



Community Liaison Committee Meeting #39

Tuesday, December 14, 2021



Agenda

1. Review of September 14th, 2021 meeting notes
2. Membership Items
3. Cokemaking Emissions Performance
4. Electric Arc Steelmaking
5. Environmental Compliance Approval updates
6. Site Specific Standards / Technical Standards
7. Legacy Environmental Action Plan
8. Public Complaints
9. Next Meetings

Membership

Current Members and Alternates

Representation

Algoma Steel
Ministry of Environment, Conservation & Parks
Public
Public
SSM Tribe of Chippewa Indians
Algoma Public Health
Chippewa County Health Dept.
Batchewana First Nations
City of Sault Ste. Marie
United Steel Workers Local 2251
St. Mary's River RAP Coordinator

Primary Member

Fred Post
Lori Greco
David Trowbridge
Jillian Marquis
Kathie Brosemer
Melissa Francella
Steve Carey
Dan Sayers Jr.
Catherine Taddo
Wayne Hubbard
Lisa Derickx

Alternate

Chris Galizia
Ron Dorscht
Peter McLarty

Chris Spooney
Suzanne Lieurance

Maggie McAuley
Dennis Gagne

Cokemaking Emissions Performance

100% Compliant with the Site Specific Standard

Key Performance Indicators related to Cokemaking Emissions:

- ▶ average intensity of pushing emissions
- ▶ average duration of charging emissions
- ▶ % lid leaks
- ▶ % off-takes leaks
- ▶ % door leaks

