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ADDENDUM NO. 2

Date: May 21, 2009

RSQ No. 09-0034

On Call Continuing Contract Engineering Services Waste-to-Energy Monitoring

This addendum is being issued to make the following additions to the bidding document. The information in this addendum modifies and changes the original bidding documents and takes precedence over the original documents. **Respondents shall acknowledge receipt of this addendum by completing this form and returning it with the response. Failure to acknowledge this addendum may preclude consideration of the bid proposal award.**

The attached information is provided in response to a vendor inquiry. These materials are for informational purposes, and have no impact on the any of the current terms, conditions, or requirements stated within the solicitation. Vendors are specifically advised that there is no change in the currently scheduled opening date and time. The specific vendor inquiry and County response are provided below:

Inquiry: To allow us to submit a higher quality response, we would like to receive copies of the last three Quarterly Performance Memoranda (as described in Task 150) and the most recent Annual Performance Report (as described in Task 155). Additionally, if the updated "punch list" is not reflected in the Quarterly Performance Memoranda, we would like to review documentation of the most recent On-Site Inspection (as described in Task 105).

Response: The 1st quarter and annual monitoring reports are herewith provided for informational purposes. The last three are not necessary and these two are appropriate for the tasks 150 and 155. Punch lists are included in 155. Task 105 commentary is included in the two attached reports.

Firm Name: _____ Date: _____

Signature: _____ Title: _____

Typed/Printed Name: _____

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Consulting Engineer's
Operations Monitoring Quarterly Report
Lake County Resource Recovery Facility



Covanta Lake

**Solid Waste Operations Monitoring 1st Quarter Report
FY 2009 (October 1, 2008 – December 31, 2008)**



Prepared by:
**MALCOLM
PIRNIE**



This Quarterly Operations Monitoring Report (the "Report") provides Malcolm Pirnie, Inc.'s summary review of the performance and operation of the Covanta Energy - Lake County Resource Recovery Facility (the "Facility") for the 1st quarter of the 2009 Contract Year (October 1, 2008 - December 31, 2008).

The Facility utilizes two 264 tons-per-day waterwall furnaces to process approximately 170,000 tons of refuse per year on average. The combustion process reduces the volume of the refuse by roughly 90%, while producing electricity for sale to Progress Energy, Florida Inc. Air pollution control systems reduce emissions and the ash produced is used for cover at the Lake County (the "County") landfill.

Malcolm Pirnie's summary of Facility performance is presented in the table entitled "Facility Performance Summary". The Facility had an overall "average" performance rating for the 1st quarter, meaning that performance was similar to recent years. In October 2008, the Facility underwent scheduled fall outages for both combustion units. The outages involved typical maintenance activities with no significant issues to report. The Facility also experienced several unscheduled outages during the quarter, mainly due to boiler tube failures, but the total quantity of outage time for the quarter was not unusual.

Initiatives

Lake County and Covanta continued their cooperative initiatives to control operating costs and improve Facility performance. Under the direction of the County's contract service coordinator, the County monitored the Facility's waste storage capacity on a daily basis, and scheduled routine and supplemental waste deliveries to optimize Facility throughput and minimize diversions to the County Landfill.

Close coordination of waste deliveries helped the Facility maintain full-time operations even though available waste from the County was below historical averages for the quarter. During the quarter the County augmented waste deliveries with yard waste, delivering 788 tons and 852 tons in November and December 2008 respectively.

Operations & Performance

Facility operating data is summarized in the tables and figures located in the appendices. The Facility processed 39,685 tons of waste during the quarter, and the County delivered 37,924 tons. As illustrated in Figure 1, which compares waste deliveries over the past three years in the same quarter, the quantity of available waste delivered to the Facility in this reporting period was slightly below average due to lower than average waste available in December.



Table 1 contains a summary breakdown of operating data for the quarter comparing it to previous years during the same period.

Covanta utilizes a standard scheduled maintenance calendar for this type of plant, with a fall and spring scheduled outage, and mid-cycle blast cleaning of the boilers between scheduled outages. Scheduled outages occurred for both combustion units in early October 2008, involving typical maintenance procedures for both combustion units. During the fall outage 348 tons of waste was diverted to the County landfill.

The Facility had a total of five unscheduled outages (both units) in November and December. The unscheduled outages were due to tube leaks on the evaporator section of Unit 1 and tube leaks on the lower economizer in Unit 2. Table 2 "Outage Summary" contains a detailed breakdown of both scheduled and unscheduled outages. The turbine generator also had a high rate of availability, with no significant maintenance issues to report. However, the turbine generator did trip off line on three separate occasions, making it unavailable to generate electricity for a total of 5.5 hours during the quarter.

Facility Performance Summary

<u>Performance Metric</u>	<u>1st Quarter Rating (Above Average, Average, or Below Average)</u>	<u>Notes</u>
Operations and Performance	-	
Facility and Equipment O&M	Average	Quarterly average ash production was 26.3% (by weight) of refuse processed, and ferrous recovery rate was 1.5% (by weight).
Scheduled & Unscheduled Outages	Average	Unscheduled maintenance required for boiler tube leaks was comparable to past years.
Capacity Utilization	Average	Units operated similarly compared to years past during the same period.
Waste Disposal Agreement	-	
Energy Recovery Performance	Average	Note that maximum allowable cooling tower outlet water temperatures were exceeded for five days in October.
Guaranteed Annual Tonnage	Average	Waste deliveries and processing was down from 2007, but similar to 2006. Waste delivered in December was below average.
Pass Through Costs	Average	Average quantities of ammonia (1.36 lbs./TRW) and powder activated carbon used (1.21 lbs./TRW).
Utility Usage	Above Average	Purchased only 9 MWh of electricity, compared to up to 306 MWh / quarter allowable as a pass-through cost under the Waste Disposal Agreement. Purchased 3,831 MMBTU of natural gas, as compared to 5,000 MMBTU allowable as a pass-through cost.
Regulatory Requirements	Average	No significant issues to report.



Waste Disposal Agreement

The Waste Disposal Agreement between the County and Covanta defines performance standards for three specific areas:

- Energy Recovery Performance Standard
- Acceptance of the Guaranteed Annual Tonnage
- Pass Through Costs and Maximum Utility Usage

The average electricity production rate, as measured by net kWh sales to Progress Energy per ton of refuse processed was 502.5 kWh/ton, or 17.0 kWh/ton below the standard of 519.5 kWh/ton of waste processed. Historical data shows that the net electricity produced by the Facility is typically below the standard during the first quarter. This pattern is primarily due to the scheduled outage work. During scheduled outages the Facility produces less power but continues to consume a full load of electricity to operate all systems, and consequently the net electricity available for sale drops significantly.

The Facility remained on target to meet its energy production capacity commitments to Progress Energy. The 12-month rolling average for availability at the end of the quarter was 81.69%. However, the Facility did not meet all of the energy efficiency operating parameters defined in the Waste Disposal Agreement. In October the cooling water outlet temperature exceeded the maximum allowable temperature for five consecutive days. Covanta reported that this occurred because of maintenance to the cooling tower. The Facility did meet its condenser vacuum target for the five day period, but regardless of the cause or outcome the cooling water temperatures will need to be considered at the end of the year when any potential “energy efficiency damages” due to the County are calculated.

The Facility accepted 38,994 tons of Acceptable Waste during the quarter, and 37,924 tons of that waste was from the County. As adjusted for heating value (HHV), the Facility processed 39,763 tons of reference waste (TRW) during quarter, equivalent to a daily average of 433 TRW per day. The total waste processing in this quarter was below 2007 levels but similar to 2006 for the same quarter.

The Waste Disposal Agreement allows for pass through of costs associated with emissions control chemicals (ammonia and powder activated carbon), electricity, and natural gas. The Facility had average consumption rates for those items during the quarter:

- Ammonia: 1.36 lbs./TRW
- Powder Activated Carbon: 1.21 lbs./TRW



- Electricity purchased: 9 MWh /quarter (compared to 306 MWh/quarter allowable as a pass-through)
- Natural gas: 3,831 MMBTU /quarter (compared to 5,000 MMBTU/quarter allowable as a pass-through)

Regulatory Requirements

The Facility is required by permit to meet a variety of regulatory requirements, including a program of monitoring air and water. During the quarter, environmental sampling and monitoring at the Facility continued as usual. Test America, Inc. collected the quarterly groundwater samples on October 17, 2008, and Hydro Designs, Inc. continued to collect monthly ash samples. Covanta submitted the annual septic system permit renewal application to Lake County on December 19, 2008.

There was one reportable air emissions event during the quarter. On December 31, 2008 the Unit 1 CEMS recorded an elevated CO emission due to a ruptured tube in the upper evaporator section. Covanta reported that the event was allowable under the Title V permit requirements, i.e. it was a short duration event that could be explained by equipment malfunctions or some other acceptable reasoning. The event did not indicate major operational problems that would require significant changes to the Facility.

Recommendations

The Facility continued to perform on par with recent quarters from previous years. Despite below average availability of refuse, the Facility was able to operate at full schedule during the quarter. Covanta continued to maintain the Facility well, with no major issues to report resulting from the fall outage. Malcolm Pirnie's primary recommendation continues to emphasize proactive maintenance at the Facility, including an investment in replacing and upgrading equipment as needed.



Attachments:

Table 1: Summary of 1st Quarter Operating Data

Table 2: Outage Summary

Figure 1: 1st Quarter FY 2009 Performance Figures:

- Solid Waste Process (monthly average)
- Electricity Generating/ Net Usage Comparison
- Gross Electricity Generation Rate
- Ash Produced
- Ferrous Materials Recovered
- Natural Gas Consumed

Table 1
Summary of 1st Quarter Operating Data

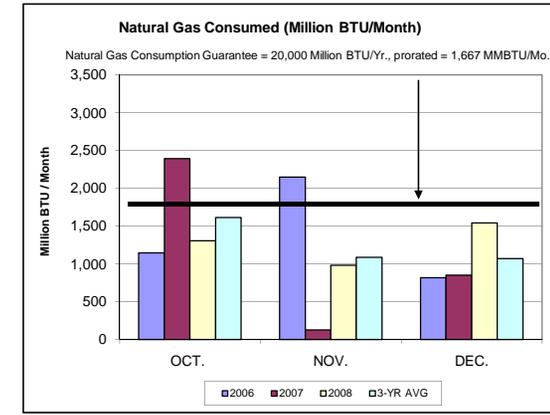
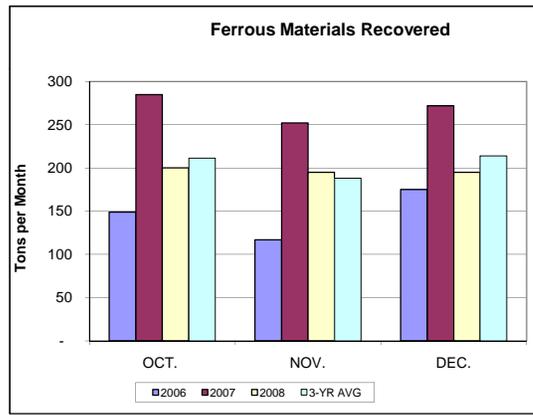
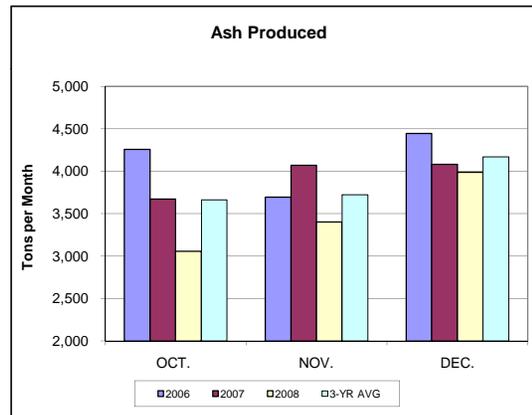
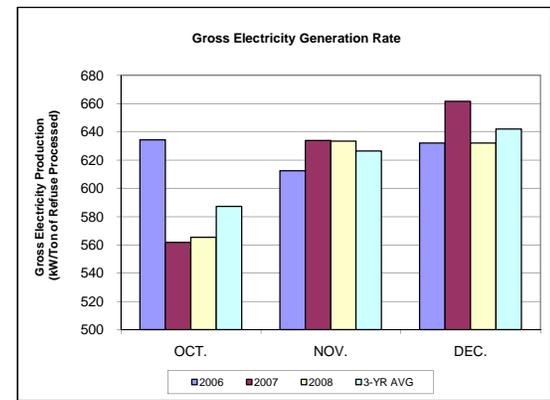
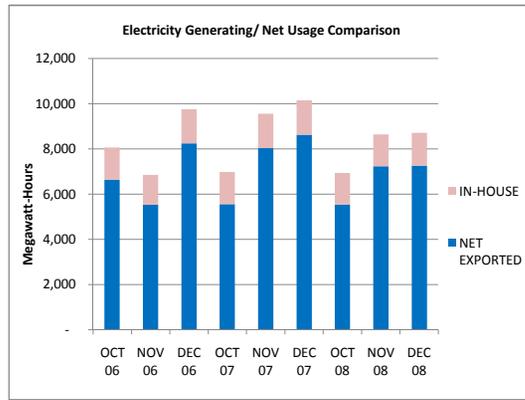
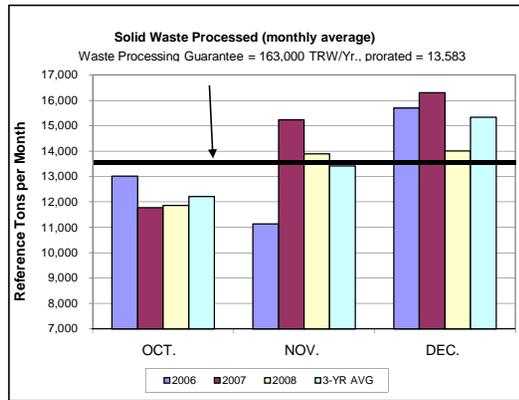
	Measurement Unit	Monthly Average for Oct.-Dec. 2008	Monthly Average for Oct- Dec 2007	Monthly Average for Oct. -Dec. 2006
REFUSE PROCESSED				
Refuse Received	Tons/Quarter	38,994	41,271	39,583
County Waste	Tons/Quarter	37,924	39,557	38,667
Out Of County Waste	Tons/Quarter	1,070	1,714	916
Refuse Processed	Tons/Quarter	39,685	42,541	38,985
Refuse Processed	Tons/Day	432	463	423
Refuse Diverted to LF	Tons/Quarter	348	4,561	4,536
Supplemental Waste	Tons/Quarter	1,070	1,714	916
Refuse HHV	BTU/lb	5,004	5,071	5,107
Refuse Processed - Adjusted for HHV (reference value = 5,000 BTU/lb.)	TRW/Quarter	39,763	43,308	39,842
Avg Refuse Processed per Day - Adjusted for HHV	TRW/Day	433	471	432
Ash	Tons/Quarter (wet)	10,448	11,821	12,397
Ash % of Refuse Processed	%	26.3%	27.9%	32.1%
Ferrous	Tons/Quarter	590	809	441
Ferrous % of Refuse Processed	%	1.5%	1.9%	1.1%
CONSUMABLES & UTILITIES				
In-Plant Power	MWH/Quarter	4,271	4,477	4,246
In-Plant Power Rate - Adjusted	kWH/TRW Processed	108	105	108
Purchased Power	MWH/Quarter	9	20	90
Aux Nat Gas	Therms/Quarter	38,306	33,718	41,131
Nat Gas Rate	Therms/TRW MSW Processed	0.97	0.88	1.11
Well Water	kgal/Quarter	22,787	24,223	23,812
Well Water Rate	gals./TRW MSW Processed	575	561	601
Pebble Lime	Tons/Quarter	284	438	558
Pebble Lime Rate	lbs/TRW MSW Processed	14	20	28
Dolomitic Lime	Tons/Quarter	128	127	203
Dolomitic Lime Rate	lbs/TRW MSW Processed	6.37	5.65	10.09
Ammonia	klbs/Quarter	54	54	47
Ammonia Rate	lbs/TRW MSW Processed	1.36	1.24	1.18
Carbon	Tons/Quarter	24	24	22
Carbon Rate	lbs/TRW MSW Processed	1.21	1.11	1.10
EQUIPMENT AVAILABILITY				
Boiler 1	%	90.9%	90.0%	85.7%
Boiler 2	%	89.1%	92.9%	82.8%
Avg Boiler Availability	%	90.0%	91.4%	84.2%
Turbine	%	99.8%	99.5%	100.0%
STEAM & ELECTRICITY PRODUCTION				
Steam	klbs/Quarter	245,422	261,789	241,930
Steam Rate - Adjusted	lbs-Steam/lb-MSW (Ref)	3.09	3.03	3.04
Gross Electric Production	MWH/Quarter	24,279	26,496	24,452
Avg Gross Electric	MW	11.0	12.0	11.1
Gross Electric Rate	kWH/Ton MSW Processed	610.2	619.0	626.3
Steam-Electric Rate (Gross)	lbs-Steam/kWH-Gross	10.1	10.0	9.9
Net Electric - Exported for Sale	MWH/Quarter	20,016	22,197	20,420
Avg Net Electric	MW	9.1	10.1	9.2
Net Electric Rate	kWH/Ton MSW Processed	502.5	517.3	521.9
Steam-Electric Rate (Net)	lbs-Steam/kWH-Net	12.3	12.0	11.9
CAPACITY UTILIZATION CALCULATIONS - COMPARED TO 100% AVAILABILITY				
Throughput Capacity	% of Design Maximum	82.5%	87.7%	80.1%
Heat Capacity	% of Design Maximum	82.6%	89.2%	81.9%
Steam Capacity	% of Design Maximum	86.9%	91.9%	84.7%
Electric Generation Capacity	% of Design T-G Output	75.5%	82.4%	75.9%
CAPACITY UTILIZATION CALCULATIONS - COMPARED TO ACTUAL AVAILABILITY				
Throughput Capacity	% of Design Maximum	92.3%	95.9%	95.1%
Heat Capacity	% of Design Maximum	92.2%	97.2%	97.1%
Steam Capacity	% of Design Maximum	97.0%	100.3%	100.5%
Electric Generation Capacity	% of Design T-G Output	76.3%	82.8%	75.9%

**Table 2
Outage Summary**

Month	Unit No. 1 Outages	Unit No. 2 Outages	Turbine Generator Outages	Notes
	Down Time Hours	Down Time Hours	Down Time Hours	
Dec-08	33			Unit 1- A ruptured tube in the evaporator section.
Dec-08		53		Unit 2- Tube leak in the economizer section.
Dec-08	26.75			Unit 1- Tube leak in the lower furnace which occurred due to a refractory failure.
Dec-08			1.3	T/G tripped due to a loss of lube oil pressure when the #1 lube oil pump failed due to a broken pump shaft.
Dec-08			3.5	T/G tripped for an unknown reason and was placed back online in 3.5 hours.
Dec-08		59		Unit 2- Tube leak in the lower economizer bundle
Nov-08			0.75	T/G tripped for an unknown reason and was placed back online in 42
Nov-08	36			Unit 1- Tube leak in the top of the evaporator section
Oct-08		167.2		Unit 2- Scheduled Outage
Oct-08	153			Unit 1- Scheduled Outage
Sep-08		21		Unit 2- A leak in the west superheater sidewall header drain pipe.
Sep-08		12.75		Unit 2- Tube leak in the lower economizer bundle
Sep-08			2	T/G- #1B 480V transformer had a bad cable connecting it to the 13.8 KV feeder breaker.
Sep-08			121.5	T/G- #1B 480V station service transformer shorted and caught fire.
Sep-08			27.25	T/G- tripped due to an instrument air malfunction.
Aug-08			4	T/G- disconnected from the grid and began isochronous operation.
Jul-08			2.5	T/G- taken off grid to allow Progress Energy to conduct relay testing at the Okahumpka substation.
Jul-08			4.5	T/G- taken off grid to allow Progress Energy to conduct relay testing at the Okahumpka substation.
Jul-08		57.75		Unit 2- Tube leak in the lower economizer bundle
Jun-08		13.5		Unit 2- leak in a corroded section of drain piping from the convection pass left sidewall header.
Jun-08		31.66		Unit 2- ruptured turbine in the lower economizer bundle
May-08		185		Unit 2- Scheduled Spring Outage
May-08		50		Unit 2- Leak in the high temperature superheater
May-08			52	T/G- Unit 2 was taken offline while Unit 1 was in a spring outage.
May-08	209.66			Unit 1- Scheduled Spring Outage
Mar-08	25.5			Unit 1- Tube leak on the furnace front wall
Feb-08			1	T/G- Tripped for an unknown reason
Feb-08	19			Unit 1- Tube leak in the 2nd pass area
Feb-08	16			Unit 1- Ruptured tube in the lower economizer bundle
Jan-08		35.25		Unit 2- Ruptured tube in the lower economizer bundle
Jan-08	26			Unit 1- Mid-cycle explosive blast cleaning and inspections
Jan-08		23.75		Unit 2- Mid-cycle explosive blast cleaning and inspections.
Jan-08			0.7	T/G- Tripped due to a malfunction in the burner management system which caused a false high steam drum level.
Dec-07			2	T/G- Tripped due to an electrical ground in the burner management system, which was caused by loose wiring
Nov-07			0.2	T/G tripped for an unknown reason and was placed back online in 11
Nov-07			0.2	T/G tripped due to a high drum level in the # 2 boiler which was off-line for a tube leak repair
Nov-07		19.9		Unit 2- Tube leak in the lower economizer bundle
Nov-07	48.8			Unit 1- A leak in the west chill wall header drain piping
Oct-07			7.8	T/G tripped due to a faulty lube oil reservoir level switch
Oct-07		169		Unit 2- Scheduled Outage
Oct-07	202			Unit 1- Scheduled Outage
Down Time for October - December 2008	249	279	6	
Availability for 1st Qtr. Reporting Period	88.7%	87.4%	99.7%	
TOTAL Down Time for Previous 12 Months (Jan. 08 - Dec. 08)	545	710	221	
Availability for Previous 12 Month Period	93.8%	91.9%	97.5%	

Note: Yellow shaded region indicates the quarterly reporting period, pink shading indicates the same period during the previous year.

Figure 1: 1st Quarter FY 2009 Performance Figures



Consulting Engineer's
Operations Monitoring Annual Report
Lake County Resource Recovery Facility



Covanta Lake

Solid Waste Operations Monitoring Annual Report
FY 2008 (October 1, 2007 – September 30, 2008)
Including a Summary of 4th Quarter FY 2008 (July 1, 2008 – September 30, 2008)



Prepared by:
**MALCOLM
PIRNIE**



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1.0 EXECUTIVE SUMMARY

This Annual Operations Monitoring Report (the “Report”) provides Malcolm Pirnie, Inc.’s summary review of the performance and operation of the Covanta Energy – Lake County Resource Recovery Facility (the “Facility”) for the 2008 Contract Year. The report also reviews the Facility performance in the 4th quarter of the Contract Year (July 1, 2008 – September 30, 2008).

