Message

From: Dunn, John [Dunn.John@epa.gov]
Sent: 3/12/2020 3:16:35 PM
To: Curtis, Glenn [curtis.glenn@epa.gov]; Madden, Venessa [Madden.Venessa@epa.gov]
Subject: FW: Labadie 316(a) comments for virtual meeting today at 1 pm

Here is the comparison of comments for todays call. --JD

From: Hackler, Pam <pam.hackler@dnr.mo.gov>
Sent: Thursday, March 12, 2020 10:15 AM
To: cgiesmann@ameren.com; 'Kohlbusch, Meghan' <MKohlbusch2@ameren.com>; Wieberg, Chris <chris.wieberg@dnr.mo.gov>; Abbott, Michael <michael.abbott@dnr.mo.gov>; heather.peters@dnr.mo.gov; Meyers, Leasue <leasue.meyers@dnr.mo.gov>; john.hoke@dnr.mo.gov; Angela Falls <Angela.Falls@dnr.mo.gov>; Michael Kruse <michael.kruse@dnr.mo.gov>; Michaelson, Dave <dave.michaelson@dnr.mo.gov>; Campbell, Jennifer <Jennifer.Campbell@mdc.mo.gov>; Dunn, John <Dunn.John@epa.gov>; 'Hentges, Valerie A' <valerie_hentges@fws.gov>; Herrington, Karen (karen_herrington@fws.gov) <karen_herrington@fws.gov>; Voss, Robert <robert.voss@dnr.mo.gov>
Subject: Labadie 316(a) comments for virtual meeting today at 1 pm

Good morning Craig and Meghan,

Thank you for setting up a Skype call for the meeting with us today; DNR and EPA are working on obtaining a visual connection, otherwise it will be voice only.

For those wishing to attend remotely, please let me know if you did not receive the Skype call-in information. For DNR folks, we still have Gasconade Camp reserved.

Agency comments are as follows:

From EPA:

Introduction

The 316(a) variance process is not a change of state water quality standards and does not require EPA approval as with site specific changes to state Water Quality Standards (WQS). The 316(a) variance is a site-specific permit limit based on biological studies. The Clean Water Act states that the state "will require effluent limits more stringent than necessary to assure the projection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife…" With this in mind, the alternate limits, less stringent than state WQS, are primarily a biological decision on the part of the state, implemented through permit limits.
EPA agrees that the biological studies produced by Ameren collected a range of data suitable to provide the state with information needed to make scientifically based decisions.
Ameren has requested:

- A TDP of greater than 0.95 will be allowed under conditions when the river flow is less than 40,000 cubic feet per second or ambient river temperatures are greater than 87°F;
- A TDP of greater than 0.95 will be allowed in no more than 6 percent of the days in any calendar year; and
- On any day where the TDP is greater than 0.95, the mixing zone must be less than 40 percent of the volume of the river as calculated by the equations in the permit.

EPA has two basic comments:

Thermal Discharge Parameter (TDP)

The TDP measure is a modeled output to gauge compliance with state WQS which are based on degrees Fahrenheit. EPA supports the modeling approach and believe that model outputs are predictive of real-world conditions.

EPA believes that the conditions of the variance and permit limits/conditions should be expressed in calculated degrees F. The calculated temperatures could be based on the TDP calculations as explained in the permit Fact Sheet and the Permit itself. This keeps limits and the variance in the same terms as the underlying state WWS

While the modeled TSP calculations and fisheries analysis are well beyond the abilities of most people to understand, the bottom line should be in terms that are accessible to the lay public. The purpose of public notice of permits is to give the public access to the decision making of the permitting authority and a defense of those decision. The process should be as open as possible, with plain descriptions of outcomes and regulatory limits. Limits should be clear and enforceable.

Days as Units of Measure

The LEC is the largest power plant in Region 7 and requests the most liberal limits of any power plant in the region. Ameren has invested in complex and exacting modeling of heat within the Mixing Zone of the LEC discharge. EPA believes that monitoring should embody the precision contained in the underlying models.

Heat events occur every few years and appear to be more severe as time goes on. Heat events are driven by diurnal cycles where river temperatures fluctuate by about 1.5 degrees Fahrenheit on a daily basis. (See attached data from 2017). Capture of scientific and compliance data throughout these cycles is important.

Missouri's WQS for heat include a "Delta T" at the end of the MZ and a temperature Maximum at the end of the MZ. Missouri's WQS are defined in "time" and do not specify days as the unit of measure.

Heat output from the LEC is near steady state, so Delta T remains fairly stable. Maximum heat at the end of the MZ varies greatly during the diurnal cycle, so use of a Daily Average Temperature would underestimate the Maximum Temperature at the end of the MZ by about 0.75 degrees F. Again, MDNR WQS state that the Maximum should not be exceeded at any time.

In addition, basing the duration of the variance period on a percentage of days in the calendar year is imprecise and not the norm in other states or in existing MDNR permits. In Iowa and other states of the Upper Mississippi River, WQS allow for a Maximum "plus" temperature at the end of the MZ with a percentage of exceedance time (1% or 5%) allowed. MDNR's WQS are constructed in the same way. In those other states, exceedance times are measured in hours in permits.