Performance is monitored and calculated daily for each battery

Progressive Annual Reduction

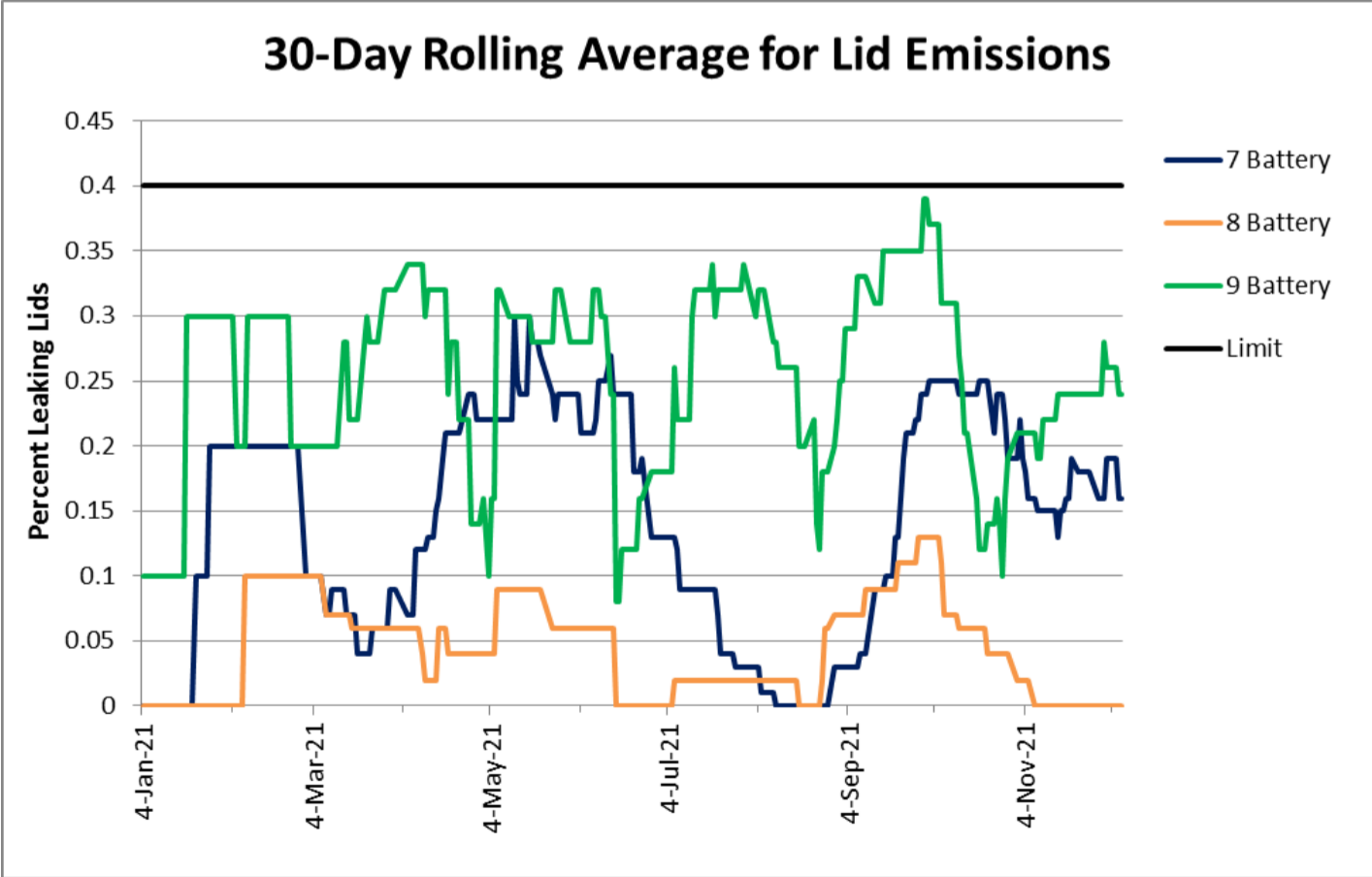
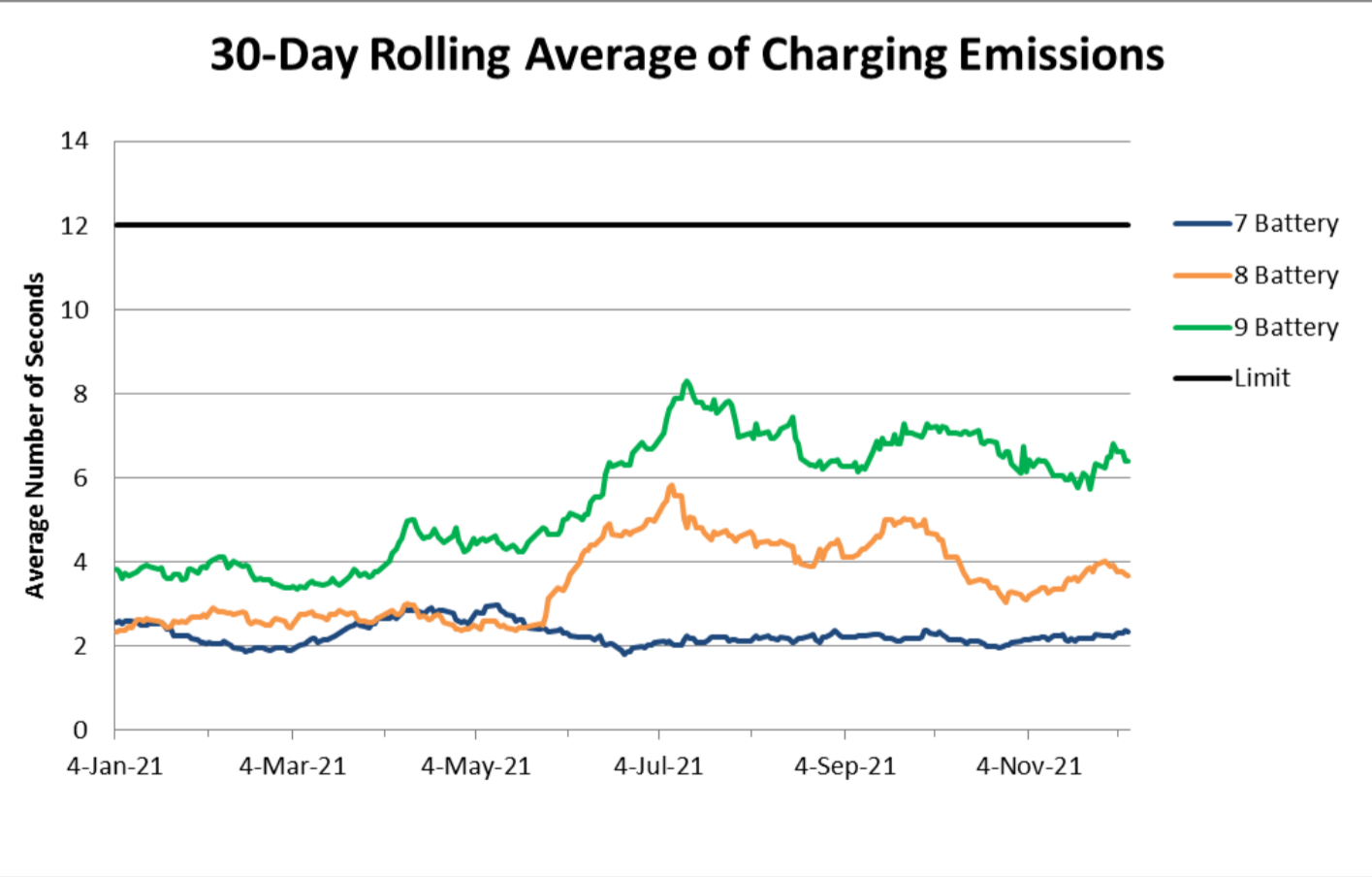
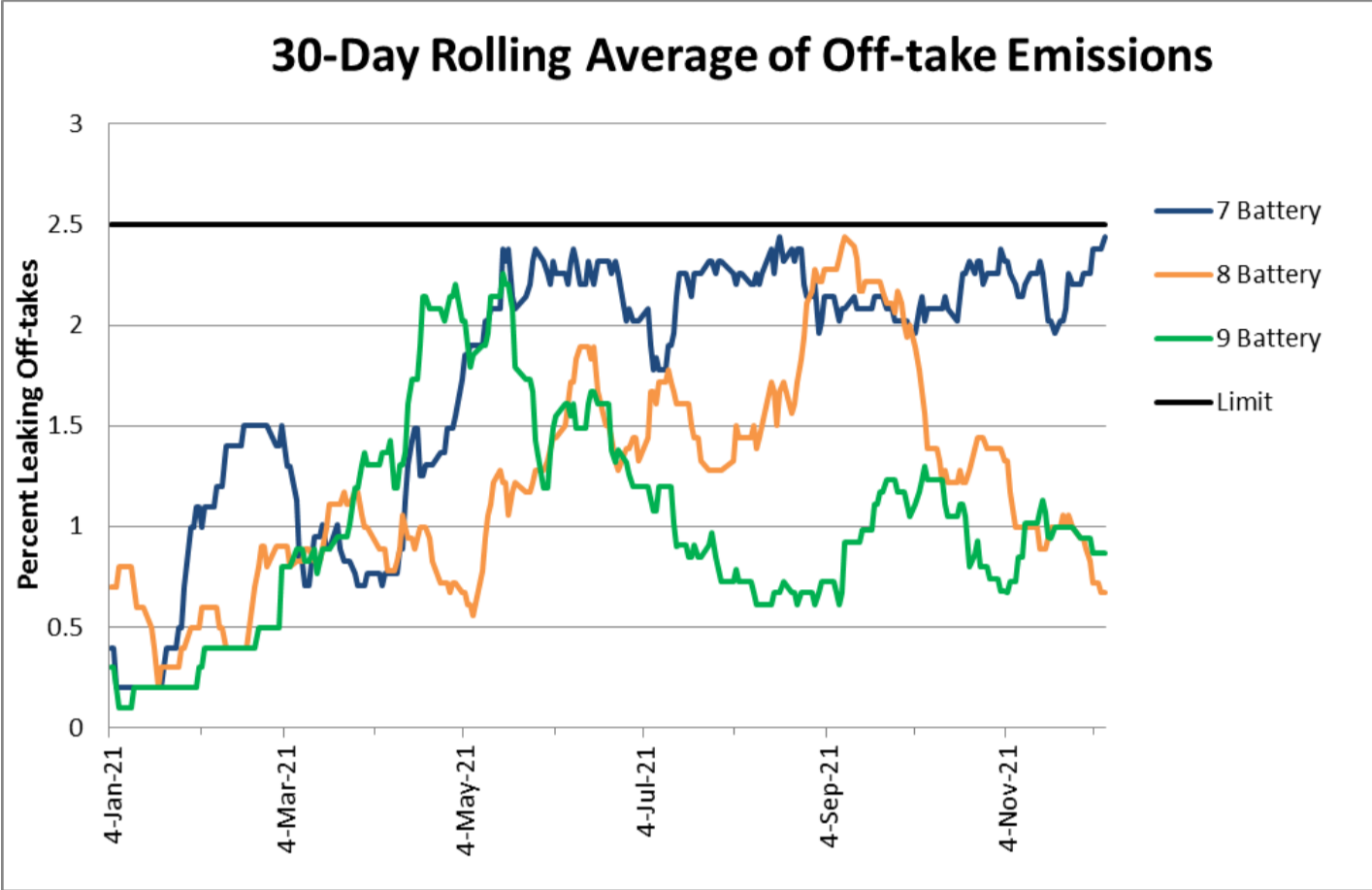
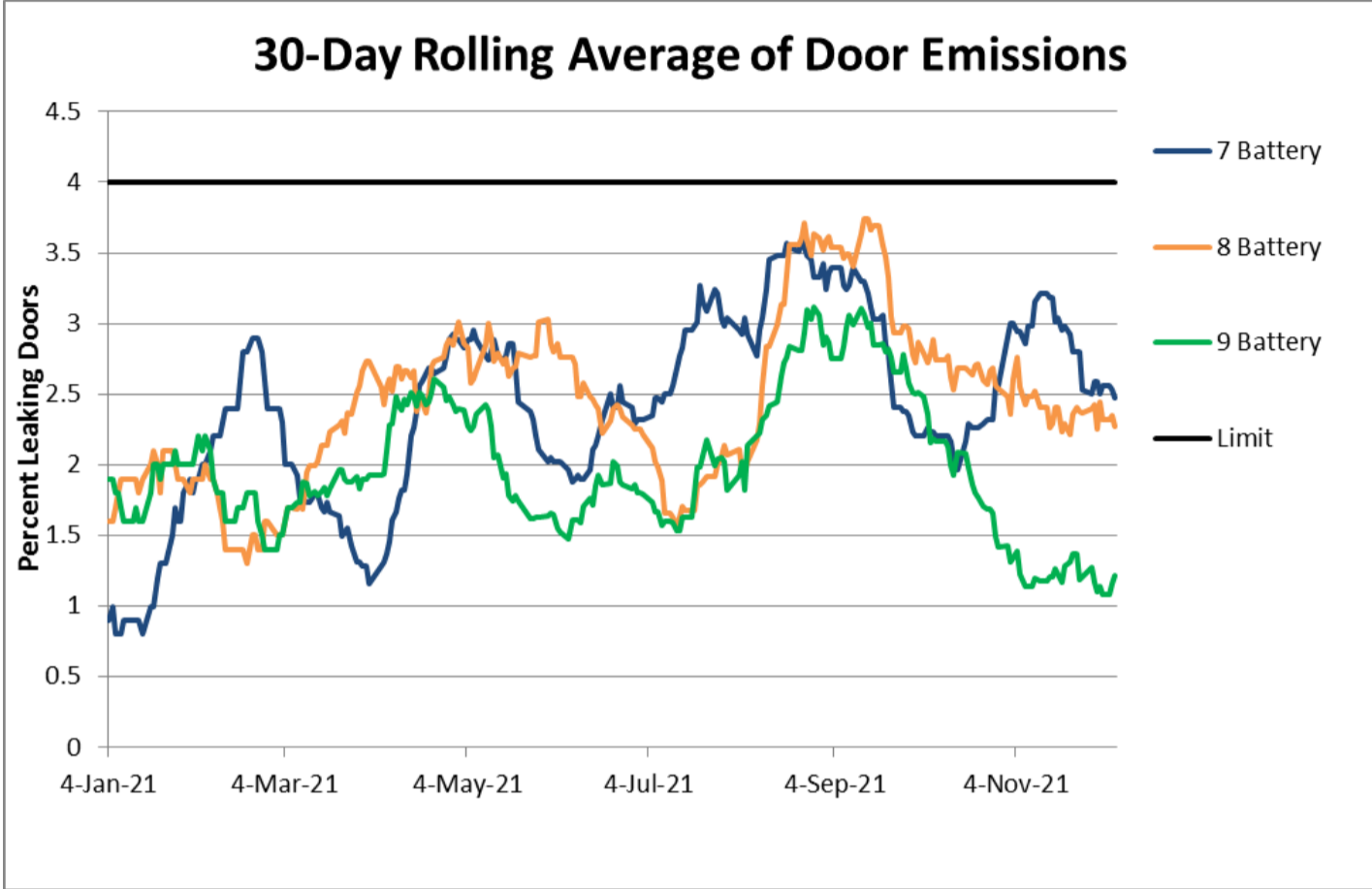
Implementation Date	30 day rolling average%			Charging Emission	Pushing Opacity (%)
	Doors	Lids	Off-takes		
July 2, 2015	38	0.8	25	12 sec	50
Jan 1, 2016	22.5	0.8	15	12 sec	50
Jan 1, 2017	7	0.8	4.2	12 sec	50
Jan 1, 2019	7	0.8	4.2	12 sec	40
Jan 1, 2020 onward	4	0.4	2.5	12 sec	30



