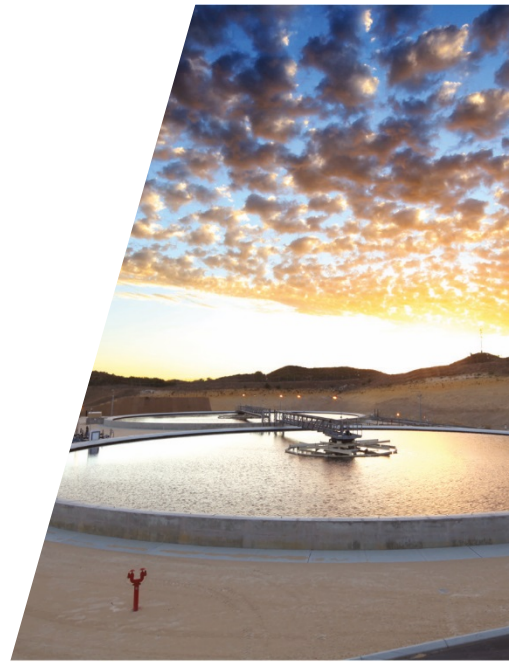




# 2021 First Quarter Summary Report - Ambient Air Quality Monitoring Program

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Algoma Steel Inc.





## Executive Summary

Algoma Steel Inc. (Algoma) herein presents the 2021 First Quarter Summary Report (Report) for the months of January to March 2021, for its Ambient Air Quality Monitoring Program (AAQMP) in Sault Ste. Marie, Ontario (Site/Facility). Algoma is responsible for the operation and maintenance of the existing monitoring stations and ambient air quality sampling, formerly carried out by the Ontario Ministry of the Environment, Conservation, and Parks (MECP). The AAQMP was operated in general accordance with the MECP Operations Manual for Air Quality Monitoring in Ontario dated February 2018 (Operations Manual). Reporting and/or excursion notification were conducted in general accordance with Ontario Regulation 419/05, "Air Pollution – Local Air Quality" (O. Reg. 419/05), the Ontario Ambient Air Quality Criteria (Ontario AAQC), and as per the requirements set forth by the MECP and presented within the attached summary table.

The objective of the AAQMP is to perform ongoing data analysis and reporting of both continuous and non-continuous data for the following stations:

Station 71068 – Patrick Street

Station 71090 – Wallace Terrace

Station 71015 – Spadina Avenue (dustfall only)

Station 71042 – Bonney Street (dustfall only)

Station 71043 – Wilding Avenue (dustfall only)

Station 71045 – Adelaide Street (dustfall only)

Algoma operated the monitoring stations in general accordance with the requirements specified within the MECP Operations Manual, O. Reg. 419/05, and the Ontario AAQCs. As per the MECP's requirements and in accordance with O. Reg. 419/05, all AAQC, Upper Risk Thresholds (URT), Guideline, and/or Standard excursions within this Report were reported.

2021 First Quarter Executive Summary Table  
January to March 2021  
Algoma Ambient Air Quality Monitoring Program  
Sault Ste. Marie, Ontario

Patrick Street Ambient Air Quality Monitoring Station (71068)							
Parameter	Units	Maximum	Minimum	Arithmetic Mean	Standard <sup>(1)</sup>	Number of Excursions <sup>(2)</sup>	Guideline, URT, AAQC Criteria <sup>(1,3,4)</sup>
<b>Continuous Parameters</b>							
Total Reduced Sulphur (TRS) - 24 hour	ppb	4.8	0.0	0.4	5 ppb (24-hour) <sup>(5)</sup>	0	5 ppb (24-hour)
Total Reduced Sulphur (TRS) - 10 minute	ppb	17.8	0.0	0.4	10 ppb (10-minute) <sup>(5)</sup>	13	10 ppb (10-minute)
<b>Non-Continuous Parameters</b>							
Particulate Matter less than 10 microns (PM <sub>10</sub> )	µg/m <sup>3</sup>	53.00	<MDL	23.17	N/A	N/A	50 (24-hour)
Total Suspended Particulate (TSP) <sup>(6)</sup>	µg/m <sup>3</sup>	108.00	<MDL	45.03		N/A	N/A
Total Suspended Particulate Metals (TSP Metals except Ferric Oxide)	µg/m <sup>3</sup>	VARIOUS PARAMETERS, NO EXCURSIONS TO REPORT UNLESS LISTED BELOW					
Total Suspended Particulate Ferric Oxide <sup>(7)</sup>	µg/m <sup>3</sup>	3.26	<MDL	1.25	25 µg/m <sup>3</sup> (24-hour)	0	25
Volatile Organic Compounds (VOCs)	µg/m <sup>3</sup>	VARIOUS PARAMETERS, NO EXCURSIONS TO REPORT					
Volatile Organic Compounds (Benzene) <sup>(8)</sup>	µg/m <sup>3</sup>	1.6000	0.1900	1.0171	N/A	0	2.3 µg/m <sup>3</sup> (24 hr)
Poly-cyclic Aromatic Hydrocarbons (Benzo(a)pyrene) <sup>(8)</sup>	ng/m <sup>3</sup>	18.0000	0.0400	4.1620	N/A	N/A	0.05 (24-hour)

