

## Maine DEP Basic Data Review Checklist

### Attachment A (from EPA New England Guidance and National Functional Guidelines-NFG and modified for MEDEP EGAD flagging conventions )



Revision No.: 00  
Effective Date: 2/28/14  
Page 1 of 10

#### Organic – Blank Contamination Data Review Guidance

All blank sample results should be evaluated manually for contamination in accordance with the most recent NFG blank criteria. **Note:** This represents a change from previous EPA NE data validation guidance which included the application of a “5x or 10x” rule in accepting, qualifying or rejecting sample results based on blank contamination.

**Apply the NFG criteria and actions based on the highest blank contamination associated with the samples.** PES (Performance Evaluation Sample) contamination is not used to qualify data.

- In determining the highest blank contamination, evaluate all blanks including method, clean-up, instrument, storage, bottle, trip and equipment rinsate blanks.
- If the blank action for an analyte is determined using the concentration from an equipment, trip or bottle blank, then the positive values in the equipment, trip or bottle blank should be reported unqualified on the Data Summary Tables. However, if the blank action is determined from a laboratory blank (e.g., method, clean-up, storage, or instrument blank), then the positive values in the equipment, trip or bottle blanks should be qualified.
- For aqueous equipment, trip and bottle blanks, if an analyte is present in the non-aqueous sample and is also present in the associated aqueous equipment blank, trip blank or bottle blank, then flag that sample result (in the EGAD sample comments field) as B, to indicate to the end user that an indeterminate amount of sampling error has potentially impacted the sample results.

NFG criteria:

**Table 1. Blank Actions for Low/Medium Volatiles Analyses**

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Storage, Field, Trip, Instrument **	Detects	Not detected	No qualification
	< RL*	< RL*	Report RL value with a U
		≥ RL*	Use professional judgment- Flag affected sample data with “B”
		< RL*	Report RL value with a U

**Maine DEP Basic Data Review Checklist**

**Attachment A**  
**(from EPA New England Guidance and National Functional Guidelines-NFG**  
**and modified for MEDEP EGAD flagging conventions )**



Revision No.: 00  
 Effective Date: 2/28/14  
 Page 2 of 10

	> RL*	> RL* and < blank	Report the blank concentration for the sample with a U or qualify the data as unusable R
		≥ RL* and ≥ blank concentration	Use professional judgment- Flag affected sample data with “B” qualifier
	= RL*	< RL*	Report RL value with a U
		≥ RL*	Use professional judgment- Flag affected sample data with “B”
	Gross	Detects	Qualify results as unusable R

\* 2x the RL for methylene chloride, 2-butanone, and acetone.

\*\* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 µg/L.

**Table 2. Blank Actions for Semivolatiles Analyses**

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Field	Detects	Not detected	No qualification
	< RL*	< RL*	Report RL value with a U
		≥ RL*	Use professional judgment- Flag affected sample data with “B” qualifier
	> RL*	< RL*	Report RL value with a U
		≥ RL* and < blank concentration	Report the blank concentration for the sample with a U or qualify the data as unusable R
		≥ RL* and ≥ blank	Use professional judgment- Flag affected sample data with

Maine DEP Basic Data Review Checklist

Attachment A  
 (from EPA New England Guidance and National Functional Guidelines-NFG  
 and modified for MEDEP EGAD flagging conventions )

Revision No.: 00  
 Effective Date: 2/28/14  
 Page 3 of 10



	= RL*	< RL*	Report RL with a U
		≥ RL*	Use professional judgment- Flag affected sample data with “B” qualifier
	Gross contamination	Detects	Qualify results as unusable R
	TIC > 10 µg/L (for aqueous blanks) TIC > 330 µg/kg (for non-aqueous blanks)	Detects	Use professional judgment- Flag affected sample data with “B” qualifier

\* 5x the RL for bis(2-ethylhexyl)phthalate for low-level non-aqueous and aqueous samples.

Table 3. Blank Actions for Pesticide Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Sulfur Cleanup, Instrument, Field	Detects	Not detected	No qualification
	< RL	< RL	Report RL value with a U
		≥ RL	Use professional judgment- Flag affected sample data with “B” qualifier
	> RL	< RL	Report RL value with a U
		≥ RL and < blank concentration	Report the blank concentration for the sample with a U, or qualify the data as unusable R
		≥ RL and ≥ blank concentration	Use professional judgment- Flag affected sample data with “B” qualifier

**Maine DEP Basic Data Review Checklist**

**Attachment A**  
**(from EPA New England Guidance and National Functional Guidelines-NFG**  
**and modified for MEDEP EGAD flagging conventions )**



Revision No.: 00  
 Effective Date: 2/28/14  
 Page 4 of 10

	= RL	< RL	Report RL values with a U
		≥ RL	Use professional judgment- Flag affected sample data with “B” qualifier
	Gross	Detects	Qualify results as unusable R

