DNR Update
Government Affairs Seminar 2019

Jason Knutson
Wastewater Section Chief
Wisconsin DNR
Topics

• DNR Organization and Updates
• Water Quality Standards
  • Ammonia
  • Total Nitrogen
  • Blue-green Algae
  • Antidegradation
  • PFAS

• Whole Effluent Toxicity (WET)
• TMDLs
  • Wisconsin River
  • Upper Fox/Wolf Rivers
• Air Quality Regulation of POTWs
• Operator Certification/Training
Administration Changes

- Permits: Wade Strickland
- Wastewater: Jason Knutson
- Monitoring: Tim Asplund
- Water Evaluation: Marcia Willhite
- Lakes & Rivers: Carroll Schaal
- Bus Support/IT: Ryan Raab

Water Quality Bureau

- Adrian Stocks, Director
  - Greg Searle, WR FOD

Environmental Management Division

- Darsi Foss, Administrator
  - Jim Zellmer, Deputy

- Preston Cole, Secretary
- Elizabeth Kluesner, Deputy Secretary
- Todd Ambs, Asst. Deputy Secretary
# Wastewater Program Staff

## Adrian Stocks
**Water Quality Bureau Director**

### Wade Strickland
**Section Chief - Permits**

- David Argall: WW Engineer (1.0 FTE)
- Kari Fleming: WR Engineer (1.0 FTE)
- Amanda Perdzock: WW Specialist (1.0 FTE)

<table>
<thead>
<tr>
<th>WW Engineer</th>
<th>WW Specialist</th>
<th>WW Specialist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dave Argall</td>
<td>Inna Gurevic</td>
<td>LTE:</td>
</tr>
</tbody>
</table>

### Jason Knutson
**WW Supervisor - South District - West (Fitchburg)**

- Chris Bellows: WW Engineer (1.0 FTE)
- Jonnathan Hill: WW Engineer (1.0 FTE)
- Andrew Dutcher: WW Engineer (1.0 FTE)
- Tim Ryan: WW Engineer (1.0 FTE)
- Steve Warmer: WW Specialist (Horizon) (1.0 FTE)

### Bryan Hatschek
**WW Supervisor - South District - East (Horicon)**

- Lisa Oregon: WW Specialist (Milwaukee) (1.0 FTE)
- Steven Eshkenazi: WW Specialist-Adj (Milwaukee) (1.0 FTE)
- Lisa Kowalski: WW Engineer (Waunakee) (1.0 FTE)

### Kelly O'Connor
**WW Supervisor - East District (Green Bay)**

- Mark Starnek: WW Enginee (Milwaukee) (1.0 FTE)
- Chris Dietrich: WW Engineer (Waukesha) (1.0 FTE)
- Dave Gardman: WW Engineer (Green Bay) (1.0 FTE)

### Michelle Balk
**WW Supervisor - North District (Spooner)**

- Lisa Lumley: WW Specialist (Green Bay) (1.0 FTE)
- Frank Smarr: WW Specialist (Milwaukee) (1.0 FTE)
- Grady Heldstab: WW Specialist-Adj (Milwaukee) (0.5 FTE)
- Angela Hart: WW Specialist (Spencer) (0.5 FTE)

### Field Operations Director

- Laura Dietrich: WW Specialist-Adj (Waukesha) (1.0 FTE)
- Phillip Spranger: WW Specialist-Adj (Waukesha) (1.0 FTE)

### Vacant Field Operations Director

- Laura Dietrich: WW Specialist-Adj (Waukesha) (1.0 FTE)
- Phillip Spranger: WW Specialist-Adj (Waukesha) (1.0 FTE)

### Wastewater Program Staff

- **WQBEL Engineer**
  - Matt Clucherly: WR Specialist (1.0 FTE)
  - Bob Laika: WW Engineer (1.0 FTE)
  - Jennifer Jerich: WW Engineer (1.0 FTE)
  - Nathan Wells: WW Engineer (Fitchburg) (1.0 FTE)

