Knight, David T. (ERO) (ECY)

From: Caitlin Brower [Caitlin@tuppermackbrower.com]
Sent: Tuesday, November 13, 2007 3:49 PM
To: Knight, David T. (ERO) (ECY)
Subject: FW: City of Coeur D'Alene Comments
Attachments: Comments 11-13-07.pdf

Dear Mr. Knight: Please see the attached comments submitted on behalf of the City of Coeur D'Alene re the Draft Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load Water Quality Improvement Report September 2007 Publication No. 07-10-073.
Thank you.

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CITY OF COEUR D'ALENE

WASTEWATER UTILITY DEPARTMENT

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November 13, 2007

Via Email and U.S. Mail (dkni461@ecy.wa.gov)

Dave Knight
Eastern Regional Office
WA Department of Ecology
4601 N. Monroe Street
Spokane, WA 99205

Re: Draft Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load Water Quality Improvement Report September 2007 Publication No. 07-10-073

Dear Mr. Knight:

The City of Coeur d'Alene Idaho appreciates the opportunity to provide these comments on the Spokane River/Lake Spokane Draft Dissolved Oxygen TMDL. The City has a substantial interest in how Washington state and EPA Region 10 ultimately decide to address low Dissolved Oxygen ('DO") in the Spokane River and how those decisions are implemented. The City's wastewater treatment facility discharges to the upper Spokane River in Idaho that flows into the downstream Washington portion of the River.

In general, while the City of Coeur d'Alene supports the approvals of TMDL, it is disappointed in the failure of Ecology to recognize the value and scientific validity of a watershed based approach to low DO in the River that treats all the contributing sources in Washington and Idaho equitably. There should be an adaptive management approach that recognizes the uncertainties in the technology to control phosphorous from point sources for all dischargers to the Spokane River and not just those in Washington State.

The draft TMDL ignores the need for a watershed approach by failing to establish Waste Load Allocations ("WLAs") for the Idaho dischargers. The Idaho and Washington discharges are part of the same water basin and are all part of the solution as well.

History of Spokane River Collaboration is Inaccurate

The City is concerned about how the draft TMDL characterizes the Spokane River collaboration. The Department of Ecology should correct the description of the collaborative process in the final TMDL. Beginning in the 1980's the City worked cooperatively with Ecology, Idaho DEQ, EPA Region 10 and the other dischargers to address low dissolved oxygen problems in the Washington portion of the Spokane River covered by this draft TMDL.

The history of the City's involvement and financial contribution to these planning efforts is well documented and well known to Ecology and EPA. This record of the City's commitment to a watershed based plan to address low DO in the River is not accurately presented in the draft TMDL. The draft TMDL acknowledges that the Spokane River collaboration included the "dischargers" to the River. It does not, however, explicitly acknowledge that the City of Coeur d'Alene was a formal member of and funded a portion of the collaboration effort. The City entered into the collaboration with the understanding that the outcome would be a TMDL to address all the loads to the impaired section of the Spokane River including the upstream sources in Idaho. The City believed then and believes now that a bi-state watershed approach to achieving DO standards for the river is the best most equitable approach to meeting this goal.

In February 2006 Ecology issued a Draft Water Quality Managed Implementation Plan for the Spokane River collaboration to describe the proposed path forward to meeting this goal. The draft plan did not include the Idaho dischargers in the proposed TMDL approach. The City submitted comments to Ecology explaining its concerns in detail with this abrupt change in the collaboration approach. In that comment letter the City wrote in part:

> We request that Ecology honor its agreement to work collaboratively with all the dischargers participating in the current collaboration. The Water Quality Managed Implementation Plan should be revised to acknowledge the bi-state watershed based approach that is the foundation of the agreement. It should be made clear that the Idaho discharge permits will be drafted to implement the resulting agreement as revised and that this approach will ensure that the Idaho dischargers are not causing or contributing of (an exceedence) of Washington water quality standards.

Ecology did not provide a response to the City's letter and has never explained why it departed from the collaboration or why the department abandoned a watershed approach to DO. EPA Region 10 later announced its intention to issue draft permits for the Idaho dischargers prior to issuance of the planned 2007 draft TMDL. The City comments on the draft NPDES for its wastewater treatment plant are attached here. The comments further explain the City's concerns about being excluded from the TMDL process. Ecology should explain why its TMDL does not address DO on a watershed basis.

