Alexandria Arlington Resource Recovery Facility

Fiscal Year 2025
Third Quarter Operations Report
~~Draft~~

May 2025

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Definition of Abbreviations & Acronyms

Abbreviation/Acronym	Definition
APC	Air Pollution Control
Apr	April
Aug	August
Avg	Average
BCU	Boiler Capacity Utilization
Btu	British thermal unit
CEMS	Continuous Emissions Monitoring System
CO	Carbon Monoxide
Dec	December
ECOM	Emergency Communications
Feb	February
FMG	Facility Monitoring Group
FY	Fiscal Year
gal	Gallon
GAT	Guaranteed Annual Tonnage
HCl	Hydrochloric (Hydrogen Chlorides)
HDR	HDR Engineering Inc
HHV	Estimated Waste Heating Value (Btu/lb)
ID	Induced Draft
Jan	January
Jul	July
Jun	June
klbs	Kilo-pounds (1,000 lbs)
kWh	Kilowatt hours (1,000 watt-hours)
lbs	Pounds
Mar	March
Max	Maximum
May	May
Min	Minimum
MSW	Municipal Solid Waste
MWh	Megawatt hours
No	Number
NOV	Notice of Violation
Nov	November
NO_x	Nitrogen Oxide
Oct	October
OSHA	Occupational Safety and Health Administration
ppm	Parts per million
ppmdv	Parts per million dry volume
PSD	Prevention of Significant Deterioration
Q1	First Quarter
Q2	Second Quarter
Q3	Third Quarter
Q4	Fourth Quarter
RAAI	Reworld Alexandria Arlington, Inc.
RE	Reportable Exempt
RNE	Reportable Non-Exempt
SDA	Spray Dryer Absorber
Sep	September
SO_2	Sulfur Dioxide
TCLP	Toxicity Characteristic Leaching Procedure
VADEQ	Virginia Department of Environmental Quality
yr	Year
YTD	Year to date

1.0 Purpose of Report

HDR Engineering, Inc. (HDR) was authorized by the Facility Monitoring Group (FMG) to conduct quarterly site assessments and provide quarterly reports regarding the operation and maintenance of the Reworld Alexandria/Arlington Waste-to-Energy Facility (Facility) for the 2025 Fiscal Year. This report is prepared for the third quarter of the 2025 Fiscal Year and summarizes Facility operations between January 1, 2025, and March 31, 2025. This report is based upon HDR's experience in the waste-to-energy industry, upon site observation visits and previous reports provided by HDR, and upon data provided by Reworld Alexandria/Arlington, Inc. (RAAI), the Facility owner and operator.

2.0 Executive Summary

RAAI operated the Facility in an acceptable manner and in accordance with established waste-to-energy industry practices during Q3FY25. The operation of the Facility, maintenance, safety, and overall cleanliness continue to be above average. The Facility did not experience any environmental permit deviations during the quarter.

During Q3FY25, the boilers experienced three (3) instances of scheduled downtime totaling 529 hours, six (6) instances of unscheduled downtime totaling 118 hours and no standby downtime. The turbine generators experienced two (2) instances of unscheduled downtime totaling 1 hour, two (2) instances of standby time totaling 33 hours. A detailed listing of downtime is provided in Section 5.1 of this report.

Average waste processed during the quarter was 942 tons per day, or 97% of nominal facility capacity which compares very favorably to industry averages. Waste deliveries averaged 928 tons per day, which is lower (1.5%) than the burn rate. Compared to the corresponding quarter in FY24, during Q3FY25 MSW processed was slightly lower (0.1%), steam production increased (3.4%), and electricity generated (gross) increased (3.9%). The increase in steam generation was attributable to the higher BCU and a higher (3.5%) waste heating value despite more (16.3 hours) downtime. The increase in electrical generation is

attributable to the increase in steam production (3.4%), less (183.5 hours) downtime experience by the Turbine Generators, and less operating time (24 fewer hours) during the quarter due to 2024 being a Leap Year.

3.0 Facility Inspection and Records Review

In April 2025, HDR met with the Facility management and other plant personnel to discuss Facility operations and maintenance, perform an independent visual inspection of the operating Facility, photograph areas of interest, and perform a review of recent Facility activity. HDR obtained operating data and monthly reports electronically from RAAI throughout the quarter and maintains a running tabulation of the status of corrective actions and plant performance trends. RAAI provides the following documents for each month:

- Facility Monthly Operating Reports
- Monthly Continuous Emissions Monitoring System (CEMS) Reports

Table 1 summarizes maintenance, repair, and plant condition issues reported during this and prior reporting periods. An “A” indicates an issue of the highest priority and worthy of immediate attention. Such items are usually safety or operability issues. A “B” indicates that the issue needs to be dealt with as quickly as possible but is not urgent. These items will usually result in a process improvement or will help avoid future “urgent” issues. A “C” indicates that the issue should be dealt with in due course but is not a priority issue. This category might include issues related to aesthetics, non-urgent maintenance, or housekeeping improvements which are not safety related. Note that HDR site assessments are generally performed while equipment is operating, and are not intended to address the internal condition, performance or life expectancy of mechanical, electrical, and electronic equipment and structures. HDR site assessments are only performed quarterly, generally representing findings on the day of the assessment. RAAI is responsible, without limitation, for operations, maintenance, environmental performance, and safety and should not rely on HDR observations or inspection reports which are overviews of Facility external conditions only.

Table 1: Summary of Inspection Report Deficiencies

*A is highest priority & demands immediate attention: B needs attention but is not urgent; C can be addressed at earliest opportunity & is not urgent.

Item No.	Inspection Report Deficiencies	Issue Reported	Priority*	HDR Recommendation	Status	Open / Closed
1	Pavement spider-cracking at Tipping Floor Entrance	November 2016	C	Resurface section of pavement at Tipping Floor Entrance	**Status Unchanged**	Open
2	SDA Penthouse No. 3 Door deteriorated at base	November 2017	C	Patch and Paint Door – Replace if necessary	**Status Unchanged**	Open
3	Deterioration behind lime slurry piping in SDA Penthouse No. 2	August 2019	C	Conduct painting preservation measures	**Status Unchanged**	Open
4	Siding deteriorated beneath Baghouse No. 3 Hoppers	August 2019	C	Replace siding	**Status Unchanged**	Open
5	Siding on north side of Baghouse No. 2 Deteriorated	February 2020	C	Replace siding and conduct painting preservation measures	**Status Unchanged**	Open
6	Damaged/Missing insulation and lagging throughout Facility	August 2020	C	Perform audit of all steam piping and replace damaged/missing insulation and lagging throughout the Facility as needed	**Status Unchanged**	Open
7	Insulation and lagging damaged/deteriorated around Boiler No. 3 Steam Drum	February 2021	C	Replace insulation and lagging	**Status Unchanged**	Open
8	Baghouse hopper heaters set to manual; heater off but signaling low temperature.	February 2021	B	Repair hopper heaters	**Status Unchanged – Refer to Figure 23**	Open
9	Feed Chute Cooling Jacket Water Level Boxes empty on Boilers No. 1	May 2021	B	Repair feed chute cooling jacket water level boxes	**Modified to only Boiler No. 1**	Open
10	Uneven water flow from Cooling Tower nozzle/distribution on southeast side of tower	August 2021	C	Repair nozzle	**Status Unchanged**	Open
11	A temporary pump is being utilized on the ground floor of the Turbine Hall to transport wastewater from the trench drains to the Cooling Tower basin.	November 2022	B	Consider a permanent pump installation in lieu of temporary.	**Status Unchanged**	Open
12	There is a small section of building siding missing on the east side (near the Tipping Floor entrance).	May 2023	C	Repair/Replace siding.	**Status Unchanged**	Open
13	Grounding wire on southwest corner of Cooling Tower not secured.	May 2023	B	Repair grounding wire.	**Status Unchanged**	Open
14	There is a hole in stairs near Boiler No. 1 grate system.	May 2024	B	Repair stairs.	**Repaired – Refer to Figure 13**	Closed
15	Steam leak identified West side of Boiler No. 2 auxiliary burner elevation	August 2024	B	Repair leak	**Status Unchanged**	Open
16	Insulation missing around main steam isolation valve on Boiler No. 3.	August 2024	C	Add Insulation	**Status Unchanged**	Open
17	Cooling Tower water siding deteriorating	August 2024	C	Repair siding	**Status Unchanged**	Open
18	Corrosion on Circulating Water Pump Housing	August 2024	C	Replace housing	**Status Unchanged**	Open

Item No.	Inspection Report Deficiencies	Issue Reported	Priority*	HDR Recommendation	Status	Open / Closed
19	Roof ventilation fan above deaerator not operating	August 2024	C	Repair fan	**Status Unchanged**	Open
20	Refractory damage around G9B-11 sootblower on Boiler No. 1	August 2024	C	Repair refractory	**Status Unchanged**	Open
21	Tipping Floor exit door remains open during accepting hours.	October 2024	B	Review functionality and requirements. Door was designed to be operated automatically during accepting hours.	**In Operation during Site Visit. Refer to Figure 9**	Closed
22	Minor leak on Unit 1 external piping on LN Nozzle elevation	October 2024	C	Repair Leak	**Status Unchanged**	Open
23	Boiler penthouse lights are out of service over Boiler No. 1	October 2024	C	Repair Lighting	**Status Unchanged**	Open
24	Boiler No. 1 side wall of feed chute in poor condition	December 2024	B	Repair patch and replace feedchute	**Status Unchanged**	Open
25	Sootblower seal air disconnected on Boiler No. 2 IK-08	April 2025	B	Repair connection	**New Deficiency. Refer to Figure 17**	Open
26	Sootblower seal air disconnected on Boiler No. 2 G9-B11	April 2025	B	Repair connection	**New Deficiency. Refer to Figure 18**	Open
27	Boiler No. 3 Feed Chute has several new holes	April 2025	B	Patch Holes	**New Deficiency. Refer to Figure 16**	Open

4.0 Facility Performance

Monthly operating data provided by RAAI indicates that 84,777 tons of MSW were processed during Q3FY25, and a total of 83,483 tons of MSW including 1,358 tons of Special Handling Waste (1.6% by weight) were received. Total ash production during the quarter was 17,117 tons, which represents 20.2% of the waste processed. The average uncorrected steam production rate for Q3FY25 was 3.1 $tons_{steam}/ton_{waste}$, which is higher (3.4%) than the corresponding quarter in FY24. The rate improvement can be attributable to the HHV increase (3.5%) compared to Q3FY24.