- **IS Data Services**
  - Rachel Fritz: WW Specialist-Adj (1.0 FTE)
  - Bob Laika: WW Engineer (1.0 FTE)
  - Jennifer Jerich: WW Engineer (1.0 FTE)
  - Nathan Wells: WW Engineer (Fitchburg) (1.0 FTE)

- **IS Resources**
  - Bob Liska: WW Specialist (1.0 FTE)
  - Jennifer Jerich: WW Engineer (1.0 FTE)
  - Nathan Wells: WW Engineer (Fitchburg) (1.0 FTE)

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  - Amanda Perdzock: WW Specialist (1.0 FTE)
  - Lisa Lumley: WW Specialist (Green Bay) (1.0 FTE)
  - Frank Smarr: WW Specialist (Milwaukee) (1.0 FTE)

- **WW Engineer**
  - Dave Argall: WW Engineer (1.0 FTE)
  - Kari Fleming: WR Engineer (1.0 FTE)
  - Amanda Perdzock: WW Specialist (1.0 FTE)

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**Vacancy**

1.0 FTE

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**LTE**

- Inna Gurevic
- Patrick Bass

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*If you have changes that need to be made to this chart, please contact Kari Fleming*

February 4, 2019

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*White boxes (above) = Vacant positions in the CPR process*
Water Quality Standards
Triennial Standards Review – Priorities for 2018-2020

A: In Progress
- Antidegradation
  - Bacteria Criteria Revision
  - Biocriteria
  - Chloride Variance Streamlining
  - Designated Uses Process Revision
  - P Assimilative Capacity in GLs
  - P Site Specific Criteria
  - Wetlands Floristic Assessment
  - Numeric Benchmarks

B: New Priorities
- Cyanobacteria
  - Human Health Criteria Revisions
  - Mercury MDV
  - Outstanding/Exceptional Resource
  - Water Process Revision
  - PFOS/PFOA

C: Priorities, but limited progress expected
- Aquatic Life Criteria Revisions

D: Barriers to progress
- Ammonia
  - Arsenic
  - Chloride
  - Total Suspended Solids (TSS)
  - Copper
  - Nitrate/Nitrogen

E: Not Priorities
- P Criteria for 2-Story Lakes
- Arsenic Variance Process
Ammonia

Variable based on pH

<table>
<thead>
<tr>
<th>Effluent pH</th>
<th>NH$_3$-N Limit mg/L</th>
<th>Effluent pH</th>
<th>NH$_3$-N Limit mg/L</th>
<th>Effluent pH</th>
<th>NH$_3$-N Limit mg/L</th>
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<tbody>
<tr>
<td>6.0 &lt; pH ≤ 6.1</td>
<td>108</td>
<td>7.0 &lt; pH ≤ 7.1</td>
<td>66</td>
<td>8.0 &lt; pH ≤ 8.1</td>
<td>14</td>
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<tr>
<td>6.1 &lt; pH ≤ 6.2</td>
<td>106</td>
<td>7.1 &lt; pH ≤ 7.2</td>
<td>59</td>
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<td>11</td>
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<tr>
<td>6.2 &lt; pH ≤ 6.3</td>
<td>104</td>
<td>7.2 &lt; pH ≤ 7.3</td>
<td>52</td>
<td>8.2 &lt; pH ≤ 8.3</td>
<td>9.4</td>
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<tr>
<td>6.3 &lt; pH ≤ 6.4</td>
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<td>7.3 &lt; pH ≤ 7.4</td>
<td>46</td>
<td>8.3 &lt; pH ≤ 8.4</td>
<td>7.8</td>
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<tr>
<td>6.4 &lt; pH ≤ 6.5</td>
<td>98</td>
<td>7.4 &lt; pH ≤ 7.5</td>
<td>40</td>
<td>8.4 &lt; pH ≤ 8.5</td>
<td>6.4</td>
</tr>
<tr>
<td>6.5 &lt; pH ≤ 6.6</td>
<td>94</td>
<td>7.5 &lt; pH ≤ 7.6</td>
<td>34</td>
<td>8.5 &lt; pH ≤ 8.6</td>
<td>5.3</td>
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<tr>
<td>6.6 &lt; pH ≤ 6.7</td>
<td>89</td>
<td>7.6 &lt; pH ≤ 7.7</td>
<td>29</td>
<td>8.6 &lt; pH ≤ 8.7</td>
<td>4.4</td>
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<tr>
<td>6.7 &lt; pH ≤ 6.8</td>
<td>84</td>
<td>7.7 &lt; pH ≤ 7.8</td>
<td>24</td>
<td>8.7 &lt; pH ≤ 8.8</td>
<td>3.7</td>
</tr>
<tr>
<td>6.8 &lt; pH ≤ 6.9</td>
<td>78</td>
<td>7.8 &lt; pH ≤ 7.9</td>
<td>20</td>
<td>8.8 &lt; pH ≤ 8.9</td>
<td>3.1</td>
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<tr>
<td>6.9 &lt; pH ≤ 7.0</td>
<td>72</td>
<td>7.9 &lt; pH ≤ 8.0</td>
<td>17</td>
<td>8.9 &lt; pH ≤ 9.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

