

TECHNICAL REVIEW OF CAM PLANS

Sources that are subject to the CAM Rule (40 CFR Part 64) are required to submit a monitoring plan that will verify the proper operation of the control equipment and provide a reasonable assurance of compliance with emission limitations or standards for the anticipated range of operations for pollutant-specific emission units. The purpose of this document is to provide guidance to AQD staff for review of the monitoring (CAM) plans. Where the rule is cited it appears as, e.g. 40 CFR 64.4(a).

Submittal of CAM Plans

In general, emission units are subject to the CAM Rule if they satisfy all of the following:

- are located at a source required to obtain an ROP;
- are subject to a federally enforceable emission limitation or standard for a major regulated pollutant (VOC, HAP, PM-2.5, PM-10 (PM is a surrogate for PM-2.5 and PM-10), SO_x, NO_x, CO, Lead, and Ozone);
- use a control device to achieve compliance with the emission limitation or standard;
- potential pre-control emissions are over 100% of the major source threshold ;
- emission limitations or standards do not meet a CAM exemption.

Some exemptions apply. For an explanation of these, please review 40 CFR 64.2(b). A document entitled "[Technical Guidance Document: Compliance Assurance Monitoring](#)" contains detailed information about the rule, the exemptions, and CAM Plan review. The [CAM Fact Sheet](#) also contains useful information. All are available at the [AQD Title V permitting webpage](#).

The CAM Rule divides emission units into two types. Those with potential post-control emissions over an amount equal to or greater than 100 percent of the major source threshold are termed **large pollutant-specific emission units**. Those with potential post-control emissions below the major source threshold are termed **other pollutant-specific emission units**. There are different CAM Plan deadlines for large and other pollutant-specific emission units. For CAM Plan submittal deadlines, see Table 1 in the [CAM Fact Sheet](#) under "Requirements For CAM Plan Submittals."

The CAM Plan will generally be submitted with an ROP application via MiEnviro Portal. AQD staff will review the plans to ensure that they contain the information required in the CAM Rule. Separate CAM Plans should be submitted for each pollutant-specific emission unit that is subject to the Rule. However, only one plan is needed if multiple emission units share the same control device (40 CFR 64.4(f)) or if multiple control devices of similar design and operation share the same emission unit (40 CFR 64.4(g)).

The CAM Plan Checklist on the following page has been developed to aid staff in the review of these plans. See "Requirements For CAM Plan Submittals" in the [CAM Fact Sheet](#) for a CAM Plan outline, listing of required CAM Plan elements, and an Example CAM Plan.

Once approved, the required CAM permit conditions are incorporated into the appropriate ROP emission unit or flexible group tables. Two documents are available to aid staff: the ROP-CAM Example Table available at the [AQD Title V permitting webpage](#); and Attachment 5 of the ROP Shell Instructions in the ROP Manual.

If the submitted plan is inadequate, a correction request should be sent to the permittee. A compliance plan may also be put into the ROP regarding submittal of the CAM plan (40 CFR 64.6(d)). If any questions arise concerning CAM, please contact the AQD CAM Specialist: Sebastian Kallumkal, KallumkalS@michigan.gov.