Algoma Steel is meeting the current limits on all three batteries.

Improved Air Quality

Cokemaking Emissions Performance

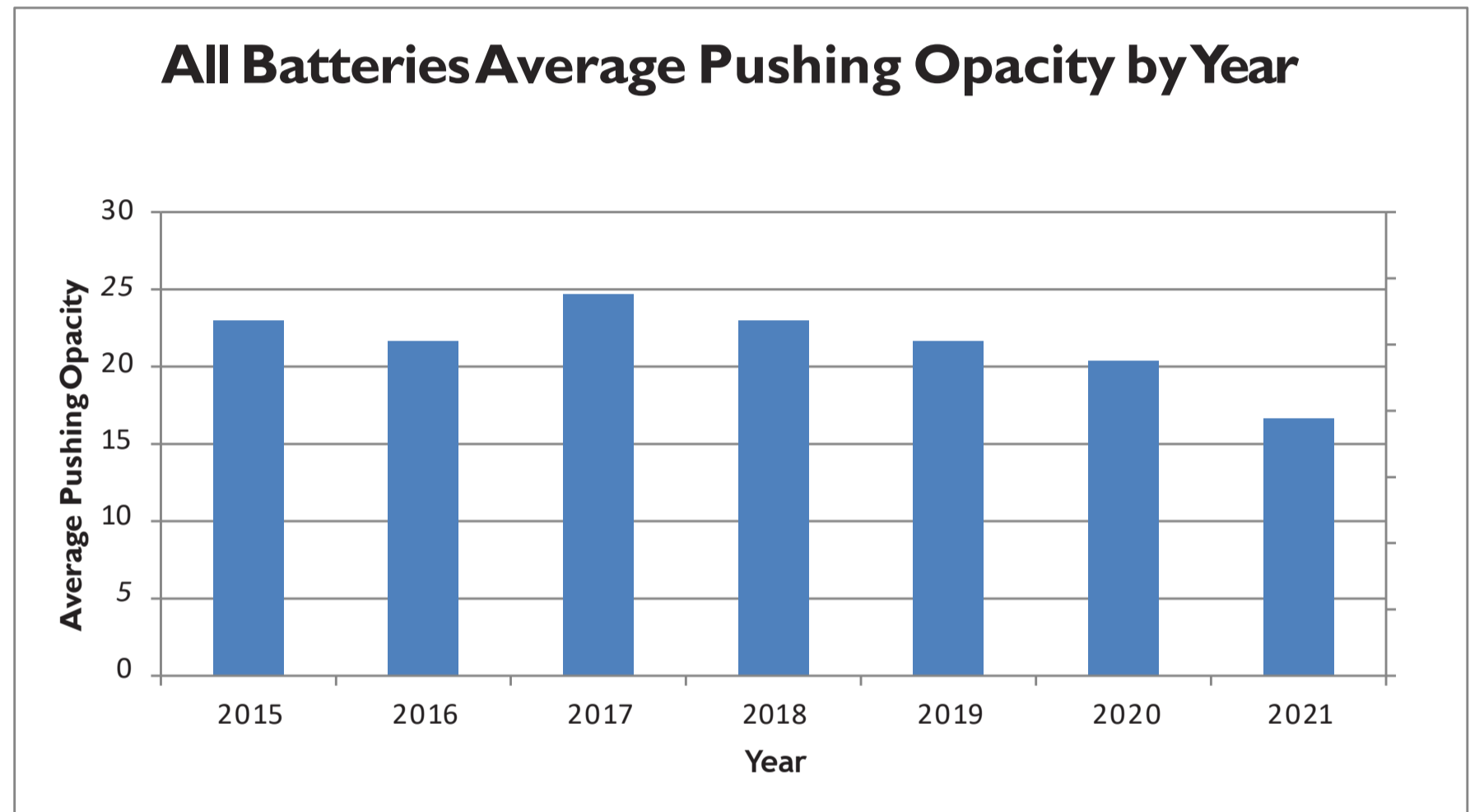
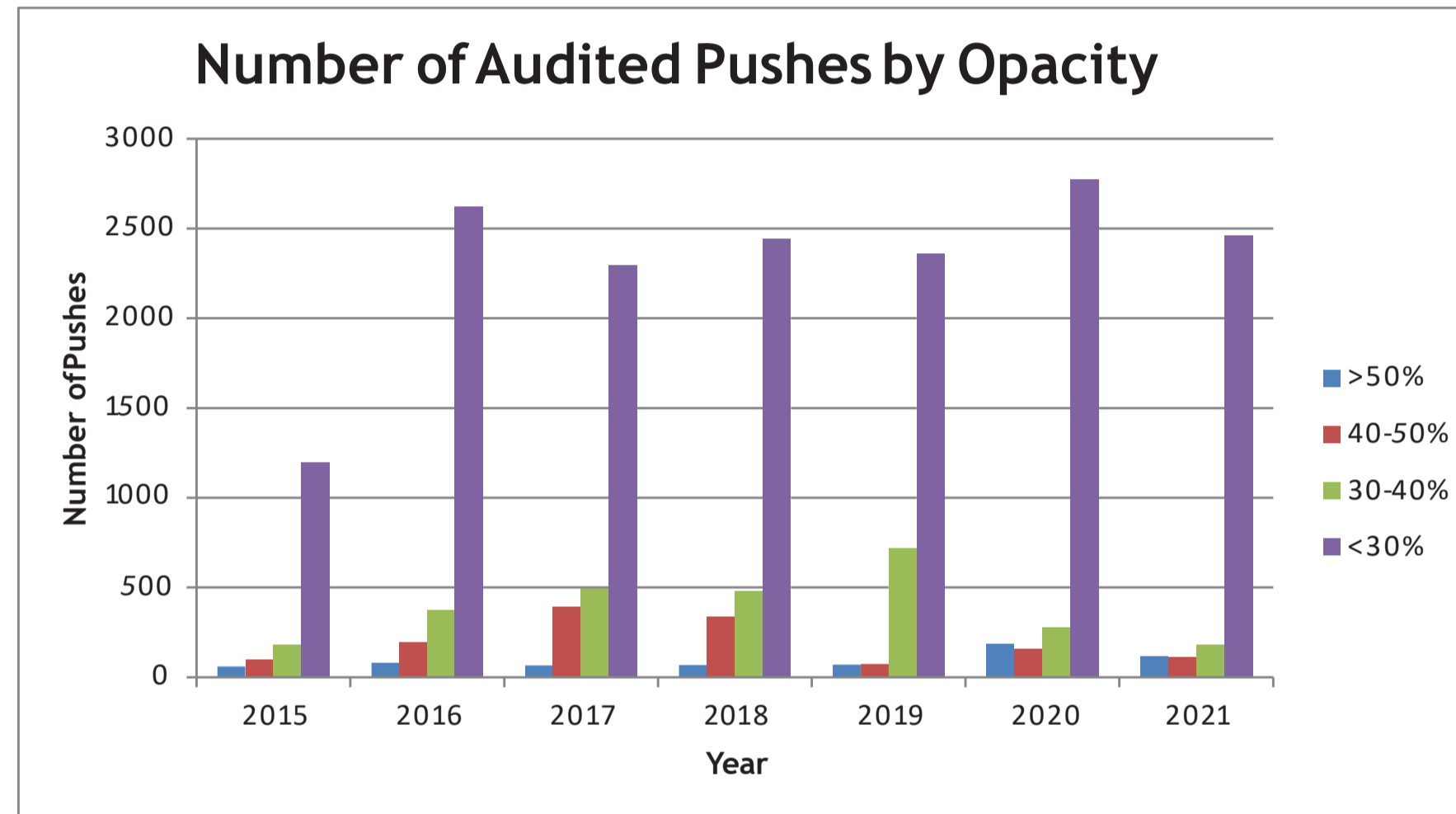


All batteries performing below current limit.

