

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	KP 514-18	Wellbore No.	
Well Name	KP 514-18	Common Name	KP 514-18
Project	KP 18-06S-91W	Site	KP 34-18 Pad
Vertical Section Azimuth	257.37 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	7/13/2012	UWI	KP 514-18
Active Datum	KB @5,944.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	7/13/2012	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 (°)
7/13/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/13/2012	NORMAL	106.0	1.41	259.63	105.99	-0.23	-1.28	1.30	1.33	1.33	0.00	259.63
	NORMAL	136.0	1.67	260.68	135.98	-0.37	-2.08	2.11	0.87	0.87	3.50	6.72
	NORMAL	166.0	2.02	262.62	165.96	-0.51	-3.03	3.07	1.18	1.17	6.47	11.09
	NORMAL	197.0	2.73	264.29	196.94	-0.65	-4.31	4.35	2.30	2.29	5.39	6.40
	NORMAL	227.0	3.78	254.79	226.89	-0.98	-5.97	6.05	3.92	3.50	-31.67	328.01
	NORMAL	257.0	4.57	252.60	256.81	-1.60	-8.07	8.22	2.69	2.63	-7.30	347.50
	NORMAL	287.0	5.54	256.64	286.69	-2.29	-10.62	10.86	3.44	3.23	13.47	22.17
	NORMAL	318.0	6.51	258.49	317.52	-2.99	-13.80	14.12	3.19	3.13	5.97	12.24
	NORMAL	348.0	7.75	256.82	347.29	-3.79	-17.43	17.84	4.19	4.13	-5.57	349.68
	NORMAL	379.0	8.97	255.41	377.96	-4.88	-21.81	22.35	3.99	3.94	-4.55	349.76
	NORMAL	409.0	10.73	255.32	407.51	-6.17	-26.77	27.47	5.87	5.87	-0.30	359.45
	NORMAL	439.0	11.79	256.92	436.94	-7.57	-32.46	33.33	3.68	3.53	5.33	17.21
	NORMAL	469.0	13.37	256.99	466.21	-9.05	-38.82	39.86	5.27	5.27	0.23	0.59
	NORMAL	499.0	14.52	257.34	495.33	-10.65	-45.87	47.09	3.84	3.83	1.17	4.36
	NORMAL	530.0	15.31	257.35	525.28	-12.40	-53.66	55.07	2.55	2.55	0.03	0.19
	NORMAL	560.0	15.92	257.52	554.18	-14.16	-61.54	63.15	2.04	2.03	0.57	4.37
	NORMAL	590.0	17.07	257.96	582.94	-15.97	-69.86	71.66	3.86	3.83	1.47	6.41
	NORMAL	621.0	17.95	258.13	612.51	-17.90	-78.99	80.99	2.84	2.84	0.55	3.41
	NORMAL	661.0	18.91	257.71	650.45	-20.55	-91.35	93.64	2.42	2.40	-1.05	351.93
	NORMAL	722.0	21.46	257.18	707.70	-25.13	-111.90	114.68	4.19	4.18	-0.87	355.65

2.1.2 Survey Stations (Continued)

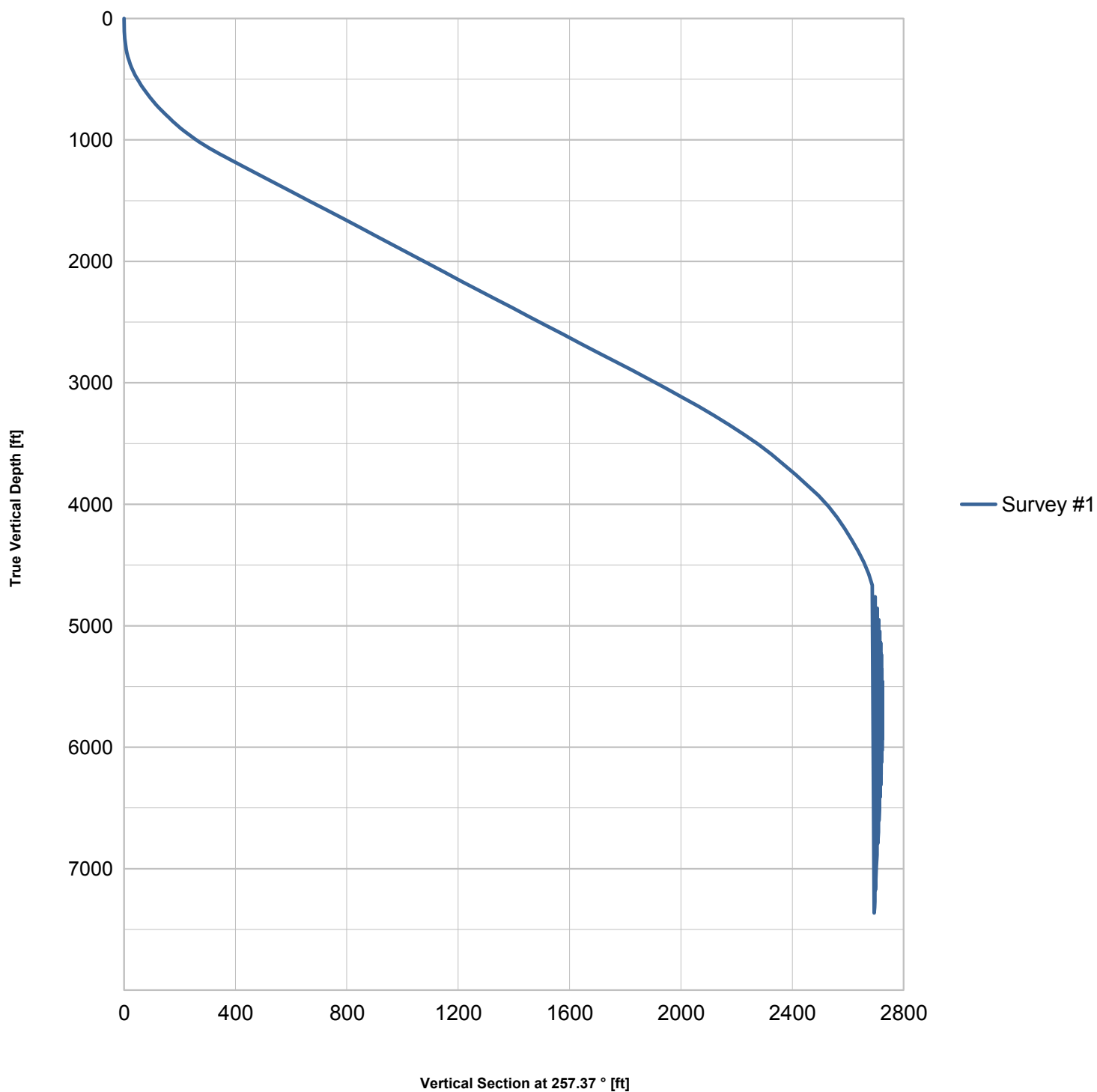
