Environmental Management System and Community Engagement Report

2024 Annual Summary

6/18/2025

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B. Executive Summary

As of July 2015, Cokemaking facilities in Ontario have been required to operate within strict emission limits governed by the Ministry of the Environment, Conservation and Parks (MECP). There are specific emission limits for coke oven doors, offtakes, topside lids, charging procedures, and pushing opacity. The emission limits drop substantially on a yearly basis between 2015 and 2020, mandating Cokemaking facilities to continually improve their operations to maintain environmental compliance. The 2020 limits have remained in place since their implementation.

As part of this requirement, all facilities must carry out Method 303 and Method 9 observations Monday-Friday each week, as well as 10 Saturdays and Sundays per year. If an observation result is above the daily allowable emission limit, the Company must notify the MECP and submit the corrective action taken to address the exceedance.

This report is an annual summary of the information gathered and submitted by Algoma to the MECP in accordance with Amended Environmental Compliance Approval Number 6460-BW7LFB issued on January 25, 2021 for the 2024 calendar year.

C. Coke Oven Gas Suction Main Failure

On January 20, 2024 the Cokemaking facilities suffered a failure in the structure supporting the utilities piping and coke oven gas suction main. This led to damage to the Coke Oven Batteries affecting the door and charging emissions.

A battery repair plan was prepared in accordance with the Cokemaking Environmental Compliance Approval to ensure the safety of personnel, maintain the assets and systematically restore operations. Included in the plan was a request for a temporary exemption from the battery fugitive emissions limits until the battery repair plan was completed. The request was approved by the MECP, with emissions observations resuming on April 11, 2024 when the new utility corridor was commissioned.

D. Daily 30-day Rolling Average

1.1. Door Emissions

Door emissions are caused by a gap between the coke oven door diaphragm knife edge and the door frame sealing surface. Emissions also occur when there is a leak outside of the door frame.

Operational Adjustments made by Algoma to address coke oven door emissions include:

- Adjusting door bolts, frame clips, and hour glass clips to ensure tight and proper placement of the door and frame
- Cleaning doors, door frames, and sill plates, to ensure a proper seal and minimize damage to doors and frames
- Replacing door cleaner brushes and frame cleaner blades on a scheduled basis and whenever required
- Replacing damaged door and door frames
- Packing the inner and outer frames to prevent emissions from leaking out of the oven
- Machine spotting systems have been upgraded to a radar location system
- Extensive replacement of steelwork including frames, buckstays, and armour plates have been completed
- Spraying of silicate to seal small leaks

The following table shows the number of days by month in which each coke oven battery exceeded the daily 30-day rolling average door emissions for January to December 2024.

Table 1. Summary of the number of days the 30-day rolling average door emissions exceeded 4% limit by battery.

Month	No. of days the 30 day Door emissions exceeded 4% limit		
	7 Battery	8 Battery	9 Battery
Jan-2024	0	0	0
Feb-2024	0	0	0
Mar-2024	0	0	0
Apr-2024	0	0	0
May-2024	0	0	0
Jun-2024	13	5	0
Jul-2024	0	0	0
Aug-2024	0	0	0
Sep-2024	0	11	0
Oct-2024	0	0	0
Nov-2024	0	0	0
Dec-2024	0	0	0

No. 7 Battery 30-day rolling average door emission exceedance summary

First day of exceedance	12-June-2024
Last day of exceedance	27-June-2024
Value of result indicating failure to comply	4.05
Ovens contributing to failure to comply	All except 1,2,12,13,21,22,23,24,28,29,31,32
Cause of failure	Coke oven gas suction main failure

No. 8 Battery 30-day rolling average door emission exceedance summary

First day of exceedance	21-June-2024
Last day of exceedance	23-June-2024
Value of result indicating failure to comply	4.10
Ovens contributing to failure to comply	All except 118,119
Cause of failure	Coke oven gas suction main failure

First day of exceedance	25-June-2024
Last day of exceedance	27-June-2024
Value of result indicating failure to comply	4.07
Ovens contributing to failure to comply	All except 118,119
Cause of failure	Coke oven gas suction main failure

