

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Air Quality Division

PROCEDURE FOR EVALUATING PERIODIC MONITORING SUBMITTALS

Background

The requirement for Periodic Monitoring stems from the stipulation in the Clean Air Act Amendments of 1990 that all subject sources conduct monitoring sufficient to assure compliance with every applicable emission limit or standard. Therefore, every emission limit or standard in every permit for a Title V source must have some form of monitoring. In the absence of a current federal rule implementing this requirement, it is left to the individual states to determine how this requirement will be met.

In an effort to provide guidance to the regulated community as to what constitutes an acceptable periodic monitoring protocol, and in an effort to aid AQD staff in evaluating the monitoring protocols that are submitted pursuant to this requirement, this guidance was developed. This document is intended to “fill the gap” in terms of Title V monitoring requirements until such time as the federal CAM (Compliance Assurance Monitoring) approach is promulgated.

Key Terms

Enhanced Monitoring - The original proposal from EPA to conduct Title V monitoring was referred to as Enhanced Monitoring. This proposal was very complex and controversial, only applied to larger emission units, and did not address the monitoring requirements for smaller sources. This proposal has been withdrawn from further consideration.

CAM - Acronym for Compliance Assurance Monitoring, this proposal surfaced subsequent to EPA's ill-fated initial attempt at monitoring rule development. CAM is intended to apply to all Title V monitoring requirements, not just the larger emission unit subset. The CAM rule was initially proposed in Sept. '95. The rule still has some controversial aspects, but it is anticipated as of this writing that CAM, in some form, will ultimately be promulgated. Federal Court ordered deadline for monitoring rule promulgation is July '96. Current information indicates that this date will be further delayed by 4-6 mos.

Periodic Monitoring - is the term that the State of Michigan is using to refer to the monitoring proposals used to “fill the gap” until the federal CAM rule promulgates. Once CAM is promulgated, Periodic Monitoring will only exist to fulfill the Title V monitoring requirements until CAM rule applicability kicks in for an individual emission unit.

Choosing a Monitoring Protocol

Where there are existing or built in monitoring requirements, and that monitoring is adequate to reasonably assure compliance, those may be submitted as is. Where there are no current monitoring requirements, or current monitoring requirements are not adequate to assure compliance with the emission limits, facilities have the following options:

