UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
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OFFICE OF
WATER AND
WATERSHEDS

March 17, 2016

Troy Smith, IPDES Rules and Guidance Coordinator
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706 *(sent to: Troy.Smith@deq.idaho.gov)*

Re: U.S Environmental Protection Agency Comments on Guidance Documents for the Idaho Pollutant Discharge Elimination System (IPDES) Program

Dear Mr. Smith:

The U.S Environmental Protection Agency, Region 10 (EPA) has reviewed the following IPDES document that the Idaho Department of Environmental Quality (DEQ) presented at the February 18, 2016 IPDES Effluent Limit Workgroup Meeting.

- Guidance for Water Quality-based Effluent Limits for the State of Idaho, December 2002

The EPA has the following comments and suggestions to improve the document.

General Comments

1. The EPA suggests DEQ eliminate or delete information from Section 1 since it appears much of information in this section will be available in the currently under development User's Guide Volume 1.

2. The EPA suggests removing information about the origins of the guidance (Section 1.1.5) and references to the State of Wisconsin's approach for determining reasonable potential to exceed (RPTE) and effluent limitations (limits) throughout this guidance document. Wisconsin adopted their approach under state regulation (Chapter NR106[1]). The state regulation dictating Wisconsin's approach and DEQ's use of the same approach may be confusing. The EPA suggests that DEQ use EPA's Technical Support Document as the basis for establishing their procedures for RPA and effluent limit development. To the degree DEQ chooses to adopt alternate procedures or policies for RPA or limits development, EPA's guidance and regulations are flexible in this regard. DEQ should provide the technical basis for the procedures and practices it intends to implement through guidance.

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[1] Wisconsin NR 106 Procedures For Calculating Water Quality Based Effluent Limitations For Toxic And Organoleptic Substances Discharged To Surface Waters <http://dnr.wi.gov/topic/SurfaceWater/codes/nr106.pdf>

3. The EPA suggests organizing the guidance in line with the RPTE and limit development process.

Specific Comments

1. Section 2.1 General RPTE and WQBELs Process

The section should align with the overall RPTE-Limit process DEQ develops. In general, the EPA believes some of the statements in this section are confusing and incorrect. DEQ should refer to EPA's Permit Writers' Manual[2] and Technical Support Document[3] and rewrite this section with correct use of descriptions and terminology.

2. Section 2.1.1 Background

Additional consideration should be given to the content and coherency of this section. The section heading appears to have little to do with the content of the section. Much of the section is about the limitations of methods for testing low-level pollutant concentrations. Statements in paragraph 4 of the section seems more opinion than fact.

3. Section 2.2.2 Analytical Detection and Quantification Levels

This section accurately describes EPA's definitions of Method Detection Level (MDL) and Minimum Levels (MLs), but does not provide details and information pertaining to how DEQ will use MDL and ML in permitting, RPTE or limits development. The establishment of MLs and MDLs and impacts on permitting are of considerable interest to both EPA and the regulated community. The EPA suggests DEQ develop comprehensive guidance on the topic.

4. Section 2.2.3 Compliance with WQBELs Below MDL

In relation to the second sentence, the EPA clarifies that when there is RPTE, the permitting authority must establish WQBELs in the permit regardless of the ML. The permitting authority may establish a compliance evaluation level at the ML as appropriate. The EPA suggests removing all references to NR 106. Compliance should be based on the quantifiable ML not the MDL.

5. Section 2.2.4 Importance of Data Quality and Representativeness

This section does not provide the necessary specifics about DEQ's intentions with regard to limited data sets, adequacy of data set, etc. The EPA suggests DEQ consider how data sets are to be evaluated and handled in RPTE and limit calculations.

6. Section 2.2.5 Outlier Analysis

The EPA generally agrees with the need to provide guidance on the evaluation and handling of outliers and the requirement to explain the exclusion of any data. However, this section lacks detail.

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[2] EPA's Permit Writers' Manual, September 2010, < https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf>

[3] EPA's Technical Support Document for Water-Quality based Toxic Control, March 1991, <https://www3.epa.gov/npdes/pubs/owm0264.pdf>

7. Section 2.3.1.1.3 Mixing Zone Use in WLA
DEQ should refer to mixing zone guidance, if standalone guidance exists to avoid conflicts between this document and existing guidance. The EPA suggests removing all references to NR 106.

8. Section 2.3.1.1.4 Receiving Water Design Flows
Consistency with Idaho's EPA-approved WQS is important; the EPA sees no need to mention others (last paragraph page 20). The EPA suggests removing all references to NR 106. The EPA recommends using a table to summarize the critical flow statistics used in relation to water quality criterion for the protection of aquatic life and human health.

