EIM Help – Field Replicates

Version 2.0
August 2026

Field Replicate Overview

Field replicates are separate samples or measurements identically collected as close as possible to the same point in space and time as the primary sample or measurement. In the case of samples, originals and replicates are stored in separate containers, each of which is identically processed and analyzed. Sometimes measurement replicates are averaged into one result, like for manual groundwater levels. Field replicates provide insight into field and laboratory procedure variability (and in some cases contaminant distribution).

August 2026 Changes

For the primary or "main" sample in a series of field replicates, we used to enter "N" in the Sample Replicate Field. We entered "Y" for the field replicates. This made it hard to connect primary samples or measurements to their field replicates in EIM, even though we entered a Field Collection Comment to the effect of "Sample X is a replicate of Sample Y."

In August 2026, we changed the way we enter data for field replicates. We added a new valid value, "P" (Primary), to the Sample Replicate Flag field. This is to indicate the primary sample in a series of replicates.

Now, enter "P" for the primary sample in a series of replicates and "Y" for the secondary replicates.

The Sample Replicate Flag is required for samples or measurements that are field replicates.

- **P** (Primary) – Required for the primary sample or measurement in a series of field replicates.
- **Y** (Yes) – Required for all secondary samples or measurements in a series of field replicates.
- **N** (No) - Optional for samples or measurements that aren't field replicates.

Note: Data entered into EIM prior to August 2026 will remain coded in accordance with the previous convention of "N" for the primary sample and "Y" for the secondary replicate sample(s).

How to Enter Field Replicate Data

There are several ways to handle field replicates in EIM, depending on whether they are samples or measurements and how you code your Sample IDs and other fields, shown in the examples below.

Don't create separate Locations for field replicate samples or measurements. Assign all field replicates, primary or secondary, to the same Location.

In most cases, we encourage you (to enter a Field Collection Comment for both the primary and secondary replicate samples or measurements. Follow the guidance below when filling out your Result Template.

Replicate Sample Examples

Below are examples of various ways to code your field replicate samples. Yellow shading indicates secondary replicate rows, as does "Y" in the Sample Replicate Flag column.

Example 1 - One field replicate and primary sample with a DIFFERENT Sample ID than the secondary field replicate sample. The primary sample 5649780 has one secondary field replicate sample 5649781.

Location ID (B)	Field Collection Comment (J)	Sample ID (R)	Sample Replicate Flag (T)	Result Parameter Name (AH)
VCNW101-MW1	Sample 5649781 is a field replicate of Sample 5649780	5649780	P	Lead
VCNW101-MW1	Sample 5649781 is a field replicate of Sample 5649780	5649780	P	Arsenic
VCNW101-MW1	Sample 5649781 is a field replicate of Sample 5649780	**5649781**	Y	Lead
VCNW101-MW1	Sample 5649781 is a field replicate of Sample 5649780	**5649781**	Y	Arsenic

Example 2 - Two field replicates and primary sample with a DIFFERENT Sample ID than the secondary field replicate samples. The primary sample 5649780 has two secondary field replicate samples 5649781 and 5649782.

Location ID (B)	Field Collection Comment (J)	Sample ID (R)	Sample Replicate Flag (T)	Result Parameter Name (AH)
VCNW101-MW1	Samples 5649781 and 5649782 are field replicates of Sample 5649780	5649780	P	Lead
VCNW101-MW1	Samples 5649781 and 5649782 are field replicates of Sample 5649780	5649780	P	Arsenic
VCNW101-MW1	Samples 5649781 and 5649782 are field replicates of Sample 5649780	**5649781**	Y	Lead
VCNW101-MW1	Samples 5649781 and 5649782 are field replicates of Sample 5649780	**5649781**	Y	Arsenic
VCNW101-MW1	Samples 5649781 and 5649782 are field replicates of Sample 5649780	**5649782**	Y	Lead
VCNW101-MW1	Samples 5649781 and 5649782 are field replicates of Sample 5649780	**5649782**	Y	Arsenic

Example 3 – Primary sample with the SAME Sample ID as the secondary replicate sample.

Option A: Append "-Rep" to the Sample ID of the secondary field replicate(s). While not required, this makes it easier for a data user to connect your replicate pairs.

Location ID (B)	Field Collection Comment (J)	Sample ID (R)	Sample Replicate Flag (T)	Result Parameter Name (AH)
VCNW101-MW1	Sample 5649780-Rep is a field replicate of Sample 5649780	5649780	P	Lead
VCNW101-MW1	Sample 5649780-Rep is a field replicate of Sample 5649780	5649780	P	Arsenic
VCNW101-MW1	Sample 5649780-Rep is a field replicate of Sample 5649780	5649780**-Rep**	Y	Lead

Location ID (B)	Field Collection Comment (J)	Sample ID (R)	Sample Replicate Flag (T)	Result Parameter Name (AH)
VCNW101-MW1	Sample 5649780-Rep is a field replicate of Sample 5649780	5649780-**Rep**	Y	Arsenic

Option B: **Use the Sample Field Replicate ID field** to distinguish between primary and secondary replicate samples with the same Sample ID.

Location ID (B)	Sample ID (R)	Sample Field Replicate ID (S)	Sample Replicate Flag (T)	Result Parameter Name (AH)
VCNW101-MW1	5649780		P	Lead
VCNW101-MW1	5649780		P	Arsenic
VCNW101-MW1	5649780	**1**	Y	Lead
VCNW101-MW1	5649780	**1**	Y	Arsenic

OR (for multiple replicates)

Location ID (B)	Sample ID (R)	Sample Field Replicate ID (S)	Sample Replicate Flag (T)	Result Parameter Name (AH)
VCNW101-MW1	5649780		P	Arsenic
VCNW101-MW1	5649780		P	Lead
VCNW101-MW1	5649780	**1**	Y	Arsenic
VCNW101-MW1	5649780	**1**	Y	Lead
VCNW101-MW1	5649780	**2**	Y	Arsenic
VCNW101-MW1	5649780	**2**	Y	Lead
VCNW101-MW1	5649780	**3**	Y	Arsenic
VCNW101-MW1	5649780	**3**	Y	Lead

Replicate Measurement Example

Measurement field replicates are not as common as sample field replicates. If you have measurement field replicates, you can enter them as demonstrated in the example below. You usually don't need a Sample ID or a Sample Field Replicate ID, but you can assign them if you choose to. You must enter a Field Collection Comment in these cases.

Location ID (B)	Field Collection Comment (J)	Sample Replicate Flag (T)	Result Parameter Name (AH)
WQC-44567	Primary measurement	P	Temperature, water
WQC-44567	Secondary field replicate	Y	Temperature, water

Document Revision History

Revision Date	Revision No.	Summary of Changes	Reviser(s)
9/27/2007	1.0	Original Document	CN, KC
10/1/2008	1.1	Colum updated per data model change	CN
6/13/2011	1.2	Nomenclature change - dropped 'User' from Location ID	CN
8/1/2013	1.3	Updated references to spreadsheet column headings per data model change	CN
09/07/2017	1.4	Updated terminology of Result Spreadsheet to Result Template	KC
08/01/2026	2.0	Change from not treating the first sample or measurement in a series of replicates as a replicate in the Sample Replicate Flag field (coded "N" for No) to adding a new valid value of "P" for primary replicate in the Sample Replicate Flag field.	NM, MK, LK, CM, CN