Chart 1: Tons of Waste Processed

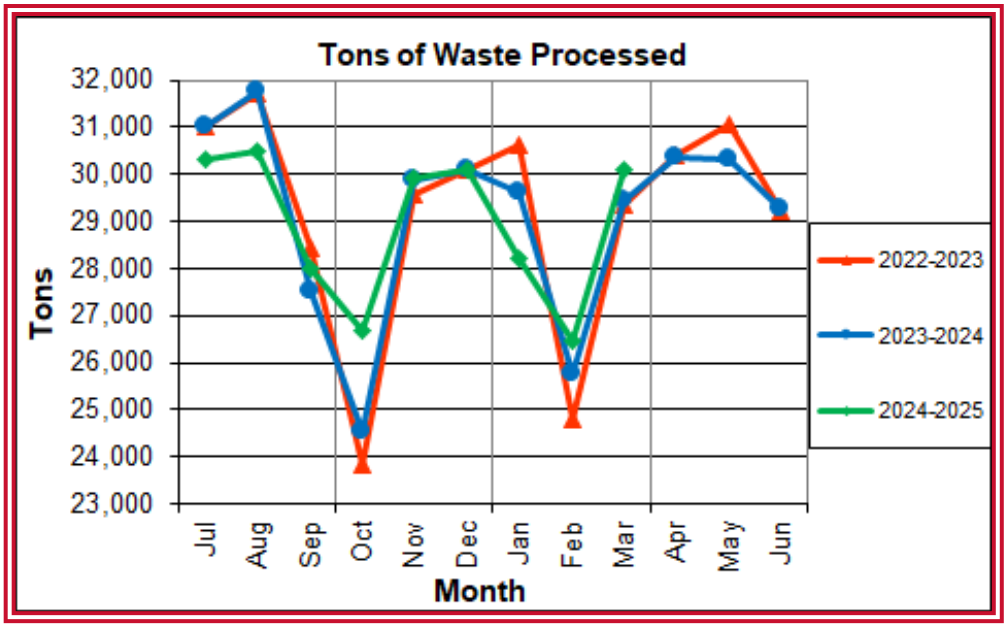


Chart 1 illustrates that Q3FY25 waste processed was slightly lower (0.1%) than Q3FY24 which had one extra day due to the Leap Year, despite more (16.3 hours) downtime experienced by the boilers during this quarter. RAAI reported that 643 tipping floor/MSW internal inspections were performed during the quarter and there was one (1) Notice of Violation (NOV) issued to a hauler in March for speeding.

Chart 2: Tons of Ash Produced per Ton of Waste Processed

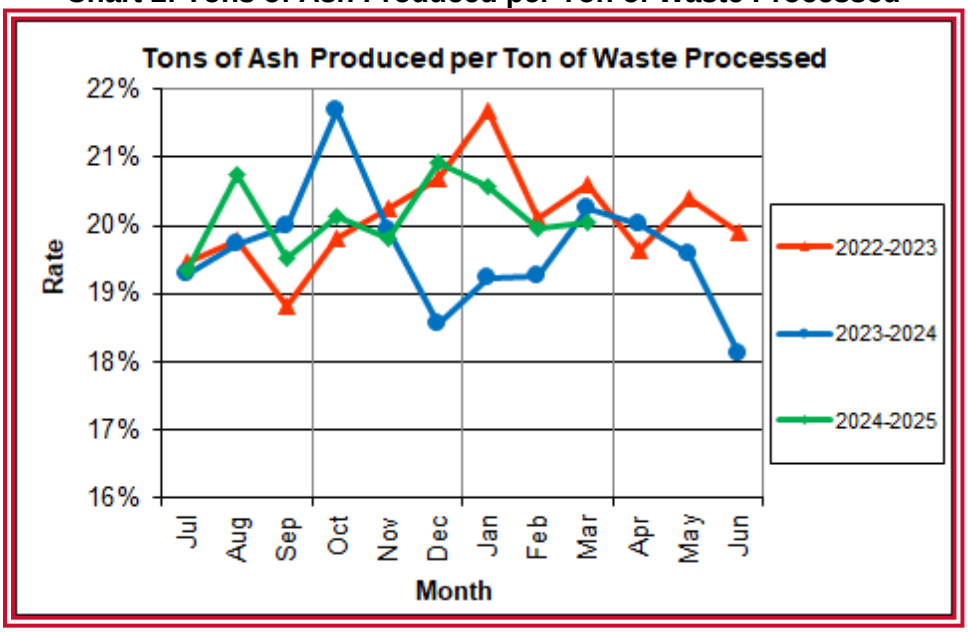


Chart 2 illustrates that the average ash production rate in Q3FY25 slightly increased (0.6 percentage points) to 20.2% of processed waste, compared to the corresponding quarter in FY24 when the rate was 19.6%.

Chart 3: Ferrous Recovery Rate

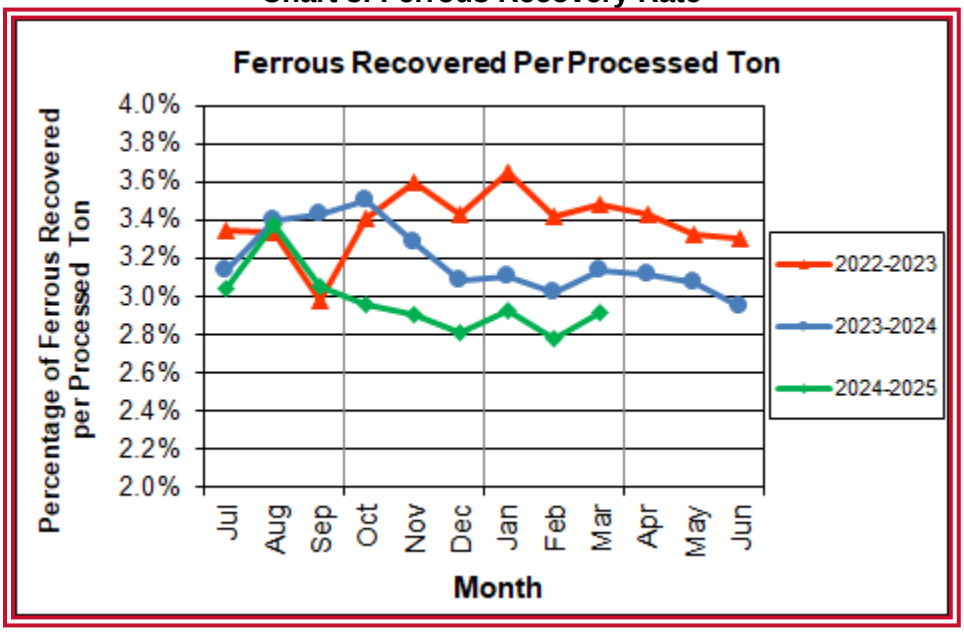
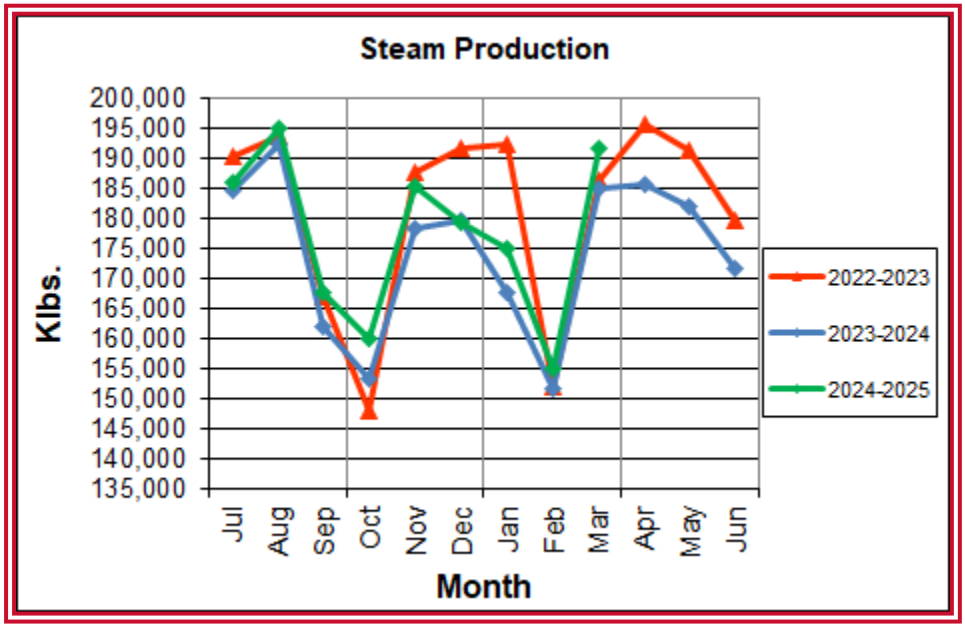


Chart 3 depicts the monthly ferrous metal recovery rate as a percentage of processed MSW tonnage. In Q3FY25, 2,439 tons of ferrous metals were recovered, which is 6.9% lower than the corresponding quarter in FY24, and the sixth consecutive month that this metric underperformed the corresponding quarter

in prior two (2) fiscal years. Chart 3 illustrates that the ferrous recovery rate in Q3FY25 was 0.2 percentage points lower, at 2.9% of processed waste, compared to the corresponding quarter in FY24 when the rate was 3.1%. Throughout FY25, the ferrous recovery rate has continued to trend downward despite more (0.3%) waste processed in the fiscal year to date, despite one less day of operations compared to Q3FY24 which was a Leap Year.

Chart 4: Steam Production



In Chart 4, the total steam production for Q3FY25 was 521,683 klbs, 3.4% higher than the corresponding quarter in FY24. The increase in steam production, despite more downtime experienced by the refuse boilers, is attributable to the increase in HHV (3.5%) offset by the Leap Year in Q3FY24.