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
7/13/2012	NORMAL	752.0	22.34	256.21	735.54	-27.70	-122.78	125.87	3.17	2.93	-3.23	337.20
	NORMAL	782.0	23.39	256.56	763.18	-30.45	-134.11	137.53	3.53	3.50	1.17	7.54
	NORMAL	812.0	23.92	256.56	790.66	-33.24	-145.82	149.56	1.77	1.77	0.00	0.00
	NORMAL	843.0	24.62	258.06	818.92	-36.04	-158.25	162.30	3.01	2.26	4.84	42.06
	NORMAL	873.0	24.62	258.06	846.19	-38.63	-170.48	174.80	0.00	0.00	0.00	0.00
	NORMAL	906.0	27.26	258.32	875.86	-41.58	-184.61	189.23	8.01	8.00	0.79	2.58
	NORMAL	938.0	28.23	257.79	904.19	-44.66	-199.18	204.13	3.13	3.03	-1.66	345.49
	NORMAL	970.0	29.19	257.79	932.25	-47.91	-214.21	219.50	3.00	3.00	0.00	0.00
	NORMAL	1,002.0	30.34	256.83	960.03	-51.41	-229.70	235.38	3.89	3.59	-3.00	337.07
	NORMAL	1,034.0	31.92	256.91	987.42	-55.16	-245.81	251.93	4.94	4.94	0.25	1.53
	NORMAL	1,066.0	33.50	257.44	1,014.34	-59.00	-262.67	269.22	5.02	4.94	1.66	10.50
	NORMAL	1,097.0	35.17	257.62	1,039.94	-62.78	-279.75	286.70	5.40	5.39	0.58	3.55
	NORMAL	1,129.0	36.58	256.04	1,065.87	-67.05	-298.00	305.45	5.27	4.41	-4.94	326.07
	NORMAL	1,161.0	37.81	256.83	1,091.36	-71.59	-316.81	324.79	4.12	3.84	2.47	21.54
	NORMAL	1,193.0	38.69	255.77	1,116.49	-76.28	-336.05	344.60	3.43	2.75	-3.31	322.87
	NORMAL	1,225.0	39.04	256.21	1,141.41	-81.14	-355.54	364.67	1.39	1.09	1.38	38.44
	NORMAL	1,257.0	39.48	257.27	1,166.19	-85.79	-375.25	384.92	2.51	1.38	3.31	57.15
	NORMAL	1,288.0	39.57	257.53	1,190.10	-90.09	-394.50	404.65	0.61	0.29	0.84	61.56
	NORMAL	1,305.0	39.75	259.20	1,203.18	-92.28	-405.13	415.50	6.36	1.06	9.82	81.06
7/14/2012	NORMAL	1,439.0	39.66	258.76	1,306.28	-108.64	-489.15	501.07	0.22	-0.07	-0.33	252.08
	NORMAL	1,503.0	40.54	259.29	1,355.23	-116.49	-529.62	542.28	1.47	1.38	0.83	21.41
	NORMAL	1,598.0	39.31	257.18	1,428.09	-128.90	-589.30	603.23	1.93	-1.29	-2.22	226.95
	NORMAL	1,694.0	40.01	256.47	1,501.99	-142.87	-648.96	664.50	0.87	0.73	-0.74	326.81
	NORMAL	1,790.0	40.71	256.12	1,575.14	-157.60	-709.36	726.65	0.77	0.73	-0.36	341.92
	NORMAL	1,885.0	39.22	258.23	1,647.96	-171.16	-768.84	787.66	2.12	-1.57	2.22	138.52
