-1,100.09	1,689.27	1.08	0.55	-1.47	300.22
	NORMAL	3,541.0	39.99	315.06	2,957.54	1,329.63	-1,142.26	1,749.95	1.38	0.60	-1.95	295.03
	NORMAL	3,637.0	39.90	314.63	3,031.14	1,373.09	-1,185.96	1,811.57	0.30	-0.09	-0.45	251.78
4/19/2012	NORMAL	3,732.0	40.69	315.77	3,103.60	1,416.69	-1,229.25	1,873.00	1.14	0.83	1.20	43.46
	NORMAL	3,827.0	40.78	317.53	3,175.59	1,461.77	-1,271.80	1,934.99	1.21	0.09	1.85	86.19
	NORMAL	3,923.0	41.18	316.56	3,248.06	1,507.84	-1,314.70	1,997.93	0.78	0.42	-1.01	301.80
	NORMAL	4,018.0	40.87	316.91	3,319.73	1,553.25	-1,357.43	2,060.28	0.41	-0.33	0.37	143.59
	NORMAL	4,111.0	40.08	316.91	3,390.48	1,597.33	-1,398.67	2,120.64	0.85	-0.85	0.00	180.00
	NORMAL	4,206.0	39.42	316.91	3,463.52	1,641.70	-1,440.17	2,181.38	0.69	-0.69	0.00	180.00
	NORMAL	4,301.0	38.58	318.76	3,537.35	1,686.00	-1,480.31	2,241.13	1.51	-0.88	1.95	126.53
	NORMAL	4,396.0	36.65	318.58	3,612.60	1,729.54	-1,518.60	2,299.05	2.03	-2.03	-0.19	183.19
	NORMAL	4,491.0	34.58	318.05	3,689.82	1,770.86	-1,555.38	2,354.32	2.20	-2.18	-0.56	188.27
	NORMAL	4,587.0	33.00	317.00	3,769.60	1,810.24	-1,591.42	2,407.69	1.75	-1.65	-1.09	199.85
	NORMAL	4,682.0	31.29	314.80	3,850.04	1,846.55	-1,626.58	2,458.23	2.18	-1.80	-2.32	213.47
	NORMAL	4,778.0	29.84	317.09	3,932.70	1,881.61	-1,660.53	2,507.04	1.94	-1.51	2.39	142.21
	NORMAL	4,873.0	27.33	316.73	4,016.12	1,914.80	-1,691.57	2,552.48	2.65	-2.64	-0.38	183.77
	NORMAL	4,969.0	25.62	316.82	4,102.05	1,945.99	-1,720.88	2,595.27	1.78	-1.78	0.09	178.70
	NORMAL	5,064.0	24.13	317.88	4,188.23	1,975.37	-1,747.96	2,635.22	1.64	-1.57	1.12	163.82
	NORMAL	5,159.0	22.98	319.90	4,275.31	2,003.96	-1,772.93	2,673.13	1.48	-1.21	2.13	145.86
	NORMAL	5,255.0	21.01	319.90	4,364.32	2,031.46	-1,796.09	2,709.00	2.05	-2.05	0.00	180.00
	NORMAL	5,350.0	18.19	319.90	4,453.81	2,055.84	-1,816.62	2,740.79	2.97	-2.97	0.00	180.00
	NORMAL	5,445.0	16.00	317.09	4,544.61	2,076.77	-1,835.08	2,768.68	2.46	-2.31	-2.96	199.33
	NORMAL	5,540.0	14.50	314.54	4,636.26	2,094.70	-1,852.48	2,793.66	1.73	-1.58	-2.68	202.87
4/21/2012	NORMAL	5,636.0	13.18	314.19	4,729.47	2,110.76	-1,868.89	2,816.62	1.38	-1.38	-0.36	183.46
	NORMAL	5,731.0	11.60	316.73	4,822.26	2,125.27	-1,883.21	2,836.99	1.76	-1.66	2.67	162.21
	NORMAL	5,826.0	9.40	321.22	4,915.66	2,138.27	-1,894.61	2,854.27	2.47	-2.32	4.73	161.80
	NORMAL	5,922.0	7.60	318.67	5,010.60	2,149.15	-1,903.72	2,868.42	1.92	-1.88	-2.66	190.57
	NORMAL	6,017.0	5.76	316.82	5,104.96	2,157.34	-1,911.13	2,879.47	1.95	-1.94	-1.95	185.75
	NORMAL	6,112.0	4.22	318.49	5,199.59	2,163.44	-1,916.71	2,887.73	1.63	-1.62	1.76	175.44
	NORMAL	6,207.0	3.56	315.77	5,294.37	2,168.17	-1,921.08	2,894.17	0.72	-0.69	-2.86	194.27
	NORMAL	6,303.0	2.94	307.59	5,390.22	2,171.81	-1,925.11	2,899.58	0.80	-0.65	-8.52	212.76
	NORMAL	6,399.0	2.99	301.00	5,486.09	2,174.60	-1,929.21	2,904.44	0.36	0.05	-6.86	275.05
	NORMAL	6,494.0	2.24	314.45	5,580.99	2,177.17	-1,932.66	2,908.69	1.01	-0.79	14.16	147.30
	NORMAL	6,589.0	1.67	17.64	5,675.95	2,179.79	-1,933.56	2,911.20	2.22	-0.60	66.52	134.92
	NORMAL	6,685.0	0.62	338.18	5,771.93	2,181.61	-1,933.33	2,912.35	1.31	-1.09	-41.10	198.30
	NORMAL	6,780.0	0.48	253.28	5,866.92	2,181.97	-1,933.90	2,913.00	0.79	-0.15	-89.37	219.63
	NORMAL	6,875.0	1.27	217.95	5,961.91	2,181.03	-1,934.93	2,913.04	0.97	0.83	-37.19	307.14
4/22/2012	NORMAL	6,971.0	1.27	210.83	6,057.89	2,179.28	-1,936.13	2,912.61	0.16	0.00	-7.42	266.44
	NORMAL	7,067.0	0.53	162.05	6,153.88	2,177.94	-1,936.54	2,911.93	1.05	-0.77	-50.81	203.41
	NORMAL	7,162.0	0.53	53.06	6,248.88	2,177.79	-1,936.05	2,911.48	0.91	0.00	-114.73	215.51
	NORMAL	7,257.0	0.04	171.72	6,343.87	2,178.02	-1,935.70	2,911.40	0.58	-0.52	124.91	176.34

