

## 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 441-1-298	Wellbore No.	
Well Name	FEDERAL RGU 441-1-298	Common Name	RGU 441-1-298
Project	RG 01-02S-098W	Site	RGU 41-1-298 PAD
Vertical Section Azimuth	219.68 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	10/27/2011	UWI	RGU 441-1-298
Active Datum	KB @6,594.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	10/27/2011	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 (°)
10/27/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/27/2011	NORMAL	155.0	0.30	106.50	155.00	-0.12	0.39	-0.16	0.19	0.19	0.00	106.50
	NORMAL	248.0	1.50	169.90	247.99	-1.38	0.84	0.53	1.50	1.29	68.17	74.51
	NORMAL	340.0	2.20	188.20	339.94	-4.32	0.80	2.81	0.99	0.76	19.89	49.55
	NORMAL	432.0	2.20	207.90	431.87	-7.62	-0.28	6.05	0.82	0.00	21.41	99.84
	NORMAL	524.0	2.20	226.70	523.81	-10.40	-2.39	9.53	0.78	0.00	20.43	99.39
	NORMAL	617.0	2.10	251.70	616.74	-12.16	-5.31	12.75	1.01	-0.11	26.88	108.48
	NORMAL	711.0	1.20	208.10	710.71	-13.56	-7.41	15.17	1.58	-0.96	-46.38	213.92
	NORMAL	803.0	1.50	213.50	802.68	-15.42	-8.53	17.31	0.35	0.33	5.87	25.70
	NORMAL	894.0	0.90	240.10	893.66	-16.77	-9.81	19.17	0.88	-0.66	29.23	149.90
	NORMAL	986.0	0.90	248.10	985.65	-17.40	-11.10	20.48	0.14	0.00	8.70	94.00
	NORMAL	1,080.0	0.90	242.60	1,079.64	-18.01	-12.44	21.81	0.09	0.00	-5.85	267.25
	NORMAL	1,175.0	1.20	220.43	1,174.62	-19.11	-13.75	23.49	0.53	0.32	-23.34	295.02
	NORMAL	1,269.0	1.50	209.30	1,268.60	-20.94	-14.99	25.68	0.42	0.32	-11.84	313.19
	NORMAL	1,364.0	0.90	262.00	1,363.58	-22.12	-16.34	27.46	1.26	-0.63	55.47	143.13
	NORMAL	1,458.0	0.70	259.80	1,457.57	-22.33	-17.63	28.44	0.22	-0.21	-2.34	187.63
	NORMAL	1,553.0	0.80	147.10	1,552.56	-22.99	-17.85	29.09	1.32	0.11	-118.63	216.19
	NORMAL	1,648.0	0.90	190.70	1,647.55	-24.28	-17.62	29.94	0.67	0.11	45.89	103.43
	NORMAL	1,742.0	0.60	232.40	1,741.55	-25.30	-18.15	31.06	0.64	-0.32	44.36	138.55