The Facility utilizes two 264 tons-per-day waterwall furnaces to process approximately 170,000 tons of refuse per year on average. The combustion process reduces the volume of the refuse by roughly 90%, while producing electricity for sale to Progress Energy, Florida Inc. Air pollution control systems reduce emissions and the ash produced is used for cover at the Lake County (the “County”) landfill.

Malcolm Pirnie’s summary of Facility performance is presented in the table entitled “Facility Performance Summary”. The Facility had an overall “average” performance rating for FY 2008, meaning that performance was similar to recent years. The overall performance for the 4th quarter was “below average”, primarily due to a transformer failure and fire that occurred in September 2008. Four notable events occurred during the year, each having an impact on overall Facility performance:

- **January 2008:** The Facility exceeded the limit for dioxins / furans during annual stack testing. Covanta corrected the problem and a re-test was within acceptable levels. The issue was resolved in July 2008 when the Florida Department of Environmental Protection required Covanta to pay a civil penalty.
- **May 2008:** Unit 2 experienced a boiler tube failure while Unit 1 was undergoing a scheduled spring outage. The Facility temporarily lost the ability to generate power and process waste because both units were down.
- **August – September 2008:** The quantity of refuse delivered to the Facility dropped below average for the two months, and the average BTU content of waste was also low. This combination of factors affected the electricity production rate for the Facility.
- **September 2008:** A 480V service transformer failure and fire caused a loss of power and consequently both combustion units were unavailable for processing refuse. The unscheduled outage accounted for approximately 150 hours of lost power generating time.

Initiatives

Lake County and Covanta continued their cooperative initiatives to control operating costs and improve Facility performance throughout the year. Under the direction of the County's contract service coordinator, the County monitored the Facility's waste storage capacity on a daily basis, and scheduled routine and supplemental waste deliveries to optimize Facility throughput and minimize diversions to the County Landfill.

Covanta continued to address corrosion issues, common to all waste-to-energy facilities, by replacing corroded parts as needed. Covanta also upgraded safety equipment at the Facility and improved access points to several areas. The Facility had a good safety record during the year with only one OSHA reportable injury.

Operations & Performance

Facility operating data is summarized in the tables and figures located in the appendices. The Facility processed 170,861 tons of waste during the year, and the County delivered 165,293 tons, meeting the contractual guarantee of 163,000 tons per year. Diversions were required during the two scheduled outage periods (October 2007 and May 2008), and also following the September 2008 transformer fire, which temporarily left the Facility without power. A total of 7,880 tons of waste was diverted to the County landfill, which was significantly less than the previous three operating years.

Covanta utilized a standard scheduled maintenance calendar for this type of plant, with a fall and spring scheduled outage, and mid-cycle blast cleaning of the boilers between scheduled outages. Scheduled outages involved typical maintenance for combustion units. Unit 2 experienced a tube failure during the spring outage for Unit 1, and consequently the Facility lost all waste processing and power generating capabilities for several days. Also notable was the use of "on-line" blast cleaning of the combustion units in August 2008. The on-line approach allowed Covanta to maintain operations during cleaning and minimize the effects of startup and shutdown.

The Facility had a total of 12 unscheduled outages (both units) due to tube leaks, which was fewer than normally experienced, or above average performance for the Facility. The turbine generator also had a high rate of availability, with no significant maintenance issues to report.

Facility Performance Summary

<u>Performance Metric</u>	<u>FY 2008 Rating (Above Average, Average, or Below Average)</u>	<u>4th Quarter Rating (Above Average, Average, or Below Average)</u>	<u>Notes</u>
Operations and Performance	-		
Facility and Equipment O&M	Average	Average	Annual ash production was 26.6% (by weight) of refuse processed, and annual ferrous recovery rate was 1.7% (by weight).
Scheduled & Unscheduled Outages	Average	Below Average	Above average performance for tube failures was offset by lost time due to a September 2008 transformer fire.
Capacity Utilization	Average	Below Average	Units operated under reduced load in 4 th quarter due to a shortfall in available waste. Lost capacity due to September 2008 transformer fire.
Waste Disposal Agreement	-	-	
Energy Recovery Performance	Average	Below Average	Low average BTU content of fuel in 4 th quarter likely contributor to reduced electricity production. Shortfall in available waste may have also contributed to reduced energy performance in 4 th quarter.
Guaranteed Annual Tonnage	Average	Average	Met annual tonnage guarantee for the year, but declining availability of waste in August and September 2008.
Pass Through Costs	Average	Average	Average quantities of ammonia (1.31 lbs./TRW) and powder activated carbon used (1.16 lbs./TRW).
Utility Usage	Average	Average	Purchased 163 MWh of electricity and 14,630 MMBTU of natural gas.
Regulatory Requirements	Below Average	Average	Exceeded limit for dioxins /furans during stack testing resulting in a consent order and civil penalty from FDEP.

Waste Disposal Agreement

The Waste Disposal Agreement (WDA) between the County and Covanta defines performance standards for three specific areas:

- Energy Recovery Performance Standard
- Acceptance of the Guaranteed Annual Tonnage
- Pass Through Costs and Maximum Utility Usage

The Facility did not meet the annual Energy Recovery Performance Standard. The average electricity production rate, as measured by net kWh sales to Progress Energy per ton of refuse processed was 510.1 kWh/ton, or 9.4 kWh/ton below the standard of 519.5 kWh/ton of waste processed. However, there are no “energy efficiency damages” due to the County because the Facility produced a surplus of electricity during seven months of the year, and those surplus revenues to the County offset performance penalties. The Facility also met its energy production capacity commitments to Progress Energy for all 12 months, with the lowest 12-month rolling average for availability reaching 82.61%, occurring in September 2008. Total revenues generated by electricity sales were \$9,012,671, of which the County’s share was 90% or \$8,111,404.

Both the County and Covanta met their contractual guarantees for the acceptance of waste during the Contract Year. The Facility accepted 170,420 tons of Acceptable Waste during the year, and 165,293 tons of that waste was from the County. As adjusted for heating value (HHV), the Facility processed 169,999 tons of reference waste (TRW) during FY 2008, equivalent to a daily average of 466 TRW per day. Although the total waste processing in FY 2008 was slightly above FY 2006 and 2007, when adjusted for the heating value of the refuse, the total processing was average for the year.

The Waste Disposal Agreement allows for pass through of costs associated with emissions control chemicals (ammonia and powder activated carbon), electricity, and natural gas. The Facility had average consumption rates for those items during the year:

- Ammonia: 1.31 lbs./TRW
- Powder Activated Carbon: 1.16 lbs./TRW
- Electricity purchased: 163 MWh /year
- Natural gas: 14,630 MMBTU /year

Regulatory Requirements

The Facility is required by permit to meet a variety of regulatory requirements, including a program of monitoring air and water. During FY 2008 the Facility failed to meet testing requirements for dioxins/furans resulting in a consent order from FDEP and civil penalty.

Ten separate reportable air emissions events occurred during the year, three of which were related to the Unit 1 combustion line, five of which were associated with Unit 2, one affected both units, and one was presumed to affect both units. Of the reported events, seven were associated with CO emissions, two events involved opacity, and one event was presumed emissions that were never monitored due to a loss of plant power. The typical cause of CO-related emissions events during the year was “black plant” conditions (loss of plant power), or a boiler tube failure followed by an equipment malfunction during boiler shutdown or startup. Opacity events were typically caused by minor maintenance issues and did not last long. None of the events indicated major operational problems that would require significant changes to the Facility. All of the events were allowable under the Title V permit, i.e. they were short duration events and they could be explained by equipment malfunctions or some other acceptable reasoning.

Some elevated levels of total dissolved solids, sulfates, and pH were also detected in groundwater monitoring wells, but the results were most likely related to discharges from prior to 2004, which was prior to the recycling of plant process water using a reverse osmosis system. There were no exceptional issues of note for ash sampling, groundwater consumption, or water discharge monitoring.

Recommendations

The Facility continued to perform on par with recent years in FY 2008. Covanta continues to make strides in replacing ageing equipment, addressing corrosion, performing insulation and lagging repairs, updating safety equipment, and participating in the OSHA VPP program. Malcolm Pirnie’s primary recommendation continues to emphasize proactive maintenance at the Facility, including an investment in replacing and upgrading equipment as needed.

It is Malcolm Pirnie’s opinion that the Facility is capable of operating beyond the end of the contract period in 2014 as long as Covanta continues to provide, or exceeds, the current level of maintenance. Although specific systems may operate less efficiently as the Facility ages, Malcolm Pirnie is unaware of any operational data or information that would indicate that the Facility may not be capable of meeting its overall operational goals (as defined by the WDA) through 2014 and beyond.

2.0 FACILITY BACKGROUND

This Annual Operations Monitoring Report provides Malcolm Pirnie, Inc.'s summary review of the performance and operation of the Covanta Energy - Lake County Resource Recovery Facility for the 2008 Contract Year. In addition to providing an overview of Facility performance for the 2008 Contract Year (October 1, 2007 - September 30, 2008), the Report also includes a review of the Facility's performance for the 4th quarter of the Contract Year (July 1, 2008 - September 30, 2008); the Contract Year and its reporting calendar coincides with Lake County's fiscal year.

The current terms and conditions for the cooperative arrangements and obligations between Covanta and the County concerning the Facility's management are established by the December 2004 "Waste Disposal Agreement". This Report was prepared in accordance with tasks assigned and performed pursuant to Malcolm Pirnie's Contract with Lake County for Continuing Engineering Services for Waste-to-Energy Monitoring, and relative to the requirements of the WDA, as well as generally accepted industry standards. Malcolm Pirnie has been retained by the County in the role of independent engineer to "provide an assessment of the operational efficiency and maintenance of the Facility". In this role, Malcolm Pirnie has prepared for and attended Coordination Meetings (Task 125) with Lake County and Covanta, compiled and reviewed pertinent Facility operating and maintenance data (Task 145), and issued regular reports such as this one to summarize findings (Task 150). Where practical, Malcolm Pirnie has combined On-Site Inspections (Task 105), and Outage Inspections (Task 130) with the Coordination Meetings to minimize consulting costs.

Malcolm Pirnie's findings with respect to the Facility's performance are dependent, in part, upon the accuracy of the data provided by Covanta and the County. Malcolm Pirnie has verified the accuracy of the data and information collected for this Report to the extent practical, but must rely on data from Covanta or the County for certain items.

2.1 Introduction to Facility Operations

The Facility is located in Okahumpka, Florida (south of Leesburg, FL), and it began commercial operation in 1991. The Facility is owned and operated by Covanta Lake, Inc., and processes refuse provided by Lake County, as well as refuse provided by other municipal and private sources. The Facility's waste-to-energy processing significantly reduces the volume of materials that needs to be disposed of in landfills, and produces valuable electricity and recovered ferrous metals as a by-product.

Utilizing its two 264 tons-per-day waterwall furnaces, the Facility has a total processing capacity of 528 tons-per-day, for an annual average processing total of approximately 170,000 tons. Refuse delivered to the Facility follows a typical treatment process for a resource recovery plant.

After passing through the scale house, refuse collection trucks enter the tipping building and empty their contents into the storage pit. Facility operators load the refuse onto the furnace feed chute using an overhead crane and grapple. Hydraulic ram feeders push the refuse onto the Martin reverse-reciprocating stoker grates, feeding the two furnace units with fuel. A forced draft fan delivers combustion air, via ductwork and dampers, underneath each grate; and an over fire air fan injects air into the furnaces above the grates. Both the forced draft fan and over fire air fan utilize air from the tipping building to help minimize odors at the Facility.

The combustion process provides heat that is absorbed by water circulating within the boiler tubes. The added heat transforms boiler water into steam, which also absorbs additional heat energy in the superheater section of each furnace. Superheated steam is used to power a turbine generator (T-G). The exhaust steam from the turbine is condensed back to water through a water cooled condenser. An evaporative cooling tower is used to cool the circulating water. The condensate is reheated and re-circulated as boiler feedwater. To improve the overall process efficiency hot combustion gases are also used to pre-heat the boiler feedwater in an economizer.

Once the useable heat is extracted from the combustion gases, those gases pass through the air pollution control system, which includes spray-dryer absorbers (SDA), fabric filters (also known as bag houses), aqueous ammonia injection, and powdered carbon injection. The SDAs utilize a lime slurry to neutralize acid forming gases such as hydrochloric acid and sulfur oxides. Fabric filters remove particulate matter, ammonia helps to control nitrogen oxide formation (NO_x), and powdered activated carbon reduces mercury and dioxin emissions. The treated combustion air is also monitored by a continuous emissions monitoring system (CEMS).

Another by-product of the combustion process is the ash residue, which consists of both "bottom ash" and "fly ash". Bottom ash is collected at the end of the grate system, where it is quenched in water and transported away from the furnaces via a conveyor. Fly ash is collected in hoppers under the fabric filters and SDAs. The fly ash is also quenched and mixed with the bottom ash, and conveyed by a slip stick conveyor to the grizzly scalper where oversized materials are removed from the ash stream. At the ash handling building the ash is loaded on to trucks for landfill disposal, and ferrous metals are recovered from the ash using a drum magnet system.

2.2 Overview of Waste Disposal Agreement

In December 2004, Covanta and the County entered into the “Waste Disposal Agreement” to settle an array of claims and counter-claims stemming from past agreements regarding the original Facility financing and operation. The WDA serves the County’s interests by establishing a mechanism to dispose of the County’s waste in an environmentally sound manner, while also providing for some revenue through the sale of the electricity generated by the Facility. Covanta also benefits from the WDA because it establishes a guaranteed supply of waste for the Facility to process while also providing a percentage of the electrical revenues to Covanta. Both parties benefit from the WDA in that it settles all outstanding claims and obligations.

3.0 FY 2008 PERFORMANCE IMPROVEMENT INITIATIVES

The County recognizes that certain functions of the Facility operations can be enhanced by day-to-day communications, performance monitoring, scheduling of waste deliveries, pre-outage planning, and Facility oversight. The following section summarizes County or Covanta led initiatives to increase productivity and ultimately reduce the County’s cost of disposal.

3.1 Facility and Equipment Improvement Programs

Covanta continues to emphasize maintenance of the Facility by replacing and/or upgrading aging equipment. Covanta continues to combat corrosion issues around the Facility caused by the outdoor environment and the corrosive nature of the ash and reagent products used in the Facility. This problem is common to all waste-to-energy facilities and Covanta is encouraged to continue replacing and upgrading problematic areas. Covanta addressed several specific corrosion problems during the year, including: a repair to a corroded stanchion on the main slipstick conveyor, installation of steel plating in the ash house, replacement of ash conveyor troughs, replacement of ash discharger yoke assembly, and replacement of corroded grating at the Unit 1 economizer hopper platform.

Covanta also focused on improving safety at the Facility by installing a variety of new safety equipment and access ladders, including new:

- Emergency escape breathing apparatus on both refuse cranes
- Ladder access at sulfuric acid containment area
- Ladder access at aqueous ammonia containment area
- Walkway over piping at the air compressors
- Backup cameras on front-end loaders

- Domed safety mirror on exit ramp of tipping floor

In addition, Covanta installed a new camera system to enhance facility security. Covanta also installed a new control room data acquisition system.

As in past years, Covanta has maintained a boiler tube testing and inspection program, and routinely repairs or replaces boiler tubes as needed during scheduled maintenance. A list of typical boiler repairs made during scheduled outages is provided in Appendix 5.

3.2 Electricity Production Revenues

The WDA requires Covanta to meet certain electrical generation production standards, and to achieve these standards critical equipment components must be maintained regularly. Sales of electricity to Progress Energy, as well as the sale of electricity generating capacity produce substantial revenues for the Facility. During the reporting year the Facility sold 87,151 MWh of power at an average rate of \$26.34 per MWh (based on final data reported by Progress Energy). The Facility also met its energy production capacity commitments to Progress Energy for all 12 months, with the lowest 12-month rolling average for availability reaching 82.61%, occurring in September 2008. Total revenues generated by electricity sales were \$9,012,671, of which the County's share was 90% or \$8,111,404. The majority of the electricity sales revenue, roughly 75%, comes from "capacity payments" by Progress Energy, with the remaining 25% from energy payments (i.e. sale of MWhs of electricity).

3.3 Facility Throughput and Refuse Delivery Management

In FY 2008 the County continued a program of monitoring the Facility's waste throughput on a daily basis, as well as coordinating waste deliveries with Covanta, the County's Solid Waste Operations, and waste haulers. Under the direction of the County's contract service coordinator, the County monitored the Facility's pit storage capacity on a daily basis, including monitoring via web-camera, and used that information to schedule routine waste deliveries, and supplemental deliveries to the Facility or waste diversions to the County landfill as needed. The County utilized a computer model prepared by the County's contract service coordinator to track waste deliveries and pit capacity, and predict future Facility capacity. This tool improved the ability to actively manage waste deliveries, anticipate and communicate future needs, and minimize waste diversions to the County landfill thereby optimizing available landfill capacity. In addition, pro-active planning also minimizes truck waiting times, helps to avoid overfilling the Facility's waste storage pit, and provides improved opportunities to plan for revenue generating supplemental waste deliveries.

In FY 2008 the refuse delivery management initiative continued to successfully accomplish its goals. Although three periods of refuse diversions to the County landfill were required

during the year (see Appendix 3, Figure 3-4), the County's contract service coordinator was able to predict, anticipate, and plan for the majority of diversions, which were necessary to accommodate required scheduled maintenance events, therefore minimizing the burdening of landfill operations.

3.4 Pass Through Cost Control Initiatives

The County continues to work with Covanta to implement savings programs for pass-through items. Past initiatives to reduce property taxes, and to lower carbon consumption continue to produce savings for the County. In addition, due to the high cost of energy, the County continues to emphasize to Covanta the importance of increased awareness of natural gas usage. As further described in Section 4.0, and illustrated in Appendix 3, Figure 3-8, natural gas usage in FY 2008 was 53,697 therms below Covanta's maximum usage guarantee of 200,000 therms, but slightly higher than FY 2007.

3.5 Environmental Compliance, and Health & Safety Improvement Initiatives

Covanta maintained its focus on improving environmental compliance, and health and safety in FY 2008. The Facility had one OSHA reportable incident in October 2007, in which a Covanta worker injured a knee following a fall. No other recordable accidents occurred during the reporting year.

Covanta reported that monthly safety committee meetings were held at the Facility throughout FY 2008, as well as quarterly inspections by the regional Covanta safety coordinator. Covanta continues to participate in the OSHA VPP Star program, which is designed to encourage and recognize health and safety performance initiatives. The OSHA VPP Star Program is intended to promote jobsite safety, and it provides the inherent benefit of having all employees participate in the program, working together to increase the overall performance of the Facility. The OSHA VPP program is one that all waste-to-energy facilities are embracing as a standard for their operations.

4.0 OPERATIONS AND PERFORMANCE

The operations and performance summary data for the Facility (as per Task 110) is presented in Appendix 1, Tables 1A and 1B. A summary of the Facility's performance for the Reporting period is presented in Section 1.0 (Executive Summary). The Facility had an overall "average" performance during FY 2008, meaning that performance was similar to recent years. The overall performance for the 4th quarter was "below average", primarily due to a transformer failure and fire that occurred in September 2008.

4.1 Facility and Equipment Operations & Maintenance

In FY 2008 Malcolm Pirnie performed site inspections and reviewed relevant data and documentation as per Task 105. Malcolm Pirnie and Covanta personnel toured the Facility during scheduled outages, noted Facility improvements, discussed deficient and/or unfinished repairs, and provided recommendations that would enhance the Facility's performance or appearance.

4.1.1 4th Quarter Facility and Equipment Operations & Maintenance

Quarterly operations and performance data for the Facility (as per Task 110) is presented in Appendix 1, Table 1B. During the 4th quarter the Facility processed a total of 42,914 tons of solid waste, which is equivalent to 39,053 tons of reference waste (TRW) as defined by the waste's energy content. This is equivalent to an average of approximately 424 TRW per day. During the quarter, 2,117 tons of processible waste was diverted to the Lake County Landfill, due primarily to a transformer fire in September that caused an extended unscheduled outage. A comparison of solid waste processing for the same months of calendar years 2006 – 2008 is found in Appendix 2, Figure 2-1. Waste processing for the quarter was below average, as the availability of waste declined in August and September 2008.

The electrical generation performance was evaluated as per Task 115, and the gross electric generation totaled 23,559 megawatt-hours (MWh) during the quarter, or an average of 7,853 MWh per month. In-plant usage of electricity for the quarter totaled 4,185 MWh, or an average of 1,395 MWh per month. The Facility exported 19,776 MWh of electricity during the quarter to the Progress Energy, Florida Inc. electric company, or an average of 6,592 MWh per month. This is equivalent to exporting an average of 8.9 MW of electricity per hour for the duration of the quarter. Electricity generation data for the same months of calendar years 2006-2008 is presented in Appendix 2, Figure 2-2. The loss of electricity generation due to the transformer fire led to a decline in productivity for September, significantly lowering the average for the quarter as well. The unscheduled outage time due to transformer and turbine generator issues accounted for roughly 150 hours of lost power generation in September, or 20% of the available generating time for the month.

The Facility generated 11,110 tons of ash residue during the quarter, or an average of approximately 3,703 tons per month. The ash residue tonnage, which includes chemicals added for pollution control purposes (lime and carbon added at the SDA, and dolomite lime added as a fly ash conditioner) was approximately 25.8% (by weight) of the processed waste tonnage. Typical ash production from boiler operations ranges from 25 – 30% of the total tonnage (not adjusted for BTU content) of refuse processed, including additives for pollution control, which

account for roughly 3 - 4% of the total mass of ash removed from the Facility, and moisture added for ash quenching. Ash production data for the same months of 2006-2008 is presented in Appendix 2, Figure 2-3. The total mass of ash produced is affected by the moisture content of the refuse processed, as well as the moisture present in ambient air, and therefore weather conditions during any time period can contribute to the variability of ash production rates. Ash production for the quarter was within the typical range for this Facility, and the percentage of ash produced trended downward over the course of the year.

Ferrous metals removed from the ash during the quarter totaled 686 tons (Appendix 2, Figure 2-3), or approximately 1.6% (by weight) of the processed waste tonnage. Covanta Lake's ferrous recovery rate has typically been approximately 1% lower than recovery rates from comparable facilities in Florida, as has been previously noted in past annual reports. Ferrous metal recovery was within the expected range for this quarter at this Facility.

A total of 194 work orders were issued and 189 work orders were completed by Covanta staff during the quarter. No major new systems were installed during the quarter, but Covanta also reported making a modification to the grizzly scalper, adjusting the bar spacing from 10" to 8". The grizzly scalper is used for separating materials from the ash stream, and the adjustment in bar spacing was made to improve performance.

4.1.2 FY 2008 Facility and Equipment Operations & Maintenance

Appendix 3 presents selected monthly operating data for FY 2008 as compared to the average for FY 2003-2008. As can be seen in Appendix 3, Figures 3-1 through 3-3, FY 2008 was similar to past years for waste received and processed, until August and September 2008. Delivery of waste dropped slightly in August as compared to previous years, and both delivery and processing dropped significantly in September 2008. The September 2008 transformer fire also reduced waste processing by roughly 20%, as previously mentioned. Over the course of the year the Facility processed a total of 170,861 tons of solid waste, which is equivalent to 169,999 tons of reference waste (TRW) as defined by the waste's energy content. This is equivalent to an average of approximately 466 TRW per day.