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 (°)
4/22/2012	NORMAL	7,352.0	1.01	205.73	6,438.87	2,177.23	-1,936.06	2,911.09	1.03	1.02	35.80	35.32
	NORMAL	7,448.0	0.92	211.35	6,534.86	2,175.81	-1,936.82	2,910.60	0.14	-0.09	5.85	136.34
	NORMAL	7,543.0	0.40	235.52	6,629.85	2,174.97	-1,937.49	2,910.46	0.61	-0.55	25.44	163.56
	NORMAL	7,638.0	0.13	299.42	6,724.85	2,174.84	-1,937.86	2,910.62	0.38	-0.28	67.26	161.19
	NORMAL	7,734.0	0.57	4.63	6,820.85	2,175.36	-1,937.92	2,911.04	0.55	0.46	67.93	78.11
	NORMAL	7,830.0	0.70	247.65	6,916.84	2,175.62	-1,938.42	2,911.57	1.13	0.14	-121.85	215.10
	NORMAL	7,925.0	2.33	237.11	7,011.81	2,174.35	-1,940.58	2,912.16	1.73	1.72	-11.09	345.00
	NORMAL	8,021.0	2.94	240.97	7,107.71	2,172.09	-1,944.37	2,913.17	0.66	0.64	4.02	18.15
	NORMAL	8,116.0	2.94	243.43	7,202.58	2,169.82	-1,948.68	2,914.53	0.13	0.00	2.59	91.23
	NORMAL	8,212.0	2.72	243.52	7,298.46	2,167.70	-1,952.92	2,915.95	0.23	-0.23	0.09	178.89
	NORMAL	8,308.0	2.90	232.54	7,394.35	2,165.21	-1,956.89	2,916.91	0.59	0.19	-11.44	282.95
	NORMAL	8,404.0	3.08	225.06	7,490.22	2,161.91	-1,960.64	2,917.14	0.45	0.19	-7.79	291.00
	NORMAL	8,480.0	3.08	219.97	7,566.11	2,158.91	-1,963.40	2,916.89	0.36	0.00	-6.70	267.46
	NORMAL	8,525.0	3.08	216.96	7,611.04	2,157.01	-1,964.90	2,916.58	0.36	0.00	-6.69	268.50

3 Charts

3.1 Vertical Section View



3.2 Plan View