10/30/2011	NORMAL	1,900.0	0.50	228.90	1,899.54	-26.26	-19.33	32.55	0.07	-0.06	-2.22	196.83

## 2.1.2 Survey Stations (Continued)

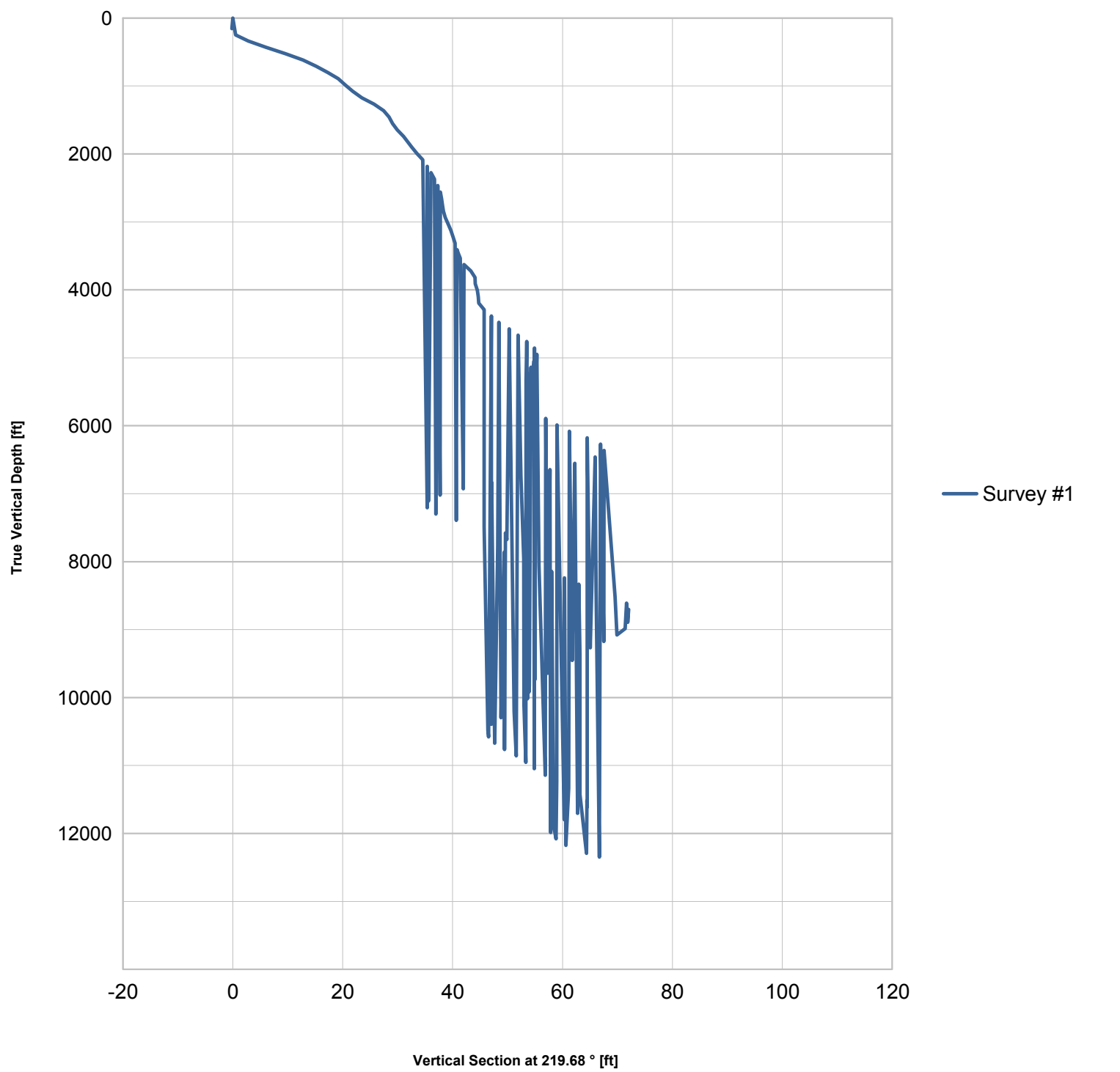
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
10/30/2011	NORMAL	1,994.0	0.70	225.90	1,993.53	-26.93	-20.05	33.53	0.22	0.21	-3.19	349.57
	NORMAL	2,088.0	0.60	210.80	2,087.53	-27.75	-20.71	34.58	0.21	-0.11	-16.06	232.32
	NORMAL	2,183.0	0.40	209.50	2,182.53	-28.47	-21.13	35.40	0.21	-0.21	-1.37	182.60
	NORMAL	2,277.0	0.40	211.90	2,276.52	-29.03	-21.46	36.05	0.02	0.00	2.55	91.20
	NORMAL	2,372.0	0.40	203.50	2,371.52	-29.62	-21.77	36.70	0.06	0.00	-8.84	265.80
	NORMAL	2,466.0	0.40	198.10	2,465.52	-30.23	-22.00	37.32	0.04	0.00	-5.74	267.30
	NORMAL	2,561.0	0.20	183.10	2,560.52	-30.71	-22.12	37.76	0.22	-0.21	-15.79	194.05
	NORMAL	2,655.0	0.30	153.30	2,654.52	-31.10	-22.01	37.99	0.17	0.11	-31.70	292.03
	NORMAL	2,750.0	0.30	146.70	2,749.51	-31.53	-21.77	38.16	0.04	0.00	-6.95	266.70
	NORMAL	2,842.0	0.40	148.80	2,841.51	-32.00	-21.47	38.34	0.11	0.11	2.28	8.36
	NORMAL	2,937.0	0.50	161.50	2,936.51	-32.68	-21.16	38.66	0.15	0.11	13.37	51.39
	NORMAL	3,031.0	0.70	163.10	3,030.50	-33.62	-20.87	39.20	0.21	0.21	1.70	5.59
	NORMAL	3,126.0	0.70	144.50	3,125.50	-34.64	-20.36	39.66	0.24	0.00	-19.58	260.70
	NORMAL	3,220.0	1.00	148.90	3,219.49	-35.81	-19.60	40.08	0.33	0.32	4.68	14.48
	NORMAL	3,315.0	0.90	135.70	3,314.47	-37.06	-18.66	40.43	0.25	-0.11	-13.89	238.94
	NORMAL	3,409.0	1.00	150.10	3,408.46	-38.30	-17.73	40.80	0.27	0.11	15.32	74.58
	NORMAL	3,465.0	1.00	139.80	3,464.45	-39.09	-17.17	41.05	0.32	0.00	-18.39	264.85
12/16/2011	NORMAL	3,535.0	1.23	148.78	3,534.44	-40.20	-16.39	41.41	0.41	0.33	12.83	41.77
	NORMAL	3,629.0	1.32	148.06	3,628.42	-41.99	-15.29	42.08	0.10	0.10	-0.77	349.55
	NORMAL	3,723.0	1.28	185.43	3,722.39	-43.95	-14.82	43.29	0.89	-0.04	39.76	111.29