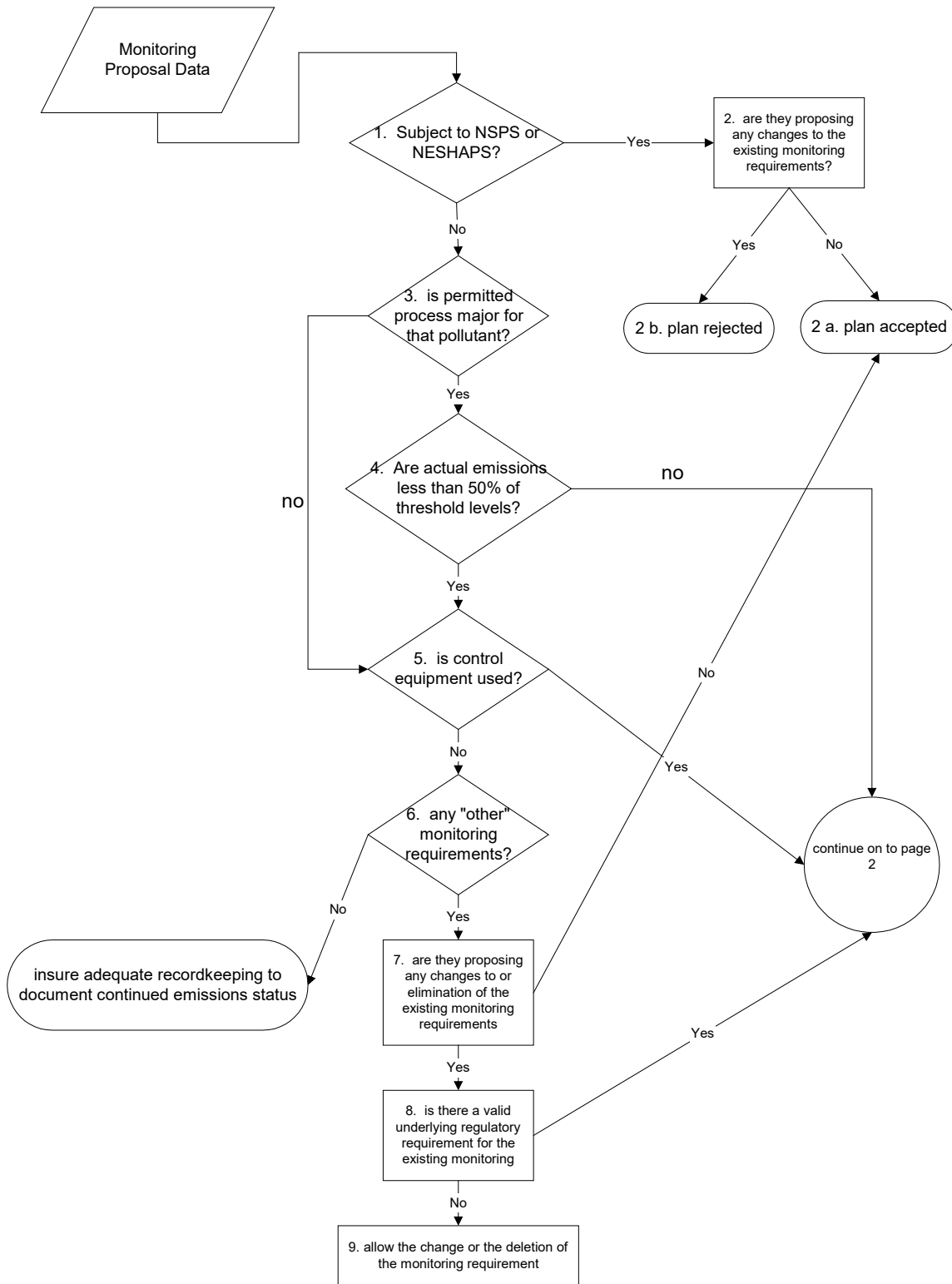
- a) Choose one of the “Acceptable Minimum Monitoring Options” for opacity, sulfur-in-fuel, or sulfur dioxide monitoring listed at the end of this procedure.
- b) Submit a direct monitoring approach which measures the actual emission limit.
- c) Where compliance is dependent on a control device, facilities may propose to monitor control device parameters which are indicative of control device performance.

- d) Submit a monitoring plan which monitors some other parameter(s) indicative of compliance with the emission limit.
- e) A combination of the above.

