

February 5, 2024

**Sent Via Email**

Adolfo Quiroga - President  
 Smith Foundry Company Inc.  
 1855 E 28th St  
 Minneapolis, MN 55407-1273

RE: Verification of Test Results for the December 12-14, 2023, Filterable Particulate Matter, Lead and Opacity Performance Test of the Fabric Filters (TREAs 1-4 and 6) Pursuant to Air Emission Permit Number 137-91-0T-1 and EPA Testing Request

Dear Adolfo Quiroga:

Minnesota Pollution Control Agency (MPCA) performance test staff reviewed the final test report for the performance test conducted at Smith Foundry Company Inc. located in Minneapolis, Minnesota. The test report was submitted January 24, 2024.

**Summary of performance test results**

<b>Emission unit tested</b>	<b>Limitation basis Pollutant and emission limit</b>	<b>Test result</b>	<b>Compliance status</b>
Fabric Filter - Low Temperature, i.e., T<180 Degrees F TREA 6 CE001	The Permittee shall limit emissions of Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. [Minn. R. 7011.0715, subp. 1(A)] <b>(7011.0735 TABLE 2 calculated limit: 0.082 gr/dscf)</b>	Filterable Particulate Matter 0.0016 grains per dry standard cubic foot	Compliant
(Facing Sand Muller/EU002 and Shakeout/EU007 SV005)	The Permittee shall limit Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]	Opacity 0 percent opacity	Compliant
	Control equipment Outlet Lead emissions. [EPA requested testing]	Lead 0.0015 pounds per hour	Verified
	Control equipment Outlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 0.17 pounds per hour	Verified
	Control equipment East Inlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 0.044 pounds per hour	Verified
	Control equipment West Inlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 41.1 pounds per hour	Verified
	Control equipment Filterable Particulate Matter collection efficiency. [EPA requested testing]	Filterable Particulate Matter 99.6 percent collection efficiency	Verified

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Fabric Filter - Low Temperature, i.e., T<180 Degrees F TREA 3 CE002	The Permittee shall limit emissions of Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. [Minn. R. 7011.0715, subp. 1(A)] <b>(7011.0735 TABLE 2 calculated limit: 0.100 gr/dscf)</b>	Filterable Particulate Matter 0.0018 grains per dry standard cubic foot	Compliant
(Cutoff Saws SV007)	The Permittee shall limit Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]	Opacity 0 percent opacity	Compliant
	Control equipment Outlet Lead emissions. [EPA requested testing]	Lead 0.00027 pounds per hour	Verified
	Control equipment Outlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 0.038 pounds per hour	Verified
Fabric Filter - Low Temperature, i.e., T<180 Degrees F TREA 1 CE003	The Permittee shall limit emissions of Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. [Minn. R. 7011.0715, subp. 1(A)] <b>(7011.0735 TABLE 2 calculated limit: 0.082 gr/dscf)</b>	Particulate Matter 0.0017 grains per dry standard cubic foot	Compliant
(Shakeout/ EU007 SV015)	The Permittee shall limit Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]	Opacity 0 percent opacity	Compliant
	Control equipment Outlet Lead emissions. [EPA requested testing]	Lead 0.00048 pounds per hour	Verified
	Control equipment Outlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 0.079 pounds per hour	Verified
	Control equipment Inlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 39.7 pounds per hour	Verified
	Control equipment Filterable Particulate Matter collection efficiency. [EPA requested testing]	Filterable Particulate Matter 99.8 percent collection efficiency	Verified

