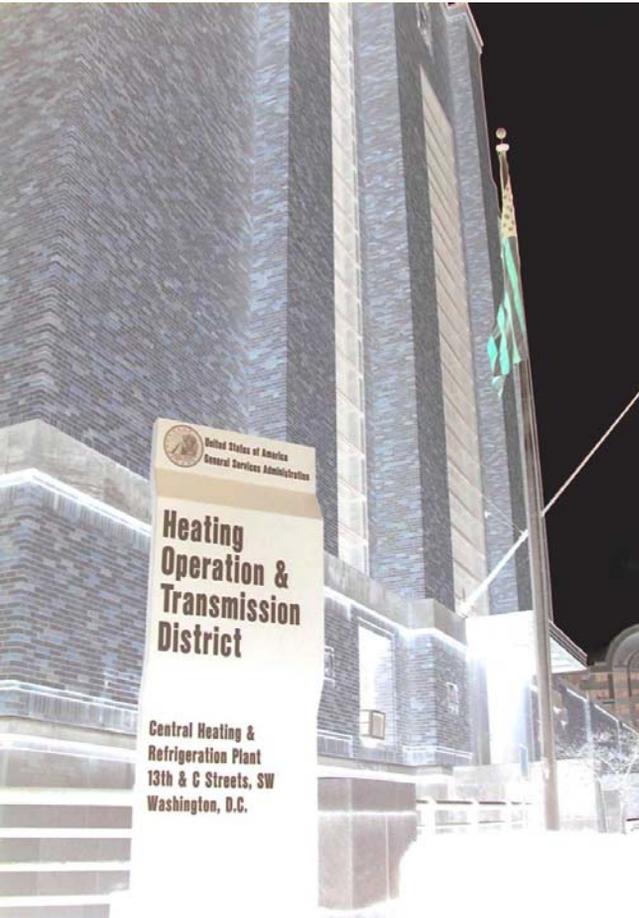




U.S. General Services Administration

GSA National Capital Region  
Web Based Energy Management



# Heating Operation & Transmission Division



# Heating Operation & Transmission Division Heating Energy Since 1933



**West Heating Plant**

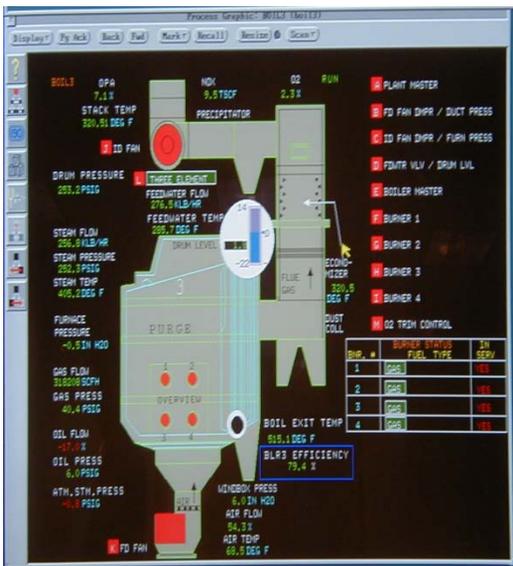
**Central Heating & Refrigeration Plant**





# Heating Operation & Transmission Division

## 21st Century District Energy Services



# GSA's Web-Based Energy Manager Tool: D.C. customers see near real-time energy use

M. Richard Boyette, Supervisory General Engineer, Heating Operation and Transmission Division  
for the U.S. General Services Administration National Capital Region Public Buildings Services

Advances in technology and a mandate for monitoring energy usage in governmental buildings are bringing greater operational savings and control to building energy managers. Such is the case with the Heating Operation and Transmission Division (HOTD) of the U. S. General Services Administration National Capital Region Public Buildings Services (GSA/NCR/PBS).

The organization has developed a Web-based energy manager system to give building managers a unique and immediate Internet view of their steam and chilled-water utility usage as data is collected from the metering points. This newly implemented GSA system ties directly to the existing meter data collection system at HOTD to provide customer building managers with near real-time energy flows, trend graphics and energy consumption reports.

## Streamlining Data

In the early 1990s, HOTD purchased an advanced computer system and software programs (the Enersave System), which interfaced directly with steam meter processors at remote metering points over standard telephone lines. The system connected, downloaded and stored one-

hour meter data in a rudimentary database and served as a platform for verifying monthly steam meter readings. Over the course of several years - and several versions - the software programs were upgraded and eventually converted to a Microsoft format that allowed for easy conversion of meter data into an active main display with usable reports and graphics.

In June 2007, HOTD added chilled-water meter data collection to the system. These steam and chilled-water data acquisition systems together are now known as the Energy Manager 2000 Data Collection System (EM2000). The system has been collecting and storing real-time steam meter data for more than 15 years as part of ongoing programs to support HOTD's billing and meter maintenance. Upon request, HOTD used to send resulting meter data, trend graphic and reports for steam and chilled-water consumption directly to its customers via email or fax (as Adobe files or Excel spreadsheets).

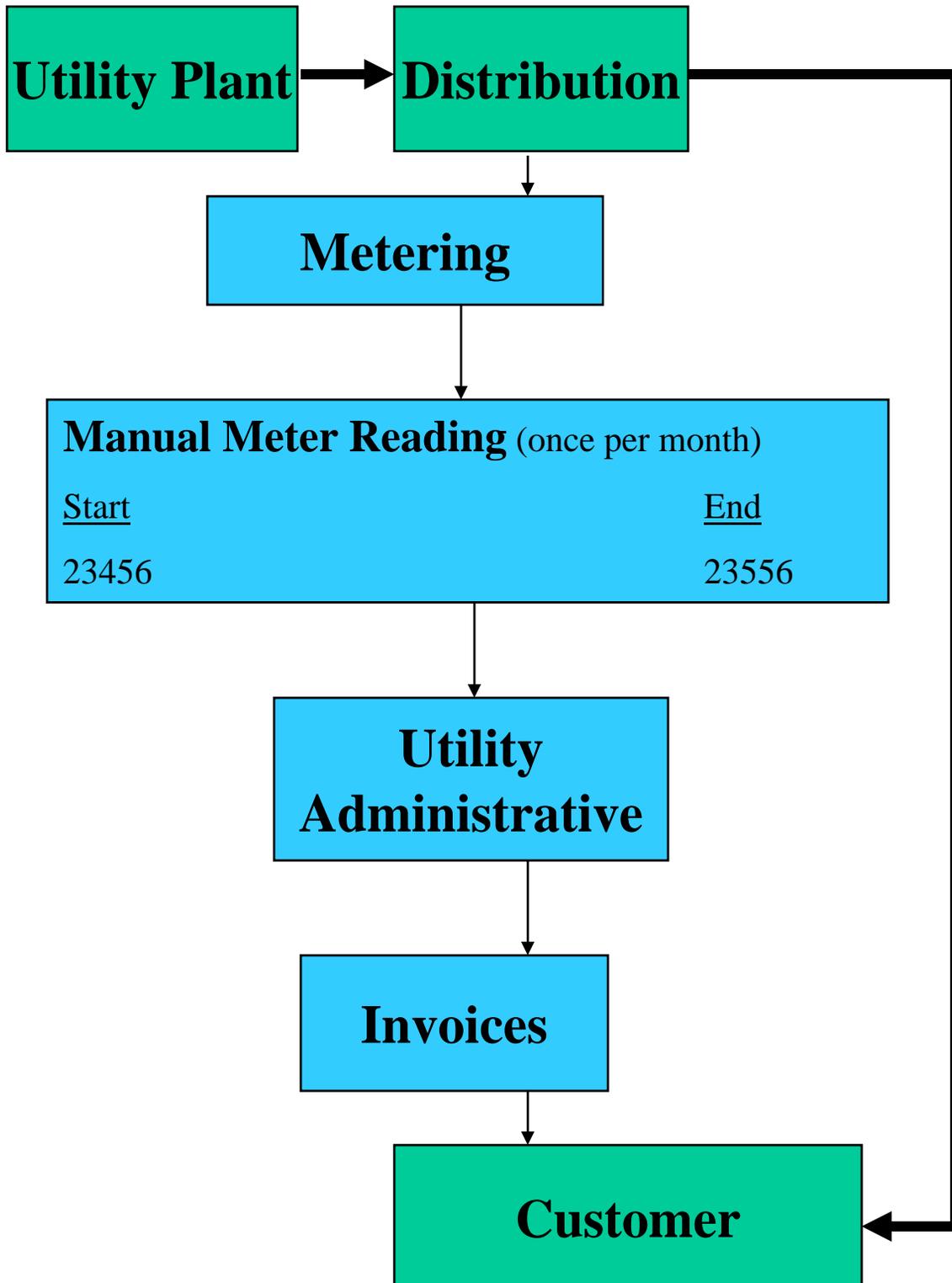
It has always been the consensus of energy management professionals, however, that the only way to effectively reduce energy consumption is for utility users to have timely access to how much energy they use, when they use it and how it is

being used. Officials with the Federal Energy Management Program (FEMP) have stated that energy consumption is almost always immediately reduced by at least 10 percent when users are given access to real-time energy usage.

Energy consumption is almost always immediately reduced by at least 10 percent when users are given access to real-time energy usage.

In June 2008, HOTD was tasked by the GSA/NCR/PBS to create a program to bring near real-time utility data to its customers in an automated manner via the Internet. The initiative's goal is to aid customers in reducing energy usage, complying with executive order mandates. In summary, the mandates require all federal buildings, in accordance with the Energy Independence and Security Policy of 2007 (amended from the Energy Policy of 1995 and 2005) under section 543, to have advanced meters or metering devices in use by Oct. 1, 2012, that provide electrical consumption data on at least a

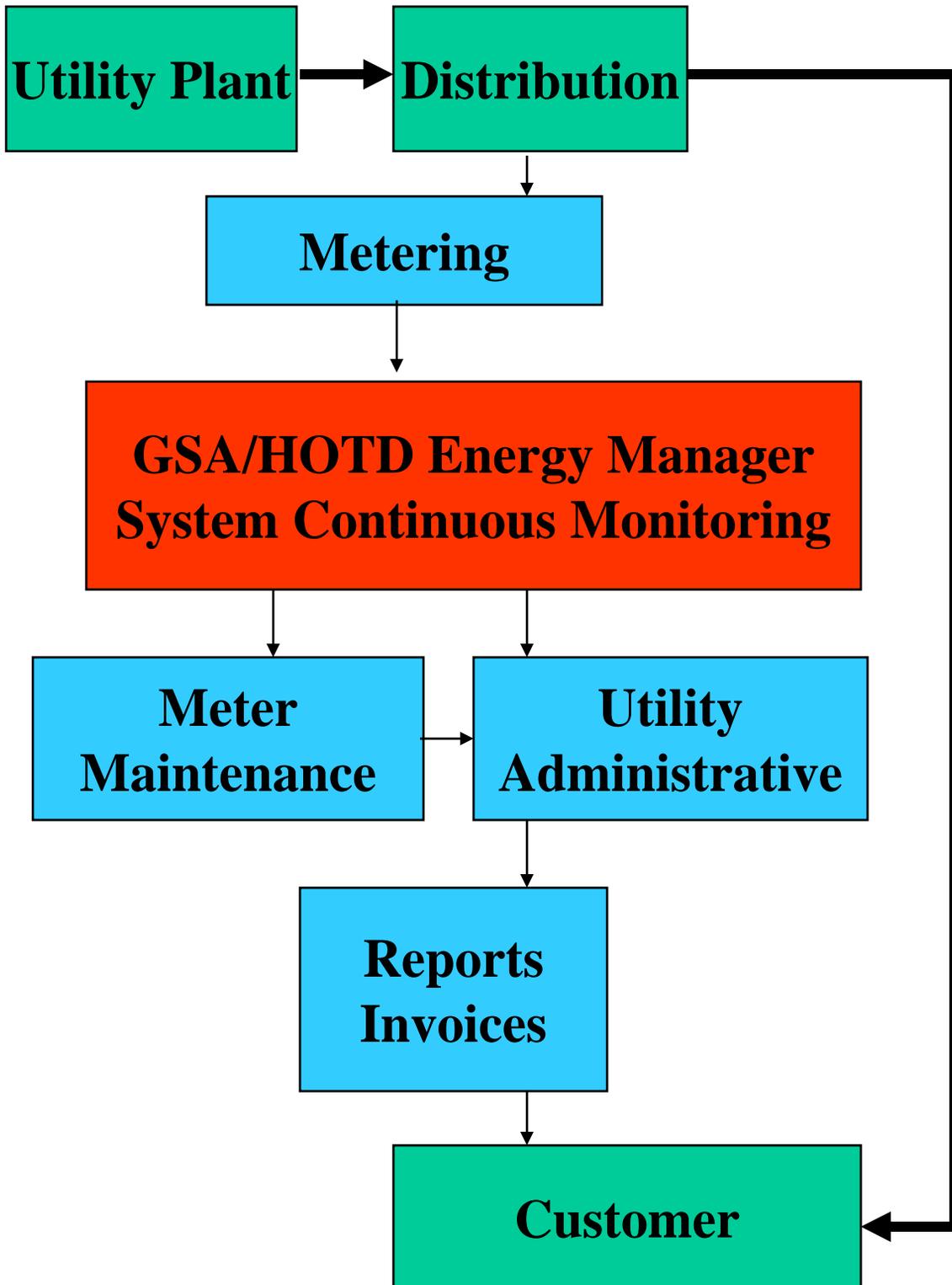
# Typical Utility Operations



# Typical Utility Operations Invoice

<u>Meter Start Reading</u>	<u>Meter End Reading</u>	<u>Klbs Used</u>
23456	23556	100
Rate \$38.95	Invoice Amount	\$3,895.00

