DEPARTMENT OF ECOLOGY State of Washington

EIM Environmental Information Management

EIM Help – Fraction Analyzed

Version 4.3
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Overview

The Fraction Analyzed field in EIM is primarily for water samples. Fraction Analyzed indicates what portion or fraction (Total, Dissolved, or Suspended) of a water sample was analyzed.

Total (Unfiltered or Whole) Water

If a water sample was NOT FILTERED prior to analysis, Fraction Analyzed is usually "Total," meaning the WHOLE sample was analyzed. Chemistry analyses performed on unfiltered water samples measure chemical concentrations in both the dissolved and particulate fractions.

The term "Total" in EIM is synonymous with "Total Recoverable," which is usually associated with metals.

Dissolved (Filtered) Water

If a water sample was FILTERED prior to analysis and the liquid portion was analyzed, Fraction Analyzed is usually "Dissolved." Dissolved analyses are performed after removing the suspended fraction (particulates) with a filter and then analyzing the filtered water. Filtering can occur in the field or the lab.

Suspended (Particulate) Fraction

If a water sample was FILTERED prior to analysis and the particulate material on the filter was analyzed, Fraction Analyzed is usually "Suspended."

The same is true for suspended sediments collected from the water column using a sediment trap.

Other Cases

Lab Leachate

Fraction Analyzed is also used to indicate that an analysis was performed on a lab-generated leachate (lab leachate) derived from a solid sample. Sample Preparation Method (column AB) is required for leachates.

Data Entry Requirements

The following EIM fields are related to Fraction Analyzed. Read through this information to determine what you need to fill out.

Fraction Analyzed (Column AT)

Required in These Cases

- Sample Matrix is "Water," unless Sample Source is Plant Tissue, Freshwater Taxonomy, or Salt/Marine Taxonomy.
- Sediment samples were collected while suspended within a water column.
- Sediment, soil, or tissue samples were prepared using TCLP (Toxicity Characteristic Leaching Procedure), SPLP (Synthetic Precipitation Leaching Procedure), or similar Sample Preparation Methods.

Valid Values

- **Total** - Analysis performed on an unfiltered or whole water sample (dissolved and suspended fraction).
- **Dissolved** - Analysis performed on the liquid portion of a field or lab-filtered water sample.
- **Suspended** - Analysis performed on particulate material retained from a water sample after filtering or centrifuging, etc.
- **Lab Leachate** - Analysis performed on lab-generated leachate derived from a solid sample using TCLP, SPLP, or similar sample preparation.

Data Entry Requirement Exceptions are listed below.

Field Filtered Flag (Column AU)

Field Filtered Flag is required when Sample Matrix is 'Water" and Fraction Analyzed is "Dissolved."

Valid Values:

- **Y** - Yes
- **N** - No

Sample Preparation Method (Column AB)

Sample Preparation Method is required when Fraction Analyzed is "Dissolved." When dissolved, use this field to indicate the field or lab filter size. Sample Preparation Method is also required for lab leachates.

Sample Preparation Methods - Filtering

Following are the most common EIM Sample Preparation Methods related to filtering. If your filter type isn't listed, or isn't in the EIM Method valid values, contact us to have it added. If you used a non-standard filter size, use Result Comment (column AZ) to document the reason.

Sample Preparation Method (AB)	Description
FILTER.45um	Water sample filtered with 0.45 micron (micrometer) filter (material unspecified)
FILTER.45um-CA	Water sample filtered with 0.45 micron (micrometer) cellulose acetate filter (CA)
FILTER.45um-GFF	Water sample filtered with 0.45 micron (micrometer) glass fiber filter (GFF)
FILTER.45um-PP	Water sample filtered with 0.45 micron (micrometer) polypropylene filter (PP)
FILTER.80um	Water sample filtered with 0.80 micron (micrometer) filter (material unspecified)
FILTER1.2um-GFF	Sample filtered with 1.2 micron glass fiber filter (GFF)
FILTER5um	Water sample filtered with 5 micron (micrometer) filter (material unspecified)

Sample Preparation Methods – Lab Leachates

Following are the most common EIM Sample Preparation Methods related to lab leachates.

Sample Preparation Method (AB)	Description
SW1311	Toxicity Characteristic Leaching Procedure (TCLP), Revision 0
SW1312	Synthetic Precipitation Leaching Procedure (SPLP)

Data Entry Exceptions

Bacteria

Most water samples analyzed for bacteria are filtered prior to analysis. The filter is analyzed for bacteria. Examples of bacteria include E. coli and Fecal coliform.

For bacteria, filtering isn't for separating the dissolved fraction from the suspended fraction - it is for collecting the Total or ALL of the bacteria in a sample. Free-floating bacteria and those attached to particulates are both larger than the filter openings and are captured by filtering. No bacteria are dissolved.

Enter water samples analyzed for bacteria with Fraction Analyzed "Total."

Chlorophyll

Like bacteria, most water samples analyzed for chlorophyll are filtered prior to analysis. In method like EPA 445.0 or SM10200H, water samples are poured through a filter to concentrate the phytoplankton, which contains the chlorophyll. The phytoplankton on the filter are then analyzed for chlorophyll.

Enter water samples analyzed for chlorophyll by these methods with Fraction Analyzed "Total."

Data Entry Examples

Fraction Analyzed "Total" (Unfiltered or Whole Water)

In these examples, the sample was NOT FILTERED and the Total or whole water sample was analyzed.

The lead sample is Sample Fraction "Total" because the unfiltered or whole water sample was analyzed (both dissolved and suspended fractions). This included lead dissolved in the water and adsorbed to the particulates.