Chart 5: 12-Month Rolling Steam Production

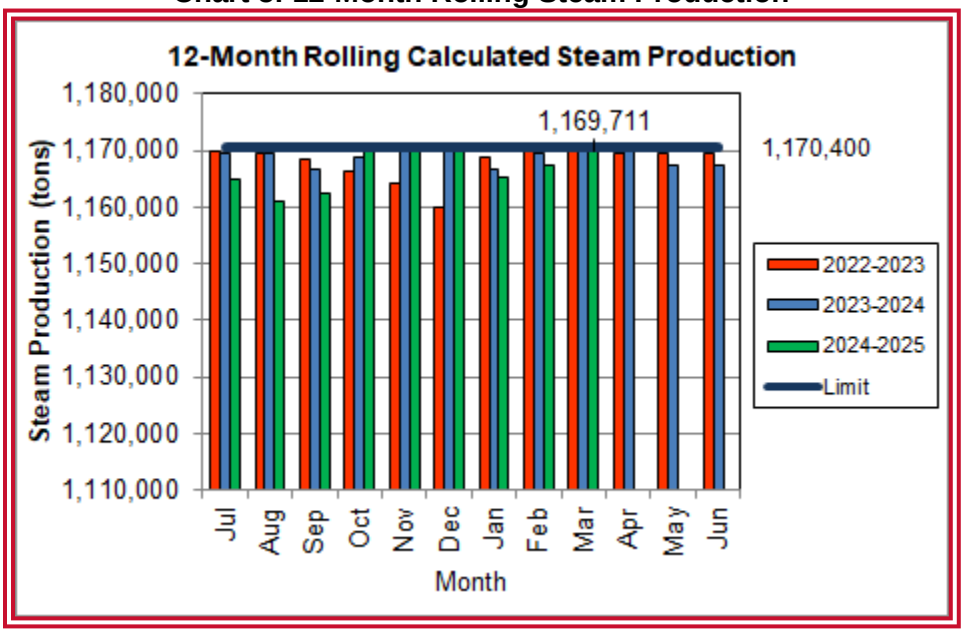
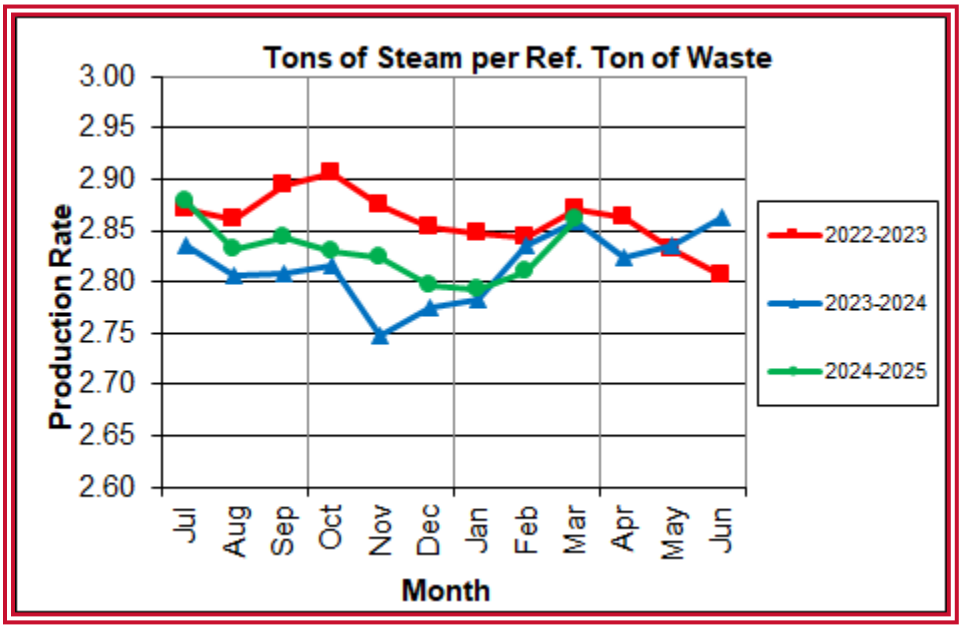


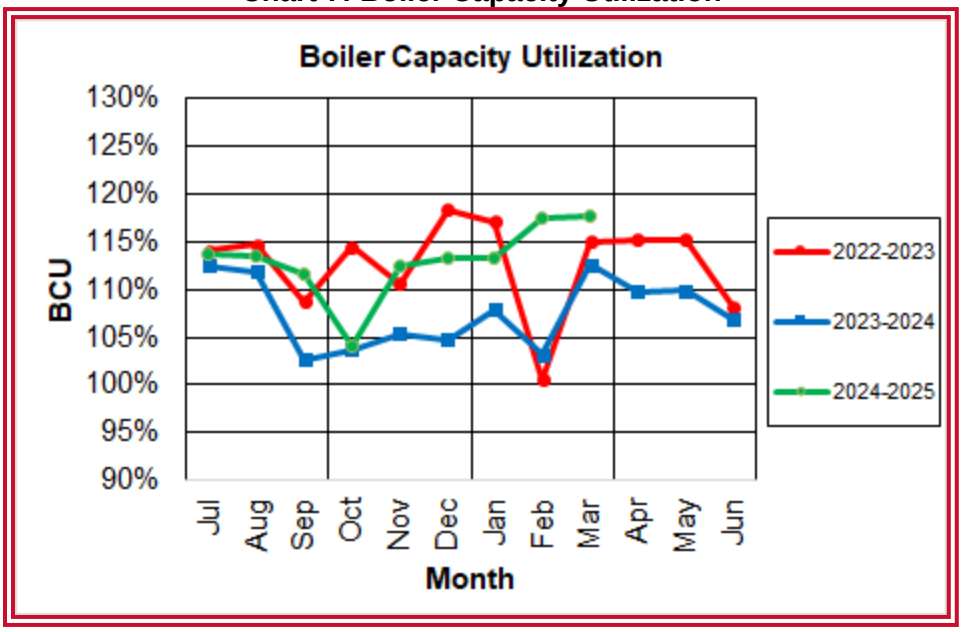
Chart 5 depicts the 12-month rolling steam production for Q3FY25, and for the previous two (2) fiscal years. According to the Title V permit, the annual steam production for the Facility shall not exceed 1,170,400 tons based on an average value of 3.34 lbs. of steam per lb. of MSW processed, calculated monthly as the sum of each consecutive 12-month period. The Facility complied with the 12-month rolling steam production total every month in Q3FY25. The 12-month rolling total for steam production ending in March 2025 was 1,169,711 tons, which is 99.9% of the limit. Chart 5 shows that Facility throughput, and in turn, steam and electricity production are being throttled to stay below the steam production permit limit each month.

Chart 6: Steam Production Rate



In Chart 6, the conversion of raw waste tonnages into “reference tons” is another way of analyzing steam production and helps to determine whether changes are related to boiler performance or to fuel issues. “Reference tons” are adjusted to account for the calculated average fuel heating value, so that lower BTU fuel raw tonnages are adjusted upwards and vice versa. In Q3FY25, this metric tracked slightly less (0.1%) at 2.82 $tons_{steam}/ton_{ref}$ compared to the corresponding quarter in FY24 (2.83 $tons_{steam}/ton_{ref}$).

Chart 7: Boiler Capacity Utilization



In Chart 7, the boiler capacity utilization (BCU) refers to the total steam production in respect to the total availability. This metric demonstrates how the boilers are operating compared to the design maximum continuous rating (MCR) when the units are online. The BCU during Q3FY25 was 116% compared to the corresponding quarter in FY24 when the BCU was 108%, indicative of the boilers being operated at a higher capacity despite more downtime.

Chart 8: Calculated Waste Heating Value

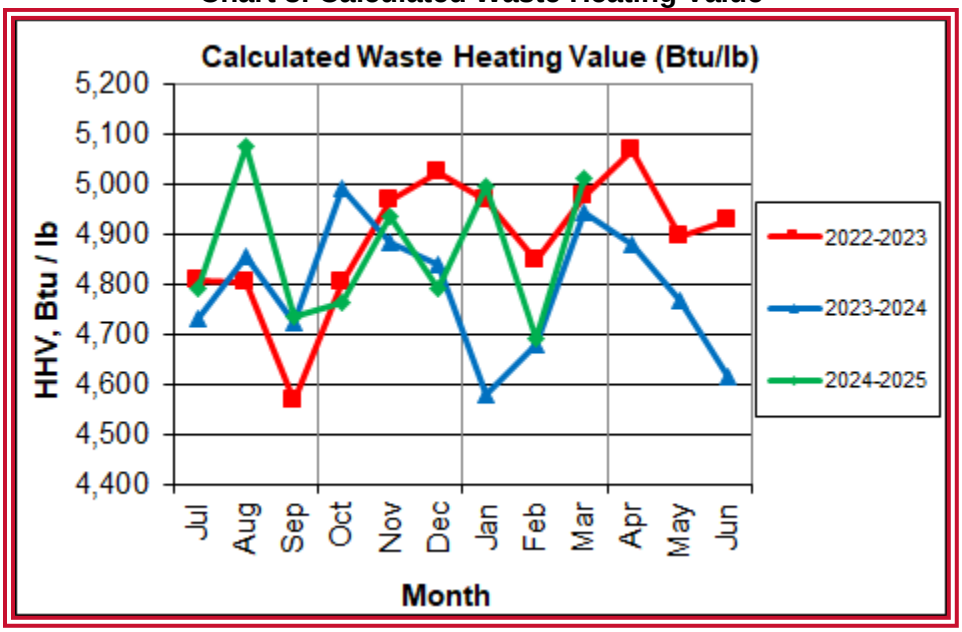


Chart 8 illustrates that the Q3FY25 calculated average waste heating value was higher (3.5%) at 4,899 Btu/lb than the corresponding quarter in FY24, which averaged 4,735 Btu/lb. Note that 19.4[1] inches of precipitation were recorded at Ronald Reagan National Airport during Q3FY25, which is 4.0 inches more than the corresponding quarter in FY24 and does not correlate to the trend.