# GSA/HOTD Utility Operations



# **GSA/HOTD Energy Manager Data Collection System**

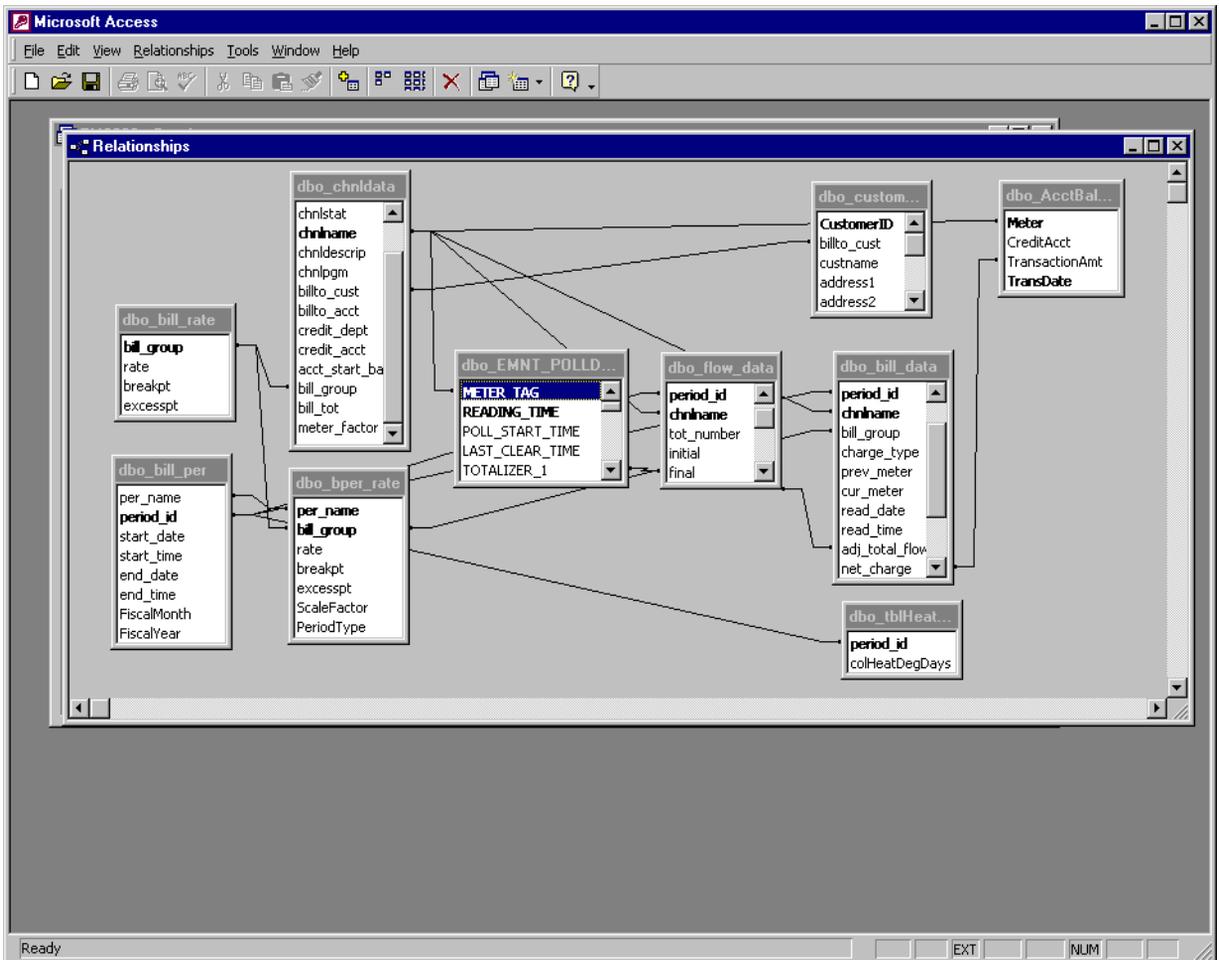
## **History**

- 1995 – 2000 Enersave system, IBM OS2 operating system with Lotus spreadsheet applications
- 2000 – 2004 Energy Manager 2000 system, Windows NT operating system with SQL database
- 2004 – 2008 Flowise Energy Manager system, Windows Server operating system with SQL database
- Fall 2008 Flowise Energy Manager system, Windows Server operating system with SQL database and Web Browser Interface

Notes: Energy manager polls steam meters every hour and chilled water meters every 15 minutes.

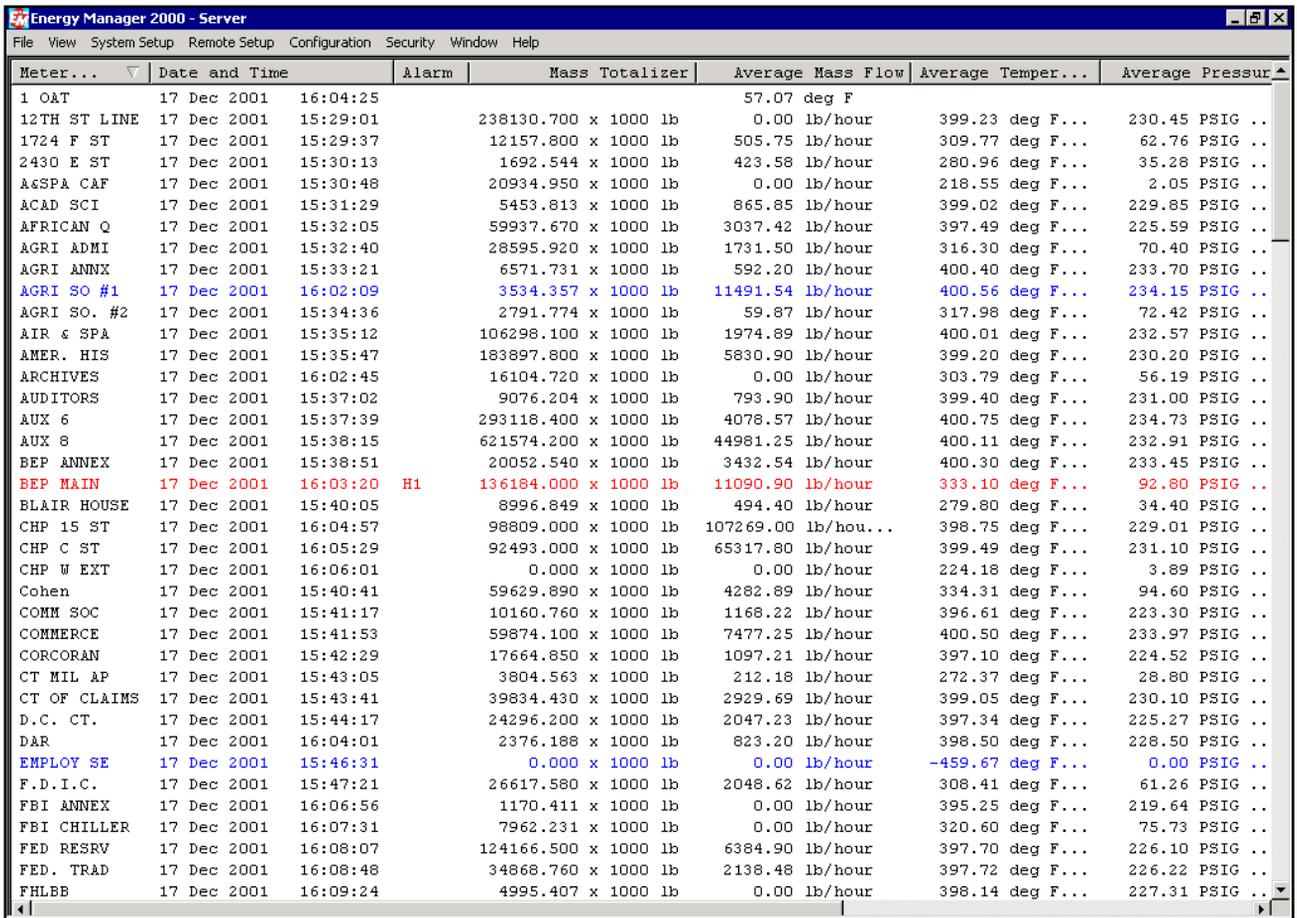
Communications are via RS-232b modems or direct connect via TCPIP. Data is stored in the SQL database and interfaced thru Microsoft Windows Access.

# Relational Database



# Energy Manager Active

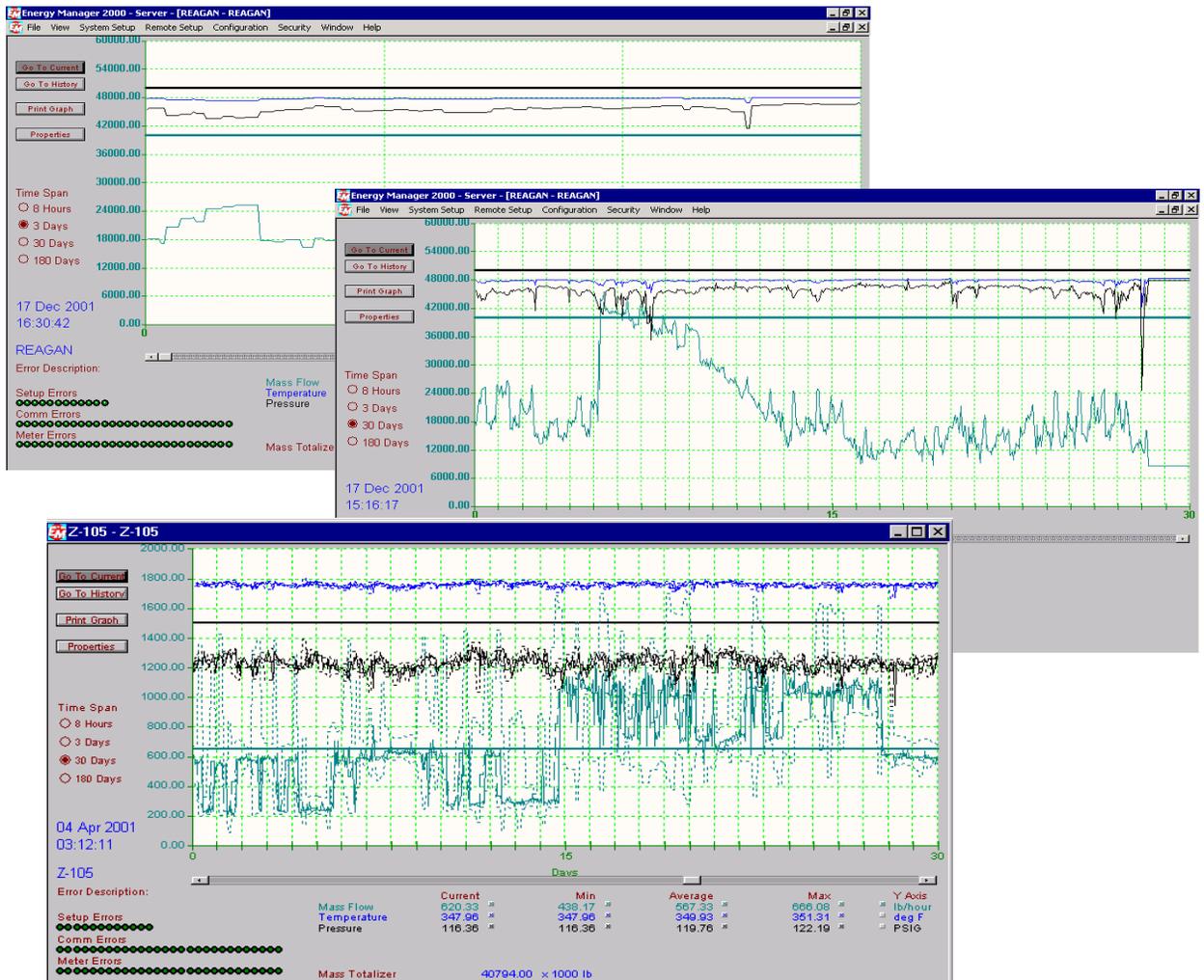
## Main Display



Meter...	Date and Time	Alarm	Mass Totalizer	Average Mass Flow	Average Temper...	Average Pressur...
1 OAT	17 Dec 2001 16:04:25			57.07 deg F		
12TH ST LINE	17 Dec 2001 15:29:01		238130.700 x 1000 lb	0.00 lb/hour	399.23 deg F...	230.45 PSIG ..
1724 F ST	17 Dec 2001 15:29:37		12157.800 x 1000 lb	505.75 lb/hour	309.77 deg F...	62.76 PSIG ..
2430 E ST	17 Dec 2001 15:30:13		1692.544 x 1000 lb	423.58 lb/hour	280.96 deg F...	35.28 PSIG ..
A&SPA CAF	17 Dec 2001 15:30:48		20934.950 x 1000 lb	0.00 lb/hour	218.55 deg F...	2.05 PSIG ..
ACAD SCI	17 Dec 2001 15:31:29		5453.813 x 1000 lb	865.85 lb/hour	399.02 deg F...	229.85 PSIG ..
AFRICAN Q	17 Dec 2001 15:32:05		59937.670 x 1000 lb	3037.42 lb/hour	397.49 deg F...	225.59 PSIG ..
AGRI ADHI	17 Dec 2001 15:32:40		28595.920 x 1000 lb	1731.50 lb/hour	316.30 deg F...	70.40 PSIG ..
AGRI ANNK	17 Dec 2001 15:33:21		6571.731 x 1000 lb	592.20 lb/hour	400.40 deg F...	233.70 PSIG ..
AGRI SO #1	17 Dec 2001 16:02:09		3534.357 x 1000 lb	11491.54 lb/hour	400.56 deg F...	234.15 PSIG ..
AGRI SO. #2	17 Dec 2001 15:34:36		2791.774 x 1000 lb	59.87 lb/hour	317.98 deg F...	72.42 PSIG ..
AIR & SPA	17 Dec 2001 15:35:12		106298.100 x 1000 lb	1974.89 lb/hour	400.01 deg F...	232.57 PSIG ..
AMER. HIS	17 Dec 2001 15:35:47		183897.800 x 1000 lb	5830.90 lb/hour	399.20 deg F...	230.20 PSIG ..
ARCHIVES	17 Dec 2001 16:02:45		16104.720 x 1000 lb	0.00 lb/hour	303.79 deg F...	56.19 PSIG ..
AUDITORS	17 Dec 2001 15:37:02		9076.204 x 1000 lb	793.90 lb/hour	399.40 deg F...	231.00 PSIG ..
AUX 6	17 Dec 2001 15:37:39		293118.400 x 1000 lb	4078.57 lb/hour	400.75 deg F...	234.73 PSIG ..
AUX 8	17 Dec 2001 15:38:15		621574.200 x 1000 lb	44981.25 lb/hour	400.11 deg F...	232.91 PSIG ..
BEP ANNEX	17 Dec 2001 15:38:51		20052.540 x 1000 lb	3432.54 lb/hour	400.30 deg F...	233.45 PSIG ..
BEP MAIN	17 Dec 2001 16:03:20	H1	136184.000 x 1000 lb	11090.90 lb/hour	333.10 deg F...	92.80 PSIG ..
BLAIR HOUSE	17 Dec 2001 15:40:05		8996.849 x 1000 lb	494.40 lb/hour	279.80 deg F...	34.40 PSIG ..
CHP 15 ST	17 Dec 2001 16:04:57		98809.000 x 1000 lb	107269.00 lb/hou...	398.75 deg F...	229.01 PSIG ..
CHP C ST	17 Dec 2001 16:05:29		92493.000 x 1000 lb	65317.80 lb/hour	399.49 deg F...	231.10 PSIG ..
CHP W EXT	17 Dec 2001 16:06:01		0.000 x 1000 lb	0.00 lb/hour	224.18 deg F...	3.89 PSIG ..
Cohen	17 Dec 2001 15:40:41		59629.890 x 1000 lb	4282.89 lb/hour	334.31 deg F...	94.60 PSIG ..
COMM SOC	17 Dec 2001 15:41:17		10160.760 x 1000 lb	1168.22 lb/hour	396.61 deg F...	223.30 PSIG ..
COMMERCE	17 Dec 2001 15:41:53		59874.100 x 1000 lb	7477.25 lb/hour	400.50 deg F...	233.97 PSIG ..
CORCORAN	17 Dec 2001 15:42:29		17664.850 x 1000 lb	1097.21 lb/hour	397.10 deg F...	224.52 PSIG ..
CT MIL AP	17 Dec 2001 15:43:05		3804.563 x 1000 lb	212.18 lb/hour	272.37 deg F...	28.80 PSIG ..
CT OF CLAIMS	17 Dec 2001 15:43:41		39834.430 x 1000 lb	2929.69 lb/hour	399.05 deg F...	230.10 PSIG ..
D.C. CT.	17 Dec 2001 15:44:17		24296.200 x 1000 lb	2047.23 lb/hour	397.34 deg F...	225.27 PSIG ..
DAR	17 Dec 2001 16:04:01		2376.188 x 1000 lb	823.20 lb/hour	398.50 deg F...	228.50 PSIG ..
EMPLOY SE	17 Dec 2001 15:46:31		0.000 x 1000 lb	0.00 lb/hour	-459.67 deg F...	0.00 PSIG ..
F.D.I.C.	17 Dec 2001 15:47:21		26617.580 x 1000 lb	2048.62 lb/hour	308.41 deg F...	61.26 PSIG ..
FBI ANNEX	17 Dec 2001 16:06:56		1170.411 x 1000 lb	0.00 lb/hour	395.25 deg F...	219.64 PSIG ..
FBI CHILLER	17 Dec 2001 16:07:31		7962.231 x 1000 lb	0.00 lb/hour	320.60 deg F...	75.73 PSIG ..
FED RESRV	17 Dec 2001 16:08:07		124166.500 x 1000 lb	6384.90 lb/hour	397.70 deg F...	226.10 PSIG ..
FED. TRAD	17 Dec 2001 16:08:48		34868.760 x 1000 lb	2138.48 lb/hour	397.72 deg F...	226.22 PSIG ..
FHLBB	17 Dec 2001 16:09:24		4995.407 x 1000 lb	0.00 lb/hour	398.14 deg F...	227.31 PSIG ..