Improved Air Quality

Cokemaking Emissions Performance

Pushing Opacity



Notes:

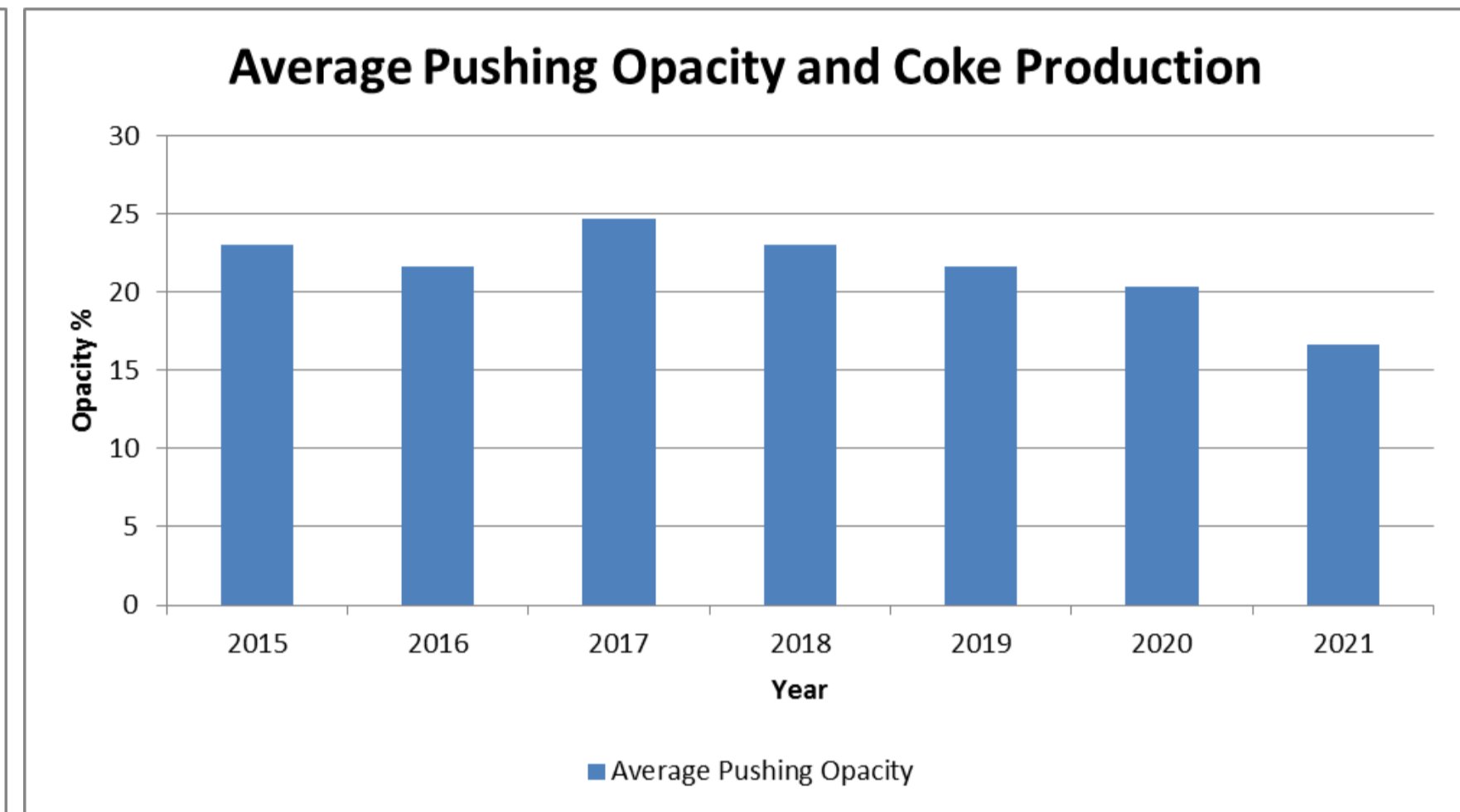
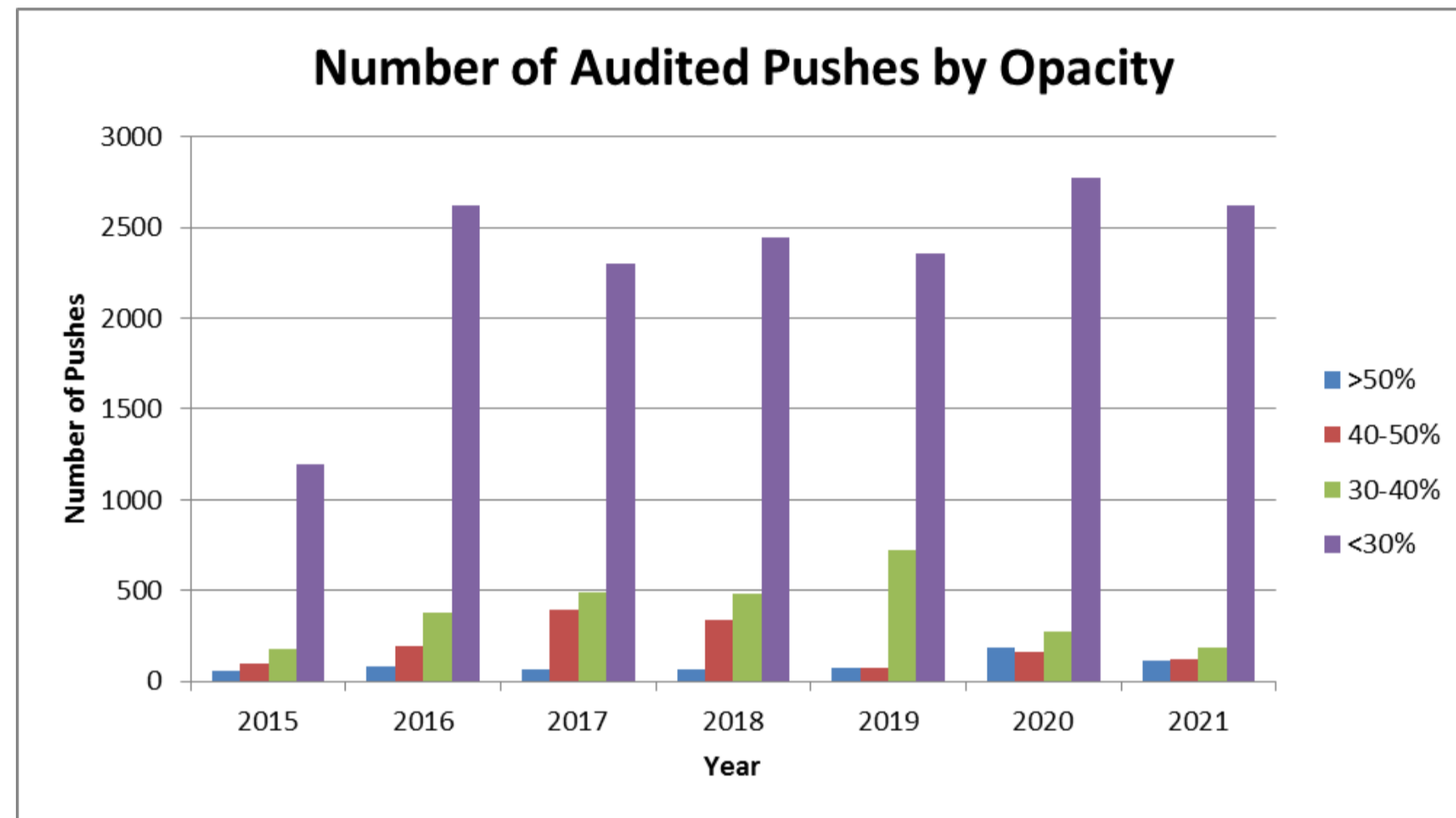
- ▶ 2015 data begins on July 2nd when the standard came into force
- ▶ 2021 data includes Jan 1, 2021 to **Nov 19, 2021**
- ▶ Number of audits per year vary based on changing operating conditions



