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REVISED
COMPLIANCE ASSURANCE MONITORING RULE SUPPLEMENT
TO
SAND SYSTEM BAGHOUSE MALFUNCTION ABATEMENT PLAN

BREMBO NORTH AMERICA FOUNDRY
HOMER, MICHIGAN

RPS PROJECT NO. 211727

FORWARD

The information presented in this document is intended to be used a supplement to that which is provided in the Sand System Baghouse Malfunction Abatement Plan, and to fulfill applicable “submittal requirements” of Compliance Assurance Monitoring Rule (CAM Rule) requirements (40 CFR 64.4).

The plan addresses Michigan’s Malfunction Abatement Plan (R 336.1911) requirements, including those related to preventative maintenance; inspection, maintenance and repair; operating variables that shall be monitored to detect a malfunction or failure; and corrective action procedures.

This supplemental provides incremental additions to augment CAM Rule-relevant information presented in the plan, so as to ensure all required, currently-availably information to address CAM Rule applicable submittal requirements.

I. BACKGROUND

A. Emission Units

EUSHAKEOUT
EUSANDHNDLG

B. Applicable Requirements Summary

Permit Number: PTI No. 199-14C

Pre-Control
Emissions: 3,656 tpy PM (estimated)
203 tpy PM10 (estimated)
113 tpy PM2.5 (estimated)

CAM Rule
Applicability: Other Pollutant-Specific Emission Unit for PM, PM10, and PM2.5

Emission Limits		<u>PM</u>	<u>PM10</u>	<u>PM2.5</u>
Subject to CAM:	pph:	14.41	16.02	13.31
	tpy:	36.56	40.64	33.76

Monitoring
Requirements: Malfunction Abatement Plan-required monitoring: Bag Leak Detection System (BLDS)

C. Control Technology

The Sand System Baghouse is comprised of two pulse-jet “cells” (modules or “DCs”), each with a dedicated 350 HP fan rated at 100,000 acfm each (nominal). Each cell exhausts via a common stack, the outlet of which is equipped with a Malfunction Abatement Plan-required BLDS (i.e., a CMP 750). The common inlet to the baghouse is equipped with a “duct burner system” to prevent condensation.

II. MONITORING APPROACH

	Pressure Drop (in H2O)	Optical Scintillation (%)
A. Indicator:	Pressure drop across the baghouse is continuously measured with a differential pressure gauge, and communicated to a Distributed Control System (DCS) and recorded on a Supervisory Control and Data Acquisition (SCADA) system.	Variations in visible light beam intensity caused by the movement of particles in the exhaust stack are continuously measured with a CPM 750, a parametric monitoring system (CPMS) for PM emissions. Monitor readings are communicated to a Distributed Control System (DCS) and recorded on a Supervisory Control and Data Acquisition (SCADA) system.
B. Indicator Range	A potential excursion investigation will be conducted and documented for any 1-hour period during which the recorded indicator value is:	
	DC1: < 3.5 / > 9.0 in H2O DC2: < 3.5 / > 8.5 in H2O	> 65%
	If an applicable emission limit is found to have been surpassed during any such period, excess emissions reporting will be conducted in accordance with the procedures in Section 7.4 in the Sand System Baghouse Malfunction Abatement Plan.	
C. QIP Threshold	Optional (none selected).	Optional (none selected).

III. PERFORMANCE CRITERIA

	Pressure Drop (in H2O)	Optical Scintillation (%)
A. Measurement Approach:	Pressure is measured at across the baghouse, at the inlet and outlet of each module. The gauge has an accuracy of 0.1 in H2O.	Optical scintillation (% baseline) is measured in the baghouse exhaust stack. The device has an accuracy of +/- 1%.
B. Verification of Operational Status	NA – monitoring equipment is not new or modified.	
C. QA/QC Practices and Criteria	Consistent with manufacturer’s recommendations.	

D. Monitoring Frequency	Continuous	Continuous
E. Data Collection Procedure	See II.A above.	See II.A above.
F. Averaging Period	10 minutes	10 minutes

IV. JUSTIFICATION

A. Rational for Selection of Performance Indicators

Pressure Drop

In general, baghouses are designed to operate at a relatively constant pressure drop. Monitoring pressure drop provides a means of detecting a change in operation that could lead to an increase in emissions. An increase in pressure drop can indicate that the cleaning cycle is not frequent enough, cleaning equipment is damaged; the bags are becoming inefficient; or the airflow has increased. A decrease in pressure drop may indicate broken or loose bags, which could possibly contribute to increased particulate matter emissions. A pressure drop across the baghouse also serves to indicate that there is airflow through the control device.

Optical Scintillation

Optical scintillation is a generally recognized surrogate parameter for particulate matter emissions. Continuously monitoring variations in a transmitted light beam across the exhaust stack diameter provide real-time indications of changes in particulate matter concentrations in the baghouse outlet gas stream.

B. Rational for Selection of Indicator Ranges

Pressure Drop

The baghouse manufacturer initially suggested a pressure drop range of 3.5 to 8.5-9.0 in H₂O as an optimal range.

Optical Scintillation

The value is based on the manufacturer recommendations for the Melt Shop Baghouse monitor, which Brembo has also adopted (as interim value) for the other three baghouse monitors as well, pending completion of the next emissions testing campaign (in mid-2021), and development of updated indicator ranges.

Brembo reserves the right to further evaluate and adjust these indicator ranges, primarily in the context of the next required emissions testing, which is tentatively scheduled for the mid-2021 timeframe.

C. Performance Test

The next required emissions testing is tentatively scheduled for the mid-2021 timeframe. Selected indicator parameter ranges will be further evaluated in conjunction with that testing campaign.

Data obtained during the two prior testing campaigns did not appear to provide an appropriate for developing representative, coherent correlations between concurrent emissions measurements, process parameters, and indicator readings.