- Category D: Barrier to Development
  - EPA Region 5 has a workgroup examining implementation of these standards
  - Awaiting findings

1999: EPA published Ammonia Criteria
2004: DNR Adopted Ammonia Criteria (NR 106)
2013: EPA published Updated Aquatic Life Criteria for Ammonia

Varies dependent upon presence/absence of mussels
Total Nitrogen

• Surface Water: Category D - Barriers to Development
  • Insufficient data on hand for state-led standard development
  • EPA working on a nutrient standard for lakes to prevent Harmful Algal Blooms
    • P and N Standards
    • Will continue to evaluate data and improve state’s scientific understanding

• Groundwater: UW Denitrification Study for Land Treatment Systems
  • Plant Uptake + Demonstrable Denitrification = N Loading Limits
    Known
    Topic of UW Study
Blue-green Algae

- EPA to finalize criteria in Spring 2019 for:
  - Microcystin
  - Cylindrospermopsin

- May be either:
  - Numeric Criterion or Recreational Advisory Level
  - Cyanotoxin Concentration or Cell Density Count

- Category B: New Priority
  - DNR waiting to see EPA’s final criteria and Technical Development Document
  - Scope Statement would begin after that point
Antidegradation

• Category A: Active Progress
• Scope Statement for Rulemaking approved in 2016
• Progress ongoing
• Goals:
  • Revise Subch. I of NR 207, Wis. Adm. Code to be consistent with federal regs
  • Clarify when an antideg review is necessary
  • Establish effective, transparent process for conducting antideg reviews
• Interim Step: Antidegradation Application Form
PFAS

• PFAS = Per- and PolyFluoroAlkyl Substances
  • PER-sistant!
  • Family of over 3,000 man-made fluorinated organic compounds
  • Fluorinated carbon tail is lipophobic (repels fat), oleophobic (repels oil), and hydrophobic
  • Manufactured since 1940s
    • 2002: Production of PFOS in US is phased out
      • Replaced by shorter-chained PFAAs
    • 2015: Production of PFOA in US is phased out
      • Replaced by GenX and shorter-chained PFAAs
    • Production in China for both chemicals has since increased
# U.S. PFOA/PFOS Water Quality Standards