To date all corrective actions have successfully corrected pushing opacity.

Improved Air Quality

Cokemaking Emissions Performance



Notes:

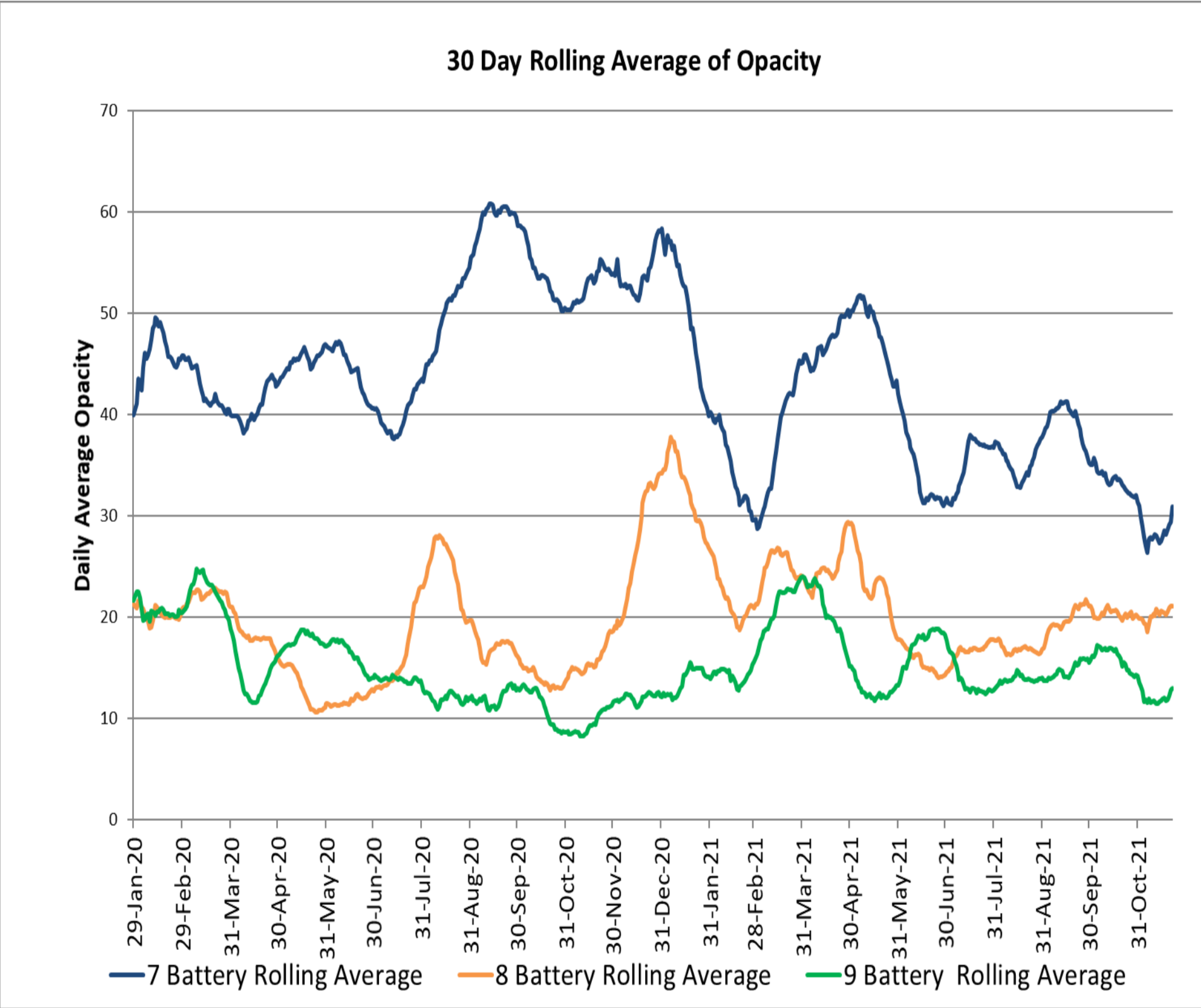
- ▶ 2015 data begins on July 2nd when the standard came into force
- ▶ 2021 data includes Jan 1, 2021 to Dec 7, 2021
- ▶ Number of audits per year vary based on changing operating conditions



To date all corrective actions have successfully corrected pushing opacity.

Progress Improvement

Cokemaking Stack Opacity



- ▶ **No. 9 battery:** Completed nine thru-walls in 2021. Planned capital investment to complete remaining thru-walls in 2022.
- ▶ **No. 8 battery:** Planned capital investment to complete additional thru-walls in future.
- ▶ **No. 7 battery:** Ongoing maintenance planned.

\$10 million investment planned for 2022



Continued improvement in stack opacity. Further investments committed.



Anticipated Benefits of Electric Arc Steelmaking

Improved Competitiveness

- ▶ Creates cost competitive platform for growth and value-add downstream opportunities by increasing our annual liquid steel production capacity from 2.8 to 3.7 million tons.
- ▶ Reduces sustaining capital requirements allowing more opportunity for investment.
- ▶ Offers scalable operating model and cost structure.
- ▶ Reduces exposure to carbon taxes
- ▶ Eliminates the risk associated with a single furnace operation.

