

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	PA 413-4	Wellbore No.	
Well Name	PA 413-4	Common Name	PA 413-4
Project	PA 04-07S-095W	Site	GV 80-4 Pad
Vertical Section Azimuth	297.83 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	1/2/2013	UWI	PA 413-4
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	1/2/2013	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

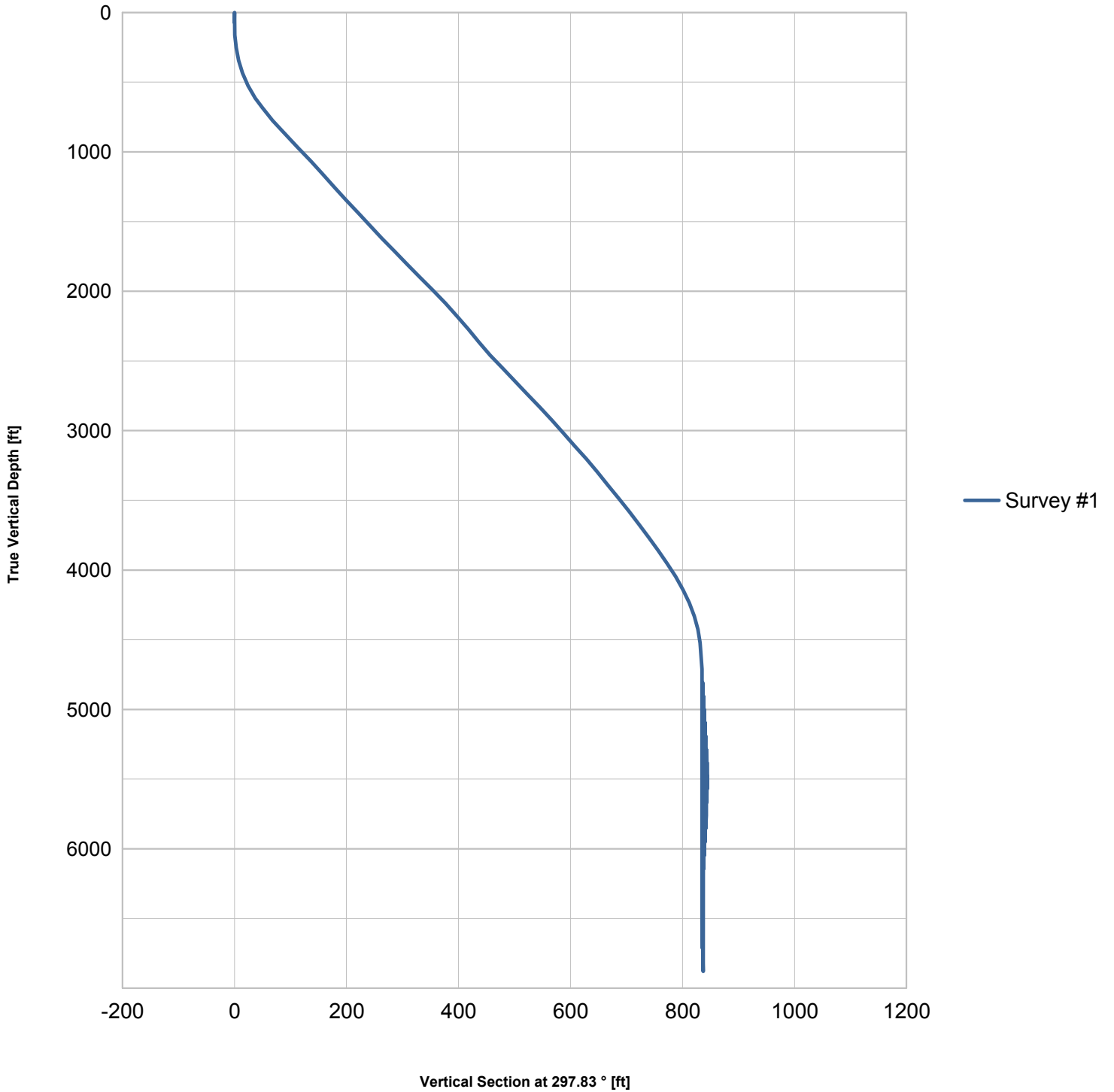
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
1/2/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/2/2013	NORMAL	72.0	0.35	61.96	72.00	0.10	0.19	-0.12	0.49	0.49	0.00	61.96
	NORMAL	162.0	0.88	291.36	162.00	0.48	-0.21	0.41	1.27	0.59	-145.11	215.91
	NORMAL	253.0	2.38	293.82	252.96	1.50	-2.59	2.99	1.65	1.65	2.70	3.90
	NORMAL	344.0	3.34	287.93	343.84	3.08	-6.84	7.48	1.10	1.05	-6.47	340.02
1/3/2013	NORMAL	435.0	5.54	297.25	434.57	5.91	-13.27	14.49	2.54	2.42	10.24	22.84
	NORMAL	526.0	6.86	297.69	525.03	10.45	-21.98	24.32	1.45	1.45	0.48	2.28
	NORMAL	616.0	9.68	297.69	614.09	16.46	-33.44	37.26	3.13	3.13	0.00	0.00
	NORMAL	687.0	10.71	296.53	683.96	22.18	-44.63	49.83	1.48	1.45	-1.63	348.16
	NORMAL	779.0	12.34	300.60	774.11	31.00	-60.74	68.19	1.98	1.77	4.42	28.52
	NORMAL	852.0	13.06	301.77	845.32	39.32	-74.47	84.21	1.05	0.99	1.60	20.23
1/4/2013	NORMAL	981.0	13.36	302.13	970.91	54.92	-99.48	113.62	0.24	0.23	0.28	15.51
	NORMAL	1,077.0	13.41	298.09	1,064.30	66.06	-118.70	135.81	0.98	0.05	-4.21	271.09
	NORMAL	1,172.0	12.22	298.62	1,156.93	76.06	-137.24	156.88	1.26	-1.25	0.56	174.62
	NORMAL	1,267.0	12.66	298.35	1,249.70	85.82	-155.23	177.34	0.47	0.46	-0.28	352.34
	NORMAL	1,362.0	13.32	299.85	1,342.27	96.21	-173.88	198.69	0.78	0.69	1.58	27.79
	NORMAL	1,458.0	13.01	294.14	1,435.75	106.14	-193.34	220.52	1.39	-0.32	-5.95	253.82
	NORMAL	1,553.0	12.84	294.22	1,528.35	114.84	-212.72	241.73	0.18	-0.18	0.08	174.03
	NORMAL	1,648.0	13.76	301.43	1,620.80	125.06	-231.99	263.54	1.99	0.97	7.59	64.53
	NORMAL	1,744.0	13.67	298.18	1,714.07	136.37	-251.73	286.28	0.81	-0.09	-3.39	261.76
	NORMAL	1,839.0	13.54	298.35	1,806.40	146.96	-271.41	308.63	0.14	-0.14	0.18	162.98