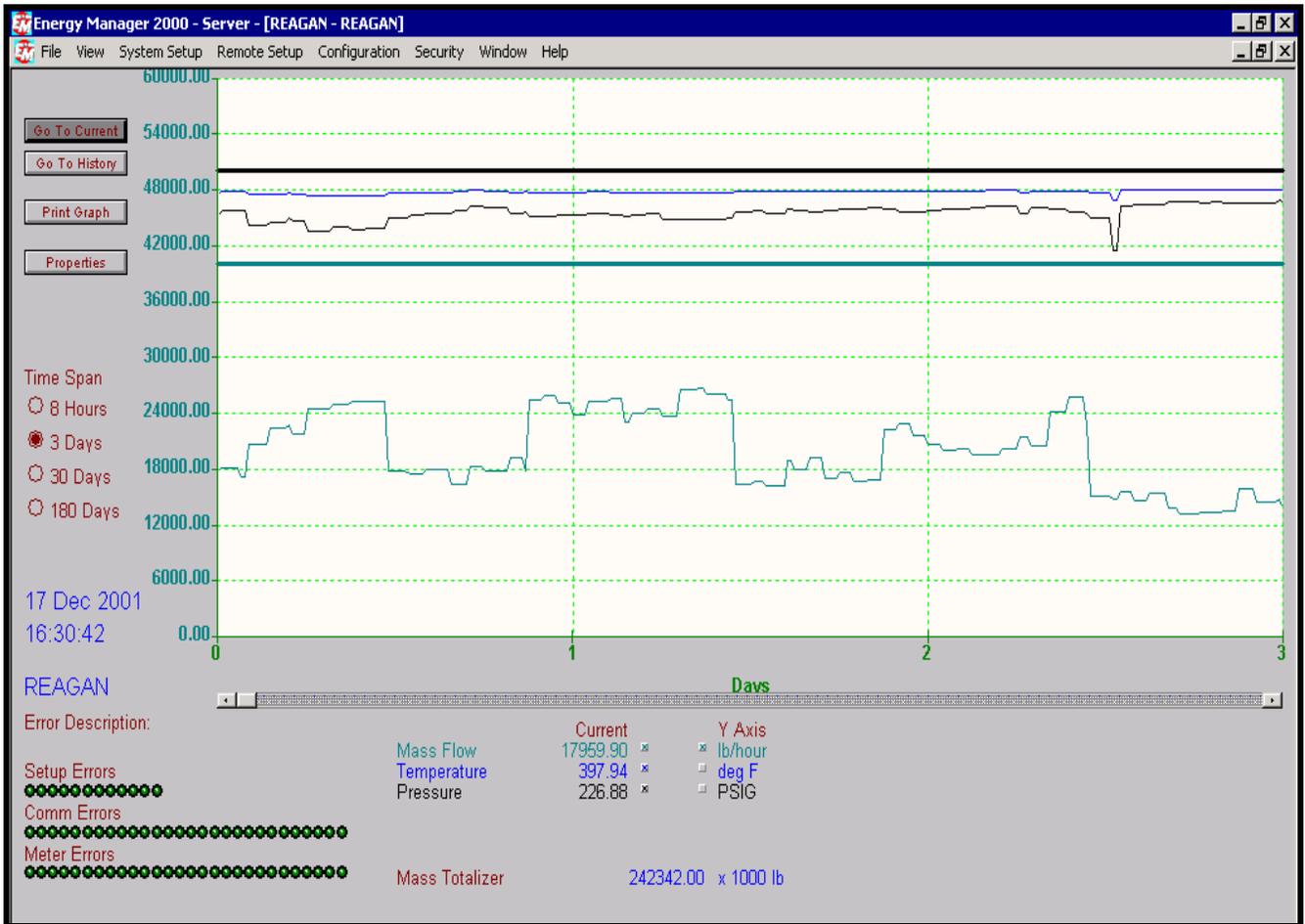
**Energy Manager's active main display** allows the user to see the current status of all utility meters in the system at a glance. Any deviations from normal utility flow rates and meter status are automatically highlighted on the display in red or blue depending on the problem or user defined alarm high and low set points. Energy Manager tracks energy flow 24 hours a days.

# Energy Manager Graphics



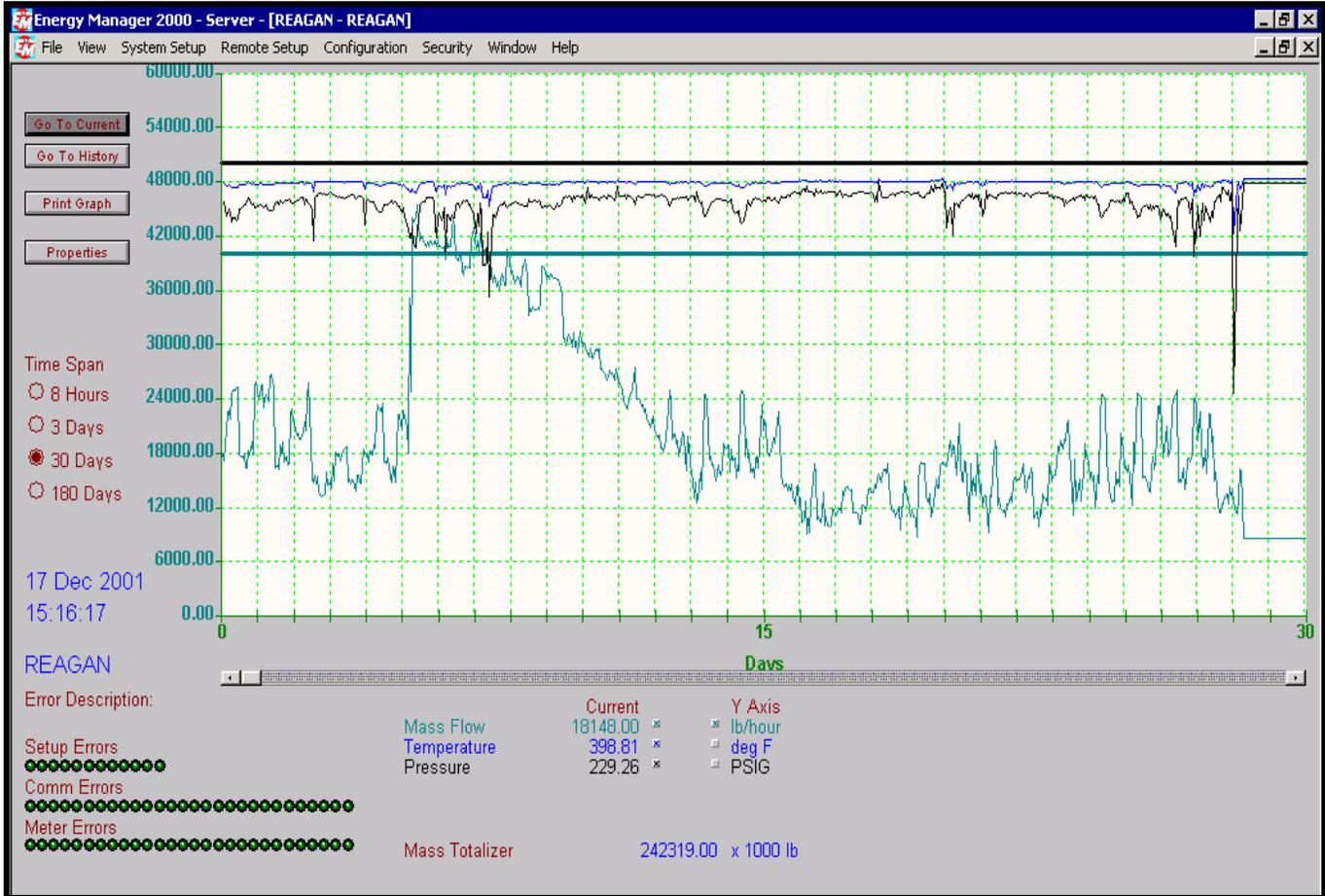
**Energy Manager's graphics** give the user views of utility consumption. Graphs show utility parameters such as flow rate, totalizer values, and alarm set points, and are viewable in different scales from 8 hours at a time up to 180 days at a time. The graphs show meter status and faults at the time errors occur as the user scrolls through the history of the metering point. Energy Manager's graphs are a troubleshooting tool for meter and facilities maintenance as they show not only meter performance but building performance. Graphs track facilities improvements and document energy usage improvements or wastes.

# Energy Manager 3 Day Graph Normal Operation

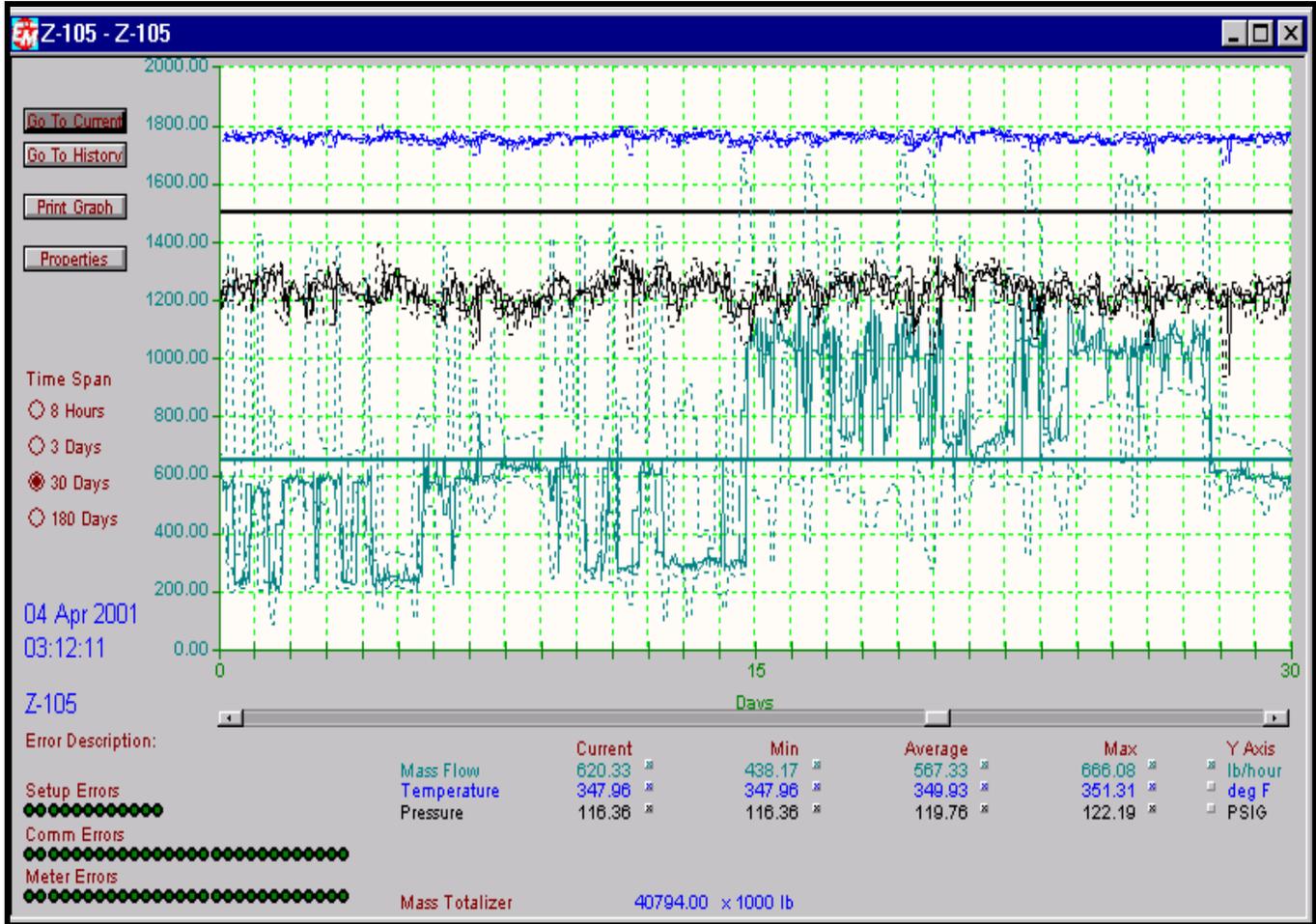




# Energy Manager 30 Day Graph Meter Malfunction



# Energy Manager 30 Day Graph Facility Malfunction



# Energy Manager Reports

Enter Report Date

Run Daily Report

Run Monthly Report

Load 4 Yr Avg

Build New Invoice

Print Old Invoices

General Services Administration  
Heating Operation and Transmission District  
7th and D Streets, S.W.  
Washington, D.C. 20407

Monthly Steam Consumption

Internal Revenue Service  
Rm G-106  
1111 CONST. AVE. NW  
Washington, DC 20224  
Attn: Building Manager

MONTH: April  
FISCAL YEAR: 2001  
Heat Deg Days: 246

Acct. Number : N2585955

Date File # Building Num Bldg. Num Dist  
5/101 142 INT. REV. DC00222Z Steam: NON  
5/101 142 Old Post Offc. Steam: NON

The above is the monthly steam consumption invoice for the based on the actual meter reading, unless otherwise indicated.

For further information concerning this report, please call Mr. District at (202)708-0149... E-mail: ANTHONY.MILES@GSA

This information is also updated monthly on the HOTO web

For problems with your steam service, please call Mr. Harry 800-6738.