First day of exceedance	5-Sep-2024
Last day of exceedance	5-Sep-2024
Value of result indicating failure to comply	4.04
Ovens contributing to failure to comply	All except 118,119
Cause of failure	Coke oven gas suction main failure

First day of exceedance	9-Sep-2024
Last day of exceedance	11-Sep-2024
Value of result indicating failure to comply	4.21
Ovens contributing to failure to comply	All except 118,119
Cause of failure	Coke oven gas suction main failure

First day of exceedance	17-Sep-2024
Last day of exceedance	23-Sep-2024
Value of result indicating failure to comply	4.05
Ovens contributing to failure to comply	All except 118,119
Cause of failure	Coke oven gas suction main failure

The following graph shows the daily 30-day rolling average door emission performance for each coke oven battery for January to December 2024.

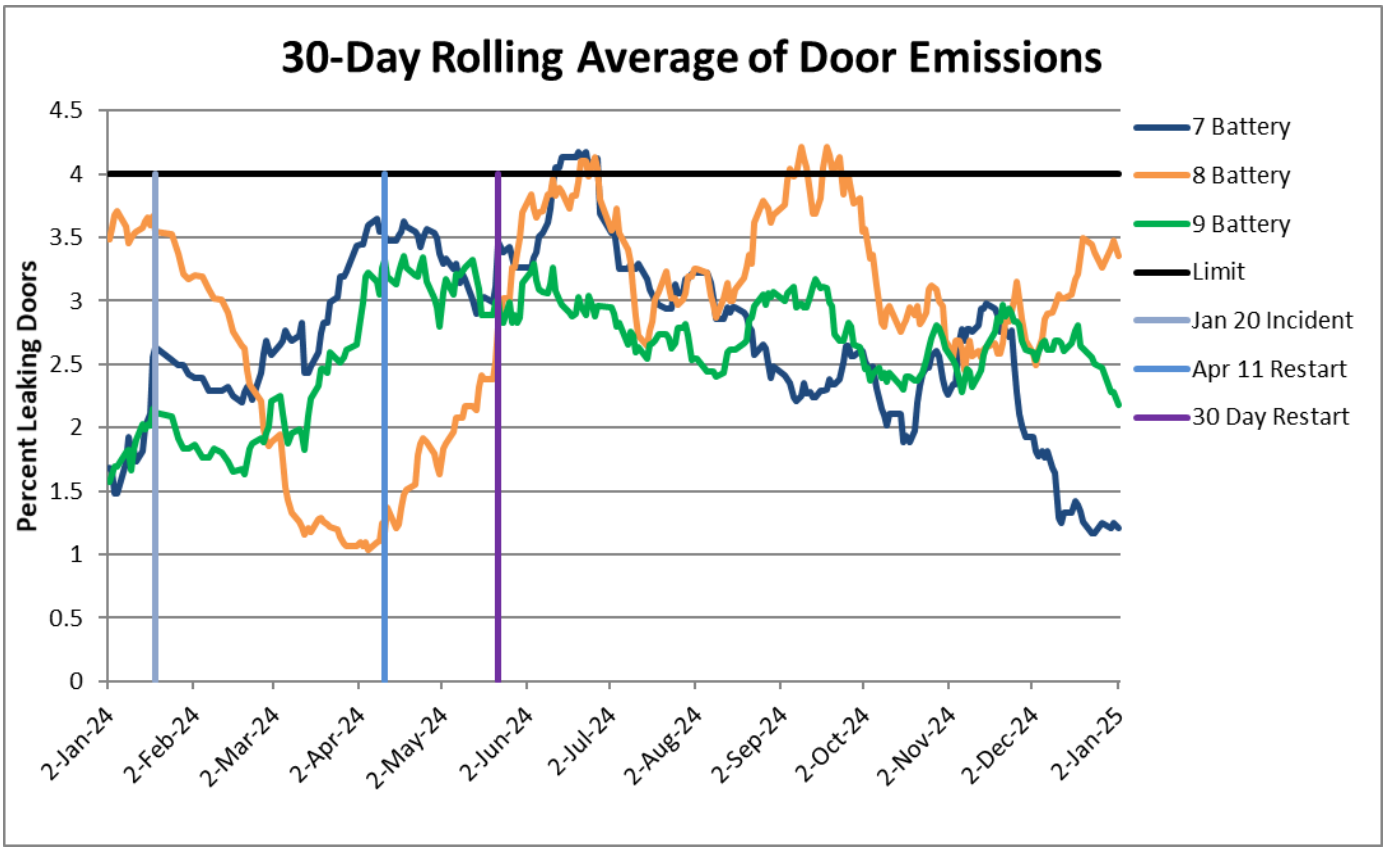

Figure 1.1. Graph of the 30-day Rolling Average Percent Leaking Doors for 2024.

1.2. Lid Emissions

Coke oven lids typically cause emissions shortly after the oven has been charged as there is a high amount of gas and volatile material being introduced to the coking process. Lid emissions are also caused when there is a pressure fluctuation in the coke oven, as the lid seal can easily be broken, allowing gasses to escape.

Operational Adjustments made by Algoma to address coke oven lid emissions include:

- Applying the designated lid sealant immediately after charging an oven and whenever emissions are observed
- Replacing damaged or cracked lids
- Repairing, leveling and grouting charge hole bases to ensure no leakage and a proper seal

The following graph shows the daily 30-day rolling average lid emission performance for each coke oven battery for January to December 2024.