**Table 4. Blank Actions for Aroclor Analyses**

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Sulfur Cleanup, Instrument, Field	Detects	Not detected	No qualification
	< RL	< RL	Report RL value with a U
		≥ RL	Use professional judgment- Flag affected sample data with “B” qualifier
	> RL	< RL	Report RL value with a U
		≥ RL and < blank concentration	Report the blank concentration for the sample with a U, or qualify the data as unusable R
		≥ RL and ≥ blank concentration	Use professional judgment- Flag affected sample data with “B” qualifier
		< RL	Report RL values with a U

## Maine DEP Basic Data Review Checklist

### Attachment A (from EPA New England Guidance and National Functional Guidelines-NFG and modified for MEDEP EGAD flagging conventions )



Revision No.: 00  
Effective Date: 2/28/14  
Page 5 of 10

	= RL	$\geq$ RL	Use professional judgment- Flag affected sample data with “B” qualifier
	Gross	Detects	Qualify results as unusable R

#### Inorganic – Blank Contamination Data Review Guidance

All blank sample results should be evaluated manually for contamination in accordance with the most recent NFG blank criteria. **Note:** This represents a change from previous EPA NE data validation guidance which recommended the application of a 5x rule in accepting, qualifying or rejecting sample results based on blank contamination.

**Apply the NFG criteria and actions based on the highest blank contamination associated with each sample.** PES (Performance Evaluation Sample) contamination is not used to qualify data.

- In determining the highest blank contamination, evaluate all blanks including preparation/method, calibration/instrument, bottle, and equipment rinsate blanks.
- Initial and continuing calibration blank contamination within an analytical sequence applies to all samples analyzed in that sequence. Use professional judgment- Flag affected sample data with “B” qualifier to apply contamination only to a specific subset of samples.
- If the blank action for an analyte is determined using the concentration from an equipment or bottle blank, then the positive values in the equipment or bottle blank should be reported unqualified on the Data Summary Tables. However, if the blank action is determined from a laboratory blank (e.g., preparation or calibration blank), then the positive values in the equipment and bottle blanks should be qualified.
- For aqueous equipment and bottle blanks, if an analyte is present in the non-aqueous sample and is also present in the associated aqueous equipment blank or bottle blank, then flag that sample result as EB or BB, respectively, to indicate to the end user that an indeterminate amount of sampling error has potentially impacted the sample results.

NFG criteria:

**Maine DEP Basic Data Review Checklist**

**Attachment A**  
**(from EPA New England Guidance and National Functional Guidelines-NFG**  
**and modified for MEDEP EGAD flagging conventions )**

Revision No.: 00  
 Effective Date: 2/28/14  
 Page 6 of 10



**Table 5. Blank Actions for ICP-AES Analysis**

<b>Blank Type</b>	<b>Blank Result</b>	<b>Sample Result</b>	<b>Action for Samples</b>
ICB/CCB	$\geq$ MDL but $\leq$ RL	Non-detect	No action
		$\geq$ MDL but $\leq$ RL	Report RL value with a “U”
		$>$ RL	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	$>$ RL	$\geq$ MDL but $\leq$ RL	Report RL value with a “U”
		$>$ RL but $<$ Blank Result	Report at level of Blank Result with a “U” or qualify data as unusable (R)
		$>$ Blank Result	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	$\leq$ (-MDL) but $\geq$ (-RL)	$\geq$ MDL, or non-detect	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	$<$ (-RL)	$<$ 10x the RL	Qualify results that are $\geq$ RL as estimated low (J) Qualify non-detects as estimated (UJ)
Preparation Blank	$>$ RL	$\geq$ MDL but $\leq$ RL	Report RL value with a “U”
		$>$ RL but $<$ 10x the Blank Result	Use professional judgment- Flag affected sample data with “B” qualifier to qualify results as unusable (R) or estimated high (J)
		$\geq$ 10x the Blank Result	No action
Preparation Blank	$\geq$ MDL but <input type="checkbox"/> <input type="checkbox"/> RL	Non-detect	No action
		$\geq$ MDL but <input type="checkbox"/> <input type="checkbox"/> RL	Report RL value with a “U”
		$>$ RL	Use professional judgment- Flag affected sample data with “B” qualifier
Preparation Blank	$<$ (-RL)	$<$ 10x the RL	Qualify results that are $\geq$ RL as estimated low (J) Qualify non-detects as estimated (UJ)

Maine DEP Basic Data Review Checklist

Attachment A  
 (from EPA New England Guidance and National Functional Guidelines-NFG  
 and modified for MEDEP EGAD flagging conventions )



