

This document provides industry best practices and resources for wastewater operators to avoid common mistakes that trigger noncompliance when monitoring wastewater influent. Operators should always check their NPDES permit or permitting authority for specific monitoring requirements.

Sampling Locations



Samples should be collected at a location after all contributions from the collection system but prior to any treatment.

Collect samples from a location that is well mixed and representative of flow entering the facility.

Avoid stagnant zones that allow opportunity for stratification and settling of solids.

Collection Method



Collection method can be determined by permit requirements, cost of equipment and parameter to be analyzed. Samples must be representative of the waste stream they are pulled from.

Examples include:

- Automatic Sequential Sampler
- Pole dipper and sample cup
- Direct to bottle

Sample Types



Composite

A sample consisting of multiple aliquots collected over time.

Grab

A single discrete sample collected at one location.

Composite Sampling



Time: Aliquots volume and intervals between aliquots are constant.

Flow Proportional: Aliquots are varied to be proportional to flow, changing either time interval or aliquot volume.

Sampling Parameter Requirements

This table includes the sampling container type, preservation requirements and hold time for common wastewater influent sampling parameters.

Parameter	Container	Preservation	Hold Time
BOD ₅	Plastic or glass	≤6°C	48 hours
TSS	Plastic or glass	≤6°C	7 days
Nutrients	Plastic or glass	≤6°C, H ₂ SO ₄ to pH<2	28 days
pH	Plastic or glass	none	15 min
Oil & Grease	Wide mouth glass w/ Teflon lid	H ₂ SO ₄ to pH<2	14 days

Quality Control



Chain of custody (COC) form:

Should accompany all samples and indicate persons handling samples from time of collection until delivery to the laboratory.

Labeling:

Mark sample containers with location, date, time, analyte, and sampler.

QC samples:

Include equipment blanks and sample splits to verify samples are free from contamination.

Safety



Confined Space Entry:

Avoid confined spaces, when possible, but follow all procedures if entry is required.

PPE:

Appropriate PPE includes safety glasses, nonpermeable gloves, sturdy footwear.

Trips and Falls:

Avoid leaning over railings to grab samples; utilize an extension pole with the sample container to collect in hard-to-reach places.

Permit Requirements and Regulations



Standard requirements can be found in 40 CFR Part 122 (record keeping) and 136 (sample collection and analytical procedures). Facility-specific requirements, including influent sampling frequency, are detailed in your NPDES permit.

Common Sampling Deficiencies



- Samples not properly preserved
- Improper aliquot volume (100mL minimum)
- Composite samples not collected proportional to flow
- Sample collection device or tubing not clean
- Non-representative sample
- Improper sample container used

Resources



[EPA Sampling Presentation](#)

[NPDES New Mexico Sampling SOP](#)

[Procedures for Collecting Wastewater Samples](#)

[Resources for Wastewater Operators](#)

Documentation



Include in sampling documentation:

- Collection date, time and place
- Date of analysis
- Individual performing analysis
- Analytical technique or method
- Results

Disclaimer: This tip sheet addresses select provisions of EPA regulatory requirements using plain language. Nothing in this tip sheet is meant to replace or revise any NPDES permit, any EPA regulatory provision, or any other part of the Code of Federal Regulations, the Federal Register, or the Clean Water Act. EPA recommends that operators consult with their permitting agency prior to making major changes to their systems.