



## FACT SHEET

### FINAL GREAT LAKES WATER QUALITY GUIDANCE CRITICAL PROVISIONS

#### *I. Water Quality Criteria and Standards*

PROGRAM COMPONENT	PROPOSED GREAT LAKES WATER QUALITY GUIDANCE	FINAL WATER QUALITY GUIDANCE FOR THE GREAT LAKES SYSTEM
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#### **I. Chemicals of Focus**

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| <ul style="list-style-type: none"><li>• All pollutants, data gathering for 138 toxic pollutants</li><li>• 28 Bioaccumulative Pollutants of Concern (BCCs)</li><li>• List of 16 excluded pollutants</li></ul> | <ul style="list-style-type: none"><li>• Same as proposal</li><li>• 22 BCCs</li><li>• Removed hydrogen sulfide and sulfide from list of excluded pollutants</li></ul> |
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#### **II. Bioaccumulation Factors**

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| <b>1. Bioaccumulation Factors (BAFs) vs. Bioconcentration Factors (BCFs)</b> | <ul style="list-style-type: none"><li>• Human health and wildlife criteria derived using measured or predicted BAFs</li></ul>   | <ul style="list-style-type: none"><li>• Same as proposal</li></ul>  |
| <b>2. BAF Hierarchy</b>  | <ul style="list-style-type: none"><li>• Data preference:<ul style="list-style-type: none"><li>- Field measured BAF</li><li>- Lab measured BCF*FCM</li><li>- Predicted BCF*FCM</li></ul></li></ul> | <ul style="list-style-type: none"><li>• Data preference:<ul style="list-style-type: none"><li>- Field measured BAF</li><li>- Biota-sediment accumulation factor (BSAF)</li><li>- Lab measured BCF*FCM</li><li>- Predicted BCF*FCM</li></ul></li></ul> |
| <b>3. Food Chain Multiplier (FCM) Model</b>                                  | <ul style="list-style-type: none"><li>• Used model developed by Thomann, 1989</li></ul>   | <ul style="list-style-type: none"><li>• Uses model developed by Gobas, 1993</li></ul>   |
| <b>4. BCC Definition</b>   | <ul style="list-style-type: none"><li>• Chemicals with BAFs greater than 1000</li></ul>   | <ul style="list-style-type: none"><li>• Same, but chemicals must also be persistent and toxic and be based on field data</li></ul>  |

#### **III. Additivity**

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| <b>1. Carcinogens</b>                         | <ul style="list-style-type: none"><li>• Did not include regulatory text. Preamble presented two approaches (criteria-based vs. limit-based). Both approaches set risk level at 10-5.</li></ul> | <ul style="list-style-type: none"><li>• Requires states and tribes to adopt an additivity provision applied to effluents, but provides flexibility on how to implement the provision</li></ul> |
| <b>2. Toxicity Equivalency Factors (TEFs)</b> | <ul style="list-style-type: none"><li>• Preamble suggested use of TEFs for 17 dioxins/furans</li></ul>   | <ul style="list-style-type: none"><li>• Use of TEFs for 17 dioxins/furans</li></ul>  |

