

## 1 General

### 1.1 Customer Information

Company	PICEANCE HL
Representative	Eric Kolstad
Address	1515 Arapahoe St., Suite 1000 Denver, CO 80202

### 1.2 Well Information

Well	RGU 521-36-198	Wellbore No.	
Well Name	FEDERAL RGU 521-36-198	Common Name	RGU 521-36-198
Project	RG 25-01S-098W	Site	RGU 24-25-198 Pad
Vertical Section Azimuth	155.17 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	9/10/2012	UWI	RGU 521-36-198
Active Datum	KB @6,707.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SDI
Date Started	9/10/2012	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 (°)
9/10/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/10/2012	NORMAL	227.0	1.75	170.04	226.96	-3.41	0.60	3.35	0.77	0.77	0.00	170.04
	NORMAL	319.0	2.46	158.15	318.90	-6.63	1.58	6.68	0.90	0.77	-12.92	322.37
	NORMAL	411.0	4.04	153.40	410.75	-11.36	3.76	11.89	1.74	1.72	-5.16	347.95
	NORMAL	503.0	6.24	156.74	502.38	-18.85	7.19	20.13	2.41	2.39	3.63	9.41
	NORMAL	595.0	8.79	154.72	593.58	-29.80	12.17	32.16	2.79	2.77	-2.20	353.08
	NORMAL	687.0	10.02	156.13	684.34	-43.48	18.41	47.19	1.36	1.34	1.53	11.31
	NORMAL	780.0	9.94	154.37	775.93	-58.12	25.15	63.31	0.34	-0.09	-1.89	254.44
	NORMAL	872.0	10.09	153.30	866.53	-72.47	32.21	79.30	0.26	0.16	-1.16	308.34
	NORMAL	964.0	10.27	152.72	957.08	-86.96	39.59	95.55	0.23	0.20	-0.63	330.05
	NORMAL	1,089.0	8.88	156.04	1,080.34	-105.68	48.61	116.33	1.20	-1.11	2.66	159.96
	NORMAL	1,184.0	8.88	155.78	1,174.20	-119.07	54.60	130.99	0.04	0.00	-0.27	269.87
	NORMAL	1,277.0	9.67	154.37	1,265.98	-132.66	60.92	145.98	0.88	0.85	-1.52	343.25
	NORMAL	1,371.0	10.02	154.28	1,358.60	-147.15	67.89	162.05	0.37	0.37	-0.10	357.44
	NORMAL	1,465.0	9.85	156.74	1,451.19	-161.90	74.61	178.27	0.49	-0.18	2.62	113.04
	NORMAL	1,558.0	9.85	157.45	1,542.82	-176.56	80.80	194.17	0.13	0.00	0.76	90.35
	NORMAL	1,652.0	9.63	154.83	1,635.47	-191.10	87.23	210.06	0.53	-0.23	-2.79	242.32
	NORMAL	1,747.0	9.67	157.62	1,729.12	-205.67	93.65	225.98	0.49	0.04	2.94	86.49