RWA search Website: <http://www.finances.gsa.gov/bonnav/>

**Daily Report - DDNV Norfolk, VA**  
Monday, February 22, 2001

Meter	Initial Reading	Final Reading	Consumption
CEP 261			190
LF-26			
LF-26			
DET			6
PIST 2			
PIST J NORTH			752
PIST J SOUTH			170
PIST 4			1510
SP-26			
V-117			
V-62			
W-127			1162
W-128			197
W-135			1764
W-135-EST			2141
W-135-WEST			2175
W-1			2424
W-11 CAFE			
W-114			116
W-114			121
>-12			794
>-12*			6162
>-16			4415
>-17 24PLV			1710
>-18			652
>-18			2641

Daily Report: 02/19/2001  
Printed: Sunday, November 01, 2001

**Monthly Report**  
(1/1/2001 thru 1/31/2001)

Meter	Start Time	Initial Reading	End Time	Final Reading	Consumption	Change
CTFC16846	10/1/2001 11:00:00 PM	1175	10/31/2001 11:00:00 PM	2069	794	1149151
ET-CEILING						
TRF 6475	10/1/2001 11:00:00 PM	12049	10/31/2001 11:00:00 PM	12049	6	1660
OE-DB	10/1/2001 11:00:00 PM	19281	10/31/2001 11:00:00 PM	19766	485	813210
FOR-6	10/1/2001 11:00:00 PM	5182	10/31/2001 11:00:00 PM	5231	49	1131163
NE-DB	10/1/2001 11:00:00 PM	1251	10/31/2001 11:00:00 PM	11929	2078	1131266
FOR-10	10/1/2001 11:00:00 PM	8885	10/31/2001 11:00:00 PM	8989	104	1131266
FOR-10B	10/1/2001 11:00:00 PM	2041	10/31/2001 11:00:00 PM	2092	51	1131266
OG6-CHTR	10/1/2001 11:00:00 PM	2130	10/31/2001 11:00:00 PM	2151	21	1131266
C-08	10/1/2001 11:00:00 PM	2416	10/31/2001 11:00:00 PM	2722	306	1131266
S-08	10/1/2001 11:00:00 PM	1716	10/31/2001 11:00:00 PM	2681	965	1131266
LS-06T	10/1/2001 11:00:00 PM	1009	10/31/2001 11:00:00 PM	1071	62	1131266
LE-VEVE	10/1/2001 11:00:00 PM	1002	10/31/2001 11:00:00 PM	1021	19	1131266
NEW-FCST	10/1/2001 11:00:00 PM	6887	10/31/2001 11:00:00 PM	7016	129	1131266
POT-40C-08	10/1/2001 11:00:00 PM	5076	10/31/2001 11:00:00 PM	5076	0	1660
R-DB	10/1/2001 11:00:00 PM	1765	10/31/2001 11:00:00 PM	1876	110	1131266
R-DB-CHL	10/1/2001 11:00:00 PM	2078	10/31/2001 11:00:00 PM	2135	57	1131266
LS-CT	10/1/2001 11:00:00 PM	1765	10/31/2001 11:00:00 PM	1876	110	1131266
LS-TOCT	10/1/2001 11:00:00 PM	1007	10/31/2001 11:00:00 PM	1076	69	1131266
WING-TR	10/1/2001 11:00:00 PM	205	10/31/2001 11:00:00 PM	207	2	1131266
TR-FCST	10/1/2001 11:00:00 PM	1129	10/31/2001 11:00:00 PM	1184	55	1131266
2-05-ET	10/1/2001 11:00:00 PM	101	10/31/2001 11:00:00 PM	109	8	1131266
PT-NON	10/1/2001 11:00:00 PM	101	10/31/2001 11:00:00 PM	105	4	1131266
VE-TRNG	10/1/2001 11:00:00 PM	3629	10/31/2001 11:00:00 PM	3741	112	1131266
RE-DB	10/1/2001 11:00:00 PM	2105	10/31/2001 11:00:00 PM	2191	86	1131266
FM-08E	10/1/2001 11:00:00 PM	78	10/31/2001 11:00:00 PM	78	0	1131266
FM-CHL-TR	10/1/2001 11:00:00 PM	784	10/31/2001 11:00:00 PM	784	0	1131266
SE-DB-TRV	10/1/2001 11:00:00 PM	1022	10/31/2001 11:00:00 PM	1025	3	1131266

Monthly Report: 1/19/2001 thru 1/31/2001  
Printed: Monday, November 01, 2001 Page 2/11

**Energy Manager's reports** give the user effective tools to tract utility use not only by the month but by the day or hour. Energy Manager's reports includes daily consumption reports, monthly consumption reports, and a 4 year average report that compares a period's utility use to the past 4 year's average for that period and data for differing heating/cooling degree days. Also invoicing and transaction reports that compile, organize, group invoices by RWA and/or customer. Customized reports can be added by the developer or the user. Energy Manager uses Windows Office Professional programs including Access and Excel that allow full data transfer from one application to another to create reports and graphs suitable for any presentation.

# Energy Manager Daily Report

## *Daily Report*

*Saturday, March 01, 2008*

<i>Meter</i>	<i>Initial Totalizer</i>	<i>Final Totalizer</i>	<i>Consumption</i>
CT OF CLAIMS	137531	137577	46
EXEC MANS			
TREAS EXE	0	0	0
O.E.O.B.	329952	329952	0
FOB 6	148935	148979	44
N.E.O.B.	369968	370114	146
N.E.O.B. Net			
FOB 10A	53501.7	53658.9	157.2
FOB 10B	106187	106231	44
GSACNTRL	64463.2	64617.5	154.3
Cohen	111757	111923	166
Switzer	151143	151276	133
U.S. CUST	7683.3	7786.9	103.6
LAYAYETTE	91024.3	91070.7	46.4
NEW POST	29374.1	29452.6	78.5
POTOMAC AN	4019.4	4061.4	42
Pot Annx Net			
ROB Net			
R.O.B.	194458	194515	57
ROB CHILL	1.7	1.7	0
U.S. CT.	102274	102333	59
US TAX CT	66308.3	66343.9	35.6
WINDER	11600.7	11610	9.3
1724 F ST	27485.8	27492.8	7
2430 E ST	3876.7	3885	8.3
PENSION	61915.4	61941.3	25.9

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*Daily Report: 3/1/2008*

*Printed: Tuesday, September 23, 2008*

*Page 1 of 4*

# Energy Manager Monthly Report

## *Monthly Report*

2/1/2008 thru 2/29/2008

<u>Meter</u>	<u>Start Time</u>	<u>Initial Totalizer</u>	<u>End Time</u>	<u>Final Totalizer</u>	<u>Consumption</u>	<u>Charge</u>
CT OF CLAIMS	1/31/2008 11:39:46 PM	135553	2/29/2008 11:52:17 PM	137531	1978	\$77,043.10
EXEC MANS						
TREAS EXE	1/31/2008 9:08:49 PM	0	2/29/2008 9:18:40 PM	0	0	\$0.00
O.E.O.B.	1/31/2008 8:54:28 PM	329952	2/29/2008 9:04:18 PM	329952	0	\$0.00
FOB 6	1/31/2008 11:45:59 PM	147186	2/29/2008 11:58:40 PM	148935	1749	\$68,123.55
N.E.O.B.	1/31/2008 10:58:22 PM	365093	2/29/2008 11:09:03 PM	369968	4875	\$0.00
N.E.O.B. Net						
FOB 10A	1/31/2008 11:44:46 PM	51659.1	2/29/2008 11:57:27 PM	53501.7	1842.6	\$71,769.27
FOB 10B	1/31/2008 11:45:22 PM	103420	2/29/2008 11:58:03 PM	106187	2767	\$107,774.65
GSACNTRL	1/31/2008 11:49:37 PM	60520.9	2/29/2008 10:57:36 PM	64463.2	3942.3	\$153,552.59
Cohen	1/31/2008 11:36:05 PM	106338	2/29/2008 11:48:37 PM	111757	5419	\$211,070.05
Switzer	1/31/2008 11:13:43 PM	147361	2/29/2008 11:24:16 PM	151143	3782	\$147,308.90
U.S. CUST	1/31/2008 11:18:35 PM	3507.1	2/29/2008 11:30:27 PM	7683.3	4176.2	\$162,663.38
LAYAYETTE	1/31/2008 11:58:37 PM	89401.3	2/29/2008 11:06:25 PM	91024.3	1623	\$63,215.85
NEW POST	1/31/2008 10:58:58 PM	26721.2	2/29/2008 11:09:40 PM	29374.1	2652.9	\$103,330.46
POTOMAC AN	1/31/2008 11:04:58 PM	2825.3	2/29/2008 11:15:40 PM	4019.4	1194.2	\$0.00
Pot Annx Net						
ROB Net						
R.O.B.	1/31/2008 11:05:35 PM	192272	2/29/2008 11:16:17 PM	194468	2186	\$0.00
ROB CHILL	1/31/2008 8:59:56 PM	1.7	2/29/2008 9:09:41 PM	1.7	0	\$0.00
U.S. CT.	1/31/2008 11:17:52 PM	100042	2/29/2008 11:29:04 PM	102274	2232	\$86,936.40
US TAX CT	1/31/2008 11:19:11 PM	65247.3	2/29/2008 11:31:04 PM	66308.3	1061	\$41,325.95
WINDER	1/31/2008 11:21:02 PM	11292.9	2/29/2008 11:33:02 PM	11600.7	307.8	\$11,988.81
1724 F ST	1/31/2008 11:22:50 PM	27240.3	2/29/2008 11:34:51 PM	27485.8	245.5	\$9,562.23
2430 E ST	1/31/2008 11:23:27 PM	3654.3	2/29/2008 11:35:32 PM	3876.7	222.4	\$8,662.87
PENSION	1/31/2008 11:04:21 PM	60939.8	2/29/2008 11:15:03 PM	61915.4	975.6	\$37,999.62
VETERANS	1/31/2008 11:19:49 PM	146114	2/29/2008 11:31:46 PM	149474	3360	\$130,872.00

Monthly Report: 2/1/2008 thru 2/29/2008

Printed: Tuesday, September 23, 2008

Page 1 of 4

# Energy Manager Daily Reports Summed in Excel Spreadsheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	AG	AH
1	<b>Sep FY09 (September 2008)</b>																								
2	Meter Tag	9/1	9/2	9/3	9/4	9/5	9/6	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18	9/19	9/20	9/21	9/22	Total	
3	HDD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	CDD	12	14	17	20	17	11	11	13	12	9	11	9	19	19	15	6	5	7	3	1	4	8	243	
5	CT OF CLAIMS	3	2	3	3	6	3	2	2	12	3	1	5	2	0		6	2	2	3	2	3	3	3	68.0
6	EXEC MANS																								0.0
7	TREAS EXE	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
8	O.E.O.B.	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
9	FOB 6	2	1	3	2	2	0	3	5	5	4	2	6	4	2		13	5	4	5	0	3	4	4	75.0
10	N.E.O.B.	0	52	71	76	71	66	78	74	78	76	34	113	84	36		204	75	72	74	68	73	75	1950.0	
11	N.E.O.B. Net																								0.0
12	FOB 10A	35	40	40	42	40	38	36	40	39	39	20	63	36	17		117	47	44	30	0	10	42.5	815.7	
13	FOB 10B	0	0	0	0	0	0	0	1	0	1	1	2	1	0		0	1	1	2	0	1	6	17.0	
14	GSA CNTRL	0	17	23	24	22	21	21	22	23	24	12	38	23	9		62	24	25	25	25	24	24.3	485.8	
15	Cohen	0	0	0	0	0	0	0	5	0	2	0	0	0	0		0	0	0	0	0	2	0	14.0	
16	Switzer	26	24	25	24	23	12	27	27	30	28	13	47	28	10		71	29	28	24	16	22	31	565.0	
17	U.S. CUST	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.2
18	LAYAYETTE	46	52	54	35	25	25	26	27	26	25	12	42	26	10		67	27	27	27	28	27	26.6	859.7	
19	NEW POST	11	11	10	11	10	10	11	10	11	10	5	16	10	4		26	11	10	10	10	11	10	227.8	
20	POTOMAC AN	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
21	For Annx Net																								0.0
22	ROB Net																								0.0
23	R.O.B.	4	5	5	5	4	1	1	5	4	5	2	7	1	1		9	5	4	4	0	1	4	77.0	
24	ROB CHILL	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
25	U.S. CT.	15	15	14	15	16	13	20	22	16	13	5	19	13	4		29	12	11	10	11	11	10	294.0	
26	US TAX CT	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8	3	8	9	7	7	6.9	48.1	
27	WINDER	0	1	1	1	1	1	1	1	1	1	1	1	1	0		2	1	1	1	1	1	1	12	21.6
28	1724 F ST	0	2	2	2	2	2	2	2	3	3	1	4	2	1		5	3	3	3	3	3	2.8	50.5	
29	2430 E ST	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
30	PENSION	15	14	15	14	15	15	15	15	16	15	7	25	16	6		38	15	15	15	15	15	15.4	330.0	
31	VETERANS	4	6	8	6	5	6	5	7	6	6	3	9	3	1		8	3	4	4	3	3	5	105.0	
32	REAGAN	230	223	230	222	233	218	229	220	230	222	100	349	228	90		580	229	224	223	225	226	228	4959.0	
33	FBI ANNEX	99	158	149	71	178	144	207	188	180	129	20	55	57	26		285	169	86	131	129	103	107	2671.0	
34	FBI CHILLER	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8	3	3	2	2	1	0.7	21.1	
35	SECRET SERV	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
36	OLD POST	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
37	U.S. CT. Annx	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
38	H.O.B. 2	18	20	21	20	16	0	10	20	18	20	9	29	19	8		48	20	21	17	0	0	22	356.0	
39	BEP ANNEX	72	73	80	70	69	59	59	70	65	92	43	122	58	28		168	88	79	90	74	75	86	1620.0	
40	BEP Annx Net																								0.0
41	BEP MAIN	141	127	123	110	110	120	131	127	112	124	58	189	115	71		300	130	133	124	126	144	139	2754.0	
42	CORCORAN	0	1	0	1	1	1	1	0	1	1	0	4	4	2		3	2	2	1	1	2	0.3	29.9	
43	FED RESRV	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
44	HOOVER	100	107	76	86	55	34	33	38	37	42	20	65	35	15		107	46	44	51	45	43	46	1125.0	
45	FREER	29	29	27	26	25	25	28	28	25	29	15	34	0	0		72	29	28	28	32	31	29.9	568.4	
46	HIRSHHORN	77	81	73	70	74	75	80	79	75	83	37	121	76	31		194	80	81	67	0	16	83	1553.0	
47	SUP CT A	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
48	SUP CT C	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
49	MILK LIB.	44	44	42	45	42	43	44	43	44	43	19	67	44	18		111	42	40	39	37	35	34	920.0	
50	MUN CNTRL	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
51	NTRL HIST	114	114	103	106	116	126	121	103	119	115	54	154	0	0		343	127	120	128	131	136	128	2458.0	
52	NHB CONV	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
53	South Mall	1	1	0	0	1	1	1	2	1	1	1	2	0	0		16	8	9	9	10	10	9.5	83.0	
54	SUP CT B	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
55	AMER. HIS	67	70	75	72	69	76	83	84	71	75	40	124	67	41		169	75	73	71	73	73	75	1623.0	
56	ACAD SCI	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0.0
57	AIR & SPA	50	47	43	39	42	47	53	49	39	50	27	79	42	26		105	54	52	43	0	15	59.9	964.8	
58	NSA EAST	77	76	68	67	72	76	79	72	81	87	37	132	77	31		196	85	86	93	99	93	82	1760.0	
59	MGA WEST	20	28	22	23	18	26	26	19	28	29	24	173	158	48		189	67	68	68	77	78	67	1107.0	