[1] https://www.wunderground.com/

Table 2: Quarterly Performance Summaries

Month		Waste Processed (tons)	Waste Diverted (tons)	Ash Shipped (tons)	Special Handling (Supplemental) (tons)	Ferrous Recovered (tons)	Steam Produced (klbs)	Net Electrical Generation (MWh)
Q3FY23	**Quarterly Totals**	**84,806**	**0**	**17,678**	**1,733**	**2,987**	**531,041**	**37,059**
	January-23	30,627	0	6,640	559	1,116	192,524	13,871
	February-23	24,821	0	4,993	592	849	152,100	10,416
	March-23	29,358	0	6,045	582	1,022	186,417	12,772
Q3FY24	**Quarterly Totals**	**84,820**	**0**	**16,620**	**1,548**	**2,621**	**504,648**	**34,217**
	January-24	29,629	0	5,697	500	920	167,742	11,514
	February-24	25,752	0	4,962	492	777	151,839	10,074
	March-24	29,439	0	5,961	556	924	185,067	12,629
Q3FY25	**Quarterly Totals**	**84,777**	**0**	**17,117**	**1,358**	**2,439**	**521,683**	**36,076**
	January-25	28,211	0	5,802	416	825	174,980	11,992
	February-25	26,480	0	5,288	372	737	155,067	10,531
	March-25	30,086	0	6,027	570	877	191,636	13,553
FY25 YTD Totals		**260,317**	**0**	**52,379**	**4,078**	**7,751**	**1,594,712**	**107,361**
FY24 Totals		**259,587**	**0**	**51,219**	**5,052**	**8,382**	**1,555,175**	**104,969**
FY23 Totals		**259,464**	**0**	**52,271**	**5,431**	**8,834**	**1,609,398**	**104,910**

Table 2 presents the production data provided to HDR by RAAI for Q3FY25 on both a monthly and quarterly basis. For purposes of comparison, Q3FY23 and Q3FY24 are shown, as well as FY23, FY24 and FY25 year-to-date (YTD) totals.

In comparing quarterly totals, the data shows:

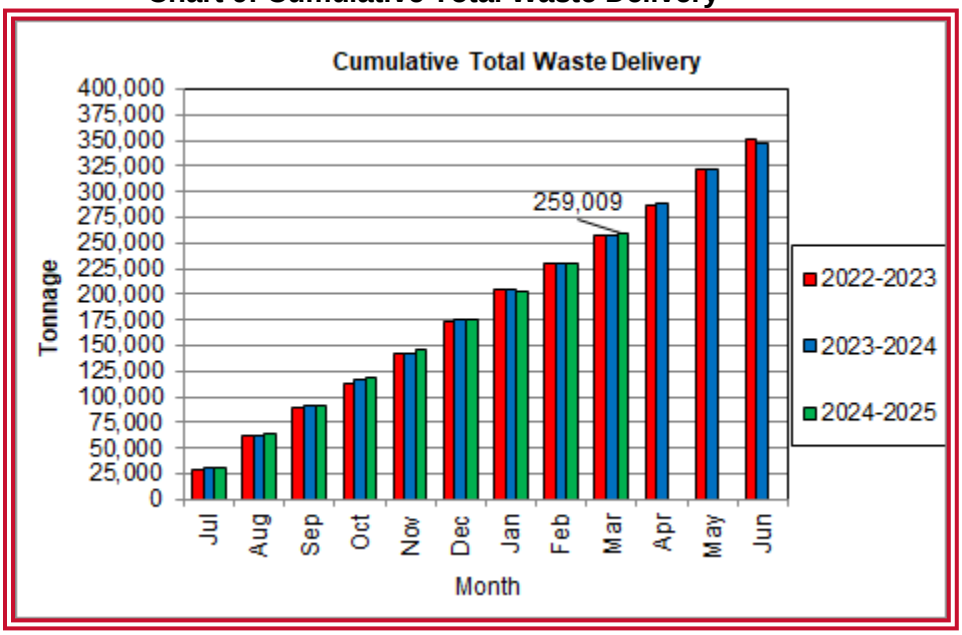
- Less waste was processed in Q3FY25 than Q3FY24 and Q3FY23
- More steam was generated in Q3FY25 than Q2FY24 but less than Q3FY23
- More electricity (net) was generated in Q3FY25 than Q3FY24 but less than Q3FY23
- Less supplemental waste was received in Q3FY25 than Q3FY24 and Q3FY23

Note that the total steam generation figures presented in Table 2 do not correlate with the annual steam production limit from the Facility Permit; such limits apply on an annual rolling average, evaluated monthly.

Table 3: Waste Delivery Classification

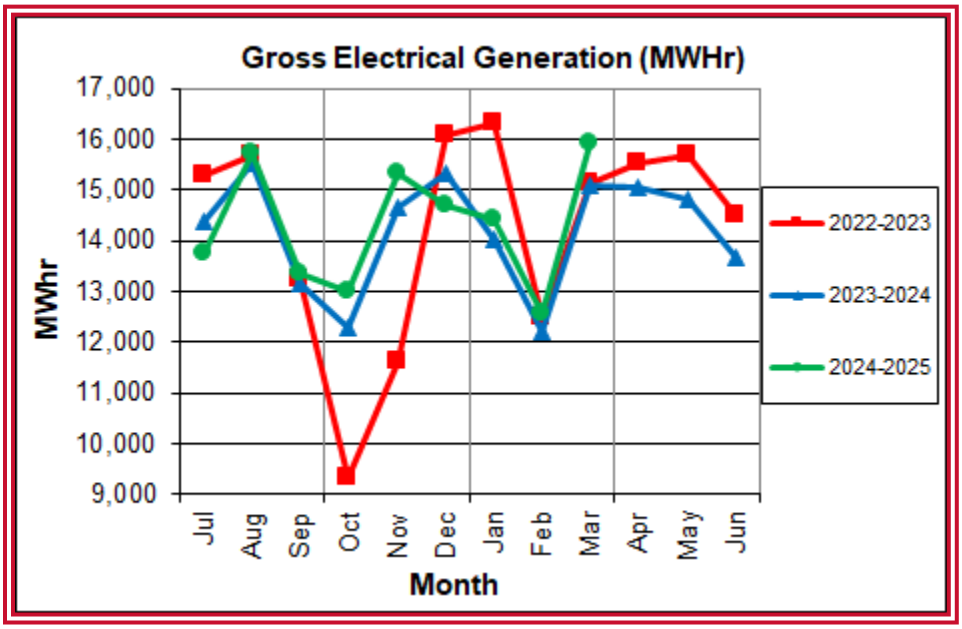
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Totals	% of Total
FY21	City Waste	1,583	1,905	2,121	1,906	1,970	1,999	1,556	1,393	2,038	2,102	2,042	2,197	22,811	6.55%
	County Waste	2,377	2,713	2,711	2,589	2,550	2,646	2,365	2,054	2,441	2,472	2,542	2,682	30,143	8.66%
	Municipal Solid Waste	22,517	26,941	24,523	22,102	19,209	25,831	22,419	20,046	25,980	25,621	25,260	24,603	285,053	81.88%
	Supplemental Waste	691	1,139	927	1,045	930	859	895	1,070	747	653	519	641	10,117	2.91%
	MSW Totals	**27,169**	**32,698**	**30,282**	**27,642**	**24,659**	**31,336**	**27,234**	**24,562**	**31,207**	**30,848**	**30,363**	**30,123**	**348,124**	**100.00%**
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Totals	% of Total
FY22	City Waste	1,853	2,080	2,042	1,855	2,002	1,914	1,628	1,570	1,900	1,895	2,107	2,203	23,049	6.58%
	County Waste	2,516	2,403	2,457	2,184	2,463	2,489	2,232	2,192	2,519	2,394	2,761	2,717	29,337	8.38%
	Municipal Solid Waste	24,682	26,646	25,378	19,376	23,834	27,424	24,212	19,114	23,465	25,745	27,057	23,637	290,569	83.01%
	Supplemental Waste	688	778	479	514	534	499	448	349	626	685	756	735	7,090	2.03%
	MSW Totals	**29,740**	**31,907**	**30,356**	**23,929**	**28,832**	**32,326**	**28,520**	**23,225**	**28,510**	**30,719**	**32,681**	**29,291**	**350,035**	**100.00%**
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Totals	% of Total
FY23	City Waste	1,841	2,020	1,874	1,827	2,046	1,872	1,880	1,566	1,829	1,887	2,035	1,913	22,590	6.43%
	County Waste	2,339	2,471	2,454	2,188	2,448	2,333	2,453	2,092	2,444	2,104	2,656	2,571	28,552	8.13%
	Municipal Solid Waste	24,434	26,977	23,660	17,994	24,827	25,487	26,656	21,209	23,673	24,530	29,037	24,013	292,500	83.32%
	Supplemental Waste	656	797	682	444	582	537	559	592	582	567	682	723	7,403	2.11%
	MSW Totals	**29,270**	**32,265**	**28,670**	**22,454**	**29,905**	**30,229**	**31,548**	**25,460**	**28,527**	**29,087**	**34,410**	**29,220**	**351,045**	**100.00%**
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Totals	% of Total
FY24	City Waste	1,780	2,149	1,746	1,735	1,889	1,688	1,829	1,603	1,650	1,887	2,106	1,812	21,874	6.29%
	County Waste	2,521	2,755	2,461	2,519	2,612	2,465	2,543	2,378	2,437	2,650	2,966	2,545	30,852	8.87%
	Municipal Solid Waste	25,031	26,225	23,276	19,985	22,285	26,796	25,750	20,805	23,119	26,211	27,185	20,780	287,450	82.64%
	Supplemental Waste	692	702	529	628	482	471	500	492	556	505	535	503	6,596	1.90%
	MSW Totals	**30,024**	**32,911**	**28,013**	**24,867**	**27,269**	**31,420**	**30,623**	**25,278**	**27,763**	**31,253**	**32,792**	**25,639**	**347,852**	**100.00%**
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Totals	% of Total
FY25	City Waste	1,837	1,660	1,648	1,869	1,694	1,778	1,610	1,492	1,710				15,298	5.91%
	County Waste	2,640	2,738	2,619	2,946	2,611	2,715	2,549	2,205	2,305				23,328	9.01%
	Municipal Solid Waste	25,456	28,049	23,255	21,665	23,669	23,957	23,405	22,533	24,306				216,297	83.51%
	Supplemental Waste	453	480	349	397	609	432	416	372	578				4,086	1.58%
	MSW Totals	**30,387**	**32,927**	**27,871**	**26,877**	**28,582**	**28,882**	**27,981**	**26,603**	**28,899**				**259,009**	100.00%