	NORMAL	1,980.0	39.31	256.83	1,721.51	-184.14	-827.55	847.79	0.94	0.09	-1.47	275.26
	NORMAL	2,076.0	39.57	256.47	1,795.65	-198.22	-886.88	908.77	0.36	0.27	-0.38	318.53
	NORMAL	2,171.0	39.31	255.42	1,869.02	-212.88	-945.43	969.10	0.75	-0.27	-1.11	248.30
	NORMAL	2,266.0	39.48	258.94	1,942.44	-226.25	-1,004.20	1,029.37	2.36	0.18	3.71	87.01
	NORMAL	2,362.0	39.48	257.53	2,016.54	-238.69	-1,063.95	1,090.40	0.93	0.00	-1.47	269.46
	NORMAL	2,457.0	39.48	256.65	2,089.87	-252.19	-1,122.82	1,150.80	0.59	0.00	-0.93	269.66
	NORMAL	2,552.0	39.83	256.12	2,163.01	-266.46	-1,181.74	1,211.41	0.51	0.37	-0.56	315.78
	NORMAL	2,647.0	39.83	258.23	2,235.97	-279.97	-1,241.07	1,272.25	1.42	0.00	2.22	90.81
7/15/2012	NORMAL	2,742.0	40.10	257.71	2,308.78	-292.68	-1,300.75	1,333.27	0.45	0.28	-0.55	308.75
	NORMAL	2,838.0	39.31	258.58	2,382.63	-305.29	-1,360.76	1,394.59	1.01	-0.82	0.91	145.21
	NORMAL	2,932.0	39.75	258.41	2,455.14	-317.22	-1,419.39	1,454.41	0.48	0.47	-0.18	346.12
	NORMAL	3,027.0	40.01	258.94	2,528.04	-329.18	-1,479.12	1,515.30	0.45	0.27	0.56	52.78
	NORMAL	3,122.0	40.19	258.58	2,600.71	-341.11	-1,539.14	1,576.48	0.31	0.19	-0.38	307.68
	NORMAL	3,218.0	39.66	257.53	2,674.33	-353.86	-1,599.41	1,638.08	0.89	-0.55	-1.09	231.41
	NORMAL	3,313.0	39.92	256.83	2,747.32	-367.35	-1,658.69	1,698.88	0.55	0.27	-0.74	299.86
	NORMAL	3,409.0	40.27	256.83	2,820.76	-381.44	-1,718.90	1,760.70	0.36	0.36	0.00	0.00
	NORMAL	3,504.0	40.80	256.48	2,892.96	-395.69	-1,778.97	1,822.44	0.61	0.56	-0.37	336.64
	NORMAL	3,600.0	38.34	258.23	2,966.96	-409.10	-1,838.62	1,883.58	2.81	-2.56	1.82	156.29
	NORMAL	3,695.0	38.69	257.53	3,041.29	-421.52	-1,896.46	1,942.74	0.59	0.37	-0.74	308.49
	NORMAL	3,791.0	38.69	258.06	3,116.23	-434.20	-1,955.12	2,002.75	0.35	0.00	0.55	90.21
	NORMAL	3,887.0	37.64	256.65	3,191.70	-447.18	-2,013.00	2,062.07	1.42	-1.09	-1.47	219.13
	NORMAL	3,982.0	35.61	256.47	3,267.94	-460.35	-2,068.12	2,118.73	2.14	-2.14	-0.19	182.96
	NORMAL	4,077.0	34.21	256.83	3,345.85	-472.91	-2,121.01	2,173.09	1.49	-1.47	0.38	171.78