MDNR has also measured hours of Maximum "plus" temperature in permits for AECI-New Madrid, Ameren-Rush Island, Ameren-Meramec, and Ameren-Sioux.

Conclusion

EPA maintains that the units of measure in the permit document should reflect the units in MDNRs WQS (degrees F) and terms of the 316(a) variance (degrees F, Maximum degrees F, Maximum plus degrees F, and percent time in hours) should be similar in structure to other Missouri power plant permits.

Comments from DNR's Water Quality Monitoring Section:

24. Final selection of representative important species (RIS) will be made in consultation with DNR. ASA acknowledged that they failed to complete this task. **The agencies (MDC, DNR) will need to determine whether this was a significant oversight worthy of additional discussion, or whether we can proceed with ASA's report and the taxa they deemed to be RIS.**

25. Regarding the relevance of blue crabs and estuarine species on this variance request. **I have no comments to their response.**

26. Concerning taxonomic Family level identification. **In response to agency comments, ASA reconsidered family level identification and created a method allowing for the inclusion of more taxa by using the lowest practicable taxa level. I reviewed the description of their revised method (page 5-1 of the *Labadie 316(A) Demonstration Study Supplement*), and it appears to be a workable solution.**

In section *5.4.2.3 Community Characteristics* on page 5-42 of the report, however, the original wording remains (i.e., "Due to the differences in taxonomic level…diversity was calculated at the family level because most organisms could be identified to this level.") Will the information in the Supplement (noted above) be included in the final report? Or is "family level" defined according to the footnote on page 5-36?

27. Laboratory subsampling of Hester-Dendy and Ponar samples. **Based on how the data were presented in the report, it was not clear to me how subsampling to 200 individuals led to figures of over 70,000 in Table 5-6. ASA's response states, "Consistent with the study plan, if Hester-Dendy and Ponar samples contained a large number of specimens then samples were split using a Folsom plankton splitter." They go on to describe the methods used in splitting samples and the multiplication factors used to arrive at estimates presented in the report. I appreciate this additional explanation and acknowledge the fact that I missed the wording in the SOP provided to us during my review.**

28. Discussion regarding whether ASA deployed Hester-Dendy samplers at both mid-depth and on the river bottom. **It was not stated in ASA's draft report that Hester-Dendy samplers were deployed at both mid-depth and the river bottom as originally agreed. ASA explained that samplers were deployed at both depths, and the data were pooled due to their similarity. ASA provided a Quantitative Similarity Index calculation as well as several biological metrics to demonstrate that pooling the data sets was appropriate.**

I am curious how the QSI was calculated: were mid-depth and benthic data pooled across all zones, or were they partitioned? As I read the Supplement, it appears that all zones and all seasons were pooled to calculate the QSI.

29. a. Taxa richness, dominant taxa, biotic index, and Shannon diversity index were listed in the study plan, but they were not included in the report. We requested that the entire suite of biological metrics promised in the study plan be presented in the report. **ASA's response was**

> **"…it was considered inappropriate to discuss each metric individually for our analysis. Rather, we combined them into the standardized difference analysis as part of a Weight-of-Evidence evaluation of thermal effects."**

ASA explains why biotic index and sediment composition were excluded, and the rationale they provide seems reasonable. ASA did, however, provide biotic index values and qualitative sediment characterization in sections 7 and 9, respectively, of the Supplement. Taxa richness (which is presented as diversity with q=0) and dominant taxa are actually presented, just not in those exact terms. The numbers for those metrics are included in the tables ASA listed in their response document.

For an explanation of diversity, see *Section 5.4.1.3 Community Characteristics*. It says that,

> **"Diversity of the community was described based on Hill numbers (Hill 1973), which provide a profile of the community diversity along a spectrum of sensitivity to abundance. Hill numbers are currently the dominant paradigm for describing diversity of ecological communities (Chao et al. 2010)."**

The section goes on to describe how q = 0, 1, 2, and 3 factor into the discussion (these q-values are presented in the macroinvertebrate diversity table [Table B-26]). At q=0, the value is equivalent to simple species richness.

b. There is a section in the QAPP describing fish identification, but nothing concerning for macroinvertebrates.
ASA provided the requested language in Section 9 of the Supplement.

Comments from DNR's Water Protection Program, Permits:

The WPP's comments largely follow EPA's concerns. The permit will need to include an understandable thermal limit (ie. degrees Fahrenheit) and a measure of the size of the mixing zone used, or the area of river used for mixing, not to exceed 40%. We believe the exceedance time should be measured in hourly increments, as averaging for a day would not be protective of diurnal fluctuations. During permit drafting, we can discuss the specifics further.

Thank you for the additional submissions.
There were no comments from the Services or MDC at this time.

-Pam

Pam Hackler

Pam Hackler, Environmental Scientist
Missouri Department of Natural Resources
Water Protection Program; Industrial Wastewater Unit; NPDES Permitting
Tel: 573-526-3386
Email:pam.hackler@dnr.mo.gov

We'd like your feedback on the service you received from the Missouri Department of Natural Resources. Please consider taking a few minutes to complete the Department's Customer Satisfaction Survey at https://www.surveymonkey.com/r/MoDNRsurvey. Thank you.

My normal office hours are from 7-3:30 M-F. Thanks!