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Surface Water Discharge Permit (SWDP) Requirements and Guidance for PFAS

From: MassDEP Surface Water Discharge (SWD) Program

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MassDEP requires monitoring of per- and polyfluoroalkyl substances (PFAS) in NPDES wastewater facilities. PFAS monitoring is important to determine the extent and magnitude of PFAS in wastewater, and to inform mitigation efforts. PFAS can be measured through methods that analyze for specific PFAS compounds out of the thousands of PFAS compounds that exist. PFAS can also be measured through methods that give an aggregate result for many PFAS compounds, such as Adsorbable Organic Fluorine (AOF) analysis.

This document clarifies requirements for PFAS sampling, analysis, and submittal for facilities with a Massachusetts Surface Water Discharge Permit (SWDP). It also offers guidance to ensure PFAS data quality.

If you have any questions regarding the PFAS monitoring requirements in your SWDP, please contact the MassDEP staff person assigned to your permit or send an email to massdep.npdes@mass.gov.

Contents

PFAS analytical method requirements

1. **PFAS analysis using EPA Method 1633**
   EPA Method 1633 analyzes 40 specific PFAS compounds in wastewater matrices, including compounds regulated by other MassDEP programs. It cannot measure every PFAS compound that exists, of which there are thousands.
   All PFAS analysis required by MassDEP Surface Water Discharge Permits (SWDP) **must be performed according to EPA Method 1633.** Labs no longer need to be approved by MassDEP to perform PFAS analyses.

2. **AOF analysis using EPA Method 1621**
   EPA Method 1621 analyzes AOF (Adsorbable Organic Fluorine). AOF measures organofluorine from PFAS and non-PFAS fluorinated compounds such as pesticides and pharmaceuticals. The result is reported as a single concentration of the fluoride (F^-) in the sample.
   All AOF analysis required by MassDEP Surface Water Discharge Permits (SWDP) **must be performed according to EPA Method 1621**.

Data submission requirements

Publicly Owned Treatment Works (POTWs) with an SWDP and privately owned wastewater treatment plants with an individual SWDP **must submit PFAS data to eDEP**. The data submittal must **include the lab report as an attachment**.

Please note that this is separate from NetDMR submission required by federal EPA NPDES permits. Typically, a laboratory can assist with uploading data to eDEP. Note that submission to eDEP is required for permit compliance, even if data have already been uploaded to NetDMR. More information on how to submit wastewater and residuals PFAS Data via eDEP is available on MassDEP's website .

Summary of SWDP PFAS requirements

Table 1. Summary of SWDP PFAS requirements

Method	Locations	Compounds	Frequency	Submittal
EPA Method 1633	Verify in the SWDP and NPDES permit. (e.g. influent, effluent, and sludge; effluent only)	Verify in the SWDP and NPDES permit. (e.g. 40 compounds; 6 compounds)	Verify in the SWDP and NPDES permit. (e.g. quarterly; twice annually)	POTWs and individual industrial permittees: Submit to eDEP using the "NPDES" PFAS form. Attach the lab report.

Summary of SWDP Adsorbable Organic Fluorine (AOF) requirements

Not all SWDPs include AOF requirements. Verify specific requirements in the SWDP.

Table 2. Summary of SWDP Adsorbable Organic Fluorine (AOF) requirements

Method	Locations	Frequency	Submittal
EPA Method 1621	Verify in the SWDP and NPDES permit. (e.g. influent and effluent)	Verify in the SWDP and NPDES permit. (e.g. quarterly)	Verify in the SWDP. To submit to MassDEP, submit to eDEP using the "NPDES" PFAS form. Attach the lab report.

Guidance

The following is recommended guidance for conducting PFAS sampling and analysis. Refer to the previous sections of the document and the SWDP for permit requirements.

1. **Sampling procedures**
   Refer to the following documents for PFAS sampling best practices.
   a) MassDEP Sampling SOP from the 2025 PFAS Testing Study for NPDES POTWs: See Appendix A, Section D (starting at page 129)
   b) Michigan EGLE PFAS sampling guidance
   c) NEBRA PFAS sampling guidance

2. **Sampling location**
   As required in the SWDP, sample influent and effluent at the same locations used for other permit compliance sampling. Refer to the NPDES permit and/or SWDP to determine which sampling locations are required for PFAS.
   Sample the final sludge product. For facilities that dewater or dry sludge, sample the dewatered or dried product. For facilities that pump and haul liquid sludge off site, sample the final liquid sludge.