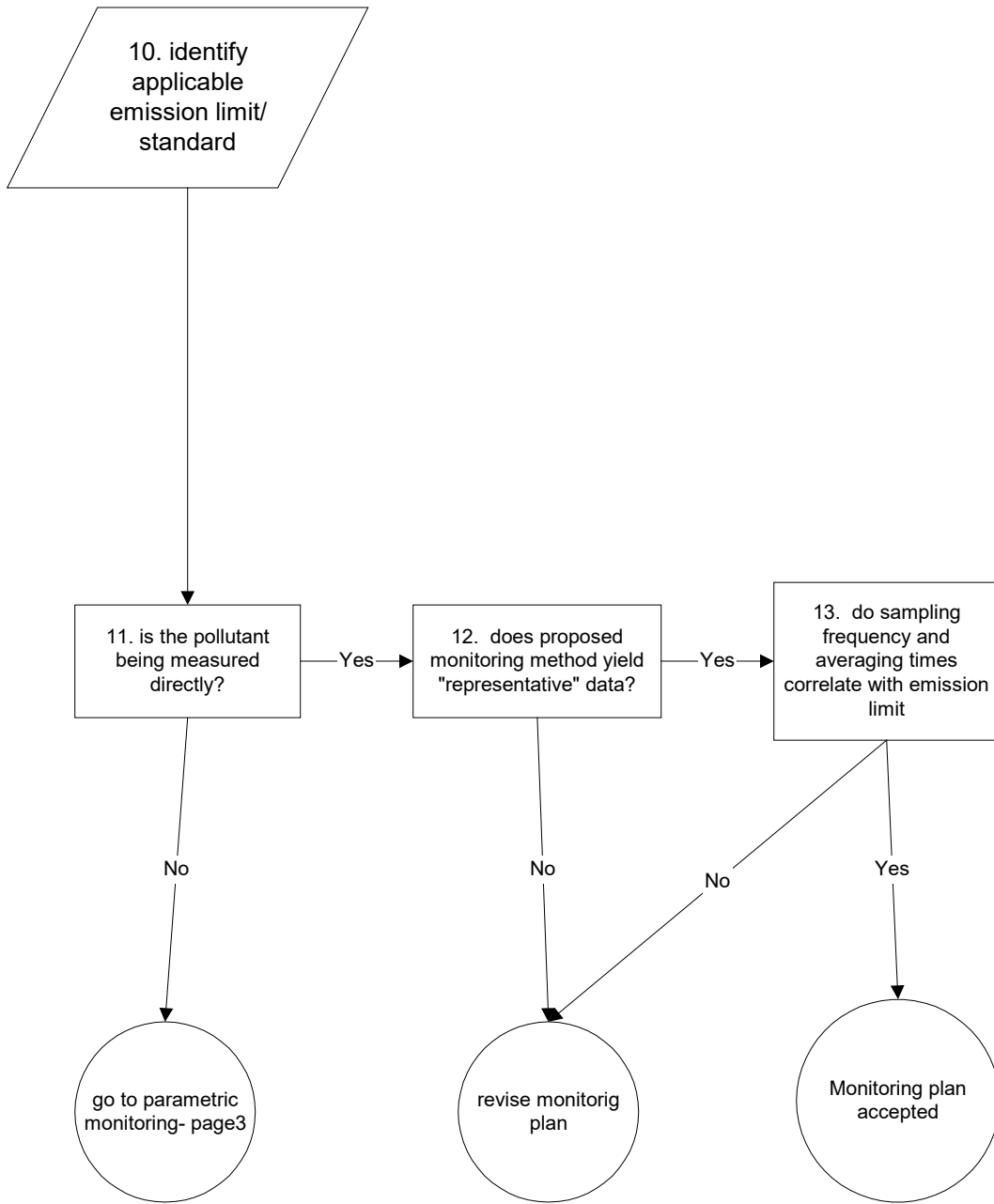
Flowchart Description

The monitoring flowchart is intended as guidance for both the permittee in the submission of a Renewable Operating Permit (ROP), and AQD staff who are reviewing ROP's. In submitting a monitoring protocol, the submitter should follow the flow chart to insure that all of the relevant information is provided, and all of the pertinent questions are answered. Likewise, in evaluating a monitoring protocol submittal, the ROP reviewer should take the information and proceed through the flowchart to ascertain that all of the relevant questions are addressed and adequately answered.