Chart 9: Cumulative Total Waste Delivery



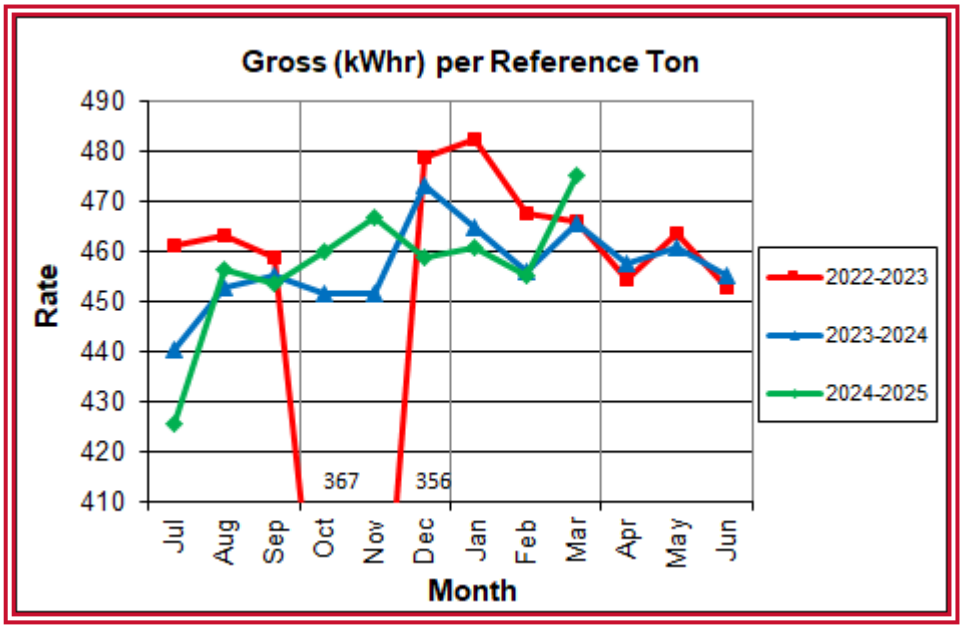
As depicted in Table 3 and Chart 9, Q3FY25 total waste delivery was consistent with Q3FY24 and Q3FY23.

Chart 10: Gross Electrical Generation



During Q3FY25, the Facility generated 42,919 MWh (gross) of electricity, an increase (3.9%) compared to the Q3FY24 generation of 41,299 MWh (gross). The increase in gross electrical production is attributable to the increase in steam production (3.4%) and less (184 hours) turbine generator downtime, offset by less operating time due to FY24 being a Leap Year.

Chart 11: Gross Conversion Rate



As shown in Chart 11, the average gross electrical generation per reference ton of refuse processed during Q3FY25 was 462 kWh per reference ton, which is 0.7% more than the corresponding quarter in FY24 due to less (184 hours) turbine-generator downtime.

Chart 12: Net Conversion Rate

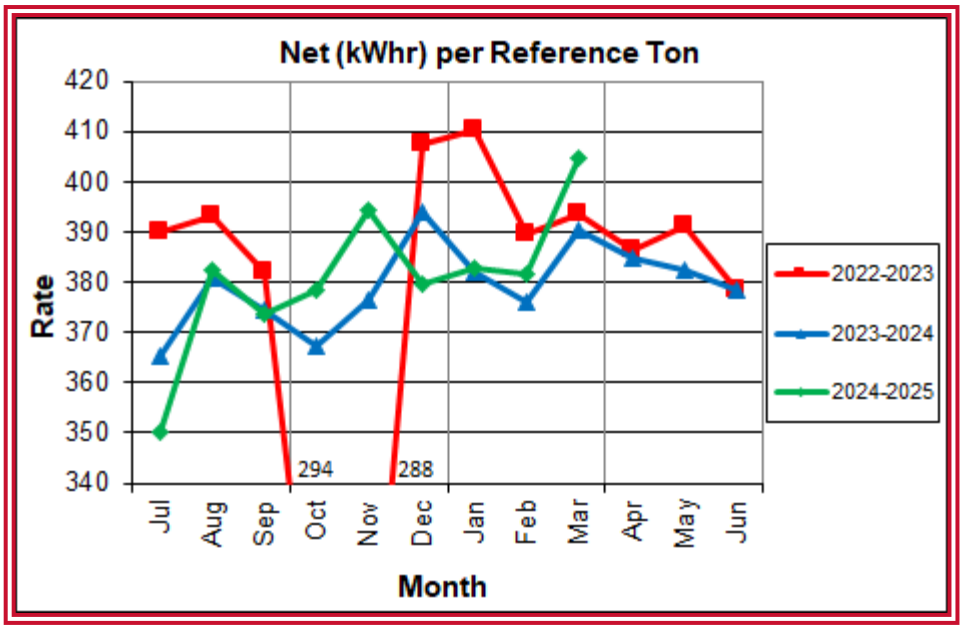


Chart 12 depicts the normalized net power generation (gross minus in-house usage). In Q3FY25, the average net electrical generation per reference ton was 390 kWh per ton, which is 1.8% higher than the corresponding quarter in FY24.

Chart 13: Net Conversion Rate

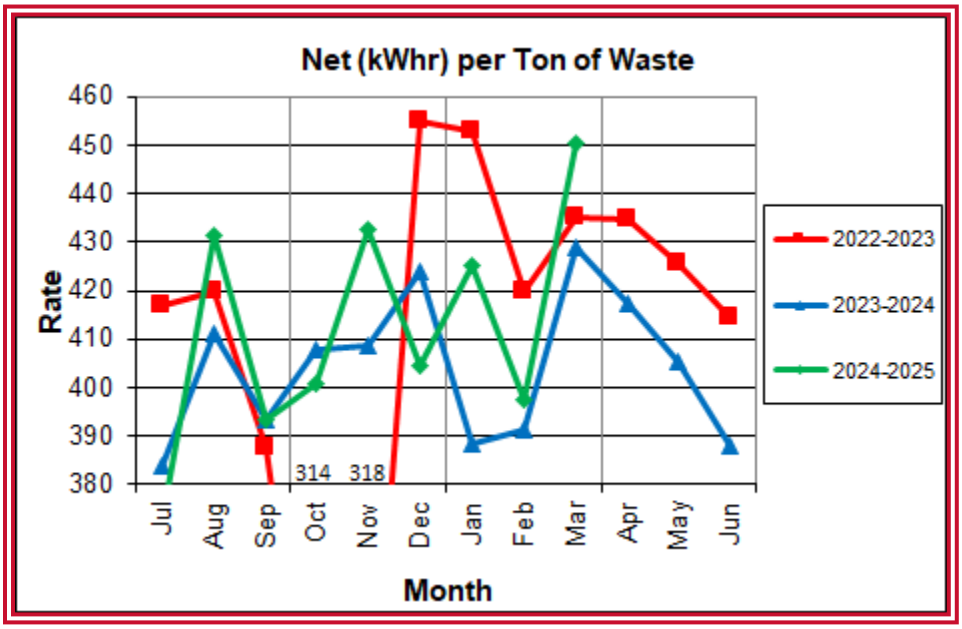


Chart 13 depicts the net power generation per processed ton. The net electrical generation per processed ton in Q3FY25 was 424 kWh per ton, which is higher (5.3%) than the corresponding quarter in FY24 due to less (184 hours) turbine-generator downtime.

Chart 14: Gross Turbine Generator Conversion Rate

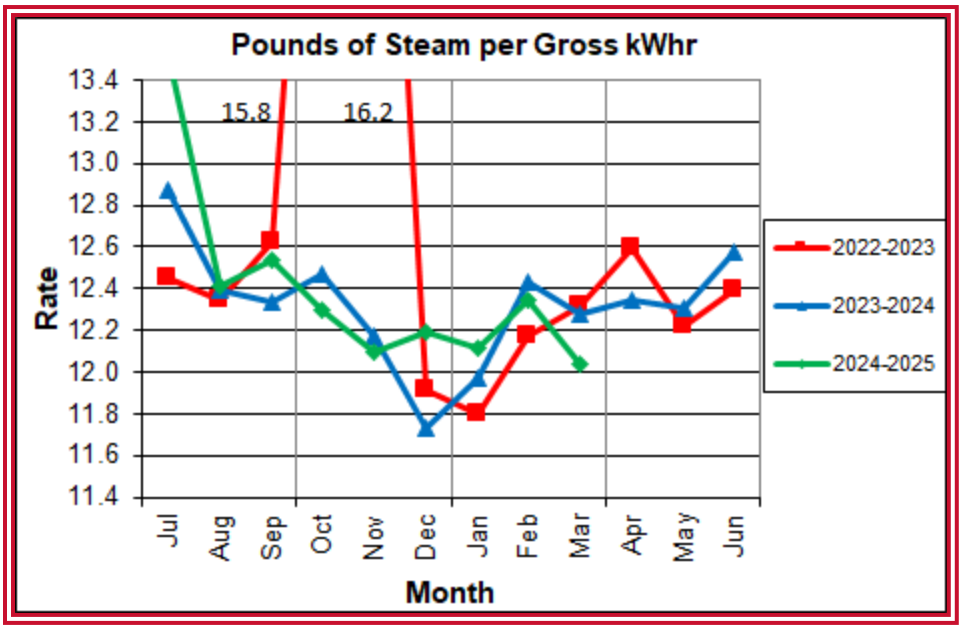


Chart 14 illustrates the quantities of steam required to generate one (1) kWh of electricity. This measure is a turbine generator performance indicator, where lower steam rates indicate superior performance. For simplification, this calculated rate is based on the average for the two turbine generators. In Q3FY25 the average

pounds of steam consumed per gross kWh generated was 12.2, which is slightly lower (0.5%) than the corresponding quarter in FY24, indicative of improved performance. The average main steam temperature during the quarter was 681.3°F, which is 4.4°F higher than the average main steam temperature of the corresponding quarter last fiscal year but 18.7°F lower than design temperature of 700°F. Lower main steam temperature decreases power generation, all other factors being equal.