Builds our Organization and Community

- ▶ Delivers a modernized workplace with skills development and succession opportunities.
- ▶ Creates at least 500 new construction jobs in the region.
- ▶ Provides more apprenticeships, co-op placements, and high-skill career opportunities.

Shrinks our Environmental Footprint

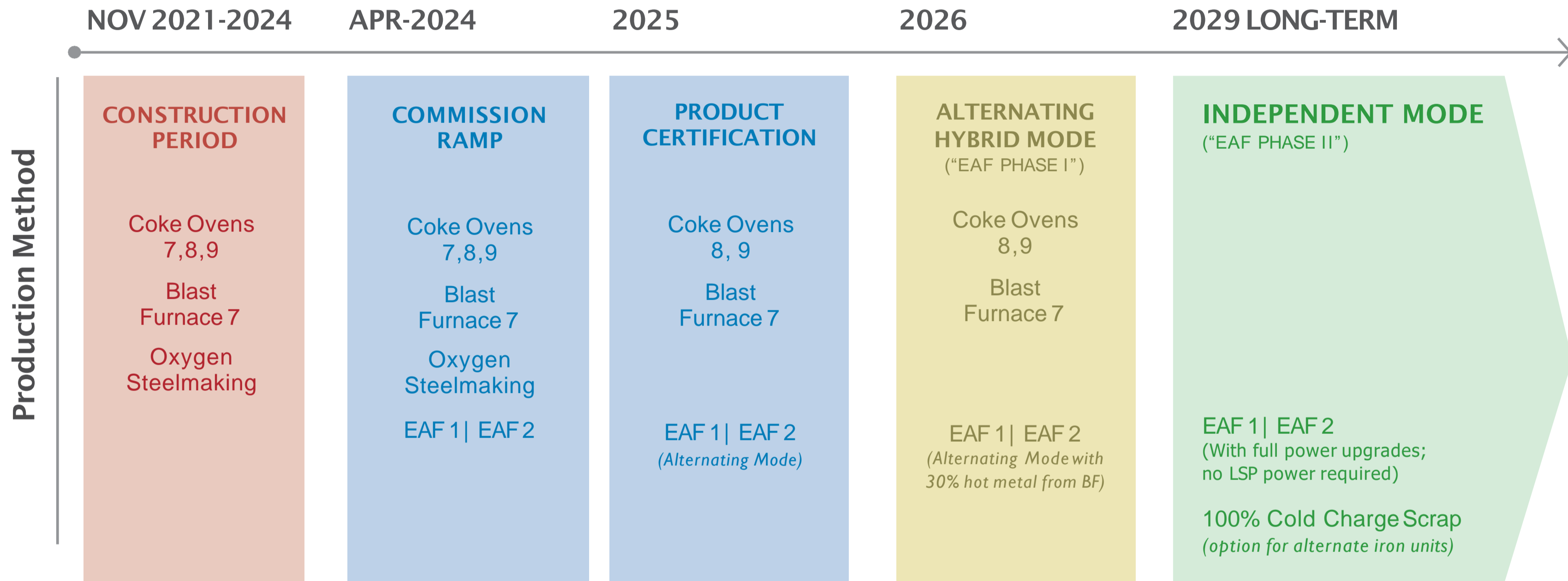
- ▶ Reduces our greenhouse gas emissions by up to 70%
- ▶ Eliminates emissions associated with cokemaking

Makes us a financially sustainable producer and employer for generations to come.

When paired with Ontario's low-carbon power grid, it would make Algoma Steel the leading producer of green steel in Canada, and among the top suppliers in North America.



Proposed Operational Transition to Electric Arc Steelmaking



Phase I

Operations would alternate arcing on one furnace at a time with approximate 30% hot metal charge from No. 7 Blast Furnace (which is operating at reduced output). Powered by the on-site LSP power generation and excess grid power from the local 230kV transmission upgrade.

Phase II

Operate both electric arc furnaces simultaneously with 100% cold charge, including obsolete and prime scrap with option for addition of alternate iron units, such as HBI or pig iron as required. Fully powered by the Ontario grid. On-site power generation not required.

Note: 2025 onwards, No. 7 Blast Furnace will operate at a lower rate.





Algoma's Shrinking Environmental Footprint

Transition to Electric Arc Steelmaking

Algoma Steel has committed to transition its manufacturing process from the integrated basic oxygen steelmaking route to electric arc steelmaking. This process change will shrink Algoma's environmental footprint dramatically, **reducing greenhouse gas emissions by up to 70%⁽¹⁾** and positioning Algoma as one of the leading producers of green steel in North America.

Other benefits include:



Quieter

Fewer noise sources.



Less Waste

Fewer by-product streams.



Cleaner Water

Fewer effluent discharges.



Cleaner Air

Lower emissions from fewer sources.

		Preliminary Estimated Reduction⁽¹⁾	% Reduction
GHG Emissions	CO₂	3.0 MM tonnes	70%
	CO₂ /NT production	1.33 tonnes	75%
SOx Emissions		4,060 tonnes	82%
NOx Emissions		1,604 tonnes	52%
Cokemaking Emissions		Complete elimination of Cokemaking Stack and Fugitive Emissions	100%

Note (1): Source: Company information. Expected environmental benefits from the EAF are based on projected estimates for Algoma, using published data sources for similar technologies. Estimated benefits based on current production versus forecasted production of 3.0MM tons of steel shipments produced under full, exclusive EAF configuration.

Transition to Electric Arc Furnace Steelmaking

Applications for Environmental Compliance Approvals

Algoma Steel will be applying for the following approvals:

1

Site wide **Environmental Compliance Approval** for **air and noise** based on the planned progressive shutdown of equipment and facilities associated with the transition to electric arc furnace steelmaking. Application to include:

- ▶ Two new off-gas treatment plants including baghouses
 - ▶ A new cooling tower
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2

Amendment to the existing **industrial sewage works Environmental Compliance Approval** that incorporates:

- ▶ New recirculating non-contact cooling water system (with a small blowdown to the existing water treatment facility)
- ▶ No new contaminant loading to the existing treatment facility

Over the course of the transition, contaminant loading to the water treatment facility will decrease, up to five existing effluent discharges and up to 7 existing noise sources will be eliminated.