The Total Suspended Solids (TSS) sample is a little different. It's Sample Fraction also "Total," but it's because the unfiltered or whole water sample was analyzed to figure out how much particulate matter was in the sample. Similarly, Total Organic Carbon (TOC), Suspended Sediment Concentration, and Total Non-Volatile Suspended Solids all require analysis of an unfiltered or whole water sample. Note that these are different than performing a chemistry analysis on the suspended fraction of a sample. For chemistry analyses on the suspended fraction, see the Fraction Analyzed "Suspended" section below.

In these cases, leave the Field Filtered Flag blank.

Sample Matrix (X)	Sample Source (Y)	Result Parameter Name (AH)	Fraction Analyzed (AU)	Field Filtered Flag (AU)	Sample Preparation Method (AB)	Sample Collection Method (AA)
Water	Fresh/Surface Water	Lead	**Total**			HANDGRAB
Water	Fresh/Surface Water	Total Suspended Solids	**Total**			HANDGRAB
Water	Fresh/Surface Water	Total Organic Carbon	**Total**			HANDGRAB

Fraction Analyzed "Dissolved"(Filtered Water)

In this example, all the parameters were FILTERED in the field. The water was analyzed for the "Dissolved" fraction.

Note, if samples were filtered in the lab, leave the Field Filtered Flag field blank or enter "N."

Sample Matrix (X)	Sample Source (Y)	Result Parameter Name (AH)	Fraction Analyzed (AU)	Field Filtered Flag (AU)	Sample Preparation Method (AB)	Sample Collection Method (AA)
Water	Fresh/Surface Water	Dissolved Organic Carbon	**Dissolved**	Y	FILTER.45um-PP	
Water	Fresh/Surface Water	Lead	**Dissolved**	Y	FILTER.45um	
Water	Groundwater	Orthophosphate as PO4	**Dissolved**	Y	FILTER.45um-CA	PUMP-GW-LOW-FLOW

Fraction Analyzed "Suspended" (Particulates)

In this example, suspended particulates were collected either by filtering a water sample or directly from the water column using a sediment trap. The suspended particulates were analyzed to determine concentrations of chemicals like lead or zinc. The Fraction Analyzed is "Suspended."

The Field Filtered Flag is not required for Fraction Analyzed "Suspended," but you may choose to enter it.

For additional help, download the Suspended Sediment Data help document.

Sample Matrix (X)	Sample Source (Y)	Result Parameter Name (AH)	Fraction Analyzed (AU)	Field Filtered Flag (AU)	Sample Preparation Method (AB)	Sample Collection Method (AA)
Solid/ Sediment	Fresh/Surface Water	Lead	**Suspended**	Y	FILTER.45um	SED-INLINE-FILTER
Solid/ Sediment	Stormwater In-Line	Zinc	**Suspended**			SEDTRAP-BOTTLE

Fraction Analyzed "Lab Leachate"

In this example, a freshwater sediment sample was prepared using a TCLP (Toxicity Characteristic Leaching Procedure) preparation method. The leachate generated from the preparation method is analyzed for lead.

For more information on TCLP samples download the TCLP/SPLP help document.

Sample Matrix (X)	Sample Source (Y)	Result Parameter Name (AH)	Fraction Analyzed (AU)	Result Value Units (AN)	Sample Preparation Method (AB)	Sample Collection Method (AA)
Solid/ Sediment	Freshwater Sediment	Lead	Lab Leachate	ug/L	SW1311	GRAB-MISC

Fraction Analyzed for Common Parameters

Following is a table of common parameters that are sometimes difficult to determine Fraction Analyzed for.

Result Parameter Name (AH)	Fraction Analyzed (AT)
Total Organic Carbon	Total
Dissolved Organic Carbon	Dissolved
Total Dissolved Solids	Dissolved
Total Suspended Solids	Total
Fecal coliform	Total
E. coli	Total
Chlorophyll	Total

Document Revision History

Revision Date	Revision No.	Summary of Changes	Reviser(s)
7/30/2008	1.1	Original Document (should have been named 1.0).	CN
10/1/2008	1.2	Updated references to spreadsheet column headings per data model change.	CN
10/6/2009	1.3	Updated references to spreadsheet column headings per data model.	CN, CL
7/23/2012	1.4	Removed info on Semi-permeable membrane devices (SPMD) since we are no longer taking that data.	CN
8/1/2013	2.0	Change from Result Sample Fraction to Fraction Analyzed. No longer contains info about sample digestion method (that now has its own field). Now required for all water samples instead of specific.	KC, CN
3/17/2014	2.1	Added exception to requirement for Sample Sources of Plant Tissue, Freshwater Taxonomy or Salt/Marine Taxonomy.	KC, CN
01/25/2016	3.0	Removed DRAFT, Added clarification about fecal samples, edits to Sample Preparation Codes and Descriptions and the examples.	KC
09/11/2017	3.1	Updated links. Added Preparation method of FILTER.80um, added TCLP/SPLP example.	KC
11/06/2023	4.0	Added sections for “Data Entry Exceptions” and “Fraction Analyzed for Common Parameters”, various wording changes throughout, updated to new format with accessibility updates.	KC, KS, CN
05/21/2025	4.1	Removed paragraph about Digestion Method because we decommissioned that field, removed Result Comment Field section and integrated the sentence into previous paragraph, removed Sample Collection Method section. Added clarification in several places that sample preparation method is required for lab leachates.	KC
02/18/2026	4.2	Removed “Ortho-phophate” as an example of a parameter that is usually considered “dissolved.” While it’s usually the case, it’s not always the case.	CN
08/20/2026	4.3	Removed value of U (unknown) for field filtered flag.	KC