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 (°)
1/5/2013	NORMAL	1,935.0	13.67	296.42	1,899.71	157.34	-291.46	331.21	0.49	0.14	-2.01	285.04
	NORMAL	2,030.0	14.15	298.09	1,991.92	167.80	-311.76	354.04	0.66	0.51	1.76	40.72
	NORMAL	2,126.0	13.19	295.45	2,085.20	178.03	-332.00	376.72	1.19	-1.00	-2.75	211.74
	NORMAL	2,221.0	12.09	295.98	2,177.90	187.05	-350.73	397.49	1.16	-1.16	0.56	174.24
	NORMAL	2,317.0	11.91	294.05	2,271.80	195.49	-368.82	417.42	0.46	-0.19	-2.01	244.90
	NORMAL	2,412.0	11.39	303.10	2,364.85	204.61	-385.63	436.55	2.00	-0.55	9.53	110.28
	NORMAL	2,508.0	12.84	302.22	2,458.71	215.47	-402.60	456.62	1.52	1.51	-0.92	352.31
	NORMAL	2,604.0	13.85	297.83	2,552.12	226.53	-421.78	478.75	1.49	1.05	-4.57	312.76
	NORMAL	2,699.0	13.19	296.60	2,644.49	236.69	-441.53	500.96	0.76	-0.69	-1.29	202.95
	NORMAL	2,795.0	13.28	297.30	2,737.94	246.65	-461.12	522.93	0.19	0.09	0.73	61.02
	NORMAL	2,890.0	13.54	296.51	2,830.35	256.62	-480.77	544.96	0.33	0.27	-0.83	324.44
	NORMAL	2,985.0	12.48	295.89	2,922.91	266.06	-499.96	566.34	1.13	-1.12	-0.65	187.20
	NORMAL	3,081.0	12.44	297.56	3,016.65	275.38	-518.45	587.05	0.38	-0.04	1.74	97.15
	NORMAL	3,177.0	12.44	298.27	3,110.39	285.06	-536.73	607.73	0.16	0.00	0.74	90.35
	NORMAL	3,272.0	12.53	299.23	3,203.15	294.94	-554.73	628.26	0.24	0.09	1.01	67.02
	NORMAL	3,368.0	11.25	298.44	3,297.09	304.48	-572.05	648.04	1.34	-1.33	-0.82	186.86
	NORMAL	3,463.0	11.39	297.30	3,390.24	313.20	-588.54	666.68	0.28	0.15	-1.20	301.47
	NORMAL	3,559.0	11.52	298.71	3,484.33	322.15	-605.37	685.75	0.32	0.14	1.47	65.79
	NORMAL	3,654.0	10.99	301.34	3,577.50	331.42	-621.42	704.27	0.78	-0.56	2.77	137.20
	NORMAL	3,749.0	10.37	302.22	3,670.85	340.69	-636.39	721.83	0.67	-0.65	0.93	165.69
1/6/2013	NORMAL	3,845.0	10.90	303.36	3,765.20	350.28	-651.28	739.48	0.59	0.55	1.19	22.21
	NORMAL	3,939.0	9.71	301.25	3,857.69	359.28	-665.48	756.24	1.33	-1.27	-2.24	196.56
	NORMAL	4,034.0	9.71	301.87	3,951.33	367.67	-679.14	772.23	0.11	0.00	0.65	90.31
	NORMAL	4,130.0	8.88	303.89	4,046.06	376.08	-692.16	787.68	0.93	-0.86	2.10	159.54
	NORMAL	4,226.0	7.08	295.89	4,141.13	382.79	-703.64	800.96	2.20	-1.88	-8.33	207.76
	NORMAL	4,321.0	6.29	299.14	4,235.49	387.88	-713.45	812.01	0.92	-0.83	3.42	156.02
	NORMAL	4,417.0	4.70	294.93	4,331.04	392.10	-721.61	821.20	1.71	-1.66	-4.39	192.14