	NORMAL	3,817.0	0.51	322.85	3,816.39	-44.66	-15.17	44.06	1.80	-0.82	146.19	168.22
	NORMAL	3,912.0	0.17	199.41	3,911.39	-44.46	-15.47	44.09	0.65	-0.36	-129.94	193.22
	NORMAL	4,007.0	0.54	271.87	4,006.38	-44.58	-15.97	44.50	0.54	0.39	76.27	90.81
	NORMAL	4,102.0	0.17	358.67	4,101.38	-44.42	-16.42	44.67	0.59	-0.39	91.37	162.26
	NORMAL	4,197.0	0.28	183.00	4,196.38	-44.51	-16.43	44.75	0.47	0.12	-184.92	182.69
	NORMAL	4,292.0	0.96	213.09	4,291.38	-45.41	-16.88	45.73	0.77	0.72	31.67	41.16
	NORMAL	4,385.0	0.70	236.32	4,384.37	-46.38	-17.78	47.04	0.45	-0.28	24.98	138.92
	NORMAL	4,479.0	1.12	195.61	4,478.36	-47.58	-18.50	48.43	0.79	0.45	-43.31	281.53
	NORMAL	4,573.0	1.39	193.06	4,572.33	-49.58	-19.01	50.29	0.29	0.29	-2.71	347.04
	NORMAL	4,668.0	0.80	243.06	4,667.32	-51.00	-19.86	51.93	1.13	-0.62	52.63	145.01
	NORMAL	4,762.0	1.71	267.45	4,761.29	-51.36	-21.85	53.48	1.10	0.97	25.95	42.99
	NORMAL	4,857.0	1.46	286.64	4,856.26	-51.07	-24.42	54.90	0.61	-0.26	20.20	124.60
	NORMAL	4,951.0	1.55	311.37	4,950.23	-49.89	-26.52	55.33	0.69	0.10	26.31	94.59
	NORMAL	5,045.0	1.01	346.60	5,044.20	-48.25	-27.67	54.80	0.99	-0.57	37.48	141.21
	NORMAL	5,139.0	0.97	313.29	5,138.19	-46.89	-28.44	54.25	0.61	-0.04	-35.44	249.48
	NORMAL	5,234.0	0.70	35.65	5,233.18	-45.87	-28.69	53.62	1.18	-0.28	86.69	141.65
	NORMAL	5,329.0	0.53	261.26	5,328.18	-45.47	-28.78	53.37	1.20	-0.18	-141.46	199.48
	NORMAL	5,423.0	0.71	210.21	5,422.18	-46.04	-29.51	54.27	0.59	0.19	-54.31	261.39
	NORMAL	5,516.0	0.62	17.89	5,515.17	-46.05	-29.64	54.37	1.42	-0.10	180.30	174.26
	NORMAL	5,611.0	0.53	81.09	5,610.17	-45.50	-29.05	53.56	0.64	-0.09	66.53	128.85
	NORMAL	5,705.0	0.88	173.99	5,704.17	-46.15	-28.54	53.74	1.12	0.37	98.83	123.17
	NORMAL	5,800.0	1.23	178.64	5,799.15	-47.89	-28.44	55.02	0.38	0.37	4.89	16.08
12/17/2011	NORMAL	5,894.0	1.45	227.70	5,893.13	-49.70	-29.30	56.96	1.20	0.23	52.19	104.33
	NORMAL	5,988.0	1.08	227.72	5,987.10	-51.10	-30.83	59.01	0.39	-0.39	0.02	179.94