## I. Water Quality Criteria and Standards (Continued)

PROGRAM COMPONENT	PROPOSED GUIDANCE	FINAL GUIDANCE
<b>IV. Aquatic Life</b>		
1. General	<ul style="list-style-type: none"> <li>• Criteria methodology similar to national criteria</li> <li>• 16 criteria proposed</li> <li>• Added Tier II methodology to translate narrative criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Same as proposal</li> <li>• 15 criteria</li> <li>• Allows flexibility to use either Tier II methodology/values or indicator parameters, where appropriate and justified, consistent with national program</li> </ul>
2. Total vs. Dissolved	<ul style="list-style-type: none"> <li>• Expressed metals criteria as total recoverable</li> </ul>	<ul style="list-style-type: none"> <li>• Expresses metals criteria as dissolved</li> </ul>
<b>V. Human Health</b>		
1. General	<ul style="list-style-type: none"> <li>• Similar to national criteria methodology</li> <li>• 20 criteria proposed</li> <li>• Added Tier II methodology to translate narrative criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Same as proposal</li> <li>• 18 criteria</li> <li>• Same as proposal</li> </ul>
2. Fish Consumption Rates	<ul style="list-style-type: none"> <li>• Used 15 grams/day consumption rate to protect sport fisherman</li> </ul>	<ul style="list-style-type: none"> <li>• Same as proposal</li> </ul>
3. Lipid Content	<ul style="list-style-type: none"> <li>• Used 5% for humans</li> </ul>	<ul style="list-style-type: none"> <li>• Uses 1.82% for tropic level 3 fish consumed and 3.10% for tropic level 4 fish consumed</li> </ul>
<b>VI. Wildlife</b>		
1. Scope of Methodology	<ul style="list-style-type: none"> <li>• Proposed methodology to derive Tier I criteria</li> <li>• Proposed 4 Tier I criteria for DDT, mercury, PCBs, and TCDD</li> <li>• Tier II methodology proposed</li> </ul>	<ul style="list-style-type: none"> <li>• Tier I methodology limited to 22 BCCs with sufficient data</li> <li>• Same as proposal</li> <li>• Tier I beyond 22 BCCs and Tier II will be guidance</li> </ul>
2. Mercury Criterion	<ul style="list-style-type: none"> <li>• 0.18 parts per trillion</li> </ul>	<ul style="list-style-type: none"> <li>• 1.3 parts per trillion</li> </ul>
<b>VII. Antidegradation</b>		
1. Tier I Waters (Protection of Uses)	<ul style="list-style-type: none"> <li>• Same as national program but clarifies that states and tribes must add designated uses</li> </ul>	<ul style="list-style-type: none"> <li>• Provisions same as proposal; however, only applies to BCCs. National program governs for non BCCs)</li> </ul>
2. Tier II Waters (High Quality Waters)	<ul style="list-style-type: none"> <li>• Same as national program but: <ul style="list-style-type: none"> <li>- Defined high quality waters on a pollutant-by-pollutant basis</li> <li>- Provided tests to determine the need for lowering water quality (institutionalizes pollution prevention)</li> <li>- Specified criteria for social and economic demonstrations</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Same as proposal: however, only applies to BCCs. National program governs for non BCCs <ul style="list-style-type: none"> <li>- Provides an off-ramp provision to exclude waters of no ecological, recreational, or aesthetic significance</li> <li>- Requires tests; however, the detailed procedures in the proposal will be examples in the preamble</li> <li>- Criteria required; however, specific criteria in proposal will be examples in the preamble</li> </ul> </li> </ul>

## I. Water Quality Criteria and Standards (Continued)

PROGRAM COMPONENT	PROPOSED GUIDANCE	FINAL GUIDANCE
b. Triggers for Review	<ul style="list-style-type: none"> <li>Placed specific emphasis on persistent BCCs. Trigger for antidegradation evaluation based on existing effluent quality (EEQ) as opposed to increases in permit limits above de minimis for non-BCCs.</li> </ul>	<ul style="list-style-type: none"> <li>Antidegradation reviews will be triggered by engaging in a deliberate action which causes an increase in the discharge of BCCs. Allowable de minimis increases for non-BCCs are guidance.</li> </ul>
3. Tier III Waters (Outstanding National Resource Waters—ONRW)	<ul style="list-style-type: none"> <li>Same as national program and contained specific provision for Lake Superior ONRW</li> </ul>	<ul style="list-style-type: none"> <li>Same as proposal</li> </ul>

### VIII. Whole Effluent Toxicity (WET)

1. Acute Mixing Zones	<ul style="list-style-type: none"> <li>Must meet 1.0 TUa (Toxic Unit acute) at end of pipe and 1.0 TUC (Toxic Unit chronic) at edge of chronic mixing zone.</li> </ul>	<ul style="list-style-type: none"> <li>Allows an acute mixing zone; must meet 0.3TUa at edge of acute mixing zone and 1.0 TUC at the edge of chronic mixing zone.</li> </ul>
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### IX. Variances

1. Duration	<ul style="list-style-type: none"> <li>Proposed a maximum three year limit on the duration of variances, subject to possible renewal</li> </ul>	<ul style="list-style-type: none"> <li>Allows variances to be granted for 5 years to correspond to the life of the NPDES permit with a specific reopener clause. Review of variance every three years as part of ongoing triennial review</li> </ul>
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### X. Site Specific Modifications