4.1 Utility and Reagent Consumptions

Table 4: Facility Utility and Reagent Consumptions

Utility	Units	Q3FY25 Total	Q3FY24 Total	Q3FY25 "Per Processed Ton" Consumption	Q3FY24 "Per Processed Ton" Consumption
Fuel Oil	Gal.	15,240	17,870	0.18	0.21
Boiler Make-up	Gal.	1,465,000	1,622,000	17.28	19.12
Cooling Tower Make-up	Gal.	37,044,304	35,117,125	436.96	414.02
Pebble Lime	Lbs.	1,466,000	1,450,000	17.29	17.10
Ammonia	Lbs.	194,000	173,000	2.29	2.04
Carbon	Lbs.	70,000	64,000	0.83	0.75

Fuel oil usage during the quarter represents approximately 0.25% of the total heat input to the boilers, which compares favorably with industry averages; and is less than the 0.31% of total heat input in Q3FY24. Fuel oil is used to stabilize combustion of wet fuel, as well as during start-up and shutdown of the boilers for maintenance. Boiler makeup water usage during the quarter represents 2.3% of steam flow, which is lower than the boiler makeup in Q3FY24 which was 2.7% of steam flow.

In comparing Q3FY25 to Q3FY24 on a per processed ton consumption basis:

- The total fuel oil consumption rate was 14.7% lower
- The boiler make-up water consumption rate was 9.6% lower
- The cooling tower make-up water consumption rate was 5.5% higher
- The total pebble lime consumption rate was 1.2% higher
- The ammonia consumption rate was 12.2% higher
- The carbon consumption rate was 9.4% higher

Despite the decrease in fuel oil consumption, there was an increase in number of downtime events (nine (9)) in Q3FY25 compared to the number of downtime events (seven (7)) in Q3FY24.

4.2 Safety & Environmental Training

The Facility experienced no OSHA recordable accidents and one (1) First Aid Accident during Q3FY25. The First Aid Accident occurred in January, an employee slipped on ice at the scale house hurting their left knee. RAAI operated 188 days without an OSHA recordable accident as of March 31, 2025. Safety trainings were conducted during the quarter with themes as follows:

January 2025

- Safety: Portable Fire Extinguishers

February 2025

- Safety: Hazard Communication

March 2025

- Safety: Lead and Heavy Metals

5.0 Facility Maintenance

Throughout the quarter, regular routine and preventative maintenance was performed. HDR considers that the Facility is implementing an effective maintenance regimen, and is performing routine and preventative maintenance, along with selected equipment replacements in a timely manner. RAAI monthly maintenance reports provide a detailed account of maintenance performed.

In addition to the scheduled major outages on Units 2 and 3 and the minor outage on Unit 1, RAAI reports that 723 preventative maintenance actions were completed during the quarter.

5.1 Availability

Facility availabilities for Q3FY25 are shown in Table 5. According to RAAI reports, the average availability for Boiler Nos. 1, 2, and 3 for Q3FY25 was 91.9%, 89.2%, and 88.5%, respectively. The three-boiler average availability during the quarter was 89.9%, which was negatively impacted by downtime experienced by the boilers scheduled outages totaling 529.1 hours.

According to RAAI reports, the average availability for Turbine Generator 1 and 2 for Q3FY25 were both 100%. Note that 33.4 hours of standby time was

experienced by the turbine generators during the quarter and does not factor into overall availability.

Table 5: Quarterly Facility Unit Availabilities

Availability	Q1FY25 Average	Q2FY25 Average	Q3FY25 Average	FY25 YTD
Boiler No. 1	96.6%	90.6%	91.9%	93.0%
Boiler No. 2	93.4%	97.2%	89.2%	93.3%
Boiler No. 3	95.4%	96.0%	88.5%	93.3%
Avg.	***95.2%***	***94.6%***	***89.9%***	***93.2%***
Turbine No. 1	90.9%	91.8%	100.0%	94.2%
Turbine No. 2	99.3%	100.0%	100.0%	99.8%
Avg.	***95.1%***	***95.9%***	***100.0%***	***97.0%***

Table 6: Boiler Downtime – Q3FY25

Boiler Number	Outage Begin Date	Outage End Date	Hours Unavailable	Downtime Classification	Reason Unavailable
3	1/10/25	1/19/25	208.7	Scheduled	Major Outage
3	1/28/25	1/29/25	18.0	Unscheduled	ID Fan Bearing Failure
1	2/3/25	2/5/25	42.6	Unscheduled	Waterwall Tube Leak
2	2/7/25	2/15/25	190.4	Scheduled	Major Outage
2	2/16/25	2/16/25	1.0	Unscheduled	Steam Flow Transmitter Malfunction
3	2/17/25	2/18/25	27.2	Unscheduled	Superheater Fouling
1	2/27/25	3/4/25	130.0	Scheduled	Minor Outage
2	3/11/25	3/13/25	26.8	Unscheduled	Grate Bar Failure
2	3/29/25	3/29/25	2.5	Unscheduled	Loss of Power to Stoker
Total Unscheduled Downtime				**118.1 Hours**	
Total Scheduled Downtime				**529.1 Hours**	
Total Standby Downtime				**0.0 Hours**	
Total Downtime				**647.2 Hours**	

Table 7: Turbine Generator Downtime – Q3FY25

Turbine Generator Number	Outage Begin Date	Outage End Date	Hours Unavailable	Downtime Classification	Reason Unavailable
2	2/8/25	2/8/25	15.5	Standby	No Steam due to Boiler Outage
1	2/20/25	2/20/25	0.4	Unscheduled	Island Ops Testing
2	2/20/25	2/25/25	0.6	Unscheduled	Island Ops Testing
1	3/3/25	3/3/25	17.9	Standby	Boiler Outage and Condenser Cleaning
Total Unscheduled Downtime			**1.0 Hours**		
Total Scheduled Downtime			**0.0 Hours**		
Total Standby Downtime			**33.4 Hours**		
Total Downtime			**34.4 Hours**		

5.2 Facility Housekeeping

RAAI is performing Facility housekeeping and maintaining plant cleanliness in accordance with acceptable industry practices. A site walkdown was conducted in April 2025. At the time of the walkdown, two (2) deficiencies were closed, and three (3) new deficiencies were recorded. Photos of interest from the walkdown are depicted in Appendix B. The Facility housekeeping ratings from the April 2025 walkdown are presented in Table 8.

Table 8: Facility Housekeeping Ratings – April 2025

Facility Area	Acceptable	Needs Improvement	Unacceptable
Tipping Floor	√		
Citizen's Drop-off Area	√		
Tipping Floor Truck Exit	√		
Front Parking Lot	√		
Rear Parking Lot	√		
Boiler House Pump Room	√		
Lime Slurry Pump Room	√		
Switchgear Area	√		
Ash Load-out Area	√		
Vibrating Conveyor Area	√		
Ash Discharger Area	√		
Cooling Tower Area	√		
Truck Scale Area	√		
SDA/FF Conveyor Area	√		
SDA Penthouses	√		
Lime Preparation Area	√		
Boiler Drum Levels	√		
Turbine Room	√		
Electrical Room	√		

6.0 Environmental

The air pollution control equipment-maintained emission concentrations well within the established regulations. Average Continuous Emission Monitoring System (CEMS) data collected for each monthly period during Q2FY25 are summarized in Appendix A. The Facility experienced no permit deviations during Q3FY25. As of March 31, 2025, the Facility has operated 263 days without an environmental excursion.

6.1 Nitrogen Oxide Emissions

During Q3FY25, the monthly emission concentrations of nitrogen oxides (NO_x) averaged 88.3 ppm, 87.7 ppm, and 86.3 ppm for Boiler Nos. 1, 2, and 3, respectively. All stack NO_X concentrations remain below the permit limit (110 ppm, 24-hr average, @ 7% O_2). In comparing Q3FY25 to the corresponding quarter last year, ammonia usage increased by 12.2%. HDR continues to track the trends after the full implementation of the LN system in FY23. Overall, ammonia usage has remained consistent with historical rates.

6.2 Sulfur Dioxide Emissions

During Q3FY25 the monthly emission concentration of stack sulfur dioxide (SO_2) averaged 2.3 ppm, 0.7 ppm, and 1.7 ppm for Boiler Nos. 1, 2, and 3, respectively. All these stack SO_2 concentrations are significantly below the permit limit of 29 ppm @ 7% O_2.

6.3 Carbon Monoxide Emissions

During Q3FY25, the monthly average CO emission concentrations on Boiler Nos. 1, 2, and 3 were 31.0 ppm, 29.7 ppm, and 20.0 ppm, respectively, and all are well below the permit limit (100 ppmdv, 4-hour average).

6.4 Opacity

During Q3FY25, the average opacity on Boiler Nos. 1, 2, and 3 were 0.3%, 0.5%, and 1.4%, respectively, which are all below the 10% (6-minute) average permit limit.

6.5 Daily Emissions Data

Appendix A, Tables 10, 11, and 12 tabulate the monthly average, maximum, and minimum emissions data for each unit during Q3FY25. It should be noted that

these tabulations of monthly averages, reported here for informational purposes, are based on tabulations of daily averages. These averages do not correlate with official reports to the regulatory agencies because of differences in averaging times and other technical differences required by agency report formats.

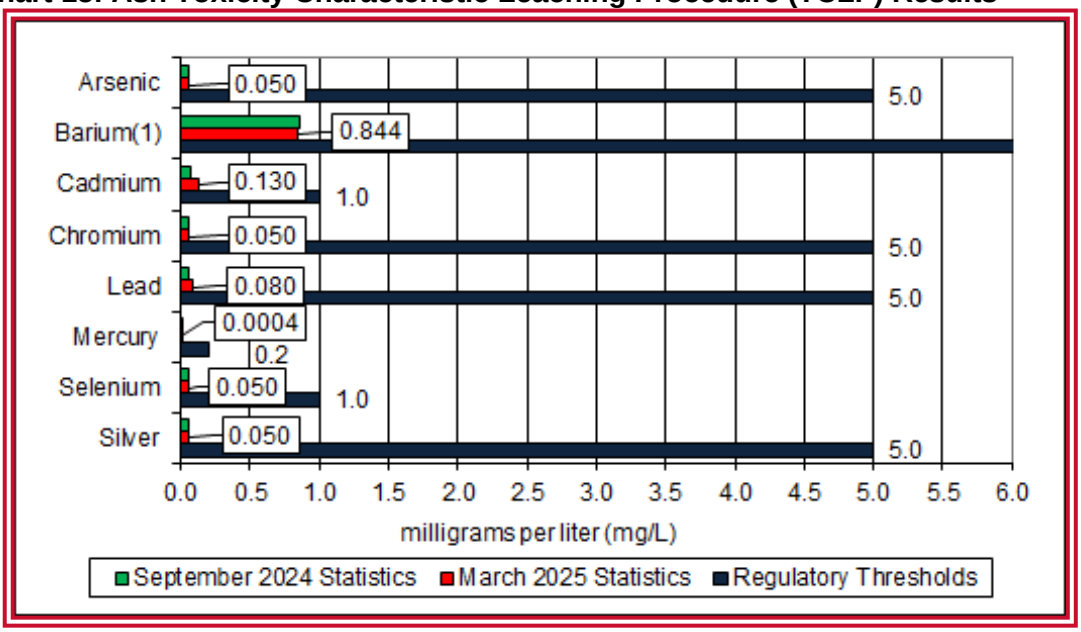
6.6 Ash System Compliance

Results from the TCLP testing conducted in September 2024 and March 2025 are depicted in Table 9 and Chart 15 below. RAAI continued to sample ash monthly in-house, and document pH readings and adjust lime feed rate as needed. The results for the in-house ash pH tests are depicted below in Chart 16 where each quarter is represented by the average of the respective monthly readings. In Q3FY25, the average ash pH for in-house tests was 8.2, which falls within the target range of 8 to 11.