# Energy Manager Monthly Reports Summed in Excel Spreadsheet

Year FY08 Projected MLBS. Billing by Month															
(Updated 9/4/2008) Billing Month															
Avg HDD															
FY-08 HDD															
Proj. FY07	October	November	December	January	February	March	April	May	June	July	August	September	Proj. Total	Mlbs to date	Proj. to
<b>337 FOB B</b>	350.0	1100.0	1800.0	2400.0	2400.0	2100.0	1800.0	1400.0	450.0	350.0	350.0	350.0	14,850.00		
338 projection running tot.	350.0	1450.0	3250.0	5650.0	8050.0	10150.0	11950.0	13350.0	13800.0	14150.0	14500.0	14850.0			
339 monthly usage	54.0	105.0	650.0	650.0	650.0	650.0	650.0	305.0	54.0	54.0	54.0	54.0			
340 usage running tot.	54.0	159.0	809.0	1459.0	2109.0	2759.0	3409.0	3714.0	3768.0	3822.0	3876.0	3930.0	3,930.00	3,930.0	
<b>341 U.S. CUST</b>	300.0	1500.0	5400.0	8500.0	8000.0	7000.0	5200.0	4000.0	2500.0	2500.0	650.0	650.0	44,200.00		
342 projection running tot.	300.0	1800.0	7200.0	13700.0	21700.0	28700.0	33900.0	37900.0	40400.0	42900.0	43550.0	44200.0			
343 monthly usage	3711.9	2908.1	5970.0	4996.0	4809.0	4176.2	2017.8	536.0	0.0	0.0	0.0	0.0			
344 usage running tot.	3711.9	6620.0	12590.0	17586.0	22395.0	26571.2	28589.0	29125.0	29125.0	29125.0	29125.0	29125.0	29,125.00	29,125.0	
<b>345 SECRET SERV</b>	850.0	950.0	1590.0	2500.0	3000.0	2400.0	1800.0	1200.0	800.0	750.0	750.0	750.0	17,340.00		
346 projection running tot.	850.0	1800.0	3390.0	5890.0	8890.0	11290.0	13090.0	14290.0	15090.0	15840.0	16590.0	17340.0			
347 monthly usage	348.8	0.0	0.0	2607.0	2863.3	2570.4	2037.3	1101.1	0.0	0.0	0.0	0.0			
348 usage running tot.	348.8	348.8	348.8	2955.8	5819.1	8389.5	10426.8	11527.9	11527.9	11527.9	11527.9	11527.9	11,527.90	11,527.9	
<b>349 REAGAN</b>	8600.0	12300.0	14000.0	18700.0	19200.0	17500.0	16500.0	12800.0	10200.0	8000.0	8000.0	8000.0	153,800.00		1
350 projection running tot.	8600.0	20900.0	34900.0	53600.0	72800.0	90300.0	106800.0	119600.0	129800.0	137800.0	145800.0	153800.0			
351 monthly usage	8334.0	10068.0	14121.0	16777.0	17473.0	15912.0	14354.0	11648.0	9822.0	7713.0	7430.0	7119.0			
352 usage running tot.	8334.0	18402.0	32523.0	49300.0	66773.0	82685.0	97039.0	108687.0	118509.0	126222.0	133652.0	140771.0	140,771.00	140,771.0	
<b>353 OLD POST</b>	0.1	0.0	850.0	1900.0	2500.0	2500.0	1400.0	400.0	0.0	0.0	0.0	0.0	9,550.10		
354 projection running tot.	0.1	0.1	850.1	2750.1	5250.1	7750.1	9150.1	9550.1	9550.1	9550.1	9550.1	9550.1			
355 monthly usage	0.0	0.0	1152.3	1639.9	2365.0	2981.2	736.2	274.3	0.0	0.0	0.0	0.0			
356 usage running tot.	0.0	0.0	1152.3	2792.2	5157.2	8138.4	8874.6	9148.9	9148.9	9148.9	9148.9	9148.9	9,148.90	9,148.9	
<b>357 NEW POST</b>	400.0	650.0	1450.0	4100.0	4800.0	4000.0	1725.0	1200.0	500.0	450.0	400.0	400.0	20,075.00		
358 projection running tot.	400.0	1050.0	2500.0	6600.0	11400.0	15400.0	17125.0	18325.0	18825.0	19275.0	19675.0	20075.0			
359 monthly usage	513.0	633.9	1842.9	2845.4	2905.2	2652.9	1900.0	890.8	357.7	220.8	290.4	291.2			
360 usage running tot.	513.0	1146.9	2989.8	5835.2	8740.4	11393.3	13293.3	14184.1	14541.8	14762.6	15053.0	15344.2	15,344.20	15,344.2	
<b>361 WINDER</b>	0.1	125.0	250.0	400.0	500.0	450.0	325.0	250.0	0.0	0.0	0.0	0.0	2,300.10		
362 projection running tot.	0.1	125.1	375.1	775.1	1275.1	1725.1	2050.1	2300.1	2300.1	2300.1	2300.1	2300.1			
363 monthly usage	0.0	31.8	241.5	362.5	371.5	307.8	228.8	94.3	1.0	18.7	0.0	0.0			
364 usage running tot.	0.0	31.8	273.3	635.8	1007.3	1315.1	1543.9	1638.2	1639.2	1657.9	1657.9	1657.9	1,657.90	1,657.9	
<b>365 VETERANS</b>	175.0	1300.0	1875.0	2850.0	3500.0	3300.0	2650.0	1800.0	700.0	200.0	150.0	150.0	18,650.00		
366 projection running tot.	175.0	1475.0	3350.0	6200.0	9700.0	13000.0	15650.0	17450.0	18150.0	18350.0	18500.0	18650.0			
367 monthly usage	301.0	505.0	2179.0	3344.0	3421.0	3360.0	2632.0	2095.0	1631.0	80.0	122.0	207.0			
368 usage running tot.	301.0	806.0	2985.0	6329.0	9750.0	13110.0	15742.0	17837.0	19468.0	19548.0	19670.0	19877.0	19,877.00	19,877.0	
<b>369 COTTON ANHX</b>	0.1	25.0	200.0	425.0	500.0	450.0	250.0	100.0	0.0	0.0	0.0	0.0	1,950.10		
370 projection running tot.	0.1	25.1	225.1	650.1	1150.1	1600.1	1850.1	1950.1	1950.1	1950.1	1950.1	1950.1			
371 monthly usage	0.0	0.0	0.0	507.5	650.0	303.8	521.4	159.0	0.0	0.0	0.0	0.0			
372 usage running tot.	0.0	0.0	0.0	507.5	1167.5	1471.3	1992.7	2151.7	2151.7	2151.7	2151.7	2151.7	2,151.70	2,151.7	
<b>373 ROB Net</b>	349.9	800.0	1800.0	2500.0	2700.0	2400.0	1460.0	600.0	350.0	350.0	350.0	350.0	14,009.90		
374 projection running tot.	349.9	1149.9	2949.9	5449.9	8149.9	10549.9	12009.9	12609.9	12959.9	13309.9	13659.9	14009.9			
375 monthly usage	343.0	381.0	1563.0	2171.0	2358.0	2186.0	1468.0	568.0	317.0	167.0	67.0	390.0			
376 usage running tot.	343.0	724.0	2287.0	4458.0	6816.0	9002.0	10470.0	11038.0	11355.0	11522.0	11589.0	11979.0	11,979.00	11,979.0	

# Energy Manager 4 Year Average Report

4 Year Average Report Feb 2008														
Month:		Feb-08		Feb FY08										
HDD FY-04:		771												
HDD FY-05:		702												
HDD FY-06:		733												
HDD FY-07:		950												
HDD 4 Yr Avg:		789												
HDD This Mo:		688												
HDD Prev. Mo:		769												
HDD % Diff:		89%												
File No	Bldg Number	Bldg Org Code	Bldg	HDD Sq Ft	FY 04 MLbs	FY 05 MLbs	FY 06 MLbs	FY 07 MLbs	4 Yr Avg MLbs	Prev Mo MLbs	This Mo MLbs	Steam Sq Ft Lbs.	Mo to Mo % Increase of Mlbs.	Mo to Avg % Change of Mlbs.
8	DC0094ZZ	P1127001	CT OF CLAIMS	245556	1962	1691	1968	2731	2088	2331	1978	12	-15%	95%
10	DC0017ZZ	P1122021	EXEC MANS	85548										
10	DC0551BA	P1122021	TREAS EXE	85548	0	0	0	0	0	0	0	0		
11	DC0035ZZ	P1122021	O.E.O.B.	670609	5326	6734	6207	4736	5751	0	0	0		
12	DC0010ZZ	P1127001	FOB 6	668147	2066	1676	1973	2403	2030	1710	1749	4	2%	86%
13	DC0105ZZ	P1122021	N.E.O.B.	426516	4604	4815	5288	6931	5410	5717	4875	17	-15%	90%
13	DC0105ZZ	P1122021	N.E.O.B. Net	426516		3607								
16	DC0083ZZ	P1127001	FOB 10A	1126523	4918	4315	5388	19	3660	16	1843	2	11419%	50%
17	DC0084ZZ	P1127001	FOB 10B	428511	1991	2697	3224	3685	2899	3035	2767	9	-9%	95%
21	DC0021ZZ	P1121101	GSA CNTRL	763971	4185	4209	3969	5132	4374	4328	3942	8	-9%	90%
22	DC0034ZZ	P1127001	Cohen	1072705	5566	4686	5292	4943	5122	5652	5419	7	-4%	106%
23	DC0033ZZ	P1127001	Switzer	592217	3670	3099	2259	1933	2740	3738	3782	9	1%	138%
29	DC0522AB	P1124001	U.S. CUST	813163	5891	5843	1435	9229	5600	3419	4176	7	22%	75%
32	DC0026ZZ	P1121101	LAYAYETTE	595212	2070	1709	1516	2130	1856	1823	1623	4	-11%	67%
34	DC0028ZZ	P1124001	NEW POST	891554	4749	4247	3355	3137	3872	2905	2653	4	-9%	69%
36	DC0591BE	P1126001	POTOMAC AN	97183	2300	2167	2010	2096	2143	1260	1194	18	-5%	56%
36	DC0591BE	P1126001	Pot Annx Net	97183		1469								
37	DC0031ZZ	P1121101	ROB Net	832174		1800								
37	DC0031ZZ	P1121101	R.O.B.	832174	3279	2042	2288	2359	2492	2358	2186	4	-7%	88%
37	DC0031ZZ	P1121101	ROB CHILL	832174	385	0	0	0	96	0	0	0		
41	DC0014ZZ	P1127001	U.S. CT.	567766	2447	1958	1938	2564	2227	2254	2232	6	-1%	100%
42	DC0114ZZ	P1127001	US TAX CT	218409	946	748	0	344	510	1284	1061	7	-17%	208%
44	DC0048ZZ	P1122021	WINDER	81093	270	264	360	560	364	372	308	6	-17%	85%
48	DC0078ZZ	P1122021	1724 F ST	53625	312	248	342	617	380	278	246	7	-12%	65%
50	DC0533AC	P1126001	2430 E ST	94786	610	467	322	514	478	243	222	3	-9%	46%
51	DC0030ZZ	P1126001	PENSION	253800	1099	1083	1030	1383	1149	1148	976	6	-15%	85%
52	DC0007ZZ	P1121101	VETERANS	709678	2714	3398	3053	3988	3288	3421	3360	7	-2%	102%
53	DC0459AF	P1124001	REAGAN	3100000	17454	16981	16405	20960	17950	17473	15912	7	-9%	89%
54	DC0463ZZ	P1127001	FBI ANNEX	306000	6185	517	2102	1041	2461	7217	6240	30	-14%	254%
55	DC0463ZZ	P1127001	FBI CHILLER		745	18	24	192	245	102	139		36%	57%

# Energy Manager Monthly Invoice

**General Services Administration**  
Heating Operation and Transmission District  
7th and D Streets, S.W.  
Washington, D.C. 20407

## Monthly Steam Consumption

Department of Agric. - FMd  
14th & Independ Ave SW  
South Bldg, RM S-313  
Washington, DC 20250  
**Attn:** Ed Murtagh

**BILLING MONTH:** March  
**CONSUMPTION PERIOD:** 2/1/2008 to 3/1/2008  
**HTG DEG DAYS:** 688

**Acct. Number :** R0266815

**Starting Balance:** \$1,388,536.80

Date	File #	Building Name	Bldg. Num	Description	Qty	Code	Rate	Amount Billed
3/1/2008	136	AGRI ADMI	DC0003ZZ	Steam: NON-GSA	1672.4	B	\$38.95	\$65,139.98
3/1/2008	136	AGRI SO. #1	DC0003ZZ	Steam: NON-GSA	8706.6		\$38.95	\$339,122.07
3/1/2008	136	AGRI SO. #2	DC0003ZZ	Steam: NON-GSA	0		\$38.95	\$0.00
3/1/2008	136	AUDITORS	DC0003ZZ	Steam: NON-GSA	730.3		\$38.95	\$28,445.19

**Total:** \$432,707.24

**Ending Balance:** \$955,829.57

The above is the monthly steam consumption invoice for the building(s) listed. The amount of steam consumption is based on the actual meter reading cycle for the previous month, unless otherwise indicated.

Code A: Estimated Consumption based on past billings due to meter malfunction.

Code B: Consumption adjusted due to intermittent meter errors.

Code C: Consumption based on manual meter readings.

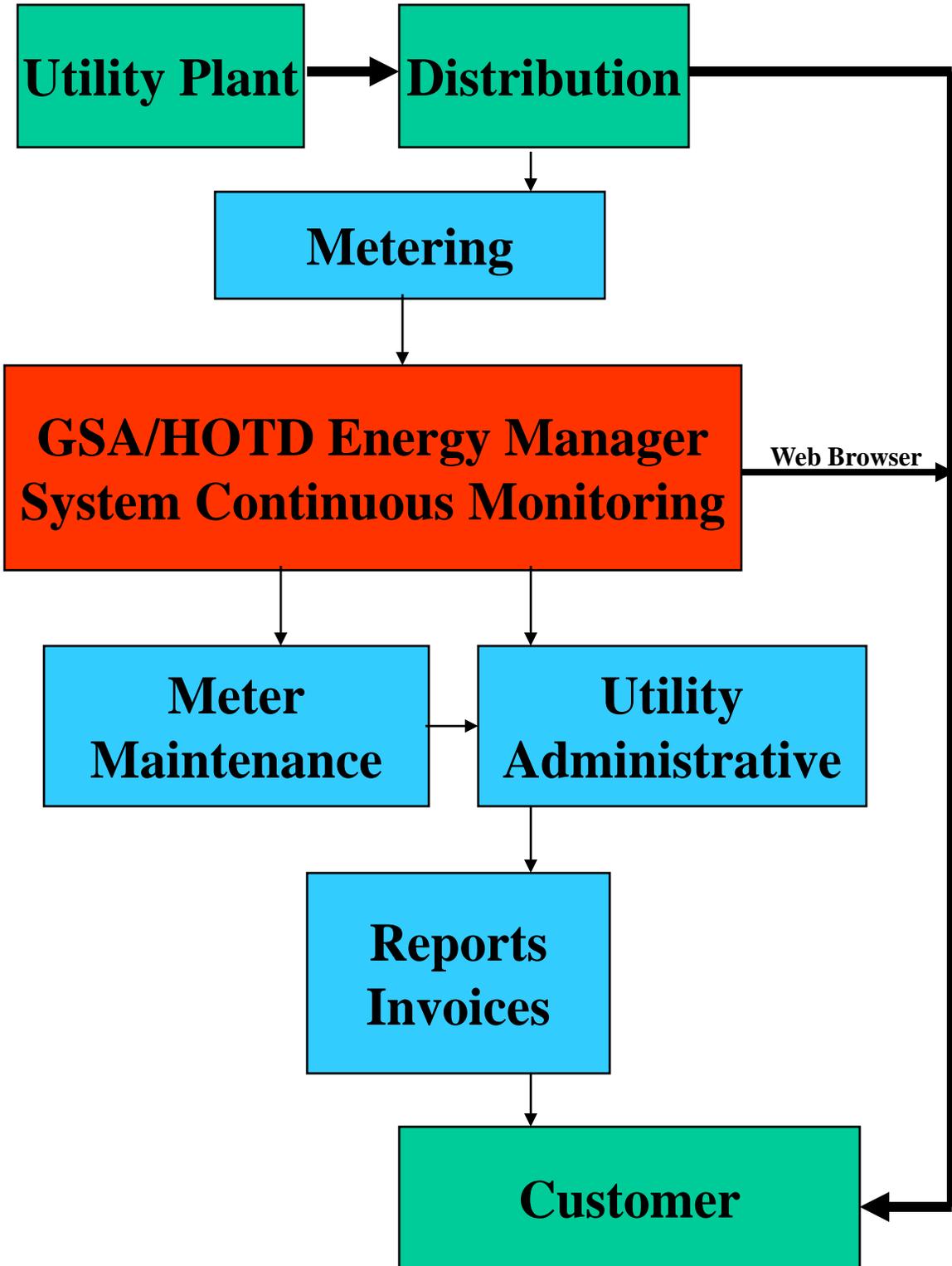
Code D: Consumption adjusted due to flowrate below minimum meter flowrange.