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| <ul style="list-style-type: none"> <li>Allowed only more stringent modifications for human health, wildlife, BAFs, and more or less stringent modifications for aquatic life</li> </ul> | <ul style="list-style-type: none"> <li>Allows for both more or less stringent modifications for human health, wildlife, BAFs and aquatic life. Requires more stringent modifications to protect endangered species.</li> </ul> |
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## II. Implementation/Permits

### I. Intake Credits

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|---|--|
| <ul style="list-style-type: none"> <li>No water quality based effluent limits (WQBELs) for outfalls that qualify for simple pass through</li> </ul> | <ul style="list-style-type: none"> <li>Same as proposal, but in addition allows WQBELs up to background for non-simple pass through situations in non-attained <i>same</i> body of water for 2 years, and requires criteria end-of-pipe for non-attained <i>different</i> body of water. Criteria end-of-pipe as guidance in preamble for situations that do not qualify for intake credits. After 12 years, TMDLs or comparable control strategies govern for non-simple pass through situations</li> </ul> |
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## II. Implementation/Permits (Continued)

PROGRAM COMPONENT	PROPOSED GUIDANCE	FINAL GUIDANCE
<b>II. Reasonable Potential</b>		
1. Determination	<ul style="list-style-type: none"> <li>Evaluation and <b>many</b> specifics are required by regulation (based on the existing National Guidance)</li> </ul>	<ul style="list-style-type: none"> <li>Requires evaluation and only <i>some</i> specifics required by regulation (based on the existing National Guidance)</li> </ul>
<b>IV. Total Maximum Daily Load (TMDL)</b>		
1. Duration for Existing Dischargers	<ul style="list-style-type: none"> <li>Provided up to three years or the length of the permit, whichever is less. Provided up to two years from permit issuance for completion of additional studies to develop a Tier I criteria or modify a Tier II value.</li> </ul>	<ul style="list-style-type: none"> <li>Provides up to 5 years, and may extend beyond term of the permit when justified. Still provides two additional years for completion of additional studies.</li> </ul>
<b>III. Compliance Schedules</b>		
1. Development	<ul style="list-style-type: none"> <li>Required as part of permit issuance. Approval required under 130.7</li> </ul>	<ul style="list-style-type: none"> <li>Required for WQ limited waters. Approval allowed under 130.6 or 130.7.</li> </ul>
2. Data Collection	<ul style="list-style-type: none"> <li>Regulation specifies implementation procedures for calculating background concentrations (e.g., use of fish tissue data, non-detects, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Same as proposal, except default values for non-detects are guidance</li> </ul>
3. Implementation	<ul style="list-style-type: none"> <li>Implementation procedures required in regulation under procedures A or B</li> </ul>	<ul style="list-style-type: none"> <li>Only critical elements required in regulation (e.g., mixing zone specifications, design flows).</li> </ul>
4. Mixing Zones	<ul style="list-style-type: none"> <li>No mixing zones for acute criteria</li> <li>All mixing zones for BCCs eliminated within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>For non-BCCs, same as proposal but allows an acute mixing zone for acute criteria</li> <li>For BCCs, same as proposal but allows for exceptions based on technical/economic considerations</li> </ul>
<b>V. Permit Conditions for WQBFI.s Below the Level of Quantification (LOQ)</b>		
1. Pollution Minimization Plans	<ul style="list-style-type: none"> <li>Required a pollution minimization plan with: <ul style="list-style-type: none"> <li>Annual review and semi-annual monitoring of sources of pollutant</li> <li>Quarterly monitoring of influent to wastewater treatment facility</li> <li>Submittal of a control strategy for controlling pollutant below LOQ</li> <li>Implementation of control strategy</li> <li>Annual status report</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Same as proposal</li> </ul>
2. Bio-uptake Studies for BCCs	<ul style="list-style-type: none"> <li>Required some type of bio-uptake monitoring and provide examples</li> </ul>	<ul style="list-style-type: none"> <li>No special requirements for BCCs</li> </ul>