Revision No.: 00  
 Effective Date: 2/28/14  
 Page 7 of 10

Table 6. Blank Actions for ICP-MS Analysis

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB	$\geq$ MDL but $\leq$ RL	Non-detect	No action
		$\geq$ MDL but $\leq$ RL	Report RL value with a "U"
		> RL	Use professional judgment- Flag affected sample data with "B" qualifier
ICB/CCB	> RL	$\geq$ MDL but $\leq$ RL	Report RL value with a "U"
		> RL but < Blank Result	Report at level of Blank Result with a "U" or qualify data as unusable (R)
		> Blank Result	Use professional judgment- Flag affected sample data with "B" qualifier
ICB/CCB	$\leq$ (-MDL), but $\geq$ (-RL)	$\geq$ MDL, or non-detect	Use professional judgment- Flag affected sample data with "B" qualifier
ICB/CCB	< (-RL)	< 10x RL	Qualify results that are $\geq$ RL as estimated low (J-) Qualify non-detects as estimated (UJ)
Preparation Blank	> RL	$\geq$ MDL but $\leq$ RL	Report RL value with a "U"
		> RL but < 10x the Blank Result	Qualify results as unusable (R) or estimated high (J)
		$\geq$ 10x the Blank Result	No action
Preparation Blank	$\geq$ MDL but $\leq$ RL	Non-detect	No action
		$\geq$ MDL but $\leq$ RL	Report RL value with a "U"
		> RL	Use professional judgment- Flag affected sample data with "B" qualifier
Preparation Blank	< (-RL)	< 10x RL	Qualify results that are $\geq$ RL as estimated low (J) Qualify non-detects as estimated (UJ)

**Maine DEP Basic Data Review Checklist**

**Attachment A**  
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Revision No.: 00  
 Effective Date: 2/28/14  
 Page 8 of 10

**Table 7. Blank Actions for Mercury Analysis**

<b>Blank Type</b>	<b>Blank Result</b>	<b>Sample Result</b>	<b>Action for Samples</b>
ICB/CCB	Absolute value is $\geq$ MDL but $\leq$ RL	Non-detect	No action
		$\geq$ MDL but $\square \square$ RL	Report RL value with a “U”
		$>$ RL	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	Absolute value is $>$ RL	$\geq$ MDL but $\square \square$ RL	Report RL value with a “U”
		$>$ RL but $<$ Blank Result	Report at level of Blank Result with a “U” or qualify data as unusable (R)
		$>$ Blank Result	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	$\leq$ (-MDL), but $\geq$ (-RL)	$\geq$ MDL, or non-detect	Use professional judgment- Flag affected sample data with “B” qualifier
ICB/CCB	$<$ (-RL)	$<$ 10x the RL	Qualify results that are $\geq$ RL as estimated low (J) Qualify non-detects as estimated (UJ)
Preparation Blank	$>$ RL	$\geq$ MDL but $\leq$ RL	Report RL value with a “U”
		$>$ RL but $<$ 10x the Blank Result	Qualify results as unusable (R) or estimated high (J)
		$\geq$ 10x the Blank Result	No action
Preparation Blank	$\geq$ MDL but $\leq$ RL	Non-detect	No action
		$\geq$ MDL but $\square \square$ RL	Report RL with a “U”
		$>$ RL	Use professional judgment- Flag affected sample data with “B” qualifier
Preparation Blank	$<$ (-RL)	$<$ 10x the RL	Qualify results that are $\geq$ RL as estimated low (J) Qualify non-detects as estimated (UJ)

**Maine DEP Basic Data Review Checklist**

**Attachment A**  
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Revision No.: 00  
 Effective Date: 2/28/14  
 Page 9 of 10

**Table 8. Blank Actions for Cyanide and Wet Chemistry Analyses**

<b>Blank Type</b>	<b>Blank Result</b>	<b>Sample Result</b>	<b>Action for Samples</b>
ICB/CCB	Absolute value is $\geq$ MDL but $\leq$ RL	Non-detect	No action
		$\geq$ MDL but $\leq$ RL	Report RL value with a "U"
		$>$ RL	Use professional judgment- Flag affected sample data with "B" qualifier
ICB/CCB	Absolute value is $>$ RL	$\geq$ MDL but $\leq$ RL	Report RL value with a "U"
		$>$ RL but $<$ Blank	Report at level of Blank Result with a "U" or qualify data as unusable (R)
		$>$ Blank Result	Use professional judgment- Flag affected sample data with "B" qualifier
ICB/CCB	$\leq$ ( $-\square$ MDL), but $\geq$ (-RL)	$\geq$ MDL, or non-detects	Use professional judgment- Flag affected sample data with "B" qualifier
ICB/CCB	$<$ (-RL)	$<$ 10x the RL	Qualify results that are $\geq$ RL as estimated low (J) Qualify non-detects as estimated (UJ)
Preparation Blank	$>$ RL	$\geq$ MDL but $\leq$ RL	Report RL value with a "U"
		$>$ RL but $<$ 10x the Blank Result	Qualify results as unusable (R) or estimated high (J)
		$\geq$ 10x the Blank Result	No action
Preparation Blank	$\geq$ MDL but $\leq$ RL	Non-detect	No action
		$\geq$ MDL but $\leq$ RL	Report RL value with a "U"
		$>$ RL	Use professional judgment- Flag affected sample data with "B" qualifier
Preparation Blank	$<$ (-RL)	$<$ 10x the RL	Qualify results that are $\geq$ RL as estimated low (J) Qualify non-detects as estimated (UJ)

**Maine DEP Basic Data Review Checklist**

**Attachment A**

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**Revision No.: 00  
Effective Date: 2/28/14  
Page 10 of 10**