<table>
<thead>
<tr>
<th>State</th>
<th>PFOA</th>
<th>PFOS</th>
<th>Type</th>
<th>Promulgated?</th>
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<tbody>
<tr>
<td>California</td>
<td>14</td>
<td>13</td>
<td>DW</td>
<td>N</td>
</tr>
<tr>
<td>Maine</td>
<td>130</td>
<td>560</td>
<td>GW</td>
<td>N</td>
</tr>
<tr>
<td>Michigan</td>
<td>420</td>
<td>11</td>
<td>DW</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>12,000</td>
<td>12</td>
<td>SW (nondrinking)</td>
<td>Y</td>
</tr>
<tr>
<td>Minnesota</td>
<td>35</td>
<td>27</td>
<td>DW/GW</td>
<td>N</td>
</tr>
<tr>
<td>Nevada</td>
<td>667</td>
<td>667</td>
<td>DW/GW</td>
<td>N</td>
</tr>
<tr>
<td>New Jersey</td>
<td>14</td>
<td>13</td>
<td>DW</td>
<td>N</td>
</tr>
<tr>
<td>North Carolina</td>
<td>2,000</td>
<td>-</td>
<td>GW</td>
<td>Y</td>
</tr>
<tr>
<td>Texas</td>
<td>290</td>
<td>560</td>
<td>GW</td>
<td>Y</td>
</tr>
<tr>
<td>Vermont</td>
<td>20</td>
<td>20</td>
<td>DW/GW</td>
<td>Y</td>
</tr>
</tbody>
</table>

*Units are in ng/L, DW = Drinking Water, GW = Groundwater, SW = Surface Water

- **USEPA:** Non-enforceable Health Advisory Level of 70 ng/L PFOA/PFOS individually and combined!
- **ATSDR:** Minimal Risk Levels (DW)

<table>
<thead>
<tr>
<th></th>
<th>PFOA</th>
<th>PFOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>78</td>
<td>52</td>
</tr>
<tr>
<td>Child</td>
<td>21</td>
<td>14</td>
</tr>
</tbody>
</table>

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*Units are in ng/L, DW = Drinking Water, GW = Groundwater, SW = Surface Water
PFAS at the Federal Level

• EPA released a federal action plan last week

• Priority Actions include:
  • Propose a national drinking water Maximum Contaminant Level (MCL)
    • PFOA and PFOS
  • Listing PFOA and PFOS as CERCLA hazardous substances
  • Developing interim cleanup recommendations
  • Finalizing and drafting toxicity assessments (beyond PFOA/PFOS)
  • Developing additional laboratory analytical methods
PFAS in Wisconsin

• DNR requested that DHS review health-related data to advise on GW health standard for:
  • PFOA
  • PFOS
• Triennial Standards Review: Category B
  • Surface Water Quality Standard development is a new priority
• Scoping: Roll out Fish Tissue Sampling Plan in 2019 field season
• Lab Cert developing SOPs for modifications to testing procedures
• Other DNR Programs also taking action
• Working with permittees to address known PFAS discharges
Whole Effluent Toxicity (WET) Testing
WET Limits

If the discharge has reasonable potential to cause an exceedance of WET limits, WET limits are required

- See NR 106.08
- Limit required if: Maximum TU x dilution x MF > 1.0
  \[
  \text{(Toxicity Unit)} \times \text{dilution} \times \text{MF} > 1.0
  \]
- Highly influenced by past toxicity detects
- If you have a detect, MF will be > 1.0 unless you have 30 low level detects
I’ve got a WET Limit. Now what?