	NORMAL	1,842.0	9.50	152.61	1,822.80	-220.01	100.29	241.78	0.90	-0.18	-5.27	256.02
	NORMAL	1,937.0	8.88	151.47	1,916.58	-233.41	107.40	256.93	0.68	-0.65	-1.20	195.80

## 2.1.2 Survey Stations (Continued)

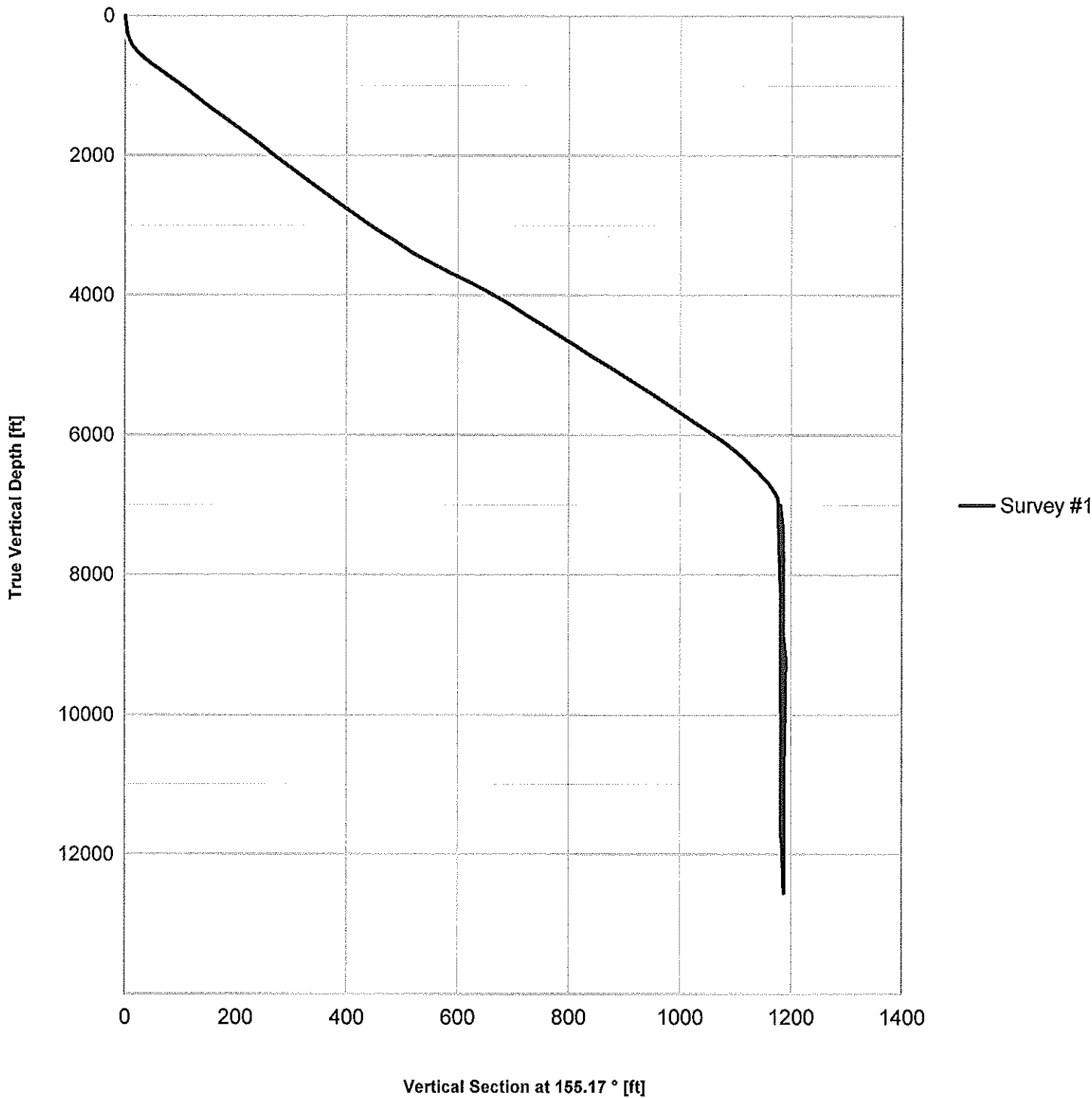
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
9/11/2012	NORMAL	2,031.0	9.18	151.57	2,009.41	-246.38	114.44	271.66	0.32	0.32	0.11	3.04
	NORMAL	2,313.0	9.60	155.33	2,287.64	-287.53	134.96	317.62	0.26	0.15	1.33	57.47
	NORMAL	2,407.0	9.67	148.83	2,380.31	-301.40	142.32	333.31	1.16	0.07	-6.91	270.47
	NORMAL	2,691.0	10.20	158.76	2,660.07	-345.26	163.78	382.11	0.63	0.19	3.50	77.74
	NORMAL	2,880.0	10.02	160.35	2,846.14	-376.34	175.37	415.19	0.18	-0.10	0.84	123.60
	NORMAL	2,974.0	10.13	159.72	2,938.69	-391.79	180.98	431.57	0.17	0.12	-0.67	314.63
	NORMAL	3,069.0	10.64	155.69	3,032.13	-407.62	187.49	448.67	0.93	0.54	-4.24	303.08
	NORMAL	3,164.0	11.26	147.51	3,125.41	-423.44	196.08	466.64	1.76	0.65	-8.61	287.70
	NORMAL	3,257.0	11.08	146.55	3,216.65	-438.55	205.89	484.47	0.28	-0.19	-1.03	225.46
	NORMAL	3,351.0	10.18	141.63	3,309.04	-452.60	216.02	501.48	1.36	-0.96	-5.23	222.84
	NORMAL	3,444.0	12.66	142.33	3,400.19	-467.12	227.35	519.41	2.67	2.67	0.75	3.54
	NORMAL	3,538.0	13.37	145.76	3,491.77	-484.26	239.76	540.17	1.12	0.76	3.65	49.09
	NORMAL	3,633.0	13.93	149.78	3,584.09	-503.22	251.70	562.39	1.16	0.59	4.23	61.41
	NORMAL	3,727.0	14.66	155.55	3,675.19	-523.82	262.32	585.55	1.70	0.78	6.14	65.69
	NORMAL	3,821.0	14.27	155.73	3,766.21	-545.21	272.00	609.03	0.42	-0.41	0.19	173.51
	NORMAL	3,891.0	14.33	156.66	3,834.04	-561.03	278.98	626.32	0.34	0.09	1.33	75.81
9/13/2012	NORMAL	3,997.0	12.57	158.24	3,937.13	-583.79	288.45	650.95	1.70	-1.66	1.49	168.97
	NORMAL	4,091.0	12.57	158.94	4,028.87	-602.84	295.92	671.37	0.16	0.00	0.74	90.34
	NORMAL	4,186.0	11.55	157.21	4,121.78	-621.25	303.32	691.19	1.14	-1.07	-1.82	198.67
	NORMAL	4,280.0	10.46	158.41	4,214.05	-637.86	310.11	709.12	1.18	-1.16	1.28	168.72