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<b>I. Chemicals of Focus</b>		
	<ul style="list-style-type: none"> <li>• All pollutants, data gathering for 138 toxic pollutants</li> <li>• 28 Bioaccumulative Pollutants of Concern (BCCs)</li> <li>• List of 16 excluded pollutants</li> </ul>	<ul style="list-style-type: none"> <li>• Same as proposal</li> <li>• 22 BCCs</li> <li>• Removed hydrogen sulfide and sulfide from list of excluded pollutants</li> </ul>
<b>II. Bioaccumulation Factors</b>		
1. Bioaccumulation Factors (BAFs) vs. Bioconcentration Factors (BCFs)	• Human health and wildlife criteria derived using measured or predicted BAFs	• Same as proposal
2. BAF Hierarchy	<ul style="list-style-type: none"> <li>• Data preference: <ul style="list-style-type: none"> <li>- Field measured BAF</li> <li>- Lab measured BCF*FCM</li> <li>- Predicted BCF*FCM</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Data preference: <ul style="list-style-type: none"> <li>- Field measured BAF</li> <li>- Biota-sediment accumulation factor (BSAF)</li> <li>- Lab measured BCF*FCM</li> <li>- Predicted BCF*FCM</li> </ul> </li> </ul>
3. Food Chain Multiplier (FCM) Model	• Used model developed by Thomann, 1989	• Uses model developed by Gobas, 1993
4. BCC Definition	• Chemicals with BAFs greater than 1000	• Same, but chemicals must also be persistent and toxic and be based on field data
<b>III. Additivity</b>		
1. Carcinogens	• Did not include regulatory text. Preamble presented two approaches (criteria-based vs. limit-based). Both approaches set risk level at 10 <sup>-5</sup> .	• Requires states and tribes to adopt an additivity provision applied to effluents, but provides flexibility on how to implement the provision
2. Toxicity Equivalency Factors (TEFs)	• Preamble suggested use of TEFs for 17 dioxins/furans	• Use of TEFs for 17 dioxins/furans

## I. Water Quality Criteria and Standards (Continued)

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<b>1. General</b>	<ul style="list-style-type: none"> <li>• Similar to national criteria methodology</li> <li>• 20 criteria proposed</li> <li>• Added Tier II methodology to translate narrative criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Same as proposal</li> <li>• 18 criteria</li> <li>• Same as proposal</li> </ul>
<b>2. Fish Consumption Rates</b>	<ul style="list-style-type: none"> <li>• Used 15 grams/day consumption rate to protect sport fisherman</li> </ul>	<ul style="list-style-type: none"> <li>• Same as proposal</li> </ul>
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<b>VI. Wildlife</b>		
<b>1. Scope of Methodology</b>	<ul style="list-style-type: none"> <li>• Proposed methodology to derive Tier I criteria</li> <li>• Proposed 4 Tier I criteria for DDT, mercury, PCBs, and TCDD</li> <li>• Tier II methodology proposed</li> </ul>	<ul style="list-style-type: none"> <li>• Tier I methodology limited to 22 BCCs with sufficient data</li> <li>• Same as proposal</li> <li>• Tier I beyond 22 BCCs and Tier II will be guidance</li> </ul>
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<b>VII. Antidegradation</b>		
<b>1. Tier I Waters (Protection of Uses)</b>	<ul style="list-style-type: none"> <li>• Same as national program but clarifies that states and tribes must add designated uses</li> </ul>	<ul style="list-style-type: none"> <li>• Provisions same as proposal; however, only applies to BCCs. National program governs for non BCCs)</li> </ul>
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<b>a. General</b>		

## I. Water Quality Criteria and Standards (Continued)

PROGRAM COMPONENT	PROPOSED GUIDANCE	FINAL GUIDANCE
b. Triggers for Review	<ul style="list-style-type: none"> <li>Placed specific emphasis on persistent BCCs. Trigger for antidegradation evaluation based on existing effluent quality (EEQ) as opposed to increases in permit limits above de minimis for non-BCCs.</li> </ul>	<ul style="list-style-type: none"> <li>Antidegradation reviews will be triggered by engaging in a deliberate action which causes an increase in the discharge of BCCs. Allowable de minimis increases for non-BCCs are guidance.</li> </ul>
3. Tier III Waters (Outstanding National Resource Waters—ONRW)	<ul style="list-style-type: none"> <li>Same as national program and contained specific provision for Lake Superior ONRW</li> </ul>	<ul style="list-style-type: none"> <li>Same as proposal</li> </ul>