For further information concerning this report, please call David Stover, Heating Operation and Transmission District at (202) 690-9716 or E-mail: David.Stover@GSA.gov, or call Team Leader Anthony Miles (202) 708-0149 E-mail: Anthony.Miles@GSA.GOV

For problems with your steam service, please call Mr. Harry Washington, Steam Distribution Complex at (202) 690-9758 or call John Bright at (202) 708-5423.

RWA search Website: <http://www.finance.gsa.gov/pbsrwa/>

# GSA/HOTD Utility Operations





**U.S. General Services Administration**  
GSA National Capital Region

## 21st Century District Energy Services

### **GSA/HOTD Energy Manager Web Interface**

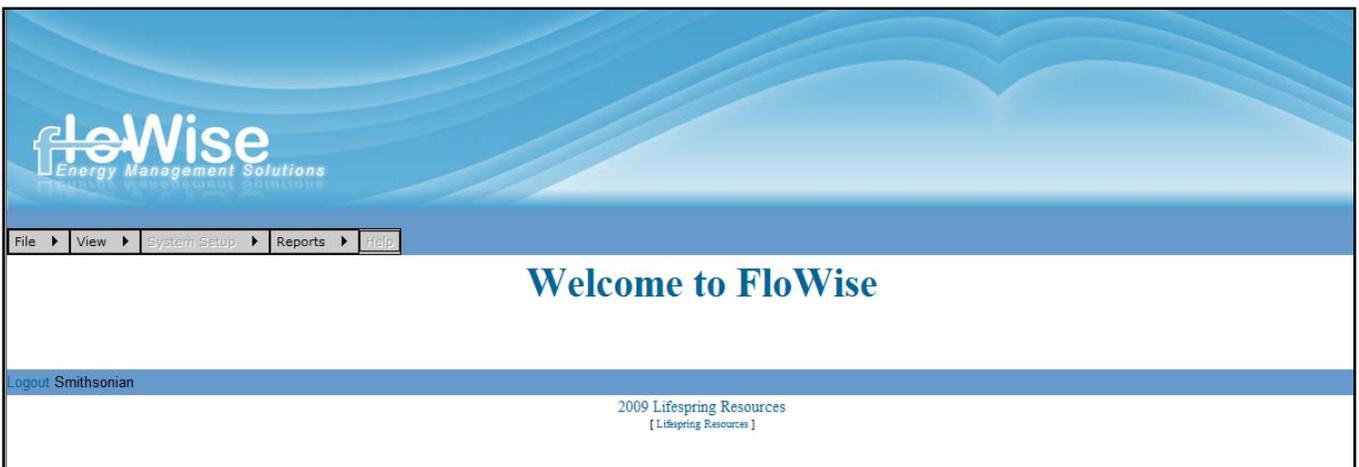
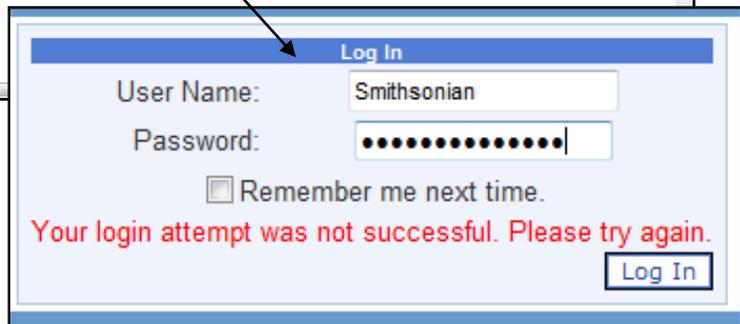
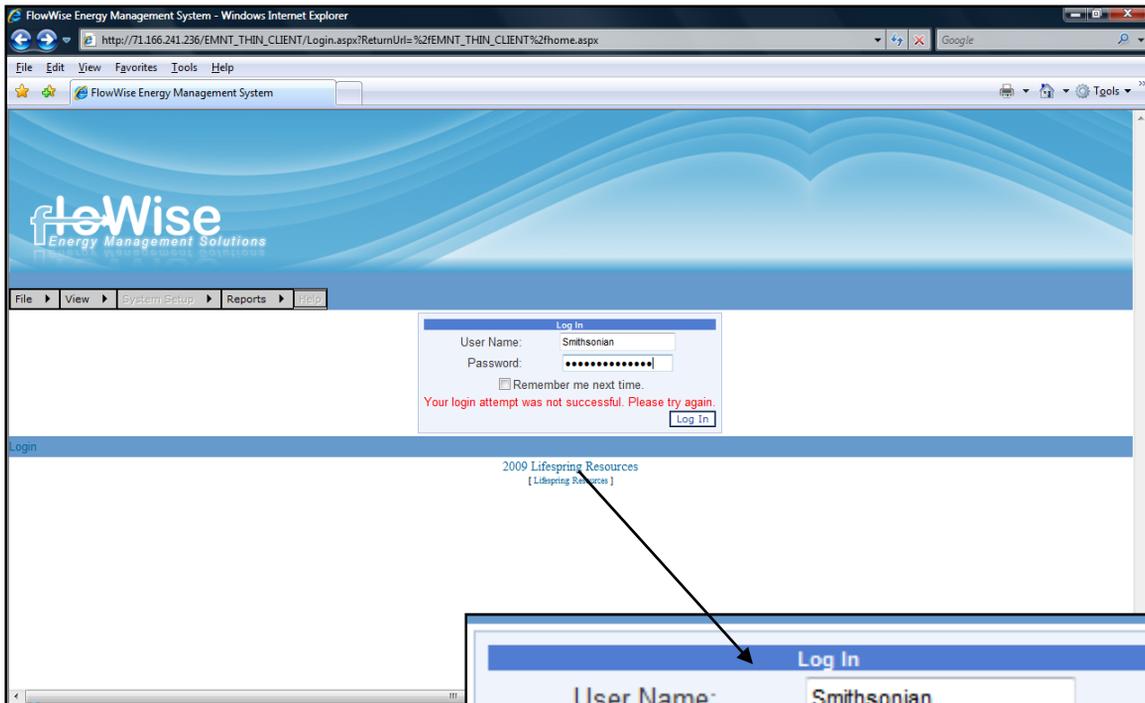
- Allow customers real time interface with GSA/HOTD Energy Manager Data Collection System
- Deployment scheduled for fall 2008
- Phase I - Internet Web Site Development
- Phase II - Active Main Display added to Web Site
  - Completed Sept. 2008
- Phase III - Graphics and Reports added to Web Site
  - Completed Dec. 2008
- Phase IV - Deployment and training to HOTD Customer
  - Completed Jan 2009

# **Energy Manager Active Web Access**

Online Access:

<https://hotd.gsa.gov>

# Energy Manager Active Web Main Display



# Energy Manager Active Web Main Display

## Generic Headings

File ▾ View ▾ System Setup ▾ Reports ▾ Help

Current Meter Readings  
Meter History

Logout Smithsonian

File ▾ View ▾ System Setup ▾ Reports ▾ Help

[All Meters](#) | Steam - Compressed Natural Gas - Chilled Water

Meter Tag	Reading Time	Totalizer 1	Totalizer 2	Cur 1	Avg 1	Cur 2	Avg 2	Cur 3	Cur 4
A&SPA CAF	2/17/2009 1:42:10 PM	136853000	0	166.43	0	0	0	395.029	218.893
AFRICAN Q	2/17/2009 1:43:27 PM	58796900	0	3085.28	0	0	0	392.706	212.703
AIR S SPA	2/17/2009 1:45:56 PM	108640000	0	4115.81	0	0	0	395.054	218.981
AMER. HIS	2/17/2009 1:46:31 PM	258338000	0	7928.5	0	0	0	394.1	216.3
FREEER	2/17/2009 1:05:09 PM	17583900	0	1735.66	0	0	0	393.708	215.353
HIRSHHORN	2/17/2009 1:08:57 PM	265853000	0	3114	0	0	0	394	217
NHB CONV	2/17/2009 1:19:31 PM	8353250	0	0	0	0	0	243.521	11.943
NTRL HIST	2/17/2009 1:20:12 PM	610058000	0	5982.83	0	0	0	300.664	52.997
South Mall	2/17/2009 1:27:52 PM	22780400	0	2314.3	0	0	0	301	53.2
X- AI-SI CW	2/17/2009 1:46:13 PM	3131890000	2599660	0.253882	0.260832	0.120703	0.1149515	39.725	51.2151
X- HIRSH CW	2/17/2009 1:48:12 PM	681057000	5137380	388.186	384.287	177.4285	199.802	41.6579	52.6066
X- NASM CW	2/17/2009 1:48:50 PM	1676190000	795043	1169.45	653.83	330.4475	260.117	37.6644	44.4562
X- NASM-R CW	2/17/2009 1:49:30 PM	1487010000	3004450	214.968	249.936	153.785	175.606	39.4171	56.5658
X- NMAI CW	2/17/2009 1:50:52 PM	110360000	782965	553.058	532.294	279.3755	279.792	41.9997	54.1335

Logout Smithsonian

2009 Lifespring Resources  
[Lifespring Resources]

File ▾ View ▾ System Setup ▾ Reports ▾ Help

[All Meters](#) | Steam - Compressed Natural Gas - Chilled Water

Meter Tag	Reading Time	Totalizer 1	Totalizer 2	Cur
A&SPA CAF	2/17/2009 1:42:10 PM	136853000	0	166

# Energy Manager Active Web Main Display

## Steam Headings

The screenshot shows a web browser window titled "FloWise - Welcome - Windows Internet Explorer". The address bar displays "http://71.166.241.236/EMNT\_THIN\_CLIENT/CurrentMeterReadings.aspx". The page features the FloWise logo and a navigation menu with "File", "View", "System Setup", "Reports", and "Help". Below the menu, there is a breadcrumb trail: "All Meters | Steam - Compressed Natural Gas - Chilled Water". A table of meter readings is displayed, with columns for Meter Tag, Reading Time, Mass Totalizer Lbs., Cur. Mass Flow Lbs/Hr, Avg. Mass Flow Lbs/Hr, Temp. deg. F., and Pressure psig. A red box highlights the "System Setup" and "Reports" menu items, with an arrow pointing to a zoomed-in view of the table below.

Meter Tag	Reading Time	Mass Totalizer Lbs.	Cur. Mass Flow Lbs/Hr	Avg. Mass Flow Lbs/Hr	Temp. deg. F.	Pressure psig
A&SPA CAF	2/17/2009 1:42:10 PM	136853000	1663.43	0	395.029	218.893
AFRICAN Q	2/17/2009 1:43:27 PM	58796900	3085.28	0	392.706	212.703
AIR & SPA	2/17/2009 1:45:56 PM	108640000	4115.81	0	395.054	218.981
AMER. HIS	2/17/2009 1:48:31 PM	258338000	7928.5	0	394.1	216.3
FREER	2/17/2009 1:05:39 PM	17583900	1735.66	0	393.708	215.353
HIRSHHORN	2/17/2009 1:08:57 PM	265853000	3114	0	394	217
NHB CONV	2/17/2009 1:19:31 PM	8353250	0	0	243.521	11.943
NTRL HIST	2/17/2009 1:20:12 PM	610058000	5982.83	0	300.664	52.997
South Mall	2/17/2009 1:27:52 PM	22780400	2314.3	0	301	53.2

Logout Smithsonian  
2009 Lifespring Resources  
[Lifespring Resources]

This is a zoomed-in view of the table from the screenshot above, showing the first three rows of data. The table has a blue header and a white body with blue borders.

Meter Tag	Reading Time	Mass Totalizer Lbs.	Cur. Mass Flow Lbs/Hr	Avg. Mass Flow Lbs/Hr	Temp. deg. F.	Pressure psig
A&SPA CAF	2/17/2009 1:42:10 PM	136853000	1663.43	0	395.029	218.893
AFRICAN Q	2/17/2009 1:43:27 PM	58796900	3085.28	0	392.706	212.703

# Energy Manager Active Web Main Display

## Chilled Water Headings

FloWise - Welcome - Windows Internet Explorer  
 http://71.166.241.236/EMNT\_THIN\_CLIENT/CurrentMeterReadings.aspx

File Edit View Favorites Tools Help  
 FloWise - Welcome

**floWise**  
 Energy Management Solutions

File View System Setup Reports Help

All Meters | Steam - Compressed Natural Gas - Chilled Water

Meter Tag	Reading Time	Vol. Totalizer Gals.	Energy Totalizer TonHrs	Cur. Vol. Flow Gals/Min	Avg. Vol. Flow Gals/Min	Cur. Energy Flow Tons	Avg. Energy Flow Tons	Inlet Temp. Deg. F.	Outlet Temp. Deg. F.
X- AI-SI CW	2/17/2009 1:46:13 PM	3131890000	2599660	0.253882	0.260832	0.120703	0.1149515	39.725	51.2151
X- HIRSH CW	2/17/2009 1:48:12 PM	681057000	5137380	388.186	384.287	177.4285	199.802	41.6579	52.6066
X- NASM CW	2/17/2009 1:48:50 PM	1676190000	795043	1169.45	653.83	330.4475	260.117	37.6644	44.4562
X- NASM-R CW	2/17/2009 1:49:30 PM	1487010000	3004480	214.968	249.936	153.785	175.606	39.4171	56.5658
X- NMAI CW	2/17/2009 1:50:52 PM	110360000	782965	553.058	532.294	279.3755	279.792	41.9997	54.1335

Logout Smithsonian  
 2009 Lifespring Resources  
 [ Lifespring Resources ]

File View System Setup Reports Help

All Meters | Steam - Compressed Natural Gas - Chilled Water

Meter Tag	Reading Time	Vol. Totalizer Gals.	Energy Totalizer TonHrs
X- AI-SI CW	2/17/2009 1:46:13 PM	3131890000	2599660
X- HIRSH CW	2/17/2009 1:48:12 PM	681057000	5137380
X- NASM CW	2/17/2009 1:48:50 PM	1676190000	795043

# Web Browser Daily Steam Report

The screenshot shows the fleWise Energy Management Solutions web browser interface. At the top left is the fleWise logo. Below it is a navigation menu with 'File', 'View', and 'System Setup'. A dropdown menu is open under 'System Setup', showing options: 'Daily Report', 'Monthly Report', 'Four Year Average Report', and 'Exit Invoices'. To the right is a calendar titled 'Select Date for Daily Report' for February 2009. The calendar has columns for Sun, Mon, Tue, Wed, Thu, Fri, and Sat. The date 10 is selected. Below the calendar are radio buttons for 'Steam Report' (selected) and 'Chilled Water'. A 'Process Daily Report' button is at the bottom. The footer includes 'Logout Smithsonian' and '2009 Lifespring Resources [Lifespring Resources]'.

The screenshot shows the fleWise Energy Management Solutions web browser interface displaying a 'Daily Report'. The navigation menu includes 'File', 'View', 'System Setup', 'Reports', and 'Help'. The report title is 'Daily Report'. Below the title is a table with the following data:

Meter	Initial Totalizer	Final Totalizer	Consumption
A&SPA CAF	136565.00	136604.00	39.00
AFRICAN Q	58232.20	58297.40	65.20
AIR & SPA	107960.00	108027.00	67.00
AMER. HIS	257145.00	257299.00	154.00
FREER	17244.10	17286.50	42.40
HIRSHHORN	265144.00	265233.00	89.00
NHB CONV	8353.30	8353.30	0.00
NTRL HIST	608608.00	608777.00	169.00
South Mall	22392.30	22442.10	49.80

The footer includes 'Logout Smithsonian' and '2009 Lifespring Resources [Lifespring Resources]'.