The Facility followed a typical maintenance plan, with scheduled outages for boiler maintenance in October 2007 and May 2008, and mid-cycle blast cleaning in January and August 2008. Waste diversions to the landfill occurred during the scheduled outages in October and May, as well as during the transformer fire in September 2008 (Figure 3-4). A diversion was required in May 2008 due to the overlap of a Unit 2 unscheduled outage with the Unit 1 scheduled outage. The total tonnage of diverted waste for the year was 7,880, which was significantly less than the previous three years.

In previous years, the heating value of the waste tended to be above the design point of 5,000 BTU/lb., which slightly reduced throughput capacity of the Facility. However, in FY 2008 the average heat content of waste was 4,977 BTUs/lb., almost exactly at the design point.

Gross electric generation totaled 103,566 megawatt-hours (MWh) during FY 2008, or an average of 8,631 MWh per month. In-plant usage of electricity for the year totaled 17,380 MWh, or an average of 1,448 MWh per month. The Facility exported 87,151 MWh of electricity during the year to the Progress Energy, Florida Inc. electric company, or an average of 7,263 MWh per month. This is equivalent to exporting an average of 9.9 MW of electricity for the duration of the fiscal year. In all categories of electricity generation, sales, and in-plant use, FY 2008 was almost identical to FY 2007.

The ash generation rate at the Facility has consistently been between 25-30% (by weight) of the total waste processed over the past five years, and FY 2008 was no exception (Appendix 3, Figure 3-9). This ash production rate is typical of comparable waste-to-energy facilities. In FY 2008 the Facility generated 45,381 tons of ash residues, or an average of 3,782 tons per month. The ash residue tonnage was approximately 26.6% of the processed waste tonnage, down slightly from previous years.

Ferrous metals removed from the ash during FY 2008 totaled 2,916 tons, or approximately 1.7% of the processed waste tonnage. As can be seen in Appendix 3, Figure 3-6, the ferrous recovery rate for FY 2008 was comparable to the average ferrous recovery at the Facility over the past five years.

4.2 Outage Summary

Malcolm Pirnie performs a review of all combustion line outages consistent with Task 130. Included in our review is an evaluation of major repairs and inspections of critical plant components.

Combustion line outages are typically categorized as either “scheduled” or “unscheduled”. Scheduled outages are performed periodically for preventive maintenance, cleaning, inspections, and to replace or upgrade components that are inaccessible while the combustion line is in service. Unscheduled maintenance is performed on an as-needed basis to respond to equipment or process problems, and Covanta attempts to minimize the need for unscheduled unit outages whenever practical. A summary of recent scheduled and unscheduled outage activity is provided in Appendix 1, Table 2. In addition, a list of typical scheduled outage maintenance activities is provided in Appendix 5, and photographs of outage activities are provided in Appendix 4.

In FY 2008 Covanta utilized a conventional schedule of outages, consisting of scheduled “fall” and “spring” outage in October 2007 and May 2008 respectively. Covanta also conducted mid-cycle blast cleaning of both Units in January and August 2008.

Covanta continues to rely upon their regional maintenance organization, which they call Southeastern Regional Maintenance (“SERM”), to perform scheduled maintenance on their Hillsborough County, Lake County, Lee County, and Pasco County waste-to-energy facilities. The SERM group works in conjunction with the Facility staff to provide specialized maintenance services such as boiler tube repairs and replacement. Covanta also utilizes corporate engineering staff to assist in planning for boiler scheduled maintenance.

4.2.1 4th Quarter Outage Summary

Scheduled Outages

There were no scheduled outages during the 4th quarter of FY 2008. However, both units underwent mid-cycle explosive blast cleaning in August 2008. Covanta utilized Precision Blasting, Inc. to provide on-line explosive blast cleaning services. On-line blast cleaning of the boilers is accomplished while the boilers are in service, and consequently productivity can be maintained during the cleaning, and the stresses that are associated with off-line cleaning methods, i.e. cycling the boilers through cooling and reheating, are reduced.

Unscheduled Outages

The Facility had three unscheduled boiler outages during the 4th quarter, all involving tube leaks in Unit 2. The Facility also experienced “black plant” conditions on two separate occasions in September. The second “black plant” event was caused by a transformer fire and resulted in significant loss of waste processing time. In addition to unscheduled outages, the T-G was taken off-line on several occasions in July and August to facilitate substation repairs by Progress Energy, as well as for maintenance of the Facility’s 69 kV switchgear. The following provides a chronological listing of events that led to unscheduled outages for the quarter.

- **July 6, 2008:** Unit 2 was taken off-line due to a tube leak on the lower economizer bundle. Covanta certified welders performed the necessary tube repairs, and the Unit was placed back in service on July 8.
- **July 10 and July 18, 2008:** The T-G was taken off-line (i.e. disconnected from the regional power grid) to allow Progress Energy to conduct relay testing and repairs at the Okahumpka substation. Covanta also operated the T-G at partial load and disconnected to the regional power grid on August 13, 2008 to allow for repairs to

the remote operating capabilities of the 69 kV switchgear and later for annual T-G trip testing.

- **September 4, 2008:** The T-G tripped due to an instrumentation failure. Covanta corrected the instrumentation problem, but a circuit breaker failed to close properly during the reconnection to the regional power grid, and the Facility was in a “black plant” condition until the breaker could be replaced and power was restored. Once power was restored, the boilers were restarted and steam was routed to the bypass condenser.
- **September 8, 2008:** The #1B 480V service transformer shorted and caught fire. Electrical equipment was damaged by the fire as well as from arcing. Covanta used CE Power Solutions to replace the transformer and make repairs to the system. A faulty cable caused the repaired system to fail after the transformer was re-energized. The cable problem was corrected, Unit 2 was restarted on September 13, and Unit 1 resumed normal operation on September 16. The event had a significant impact on productivity for the month, leading to a loss of five days of processing and energy generation.
- **September 16, 2008:** Unit 2 was taken off-line due to a tube leak on the lower economizer bundle. Covanta certified welders performed the necessary tube repairs, and the Unit was placed back in service on September 17.
- **September 25, 2008:** Unit 2 was taken off-line due to a tube leak on the west superheater sidewall header drain pipe. Covanta certified welders performed the necessary tube repairs, and the Unit was placed back in service on September 26.

4.2.2 FY 2008 Outage Summary

According to data available in Covanta’s monthly performance reports, the total cumulative combustion line (combustion line consists of the boiler, spray-dryer absorber, bag house, and associated ancillary equipment) downtime for the year was 1,167 hours for both units, which is a 42% decrease as compared to FY 2007. Neither Unit experienced excessive outage time for the year, but Unit 2 had twice as many tube ruptures as Unit 1 (8 ruptures for Unit 2 and 4 for Unit 1). The overall combustion line availability was well within the acceptable performance range for this type of facility.

The T-G system was off-line for maintenance or placed on standby for a total of 226 hours in FY 2008, for an average availability of 97.4%. Covanta has maintained the T-G at a high rate of availability in recent years, with only minor interruptions for unscheduled events. The majority of the T-G downtime was due to the transformer fire in September, and an

unscheduled Unit 2 outage corresponding with the Unit 1 spring scheduled outage accounted for much of the remaining T-G downtime.

Scheduled Outages

Covanta utilized a conventional fall and spring cycle of scheduled outages for both units, including mid-cycle explosive blast cleaning between scheduled outages. The fall outages occurred for both units in October 2007, and spring outages were held in May 2008. Off-line (i.e. boilers are not firing waste during the cleaning) explosive blast cleaning and inspection of boilers was accomplished in January 2008, and Covanta used an on-line (i.e. boilers continue to fire waste during cleaning) cleaning approach in August 2008. Unit 1 underwent a total of 438 hours of scheduled maintenance, including mid-cycle blast cleaning, accounting for 80% of the total unit downtime for the year. Unit 2 had 378 hours of scheduled maintenance, including mid-cycle blast cleaning, accounting for 61% of total unit downtime.

The T-G did not undergo scheduled maintenance during the year. However, the T-G did have annual scheduled trip testing in August 2008.

The Unit 1 and 2 fall outages involved routine repairs to boilers, including repair of damaged refractory, explosive blast cleaning, installation of inconel and carbon steel build-up on furnace tubes, and detailed equipment inspections.

Unit 1 and 2 underwent scheduled spring outages in May of 2008. The spring outages involved many of the same activities as the fall outages. Unfortunately, Unit 2 experienced a tube leak while the Unit 1 spring outage was underway, and as a result the T-G was taken off-line and waste had to be diverted to the County landfill.

In addition to combustion unit maintenance, Covanta performed preventive and corrective maintenance on ancillary plant equipment during the Reporting Period. This included repairing and/or replacing components of various systems, including: the cranes/grapples, ash handling system, pollution control equipment, instrumentation and electrical systems, circulating water system including cooling tower inspection/cleaning/biological treatment, fan gearboxes, and circulating pumps, water treatment plant, and other miscellaneous supporting systems.

Unscheduled Outages

In FY 2008, as in previous years, the majority of unscheduled outages were caused by tube leaks located in various sections of the combustion lines. Covanta attempts to minimize problems with tube leaks by optimizing combustion temperatures, and actively inspecting, resurfacing and replacing worn tubing during scheduled outages.

Unscheduled outages due to tube leaks require approximately 20 to 60 hours to repair, which is the typical time required for tube leak repairs in this size and type of facility. There were twelve unscheduled outages due to tube leaks in FY 2008 as shown on Table 2. Unscheduled outages due to tube leaks accounted for a total of 351 hours of lost processing time during the year (both units), or 30% of the total boiler downtime for the year.

Unscheduled downtime is the major cause for high natural gas use as natural gas is used to control combustion-related emissions during shutdown and is required to preheat the boilers prior to admitting solid waste to the grates. The time required for preheating is dependent on the temperature of the boiler at start-up, ambient air temperature, and whether or not precautions are required for a slow pre-heat following refractory repair.

4.3 Capacity Utilization

Capacity utilization is a comparison of the actual combustion unit performance to its designed maximum performance. This analysis can be presented in two ways:

- As a comparison between the actual unit performance and the designed unit performance assuming that the unit is available for 100% of the time (i.e. 24 hours/day).
- As a comparison between the actual unit performance and the designed unit performance given the actual availability of the unit (i.e. using the actual number of hours the unit was in operation).

Both approaches provide useful information when evaluating performance and the results of both comparisons are provided in Appendix 1, Tables 1A and 1B. However, the first approach, comparing to 100% unit availability, is more useful for assessing the performance of the entire facility, including the availability of suitable fuel. The second approach provides more information about the combustion units themselves.

Both of the combustion units have a design capacity determined by the quantities of refuse that they can process, the amount of heat energy that can be added to them as refuse, and the steam that they can produce. On an average basis, both of the combustion units are designed for a maximum heat input of 2.6 billion BTU/day, which is equivalent to 264 tons of refuse per day with an average heating value of 5,000 BTU/lb. The designed steaming capacity of each unit is 64,575 lbs. steam/hr., or approximately 1.55 million lbs. steam/day per unit assuming that the units are operating for 24 hours/day.

4.3.1 4th Quarter Capacity Utilization

Appendix 2, Figures 2-4A & B, shows the results of the capacity utilization analysis using the first approach, as calculated using 100% unit availability. As seen in the figures, the average capacity utilization measures for both units during the 4th quarter of FY 2008 were as follows:

- Refuse processing - 88%
- Heat input - 81%
- Steaming capacity - 85%
- Turbine generator capacity - 73%

These relatively low capacity utilization figures reflect the lost availability for refuse processing and energy generation due to the transformer fire which occurred in September 2008.

Using the second approach, based upon actual unit availability time, the average capacity utilizations during the 4th quarter of FY 2008 were as follows:

- Refuse processing - 96%
- Heat input - 87%
- Steaming capacity - 93%
- Turbine generator capacity - 77%

The industry standard operating target based on heat input is between 95-105% for this measurement approach. This target balances the need to maximize both the lifespan of the equipment and the output of the unit(s). During the quarter the Facility was significantly below average. Again, this low rate of utilization is primarily due to the transformer fire, which precluded refuse processing and energy generation for five days in September, or 5% of the total available processing time during the quarter.

In addition, the average heat content of refuse for the quarter was below average (4,571 BTU/lb., see Table 1B), which may have contributed to a lower heat capacity utilization. Historical data from 1999 to 2008 indicates a seasonal pattern where the average refuse heat content (HHV in BTU/lb.) has been consistently below the design point of 5,000 BTU/lb. in the July through September months. This apparent pattern may warrant additional analysis in the future to determine if any operational adjustments could help to optimize system-wide performance.

As measured by both sets of standards, the Facility performed below average for the 4th quarter.

4.3.2 FY 2008 Capacity Utilization

Using a 100% unit availability assumption for calculation purposes, the capacity utilization measures for both units during FY 2008 were as follows:

- Refuse processing - 89%

- Heat input - 88%
- Steaming capacity - 92%
- Turbine generator capacity - 81%

As compared to the past three years, the overall capacity utilization for FY 2008 was average for all measures. Lost processing time during the September transformer fire was offset by above average performance for tube failures and other causes of unscheduled outages.

Based upon actual unit availability time, the average capacity utilizations during the year were as follows:

- Refuse processing - 95%
- Heat input - 95%
- Steaming capacity - 98%
- Turbine generator capacity - 82%

An annual average for "heat input" of 95% indicates that the Facility operated within the optimal range for FY 2008, as based upon industry standards for comparable facilities. The annual capacity utilization statistics were average when compared to past years.

5.0 WASTE DISPOSAL AGREEMENT PERFORMANCE STANDARDS

Pursuant to Task 145, Malcolm Pirnie collected and analyzed data in order to evaluate the Facility's operation relative to guidelines and performance standards specified in the Waste Disposal Agreement between the County and Covanta. This included the:

- Energy Recovery Performance Standard
- Acceptance of the Guaranteed Annual Tonnage
- Pass Through Costs and Maximum Utility Usage

5.1 Energy Recovery Performance Standard

The Energy Recovery Performance Standard for the Facility is specified in Section 6.08 and Schedule 9 of the WDA. As described in more detail below in Section 4.1.2 of this report, the WDA sets a net (net of in-plant electricity usage) electricity generation standard of at least 519.5 kilowatt-hours ("kWh") of electrical energy per ton of waste processed, and also defines acceptable operating ranges (i.e. economizer exit gas temperature, condenser pressure, etc.).

5.1.1 4th Quarter Energy Recovery Performance Standard

Appendix 2, Figure 2-5 presents the Facility's electricity generation rate per ton for the July through September period of calendar years 2006-2008. The Facility's average net energy generation for the quarter was approximately 460.5 kWh per ton of waste processed (as measured by the quarterly sums of energy produced and waste processed), or 59.0 kWh per ton below the WDA standard. This relatively low electricity production rate is related in large part to the September transformer fire, but may also be explained by seasonal patterns in net electricity production. As can be seen in Figure 3.5, average data from 2003 to 2008 indicates that net electricity production in the months from July through October is typically lower than the remainder of the year (where October's low production is due to the fall scheduled outages).

5.1.2 FY 2008 Energy Recovery Performance Standard

During FY 2008 the Facility averaged 510.1 kWh per ton of acceptable waste processed (as measured by calculating the average of the 12 monthly averages), which is 9.4 kWh per ton below the performance standard. In-addition, according to data reported by Covanta and reviewed by Malcolm Pirnie, the Facility did not meet all of the contractual operating range requirements (as defined by Schedule 9 of the WDA) for one day during FY 2008. However, there are no "energy efficiency damages" due the County because the Facility produced a surplus of electricity during seven months of the year, and those surplus revenues to the County far exceeded performance penalties.

5.2 Acceptance of the Guaranteed Annual Tonnage

Section 4.02 of the WDA specifies that the Facility shall "...accept, process and/or dispose of Acceptable Waste delivered to the Facility in an amount at least equal to the Guaranteed Annual Tonnage, adjusted if necessary for the HHV (higher heating value) content of the Acceptable Waste, as provided in Schedule 3." Schedule 3 of the WDA describes the obligations of both parties in detail in regard to accepting waste, and the definitions section of the WDA (Article I) defines Guaranteed Annual Tonnage to mean "163,000 Tons of Acceptable waste" delivered during the Contract Year as based upon the County's put-or-pay obligation (which can be prorated to 41,085 tons for the 4th quarter for comparison purposes only).

5.2.1 4th Quarter Acceptance of the Guaranteed Annual Tonnage

During the quarter the Facility accepted 43,225 tons of Acceptable Waste, which was greater than the prorated put-or-pay obligation of the County. The Facility processed 42,914 tons of the accepted waste in its combustion units. As adjusted for the HHV content of the accepted waste, the Facility processed 39,053 TRW in its combustion units during the quarter. The Facility's daily processing averages for July, August, and September of 2008 were 476

TRW/day, 438 TRW/day, and 357 TRW/day respectively (Appendix 2, Figure 2-1). As can be seen in Figure 2-1, refuse processing for this quarter was lower than it was for the same period of FY 2007 and 2006. The lower processing statistic reflects the lost processing time due to the September transformer fire, as well as the below average BTU content of the refuse received during the quarter.

5.2.2 FY 2008 Acceptance of the Guaranteed Annual Tonnage

Both the County and Covanta met their contractual guarantees for the acceptance of waste during the Contract Year. The Facility accepted 170,420 tons of Acceptable Waste during the year, and 165,293 tons of that waste was from the County. As adjusted for HHV, the Facility processed 169,999 TRW during FY 2008, equivalent to a daily average of 466 TRW per day (Appendix 3, Figure 3-1). Although the total waste processing in FY 2008 was slightly above FY 2006 and 2007, when adjusted for the heating value of the refuse, the total processing was average for the year.

5.3 Pass Through Costs and Maximum Utility Usage

The Waste Disposal Agreement includes reimbursement for certain costs in association with the operation of the Facility. There are no maximum limits for the reimbursements of reagent chemicals used for the control of nitrogen oxides and mercury. The cost of up to 1,225,000 kWh of electricity may be passed through to the County on a billing year basis based upon the Maximum Utility Usage agreement, and the County is also responsible for the cost of the first 200,000 therms (1 therm = 100,000 BTU) of natural gas used.

5.3.1 4th Quarter Pass Through Costs and Maximum Utility Usage

Ammonia Consumption

Anhydrous Ammonia is used to reduce the formation of nitrogen oxides (“NO_x”) in the two solid waste boilers. A mixture of ammonia, water, and air is injected into the furnaces in precise locations to perform this function. Covanta’s average consumption of ammonia for the 4th quarter was 1.25 lbs. per TRW (Appendix 2, Figure 2-6). This is an average rate of ammonia consumption for the Facility, and no problems were reported with the system.

Activated Carbon Consumption

Activated Carbon is used to reduce the mercury and dioxin/furans emissions from the two solid waste boilers. Dry powder activated carbon (“PAC”) is injected with air into the top of the SDAs to react with gaseous compounds and reduce the emissions. Covanta’s average consumption of PAC for the quarter was 1.28 lbs. per TRW, (Appendix 2, Figure 2-7), slightly

higher than the consumption rate for the 4th quarter of FY 2007, which is an artifact of the heating value adjustment and not due to a change in the dosing rate for PAC.

Electricity

The Maximum Utility Usage agreement states that the cost of up to 1,225,500 kWh (prorated to 308,893 kWh/quarter for comparison purposes in this report) of electricity consumed by the Facility may be passed through to the County during a Billing Year. Electricity costs incurred beyond the specified annual allotment are the responsibility of Covanta. The County also pays associated stand-by and maintenance fees to the Progress Energy Company for maintaining a firm quantity of electricity to power the Facility in the event the Facility's turbine-generator is out of service.

The Facility purchased 4 MWh of electricity in August 2008, and 67 MWh in September. Purchased electricity was needed in August because of annual T-G trip testing, and in September the electricity purchase was related to the "black plant" situations that resulted from both a T-G instrumentation failure and a transformer fire.

The Facility typically relies upon electricity produced by its turbine generator to power its systems, and on a unit consumption basis, the Facility consumed 98 kWh/TRW in July, 104 kWh/TRW in August, and 124 kWh/TRW in September 2008. Overall electricity consumption was above average for the quarter as compared to past years (Appendix 2, Figure 2-2).

Natural Gas

The Waste Disposal Agreement defines a "Maximum Usage" of 20,000 million British thermal units ("MMBTU") for natural gas consumption per year for the Facility. The cost of the first 20,000 MMBTU of natural gas may be passed through to the County, but the cost of all additional consumption of natural gas in a given year is the responsibility of Covanta.

During the quarter the Facility consumed 5,732 MMBTU of natural gas, which is greater than the prorated comparison (5,041 MMBTU/4th quarter) by 691 MMBTUs. Appendix 2, Figure 2-8 shows the Facility's natural gas consumption for the July to September months of calendar years 2006-2008. The majority of natural gas usage for the Facility is typically associated with boiler startup and shutdown activities, and the relatively high natural gas usage for the quarter may have been due to the complexity of managing boiler operations during the transformer fire shutdown and startup periods. Elevated moisture content of the refuse may have also contributed to higher demand for natural gas in the quarter.

5.3.2 FY 2008 Pass Through Costs and Maximum Utility Usage

Ammonia Consumption

Covanta's average consumption of ammonia for FY 2008 was 1.31 lbs. per TRW. This is an average rate of ammonia consumption for the Facility, and no problems were reported with the system.

Activated Carbon Consumption

Covanta was able to maintain a low rate of activated carbon consumption in FY 2008 after successfully demonstrating the effectiveness of a reduced dosing rate to the Florida Department of Environmental Protection in FY 2006. Covanta's average consumption of PAC for the year was 1.16 lbs. per TRW. As can be seen in Appendix 3, Figure 3-7, PAC consumption in FY 2008 was average as compared to the past three years.

Electricity

The Maximum Utility Usage agreement states that the cost of up to 1,225,500 kWh of electricity consumed by the Facility may be passed through to the County during a Billing Year. During FY 2008 the Facility purchased 163,000 kWh of electricity from the power utility during periods in which the T-G system was off-line for maintenance, well below the contractual cap for pass through costs.

Natural Gas

The Waste Disposal Agreement defines a "Maximum Usage" of 20,000 million British thermal units ("MMBTU") for natural gas consumption per year for the Facility. The cost of the first 20,000 MMBTU of natural gas may be passed through to the County, but the cost of all additional consumption of natural gas in a given year is the responsibility of Covanta. In FY 2008 the Facility consumed 14,630 MMBTU, for an average rate of 0.086 MMBTU/TRW processed, and all natural gas costs were passed through to the County.

The FY 2008 natural gas consumption rate was similar to recent years. As can be seen in Appendix 3, Figure 3-8, the monthly natural gas consumption was on par with the comparable average for the previous five year period for ten months of the year, with exceptions in October 2007 and September 2008. The above average consumption for those two months can be explained by the fall outage and the transformer fire respectively.

6.0 REGULATORY REQUIREMENTS

The following section discusses Malcolm Pirnie's review of Covanta's environmental performance (Task 120) as it pertains to meeting the requirements of the environmental regulations such as the Title V Air Operating Permit, Solid Waste Permit, Consumptive Use Permit, Industrial Wastewater Facility Permit, and PSD Permit.