	NORMAL	6,082.0	2.11	257.22	6,081.07	-52.08	-33.18	61.26	1.37	1.10	31.38	53.94
	NORMAL	6,178.0	2.72	255.91	6,176.98	-53.02	-37.11	64.50	0.64	0.64	-1.36	354.17
	NORMAL	6,272.0	1.85	286.34	6,270.91	-53.14	-40.73	66.90	1.56	-0.93	32.37	140.20
	NORMAL	6,366.0	1.52	308.04	6,364.87	-51.94	-43.17	67.54	0.76	-0.35	23.09	127.91
	NORMAL	6,461.0	2.82	354.79	6,459.81	-48.84	-44.37	65.92	2.20	1.37	49.21	78.63
	NORMAL	6,555.0	3.01	5.46	6,553.69	-44.08	-44.35	62.24	0.61	0.20	11.35	76.08
	NORMAL	6,648.0	3.18	28.23	6,646.55	-39.38	-42.90	57.69	1.33	0.18	24.48	93.60
	NORMAL	6,741.0	3.39	31.73	6,739.40	-34.77	-40.23	52.44	0.31	0.23	3.76	45.44
	NORMAL	6,836.0	3.15	30.67	6,834.25	-30.13	-37.42	47.08	0.26	-0.25	-1.12	193.61
	NORMAL	6,930.0	3.16	46.61	6,928.10	-26.13	-34.22	41.96	0.93	0.01	16.96	97.31
12/18/2011	NORMAL	7,022.0	2.29	62.10	7,020.00	-23.53	-30.75	37.74	1.23	-0.95	16.84	147.32
	NORMAL	7,114.0	2.46	116.68	7,111.93	-23.55	-27.36	35.60	2.37	0.18	59.33	113.30
	NORMAL	7,208.0	2.90	135.40	7,205.83	-26.15	-23.89	35.38	1.04	0.47	19.91	72.87

## 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 (°)
12/18/2011	NORMAL	7,302.0	3.51	156.96	7,299.69	-30.49	-21.10	36.94	1.43	0.65	22.94	74.20
	NORMAL	7,396.0	3.66	182.96	7,393.51	-36.14	-20.12	40.66	1.72	0.16	27.66	97.79
	NORMAL	7,489.0	3.40	208.72	7,486.34	-41.52	-21.60	45.75	1.71	-0.28	27.70	112.01
	NORMAL	7,582.0	2.42	274.26	7,579.24	-43.80	-24.89	49.60	3.50	-1.05	70.48	137.40
	NORMAL	7,678.0	2.47	335.94	7,675.17	-41.76	-27.75	49.86	2.61	0.05	64.25	119.83
	NORMAL	7,772.0	0.89	37.86	7,769.13	-39.33	-28.13	48.23	2.34	-1.68	65.87	159.05
12/19/2011	NORMAL	7,865.0	2.35	217.58	7,862.11	-40.27	-28.85	49.41	3.48	1.57	193.25	179.80
	NORMAL	7,959.0	2.02	202.77	7,956.04	-43.33	-30.67	52.92	0.69	-0.35	-15.76	232.44
	NORMAL	8,053.0	1.58	199.21	8,050.00	-46.08	-31.73	55.72	0.48	-0.47	-3.79	192.48
