

Attachment 2

CHECKLISTS FOR COMPLIANCE WITH CONTINUOUS EMISSION MONITORS (CEMS) AND CONTINUOUS OPACITY MONITORS (COMS)

This checklist is provided as a courtesy for businesses by the Michigan Department of Environmental Quality (MDEQ), Air Quality Division, and is not required to be returned or submitted to the MDEQ.

MINIMUM MONITORING PLAN REQUIREMENTS	Included ?		Need to Gather More Information ?	
	Yes	No	Yes	No
<ul style="list-style-type: none"> • General description of the process(es) and pollution control equipment 				
<ul style="list-style-type: none"> • Explain and show that the location of the monitor(s) will be representative of emissions and also be accessible. Provide a diagram showing the sample acquisition point(s) or path(s) in relation to: <ul style="list-style-type: none"> – Flow disturbances (fans, elbows, inlets, outlets, etc.) – Pollution control equipment – Emission point of monitored gases to the atmosphere – Flue walls at the sample acquisition location 				
<p><i>If necessary, include any test data and explanations as to the basis for the choice of the location. Explain any deviation from location criteria in Performance Specification 1, Section 4 and/or Performance Specification 2, Section 3 of Appendix B in 40 CFR Part 60.</i></p>				
<ul style="list-style-type: none"> • The following system information must be included: <ul style="list-style-type: none"> – Types of pollutant(s) and or parameter(s) to be monitored – Operating principles of the analyzers – Number of analyzers, including the number of sample acquisition point(s) or path(s) per analyzer and locations monitored by each – Equipment manufacturer and model number(s) – Type of probe (i.e., Will the system be able to accept an external audit?) – Equipment specifications of monitors which will be verified by the applicable Performance Specification of Appendix B in 40 CFR 60 – Formulas, including any factors used to calculate emissions in the units of the applicable standard – Span values of all pollutant monitors – Instrument ranges of all pollutant monitors – Proposed daily calibration gas, calibration error, linearity, and/or cylinder gas audit values – Data acquisition system/data recorder resolution – Expected date of monitor installation and performance specification testing 				

MINIMUM PERFORMANCE SPECIFICATION TESTING REPORT REQUIREMENTS	Included ?		Need to Gather More Information ?	
	Yes	No	Yes	No
<ul style="list-style-type: none"> • CEMS description which should include the following: <ul style="list-style-type: none"> – Manufacturer, model and serial number of each monitor – Sample acquisition system (i.e., extractive, point in-situ, etc.) and analytical principle – Span values and instrument ranges of each monitor – If monitors are shared, indicate time strategies 				
<ul style="list-style-type: none"> • Reference Method (RM) testing description must include: <ul style="list-style-type: none"> – Dimensioned sketch showing location of sampling points in relation to breeching and upstream and downstream disturbances or obstructions of gas flow – Sketch of cross-sectional view indicating traverse point locations and exact stack or duct dimensions – Sampling and analysis procedures 				
<ul style="list-style-type: none"> • Seven Day Calibration Drift (CD) Test <ul style="list-style-type: none"> – All CEMS responses from the source's CEMS Data Acquisition System (DAS) are to be submitted. Delineate all final responses. – Seven Day CD Test data is to be summarized for all measured pollutants using Figure 2-1 of the Performance Specification 2, Appendix B, 40 CFR 60. Span values are to be specified. – All cylinder concentration certifications are to be submitted. 				
<ul style="list-style-type: none"> • Relative Accuracy Test Audit (RATA) <ul style="list-style-type: none"> – Submit all CEMS responses from the source's CEMS DAS documenting the nine 21-minute runs (delineate runs from start to end). – Submit all supporting reference method (RM) data. Include all data logger printouts and/or chart recording with each of the nine 21-minute runs clearly delineated from start to end. Include all bias, zero calibration drift (CD), and interference data for the velocity profile measurements and moisture determinations. – Submit all cylinder gas concentration certifications used for the calibrations of the RM testing. – RA data is to be summarized for all measured pollutants using Figure 2-2 of Performance Specification 2, Appendix B, 40 CFR 60 limits consistent with the applicable standard. 				
<ul style="list-style-type: none"> • Calculations <ul style="list-style-type: none"> – Submit example calculations of CEMS and RM test results in the units of the applicable standard. Include F-factor if applicable. 				
<ul style="list-style-type: none"> • Source Operation Data <ul style="list-style-type: none"> – Submit process data verifying the source was operating greater than 50% of normal load or as specified in an applicable subpart. 				

MINIMUM EXCESS EMISSION(S) REPORTING REQUIREMENTS *	Included ?		Need to Gather More Information ?	
	Yes	No	Yes	No
• Total operating time of each source during the reporting period				
• Documentation of excess emission(s)				
– Date of each excess emission of the applicable standard				
– Start and end time of each excess emission of the applicable standard				
– Magnitude of each excess emission above the applicable limit [Excess opacity emission(s) (COMS) are reported in 6-minute block averages. For continuous emission monitors (CEMS), other than opacity, monitored excess emission(s) are reported in the units of the standard.]				
– Nature or cause of each excess emission of the applicable standard				
– Corrective action or preventive measures of each excess emission above the applicable standard.				
• Any mathematical factors used to convert emission(s) to units of the applicable standard				
• Document monitoring system performance:				
– List date when monitoring system was inoperative (daily zero and span check are exempt)				
– Start and end time when the monitoring system was inoperative				
– Nature of system repairs or adjustments				
• Document any time the monitor exceeded the instrument range. Include date, time, duration, nature or cause, and corrective action.				
• Document any time the monitor exceeded the instrument range. Include date, time, duration, nature or cause, and corrective action.				
• Report when no excess emission(s) or monitor system outage occurred.				
• Summarize excess emission(s)				

* Note: Owner/Operators must maintain a log of all measurements, including all CEMS downtimes, repairs, adjustments, maintenance, calibrations, audits, and testing in a permanent form suitable for inspection.