

# Rivington – Database Notes

Table 1 Database Notes

<p><b>Data Collection</b></p>	<p><u>Data Logger:</u>  <u>Data Collection Interval:</u>  <u>Collection Method:</u></p>	<p>Obvius Aquisuite (CDH)            1 – minute            Obvius Upload</p>
<p><b>Site Information</b></p>	<p><u>Cogeneration Units:</u>  <u>Nameplate Capacity:</u>  <u>Heat Recovery Medium:</u>  <u>Heat Recovery Uses:</u>  <u>Excess Heat:</u></p>	<p>4 Tecogen CM - 75            300 kW            Hot glycol/water loop            100 ton hot water absorption chiller, Supplement Facility Space Heating , Supplement domestic hot water production            Rejected from hot glycol/water loop to heat exchanger connected to building tower loop</p>
<p><b>DG/CHP Generator Electrical Output</b></p>	<p><u>Engineering Units:</u>  <u>Energy Measurement (net/gross):</u>  <u>Measurement Type:</u>  <u>Generator Power Measurements:</u>  <u>Parasitic Power Measurements:</u></p>	<p>kWh            Net calculated = grow minus parasitics            Accumulated energy per interval            One per engine, four total            One for entire parasitic panel</p>
<p><b>DG/CHP Generator Electrical Output Demand</b></p>	<p><u>Engineering Units:</u>  <u>Measurement Type:</u></p>	<p>kW            From energy measurement, based on peak 1-min power</p>
<p><b>DG/CHP Generator Fuel Input</b></p>	<p><u>Engineering Units:</u>  <u>Measurement type:</u></p>	<p>CF            Discrete utility pulse output (after 10/24/2013)            Engine heat rate (Btu/kWh) calculated from utility gas data and measured generator energy output (before 10/24/13)</p>

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<b>DG/CHP Useful Heat Recovery</b>	<u>Engineering Units:</u> <u>Heat Measurement Type:</u>	MBtu (calculated value) One thermal loop - common flowmeter and two temperature sensors per loop across useful loads
<b>DG/CHP Unused Heat Recovery</b>	<u>Engineering Units:</u> <u>Heat Measurement Type:</u>	MBtu (calculated value) DHW flowmeter and 2 temperature measurements across dump HX
<b>DG/CHP Status/Runtime</b>	<u>Engineering Units:</u> <u>Measurement Type:</u>	hrs
<b>Facility Purchased Energy</b>	<u>Engineering Units:</u> <u>Measurement Type:</u>	Not collected
<b>Facility Purchased Demand</b>	<u>Engineering Units:</u> <u>Measurement Type:</u>	Not collected
<b>Other Facility Gas Use</b>	<u>Engineering Units:</u> <u>Measurement Type:</u>	Not collected

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Table 2 Event Timeline

Date	Event
February 21, 2013	Logging begins. Flowmeter not providing pulse output. TLR3 (loop temperature after dump HX) is on dump HX branch piping, needs to be moved to cogen main loop.
May 29, 2013	Added temperature sensors. Unused Heat Recovery is now measured. Gas data from monthly bills added to database.
October 24, 2013	Pulse to 4-20 mA transmitter added for flowmeter. Flow now measured with Omega flowmeter and verified with ultrasonic. Mod Hopper wireless transmitters were added in the gas meter room, and at the data logger. Gas meter pulse output now transmitted back to data logger.

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**Table 3. Range Checks**

Data Point	Units	Hourly Data Calculation Method	Database Lower Range	Database Upper Range	Notes
DG/CHP Generator Output (WG_d)	kWh/int	Sum	-5	300	Database lower range account for parasitic loads
DG/CHP Generator Output Demand (WG_KW_d)	kW	Max	-5	300	Database lower range account for parasitic loads
DG/CHP Generator Gas Use (FG_d)	cf/int	Sum	0	70	Utility on-line telemetry system
Total Facility Purchased Energy (WT_d)	kWh/int	-	-	-	Not installed
Total Facility Purchased Demand (WT_KW_d)	kW	-	-	-	Not installed
Other Facility Gas Use (FT_d)	cf/int	-	-	-	Not installed
Useful Heat Recovery (QHR_d)	MBtu/int	-	0	100	Calculated Value
Unused Heat Recovery (QD_d)	MBtu/int	-	0	100	Calculated Value
Status/Runtime of DG/CHP Generator (SG_d)	hr	-	0	1	
Ambient Temperature (TAO)	°F	Avg	-30	120	WUG Airport Code -NYC

Notes:

1. This table contains values from *rivington.csv*

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## *Relational Checks*

**Table 4. Relational Checks**

<b>Evaluated Point</b>	<b>Criteria</b>	<b>Result</b>

Notes:

1. This table contains values from *relational\_checks.pro*