	NORMAL	4,375.0	11.17	152.35	4,307.36	-654.03	317.55	726.92	1.41	0.75	-6.38	298.98
	NORMAL	4,470.0	12.57	153.76	4,400.33	-671.46	326.39	746.45	1.50	1.47	1.48	12.39
	NORMAL	4,564.0	11.17	154.90	4,492.32	-688.88	334.78	765.78	1.51	-1.49	1.21	171.05
	NORMAL	4,659.0	11.38	151.17	4,585.48	-705.42	343.20	784.33	0.80	0.22	-3.93	284.23
	NORMAL	4,753.0	11.87	156.13	4,677.56	-722.39	351.58	803.25	1.18	0.52	5.28	66.33
	NORMAL	4,847.0	10.46	156.13	4,769.78	-739.03	358.95	821.45	1.50	-1.50	0.00	180.00
	NORMAL	4,941.0	11.04	153.21	4,862.13	-754.87	366.46	838.97	0.85	0.62	-3.11	315.36
	NORMAL	5,035.0	12.39	156.63	4,954.17	-772.16	374.52	858.05	1.61	1.44	3.64	28.90
	NORMAL	5,130.0	10.82	157.71	5,047.22	-789.77	381.94	877.15	1.67	-1.65	1.14	172.65
	NORMAL	5,224.0	10.73	156.66	5,139.56	-805.97	388.76	894.71	0.23	-0.10	-1.12	244.85
	NORMAL	5,319.0	11.26	149.45	5,232.83	-822.07	396.97	912.78	1.55	0.56	-7.59	287.51
	NORMAL	5,413.0	11.61	153.58	5,324.96	-838.45	405.85	931.37	0.95	0.37	4.39	68.89
	NORMAL	5,508.0	11.24	153.63	5,418.08	-855.30	414.21	950.18	0.39	-0.39	0.05	178.49
	NORMAL	5,602.0	10.55	160.26	5,510.39	-871.61	421.19	967.91	1.52	-0.73	7.05	122.07
	NORMAL	5,697.0	11.08	158.68	5,603.70	-888.30	427.45	985.68	0.64	0.56	-1.66	330.00
	NORMAL	5,790.0	10.64	159.12	5,695.03	-904.65	433.75	1,003.17	0.48	-0.47	0.47	169.55
	NORMAL	5,884.0	10.55	159.38	5,787.43	-920.81	439.88	1,020.41	0.11	-0.10	0.28	152.15
	NORMAL	5,978.0	10.55	156.74	5,879.84	-936.77	446.31	1,037.59	0.51	0.00	-2.81	268.70
	NORMAL	6,073.0	11.08	159.64	5,973.16	-953.32	452.92	1,055.39	0.80	0.56	3.05	47.19
9/14/2012	NORMAL	6,167.0	10.02	161.14	6,065.57	-969.53	458.70	1,072.52	1.16	-1.13	1.60	166.21
	NORMAL	6,262.0	8.72	156.63	6,159.30	-983.96	464.23	1,087.94	1.57	-1.37	-4.75	207.25
	NORMAL	6,356.0	8.84	149.39	6,252.20	-996.72	470.74	1,102.25	1.18	0.13	-7.70	272.61
	NORMAL	6,450.0	7.56	146.37	6,345.24	-1,008.08	477.84	1,115.55	1.44	-1.36	-3.21	197.11