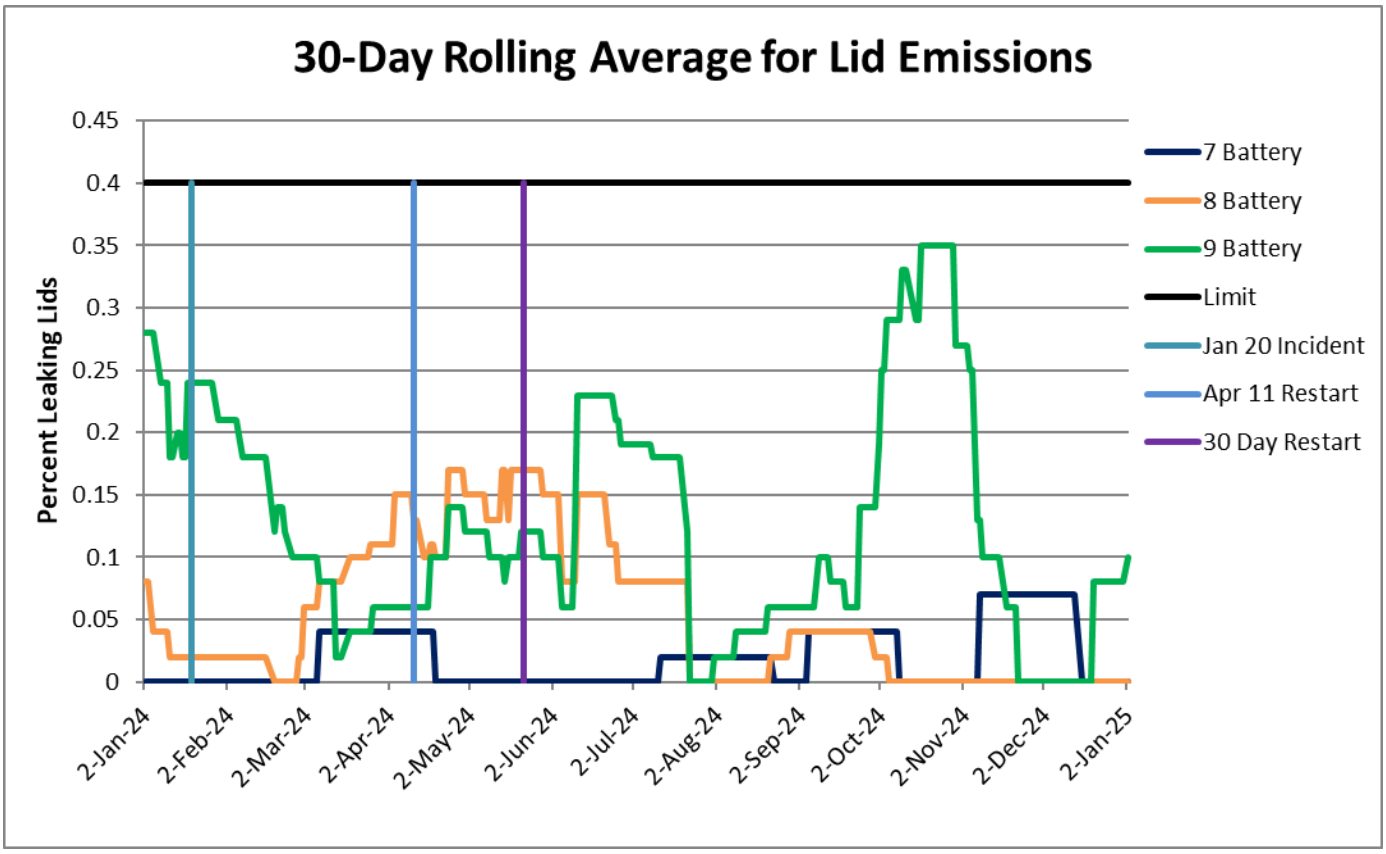

Figure 1.2. Graph of the 30-day Rolling Average Percent Leaking Lids for 2024.

1.3. Offtake Emissions

Offtake emissions are typically caused when the pressure inside the oven or collector main is too high. Emissions can escape if a gooseneck or sleeve is cracked. The most common offtake emission is caused when the seal around the cap of the standpipe becomes worn and the cap is no longer able to maintain its tight seal.

Operational Adjustments made by Algoma to address offtake emissions include:

- Replacing the soft seal to a water seal
- Cleaning the gooseneck, sleeve to the collector main, and steam jet
- Repacking the collar or base of the pipe with refractory
- Applying masonry seal to small cracks on the pipe until welding can be completed
- Replacing the standpipe at the end of its lifecycle or as needed

The following graph shows the daily 30-day rolling average offtake emission performance for each coke oven battery for January to December 2024.