6.1 4th Quarter Summary of Regulatory Requirements

Covanta reported that monthly ash samples were collected by Hydro Designs, Inc. for each of the months in the quarter. Past monthly samples have been collected by Progressive Environmental Services and Severn Trent Laboratories.

An independent testing laboratory collects groundwater samples from the seven monitoring wells located on the Facility property once per quarter. The purpose of the testing is to identify potential sources of contamination to the local groundwater that may result from the Facility operations. Groundwater testing results for the 4th quarter indicated that the pH limit for monitoring well number 7 was outside of the acceptable range. Past groundwater sampling has indicated sporadic problems with total dissolved solids, sulfate levels, and pH at monitoring wells 1, 2, and 7. The issue has been attributed to past practices for discharging used process water, which have since been discontinued.

The Facility's groundwater Consumptive Use Permit amendment allows 350,000 gallons per day of groundwater withdrawal. For comparison purposes, this equates to 32,200,000 gallons for the quarter. The Facility used 22,486,000 gallons of groundwater during the 4th quarter (9,714,000 gallons below the limit) or an average of 580 gallons per TRW. Appendix 2, Figure 2-9 shows the Facility's groundwater consumption for July through September in calendar years 2006-2008.

A state permit limits the quantity and quality of water that the Facility can discharge to the environment, and requires monitoring of any discharges. Covanta reported that on September 9, 2008 the cooling tower basin overflowed to an on-site stormwater retention pond following the loss of plant power. Covanta reported the discharge to FDEP as required and also collected samples from the retention pond.

As part of the Title V air emissions permit, the Facility monitors emissions using a Continuous Emissions Monitoring System. Covanta reported two periods of recorded excess emissions and one presumed period of excess emissions during the 4th quarter. None of the events resulted in a Title V permit compliance problem because they were caused by unforeseeable equipment failures.

- **September 4, 2008:** Both the Unit 1 and 2 CEMS recorded elevated CO emissions due to a loss of power, or “black plant” conditions.
- **September 8, 2008:** The Facility also experienced a transformer failure, which led to a fire and loss of power. Covanta notified FDEP of presumed excessive emissions during the event, but due to the extended loss in power the CEMS did not record the event.
- **September 14, 2008:** Unit 2 experienced elevated CO emissions due to a loss of power caused by a failed power cable.

6.2 FY 2008 Summary of Regulatory Requirements

The Facility is required by permit to meet a variety of environmental requirements, including a program of monitoring air and water. Officials from regulatory agencies such as the Florida Department of Environmental Protection also regularly perform on-site inspections of the Facility to assess its performance. During FY 2008 the Facility failed to meet testing requirements for dioxins/furans resulting in a consent order from FDEP and civil penalty. Some elevated levels of total dissolved solids, sulfates, and pH were also detected in groundwater monitoring wells, but the results were most likely related to discharges from prior to 2004, which was prior to the recycling of plant process water using a reverse osmosis system.

6.2.1 Ash Sampling

In FY 2008 an independent analytical laboratory collected ash samples from the Facility on a monthly basis. From October 2007 through September 2008 Hydro Designs, Inc. collected the ash samples.

The ash samples are a composite of fly and bottom ash; and they are analyzed for a variety of parameters, including heavy metal concentrations, to determine if the ash can be safely disposed of in a sanitary landfill. No samples indicated a problem with the ash that would preclude disposal in a sanitary landfill.

6.2.2 Groundwater Sampling

An independent analytical laboratory collects quarterly groundwater samples from seven monitoring wells located on the Facility property. Test America Labs collected the groundwater samples throughout FY 2008. The purpose of testing is to identify potential sources of contamination to the local groundwater that may result from the Facility operations. Monitoring wells numbered 1, 2, and 7 all exceeded groundwater quality standards at some point during the year. No problems were detected in the 1st quarter, but problems with total dissolved solids, sulfate, and pH occurred sporadically throughout the remaining three quarters

of the year. However, the elevated levels of total dissolved solids and sulfate are most likely due to past discharges of process water and are probably not related to current operating practices at the Facility.

6.2.3 Groundwater Consumption

Groundwater is treated and used at the Facility for both potable water and process water. The Facility utilized a total of 96,942,000 gallons of groundwater in FY 2008, or an average of 265,595 gallons per day, or 567 gallons per TRW. The Facility's Consumptive Use Permit amendment allows a groundwater withdrawal of 350,000 gallons per day. The groundwater consumption rate in FY 2008 was lower than the usage rate for recent years, and the Facility did not exceed the permitted limit during the reporting year.

Prior to FY 2004 the Consumptive Use Permit allowed for groundwater withdrawals of 424,000 gallons per day. In response to the more restrictive permit requirement, Covanta elected to install a reverse osmosis water treatment system for treating water used in the cooling tower. By treating and recycling cooling tower water the reverse osmosis system has allowed Covanta to realize a small savings in groundwater consumption as compared to past years. The reverse osmosis system has also allowed Covanta to eliminate routine water discharges to the environment, and consequently no regular water discharge monitoring was required in FY 2008.

On April 9, 2008 Covanta also submitted a five-year Consumptive Use Permit compliance report to the St. John's River Water Management District. The compliance report serves to document that groundwater usage has been within permitted withdrawal rates.

6.2.4 Water Discharge Monitoring

A state permit limits the quantity and quality of water that the Facility can discharge to an on-site storage pond, and requires monitoring of any discharges. Covanta reported one discharge event in September 2008 due to a loss in plant power. Water from the cooling tower basin overflowed into an on-site retention pond, and Covanta notified FDEP and collected monitoring samples as required.

The Facility also utilizes an on-site septic field to dispose of its sanitary wastewater, but no problems with the septic field were reported by Covanta in FY 2008.

6.2.5 Air Quality Monitoring

As part of the Title V air emissions permit, the Facility monitors emissions using a Continuous Emissions Monitoring System for monitoring parameters such as opacity, NO_x, CO, and SO_x. Air quality emissions are also monitored by annual stack testing of parameters,

including: opacity, NO_x, CO, SO_x, particulate matter, fugitive emissions, dioxins/furans, hydrogen chloride, and metals (mercury, cadmium, and lead).

The annual stack testing also serves to verify the performance of the CEMS, and stack testing for FY 2008 occurred in January and February 2008. Testing was performed by Testar, Inc. in accordance with FDEP test protocols, and using U.S. EPA test methods.

Results from the annual emissions testing and CEMS Relative Accuracy Test Audits ("RATA testing") indicate that the Facility is in compliance with all but one of the applicable emissions limits. Combustion line 2 did not meet the emissions limit for dioxins/furans during initial testing in January 2008. Covanta subsequently addressed a fabric filter problem and repeated the test in February. Covanta reported a two-run average of dioxin/furans to FDEP. The two-run average was 28.0 ng/DSCM, which is slightly below the compliance limit of 30.0 ng/DSCM. However, the failed test resulted in a compliance violation. In May 2008 Covanta management met with FDEP to discuss the issue. FDEP issued a consent order and in July 2008 Covanta paid a civil penalty resulting from the failed test.

As required by the testing protocol, the operating parameters (including PAC feed rate, steam loading rate, and flue gas temperature) were all within the expected ranges during testing. Also notable, Covanta tested new O₂ and SO₂ analyzers in both lines, and no performance problems were reported.

During FY 2008 there were ten separate reportable emissions events, three of which were related to the Unit 1 combustion line, five of which were associated with Unit 2, one affected both units, and one was presumed to affect both units. Of the reported events, seven were associated with CO emissions, two events involved opacity, and one event was presumed emissions that were never monitored due to a loss of plant power. Emissions events were distributed evenly in frequency throughout the year, with no quarter having more than three separate events.

The typical cause of CO-related emissions events during the year was "black plant" conditions (loss of plant power), or a boiler tube failure followed by an equipment malfunction during boiler shutdown or startup. Opacity events were typically caused by minor maintenance issues and did not last long. None of the events indicated major operational problems that would require significant changes to the Facility. All of the events were allowable under the Title V permit, i.e. they were short duration events and they could be explained by equipment malfunctions or some other acceptable reasoning.

7.0 RECOMMENDATIONS

The Facility continued to perform on par with recent years in FY 2008. Covanta continues to make strides in replacing ageing equipment, addressing corrosion, performing insulation and lagging repairs, updating safety equipment, and participating in the OSHA VPP program. Malcolm Pirnie's primary recommendation continues to emphasize proactive maintenance at the Facility, including an investment in replacing and upgrading equipment as needed.

Malcolm Pirnie recognizes the importance of Covanta's coordination of production statistics and maintenance outages with the County's service coordinator to mitigate and/or minimize the need for diversions of solid waste to the Lake County landfill.

The initiatives undertaken by both the County and Covanta described in Section 3 have been effective, and should be continued in FY 2009. This includes, but is not necessarily limited to:

- Continuing an emphasis on maintenance. In particular, aggressive corrosion in sensitive areas such as ash handling should be addressed proactively.
- Continuing the County's refuse delivery management program. To improve the program the County should also calculate the economic value associated with minimizing diversions to the County landfill. Such a calculation would allow the County to more effectively determine when diversions are acceptable and when they should be avoided.
- Identifying and testing new initiatives to reduce natural gas consumption and control costs associated with natural gas.
- Undertaking an electrical performance and efficiency study to identify any cost-effective opportunities to lower the in-house electricity consumption which would further increase the amount of net electricity available for sale.

It is Malcolm Pirnie's opinion that the Facility is capable of operating beyond the end of the contract period in 2014 as long as Covanta continues to provide, or exceeds, the current level of maintenance. Although specific systems may operate less efficiently as the Facility ages, Malcolm Pirnie is unaware of any operational data or information that would indicate that the Facility may not be capable of meeting its overall operational goals (as defined by the WDA) through 2014 and beyond.



Appendix 1 - Tables

**Table 1A
Summary of Annual Operating Data**

	Measurement Unit	FY 2008 Annual Data	FY 2007 Annual Data	FY 2006 Annual Data	FY 2005 Annual Data	FY 2004 Annual Data
REFUSE PROCESSED						
Refuse Received	Tons/Year	170,420	167,600	170,319	166,011	168,568
County Waste	Tons/Year	165,293	163,532	166,325	164,007	162,115
Out Of County Waste	Tons/Year	5,127	4,068	3,994	2,004	6,454
Refuse Processed	Tons/Year	170,861	166,178	169,507	167,919	166,922
Refuse Processed	Tons/Day	467	456	464	460	456
Refuse Diverted to LF	Tons/Year	7,880	24,583	17,171	13,947	0
Supplemental Waste	Tons/Year	5,127	4,068	3,994	2,012	1,418
Refuse HHV	BTU/lb	4,977	5,093	5,051	4,962	4,744
Refuse Processed - Adjusted for HHV (reference value = 5,000 BTU/lb.)	TRW/Year	169,999	168,577	171,343	166,176	158,946
Avg Refuse Processed per Day - Adjusted for HHV	TRW/Day	466	462	469	455	434
Ash	Tons/Year (wet)	45,381	49,555	48,792	47,768	47,664
Ash % of Refuse Processed	%	26.6%	29.8%	28.8%	28.4%	28.6%
Ferrous	Tons/Year	2,916	2,528	2,777	2,698	2,412
Ferrous % of Refuse Processed	%	1.7%	1.5%	1.6%	1.6%	1.4%
CONSUMABLES & UTILITIES						
In-Plant Power	MWH/Year	17,380	17,031	17,345	16,996	16,595
In-Plant Power Rate - Adjusted	kWH/TRW Processed	102	102	102	101	99
Purchased Power	MWH/Year	163	388	60	108	39
Aux Nat Gas	Therms/Year	146,303	141,254	104,710	153,523	179,471
Nat Gas Rate	Therms/TRW MSW	0.86	0.85	0.62	0.91	1.08
Well Water	kgal/Year	96,942	99,501	103,637	103,276	100,442
Well Water Rate	gals./TRW MSW Processed	567	599	611	615	602
Pebble Lime	Tons/Year	1,548	1,909	2,230	1,832	1,813
Pebble Lime Rate	lbs/TRW MSW Processed	18	23	26	22	22
Dolomitic Lime	Tons/Year	499	714	895	790	756
Dolomitic Lime Rate	lbs/TRW MSW Processed	5.8	8.6	10.6	9.4	9.1
Ammonia	klbs/Year	224	208	225	200	181
Ammonia Rate	lbs/TRW MSW Processed	1.31	1.25	1.33	1.19	1.08
Carbon	Tons/Year	99	94	98	137	192
Carbon Rate	lbs/TRW MSW Processed	1.16	1.13	1.16	1.63	2.30
EQUIPMENT AVAILABILITY						
Boiler 1	%	92.5%	89.6%	91.3%	88.4%	92.0%
Boiler 2	%	92.9%	89.8%	92.1%	92.9%	90.2%
Avg Boiler Availability	%	92.7%	89.7%	91.7%	90.7%	91.0%
Turbine*	%	98.4%	97.3%	99.7%	98.9%	100.0%
STEAM & ELECTRICITY PRODUCTION						
Steam	klbs/Year	1,035,823	1,021,172	1,044,931	1,032,257	979,538
Steam Rate - Adjusted	lbs-Steam/lb-MSW (Ref)	3.03	3.07	3.08	3.07	2.93
Gross Electric Production	MWH/Year	103,566	103,307	105,263	104,081	98,670
Avg Gross Electric	MW	11.8	11.8	12.0	11.9	11.3
Gross Electric Rate	kWH/Ton MSW Processed	606.1	621.7	621.0	619.8	591.1
Steam-Electric Rate (Gross)	lbs-Steam/kWH-Gross	10.0	9.9	9.9	9.9	9.9
Net Electric - Exported for Sale	MWH/Year	87,151	87,107	88,366	87,197	82,112
Avg Net Electric	MW	9.9	9.9	10.1	10.0	9.3
Net Electric Rate	kWH/Ton MSW Processed	510.1	524.2	521.3	519.3	491.9
Steam-Electric Rate (Net)	lbs-Steam/kWH-Net	11.9	11.7	11.8	11.8	11.9
CAPACITY UTILIZATION CALCULATIONS - COMPARED TO 100% AVAILABILITY						
Throughput Capacity	% of Design Maximum	88.7%	86.2%	88.0%	87.1%	86.4%
Heat Capacity	% of Design Maximum	88.2%	87.8%	88.9%	86.5%	82.0%
Steam Capacity	% of Design Maximum	91.6%	90.3%	92.4%	91.2%	86.3%
Electric Generation Capacity	% of Design T-G Output	81.1%	80.9%	82.4%	81.5%	77.1%
CALCULATIONS - COMPARED TO ACTUAL AVAILABILITY						
Throughput Capacity	% of Design Maximum	95.3%	95.5%	95.9%	96.0%	95.2%
Heat Capacity	% of Design Maximum	94.7%	97.1%	96.8%	95.1%	90.3%
Steam Capacity	% of Design Maximum	98.4%	100.3%	100.7%	100.7%	94.9%
Electric Generation Capacity	% of Design T-G Output	82.1%	82.5%	82.8%	82.6%	77.1%

Table 1B
Summary of 4th Quarter Operating Data

	Measurement Unit	Quarterly Data Jul. - Sept. 2008	Quarterly Data Jul. - Sept. 2007	Quarterly Data Jul. - Sept. 2006
REFUSE PROCESSED				
Refuse Received	Tons/Quarter	43,225	46,410	45,044
County Waste	Tons/Quarter	42,090	45,229	44,182
Out Of County Waste	Tons/Quarter	1,135	1,181	862
Refuse Processed	Tons/Quarter	42,914	46,625	46,467
Refuse Processed	Tons/Day	465	507	505
Refuse Diverted to LF	Tons/Quarter	2,117	2,095	0
Supplemental Waste	Tons/Quarter	1,135	1,181	862
Refuse HHV	BTU/lb	4,571	4,877	4,841
Refuse Processed - Adjusted for HHV (reference value = 5,000 BTU/lb.)	TRW/Quarter	39,053	45,481	44,998
Avg Refuse Processed per Day - Adjusted for HHV	TRW/Day	424	494	489
Ash	Tons/Quarter (wet)	11,110	12,987	14,289
Ash % of Refuse Processed	%	25.8%	27.8%	30.7%
Ferrous	Tons/Quarter	686	883	604
Ferrous % of Refuse Processed	%	1.6%	1.9%	1.3%
CONSUMABLES & UTILITIES				
In-Plant Power	MWH/Quarter	4,185	4,496	4,414
In-Plant Power Rate - Adjusted	kWH/TRW Processed	109	99	98
Purchased Power	MWH/Quarter	71	7	52
Aux Nat Gas	Therms/Quarter	57,320	29,920	23,230
Nat Gas Rate	Therms/TRW MSW Processed	1.58	0.65	0.53
Well Water	kgal/Quarter	22,486	26,308	26,734
Well Water Rate	gals./TRW MSW Processed	580	578	594
Pebble Lime	Tons/Quarter	307	444	627
Pebble Lime Rate	lbs/TRW MSW Processed	16	20	28
Dolomitic Lime	Tons/Quarter	109	153	269
Dolomitic Lime Rate	lbs/TRW MSW Processed	5.61	6.71	11.90
Ammonia	klbs/Quarter	49	55	58
Ammonia Rate	lbs/TRW MSW Processed	1.25	1.21	1.29
Carbon	Tons/Quarter	25	26	26
Carbon Rate	lbs/TRW MSW Processed	1.28	1.14	1.16
EQUIPMENT AVAILABILITY				
Boiler 1	%	91.8%	94.2%	97.2%
Boiler 2	%	92.1%	97.9%	96.3%
Avg Boiler Availability	%	91.9%	96.1%	96.7%
Turbine*	%	94.2%	99.8%	98.8%
STEAM & ELECTRICITY PRODUCTION				
Steam	klbs/Quarter	243,079	277,335	276,502
Steam Rate - Adjusted	lbs-Steam/lb-MSW (Ref)	3.11	3.05	3.07
Gross Electric Production	MWH/Quarter	23,559	28,022	27,619
Avg Gross Electric	MW	10.6	12.7	12.5
Gross Electric Rate	kWH/Ton MSW Processed	549.1	601.0	594.1
Steam-Electric Rate (Gross)	lbs-Steam/kWH-Gross	10.4	9.9	10.0
Net Electric - Exported for Sale	MWH/Quarter	19,776	23,687	23,284
Avg Net Electric	MW	8.9	10.7	10.5
Net Electric Rate	kWH/Ton MSW Processed	460.5	508.0	500.8
Steam-Electric Rate (Net)	lbs-Steam/kWH-Net	12.4	11.7	11.9
CAPACITY UTILIZATION CALCULATIONS - COMPARED TO 100% AVAILABILITY				
Throughput Capacity	% of Design Maximum	88.4%	96.0%	95.6%
Heat Capacity	% of Design Maximum	80.5%	93.6%	92.6%
Steam Capacity	% of Design Maximum	85.3%	97.2%	96.9%
Electric Generation Capacity	% of Design T-G Output	73.1%	87.1%	85.8%
CAPACITY UTILIZATION CALCULATIONS - COMPARED TO ACTUAL AVAILABILITY				
Throughput Capacity	% of Design Maximum	95.6%	99.9%	98.9%
Heat Capacity	% of Design Maximum	87.3%	97.4%	95.7%
Steam Capacity	% of Design Maximum	92.6%	101.2%	100.2%
Electric Generation Capacity	% of Design T-G Output	77.3%	87.2%	86.8%

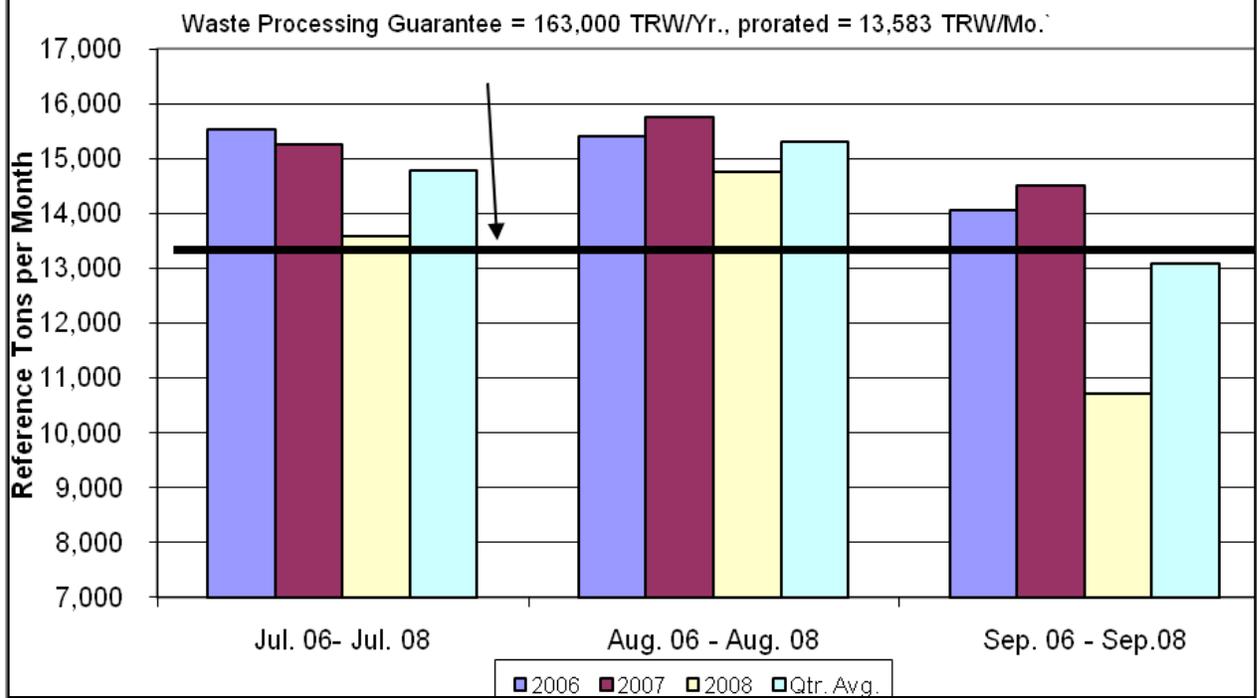
**Table 2
Outage Summary**

Month	Unit No. 1 Outages	Unit No. 2 Outages	Turbine Generator Outages	Notes
	Down Time Hours	Down Time Hours	Down Time Hours	
Sep-08		21		Unit 2- A leak in the west superheater sidewall header drain pipe.
Sep-08		12.75		Unit 2- Tube leak in the lower economizer bundle
Sep-08			2	T/G- #1B 480V transformer had a bad cable connecting it to the 13.8 KV feeder breaker.
Sep-08			121.5	T/G- #1B 480V station service transformer shorted and caught fire.
Sep-08			27.25	T/G- tripped due to an instrument air malfunction.
Aug-08			4	T/G- disconnected from the grid and began isochronous operation.
Jul-08			2.5	T/G- taken off grid to allow Progress Energy to conduct relay testing at the Okahumpka substation.
Jul-08			4.5	T/G- taken off grid to allow Progress Energy to conduct relay testing at the Okahumpka substation.
Jul-08		57.75		Unit 2- Tube leak in the lower economizer bundle
Jun-08		13.5		Unit 2- leak in a corroded section of drain piping from the convection pass left sidewall header.
Jun-08		31.66		Unit 2- ruptured turbe in the lower economizer bundle
May-08		185		Unit 2- Scheduled Spring Outage
May-08		50		Unit 2- Leak in the high temperature superheater
May-08			52	T/G- Unit 2 was taken offline while Unit 1 was in a spring outage.
May-08	209.66			Unit 1- Scheduled Spring Outage
Mar-08	25.5			Unit1- Tube leak on the furnace front wall
Feb-08			1	T/G- Tripped for for an unknwn reason
Feb-08	19			Unit 1- Tube leak in the 2nd pass area
Feb-08	16			Unit 1- Ruptured tube in the lower economizer bundle
Jan-08		35.25		Unit 2- Ruptured tube in the lower economizer bundle
Jan-08	26			Unit 1- .Mid-cycle explosive blast cleaning and inspections
Jan-08		23.75		Unit 2- Mid-cycle explosive blast cleaning and inspections.
Jan-08			0.7	T/G- Tripped due to a malfunction in the burner management system which caused a false high steam drum level.
Dec-07			2	T/G- Tripped due to an electrical ground in the burner management system, which was caused by loose wiring
Nov-07			0.2	T/G tripped for an unknown reason and was placed back online in 11
Nov-07			0.2	T/G tripped due to a high drum level in the # 2 boiler which was off-line for a tube leak repair
Nov-07		19.9		Unit 2- Tube leak in the lower economizer bundle
Nov-07	48.8			Unit 1- A leak in the west chill wall header drain piping
Oct-07			7.8	T/G tripped due to a faulty lube oil reservoir level switch
Oct-07		169		Unit 2- Scheduled Outage
Oct-07	202			Unit 1- Scheduled Outage
Sep-07	30.5			Unit 1- A ruptured tube in the lower evaporator section
Sep-07	55.5			Unit 1- Tube leak in the evaporator section
Aug-07	20			Unit 1- Tube leak in the lower economizer bundle
Aug-07		23.5		Unit 2- Broken grate bars in the Martin stoker #2 grate run
Jul-07			0.5	T/G- Tripped troubleshooting of the turbine lube oil resrvoir level switch
Jul-07	2.75	0.5	2.5	A Black Plant situation occurred due to sever lightning in the area
Jul-07		18.5		Unit 2- Tube leak in the lower economizer bundle
Jul-07	1			Unit 1- Tube leak on the lower furnace rear wall
Down Time for July - September 2008	0	92	162	
Availability for 4th Qtr. Reporting Period	100.0%	95.9%	92.7%	
TOTAL Down Time for Previous 12 Months (Oct. 07 - Sept 08)	547	620	226	
Availability for Previous 12 Month Period	93.8%	92.9%	97.4%	

Note: Yellow shaded region indicates the quarterly reporting period, pink shading indicates the same period during the previous year.