### VIII. Whole Effluent Toxicity (WET)

1. Acute Mixing Zones	<ul style="list-style-type: none"> <li>Must meet 1.0 TUa (Toxic Unit acute) at end of pipe and 1.0 TUC (Toxic Unit chronic) at edge of chronic mixing zone.</li> </ul>	<ul style="list-style-type: none"> <li>Allows an acute mixing zone; must meet 0.3TUa at edge of acute mixing zone and 1.0 TUC at the edge of chronic mixing zone.</li> </ul>
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### IX. Variances

1. Duration	<ul style="list-style-type: none"> <li>Proposed a maximum three year limit on the duration of variances, subject to possible renewal</li> </ul>	<ul style="list-style-type: none"> <li>Allows variances to be granted for 5 years to correspond to the life of the NPDES permit with a specific reopener clause. Review of variance every three years as part of ongoing triennial review</li> </ul>
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### X. Site Specific Modifications

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|---|--|
| <ul style="list-style-type: none"> <li>Allowed only more stringent modifications for human health, wildlife, BAFs, and more or less stringent modifications for aquatic life</li> </ul> | <ul style="list-style-type: none"> <li>Allows for both more or less stringent modifications for human health, wildlife, BAFs and aquatic life. Requires more stringent modifications to protect endangered species.</li> </ul> |
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## II. Implementation/Permits

### I. Intake Credits

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>No water quality based effluent limits (WQBELs) for outfalls that qualify for simple pass through</li> </ul> | <ul style="list-style-type: none"> <li>Same as proposal, but in addition allows WQBELs up to background for non-simple pass through situations in non-attained <i>same</i> body of water for 2 years, and requires criteria end-of-pipe for non-attained <i>different</i> body of water. Criteria end-of-pipe as guidance in preamble for situations that do not qualify for intake credits. After 12 years, TMDLs or comparable control strategies govern for non-simple pass through situations</li> </ul> |
|---|--|

## II. Implementation/Permits (Continued)

PROGRAM COMPONENT	PROPOSED GUIDANCE	FINAL GUIDANCE
<b>II. Reasonable Potential</b>		
1. Determination	•Evaluation and <b>many</b> specifics are required by regulation (based on the existing National Guidance)	•Requires evaluation and only <i>some</i> specifics required by regulation (based on the existing National Guidance)
<b>IV. Total Maximum Daily Load (TMDL)</b>		
1. Duration for Existing Dischargers	•Provided up to three years or the length of the permit, whichever is less. Provided up to two years from permit issuance for completion of additional studies to develop a Tier I criteria or modify a Tier II value.	•Provides up to 5 years, and may extend beyond term of the permit when justified. Still provides two additional years for completion of additional studies.
<b>III. Compliance Schedules</b>		
1. Development	•Required as part of permit issuance. Approval required under 130.7	•Required for WQ limited waters. Approval allowed under 130.6 or 130.7.
2. Data Collection	•Regulation specifies implementation procedures for calculating background concentrations (e.g., use of fish tissue data, non-detects, etc.)	•Same as proposal, except default values for non-detects are guidance
3. Implementation	•Implementation procedures required in regulation under procedures A or B	•Only critical elements required in regulation (e.g., mixing zone specifications, design flows).
4. Mixing Zones	•No mixing zones for acute criteria  •All mixing zones for BCCs eliminated within 10 years	•For non-BCCs, same as proposal but allows an acute mixing zone for acute criteria  •For BCCs, same as proposal but allows for exceptions based on technical/economic considerations
<b>V. Permit Conditions for WQBELs Below the Level of Quantification (LOQ)</b>		
1. Pollution Minimization Plans	•Required a pollution minimization plan with: <ul style="list-style-type: none"> <li>- Annual review and semi-annual monitoring of sources of pollutant</li> <li>- Quarterly monitoring of influent to wastewater treatment facility</li> <li>- Submittal of a control strategy for controlling pollutant below LOQ</li> <li>- Implementation of control strategy</li> <li>- Annual status report</li> </ul>	•Same as proposal
2. Bio-uptake Studies for BCCs	•Required some type of bio-uptake monitoring and provide examples	•No special requirements for BCCs