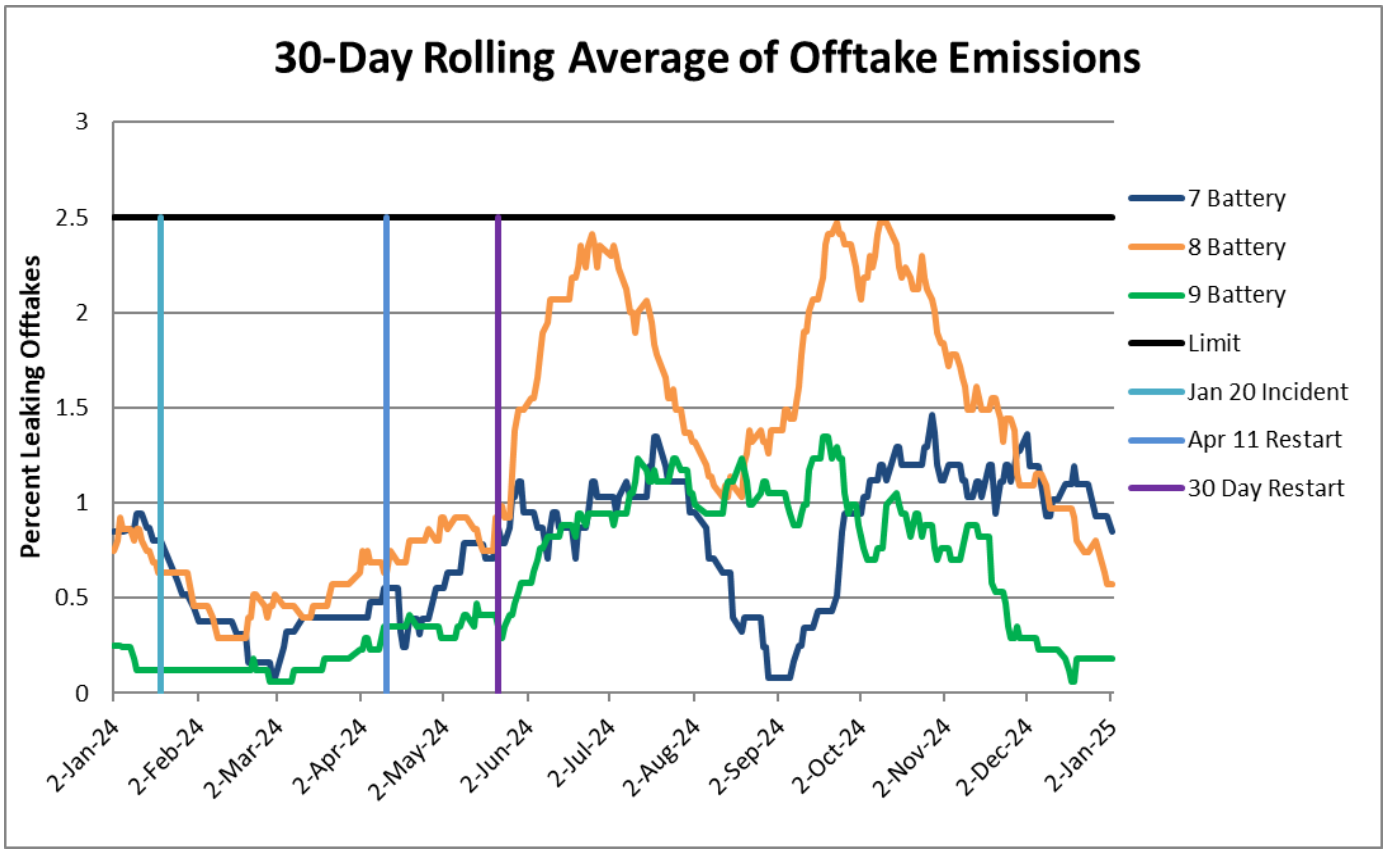

Figure 1.3. Graph of the 30-day Rolling Average Percent Leaking Offtakes for 2024.

1.4. Charging Emissions

Emissions observed during the coke oven charging process can be caused by multiple variables for any given charge. Since the charging process is so dynamic, all procedures must be strictly followed to avoid fugitive emissions. The conditions of the oven, the coal, and the Larry Car, must all be correct in order for a charge to be successful and have no emissions.

Operational Adjustments made by Algoma to address Charging emissions include:

- Adjusting the carbon scraper bar
- Decarbonizing standpipes, goosenecks, and charge holes
- Cleaning the gooseneck, sleeve to the collector main, and steam jet
- Replacing drop sleeve donuts, bellow bags, carbon seals, on the Larry Cars
- Adjusting the coal feed radar system to optimize coal charging volume
- Leveling charge hole bases to ensure proper elevation
- Monitoring coal moisture levels

The following table shows the number of days by month in which each coke oven battery exceeded the daily 30-day rolling average charging emissions for January to December 2024.

Table 2. Summary of the number of days the 30-day rolling average door emissions exceeded 12s limit by battery.

Month	No. of days the 30 day Charging emissions exceeded 12s limit		
	7 Battery	8 Battery	9 Battery
Jan-2024	0	0	0
Feb-2024	0	0	0
Mar-2024	0	0	0
Apr-2024	0	0	0
May-2024	0	0	0
Jun-2024	0	0	4
Jul-2024	0	0	9
Aug-2024	0	0	0
Sep-2024	0	0	0
Oct-2024	0	0	0
Nov-2024	0	0	0
Dec-2024	0	0	0

No. 9 Battery 30-day rolling average charging emission exceedance summary

First day of exceedance	24-June-2024
Last day of exceedance	10-July-2024
Value of result indicating failure to comply	14.19
Ovens contributing to failure to comply	All except 15,20,21
Cause of failure	Coke oven gas suction main failure

First day of exceedance	18-July-2024
Last day of exceedance	19-July-2024
Value of result indicating failure to comply	12.35
Ovens contributing to failure to comply	All except 15,20,21
Cause of failure	Coke oven gas suction main failure

The following graph shows the daily 30-day rolling average charging emission performance for each coke oven battery for January to December 2024.

