

EIM Help – Fraction Analyzed

Version 3.0
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The Fraction Analyzed field in EIM is used for water samples. Fraction Analyzed indicates the fraction (total, dissolved, or suspended) of a water sample that was analyzed. Fraction Analyzed can also indicate that an analysis was performed on a lab-generated leachate (lab leachate) derived from a solid sample.

In general, if you or your lab did not filter your sample, your fraction analyzed is “total” because you are analyzing the whole, unfiltered sample. For chemistry, if you analyze the total (whole) water sample for a parameter, you are assessing the parameter’s concentration both dissolved in the water and present in particulates in the water.

A dissolved analysis is performed by removing the particulates with a filter and then analyzing the filtered water for the parameter. If you analyze the material on the filter, you are analyzing the suspended fraction. See the exception for bacteria noted below.*

The Fraction Analyzed field in EIM (AT) is different than the Digestion Method field (AW). A digestion procedure is often applied to sediment, soil and tissue samples prior to analysis. The most common digestion techniques involve the use of acids.

The term “total” in EIM includes “total recoverable.”

Requirements

Fraction Analyzed (Column AT) is required for all samples with a sample matrix of Water, unless Sample Source is Plant Tissue, Freshwater Taxonomy or Salt/Marine Taxonomy. Also required if you analyzed sediments which were suspended in a water column or if you analyzed solid samples using TCLP/SPLP. The valid values are:

- **Total** - analysis performed on an unfiltered or unseparated **water** sample (dissolved + particulate fractions = total fraction). See note for bacteria samples below.*
- **Dissolved** - analysis performed on a **water** sample after it has been filtered in the lab or the field. Only used dissolved when you are analyzing the water after filtration, not if you are analyzing what is on the filter. See note for bacteria samples below.*
- **Suspended** - analysis performed on **solids** retained from a water sample after separation by filtering or centrifuging, etc. See note for bacteria samples below.*
- **Lab Leachate** - analysis performed on lab-generated **leachate** derived from a solid sample using TCLP (Toxicity Characteristic Leaching Procedure), SPLP (Synthetic Precipitation Leaching Procedure), or similar sample preparation.

*For most **bacteria** sampling, a water sample is filtered and the filter is analyzed for bacteria. The filter is not a way of separating the suspended fraction from the dissolved fraction, it is a way of collecting the Total bacteria in the sample for analysis. The filter collects the total organisms because the free-floating organisms and those attached to particulates are all larger than the size of the filter, and none are dissolved. Bacteria samples should be entered as Fraction Analyzed “**Total**.”

Field Filtered Flag (Column AU) is required for water samples if the Fraction Analyzed is “Dissolved.” The valid values are: **Y** – Yes; **N** – No; **U** – Unknown

Sample Preparation Method (Column AB) If Fraction Analyzed is “Dissolved” use this field to indicate the field or lab (if known) filter size.

If your filter type isn't listed below, contact your EIM Data Coordinator to have it added.

Code	Description
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.45um	Water sample filtered with 0.45 micron (micrometer) filter (material unspecified)
FILTER.70um-GFF	Water sample filtered with 0.70 micron (micrometer) glass fiber filter (GFF)
FILTER1.5um-GFF	Water sample filtered with 1.5 micron (micrometer) glass fiber filter (GFF)
FILTER5um	Water sample filtered with 5 micron (micrometer) filter (material unspecified)

Sample Collection Method (Column AA) must be included for all groundwater samples. See the [EIM Method reference table](#) for valid values.

Examples

Fraction Analyzed = Dissolved: In this example, all the parameters were filtered in the field and the water was analyzed for the dissolved fraction.

Sample Matrix (X)	Sample Source (Y)	Result Parameter Name (AH)	Fraction Analyzed (AT)	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	Ortho-Phosphate	Dissolved	Y	FILTER.45um-CA	PUMP-GW-LOW-FLOW

Fraction Analyzed = Total: In these examples, the sample was not filtered and the whole, or total, sample was analyzed. The field filtered flag is not required for fraction analyzed of “total” but you may choose to put “N.”

For the lead sample, both the fraction which was adhered to particles and the dissolved fraction were quantified, thus, the total. The analysis of Total Suspended Solids, Suspended Sediment Concentration and Total Non-Volatile Suspended Solids are considered analyses of the “total” sample. The total water sample is what is analyzed when trying to figure out how much sediment there is in a sample. This is different than performing an analysis on the suspended sediments. If you are analyzing for a chemical in suspended sediments, the Sample Matrix is “Solid/sediment” and the Fraction Analyzed is “Suspended” (see suspended example below).

Sample Matrix (X)	Sample Source (Y)	Result Parameter Name (AH)	Fraction Analyzed (AT)	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 = Suspended: In this example, water is pumped from the river through a filter. The material on the filter is what was suspended in the water column. The material on the filter is analyzed for lead concentrations so the sample fraction analyzed is suspended. Also see “[Suspended Sediment Data.](#)” The field filtered flag is not required for fraction analyzed of “suspended” but you may choose to populate it.

Sample Matrix (X)	Sample Source (Y)	Result Parameter Name (AH)	Fraction Analyzed (AT)	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

Fraction Analyzed = Leachate. An example will be added later when the “[TCLP & SPLP data](#)” help document is finalized.

Revision History

Revision Date	Revision No.	Summary of Changes	Reviser(s)
7/30/08	1.1	Original Document (should have been named 1.0)	CN
10/1/08	1.2	Updated references to spreadsheet column headings per data model change	CN
10/6/09	1.3	Updated references to spreadsheet column headings per data model change	CN, CL
7/23/12	1.4	Removed info on Semi-permeable membrane devices (SPMD) since we are no longer taking that data.	CN
8/1/13	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 parameters.	KC, CN
3/17/14	2.0	Added exception to requirement for Sample Sources of Plant Tissue, Freshwater Taxonomy or Salt/Marine Taxonomy	KC, CN
01/25/16	3.0	Removed DRAFT, Added clarification about fecal samples, edits to Sample Preparation Codes and Descriptions and the examples	KC