	NORMAL	6,545.0	7.65	149.25	6,439.40	-1,018.72	484.53	1,128.02	0.41	0.09	3.03	78.14
	NORMAL	6,639.0	7.23	150.02	6,532.61	-1,029.22	490.69	1,140.13	0.46	-0.45	0.82	167.03
	NORMAL	6,732.0	6.42	159.20	6,624.95	-1,039.15	495.46	1,151.15	1.46	-0.87	9.87	131.09
	NORMAL	6,825.0	5.72	163.34	6,717.43	-1,048.45	498.63	1,160.92	0.89	-0.75	4.45	150.03
	NORMAL	6,920.0	5.01	159.56	6,812.01	-1,056.88	501.44	1,169.74	0.83	-0.75	-3.98	204.59
	NORMAL	7,015.0	3.34	160.70	6,906.76	-1,063.37	503.80	1,176.63	1.76	-1.76	1.20	177.72
	NORMAL	7,110.0	1.93	158.24	7,001.66	-1,067.47	505.31	1,180.99	1.49	-1.48	-2.59	183.36
	NORMAL	7,205.0	0.88	187.07	7,096.63	-1,069.68	505.81	1,183.20	1.30	-1.11	30.35	159.89
	NORMAL	7,299.0	0.77	169.83	7,190.62	-1,071.02	505.84	1,184.43	0.29	-0.12	-18.34	237.64
	NORMAL	7,393.0	0.44	165.88	7,284.61	-1,071.99	506.04	1,185.39	0.35	-0.35	-4.20	185.23
	NORMAL	7,487.0	0.62	224.59	7,378.61	-1,072.70	505.77	1,185.93	0.58	0.19	62.46	102.55
	NORMAL	7,582.0	0.26	263.88	7,473.61	-1,073.09	505.19	1,186.04	0.47	-0.38	41.36	158.54
	NORMAL	7,676.0	0.44	211.32	7,567.60	-1,073.42	504.79	1,186.17	0.37	0.19	-55.91	271.23
	NORMAL	7,770.0	0.88	234.26	7,661.60	-1,074.15	504.02	1,186.51	0.54	0.47	24.40	42.80

## 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 (°)
9/14/2012	NORMAL	7,864.0	1.32	329.89	7,755.59	-1,073.64	502.89	1,185.57	1.76	0.47	101.73	127.54
9/15/2012	NORMAL	7,958.0	1.41	356.87	7,849.56	-1,071.55	502.28	1,183.41	0.68	0.10	28.70	95.66
	NORMAL	8,053.0	0.97	26.67	7,944.54	-1,069.66	502.58	1,181.83	0.78	-0.46	31.37	139.69
	NORMAL	8,148.0	1.32	48.29	8,039.52	-1,068.22	503.76	1,181.01	0.58	0.37	22.76	62.13
	NORMAL	8,242.0	1.85	70.17	8,133.49	-1,066.98	505.99	1,180.83	0.85	0.56	23.28	60.07
	NORMAL	8,337.0	1.58	81.33	8,228.44	-1,066.26	508.73	1,181.33	0.45	-0.28	11.75	134.44
	NORMAL	8,431.0	1.41	87.57	8,322.41	-1,066.02	511.17	1,182.13	0.25	-0.18	6.64	139.33
	NORMAL	8,525.0	1.14	92.58	8,416.39	-1,066.01	513.26	1,183.00	0.31	-0.29	5.33	160.06