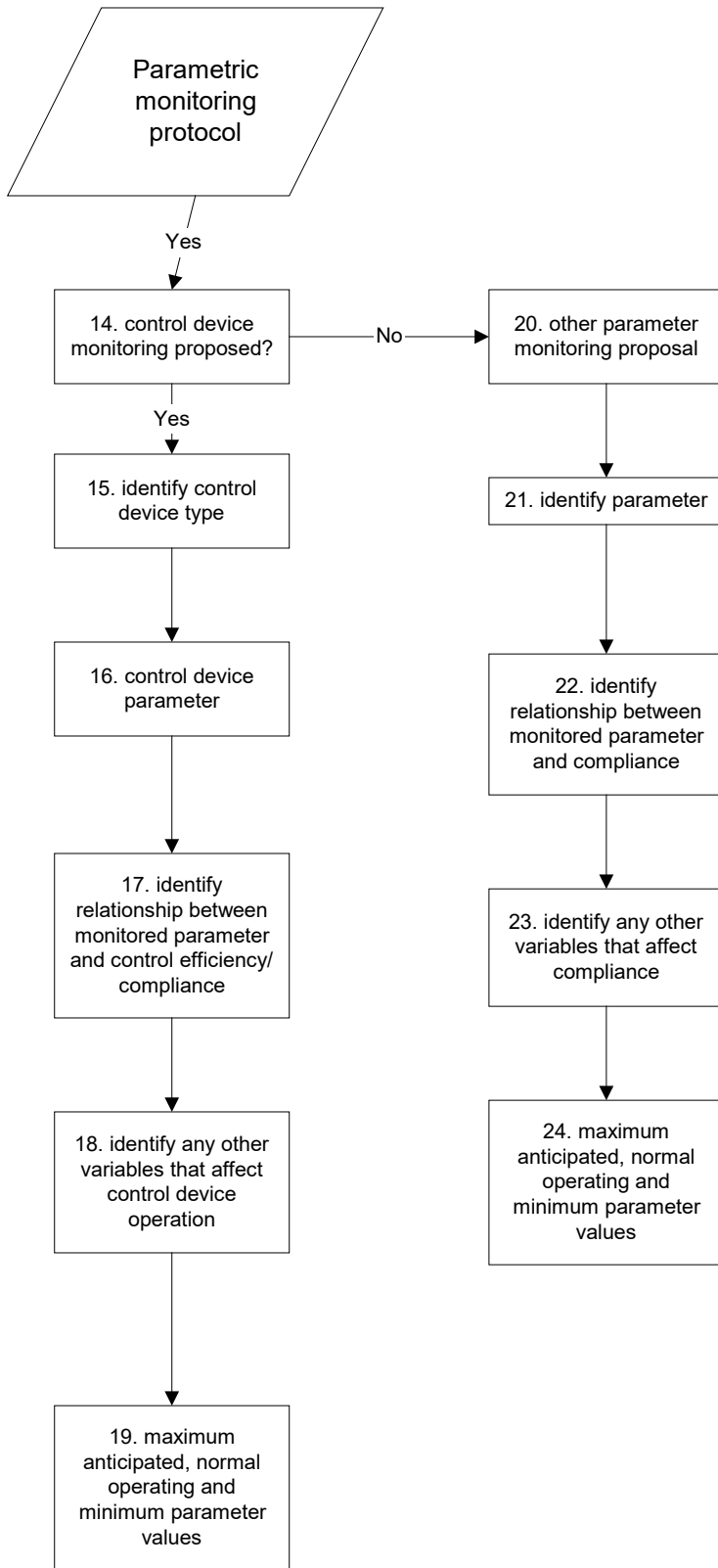
Periodic Monitoring Protocol Evaluation Procedures



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Step-by-step instructions for completing the flowchart

1. Is the source subject to an existing NESHAPS or NSPS standard?
2. Is the facility proposing ANY changes to the existing NSPS or NESHAPS monitoring requirements?
2a- if no changes are proposed, the plan is accepted.
2b- this is not the place to propose changes to existing NSPS or NESHAPS monitoring requirements. Any such changes must be undertaken via the process described for modifying NSPS or NESHAPS monitoring requirements.
3. Is the source/process considered a major source for a (any) pollutant?
4. Are actual emissions of the pollutant in question less than 50% of the amount in terms of potential emissions that would classify the process itself as a major source?
5. Does the source/process utilize control equipment to achieve compliance?
6. Are there other existing monitoring requirements, i.e., resulting from consent orders or judgments, compliance plans, etc.
7. Are any changes being proposed to an existing monitoring requirement because the company feels that the monitoring requirements are infeasible, not technically valid, no longer necessary, or are not supported by a regulatory requirement?
8. Please refer to the applicable requirement form to determine if the applicant has identified an underlying requirement for the monitoring. If not, and no underlying requirement can be identified by the permit reviewer, the applicant should have the opportunity to be relieved of the monitoring requirement. Examples of underlying requirements could include, but are not limited to; consent orders and judgments, rules, the SIP, permits, or federal requirements.
9. If no valid underlying regulatory requirement can be identified, then the permit reviewer should delete the monitoring requirement.
10. Each limit or standard per applicable state, federal or local agency permit, rule or regulation. All limits are included (i.e., opacity).
11. Direct measurement of the pollutant only (e.g., continuous opacity monitor, periodic stack testing). Can include fuel monitoring in some cases (e.g., sulfur in coal).
12. Several factors must be considered in evaluating representativeness. Adequacy is dependent on the pollutant sampling and analysis methods used, operating conditions of the process (e.g., continuous, batch or intermittent), sampling location and frequency, and ancillary measurements (e.g., temperature, volumetric flow rate).
13. Measurement, calculation and reporting averaging times should correspond with the averaging times specified in the applicable standards (e.g., 3 hours, 24 hours, annual).
14. Are they monitoring the control device?
15. The first step is to identify the control device that is being monitored. What is it? (baghouse, ESP, scrubber, cyclone etc...)
16. What parameter(s) are they planning to monitor? (differential pressure, flow rates, voltage, pH, etc....) Are those parameters indicative of control device performance?