Appendix 2 - 4th Quarter Performance Figures

FIGURE 2-1 - Solid Waste Processed (monthly average)



Solid Waste Processed (daily average)

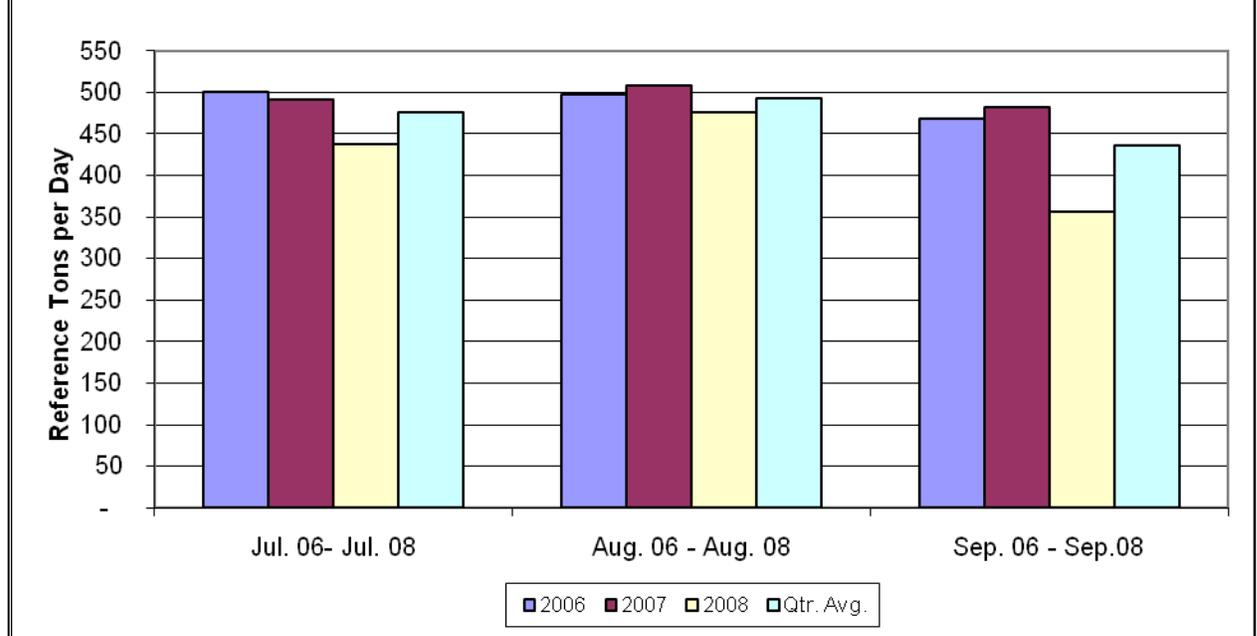
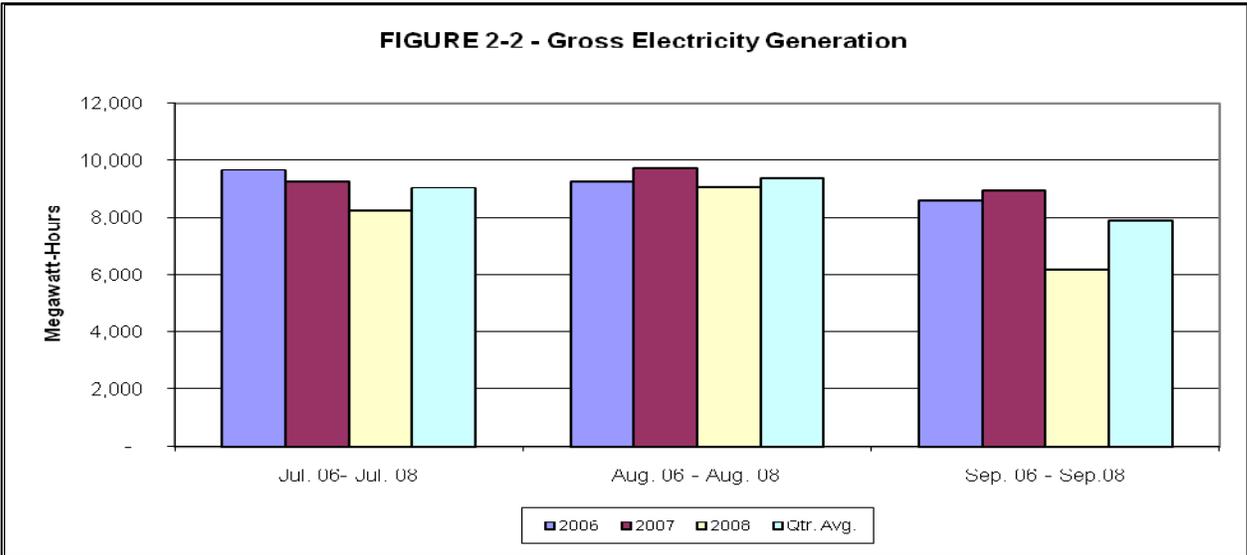
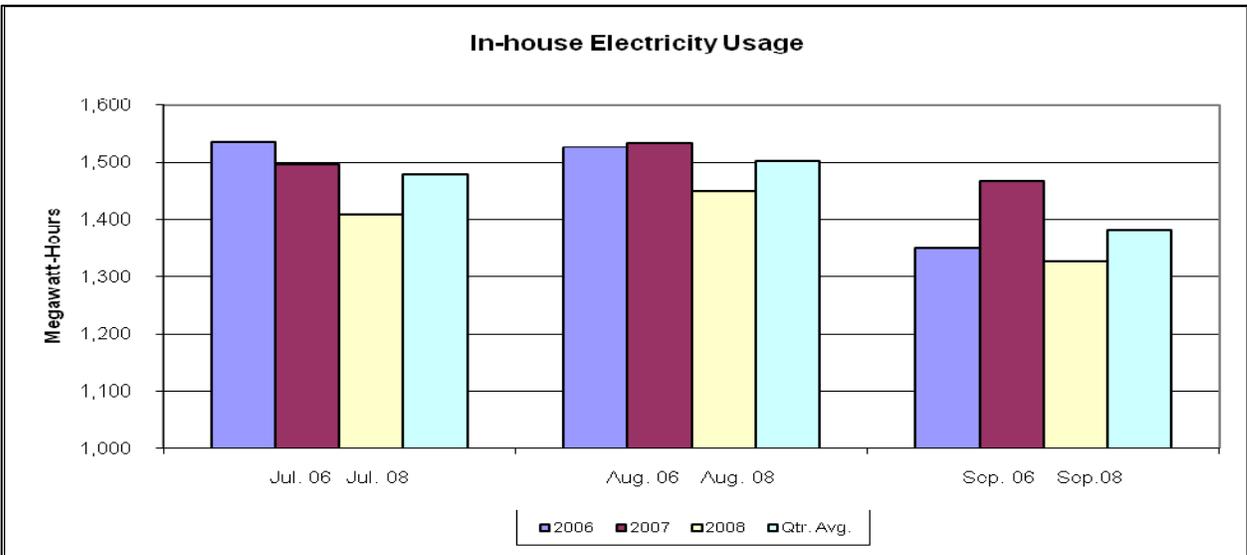


FIGURE 2-2 - Gross Electricity Generation



In-house Electricity Usage



Net Electricity Generation - Exported for Sale

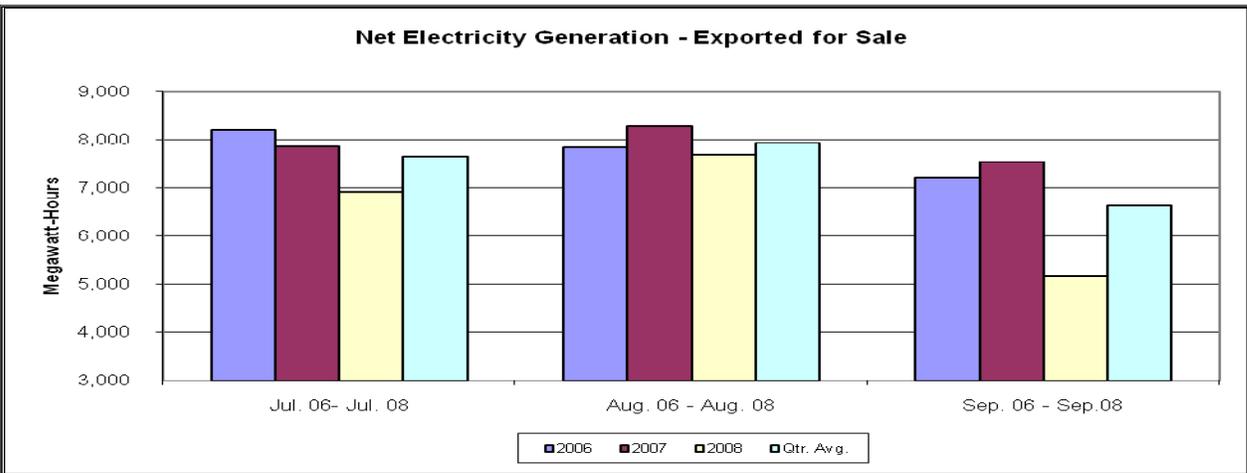
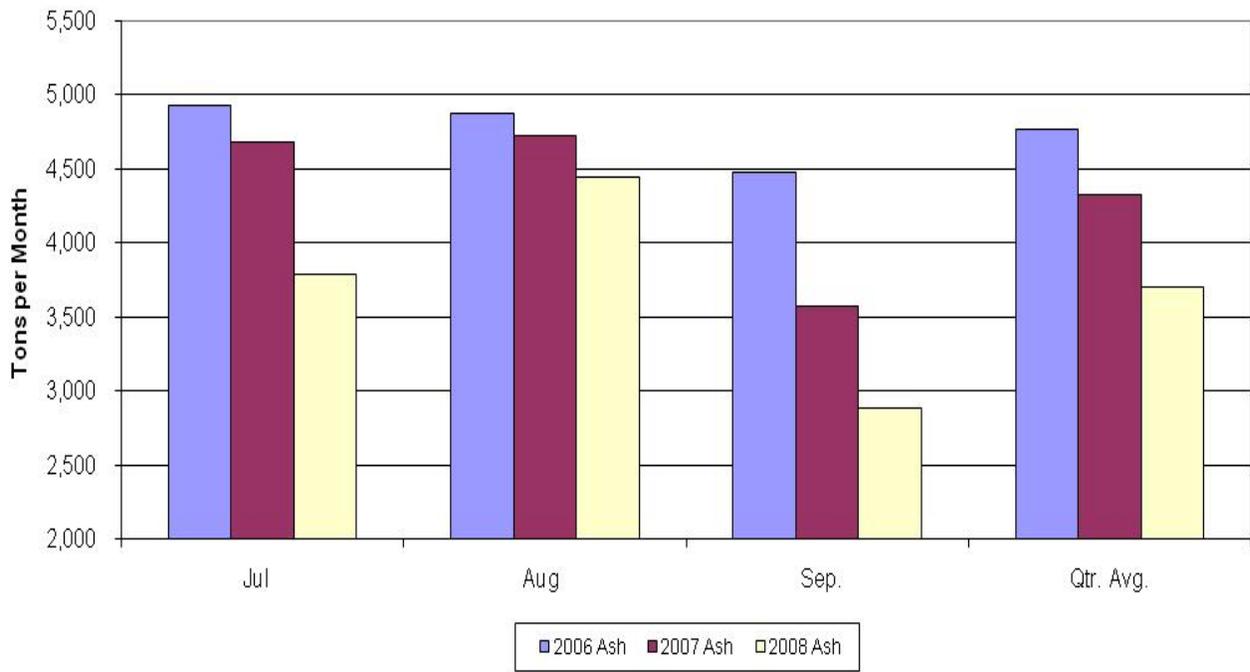
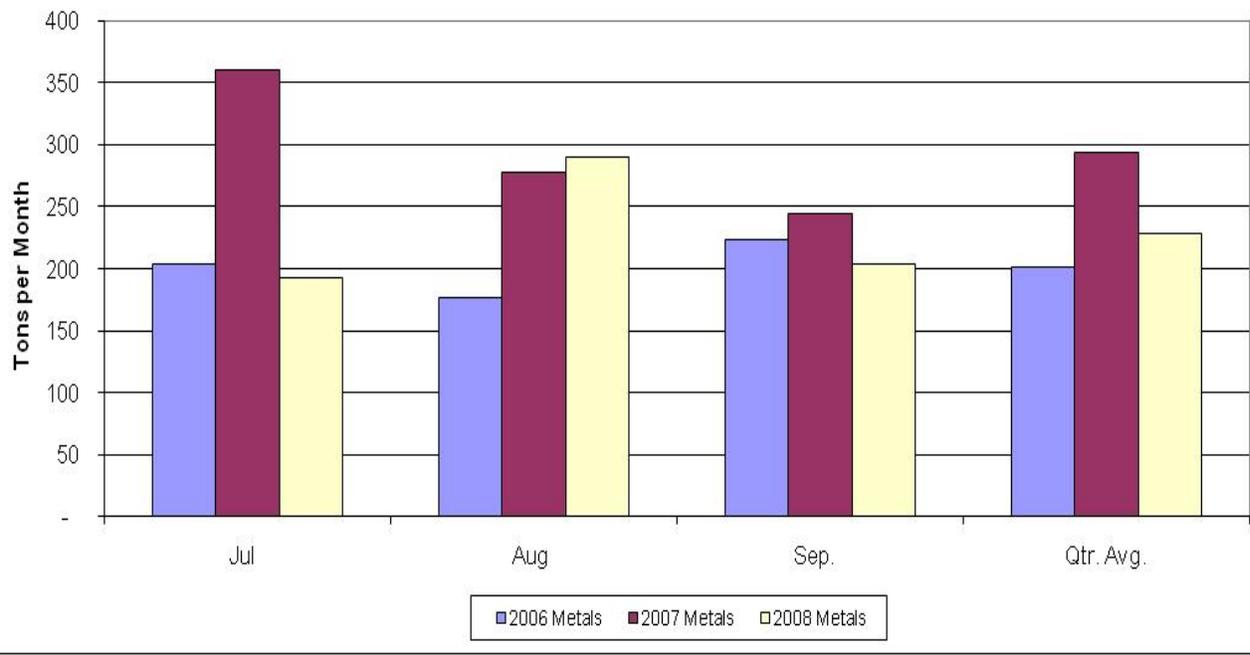
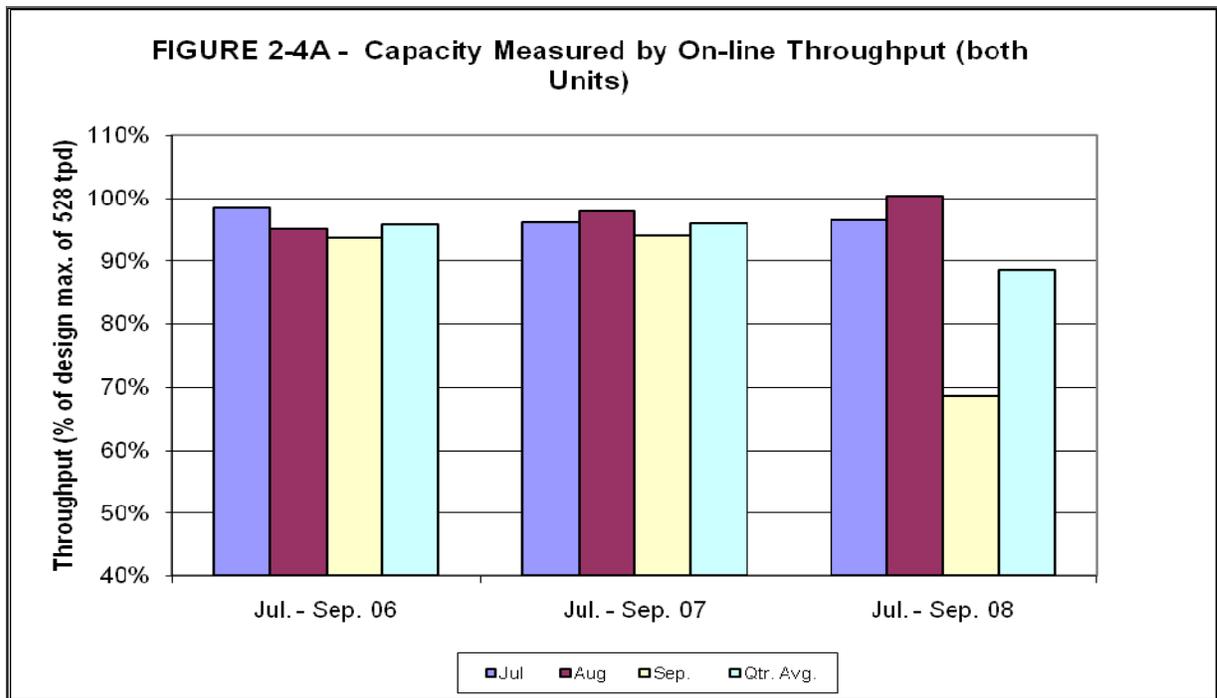


FIGURE 2-3 - Ash Produced

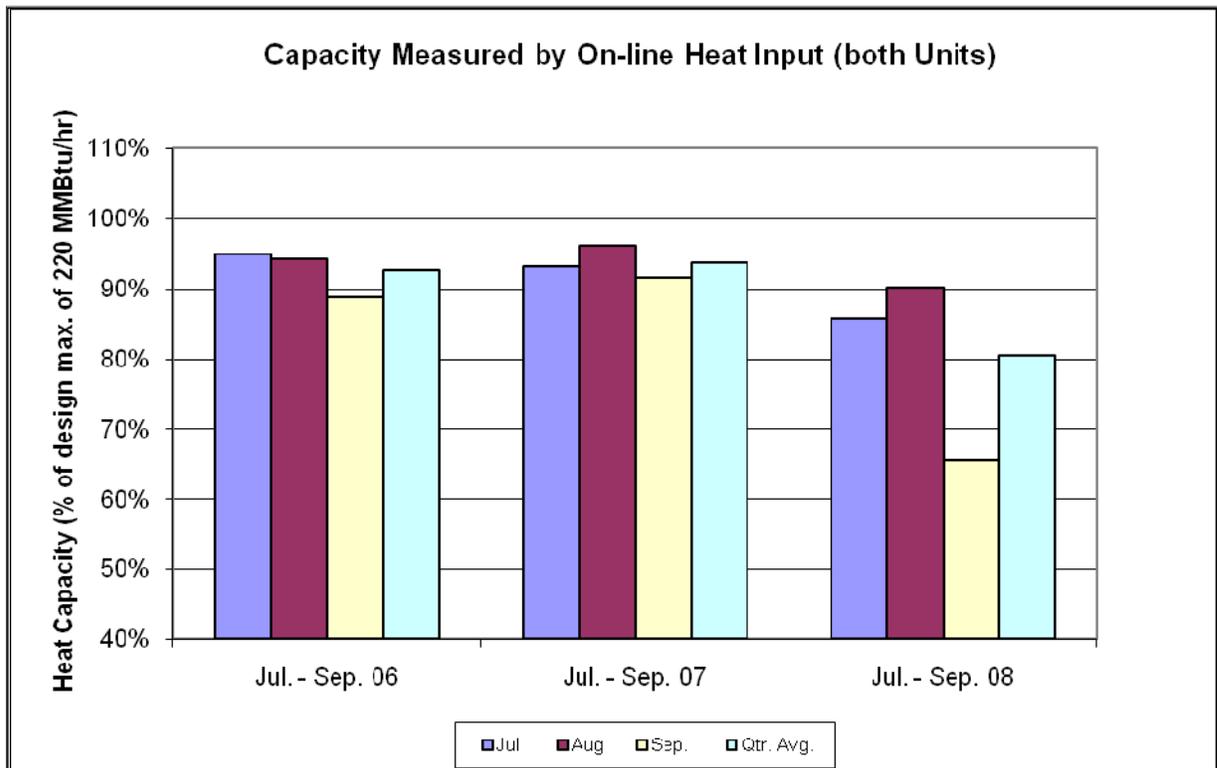


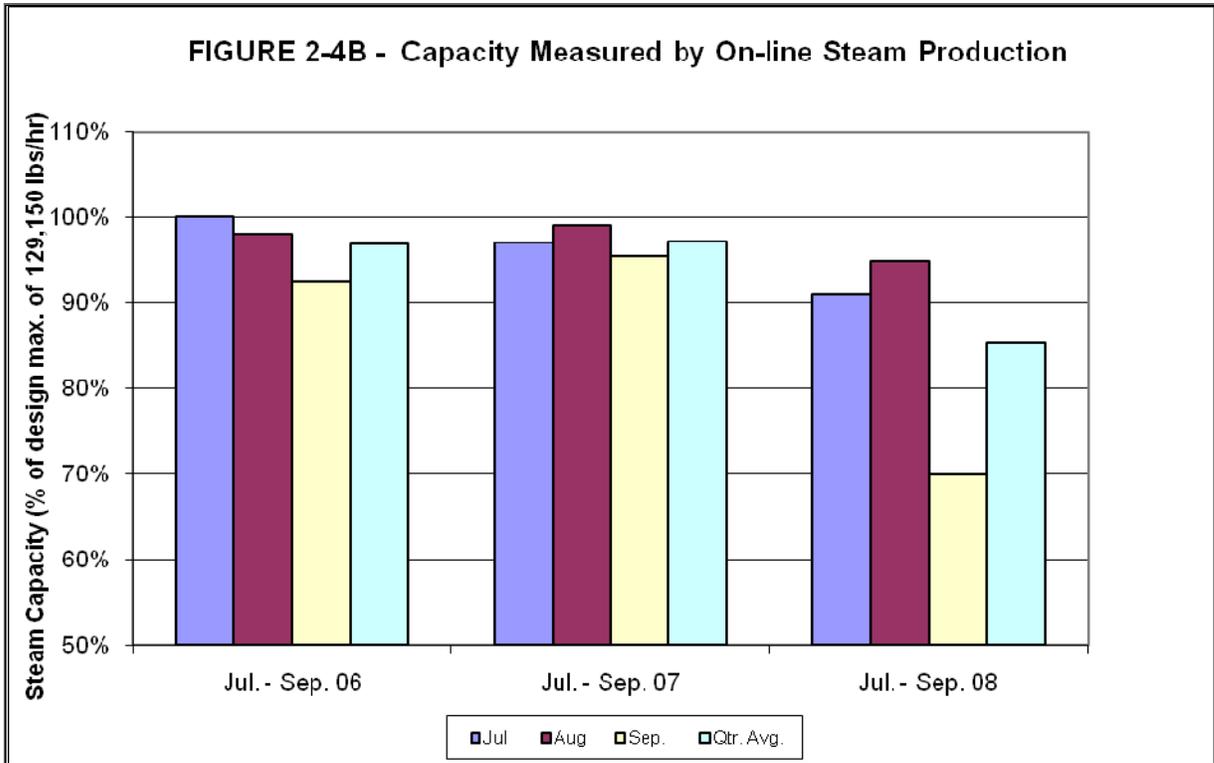
Ferrous Materials Recovered





(Note: These Capacity Utilization measures compare actual performance to the design maximum assuming the Units are available for 100% of the time.)