Wallace Terrace Ambient Air Quality Monitoring Station (71090)							
Parameter	Units	Maximum	Minimum	Arithmetic Mean	Standard <sup>(1)</sup>	Number of Excursions <sup>(2)</sup>	Guideline, URT, AAQC Criteria <sup>(1,3,4)</sup>
<b>Continuous Parameters</b>							
Total Reduced Sulphur (TRS) - 24 hour	ppb	3	0.0	0.3	5 ppb (24-hour) <sup>(5)</sup>	0	5 ppb (24-hour)
Total Reduced Sulphur (TRS) - 10 minute	ppb	13.1	0.0	0.4	10 ppb (10-minute) <sup>(5)</sup>	4	10 ppb (10-minute)
Particulate Matter less than 10 microns (PM <sub>10</sub> )	µg/m <sup>3</sup>	72	0	14	N/A	0	50 (24-hour)
<b>Non-Continuous Parameters</b>							
Total Suspended Particulate (TSP) <sup>(6)</sup>	µg/m <sup>3</sup>	111.00	10.00	49.87	120 µg/m <sup>3</sup> (24-hr)	N/A	N/A
Total Suspended Particulate Metals (TSP Metals except Ferric Oxide)	µg/m <sup>3</sup>	VARIOUS PARAMETERS, NO EXCURSIONS TO REPORT UNLESS LISTED BELOW					
Total Suspended Particulate Ferric Oxide <sup>(7)</sup>	µg/m <sup>3</sup>	3.37	0.02	1.26	25 µg/m <sup>3</sup> (24-hour)	0	25
Volatile Organic Compounds (VOCs)	µg/m <sup>3</sup>	VARIOUS PARAMETERS, NO EXCURSIONS TO REPORT UNLESS LISTED BELOW					
Volatile Organic Compounds (Benzene) <sup>(8)</sup>	µg/m <sup>3</sup>	1.7600	0.2600	1.0600	N/A	0	2.3 µg/m <sup>3</sup> (24 hr)
Poly-cyclic Aromatic Hydrocarbons (Benzo(a)pyrene) <sup>(8)</sup>	ng/m <sup>3</sup>	26.0000	0.0600	5.9220	N/A	N/A	0.05 (24-hour)

Dustfall Ambient Air Quality Monitoring Stations							
Parameter	Units	Maximum	Minimum	Arithmetic Mean	Standard <sup>(1)</sup>	Number of Excursions <sup>(2,9)</sup>	Guideline, URT, AAQC Criteria <sup>(1,3,4)</sup>
<b>Non-Continuous Parameters</b>							
Bonney Street Dustfall Station (71042)	g/m <sup>2</sup> /30day	5.27	1.33	3.00	7	0	N/A
Adelaide Street Dustfall Station (71045)	g/m <sup>2</sup> /30day	2.86	0.43	1.26	7	0	N/A
Spadina Avenue Dustfall Station (71015)	g/m <sup>2</sup> /30day	3.62	1.32	2.29	7	0	N/A
Wilding Avenue Dustfall Station (71043)	g/m <sup>2</sup> /30day	1.82	0.92	1.45	7	0	N/A

Notes:

N/A - Not Applicable due to no available Standard, Guideline, Upper Risk Threshold, or Ambient Air Quality Criteria.

- (1) Standard/Guideline/Upper Risk Threshold refers to Ontario Regulation 419/05.
- (2) Sample results presented herein may be affected by urban activities, wood burning appliances immediately adjacent to the samplers and also by several other heavy industrial facilities, main city roadways bridge traffic, main rail yard and rail traffic, tractor trailer truck marshalling and marine shipping routes immediately adjacent to and in the vicinity of the sampling equipment.
- (3) AAQC refers to the Ontario Ambient Air Quality Criteria.
- (4) URT refers to the Upper Risk Threshold
- (5) Total Reduced Sulphur standards came into effect on January 1, 2019.
- (6) The standard for Suspended Particulate Matter (TSP) is based on Suspended particulate matter less than 44 micrometers (PM<sub>44</sub>) in size. The TSP sampling method used allows for the collection of particulate sizes of less than 100 micrometers (PM<sub>100</sub>). Therefore the sampled result of PM<sub>100</sub> may be greater than a PM<sub>44</sub> result when compared against the PM<sub>44</sub> standard.  
The standard for TSP as PM<sub>44</sub> of 120 µg/m<sup>3</sup> based on an 24-hour averaging period.
- (7) The AAQC for iron is based on the elemental form and does account for the various iron compounds (i.e., Fe<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>4</sub>, etc.) attributed to the steelmaking process. Based on a report prepared for Algoma Steel Inc. by SGS Lakefield Research Ltd. entitled "Fe Department Study of Three Slag Samples and Seven Dust Samples", elemental iron (Fe) represents approximately only one percent while ferric oxide represents approximately twenty-five percent of the iron compounds detected within the samples. As such, it is anticipated that ferric oxide is the main contributor to iron concentrations at the Site and the ferric oxide (Fe<sub>2</sub>O<sub>3</sub>) standard (i.e. 25 µg/m<sup>3</sup>) is more appropriate for comparison.
- (8) Algoma has MECP-approved site-specific standards for benzene (2.2 µg/m<sup>3</sup>) and benzo(a)pyrene (4 ng/m<sup>3</sup>) that are based on an annual averaging period and compared to the annual average concentration for these parameters.
- (9) The MECP approved dustfall stations located at Bonney Street, Spadina Avenue, Wilding Avenue, and Adelaide Street are historical sites, selected to meet MECP siting criteria as closely as possible, however some sites may not meet the siting criteria perfectly. As such, dustfall results may be influenced by nearby structures. Any deviations from the siting criteria are recognized by the MECP following practical rationale including a combination of best fit and a long history of consistent data collection at each monitoring location.