9. Section 2.3.1.1.4 Receiving Water Background Concentrations
The EPA suggests removing all references to NR 106. In general, where the guidance includes examples, it would be helpful to provide the equations, calculations and results more clearly, i.e. not in a narrative form (see last paragraph in subsection).

10. Section 2.3.1.1.5 Receiving Water Background Concentration
The EPA suggests removing all references to NR 106. The EPA recommends DEQ use a more conservative statistic for background concentrations when evaluating aquatic life criteria to better aligned with the duration component of those criteria. EPA currently uses the 90th percentile value. Use of geometric mean statistic may be appropriate for pollutant background concentrations for the evaluation of human health criteria where the duration is typically 70 years. The section should address data sources and procedures to use when data quality and/or quantity are limited. The section should address recommendations for requiring monitoring to provide a robust dataset.

11. Section 2.3.1.1.6 Effluent Design Flows for RPTE WLA Calculations
The EPA suggests removing all references to NR 106. While use of average annual design flow is acceptable, this practice may not be appropriate where higher peak weather flows would result in RPTE. The guidance should address situations for which alternate facility design flows should be used in the evaluation.

12. Section 2.3.1.2 RPTE Evaluation Process and Calculations
This section states, "*The RPTE approach used herein is taken mostly from the Wisconsin rule (NR 106.05), which have been evaluated by EPA for consistency with the GLI and approved (EPA 2000a).*" The EPA suggests that DEQ refer to EPA's Permit Writers' Manual and Technical Support Document as the basis for establishing their procedures for RPA and effluent limit development. In this regard, the EPA disagrees with the bulleted list at the bottom of page 22 for determining RPTE. Wisconsin's methodology does not take into account the variability of the effluent, except in the last bullet. Again, remove references to Wisconsin, as DEQ has the discretion with develop its own technical basis for reasonable potential analysis consistent with 40 CFR 122.44(d). Use of a statistically based RPTE analysis need not and should not be limited to the availability of a specific number of samples.

The formula in the box on page 23 needs further explanation. It appears to be based on 99th percentile statistics. It also appears to be more complex than EPA's standard approach for

deriving an RP multiplier, by taking into account the number of samples in relation to method detection levels.

The guidance should, in addition to the formula, either provide or reference the EPA's TSD tables for a more extensive listing of RP multipliers associated with various coefficients of variations (CVs) for the 95th confidence interval and 95th probability basis (see TSD, page 54), if that is what DEQ intends to use (clarified on page 27, paragraph 3).

13. Section 2.3.1.3 WQBELs Calculations
The first 2 paragraphs are unnecessary and should be removed. The EPA agrees with the TSD approach, which appropriately accounts for effluent variability. This section should provide or reference the TSD tables of calculated multipliers (TDS, pages 102-103). The guidance should identify whether the 95th or 99th percentiles multipliers are to be used for LTAa, TLAc, MDL and AML calculations.

Under the procedure for human health criteria, the EPA recommends providing or referencing the table of multipliers in the TSD, Table 5-3 on page 106 to accompany the formula.

Page 27, paragraph 4, correctly identifies EPA's recommendation under Section 5.5.3 of the TSD. EPA currently uses this approach in Idaho permitting. EPA has guidance calculating limits for ammonia (using EPA 1999 criteria based on 30-days) that should be incorporated into this guidance for developing ammonia limits. Refer to https://www.gpo.gov/fdsys/pkg/FR-1999-12-22/pdf/99-33152.pdf.

14. Section 2.3.1.3.2 Mass Limits
The EPA suggests removing all references to NR 106. The last paragraph implies that wet weather limits may apply intermittently. It may be necessary to identify a defined period during which alternate wet weather limits apply by stating the specific months in permits when separate wet weather limits are warranted.

15. Section 2.3.1.4 Seasonal Considerations and Flow-Based WQBELs
While season limits can be used in permitting based on critical flow during defined periods, tier limits based on river flow are challenging to implement in permitting. The current data systems allow for limits that apply monthly and do not allow mid-month limit changes to accommodate changes in river flow. EPA would like to have further discussion on implementing flow-tiered limits in permit given the current data structure.

16. Section 2.3.2.1.1 Metal Toxicity Variability with Water Hardness.
Page 29, first paragraph. EPA R10 Water Quality Standards Unit's position regarding use of water effects ratios (WER) in Washington is, WER must be approved by EPA as a modification to the state Water Quality Standards. Further clarification is needed from R10 WQS to determine if use of a site-specific WER require EPA approval.

The EPA suggests removing all references to NR 106.