CAM Plan Checklist

SRN

Facility

Date

CHECKLIST FOR CAM PLANS		YES	DF	NO
A.	Verify that the emission unit is subject to CAM.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B.	Has background section been included?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.	Description of emission unit included?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Applicable regulations, emission limits, and monitoring requirements included?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Control technology description included?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C.	Monitoring Approach. Has this section been included? (40 CFR 64.3(a))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.	Have the control device parameters to be monitored been included, including the capture system? (40 CFR 64.3(a)(1), 40 CFR 64.4(a)(1))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Have the appropriate ranges or conditions been included for the parameters, including the capture system? (40 CFR 64.3(a)(2), (3); 40 CFR 64.4(a)(2))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Have indicators been included to detect any bypass of the control device, if appropriate? (40 CFR 64.3(a)(2))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D.	Performance Criteria. Has this section been included? (40 CFR 64.3(b))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.	If a CEMS (continuous emission monitoring system) is used for monitoring, see D.2 through D.6 below. Otherwise go to D.7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	If a CEMS is present, is it used to satisfy CAM requirements? (40 CFR 64.3(d)(1), 40 CFR 64.4(a)(4))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Is the CEMS required by an NSPS, MACT, Acid Rain, state rule or by 40 CFR Part 266 (hazardous waste facility)? If so, compliance with these regulations will satisfy the general design and performance criteria of CAM, except that indicator ranges may need to be set for a continuous opacity monitoring system (COMS). (40 CFR 64.3(d)(2))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	If an applicable requirement does not require compliance with the requirements in D.3 above, then are comparable specifications included? (40 CFR 64.3(d)(vi))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Is the CEMS designed for the reporting of exceedances (or excursions for a COMS used to assure compliance with a particulate matter standard)? (40 CFR 64.3(d)(3)(i))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	For a COMS used to assure compliance with a particulate matter standard, is an indicator range established? If the COMS is used for an opacity standard, the limit may be the appropriate indicator range as long as it provides a reasonable assurance of compliance. (40 CFR 64.3(d)(3)(ii))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Performance Criteria, cont. (This section below is also for emission units with a CEM)			
7.	Does proposed monitoring provide for obtaining data that are representative of the emissions or parameters being monitored? (40 CFR 64.3(b)(1))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	If the monitoring equipment is new or modified, does the permittee provide verification of the operational status of the equipment? (40 CFR 64.3(b)(2))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

“YES” indicates that the item has been provided and is sufficient

“NO” indicates that the item has not been provided

“DF” indicates that the item has been provided but is deficient or additional information is needed

		CHECKLIST FOR CAM PLANS, CONT.	YES	DF	NO
	9.	Are quality assurance and control practices provided? (40 CFR 64.3(b)(3))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	10.	Are specifications for the frequency of conducting the monitoring as well as the data collection procedures that will be used been provided? (40 CFR 64.3(b)(4))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11.	If appropriate, has the period over which data will be averaged to determine whether an excursion or exceedance has occurred been provided? Has an excursion level been provided? (40 CFR 64.3(b)(4)(i))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	12.	If this is a "large pollutant-specific emission unit", are a minimum of four data points spaced over each hour and averaged over the applicable averaging period collected? (40 CFR 64.3(b)(4)(ii))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	13.	If this is an "other pollutant-specific emission unit", does the monitoring include at a minimum some data collection at least once in a 24-hour period? (40 CFR 64.3(b)(4)(iii))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	14.	Does the permittee take into account site-specific factors for the design of the monitoring? (40 CFR 64.3(c))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.		Justification. Has this section been included? (40 CFR 64.4(b))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1.	Has the permittee provided a justification for the proposed monitoring (why indicators and indicator ranges were chosen)? This should include data supporting the justification as well as existing applicable requirements that support the monitoring. (40 CFR 64.4(b))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2.	If the monitoring differs from the manufacturer's recommendations, have reasons for the differences been included? (40 CFR 64.4(b))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3.	Is presumptively acceptable monitoring identified (no other justification is necessary for this monitoring)? Presumptively acceptable monitoring includes monitoring required by a state rule, monitoring identified in D.3 above, and monitoring identified as such in the <u>Technical Guidance Document: Compliance Assurance Monitoring</u> . See Page 1 for CAM FACT Sheet. (40 CFR 64.4(b)(1), (2), (3), (4), (5))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	4.	Has the permittee provided performance test data, if applicable? (40 CFR 64.4(c)(1))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	5.	If so, has the permittee documented that no changes to the control system have occurred since the test that may change control system performance? (40 CFR 64.4(c)(2))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	6.	If performance test data is not available, has the permittee submitted a test plan and schedule? (40 CFR 64.4(d)(1)) (Test plan may need to be reviewed by the AQD Technical Program Unit Staff)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7.	Alternatively, the permittee may submit data that demonstrates that performance testing is not necessary. Has this been included? (40 CFR 64.4(d)(2))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	8.	Has an implementation plan been provided if monitoring submitted by the permittee requires installation, testing, or other activities prior to implementation? (40 CFR 64.4(e), 40 CFR 64.6(d))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

"YES" indicates that the item has been provided and is sufficient

"NO" indicates that the item has not been provided

"DF" indicates that the item has been provided but is deficient or additional information is needed