	NORMAL	4,173.0	34.12	256.47	3,425.28	-485.36	-2,173.47	2,227.00	0.23	-0.09	-0.38	245.85
	NORMAL	4,269.0	30.95	256.65	3,506.20	-497.36	-2,223.68	2,278.62	3.30	-3.30	0.19	178.33
	NORMAL	4,364.0	28.67	254.89	3,588.63	-508.94	-2,269.45	2,325.82	2.57	-2.40	-1.85	200.23
	NORMAL	4,459.0	26.56	255.42	3,672.80	-520.23	-2,312.01	2,369.82	2.24	-2.22	0.56	173.59
	NORMAL	4,555.0	26.73	255.77	3,758.61	-530.94	-2,353.71	2,412.85	0.24	0.18	0.36	42.87
	NORMAL	4,650.0	25.77	257.00	3,843.81	-540.84	-2,394.54	2,454.86	1.16	-1.01	1.29	151.01
	NORMAL	4,745.0	23.65	257.71	3,930.11	-549.54	-2,433.29	2,494.57	2.25	-2.23	0.75	172.35
	NORMAL	4,841.0	20.58	255.42	4,019.03	-557.89	-2,468.44	2,530.70	3.32	-3.20	-2.39	194.63
	NORMAL	4,936.0	16.80	253.13	4,109.01	-566.08	-2,497.75	2,561.09	4.05	-3.98	-2.41	189.90

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 (°)
7/15/2012	NORMAL	5,032.0	16.36	254.19	4,201.02	-573.79	-2,524.04	2,588.42	0.56	-0.46	1.10	146.00
7/16/2012	NORMAL	5,127.0	14.51	252.96	4,292.59	-580.92	-2,548.29	2,613.65	1.98	-1.95	-1.29	189.44
	NORMAL	5,223.0	13.37	257.53	4,385.76	-586.84	-2,570.63	2,636.74	1.65	-1.19	4.76	138.20
	NORMAL	5,318.0	11.26	255.60	4,478.57	-591.52	-2,590.34	2,657.00	2.26	-2.22	-2.03	190.10
	NORMAL	5,414.0	9.06	256.30	4,573.06	-595.64	-2,606.76	2,673.92	2.30	-2.29	0.73	177.13
	NORMAL	5,509.0	7.30	256.47	4,667.09	-598.83	-2,619.90	2,687.44	1.85	-1.85	0.18	179.30
	NORMAL	5,603.0	5.19	262.28	4,760.53	-600.79	-2,629.92	2,697.65	2.34	-2.24	6.18	166.20
	NORMAL	5,698.0	3.87	258.76	4,855.23	-602.00	-2,637.32	2,705.13	1.42	-1.39	-3.71	190.14
7/17/2012	NORMAL	5,792.0	2.46	248.74	4,949.08	-603.35	-2,642.31	2,710.30	1.61	-1.50	-10.66	196.47
	NORMAL	5,887.0	2.02	248.39	5,044.01	-604.70	-2,645.77	2,713.97	0.46	-0.46	-0.37	181.61
	NORMAL	5,982.0	1.85	257.00	5,138.96	-605.66	-2,648.82	2,717.15	0.35	-0.18	9.06	124.57
	NORMAL	6,078.0	1.14	267.37	5,234.92	-606.06	-2,651.28	2,719.64	0.79	-0.74	10.80	164.27
	NORMAL	6,107.0	1.19	263.95	5,263.92	-606.10	-2,651.87	2,720.23	0.30	0.17	-11.79	304.00