- WET Test Failure = WET Limit Violation
- Minimum monitoring frequency is annual (maybe more)
- Noting else changes!
  - Test method is the same
  - Test endpoint (Instream Waste Concentration) is the same
  - Retest requirements are the same (2 w/in 90 days of a failure)
  - Toxicity Reduction Evaluation (TRE) triggered only if repeated failures occur
  - Compliance schedule if TRE is needed to comply with new limit
For more information on WET:

Go to [dnr.wi.gov](https://dnr.wi.gov),
enter “whole effluent toxicity” in search box

Or go to [https://dnr.wi.gov/topic/Wastewater/WET.html](https://dnr.wi.gov/topic/Wastewater/WET.html)

Certified Lab List:
[https://dnr.wi.gov/topic/wastewater/WETCertified.html](https://dnr.wi.gov/topic/wastewater/WETCertified.html)

Contact:
Kari Fleming, Environmental Toxicologist
Bureau of Water Quality
101 S. Webster St, Madison WI
(608) 267-7663
[Kari.Fleming@wisconsin.gov](mailto:Kari.Fleming@wisconsin.gov)
Total Maximum Daily Loads (TMDLs)

- A Budget for Pollutant Loading
- Addresses Waterbody Impairments
1. **Wisconsin River Basin** - TP  
   EPA Reviewing – anticipated approval in a couple months (Sent to EPA 12/20/2018)

2. **Upper Fox-Wolf Basin** – TP & TSS  
   DNR reviewing and responding to public hearing comments. (Comment period ended 1/18/2019)

3. **Lake Mallalieu** – TP  
   On Hold – Need SSC promulgated for Lake Mallalieu.

4. **Lake Pepin** (Led by MN) - TP and TSS  
   MN is released draft TMDL in Summer 2018 but has since been making edits.

5. **Wisconsin River Basin** – BOD  
   Collecting low flow DO and BOD samples

6. **NE Lakeshore TMDL** – TP and TSS  
   Requested by State Legislature. Currently collecting monitoring and modeling data. EPA contractor support for watershed modeling.
Monitoring data for Petenwell, Castle Rock, and Lake Wisconsin indicate that an SSC would be appropriate. Reservoirs currently average 100 µg/L TP.

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Existing TP Criterion (µg/L)</th>
<th>Recommended Site-Specific TP Criterion (µg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petenwell Flowage</td>
<td>40</td>
<td>↑ 53</td>
</tr>
<tr>
<td>Castle Rock Flowage</td>
<td>40</td>
<td>↑ 55</td>
</tr>
<tr>
<td>Lake Wisconsin</td>
<td>100</td>
<td>↓ 47</td>
</tr>
</tbody>
</table>

Calculated to support recreational use by preventing excessive algae (Chlorophyll a shall not exceed 20 µg/L more than 30% of days during July 15 – Sept 15)
Percent Reduction Maps

Current Criteria

Percent Reduction
- 0%
- 1 - 25%
- 25.1 - 50%
- 50.1 - 60%
- 60.1 - 70%
- 70.1 - 80%
- 80.1 - 90%
- 90.1 - 93%

Outfalls

SSC
Considerations for Permittees in TMDL Development Watersheds

• Wisconsin River Site-Specific Criteria
  • Scope Statement Approved June 2018
  • Moving Quickly
  • Economic Impact Analysis – 30-day comment period soon

• Antibacksliding and Antidegradation
  • Once a Limit is effective, difficult to relax it
  • MDV

No TMDL
0.1 mg/L TP
6-mon avg

TMDL
0.2 mg/L*

TMDL + SSC
0.4 mg/L*

*Figures from one example discharger
Last Thoughts
Air Permitting for POTWs


• Applies to volatilization of chemicals, combustion byproducts

• Applies to Authorized Pretreatment POTWs (>5MGD) that:
  • Combust Biogas
  • Are used as an air control device by an industrial user

Contact Megan Corrado (DNR) at [megan.corrado@wisconsin.gov](mailto:megan.corrado@wisconsin.gov) or 608-267-0566
Operator Certification

- 3 New Study Guides in 2018
  - Nitrogen Removal (N) – 10/2018
  - Anaerobic Reactors (A5) – 10/2018
  - Sanitary Sewage Collection Systems (SS) – 8/2018

- 15 Operator Study Guides, total
- One year after above date to become certified
  - Next Exam date: May 1
- Renew certification every 3 years
- Thank you Operators!
Questions