Table 9: Comparison of Statistical Results and Regulatory Thresholds for Metal Analytes

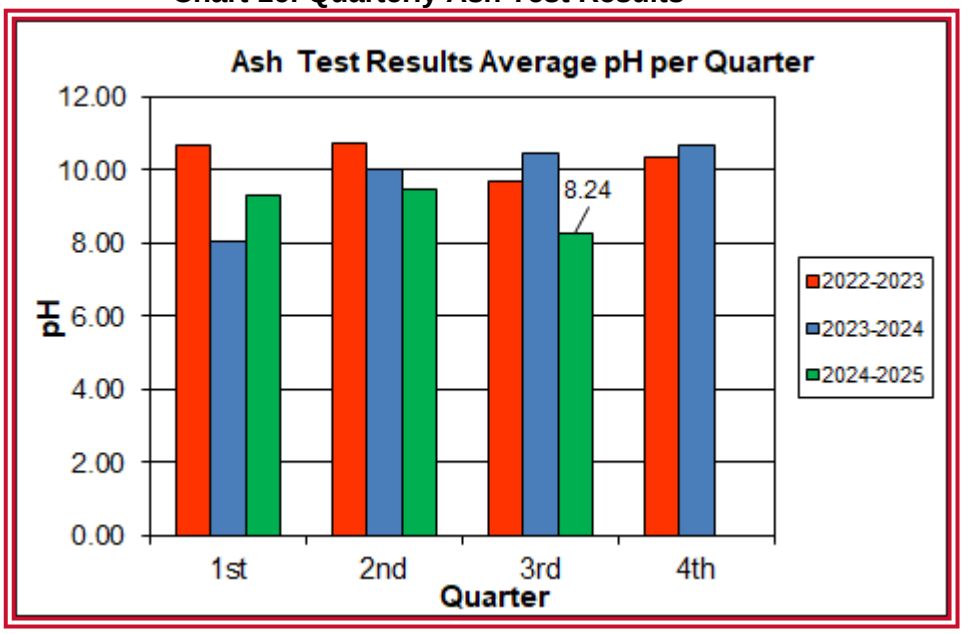
Metals	90% Upper Confidence (Sept 2024)	90% Upper Confidence (March 2025)	Regulatory Threshold (mg/L)	% of Threshold (Sept 2024)	% of Threshold (March 2025)
Arsenic	0.050	0.050	5.0	1.0%	1.0%
Barium	0.863	0.844	100.0	0.9%	0.8%
Cadmium	0.070	0.130	1.0	7.0%	13.0%
Chromium	0.050	0.050	5.0	1.0%	1.0%
Lead	0.060	0.080	5.0	1.2%	1.6%
Mercury	0.0004	0.0004	0.2	0.2%	0.2%
Selenium	0.060	0.050	1.0	6.0%	5.0%
Silver	0.050	0.050	5.0	1.0%	1.0%

Chart 15: Ash Toxicity Characteristic Leaching Procedure (TCLP) Results



Note: The regulatory threshold for Barium is 100 mg/L

Chart 16: Quarterly Ash Test Results



APPENDIX A
FACILITY CEMS DATA

Table 10: Boiler No. 1 Monthly Summary for Reportable Emissions Data

Group#-Channel#		G8-C35	G8-C28	G8-C8	G8-C4	G8-C12	G8-C34	G8-C37	G8-C40	G8-C39
Long Descrip.		U-1 Steam	U-1 Econ	U-1 Stack	U-1 Stack	U-1 Stack	U-1 Opaci	U-1 FF In	U-1 Carbo	U-1 Lime
Short Descrip.		SteamFl	SO_2ec	SO_2sc	COsc	NO_xsc	Opacity	FF InTemp	CarbInj	LimeFlow
Units		K#/Hr	ppmc	ppm	ppmc	ppmc	%	deg F	#/hr	gpm
Range		0-100	0-2000	0-500	0-4000	0-1000	0-100	100-500	0-50	0-20
Jan – 25	AVG	87.6	22.0	0.0	31.0	88.0	0.4	298.0	11.3	3.5
	Max	92.7	33.0	5.0	55.0	90.0	0.7	298.0	12.2	4.0
	Min	73.7	10.0	0.0	7.0	84.0	0.1	296.0	11.2	2.3
Feb – 25	AVG	91.4	41.0	4.0	33.0	88.0	0.3	297.0	11.3	3.9
	Max	94.5	65.0	9.0	52.0	90.0	0.7	298.0	11.7	4.3
	Min	83.4	15.0	0.0	2.0	83.0	0.1	282.0	11.2	3.4
Mar - 25	AVG	92.5	46.0	3.0	29.0	89.0	0.1	298.0	11.0	3.8
	Max	94.6	64.0	7.0	47.0	95.0	0.4	299.0	13.3	4.5
	Min	85.6	26.0	0.0	10.0	86.0	0.0	295.0	10.2	3.1
Quarter Average		90.5	36.3	2.3	31.0	88.3	0.3	297.7	11.2	3.7
Quarter Max Value		94.6	65.0	9.0	55.0	95.0	0.7	299.0	13.3	4.5
Quarter Min Value		73.7	10.0	0.0	2.0	83.0	0.0	282.0	10.2	2.3
Limits:		98	NA	29	100	110	10	331	12(a)	

(a) Carbon flow limit is a minimum value
(b) Limit for NOx is based on an average daily limit

* Note: The data reported herein represent 24-hour average data for all parameters. Emissions excursions that are measured on shorter time intervals (i.e., 4-hour block averages for CO) do not correlate with the 24-hour average data reported above.

Table 11: Boiler No. 2 Monthly Summary for Reportable Emissions Data

Group#-Channel#		G8-C35	G8-C28	G8-C8	G8-C4	G8-C12	G8-C34	G8-C37	G8-C40	G8-C39
Long Descrip.		U-2 Steam	U-2 Econ	U-2 Stack	U-2 Stack	U-2 Stack	U-2 Opaci	U-2 FF In	U-2 Carbo	U-2 Lime
Short Descrip.		SteamFl	SO_2ec	SO_2sc	COsc	NO_xsc	Opacity	FF InTemp	CarbInj	LimeFlow
Units		K#/Hr	ppmc	ppm	ppmc	ppmc	%	deg F	#/hr	gpm
Range		0-100	0-2000	0-500	0-4000	0-1000	0-100	100-500	0-50	0-20
Jan – 25	AVG	87.7	22.0	0.0	31.0	87.0	0.7	299.0	11.3	3.5
	Max	92.2	41.0	2.0	52.0	88.0	1.3	301.0	11.6	4.1
	Min	75.8	7.0	0.0	12.0	85.0	0.1	295.0	11.2	2.5
Feb – 25	AVG	90.6	45.0	1.0	30.0	87.0	0.1	299.0	11.3	3.8
	Max	94.6	87.0	14.0	58.0	90.0	0.8	301.0	11.5	4.2
	Min	83.8	7.0	0.0	10.0	73.0	0.0	291.0	11.1	3.5
Mar - 25	AVG	90.2	44.0	1.0	28.0	89.0	0.7	299.0	10.9	3.7
	Max	92.7	67.0	3.0	45.0	93.0	1.4	301.0	11.4	4.1
	Min	84.0	20.0	0.0	12.0	86.0	0.0	295.0	10.2	3.1
Quarter Average		89.5	37.0	0.7	29.7	87.7	0.5	299.0	11.2	3.7
Quarter Max Value		94.6	87.0	14.0	58.0	93.0	1.4	301.0	11.6	4.2
Quarter Min Value		75.8	7.0	0.0	10.0	73.0	0.0	291.0	10.2	2.5
Limits:		98	NA	29	100	110	10	330	12(a)	

(a) Carbon flow limit is a minimum value
(b) Limit for NOx is based on an average daily limit

* Note: The data reported herein represent 24-hour average data for all parameters. Emissions excursions that are measured on shorter time intervals (i.e., 4-hour block averages for CO) do not correlate with the 24-hour average data reported above.