	NORMAL	6,203.0	0.83	276.43	5,359.90	-606.13	-2,653.55	2,721.88	0.44	-0.38	13.00	154.71
	NORMAL	6,298.0	0.70	267.64	5,454.89	-606.08	-2,654.82	2,723.10	0.18	-0.14	-9.25	217.74
	NORMAL	6,394.0	0.35	250.24	5,550.89	-606.20	-2,655.68	2,723.96	0.40	-0.36	-18.13	195.96
	NORMAL	6,489.0	0.04	169.20	5,645.89	-606.33	-2,655.95	2,724.25	0.36	-0.33	-85.31	186.56
	NORMAL	6,585.0	0.18	84.12	5,741.89	-606.35	-2,655.79	2,724.11	0.19	0.15	-88.63	262.20
	NORMAL	6,681.0	0.26	54.71	5,837.89	-606.21	-2,655.46	2,723.75	0.14	0.08	-30.64	290.01
	NORMAL	6,776.0	0.48	95.99	5,932.89	-606.12	-2,654.89	2,723.18	0.35	0.23	43.45	72.36
7/18/2012	NORMAL	6,872.0	0.75	97.13	6,028.88	-606.24	-2,653.87	2,722.21	0.28	0.28	1.19	3.16
	NORMAL	6,968.0	0.83	81.75	6,124.87	-606.22	-2,652.55	2,720.92	0.24	0.08	-16.02	282.87
	NORMAL	7,063.0	1.05	71.20	6,219.86	-605.84	-2,651.05	2,719.37	0.29	0.23	-11.11	316.45
	NORMAL	7,158.0	1.23	74.81	6,314.84	-605.29	-2,649.24	2,717.49	0.20	0.19	3.80	23.56
	NORMAL	7,254.0	1.50	75.68	6,410.81	-604.71	-2,647.03	2,715.20	0.28	0.28	0.91	4.82
	NORMAL	7,350.0	1.58	41.06	6,506.78	-603.40	-2,644.94	2,712.88	0.96	0.08	-36.06	257.46
	NORMAL	7,446.0	1.63	20.40	6,602.74	-601.13	-2,643.60	2,711.07	0.60	0.05	-21.52	264.56
	NORMAL	7,541.0	1.85	26.91	6,697.70	-598.49	-2,642.43	2,709.35	0.31	0.23	6.85	45.22
	NORMAL	7,636.0	2.11	36.13	6,792.64	-595.71	-2,640.71	2,707.06	0.43	0.27	9.71	55.45
7/19/2012	NORMAL	7,731.0	2.24	45.71	6,887.58	-593.00	-2,638.35	2,704.17	0.41	0.14	10.08	75.15
	NORMAL	7,825.0	1.50	22.95	6,981.53	-590.59	-2,636.55	2,701.89	1.10	-0.79	-24.21	214.11
	NORMAL	7,924.0	1.58	20.58	7,080.49	-588.12	-2,635.57	2,700.39	0.10	0.08	-2.39	320.29
	NORMAL	8,020.0	1.67	25.94	7,176.45	-585.62	-2,634.49	2,698.79	0.18	0.09	5.58	62.07
7/20/2012	NORMAL	8,114.0	2.02	35.08	7,270.40	-583.03	-2,632.94	2,696.71	0.49	0.37	9.72	44.68
	NORMAL	8,163.0	2.33	33.76	7,319.37	-581.50	-2,631.89	2,695.35	0.64	0.63	-2.69	350.16
	NORMAL	8,208.0	2.33	33.76	7,364.33	-579.98	-2,630.87	2,694.03	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