Emission unit tested	Limitation basis Pollutant and emission limit	Test result	Compliance status
Fabric Filter - Low Temperature, i.e., T<180 Degrees F TREA 2 CE004	The Permittee shall limit emissions of Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. [Minn. R. 7011.0715, subp. 1(A)] <b>(7011.0735 TABLE 2 calculated limit: 0.084 gr/dscf)</b>	Particulate Matter 0.0024 grains per dry standard cubic foot	Compliant
(Shot Blaster/EU008 and Grinding/EU009 SV006)	The Permittee shall limit Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]	Opacity 0 percent opacity	Compliant
	Control equipment Outlet Lead emissions. [EPA requested testing]	Lead 0.00023 pounds per hour	Verified
	Control equipment Outlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 0.19 pounds per hour	Verified
	Control equipment Hand Grinding Inlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 0.18 pounds per hour	Verified
	Control equipment Grinding Wheel Inlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 0.80 pounds per hour	Verified
	Control equipment Shot Blaster Inlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 36.8 pounds per hour	Verified
	Control equipment Filterable Particulate Matter collection efficiency. [EPA requested testing]	Filterable Particulate Matter 99.4 percent collection efficiency	Verified
Fabric Filter - Low Temperature, i.e., T<180 Degrees F TREA 4 CE005	The Permittee shall limit emissions of Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. [Minn. R. 7011.0715, subp. 1(A)] <b>(7011.0735 TABLE 2 calculated limit: 0.100 gr/dscf)</b>	Particulate Matter 0.0015 grains per dry standard cubic foot	Compliant
(Backing Sand Muller/EU003 SV002)	The Permittee shall limit Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]	Opacity 0 percent opacity	Compliant

<b>Emission unit tested</b>	<b>Limitation basis Pollutant and emission limit</b>	<b>Test result</b>	<b>Compliance status</b>
Fabric Filter - Low Temperature, i.e., T<180 Degrees F TREA 4 CE005  (Backing Sand Muller/EU003 SV002)	Control equipment Outlet Lead emissions. [EPA requested testing]	Lead 0.00013 pounds per hour	Verified
	Control equipment Outlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 0.054 pounds per hour	Verified
	Control equipment Inlet Filterable Particulate Matter emissions. [EPA requested testing]	Filterable Particulate Matter 24.4 pounds per hour	Verified
	Control equipment Filterable Particulate Matter collection efficiency. [EPA requested testing]	Filterable Particulate Matter 99.7 percent collection efficiency	Verified

**APC operating rate**

<b>Emission unit</b>	<b>APC equipment type</b>	<b>Pressure drop units</b>	<b>Lead test range</b>	<b>Particulate test range</b>
CE001	Fabric filter	Inches water column	4.6 to 5.2	4.0 to 5.0
CE002	Fabric filter	Inches water column	2.4 to 2.6	2.4 to 2.6
CE003	Fabric filter	Inches water column	4.8 to 5.0	4.8 to 5.0
CE004	Fabric filter	Inches water column	1.1 to 1.9	1.0 to 1.9
CE005	Fabric filter	Inches water column	1.0 to 3.4	1.8 to 3.2

The Emission Inventory rule, Minn. R. 7019.3000 to 7019.3100, requires the calculation of emissions based on an established hierarchy. In the absence of Continuous Emission Monitor data meeting the requirements of Minn. R. 7019.3040, the next method of calculation, a performance test, must be used. When a performance test for particulate matter, particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers, carbon monoxide, nitrogen oxides, sulfur oxides, volatile organic compounds or lead is conducted and meets the requirements of Minn. R. 7017.2001 to 7017.2060, the results must be used to calculate emissions, unless specified otherwise by Minn. R. 7019.3000 to 7019.3100. It is the Company's responsibility to ensure the results of performance tests are accounted for in their annual emission inventory submittal. Note that the final decision to approve the emission factor for any given inventory year will be made by the Emission Inventory Coordinator.

Adolfo Quiroga  
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If you have questions or comments regarding the content of this letter, please contact me at 651-757-2757.

Your continued cooperation is appreciated.

Sincerely,

*Curtis H Stock*

*This document has been electronically signed.*

Curtis H. Stock  
State Program Administrator  
Industrial Division

CHS:cs

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