(Note: These Capacity Utilization measures compare actual performance to the design maximum assuming the Units are available for 100% of the time.)

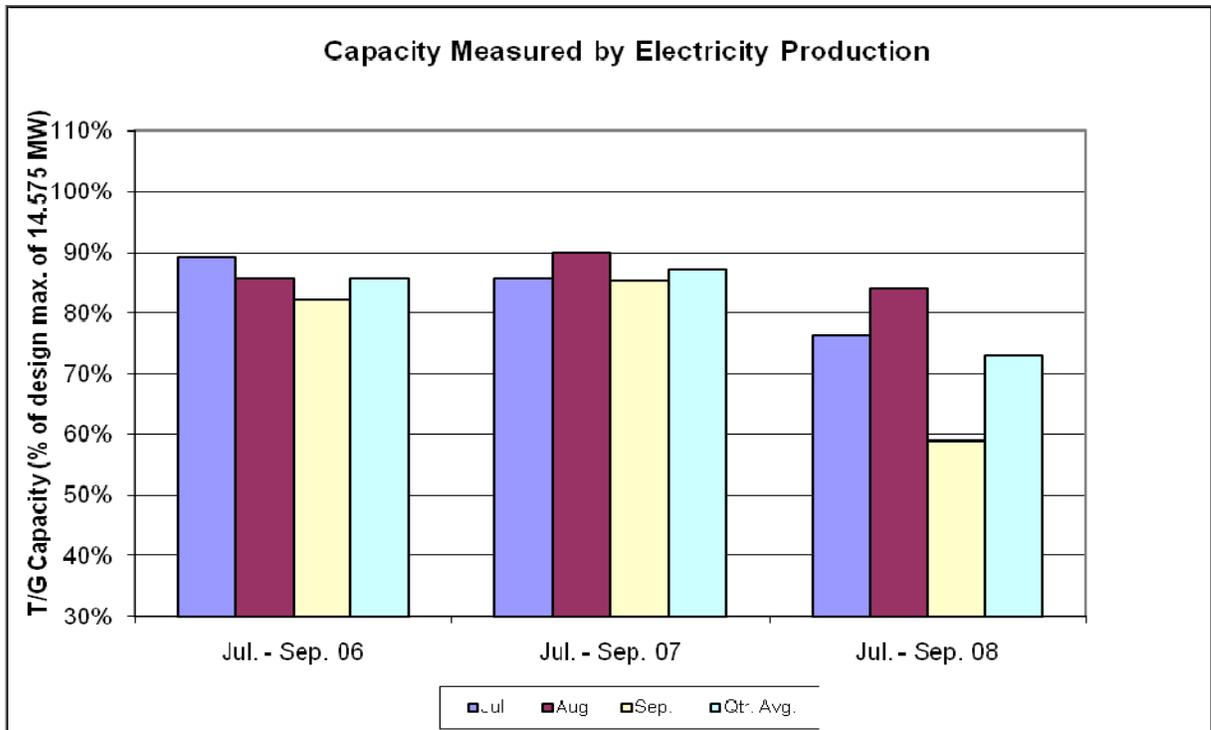
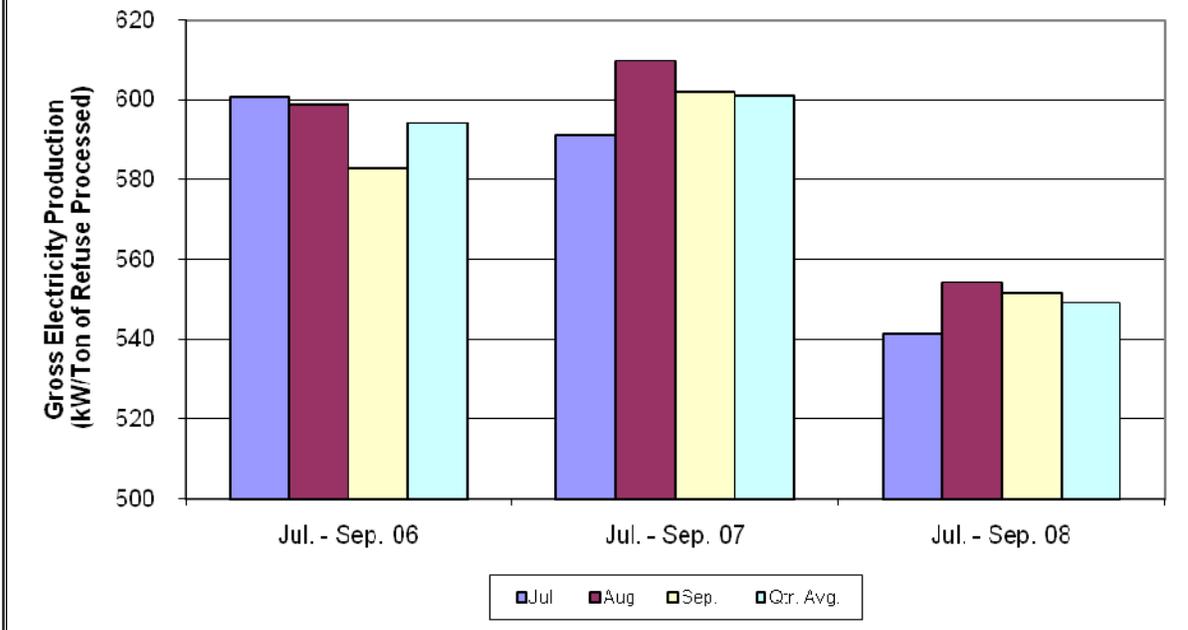


FIGURE 2-5 - Gross Electricity Generation Rate



Net Electricity Generation Rate

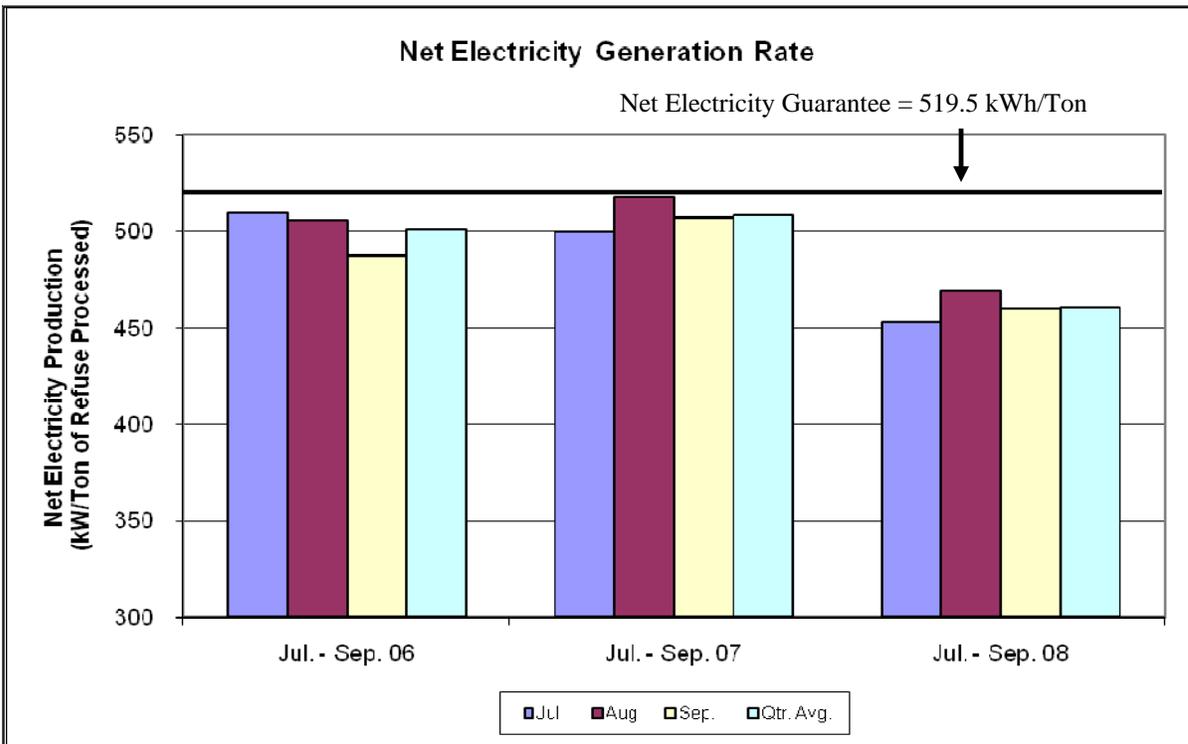
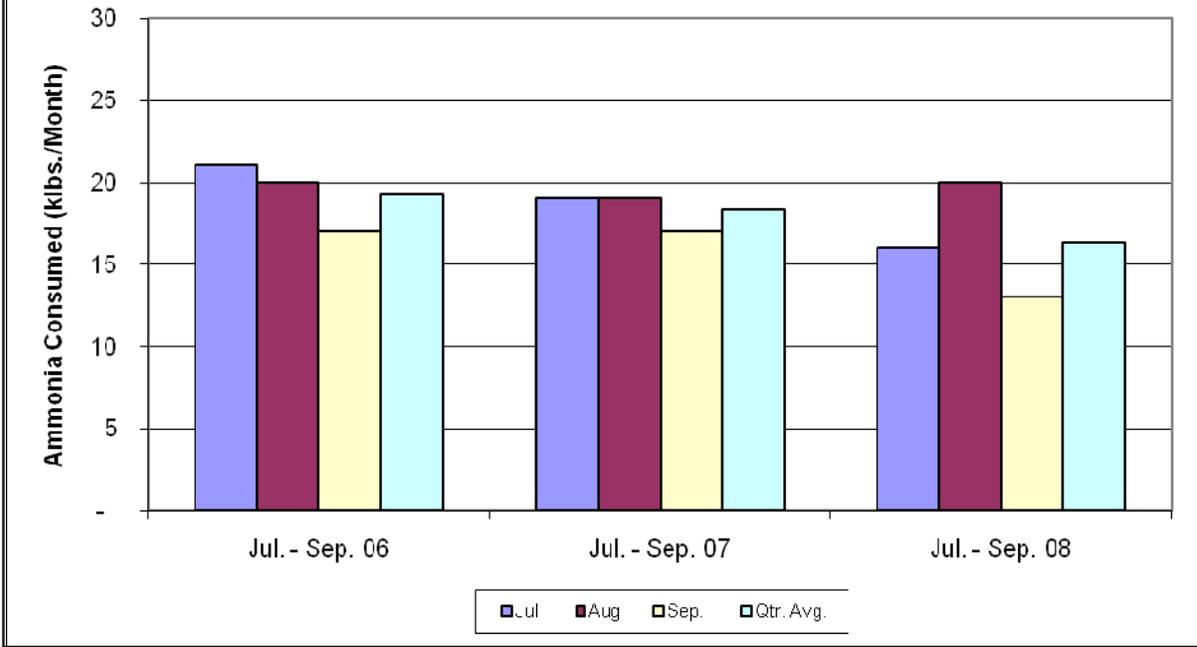


FIGURE 2-6 - Ammonia Consumption



Ammonia - Consumption Rate (lbs./TRW)

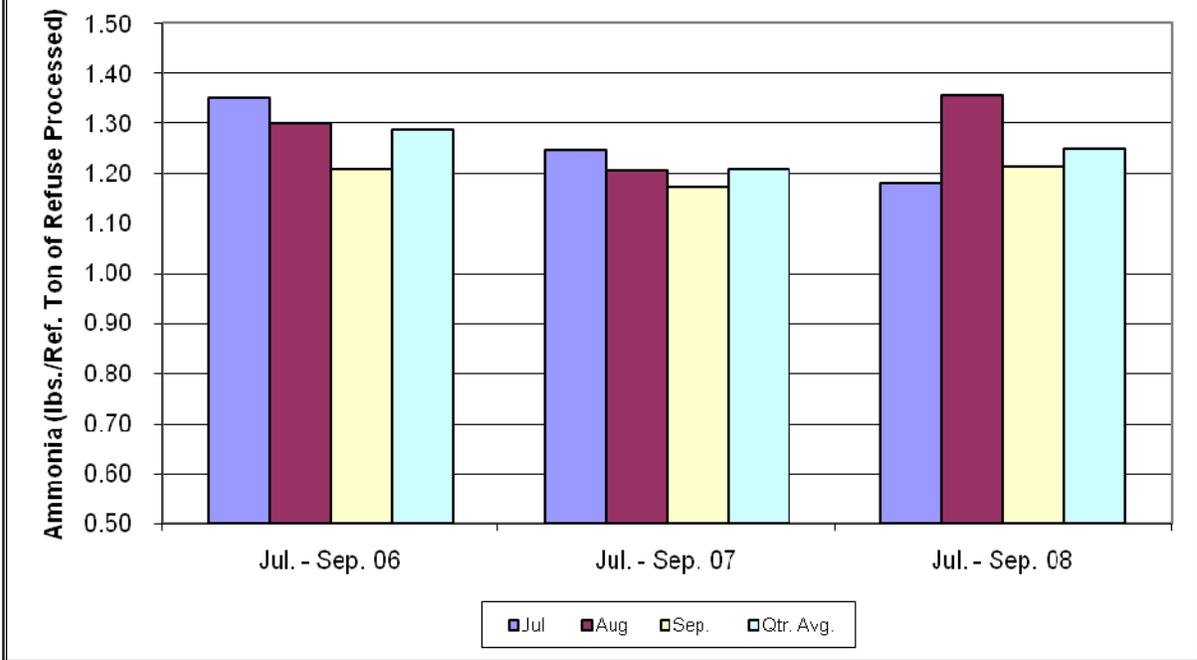
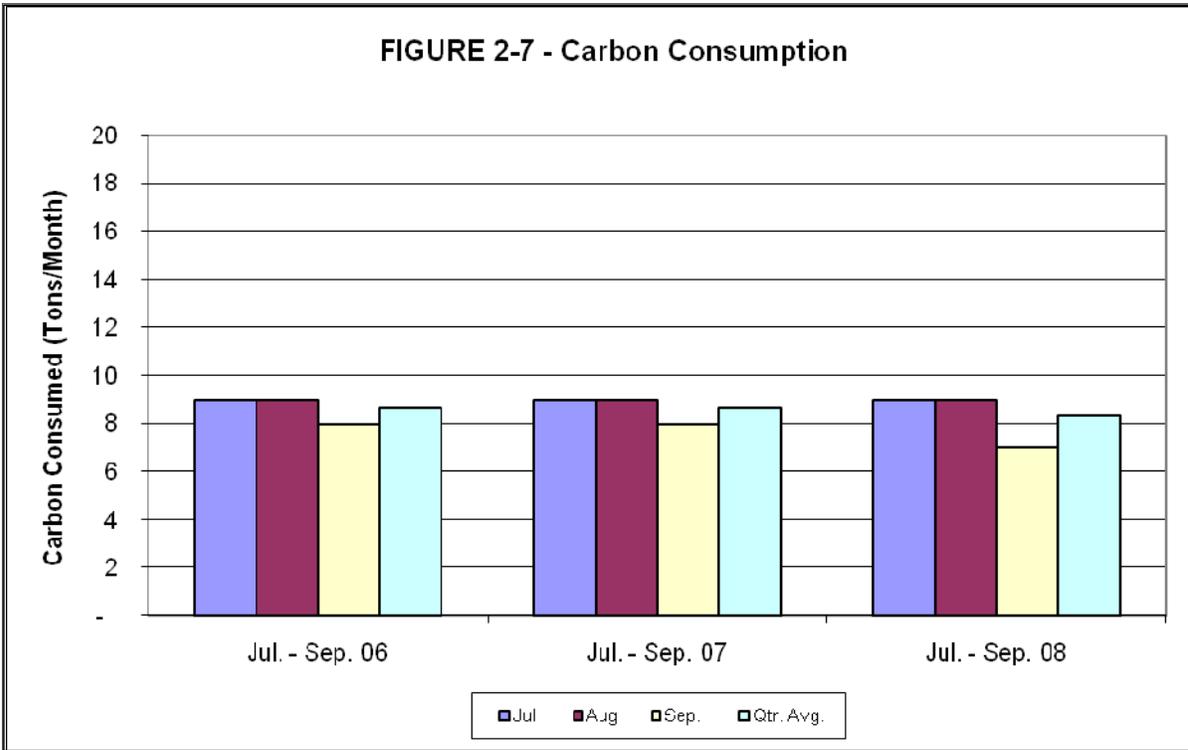


FIGURE 2-7 - Carbon Consumption



Carbon - Consumption Rate (lbs./TRW)

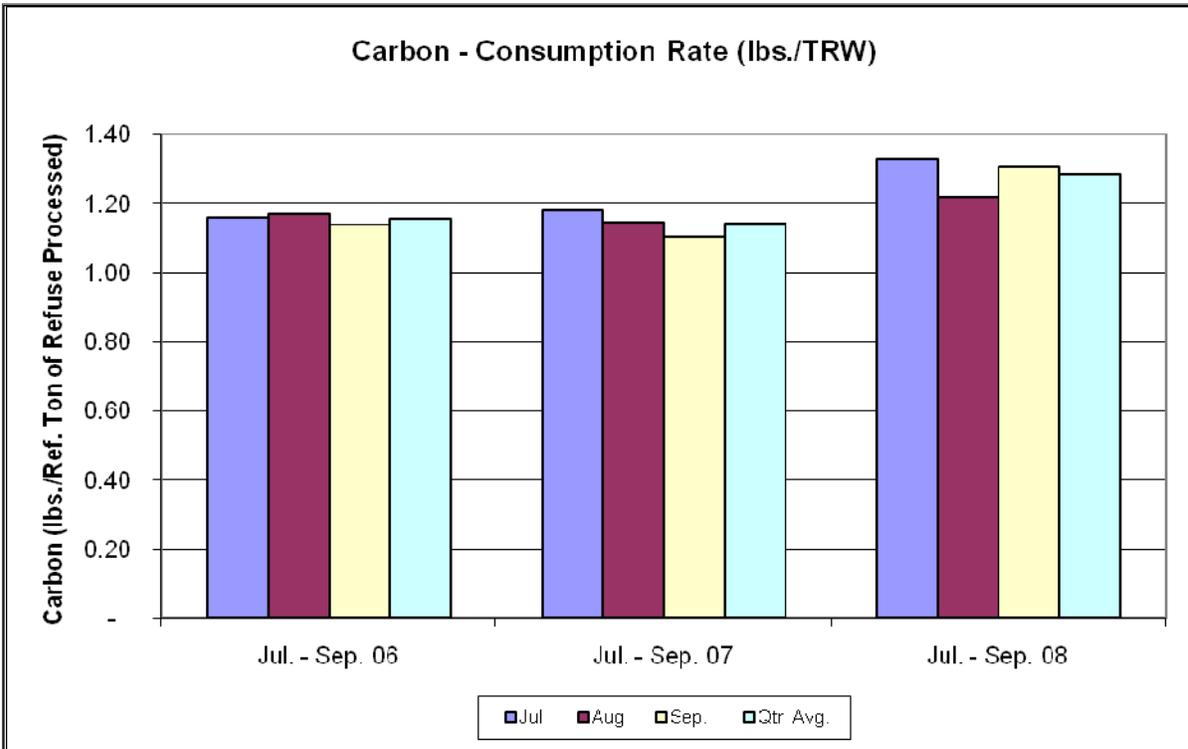
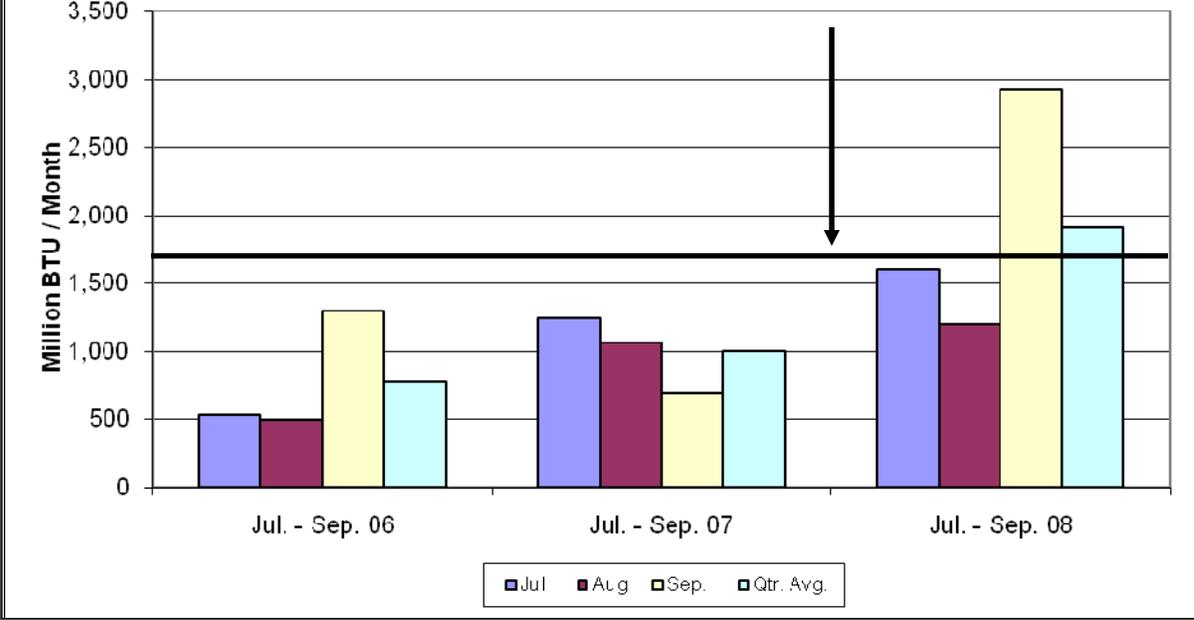