3. **Sampling frequency**
   Sampling frequency requirements are detailed in the SWDP. Current PFAS sampling frequencies for POTWs are quarterly (sample one time per calendar quarter), twice per year (specifically in calendar quarter 3 and calendar quarter 4), or one time per calendar year.

4. **Grab vs. composite samples**
   EPA has clarified that for NPDES permits, **grab sampling is preferred** to composite sampling and will satisfy the NPDES permit requirements. This follows the recommendations in EPA Method 1633. Composite sampling may be used along with the composite sampling guidelines outlined in Method 1633. These include using specific materials for tubing, cleaning with methanol and reagent water, and conducting sampling and analysis to verify that equipment is not introducing PFAS.

5. **Chain of Custody (COC) tips**
   If eDEP submission is required by the SWDP, follow this guidance when filling out a COC.
   a) Include the NPDES Permit ID.
   b) Indicate Method 1633.

c) Indicate “Influent”, “Effluent”, “Sludge”, or “Industry” (for samples from indirect dischargers’ effluent) for each sample.
d) For indirect discharger samples, include the industry name(s) for each sample.
e) If the eDEP upload will be performed by the lab, include a note to the lab requesting that they upload the results to eDEP using the “NPDES” form and attach the lab report.
f) Request that labs report J-qualified data to eDEP (results between the reporting limit and detection limit).

6. **Blanks**
   Field or trip blanks are not required per SWDPs, but may help to verify that the sampling procedure is not introducing any PFAS to the sample.

7. **Duplicates**
   The SWDP does not require duplicate samples.

8. **Sample volume and number**
   The sample volume varies based on the specific matrix and the lab.
   Reach out to the analytical laboratory before sampling to determine the optimal sample number and size.
   Multiple bottles may be required for each sample. MassDEP recommends asking the analytical laboratory whether additional bottles may be helpful to perform re-extractions to improve data quality.

   a) **Influent and effluent:** Notify the lab of the typical Total Suspended Solids (TSS) of the influent and effluent to determine the best sample size. PFAS analysis should be conducted using all material in the sample bottle, so multiple bottles are required to perform re-extraction if needed. Labs may also require a separate bottle to verify TSS.

   b) **Sludge:** Notify the lab of the typical Total Solids (TS) content of the sludge to determine the best sample size. Labs may also require a separate bottle to measure TS.

   c) **High PFAS samples:** If a material is known or suspected to contain high PFAS, a smaller sample size may be required. Contact the lab to determine the best sample size.

9. **Total Solids (TS)**
   Most wastewater sludge is analyzed as a solid (i.e. results in ng/g dry weight), and PFAS analysis is run alongside TS.

For sludge with low TS that is run as an aqueous sample by the lab (i.e. results in ng/L), analyze TS and report the results to eDEP.

10. **Re-extraction**
    Provide the laboratory with adequate sample to re-extract if necessary. Perform any re-extraction within holding times.

11. **Re-sampling**
    If re-sampling is performed, submit all results to MassDEP.

12. **J flag data**
    Report results to eDEP down to the detection limit. This means that results above the detection limit but below the reporting limit should be uploaded with a qualifier (i.e. J-qualified values).

13. **Industrial user PFAS requirements for POTWs**
    Note that the indirect discharger PFAS requirements for POTWs are different in the EPA NPDES permits and MassDEP SWDPs. EPA's NPDES permits require PFAS monitoring for specific categories of indirect dischargers, while MassDEP's SWDPs require PFAS monitoring for all Significant Industrial Users (SIUs).

Online resources

- EPA Method 1633
- Instructions to upload PFAS results to eDEP
- Public Portal with PFAS data
  Note that recent data might not yet be included in the public portal due to internal quality control.
- MassDEP Sampling SOP from the 2025 PFAS Testing Study for NPDES POTWs:
  See Appendix A, Section D (starting at page 129)
- Michigan EGLE PFAS sampling guidance
- NEBRA PFAS sampling guidance