From:	Nickel, Brian
To:	"June.Bergquist@deq.idaho.gov"
Subject:	RE: Sandpoint and KPSD draft certifications
Date:	Thursday, August 21, 2014 11:06:00 AM
Attachments:	639760-arsenic_mercury_fish_tissue_report_0508.pdf tsdcalcAug08_BN_Sandpoint_6-2014_PDO_Waterkeeper_RW_Data.xlsx

June:

Here are my thoughts on the mercury mixing zone.

Because the prior permit unfortunately did not require monitoring of mercury using a sensitive method, all but two effluent results for mercury (out of 66) were reported as "less than" values. This makes it difficult to determine what their existing performance is. I did run their data through a maximum likelihood estimation spreadsheet to fit the "less than" values to a lognormal distribution, but I'm not very comfortable with using that, because it's just a glorified guess. I'd rather be honest about how little we know about the existing mercury concentration, by using a simplistic way of estimating the current performance. Specifically, I propose sizing the mixing zone so that the maximum daily mercury limit is equal to the maximum measured mercury concentration, which is 1.1 µg/L.

The other tricky thing about mercury is that we don't know the background water column mercury concentration. We do know from the attached report that the fish tissue concentration in Lake Pend Oreille is 0.611 µg/kg, which exceeds Idaho's fish tissue criterion of 0.3 mg/kg, so we can't reasonably assume that the background concentration of mercury is zero. What I propose is to estimate the background mercury concentration from the measured fish tissue concentration. Specifically, I propose using the draft trophic level 2 national BAF, which is 120,000 L/kg (see link below, at Table 2, on Page 32). The lowest BAF will yield the highest water column concentration for a given fish tissue concentration. This yields an estimated background concentration of 0.0051 µg/L.

http://water.epa.gov/scitech/swguidance/standards/criteria/health/upload/mercury2010.pdf

With that as your estimated background mercury concentration, a chronic mixing zone encompassing 14% of the 7Q10 flow of the Pend Oreille River yields a maximum daily limit of 1.1 µg/L. I've attached an updated limit calculation spreadsheet which shows all of this.

Arguably this leaves a risk of noncompliance with the average monthly limit (0.56 µg/L), but, I think once the City starts using sensitive methods for mercury, we'll find that their actual concentrations are much lower. Again, all but two results out of 66 were less than 0.5 µg/L. These limits are still quite generous due to the dilution afforded by the Pend Oreille River.

Thanks,

Brian Nickel, E.I.T.
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Nickel.Brian@epa.gov
http://epa.gov/r10earth/waterpermits.htm

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From: June.Bergquist@deq.idaho.gov [mailto:June.Bergquist@deq.idaho.gov]
Sent: Thursday, August 21, 2014 8:39 AM
To: Nickel, Brian
Cc: June.Bergquist@deq.idaho.gov

Subject: RE: Sandpoint and KPSD draft certifications

Hi Brian,

I will be ready tomorrow to send the newly rewritten (due to rule changes) Sandpoint cert to our state office for internal review. I had to apply one of our new yet unapproved antideg rule (the one regarding river conditions as of July 1, 2011). Otherwise we would have been into a socio-economic justification for TP and mercury. I'd say middle to late September might be a doable timeframe if things go smoothly. After this is out the door KPSD is next. Sometime in December is my timeframe for sending you the draft cert for that one. It should be faster than that but DEQ has been throwing new projects at me that were totally unpredicted by anyone. I keep thinking work will get back to normal soon but it hasn't happened yet.

By the way, were you going to revise the mixing zone size for mercury in the Sandpoint cert as a result of the Tribe's comments? Should I use a lower mixing zone than 25%?

June

From: Nickel, Brian [mailto:Nickel.Brian@epa.gov]
Sent: Wednesday, August 20, 2014 11:52 AM
To: June Bergquist
Subject: RE: Sandpoint and KPSD draft certifications

June:

Do you have any updates you can share with me on the Sandpoint and KPSD certs?

Do you expect to be able to complete one or both of them by the middle of September?

Thanks,

Brian Nickel, E.I.T.
Environmental Engineer
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From: June.Bergquist@deq.idaho.gov [mailto:June.Bergquist@deq.idaho.gov]
Sent: Monday, June 23, 2014 9:21 AM
To: Nickel, Brian
Subject: RE: Sandpoint and KPSD draft certifications

Hi Brian,

I would like to say both will be done but the way things are going I suspect only Sandpoint will be done by then. I can only push so hard and after the difficulties with the Spokane certs I am reluctant to think that these next two will be any easier. Sorry, I know it is important for you to get these finalized.

June

From: Nickel, Brian [mailto:Nickel.Brian@epa.gov]
Sent: Monday, June 23, 2014 9:07 AM
To: June Bergquist
Subject: Sandpoint and KPSD draft certifications

June:

Do you expect to be able to complete the draft certifications for Sandpoint and KPSD by September 1st? I ask because I need to estimate how many permits I will be able to send to public notice by the

end of the fiscal year (September 30th), for cost estimating purposes.
Thanks,
Brian Nickel, E.I.T.
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