	NORMAL	4,512.0	3.25	282.27	4,425.81	394.31	-727.77	827.68	1.78	-1.53	-13.33	204.97
	NORMAL	4,608.0	1.85	248.17	4,521.72	394.32	-731.87	831.31	2.09	-1.46	-35.52	211.12
	NORMAL	4,703.0	1.54	246.85	4,616.68	393.24	-734.47	833.10	0.33	-0.33	-1.39	186.52
	NORMAL	4,798.0	1.63	254.23	4,711.64	392.38	-736.94	834.88	0.23	0.09	7.77	69.93
	NORMAL	4,894.0	0.75	247.47	4,807.62	391.76	-738.84	836.27	0.93	-0.92	-7.04	185.70
	NORMAL	4,988.0	0.88	272.43	4,901.61	391.56	-740.12	837.32	0.40	0.14	26.55	82.66
	NORMAL	5,084.0	1.10	274.27	4,997.60	391.66	-741.78	838.83	0.23	0.23	1.92	9.14
	NORMAL	5,179.0	0.97	341.60	5,092.59	392.49	-742.94	840.25	1.21	-0.14	70.87	129.05
	NORMAL	5,274.0	1.23	350.03	5,187.57	394.26	-743.37	841.45	0.32	0.27	8.87	36.16
	NORMAL	5,370.0	1.01	345.99	5,283.55	396.09	-743.76	842.65	0.24	-0.23	-4.21	197.73
1/7/2013	NORMAL	5,465.0	0.97	340.98	5,378.54	397.67	-744.22	843.79	0.10	-0.04	-5.27	242.71
	NORMAL	5,561.0	0.57	19.83	5,474.53	398.88	-744.32	844.45	0.66	-0.42	40.47	145.80
	NORMAL	5,656.0	0.48	73.27	5,569.52	399.44	-743.78	844.23	0.50	-0.09	56.25	126.38
	NORMAL	5,752.0	0.66	82.05	5,665.52	399.63	-742.85	843.50	0.21	0.19	9.15	30.32
	NORMAL	5,848.0	0.70	93.92	5,761.51	399.67	-741.72	842.51	0.15	0.04	12.36	80.14
	NORMAL	5,943.0	0.53	110.97	5,856.51	399.47	-740.73	841.55	0.26	-0.18	17.95	141.20
	NORMAL	6,039.0	0.79	140.85	5,952.50	398.80	-739.90	840.50	0.44	0.27	31.13	68.50
	NORMAL	6,135.0	0.83	113.26	6,048.49	398.01	-738.84	839.20	0.40	0.04	-28.74	261.95
	NORMAL	6,230.0	1.01	127.58	6,143.48	397.23	-737.54	837.68	0.31	0.19	15.07	59.25
	NORMAL	6,326.0	0.70	107.19	6,239.47	396.54	-736.31	836.27	0.45	-0.32	-21.24	214.58
	NORMAL	6,421.0	0.44	110.71	6,334.46	396.24	-735.42	835.34	0.28	-0.27	3.71	174.09
	NORMAL	6,516.0	0.13	67.38	6,429.46	396.15	-734.98	834.91	0.38	-0.33	-45.61	194.48
	NORMAL	6,612.0	0.31	9.11	6,525.46	396.45	-734.84	834.93	0.28	0.19	-60.70	277.14
	NORMAL	6,708.0	0.66	352.76	6,621.46	397.26	-734.86	835.33	0.39	0.36	-17.03	330.12
	NORMAL	6,803.0	0.66	354.06	6,716.45	398.34	-734.99	835.94	0.02	0.00	1.37	90.65
1/8/2013	NORMAL	6,899.0	0.40	312.42	6,812.45	399.12	-735.29	836.58	0.47	-0.27	-43.37	216.36
	NORMAL	6,965.0	0.18	312.33	6,878.45	399.35	-735.54	836.90	0.33	-0.33	-0.14	180.07

3 Charts

3.1 Vertical Section View



3.2 Plan View