17. What is the relationship between the parameter being monitored and the emissions or control efficiency? What happens to the emissions when the chosen parameter varies? This relationship may be established by stack testing, manufacturer's data from similar operations, or any other data sources that are relevant.
18. Identify any other process and/or control device variables that affect control device operation. Examples: pressure drop, pH, air/liquid flow rates, retention time, thruput, temperature,
19. Maximum and minimum anticipated normal operating parameter values. Those are the levels that the control device operates at while in compliance. This is a range that if the parameter deviates outside of the specified range there is still room to make adjustments before they are out of compliance.
20. If there is no control device or a control device parameter is not being monitored, then there must be a proposal for some other parameter being measured or monitored.
21. The parameter being monitored must be identified and show a direct relationship or correlation with the pollutant or applicable limit.
22. The relationship between the monitored parameter and the pollutant or applicable limit must be sufficient to demonstrate compliance.
23. Identify any other variables that affect emissions. Examples: pressure drop, pH, air/liquid flow rates, retention time, thruput, temperature,
24. State the compliance range of the parameter being measured. This should be the range during normal operating conditions. This will allow us and them to recognize if they're in non-compliance.

Acceptable Minimum Monitoring Options

Options for Monitoring Opacity.

1. If an emission unit has actual particulate emissions of 100 tons or more or has visible emissions under routine operating conditions of greater than 10%, the emission unit may either choose one of the following options, or an option available to them thru following the monitoring flowchart.
 - a) Instrumental opacity monitor.
 - b) Visible emissions observations taken by a certified reader. The frequency of the readings is determined by factors such as:
 - i) Process stability.
 - ii) Compliance history.
 - iii) Proximity to the standard.
 - c) Parametric monitoring system.
 - d) Daily observations; in conjunction with a comprehensive malfunction abatement plan designed to prevent, detect, and correct malfunctions and/or abnormal conditions. Observations of opacity greater than routine levels will trigger malfunction abatement plan requirements.
2. If emission unit has less than 100 tons of actual emissions, and at routine operating conditions has less than 10% opacity, the facility may choose one of the following:
 - a) Weekly observations; if abnormal, notify maintenance department for corrections.
 - b) Any of the items listed in option 1 above.

Options for Sulfur Dioxide Emission Limit Monitoring.

An emission unit may:

1. Install instrumental monitoring for sulfur dioxide (CEM).
2. Propose a fuel sampling program which correlates to the emission limit.
3. Propose a parametric monitoring protocol.
4. Propose a control device parameter monitoring protocol.

In determining the appropriate nature, extent, and frequency of the monitoring protocol, the permittee and permit reviewer should take into account the compliance history of the emission unit, the variability of the fuel supply, the potential and actual amount of emissions, the reliability of the control device, (if one exists) and the margin for compliance with the emission limit under normal operating conditions.

Options for Sulfur in Fuel Limitation Monitoring.

For sulfur in fuel limits a facility may:

1. Choose to do feed tank/bunker samples and analysis.
2. Choose a parametric monitoring protocol.

As above, in the determining the nature, extent and frequency of the monitoring protocol, the permittee should take into account the compliance history of the emission unit, the variability of the sulfur level in the fuel, the amount of potential and actual emissions, and the margin for compliance with the emission limit under normal operating conditions.