

Total Suspended Particulate Matter

Standards

The Ontario Regulation 419/05 Schedule 3 ground level concentration standard for total suspended particulate matter is $120 \mu\text{g}/\text{m}^3$. The Ministry of Environment, Conservation and Parks (MECP) previously issued a Site-Specific Standard (SSS) for Algoma's operations of $127 \mu\text{g}/\text{m}^3$, based on a 24 hour averaging period.

Based on MECP directed revised modeling, and the transition to electric arc (EAF) steelmaking, Algoma's predicted total suspended particulate matter concentrations, based on an 24 hour averaging period are:

- $135 \mu\text{g}/\text{m}^3$ in the Current (2024) scenario.
- $131 \mu\text{g}/\text{m}^3$ in the Interim (2025) scenario.
- $121 \mu\text{g}/\text{m}^3$ in the Interim (2026-2028) scenario.
- $34 \mu\text{g}/\text{m}^3$ in the Future (2029 - onwards)

Emissions

The most significant sources of total suspended particulate matter emissions at the facility, in terms of impact in the community come from:

Coke batteries, which includes emissions from coke oven leaks (doors, off-takes, lids), pushing, charging, quenching, coal storage and coke stacks

Ironmaking, which includes emissions from casting, stoves, flares, cooling towers, hot metal transfer, de-dishing, iron ore transfer, the slag granulator and slag pits

Steelmaking, which includes emissions from the gas cleaning plant, hot metal transfers, the ladle metallurgy station, BOF charging, BOF tapping, blowing, cooling towers, casting and flame cutting

Material handling, which includes emissions from mobile equipment, roads, slag processing and the lime plant

Benzene

Standards

The Ontario Regulation 419/05 Schedule 3 ground level standard for benzene is $0.45 \mu\text{g}/\text{m}^3$. The MECP previously issued a SSS for Algoma's operations of $2.2 \mu\text{g}/\text{m}^3$, based on an annual averaging period.

Based on MECP directed revised modeling, and the transition to EAF steelmaking, Algoma's predicted benzene concentrations, based on an annual averaging period are:

- $3.98 \mu\text{g}/\text{m}^3$ in the Current (2024) and Interim (2025) scenarios.
- $3.21 \mu\text{g}/\text{m}^3$ in the Interim (2026-2028) scenario.
- $0.11 \mu\text{g}/\text{m}^3$ in the Future (2029 - onwards) scenario.

Emissions

The most significant sources of benzene emissions at the facility, in terms of impact in the community come from:

Coke by-products plant, which includes emissions from fugitive leaks from process vessels and storage tanks

Coke batteries, which includes emissions from which includes emissions from coke oven leaks (doors, off-takes, lids), pushing and charging

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Benzo(a)pyrene

Standards

The Ontario Regulation 419/05 Schedule 3 standard for benzo(a)pyrene is $0.00001 \mu\text{g}/\text{m}^3$. The MECP previously issued a SSS for Algoma's operations of and $0.004 \mu\text{g}/\text{m}^3$, based on an annual averaging period.

Based on MECP directed revised modeling, and the transition to EAF steelmaking, Algoma's predicted benzo(a)pyrene concentrations, based on an annual averaging period are:

- $0.0053 \mu\text{g}/\text{m}^3$ in the Current (2024) and Interim (2025) scenarios.
- $0.0045 \mu\text{g}/\text{m}^3$ in the Interim (2026-2028) scenario.
- $0 \mu\text{g}/\text{m}^3$ in the Future (2029 - onwards) scenario.

Emissions

The most significant sources of benzo(a)pyrene emissions at the facility, in terms of impact in the community come from:

Coke batteries, which includes emissions from coke oven leaks (doors, off-takes, lids), pushing and charging

Sulphur Dioxide

Standards

The Ontario Regulation 419/05 Schedule 3 standard for sulphur dioxide based on an hourly averaging period is $690 \mu\text{g}/\text{m}^3$ but as of July 2023 will be reduced to $100 \mu\text{g}/\text{m}^3$. There is no annual averaging period standard currently, but as of July 2023 a standard of $10 \mu\text{g}/\text{m}^3$ will come in effect.

Based on MECP directed revised modeling, and the transition to EAF steelmaking, Algoma's predicted sulphur dioxide are:

- $597 \mu\text{g}/\text{m}^3$ based on hourly average and $34 \mu\text{g}/\text{m}^3$ based on annual average, in the Current (2024) scenarios.
- $615 \mu\text{g}/\text{m}^3$ based on hourly average and $23 \mu\text{g}/\text{m}^3$ based on annual average, in the Interim (2025) scenario.
- $494 \mu\text{g}/\text{m}^3$ based on hourly average and $18 \mu\text{g}/\text{m}^3$ based on annual average, in the Interim (2026-2028) scenario.
- $79 \mu\text{g}/\text{m}^3$ based on hourly average and $1.4 \mu\text{g}/\text{m}^3$ based on annual average, in the Future (2029 - onwards) scenario.

Emissions

The most significant sources of sulphur dioxide emissions at the facility, in terms of impact in the community come from:

Cokemaking, which includes emissions from the combustion of by-product fuels in coke oven battery under firing

Ironmaking, which includes emissions from casting, slagging and flares

Hot rolling mill, which includes emissions from the combustion of natural gas and by-product fuels in reheat furnaces

Material handling, which includes emissions from mobile equipment.

Utility sources, which include emissions from the combustion of natural gas and by-product fuels in boilers