FIGURE 2-8 - Natural Gas Consumed (Million BTU/Month)

Natural Gas Consumption Guarantee = 20,000 Million BTU/Yr., prorated = 1,667



Natural Gas - Consumption Rate (Million BTU/TRW)

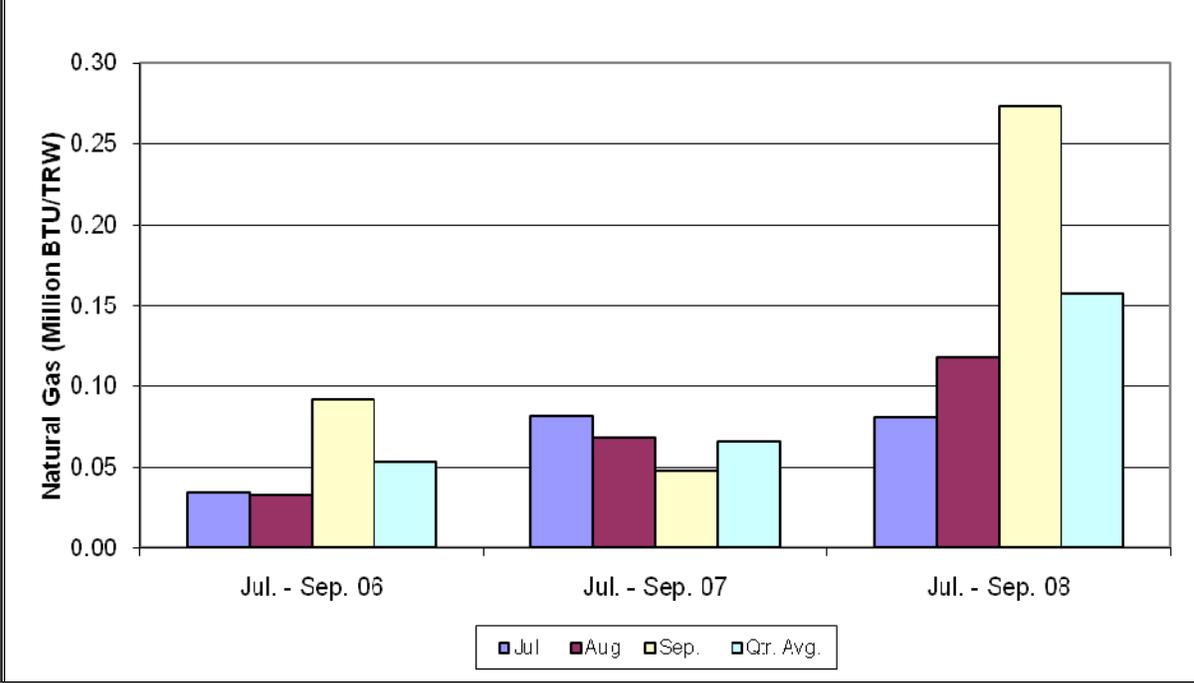
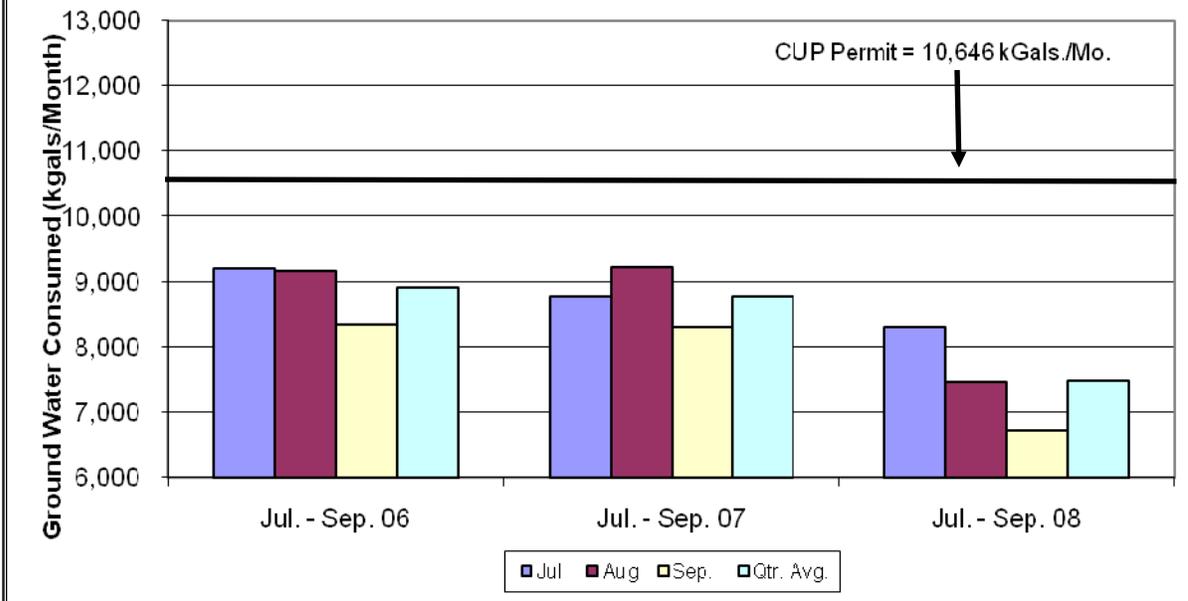
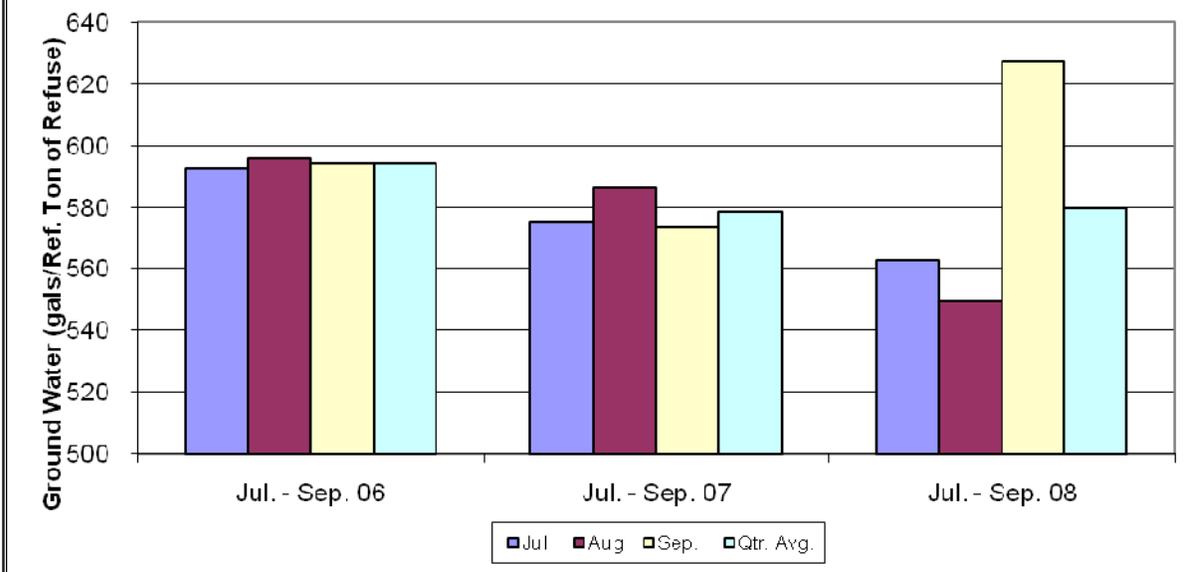


FIGURE 2-9 - Ground Water Consumption



Ground Water - Unit Consumption Rate (Gals./TRW)





Appendix 3 - Annual Performance Figures

**FIGURE 3-1 - Monthly & Cumulative Solid Waste Processing
(Tonnage adjusted for average BTU content of 5,000 BTU/Ton)**

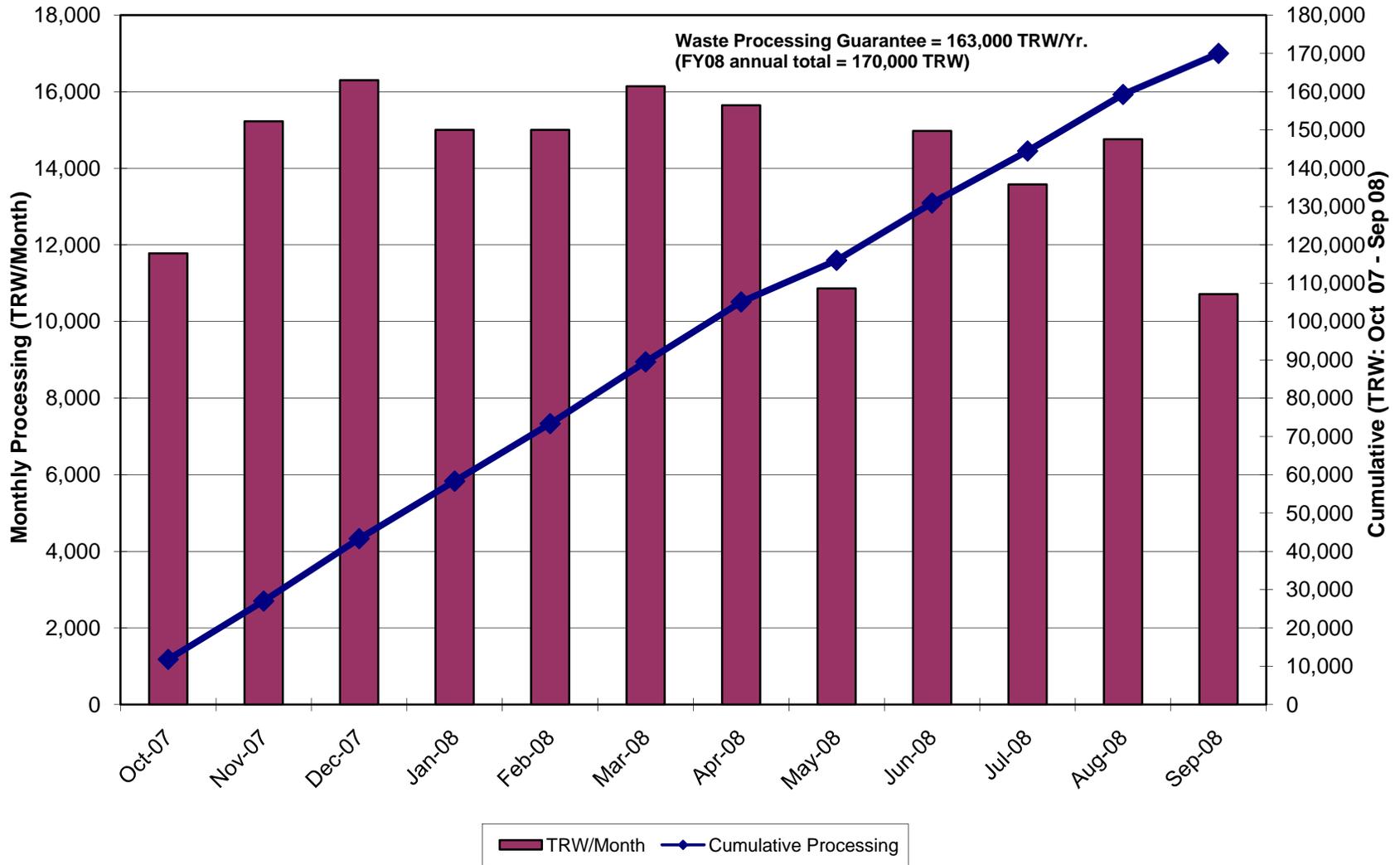


FIGURE 3-2 - Refuse Received - Comparison of FY 2008 & Avg. of FY 2003-08

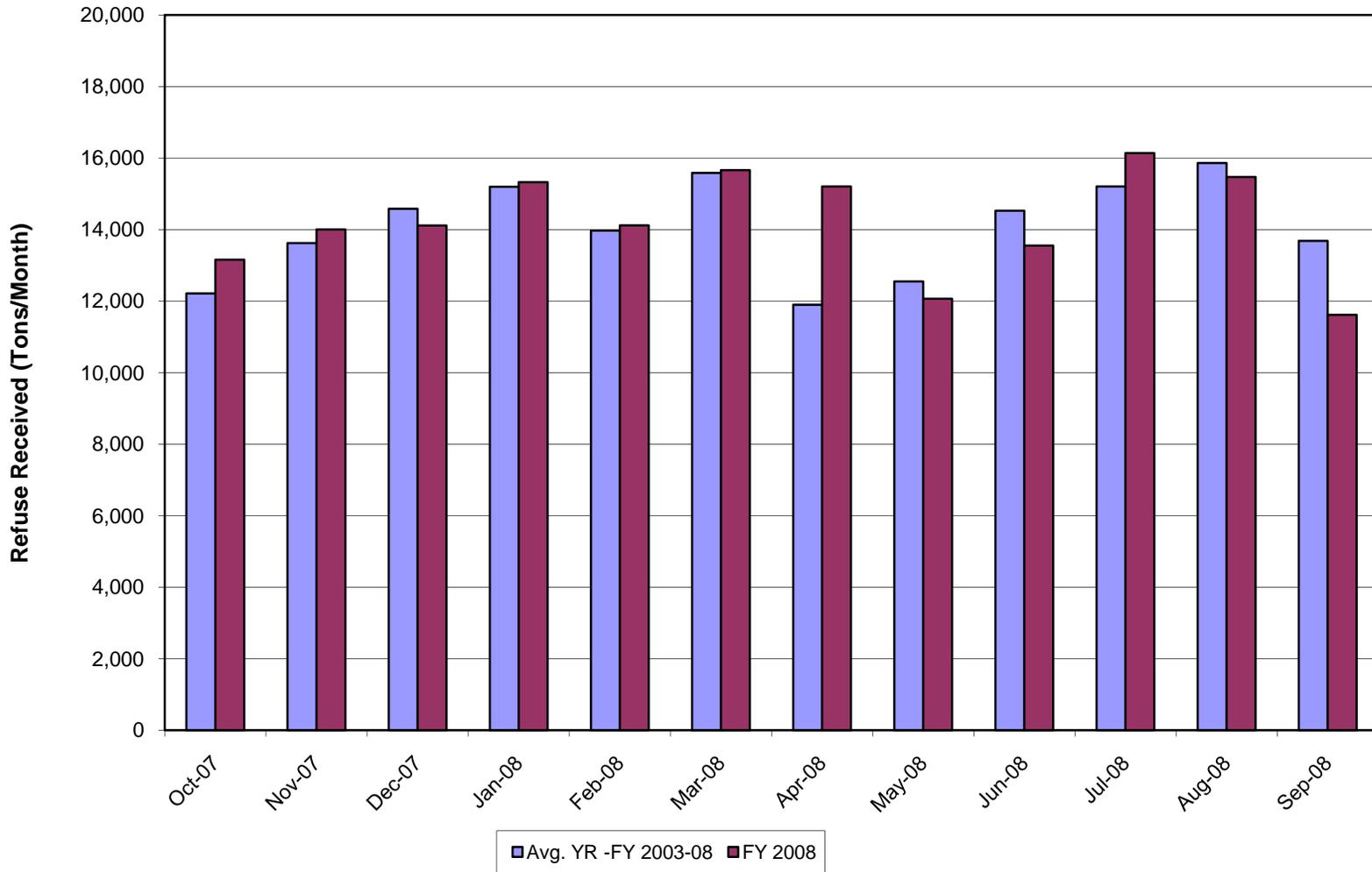


FIGURE 3-3 - Refuse Processed - Comparison of FY 2008 & Avg. of FY 2003-08

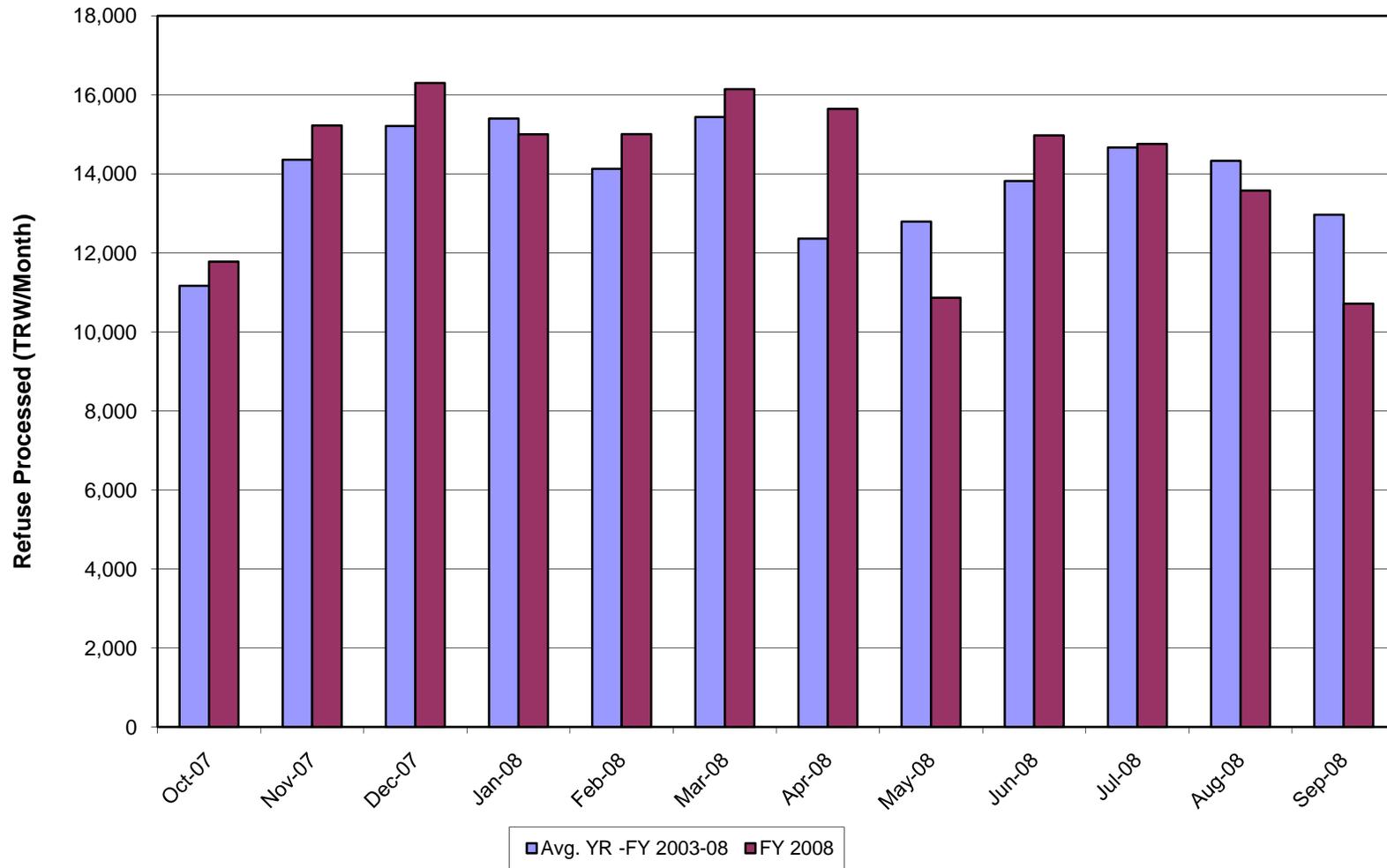


FIGURE 3-4 - Refuse Diverted to Landfill - Comparison of FY 2008 & Avg. of FY 2003-08

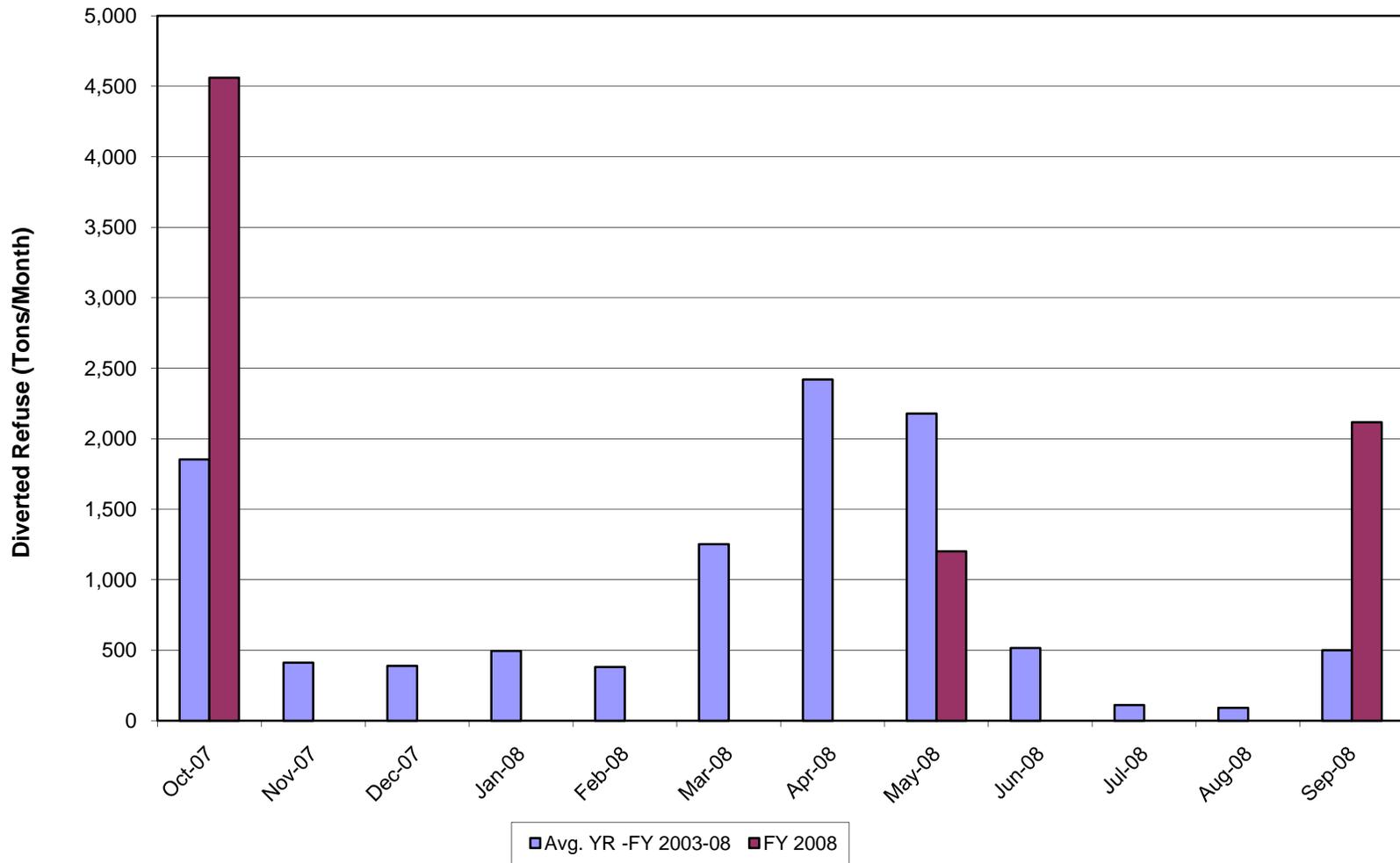


FIGURE 3-5 - Net Electricity Exported for Sale - Comparison of FY 2008 & Avg. of FY 2003-08