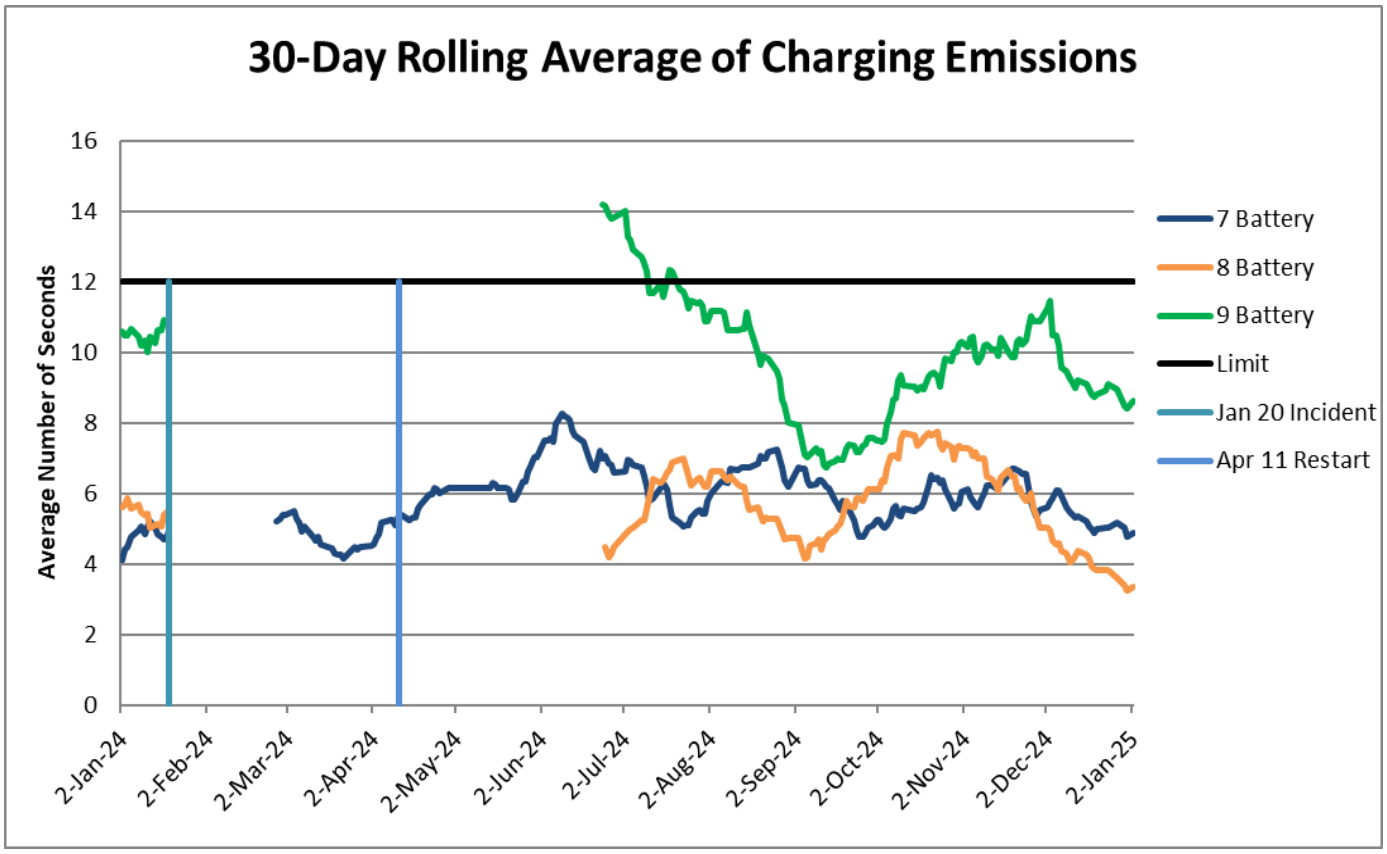

Figure 1.4. Graph of the 30-day Rolling Average Charging Time for 2024 (in seconds).