Pending Site Specific Standard Requests

New Site Specific Standards will govern the operating transition to electric arc steelmaking

- ▶ By the end of March 2022, Algoma will be submitting a request for amended site specific standards for particulate, benzene, and benzo(a) pyrene. The new Standards will reflect changes to the air emission dispersion model.
- ▶ Model updates include:
 - ▶ Newest model version
 - ▶ Data reflecting more recent meteorological conditions
 - ▶ Changes to the land use designation from urban to rural to more accurately reflect local land use
- ▶ Algoma's request will include a continuous improvement plan that provides for the substantial reduction or elimination of emissions as a result of the progressive shutdown of equipment and facilities in the transition to electric arc steelmaking.
- ▶ Site Specific Standards are government approved standards issued to facilities that are implementing a continuous improvement plan towards reducing the emissions of specific contaminants.



New Site Specific Standard Request

Sulfur Dioxide (SO₂)

A new provincial standard for SO₂ comes into force in July 2023.

- ▶ Existing integrated steelmaking facilities in Ontario cannot achieve this new standard.
- ▶ Both the federal and provincial governments have announced they will require Coke Oven Gas Desulfurization by January 1, 2026 as a means to reduce SO₂ emissions from integrated iron and steel making facilities.
- ▶ Algoma will be taking an alternative approach to reduce SO₂ through its transition to electric arc steelmaking, which will see the elimination of cokemaking from Algoma's operations. Therefore, Algoma will be applying for a Site Specific Standard that includes an action plan to reduce SO₂ that reflects the progressive facility shutdown.
- ▶ In the interim and throughout the transition, Algoma will continue to operate its facilities in compliance with the requirements of all Environmental Compliance Approvals and Site Specific Standards.

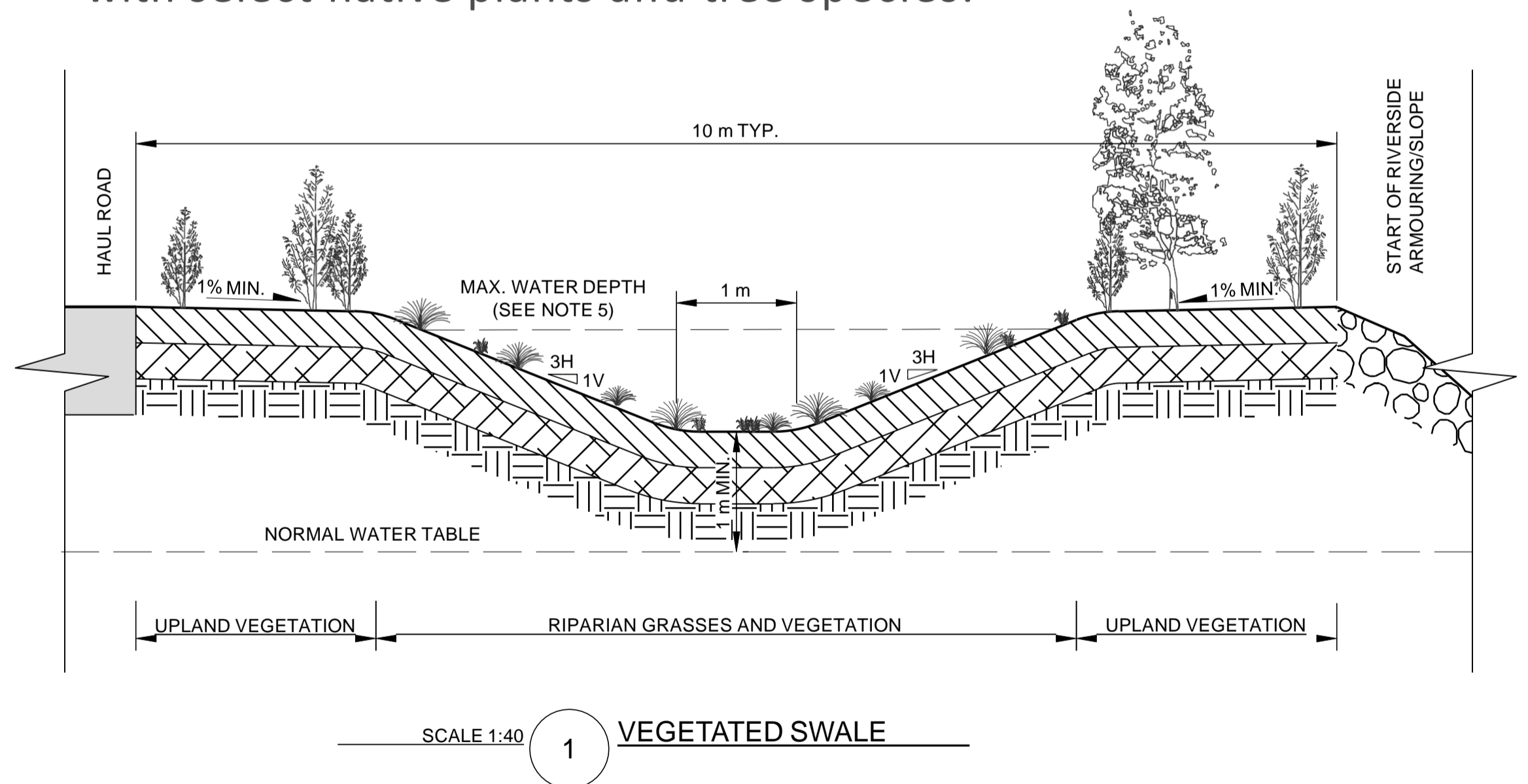


Site Greening Initiative



Algoma's Legacy Environmental Action Plan (LEAP) is a risk-based plan to identify, assess, manage and mitigate off-site adverse environmental effects caused by historical activities. Algoma commits to invest \$3.8 million each year in LEAP initiatives. **The Site Greening Initiative is one of many activities currently under way.**

- ▶ Algoma has launched a Site Greening Initiative that includes surface stabilization, ground and surface water management, and revegetation.
- ▶ The plan includes the **creation of naturalized green buffer strips** along the perimeter of the site by introducing clean soils, creating seasonal surface water ponding areas, and vegetating with select native plants and tree species.



Public Complaints

The following public complaints were received by the Company since the last CLC:

- 1 Odour & Particulate – Unknown source
- 16 Noise – A leak developed on the No. 7 blast furnace piping. Algoma's maintenance team developed and implemented a repair plan resolving the issue.

An internal investigation into each public complaint is conducted and a report is submitted to the MECP and a summary is listed on the company website.



Community Liaison Committee - Next Meetings

Proposed 2021 Schedule:

- March 8th, 2022
 - June 7th, 2022
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