	NORMAL	8,147.0	1.41	239.38	8,143.97	-47.89	-33.16	58.03	1.11	-0.18	42.73	118.92
	NORMAL	8,241.0	2.02	261.35	8,237.93	-48.73	-35.79	60.35	0.94	0.65	23.37	58.48
	NORMAL	8,335.0	2.13	257.90	8,331.86	-49.34	-39.13	62.96	0.18	0.12	-3.67	309.63
12/20/2011	NORMAL	8,426.0	2.92	258.22	8,422.77	-50.17	-43.06	66.10	0.87	0.87	0.35	1.18
	NORMAL	8,520.0	2.28	250.95	8,516.68	-51.27	-47.17	69.58	0.76	-0.68	-7.73	203.66
	NORMAL	8,614.0	0.67	192.85	8,610.65	-52.42	-49.06	71.66	2.14	-1.71	-61.81	196.46
	NORMAL	8,708.0	1.09	121.44	8,704.64	-53.42	-48.42	72.03	1.15	0.45	-75.97	252.67
	NORMAL	8,802.0	1.22	126.95	8,798.62	-54.49	-46.86	71.85	0.18	0.14	5.86	43.29
	NORMAL	8,896.0	0.91	136.03	8,892.60	-55.63	-45.54	71.89	0.37	-0.33	9.66	155.92
	NORMAL	8,989.0	1.00	84.35	8,985.59	-56.08	-44.22	71.39	0.90	0.10	-55.57	249.72
	NORMAL	9,082.0	1.21	63.54	9,078.57	-55.56	-42.53	69.92	0.48	0.23	-22.38	286.96
	NORMAL	9,178.0	1.99	69.07	9,174.54	-54.51	-40.07	67.54	0.83	0.81	5.76	13.97
	NORMAL	9,272.0	1.62	75.56	9,268.49	-53.60	-37.25	65.04	0.45	-0.39	6.90	154.30
	NORMAL	9,365.0	1.03	52.81	9,361.47	-52.76	-35.32	63.16	0.84	-0.63	-24.46	210.73
	NORMAL	9,458.0	0.73	44.40	9,454.45	-51.84	-34.24	61.75	0.35	-0.32	-9.04	199.13
	NORMAL	9,552.0	1.67	46.63	9,548.43	-50.47	-32.82	59.80	1.00	1.00	2.37	3.96
	NORMAL	9,645.0	1.47	52.34	9,641.40	-48.81	-30.89	57.29	0.27	-0.22	6.14	144.80
	NORMAL	9,738.0	1.47	53.86	9,734.37	-47.38	-28.98	54.97	0.04	0.00	1.63	90.76
	NORMAL	9,832.0	0.20	242.27	9,828.36	-46.74	-28.15	53.95	1.77	-1.35	-182.54	181.00
12/21/2011	NORMAL	9,926.0	0.55	340.50	9,922.36	-46.39	-28.45	53.87	0.65	0.37	104.50	117.11
	NORMAL	10,020.0	0.37	316.50	10,016.35	-45.75	-28.81	53.60	0.28	-0.19	-25.53	215.37
	NORMAL	10,114.0	0.73	25.86	10,110.35	-44.99	-28.76	52.99	0.74	0.38	73.79	99.36
	NORMAL	10,206.0	1.51	35.79	10,202.33	-43.48	-27.79	51.21	0.87	0.85	10.79	18.97
	NORMAL	10,300.0	1.45	35.26	10,296.30	-41.50	-26.38	48.79	0.07	-0.06	-0.56	192.59