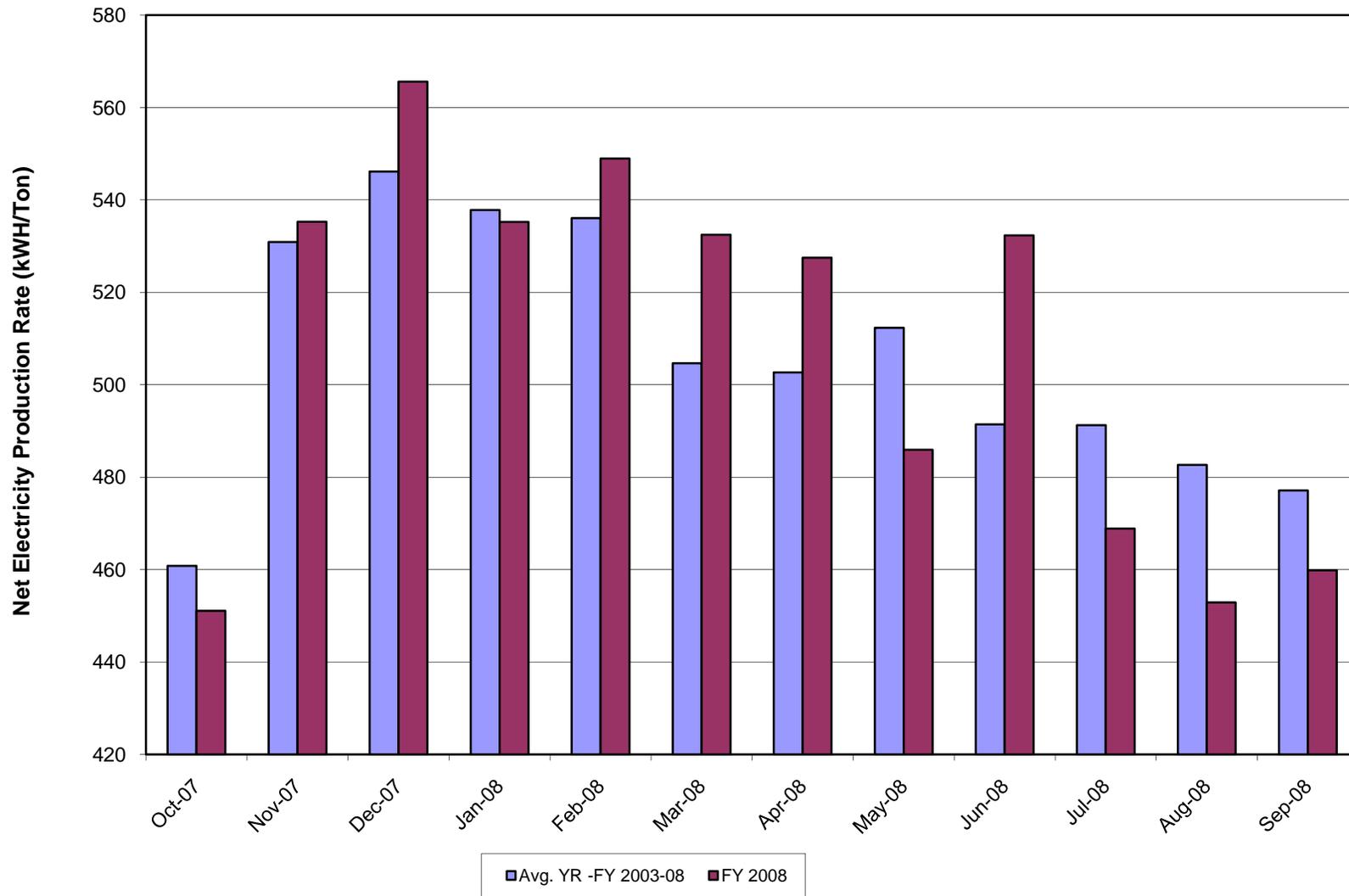


FIGURE 3-6 - Ferrous Metals Recovery Rate - Comparison of FY 2008 & Avg. of FY 2003-08

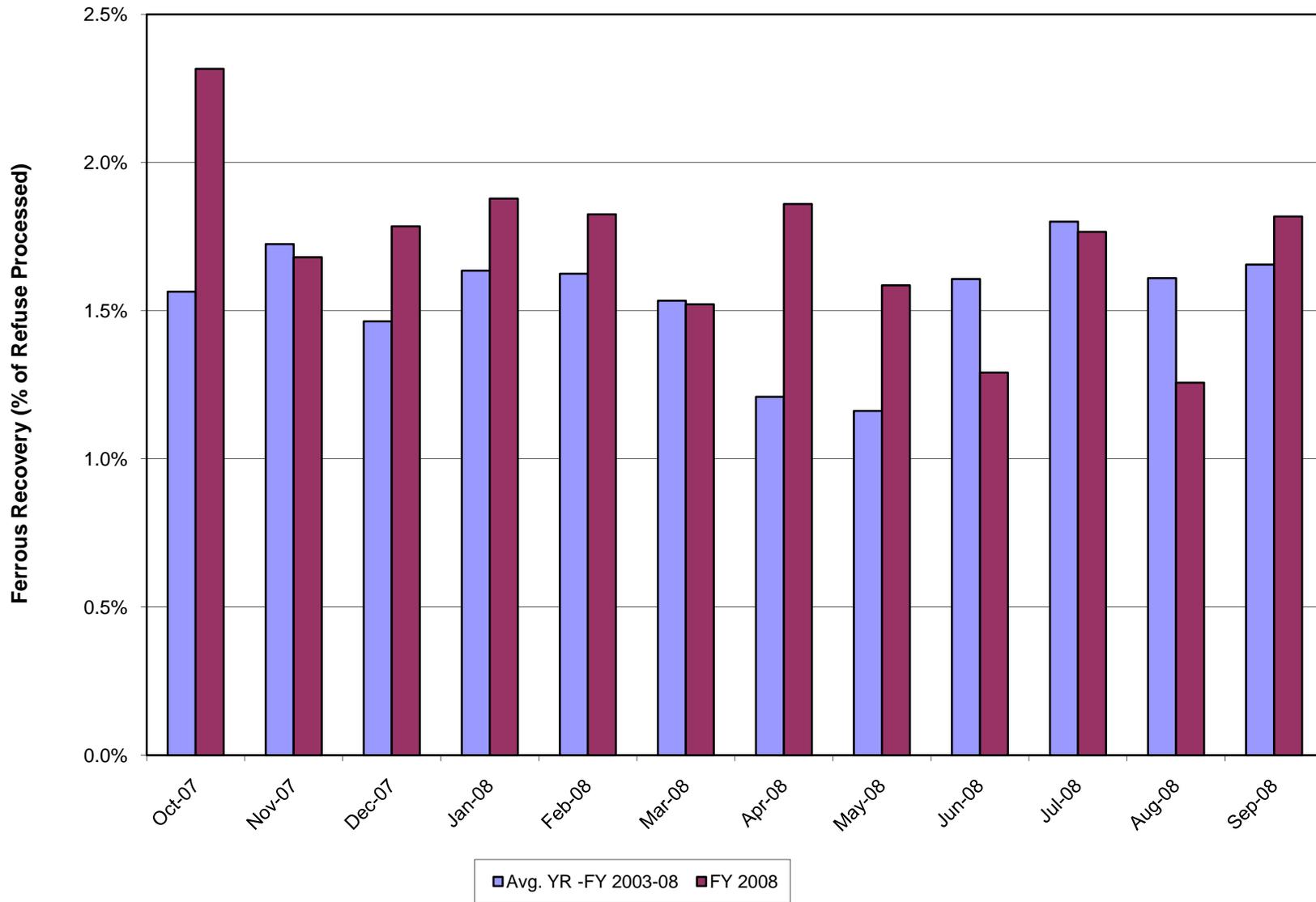


FIGURE 3-7 - Carbon Usage Rate - Comparison of FY 2008 & Avg. of FY 2003-08

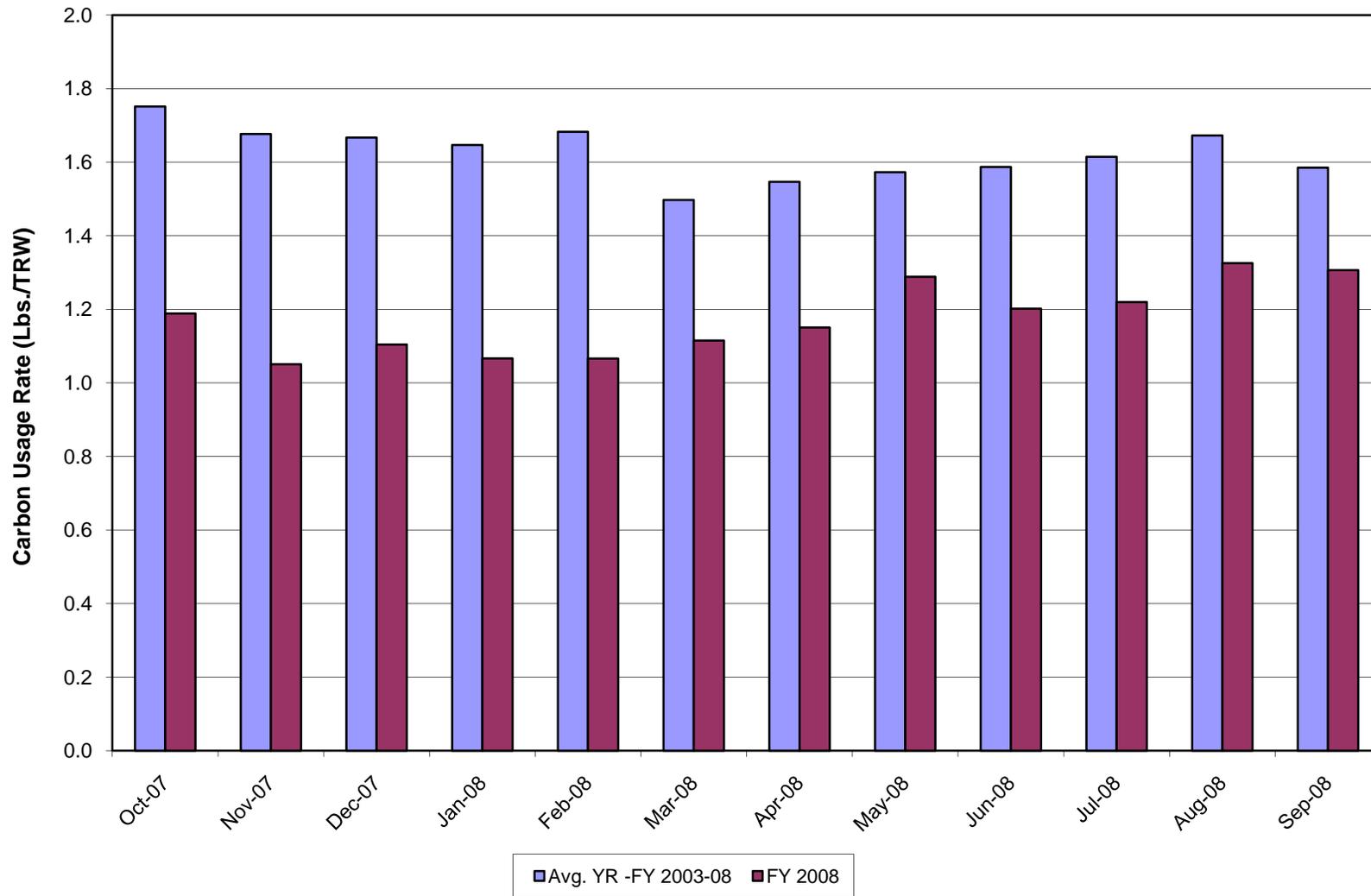


FIGURE 3-8 - Natural Gas Usage Rate - Comparison of FY 2008 & Avg. of FY 2003-08

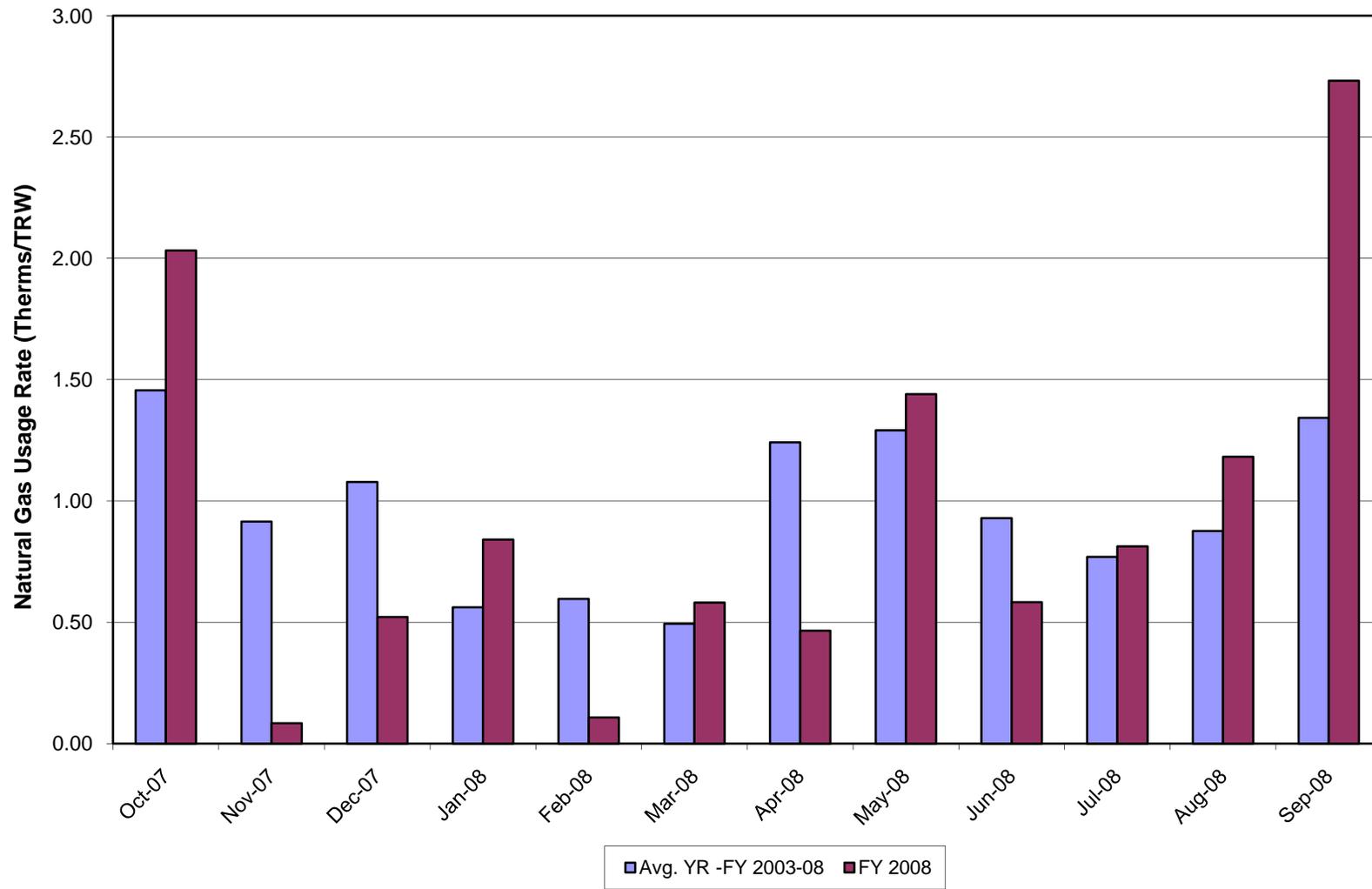
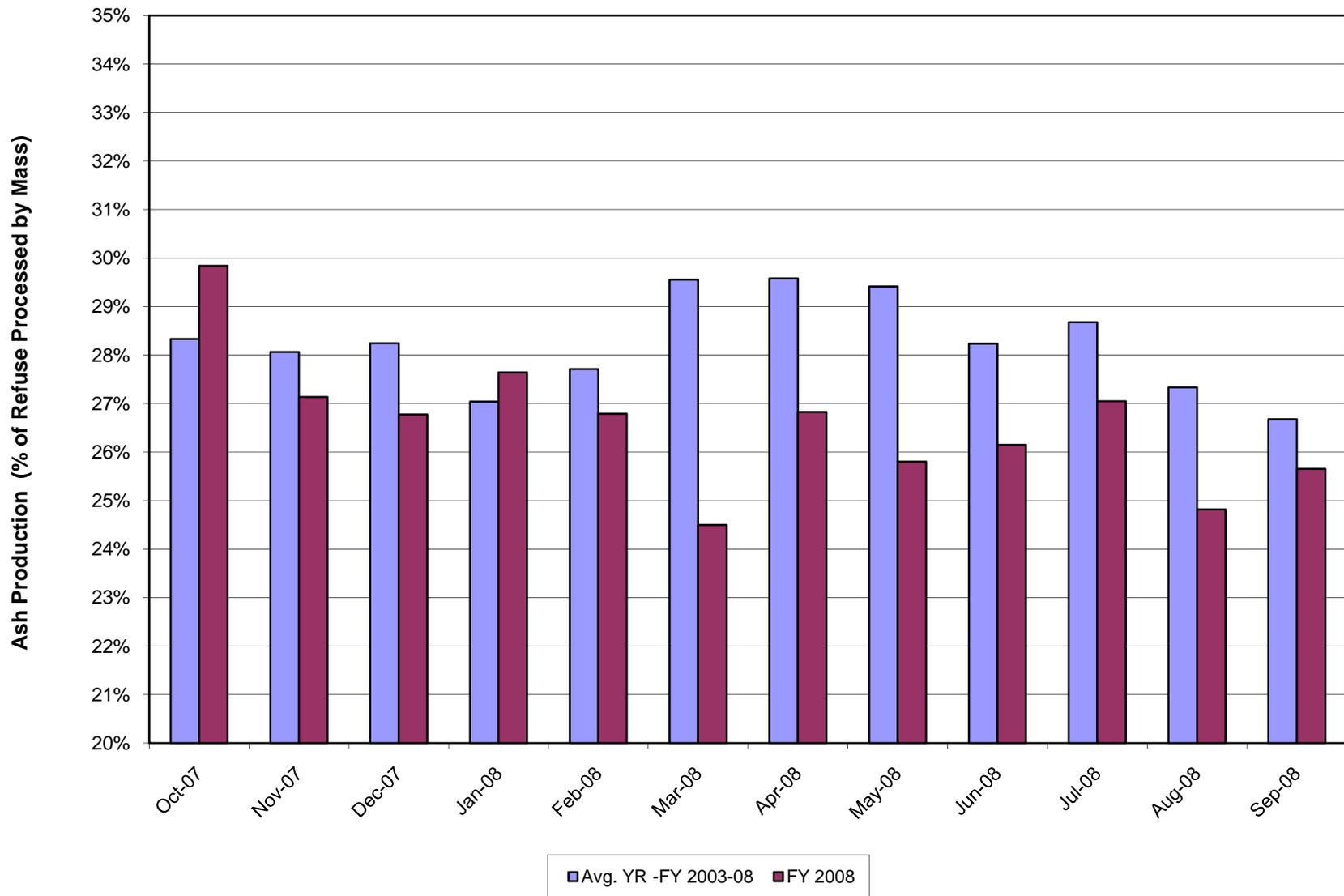


FIGURE 3-9 - Ash Production Rate - Comparison of FY 2008 & Avg. of FY 2003-08





Appendix 4 - Photographs

Photo 1 - Induced draft fan, base of stack, and bag-house: October 31, 2007.



Photo 2 - Cooling towers: October 31, 2007.



Photo 3 & 4 – Air pollution control equipment & structural framework: October 31, 2007.



Photo 5 & 6 – Ash discharger yoke assembly, old and new: May 19, 2008.



Photo 7 - New ash conveyor: May 19, 2008.



Photo 8 - Unit 2 fabric filters, detail: May 19, 2008.



Photo 9 - Outage service of boiler tubes, Unit 2 evaporator: May 19, 2008.



Photo 10- Example boiler tube replacement: May 19, 2008.



Appendix 5 - List of Typical Scheduled Outage Maintenance Tasks

Typical Scheduled Outage Maintenance Activities Performed by Covanta or a Contractor

- Explosive blast cleaning of the boiler gas passes (contractor).
- Semi-annual feedchute, riddlings, and seal air inspection.
- Semi-annual inspection of feedram hydraulic cylinders.
- Semi-annual tube shield inspection.
- Semi-annual sootblower inspection.
- Semi-annual ultrasonic thickness testing in accordance with Covanta Technical Standard 303.
- Installation of inconel overlay on the boiler waterwalls.
- Installation of carbon steel build-up on tubes in the furnace refractory area that may have become exposed due to refractory failure.
- Inspection of inconel overlay on furnace waterwalls and repaired 'holidays' and membrane as necessary.
- Repairs to damaged refractory on the furnace waterwalls (contractor).
- Installation of t-clip tube tile on the furnace sidewalls (contractor).
- Semi-annual feedtable inspection.
- Semi-annual feedchute, riddlings, and seal air inspection.
- Semi-annual inspection and cleaning of UFA preheater coils.
- Semi-annual greasing of UFA dampers.
- Semi-annual auxiliary burner inspection.
- Semi-annual measurement of OFA nozzles.
- Annual combustion fan coupling alignment and bearing inspection.
- Annual stoker hydraulic pumping station inspection.
- Annual internal inspection of flap-gate valves.
- Semi-annual ash discharger inspection.
- Semi-annual grate surface and undergrate inspections.
- Calibration checks on I/C system.