	NORMAL	8,620.0	0.97	101.69	8,511.37	-1,066.22	514.99	1,183.91	0.25	-0.18	9.59	139.88
	NORMAL	8,714.0	0.70	104.89	8,605.36	-1,066.53	516.32	1,184.75	0.29	-0.29	3.40	171.80
	NORMAL	8,809.0	0.62	119.39	8,700.36	-1,066.93	517.33	1,185.54	0.19	-0.08	15.26	122.72
	NORMAL	8,904.0	0.62	121.06	8,795.35	-1,067.44	518.22	1,186.38	0.02	0.00	1.76	90.83
	NORMAL	8,999.0	0.79	158.68	8,890.34	-1,068.32	518.90	1,187.46	0.51	0.18	39.60	89.32
	NORMAL	9,092.0	0.79	174.67	8,983.34	-1,069.56	519.19	1,188.71	0.24	0.00	17.19	97.99
	NORMAL	9,186.0	0.92	202.99	9,077.33	-1,070.90	518.96	1,189.82	0.46	0.14	30.13	87.39
	NORMAL	9,280.0	1.06	197.70	9,171.31	-1,072.42	518.40	1,190.97	0.18	0.15	-5.63	324.20
	NORMAL	9,374.0	0.97	233.21	9,265.30	-1,073.72	517.50	1,191.78	0.66	-0.10	37.78	115.64
	NORMAL	9,469.0	0.79	301.15	9,360.29	-1,073.87	516.29	1,191.40	1.05	-0.19	71.52	132.60
9/16/2012	NORMAL	9,564.0	0.70	317.85	9,455.28	-1,073.10	515.34	1,190.30	0.25	-0.09	17.58	120.72
	NORMAL	9,658.0	1.23	313.45	9,549.27	-1,071.98	514.22	1,188.82	0.57	0.56	-4.68	349.84
	NORMAL	9,753.0	1.85	265.73	9,644.24	-1,071.39	511.95	1,187.33	1.44	0.65	-50.23	270.62
	NORMAL	9,848.0	1.49	252.81	9,739.20	-1,071.87	509.25	1,186.63	0.55	-0.38	-13.60	219.95
	NORMAL	9,941.0	1.49	244.46	9,832.16	-1,072.75	507.00	1,186.48	0.23	0.00	-8.98	265.83
	NORMAL	10,037.0	0.70	262.12	9,928.15	-1,073.37	505.29	1,186.33	0.89	-0.82	18.40	165.53
9/17/2012	NORMAL	10,126.0	0.44	60.24	10,017.14	-1,073.27	505.05	1,186.14	1.26	-0.29	177.66	171.58
	NORMAL	10,220.0	0.53	128.00	10,111.14	-1,073.36	505.71	1,186.50	0.58	0.10	72.09	116.01
	NORMAL	10,314.0	0.88	93.64	10,205.14	-1,073.67	506.77	1,187.23	0.57	0.37	-36.55	291.58
	NORMAL	10,409.0	0.88	85.82	10,300.12	-1,073.67	508.22	1,187.83	0.13	0.00	-8.23	266.09
	NORMAL	10,503.0	0.88	134.59	10,394.11	-1,074.12	509.46	1,188.76	0.77	0.00	51.88	114.38
	NORMAL	10,597.0	1.49	54.35	10,488.10	-1,073.92	510.97	1,189.21	1.70	0.65	-85.36	246.87
	NORMAL	10,691.0	1.23	36.60	10,582.07	-1,072.39	512.56	1,188.50	0.52	-0.28	-18.88	229.65