Table 12: Boiler No. 3 Monthly Summary for Reportable Emissions Data

Group#-Channel#		G8-C35	G8-C28	G8-C8	G8-C4	G8-C12	G8-C34	G8-C37	G8-C40	G8-C39
Long Descrip.		U-3 Steam	U-3 Econ	U-3 Stack	U-3 Stack	U-3 Stack	U-3 Opaci	U-3 FF In	U-3 Carbo	U-3 Lime
Short Descrip.		SteamFl	SO_2ec	SO_2sc	COsc	NO_xsc	Opacity	FF InTemp	CarbInj	LimeFlow
Units		K#/Hr	ppmc	ppm	ppmc	ppmc	%	deg F	#/hr	gpm
Range		0-100	0-2000	0-500	0-4000	0-1000	0-100	100-500	0-50	0-20
Jan – 25	AVG	86.4	40.0	2.0	23.0	85.0	1.2	299.0	11.3	3.7
	Max	91.8	73.0	8.0	36.0	88.0	1.5	299.0	11.4	4.2
	Min	73.1	17.0	0.0	9.0	79.0	0.6	298.0	11.3	2.6
Feb – 25	AVG	89.2	42.0	2.0	19.0	87.0	1.3	298.0	11.3	3.8
	Max	92.5	57.0	6.0	43.0	91.0	1.6	299.0	11.7	4.2
	Min	54.6	26.0	0.0	10.0	83.0	0.8	272.0	11.2	1.4
Mar - 25	AVG	90.6	31.0	1.0	18.0	87.0	1.6	299.0	10.9	3.8
	Max	92.7	43.0	3.0	24.0	92.0	1.9	300.0	11.3	4.2
	Min	83.3	20.0	0.0	11.0	86.0	1.1	297.0	10.1	3.2
Quarter Average		88.7	37.7	1.7	20.0	86.3	1.4	298.7	11.2	3.8
Quarter Max Value		92.7	73.0	8.0	43.0	92.0	1.9	300.0	11.7	4.2
Quarter Min Value		54.6	17.0	0.0	9.0	79.0	0.6	272.0	10.1	1.4
Limits:		98	NA	29	100	110	10	332	12(a)	

(a) Carbon flow limit is a minimum value
(b) Limit for NOx is based on an average daily limit

* Note: The data reported herein represent 24-hour average data for all parameters. Emissions excursions that are measured on shorter time intervals (i.e., 4-hour block averages for CO) do not correlate with the 24-hour average data reported above.

APPENDIX B
SITE PHOTOS - April 2025

Figure 1: Temporary Generator in Front Parking Lot

Figure 2: North Side of Facility - Siding Half Pressure - Washed

Figure 3: Circulating Water Pump on East Side of Cooling Tower

Figure 4: Carbon Silo

Figure 5: Contents of Non-Metal Residential Drop Off

Figure 6: Residential Drop Off Containers Moved

Figure 7: New Induced Draft Fan Rotors Being Stored

Figure 8: Scale House in Operation

Figure 9: Tipping Floor Door in Operation

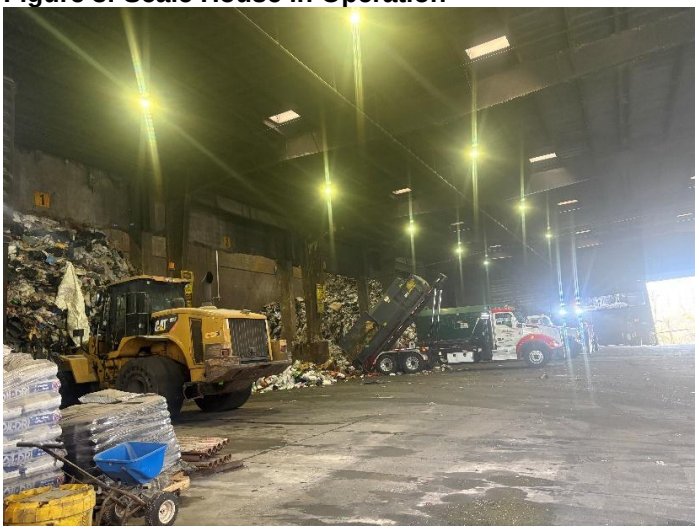


Figure 10: Lights in Tipping Hall in Good Condition

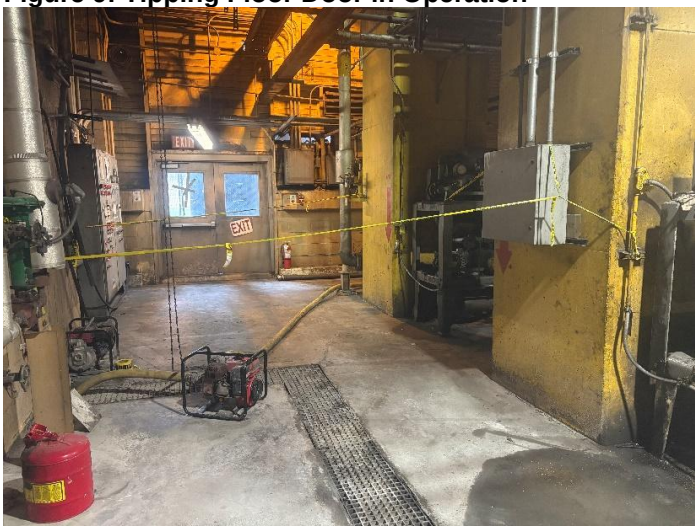


Figure 11: Temporary Pump set up to transport wastewater from the trench drains to the Cooling Tower basin. Punchlist item since 2022.

Figure 12: Scaffolding around Condenser Post Cleaning

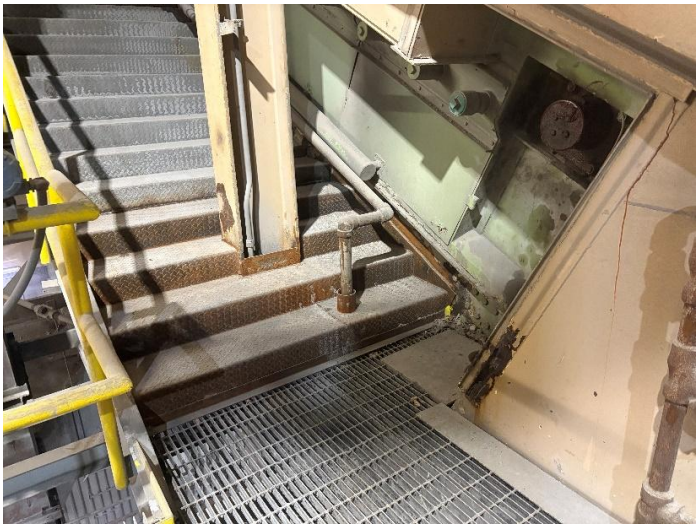


Figure 13: Staircase hole by Boiler No. 1 Repaired

Figure 14: Ferrous Drum Magnet

Figure 15: Boiler No. 1 Water Box Empty – New Deficiency

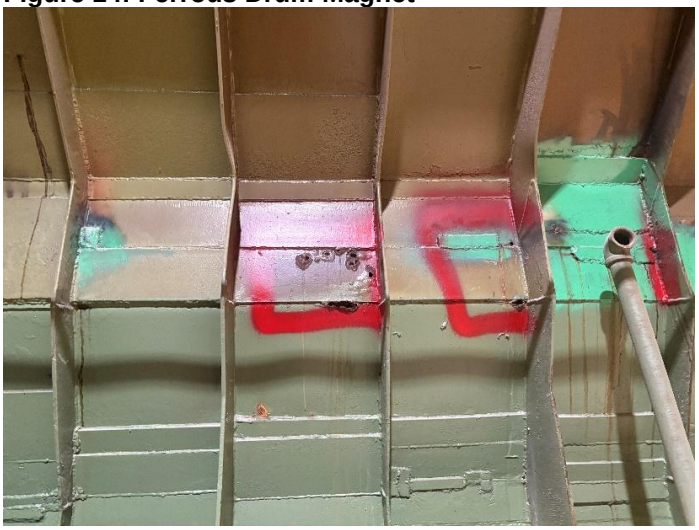


Figure 16: Boiler No. 3 Feed Chute marked for repairs

Figure 17: Boiler No.2 IK-08 Sootblower Disconnected – New Deficiency

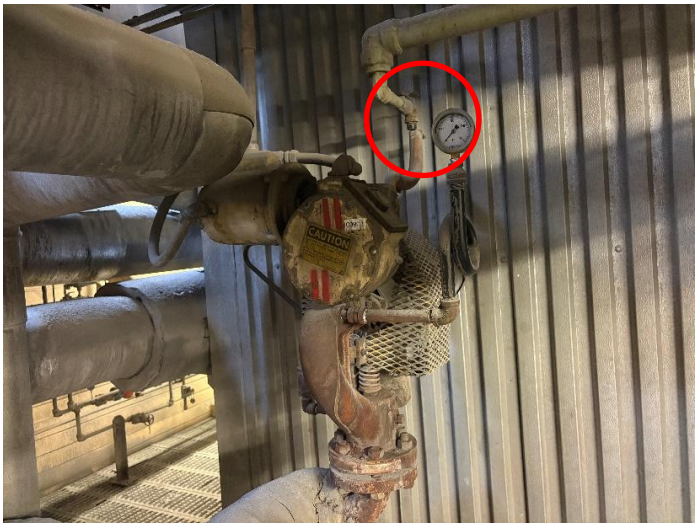


Figure 18: Boiler No.2 G9-B11 Sootblower Disconnected – New Deficiency

Figure 19: Air Shut Off to Several Viewports on Boilers – New Deficiency

Figure 20: New Expansion Joint on North side of Boiler No. 1

Figure 21: New Eyewash Station in Lime House No. 3

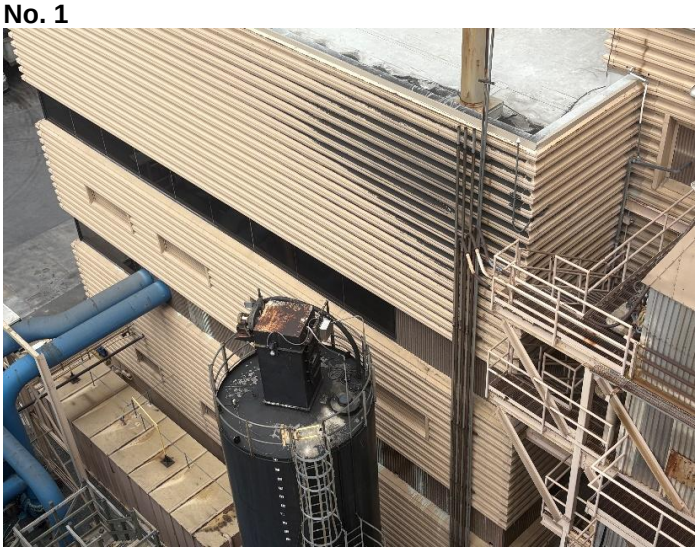


Figure 22: Carbon on External Side Wall – New Deficiency

Figure 23: All Baghouse No. 3 Heaters on with no Low Temp Indicators. (No change to Deficiency #8)

Figure 24: Unit No. 1 Economizer Plattco Covers