E. Operational Adjustments – doors, lids and offtake emissions

In addition to the 30-day rolling averages for doors, lids and offtake emissions, there are also daily maximum leak limits for each. If a coke battery is observed to be out of compliance with a daily maximum limit, the Company executes an Operational Adjustment to reduce the fugitive emissions below the appointed limit.

The following graph shows the total number of operational adjustments made for each coke oven battery for January to December 2024.

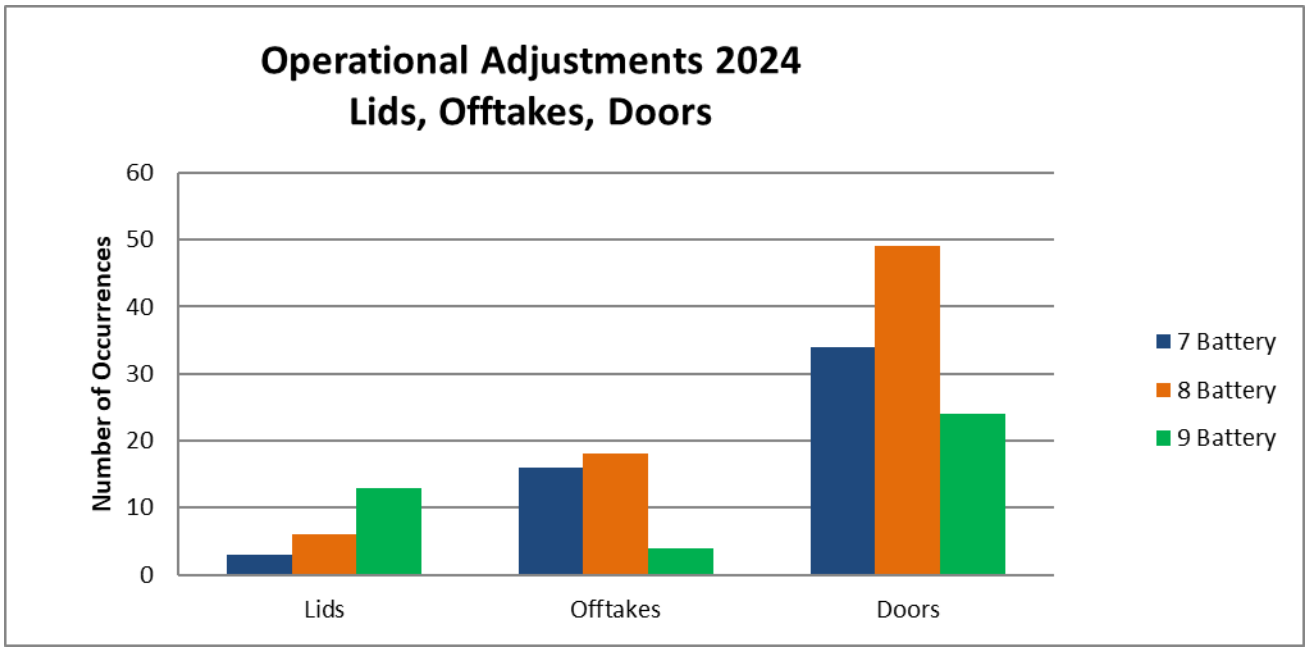

Figure 2. Graph of the Total Operational Adjustments submitted to the MECP for Doors, Lids, Offtakes in 2024.

F. Operational Adjustments to Reduce Fugitive Pushing Emissions

In order for a coke oven Pushing emission to be within compliance, it must have an average opacity of less than 30%. When a Pushing emission is observed above 30%, 30 days are granted by the MECP to correct the oven and re-observe a Push within compliance. If the oven cannot be corrected in 30 days, a plan is submitted by the Company and approved by the MECP. If the plan is not approved, the oven is taken out of service for 30 days. For all Pushing emissions observed in 2024 above 30% opacity, Algoma successfully executed corrective actions and reduced average opacity to below 30%.