	NORMAL	10,785.0	0.53	7.24	10,676.06	-1,071.15	513.22	1,187.65	0.86	-0.74	-31.23	198.69
	NORMAL	10,879.0	0.79	17.00	10,770.06	-1,070.10	513.46	1,186.79	0.30	0.28	10.38	28.31
	NORMAL	10,974.0	0.62	252.37	10,865.05	-1,069.63	513.16	1,186.24	1.32	-0.18	-131.19	204.07
	NORMAL	11,068.0	0.97	257.82	10,959.04	-1,069.95	511.90	1,186.00	0.38	0.37	5.80	14.93
9/18/2012	NORMAL	11,162.0	0.62	64.99	11,053.04	-1,069.90	511.58	1,185.83	1.68	-0.37	177.84	175.00
	NORMAL	11,257.0	0.18	20.78	11,148.04	-1,069.55	512.10	1,185.72	0.53	-0.46	-46.54	194.34
	NORMAL	11,351.0	0.53	319.96	11,242.03	-1,069.08	511.87	1,185.20	0.50	0.37	-64.70	279.62
9/19/2012	NORMAL	11,445.0	1.23	258.26	11,336.02	-1,068.95	510.61	1,184.55	1.15	0.74	-65.64	272.81
	NORMAL	11,539.0	1.49	255.27	11,430.00	-1,069.47	508.44	1,184.11	0.29	0.28	-3.18	343.24
	NORMAL	11,634.0	1.41	259.66	11,524.97	-1,069.99	506.09	1,183.60	0.14	-0.08	4.62	127.94
9/20/2012	NORMAL	11,727.0	0.62	288.49	11,617.95	-1,070.04	504.49	1,182.97	0.99	-0.85	31.00	160.97
	NORMAL	11,821.0	0.54	274.52	11,711.95	-1,069.84	503.57	1,182.40	0.17	-0.09	-14.86	233.64
	NORMAL	11,916.0	0.79	175.90	11,806.94	-1,070.46	503.17	1,182.79	1.08	0.26	-103.81	229.87
	NORMAL	12,010.0	0.97	130.99	11,900.93	-1,071.63	503.81	1,184.13	0.74	0.19	-47.78	261.45
	NORMAL	12,104.0	1.06	221.52	11,994.92	-1,072.80	503.84	1,185.20	1.54	0.10	96.31	132.75
9/21/2012	NORMAL	12,198.0	1.49	255.36	12,088.90	-1,073.76	502.08	1,185.33	0.90	0.46	36.00	77.91
	NORMAL	12,292.0	1.76	234.18	12,182.87	-1,074.91	499.73	1,185.39	0.70	0.29	-22.53	283.37
	NORMAL	12,387.0	2.37	238.39	12,277.80	-1,076.79	496.87	1,185.90	0.66	0.64	4.43	16.08
	NORMAL	12,481.0	2.46	244.81	12,371.72	-1,078.67	493.39	1,186.15	0.30	0.10	6.83	74.82
	NORMAL	12,575.0	2.46	230.84	12,465.63	-1,080.80	490.00	1,186.66	0.64	0.00	-14.86	263.02
	NORMAL	12,659.0	2.46	230.84	12,549.56	-1,083.08	487.20	1,187.55	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

