From:	Nickel, Brian
To:	Don.Essig@deq.idaho.gov
Subject:	RE: Sandpoint WLA for TP and conservatism
Date:	Wednesday, June 15, 2016 12:58:00 PM
Attachments:	TSD 103.pdf

Don:
In this context, a higher probability basis actually results in a higher limit.
At this point in the limit calculation process you have a "long term average" (LTA) level of discharge that you want your relatively short-term (monthly and weekly) effluent limits to require the discharge to meet. The exceedance probability refers to the probability that the facility will exceed its average monthly limit (AML) **if** the long-term average discharge and the variability are equal to the values calculated (or assumed) in the limit calculation. For a discharge with a given long term average and variability of the discharge, there is a higher probability that they will comply with a higher (less stringent) effluent limit. That's why the 99th percentile probability basis (1% exceedance probability) results in a higher limit than the 95th percentile (5% exceedance probability).
The TSD provides tables of long-term average to average monthly limit multipliers in Table 5-2, on Page 103 (attached). For Sandpoint's TP limits, the CV is 0.354 and n = 8 samples per month. Table 5-2 lists CVs in increments of 0.1, and "n's" of 1, 2, 4, 10, and 30, but you can see that, for an n of 10 and a CV of 0.4, the 95th percentile probability basis would result in a AML:LTA ratio of 1.25:1, whereas the 99th percentile probability basis would result in an AML:LTA ratio of 1.33:1. For Sandpoint's exact CV and n, the ratio is 1.326.
Yes, I've been asked (by June Bergquist in the Coeur d'Alene Regional Office) to participate in Friday's meeting.
Hope this clears things up a bit.
Thanks,
Brian Nickel, E.I.T.
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From: Don.Essig@deq.idaho.gov [mailto:Don.Essig@deq.idaho.gov]
Sent: Wednesday, June 15, 2016 12:30 PM
To: Nickel, Brian
Subject: Sandpoint WLA for TP and conservatism
Brian,
You no doubt have heard the City of Sandpoint has raised issues with their TP limit, (oddly) our authorization of use of a mixing zone, their ammonia limit, and mercury fish tissue monitoring requirements.
I am writing now just regarding the TP limits, and in particular this paragraph in the factsheet (pg E-7):
Probability Basis
The probability basis is the probability that the permittee will comply with the average monthly

effluent limit, if the permittee's long term average and coefficient of variation are consistent with the assumptions used in the calculation of the average monthly limit. In general, for toxics permitting, Section 5.5.4 of the TSD recommends the use of the 95th percentile (5% exceedance probability) for the average monthly limit. This is a conservative approach, which is justified when establishing effluent limits for toxic pollutants, but this conservatism is not necessary when establishing effluent limits for nutrients, where the goal is to achieve a certain seasonal average loading or concentration. Therefore, EPA has used the 99th percentile (1% exceedance probability) to calculate the average monthly limit.

Been trying to wrap my head around the statement that using the 95th rather than 99th % probability of compliance is more conservative. Seems to me a lower probability of exceedance (higher probability of compliance) is the more conservative approach. Did using the 99 % probability of compliance actual result in higher TP limits in the analysis of the Sandpoint discharge?

Has Dan Redline asked you to participate in the meeting/call with City of Sandpoint this Friday?

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