# Web Browser Monthly Steam Report

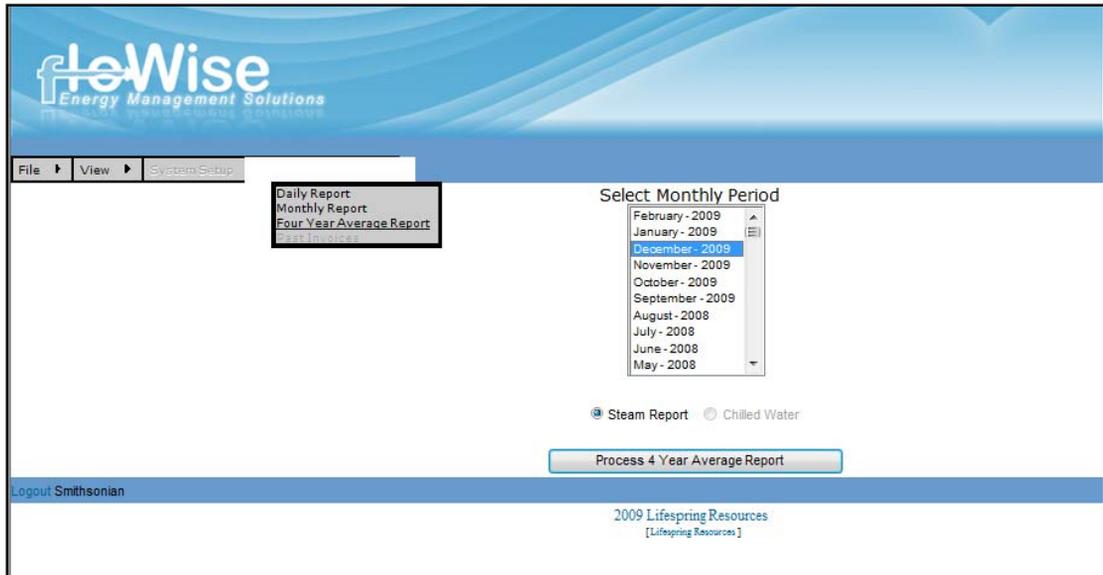
The screenshot shows the fleWise Energy Management Solutions web interface. At the top left is the fleWise logo. Below it is a navigation menu with 'File', 'View', and 'System Setup'. A dropdown menu is open under 'System Setup', showing options: 'Daily Report', 'Monthly Report' (highlighted), 'Four Year Average Report', and 'Past Invoices'. To the right, there is a 'Select Monthly Period' dropdown menu with a list of months from February 2009 to May 2008. Below this is a radio button selection for 'Steam Report' (selected) and 'Chilled Water'. A 'Process Monthly Report' button is at the bottom right. The footer includes 'Logout Smithsonian' and '2009 Lifespring Resources [Lifespring Resources]'.

The screenshot shows the fleWise Energy Management Solutions web interface displaying a 'Monthly Report'. The navigation menu includes 'File', 'View', 'System Setup', 'Reports', and 'Help'. The report title is 'Monthly Report'. Below the title is a table with the following data:

Meter	Start Time	Initial Totalizer	End Time	Final Totalizer	Consumption
A&SPA CAF	12/31/2008 11:24:51 PM	134679.00	1/31/2009 11:15:47 PM	136173.00	1494.00
AFRICAN Q	12/31/2008 11:26:14 PM	54921.60	1/31/2009 11:17:04 PM	57448.00	2526.40
AIR & SPA	12/31/2008 11:28:42 PM	102029.00	1/31/2009 11:19:32 PM	106861.00	4832.00
AMER. HIS	12/31/2008 11:29:18 PM	248960.00	1/31/2009 11:20:07 PM	255340.00	6380.00
FREER	12/31/2008 11:48:19 PM	15157.40	1/31/2009 11:39:44 PM	16798.60	1641.20
HIRSHHORN	12/31/2008 11:51:59 PM	252522.00	1/31/2009 11:43:14 PM	264273.00	11751.00
NHB CONV	12/31/2008 10:12:03 PM	8353.30	1/31/2009 9:54:16 PM	8353.30	0.00
NTRL HIST	12/31/2008 11:03:21 PM	599480.00	1/31/2009 11:54:24 PM	606693.00	7213.00
South Mall	12/31/2008 11:10:30 PM	19981.30	1/31/2009 11:01:15 PM	21822.20	1840.90

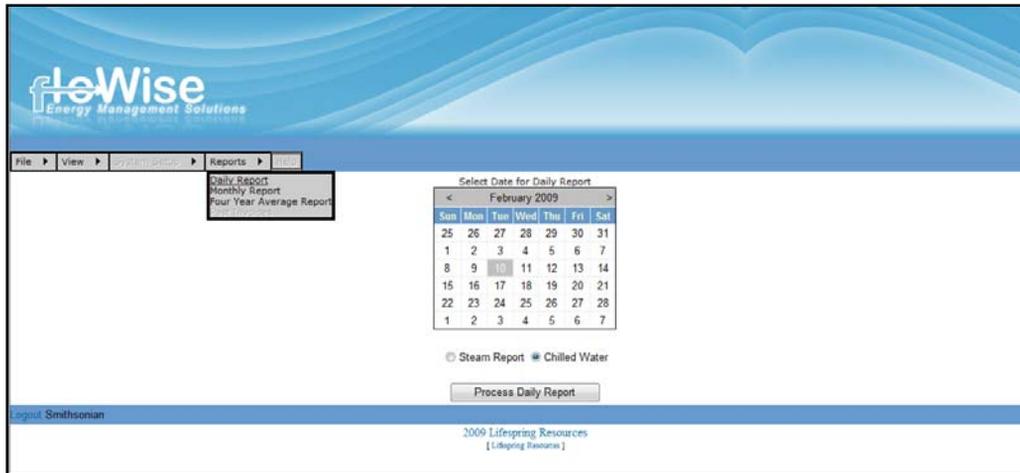
The footer includes 'Logout Smithsonian' and '2009 Lifespring Resources [Lifespring Resources]'.

# Web Browser Four Year Average Steam Report



Month	Meter	Bldg	Bldg Sq Ft	MLbs 4 Yrs Ago	HDD 4 Yrs Ago	MLbs 3 Yrs Ago	HDD 3 Yrs Ago	MLbs 2 Yrs Ago	HDD 2 Yrs Ago	MLbs 1 Yr Ago	HDD 1 Yr Ago	MLbs 4 Year Average	HDD 4 Year Average	Prev Month MLbs	This Month MLbs	Prev Month HDD	This Month HDD	Steam / Sq Ft
December	A&SPA CAF	AIR & SPACE CAFE		751	766	1503	881	1080	639	1237	713	1143	749	993	1378	543	759	
December	AFRICAN Q	AFRICAN Q	328749	2588	766	2672	881	2175	639	2031	713	2366	749	1902	2105	543	759	6.40
December	AIR & SPA	AIR & SPACE	605906	6140	766	4203	881	2357	639	2730	713	3857	749	3066	3574	543	759	5.90
December	AMER. HIS	AMERICAN HISTORY	720471	5639	766	7527	881	4517	639	4762	713	5611	749	4233	4857	543	759	6.74
December	FREER	FREER	141621	2563	766	1733	881	1345	639	1569	713	1803	749	1310	1499	543	759	10.59
December	HIRSHHORN	HIRSHHORN	133065	3555	766	3561	881	3127	639	3442	713	3421	749	2355	2802	543	759	21.06
December	NHB CONV	NHB CONVERTER		0	766	979	881	637	639	0	713	404	749	0	0	543	759	
December	NTRL HIST	NATURAL HISTORY	1500000	7336	766	8282	881	7129	639	6795	713	7386	749	5345	6632	543	759	4.42
December	South Mall	SOUTH MALL				2933	881	1099	639	1315	713			1164	1321	543	759	

# Web Browser Daily Chilled Water Report



File View System Setup Reports Help

## Daily Chilled Water Report

Meter	Start Time	End Time	Start Volume	End Volume	Gallons	Start Energy	End Energy	Ton-Hrs	Max Tons
X- AI-SI CW	2/9/2009 11:46:18 PM	2/10/2009 11:46:16 PM	3131230000.00	3131420000.00	190000.00	2596120.00	2596910.00	790.00	909.00
X- HIRSH CW	2/9/2009 11:48:17 PM	2/10/2009 11:48:16 PM	674261000.00	674779000.00	518000.00	5093890.00	5099180.00	5290.00	335.50
X- NASM CW	2/9/2009 11:48:56 PM	2/10/2009 11:48:56 PM	1662930000.00	1664290000.00	1360000.00	749400.00	756040.00	6640.00	1275.40
X- NASM-R CW	2/9/2009 11:49:39 PM	2/10/2009 11:49:35 PM	1484730000.00	1485010000.00	280000.00	2981040.00	2984340.00	3300.00	509.70
X- NMAI CW	2/9/2009 11:50:57 PM	2/10/2009 11:50:53 PM	104810000.00	105475000.00	665000.00	744855.00	749939.00	5084.00	335.20

Logout Smithsonian

2009 Lifespring Resources  
[Lifespring Resources]

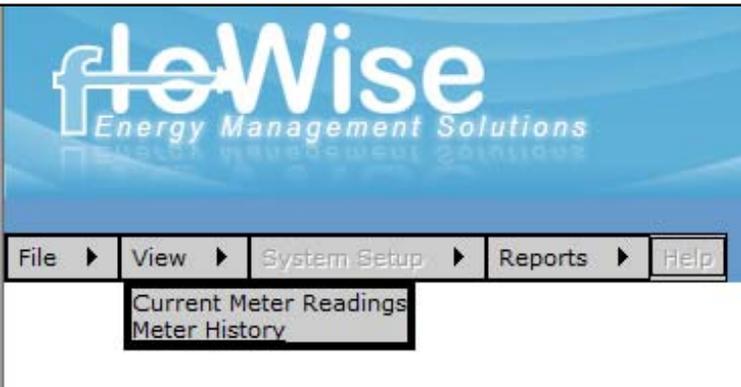
# Web Browser Monthly Chilled Water Report

The screenshot shows the leWise Energy Management Solutions web interface. At the top left is the logo. Below it is a navigation menu with 'File', 'View', and 'System Setup'. A dropdown menu is open under 'System Setup', showing options: 'Daily Report', 'Monthly Report', 'Four Year Average Report', and 'Fast Invoice'. To the right, a 'Select Monthly Period' dropdown menu is open, listing months from February - 2009 to May - 2008, with 'January - 2009' selected. Below this are radio buttons for 'Steam Report' and 'Chilled Water', with 'Chilled Water' selected. A 'Process Monthly Report' button is at the bottom. The footer includes 'Logout Smithsonian' and '2009 Lifespring Resources [Lifespring Resources]'.

The screenshot shows the leWise Energy Management Solutions web interface displaying a 'Monthly Chilled Water Report'. The navigation menu includes 'File', 'View', 'System Setup', 'Reports', and 'Help'. The report title is 'Monthly Chilled Water Report'. Below the title is a table with 11 columns: Meter, Start Time, End Time, Start Volume, End Volume, Gallons, Start Energy, End Energy, Ton-Hrs, and Max Tons. The table contains 5 rows of data for different meters. The footer includes 'Logout Smithsonian' and '2009 Lifespring Resources [Lifespring Resources]'.

Meter	Start Time	End Time	Start Volume	End Volume	Gallons	Start Energy	End Energy	Ton-Hrs	Max Tons
X- AI-SI CW	12/31/2008 11:46:16 PM	1/31/2009 11:46:16 PM	3130410000.00	3130640000.00	230000.00	2592630.00	2593420.00	790.00	1537.60
X- HIRSH CW	12/31/2008 11:48:16 PM	1/31/2009 11:48:16 PM	658441000.00	671167000.00	12726000.00	4916760.00	5055740.00	138980.00	1027.90
X- NASM CW	12/31/2008 11:48:56 PM	1/31/2009 11:48:55 PM	1596080000.00	1649870000.00	53790000.00	565316.00	709684.00	144368.00	1583.30
X- NASM-R CW	12/31/2008 11:49:35 PM	1/31/2009 11:49:38 PM	1473930000.00	1482440000.00	8510000.00	2873280.00	2955110.00	81830.00	527.80
X- NMAI CW	12/31/2008 11:50:57 PM	1/31/2009 11:51:00 PM	76944600.00	99131800.00	22187200.00	562341.00	701871.00	139530.00	285.20

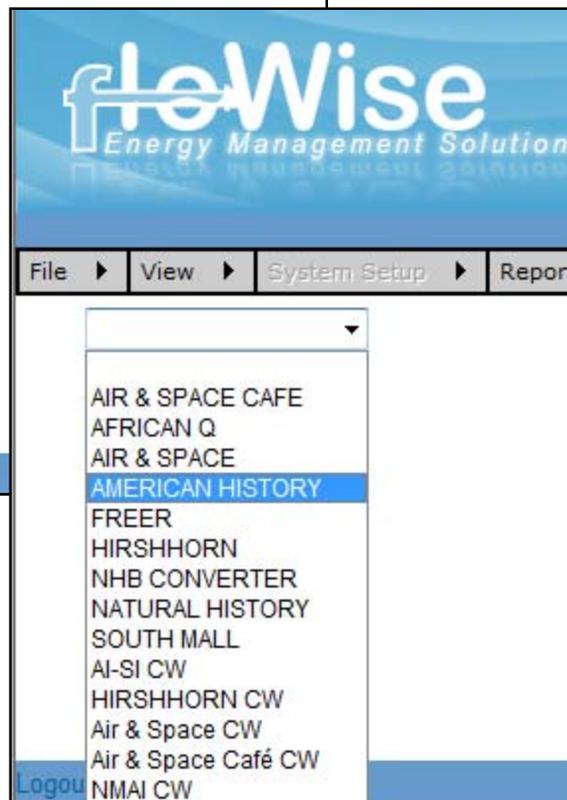
# Web Browser Graphics



Logout Smithsonian



Logout Smithsonian



Logou

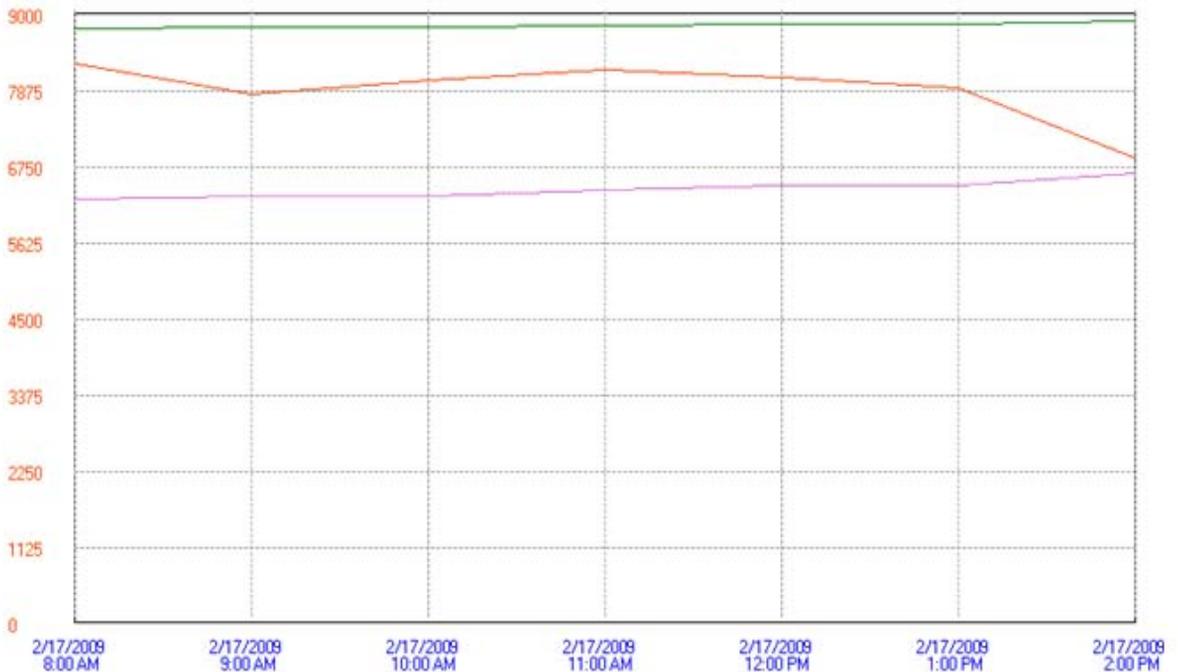
# Web Browser Graphics

## 8-Hour Graph



File View System Setup Reports Help

AMERICAN HISTORY



- Time Span
- 8 Hours
  - 3 Days
  - 30 Days
  - 180 Days

2/17/2009  
3:39 PM

	Current	Min	Max	Y Axis
Cut. Mass Flow	6979.50	6979.50	8274.10	KLbs/Hr
Temp	396.10	391.30	396.10	Deg. F.
Pressure	221.80	208.90	221.80	psig