The guidance allows for mixed receiving water-effluent hardness based on certain considerations. Idaho's WQS requires receiving water hardness to be based upon critical river

flow conditions (IDAPA 58.01.02.210.03.c.ii). The EPA requests DEQ consider the appropriate approach for determining applicable criteria that are hardness dependent.

17. Section 2.3.2.1.4 Example Calculations for Metals.
Example calculations should be adjusted to be consistent with DEQ's final decisions and guidance for calculating RTPE and limits. In the table 5 example, different effluent flows are used for acute and chronic without any explanation. EPA typically uses the same design flow for both. Please clarify. In table 6, the RPTE procedure accounts for the number of samples below and above the MDL value. Please clarify if this approach will be used by DEQ in permitting.

18. Section 2.3.2.2 Ammonia
Refer to comment number 13 regarding modification to limits calculation for ammonia. The EPA suggests removing all references to NR 106. The EPA request additional time to consider and discuss the use of mixed pH and temperature based on mean value to determine applicable ammonia criteria. This section should be written to more clearly state the statistic and averaging period for annual and seasonal application of the criteria.

19. Section 2.4 Whole Effluent Toxicity RPTE and WQBELs Calculations
The EPA did not have sufficient time for review of this section with appropriate R10 staff so requests additional opportunity to comment on subsequent drafts of this guidance. The EPA suggests removing all references to NR 106. Parts of the subsection are redundant, such as data quality, minimum samples, representativeness and outliers; consider consolidating data consideration under a single section. RPTE and limits procedures for WET are similar to procedures for other pollutants so perhaps this section can be eliminated or shortened.

Since this guidance was developed, EPA has developed additional tools for the evaluation of WET data.

- **Whole Effluent Toxicity (WET) NPDES Spreadsheet**
  The National Pollutant Discharge Elimination System (NPDES) Whole Effluent Toxicity (WET) Spreadsheet can be used to analyze valid acute or chronic WET test data using statistical approaches recommended in Chapter 1, Section 1.3 of EPA's Technical Support Document and in EPA's acute and chronic WET test method documents, as well as using EPA's Test of Significant Toxicity document (PDF) (73 pp, 522K) . The spreadsheet can be used to analyze valid data for the test endpoints indicated for the selected EPA WET test method (e.g., survival, reproduction, biomass, fertilization), and the results are presented in an easy to read format that can be printed or saved as an Excel file on the user's computer.

  The results generated by the NPDES WET Spreadsheet can be used by NPDES permit writers for reasonable potential (RP) determinations in accordance with EPA's TSD (see pages 53-57, Chapter 5) and for NPDES WET compliance determinations (see TSD pages 112-113, Chapter 6). NPDES permittees and WET testing laboratories may also find the spreadsheet helpful when analyzing valid WET test data.

  Disclaimer: Please note that neither the EPA nor any of its employees assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information disclosed. Furthermore, the NPDES WET Spreadsheet is supplied "as-is" without guarantee or warranty, expressed or implied, including without limitation, any warranty of merchantability or fitness for a specific purpose.

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- Factsheet on the Whole Effluent Toxicity (WET) Analysis Spreadsheet (PDF) (1 pp, 64K)
- Whole Effluent Toxicity (WET) Analysis Spreadsheet (EXCEL) (4.9MB)

20. Section 2.5 WQBELs When Receiving Water Background Exceeds WQC
The EPA did not have sufficient time for review of this section with appropriate R10 staff so requests additional opportunity to comment on subsequent drafts of this guidance. More detail should be provided in relation to WQS provisions cited in this section. "*When natural background conditions exceed any applicable water quality criterion, the applicable water quality criteria do not apply; instead, pollutant levels are not to exceed the natural background conditions,*" may be problematic in permitting.

21. Include section on Effluent Data and Identification of Pollutants of Concern (POC)
Data sources, statistical bases.

22. Include section on Receiving Water Data
Data sources, statistical bases.

23. Include section on Identifying Applicable Criteria
Specific guidance when calculating criteria for ammonia and metals. Determine the appropriate inputs for pH, temperature and hardness.

24. Include a section for Temperature
Temperature RTPE and limits guidance often deserve a more detailed approach to address unique considerations and complexities associated with temperature. DEQ should consider data needs, data statistics, mixing zone allowances, accounting for impairment, etc. to assist with standardizing approaches across the state.

Please contact me at (206) 553-1755 or by email at lidgard.michael@epa.gov if you have any questions about this letter or related matters, or you may contact Karen Burgess, of my staff, at (206) 553-1644 or burgess.karen@epa.gov.

Sincerely,

Michael J. Lidgard, Manager
NPDES Permits Unit

cc: Mary Anne Nelson, IPDES Program Manager *(sent to: mary.anne.nelson@deq.idaho.gov)*