	NORMAL	10,396.0	1.35	336.04	10,392.28	-39.48	-26.14	47.07	1.44	-0.10	-61.69	236.80
	NORMAL	10,487.0	1.22	321.29	10,483.25	-37.74	-27.18	46.40	0.39	-0.14	-16.21	241.28
	NORMAL	10,582.0	1.02	285.53	10,578.24	-36.72	-28.63	46.54	0.75	-0.21	-37.64	236.65
	NORMAL	10,675.0	1.44	267.45	10,671.22	-36.56	-30.59	47.67	0.61	0.45	-19.44	307.98
	NORMAL	10,769.0	1.73	264.83	10,765.18	-36.74	-33.19	49.46	0.32	0.31	-2.79	344.66
	NORMAL	10,863.0	1.41	236.16	10,859.15	-37.51	-35.56	51.57	0.89	-0.34	-30.50	233.93
	NORMAL	10,957.0	0.97	257.32	10,953.12	-38.33	-37.30	53.31	0.65	-0.47	22.51	145.29
	NORMAL	11,051.0	1.12	206.72	11,047.11	-39.32	-38.49	54.84	0.96	0.16	-53.83	253.34
	NORMAL	11,147.0	1.58	186.24	11,143.08	-41.48	-39.05	56.86	0.69	0.48	-21.33	303.09
12/22/2011	NORMAL	11,241.0	1.50	186.24	11,237.05	-43.99	-39.33	58.96	0.09	-0.09	0.00	180.00
	NORMAL	11,335.0	1.50	195.73	11,331.02	-46.39	-39.79	61.11	0.26	0.00	10.10	94.74
	NORMAL	11,429.0	1.20	201.47	11,424.99	-48.49	-40.49	63.17	0.35	-0.32	6.11	158.59
	NORMAL	11,520.0	0.90	277.31	11,515.98	-49.29	-41.55	64.46	1.44	-0.33	83.34	138.31
	NORMAL	11,614.0	1.34	329.40	11,609.97	-48.25	-42.84	64.49	1.13	0.47	55.41	94.14
	NORMAL	11,708.0	2.26	356.94	11,703.92	-45.45	-43.50	62.75	1.32	0.98	29.30	57.56
12/23/2011	NORMAL	11,801.0	1.85	356.94	11,796.86	-42.12	-43.67	60.30	0.44	-0.44	0.00	180.00
	NORMAL	11,895.0	1.33	356.00	11,890.82	-39.52	-43.83	58.40	0.55	-0.55	-1.00	182.40
	NORMAL	11,989.0	1.10	294.66	11,984.81	-38.05	-44.73	57.85	1.34	-0.24	-65.26	230.27
	NORMAL	12,084.0	1.38	268.59	12,079.78	-37.70	-46.70	58.83	0.66	0.29	-27.44	282.97
	NORMAL	12,180.0	1.65	261.81	12,175.75	-37.93	-49.22	60.62	0.34	0.28	-7.06	323.00
	NORMAL	12,297.0	2.55	235.77	12,292.67	-39.63	-53.04	64.37	1.10	0.77	-22.26	299.82
	NORMAL	12,352.0	2.55	235.77	12,347.62	-41.01	-55.07	66.72	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