# Web Browser Graphics

## 3-Day Graph

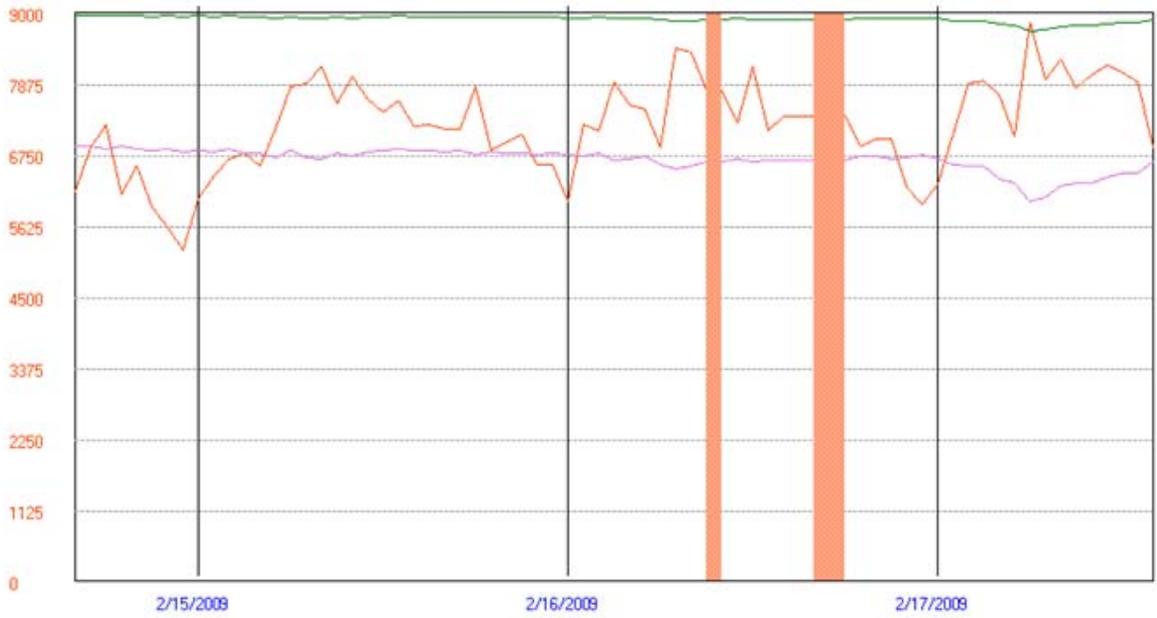


File View System Setup Reports Help

AMERICAN HISTORY

- Time Span
- 8 Hours
  - 3 Days
  - 30 Days
  - 180 Days

2/17/2009  
3:41 PM



	Current	Min	Max	Y Axis
Cur. Mass Flow	6879.50	0.00	8861.10	KLbs/Hr
Temp.	396.10	0.00	399.30	Deg. F.
Pressure	221.80	0.00	230.50	psig

# Web Browser Graphics

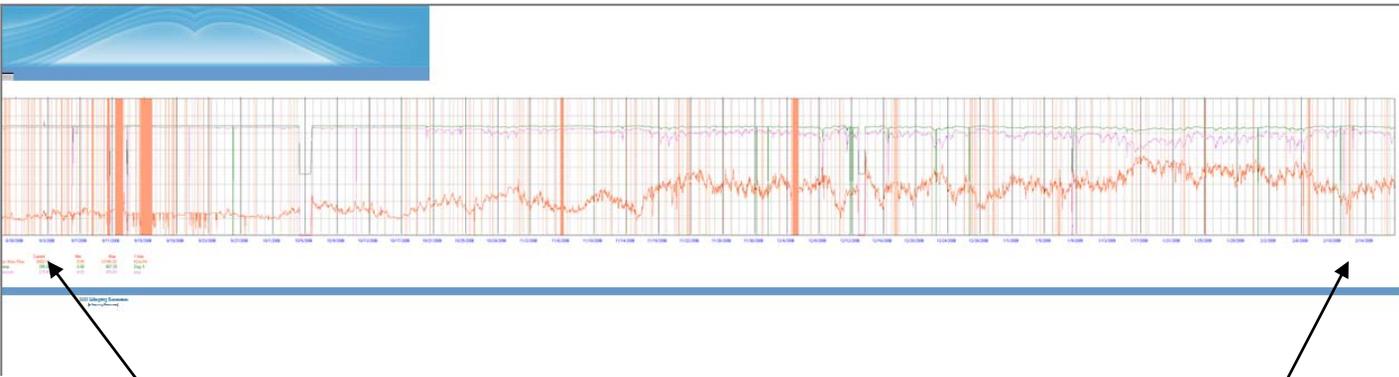
## 30-Day Graph



Oldest  
Data

Newest  
Data

# Web Browser Graphics 180-Day Graph



Oldest  
Data

Newest  
Data

# Web Browser Monthly Invoice\*\*

**General Services Administration**  
**Heating Operation and Transmission District**  
**7th and D Streets, S.W.**  
**Washington, D.C. 20407**

## Monthly Steam Consumption

Department of Agric. - FMd  
 14th & Independ Ave SW  
 South Bldg, RM S-313  
 Washington, DC 20250  
**Attn:** Ed Murtagh

**BILLING MONTH:** March  
**CONSUMPTION PERIOD:** 2/1/2008 to 3/1/2008  
**HTG DEG DAYS:** 688

**Acct. Number :** R0266815

**Starting Balance:** \$1,388,536.80

Date	File #	Building Name	Bldg. Num	Description	Qty	Code	Rate	Amount Billed
3/1/2008	136	AGRI ADMI	DC0003ZZ	Steam: NON-GSA	1672.4	B	\$38.95	\$65,139.98
3/1/2008	136	AGRI SO. #1	DC0003ZZ	Steam: NON-GSA	8706.6		\$38.95	\$339,122.07
3/1/2008	136	AGRI SO. #2	DC0003ZZ	Steam: NON-GSA	0		\$38.95	\$0.00
3/1/2008	136	AUDITORS	DC0003ZZ	Steam: NON-GSA	730.3		\$38.95	\$28,445.19

**Total:** \$432,707.24

**Ending Balance:** \$955,829.57

The above is the monthly steam consumption invoice for the building(s) listed. The amount of steam consumption is based on the actual meter reading cycle for the previous month, unless otherwise indicated.

Code A: Estimated Consumption based on past billings due to meter malfunction.

Code B: Consumption adjusted due to intermittent meter errors.

Code C: Consumption based on manual meter readings.

Code D: Consumption adjusted due to flowrate below minimum meter flowrange.

For further information concerning this report, please call David Stover, Heating Operation and Transmission District at (202) 690-9716 or E-mail: David.Stover@GSA.gov, or call Team Leader Anthony Miles (202) 708-0149 E-mail: Anthony.Miles@GSA.GOV

For problems with your steam service, please call Mr. Harry Washington, Steam Distribution Complex at (202) 690-9758 or call John Bright at (202) 708-5423.

RWA search Website: <http://www.finance.gsa.gov/pbsrwa/>

# Web Browser Transaction Log\*\*

<i>AcctNumber</i>	<i>TransDate</i>	<i>Meter_Tag</i>	<i>Description</i>	<i>Quantity</i>	<i>Rate</i>	<i>Charge</i>
	9/1/2008	FREER	Steam: NON-GSA	850.6	\$38.95	(\$33,130.87)
<i>Summary for 'AcctNumber' = R0266653 (14 detail records)</i>						
<b>Sum</b>						<b>(\$17,749.52)</b>
<i>R0266666</i>						
	9/15/2007		Opening Balance			\$667,150.00
	10/1/2007	HIRSHHORN	Steam: NON-GSA	2070	\$38.95	(\$80,626.50)
	11/1/2007	HIRSHHORN	Steam: NON-GSA	2201	\$38.95	(\$85,728.95)
	12/1/2007	HIRSHHORN	Steam: NON-GSA	3026	\$38.95	\$117,862.70)
	1/1/2008	HIRSHHORN	Steam: NON-GSA	3442	\$38.95	\$134,065.90)
	2/1/2008	HIRSHHORN	Steam: NON-GSA	3737	\$38.95	\$145,556.15)
	3/1/2008	HIRSHHORN	Steam: NON-GSA	3018	\$38.95	\$117,551.10)
	4/1/2008	HIRSHHORN	Steam: NON-GSA	3085	\$38.95	\$120,160.75)
	5/1/2008	HIRSHHORN	Steam: NON-GSA	2636	\$38.95	\$102,672.20)
	6/1/2008	HIRSHHORN	Steam: NON-GSA	2526	\$38.95	(\$98,387.70)
	7/1/2008	HIRSHHORN	Steam: NON-GSA	1849	\$38.95	(\$72,018.55)
	8/1/2008	HIRSHHORN	Amendment #1			\$519,578.60)
	8/1/2008	HIRSHHORN	Steam: NON-GSA	1832	\$38.95	(\$71,356.40)
	9/1/2008	HIRSHHORN	Steam: NON-GSA	2305	\$38.95	(\$89,779.75)
<i>Summary for 'AcctNumber' = R0266666 (14 detail records)</i>						
<b>Sum</b>						<b>(\$49,038.05)</b>
<i>R0266679</i>						
	9/15/2007		Opening Balance			\$254,932.00
	10/1/2007	SUP CT A	Steam: NON-GSA	0	\$38.95	\$0.00
	11/1/2007	SUP CT A	Steam: NON-GSA	52.5	\$38.95	(\$2,044.88)
	12/1/2007	SUP CT A	Steam: NON-GSA	964.83	\$38.95	(\$37,580.26)
	1/1/2008	SUP CT A	Steam: NON-GSA	1628.96	\$38.95	(\$63,448.90)
	2/1/2008	SUP CT A	Steam: NON-GSA	1648.72	\$38.95	(\$64,217.51)
	3/1/2008	SUP CT A	Steam: NON-GSA	1701.82	\$38.95	(\$66,285.76)
	4/1/2008	SUP CT A	Steam: NON-GSA	1762.37	\$38.95	(\$68,644.18)

# Web Browser Flowdata by Month\*\*

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	"Fiscal Month"	"Meter"	"Initial"	"Final"	"Flow"				"Fiscal Month"	"Meter"	"Initial"	"Final"	"Flow"	
2	02 Sep	BEP MAIN	132084	136345	4261				06 Jan	BEP MAIN	190373	198339	7966	
3	02 Oct	BEP MAIN	136345	123918	5640				06 Feb	BEP MAIN	198339	207239	8900	
4	02 Nov	BEP MAIN	123918	131909	7991				06 Mar	BEP MAIN	207239	215171	7932	
5	02 Dec	BEP MAIN	131909	140542	8633				06 Apr	BEP MAIN	215171	217191	2020	
6	02 Jan	BEP MAIN	140542	153264	12722				06 May	BEP MAIN	217191	221494	4303	
7	02 Feb	BEP MAIN	153252	161569	8305				06 Jun	BEP MAIN	221494	226836	5342	
8	02 Mar	BEP MAIN	161569	169488	7919				06 Jul	BEP MAIN	226836	230184	3348	
9	02 Apr	BEP MAIN	169488	174086	4598				06 Aug	BEP MAIN	230184	233442	3258	
10	02 May	BEP MAIN	174086	177761	3675				07 Sep	BEP MAIN	233442	236250	2808	
11	02 Jun	BEP MAIN	177761	180304	2543				07 Oct	BEP MAIN	236250	239559	3309	
12	02 Jul	BEP MAIN	180304	182749	2445				07 Nov	BEP MAIN	239559	246094	6535	
13	02 Aug	BEP MAIN	182749	185606	2857				07 Dec	BEP MAIN	246094	253775	7681	
14	03 Sep	BEP MAIN	185606	189273	3667				07 Jan	BEP MAIN	253775	262374	8599	
15	03 Oct	BEP MAIN	189273	194490	5217				07 Feb	BEP MAIN	262374	271336	8962	
16	03 Nov	BEP MAIN	194490	127310	8141				07 Mar	BEP MAIN	271336	278715	7379	
17	03 Dec	BEP MAIN	127310	123954	10900				07 Apr	BEP MAIN	278715	285082	6367	
18	03 Jan	BEP MAIN	123954	136288	12334				07 May	BEP MAIN	285082	285133	51	
19	03 Feb	BEP MAIN	136288	128697	-7591				07 Jun	BEP MAIN	285133	286453	1320	
20	03 Mar	BEP MAIN	128728	139813	11085				07 Jul	BEP MAIN	286453	289680	3227	
21	03 Apr	BEP MAIN	139813	126542	4540				07 Aug	BEP MAIN	289680	292812	3132	
22	03 May	BEP MAIN	126542	127386	844				08 Sep	BEP MAIN	292812	296555	3743	
23	03 Jun	BEP MAIN	127386	129719	2333				08 Sep	BEP MAIN	292812	296555	3743	
24	03 Jul	BEP MAIN	129719	793	-128926				08 Oct	BEP MAIN	296555	301014	4459	
25	03 Aug	BEP MAIN	793	1867	1074				08 Nov	BEP MAIN	301014	307645	6631	
26	04 Sep	BEP MAIN	1867	3847	1980				08 Dec	BEP MAIN	307645	315575	7930	
27	04 Oct	BEP MAIN	3847	7694	3847				08 Jan	BEP MAIN	315575	323086	7511	
28	04 Nov	BEP MAIN	7694	14975	7281				08 Feb	BEP MAIN	323086	330310	7224	
29	04 Dec	BEP MAIN	14975	26224	11249				08 Mar	BEP MAIN	330310	336770	6460	
30	04 Jan	BEP MAIN	26224	44228	18004				08 Apr	BEP MAIN	336770	340808	4038	
31	04 Feb	BEP MAIN	44228	56374	12146				08 May	BEP MAIN	340808	345416	4608	
32	04 Mar	BEP MAIN	56374	65780	9406				08 Jun	BEP MAIN	345416	350977	5561	
33	04 Apr	BEP MAIN	65780	72754	6975				08 Jul	BEP MAIN	350977	354169	3192	
34	04 May	BEP MAIN	72754.1	77706.2	4952.1				08 Aug	BEP MAIN	354169	357917	3748	

# Web Browser Flowdata by Month Graph\*\*