Corrective actions taken by Algoma to address Pushing emissions include:

- Taking cross-wall temperature readings to identify heat issues and problem flues
- Cleaning the flues, pins, orifices, risers, flex hoses, venturies and bus flues
- Adjusting fuel or air to improve combustion
- Executing masonry repairs to oven walls
- Repairing adjacent ovens and ensure proper heating of the shared walls
- Extending coking time

The following graph shows the total number of operational adjustments made for each coke oven battery for January to December 2024.

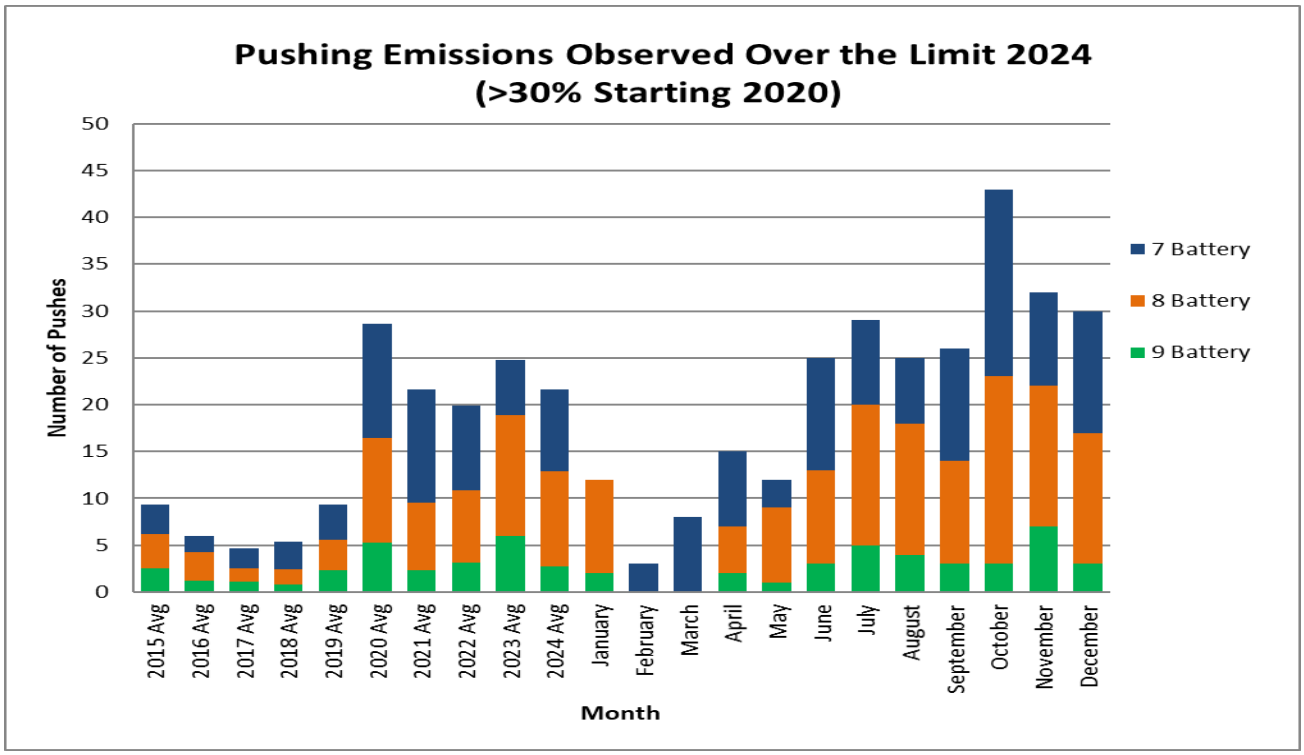

Figure 3. Graph of the Total Operational Adjustments submitted to the MECP for Pushing Emissions in 2024.

G. Community Liaison Committee Meetings

Community Liaison Committee Meeting minutes can be found on the Algoma corporate website:

https://www.algoma.com/environment/clc-meetings-minutes/