Impact of the failed Collaboration

The abandonment of a watershed approach is now resulting in inconsistent and inequitable regulation. EPA chose to issue the draft permits in Idaho prior to the issuance of the new draft TMDL. The EPA permits rely on the draft TMDL issued in 2004 and subsequently withdrawn by Ecology. EPA's reliance on the 2004 draft TMDL and on modeling conducted in 2006 is explained in Appendix C of the draft Coeur d'Alene permit Fact Sheet issued in February 2007:

> The Washington TMDL for the Spokane River and Lake Spokane has not yet been finalized and approved, and therefore the final wasteload allocations are uncertain, as are the final effluent limitations for point sources that will be based on those wasteload allocations. *Point source dischargers in both States have raised questions as to the attainability of the DO standard in Lake Spokane.* Once finalized and approved, the Lake Spokane/Spokane River DO TMDL will only assign load and wasteload allocations to sources discharging to the Spokane River in Washington State. In the draft TMDL, Ecology proposed a compliance schedule that would defer imposition of final effluent limitations for point sources under its jurisdiction for ten years to allow the dischargers time to make necessary capital improvements to their treatment facilities and to evaluate the efficacy of various treatment technologies.
>
> *For these reasons, the cumulative impact of all sources in both States on Lake Spokane dissolved oxygen concentrations cannot be determined at this time.* Therefore, EPA believes it is appropriate at this time to analyze the effects of the Idaho discharges as distinct from Washington sources when deriving limits for the Idaho permits that are derived from and comply with Washington's water quality standards. Therefore, EPA proposes to limit the Idaho dischargers such that the cumulative loading from the three Idaho discharges will not cause a measurable decrease in dissolved oxygen concentrations in the Lake Spokane relative to the natural condition of the watershed. Pursuant to 40 CFR 122.44(d)(1)(vii)(A), this analysis "derives from and complies with" the Washington DO standard based on the impact of the Idaho point sources.
>
> As stated in the *Spokane River and Lake Spokane (Long Lake) Pollutant Loading Assessment for Protecting Dissolved Oxygen* (Cusimano, 2004), Ecology has generally allowed a 0.2 mg/L decrease in dissolved oxygen concentrations in TMDLs for oxygen-demanding substances, pursuant to its dissolved oxygen criterion of "no measurable decrease from natural conditions.
>
> This is how the loading capacity was calculated in the draft Spokane River/Lake Spokane DO TMDL. In other words, Ecology has interpreted its narrative criterion of "no measurable decrease from natural conditions" to mean "less than a 0.2 mg/L decrease from natural conditions."

Consistent with this interpretation of a "measurable decrease" in dissolved oxygen concentrations, EPA has considered any decrease in dissolved oxygen of less than 0.2 mg/L to be "less than measurable" for the purposes of permitting the Idaho dischargers. Therefore, EPA has established effluent limits for the Idaho dischargers such that those discharges do not cause more than a 0.2 mg/L decrease in dissolved oxygen concentrations in the State of Washington at the most critical location in the watershed,

on the most critical day, under critical low-flow conditions, thereby ensuring compliance with Washington's water quality standard of "no measurable decrease from natural conditions" in Lake Spokane under all foreseeable receiving water and discharge conditions.

To calculate these effluent limits, EPA used the CE-QUAL-W2 model to run a series of trial-and-error simulations, adjusting the simulated phosphorus, CBOD, and ammonia loadings until the model predicted that the Idaho dischargers would cause a less-than-measurable decrease in dissolved oxygen concentrations in Lake Spokane. Once a discharge scenario was found such that the dissolved oxygen impact upon Lake Spokane was less than measurable, EPA then verified that the model predicted that Washington water quality standards would be met at the State line. The modeling is documented in more detail in the *Assessment of the Water Quality Impact of Idaho Wastewater Treatment Plants on the Spokane River and Lake Spokane* (Cope, 2006)." City of Coeur d'Alene **Fact Sheet** NPDES Permit #ID-002285-3 Page C-4 emphasis added.

EPA appears to concede that the attainability of the Washington water quality standard in the Spokane River is uncertain and that these concerns have been raised by point sources in both states. Now that the 2007 draft TMDL has been issued it is unclear how the load allocations and compliance requirements in the draft TMDL might impact EPA's assumptions and modeling applications used to set final effluent limits in the City's draft permit to ensure that the DO standard is attained.

The draft TMDL also acknowledges that point and non point source controls in Washington may not be sufficient to achieve the current DO standard. It acknowledges that a Use Attainability Analysis ("UAA") to revise the DO standard will be considered as one of the options at the ten year point. If a UAA is established to set a less stringent limit for the River, that standard would become the applicable Washington water quality standard used to determine whether upstream sources are causing or contributing to a violation of the new standard. This would have a major impact on the Idaho dischargers.

A quick comparison of the 2004 and the 2007 draft TMDLs clearly shows that there are other significant differences that might impact the Idaho permits. One major difference is that the 2007 draft TMDL portrays the WLAs for the Washington as "targets." The draft permits for the Washington dischargers issued concurrent with the draft TMDL do not include any final effluents with or without compliance schedules for the Washington dischargers to achieve the DO standard. The draft Idaho permits contain final effluent limits (for ammonia) and compliance schedules for phosphorous and CBOD5 that require compliance with interim and final limits not to exceed 10 years.

The result of this decision to remove the Idaho dischargers from the collaborative TMDL process will require the City of Coeur d'Alene (and the other Idaho dischargers) to meet final limits to attain the Washington DO standard for the Spokane River with a certainty and according to a schedule that is not required of the Washington dischargers themselves. The Idaho dischargers are not being allowed the same adaptive management

flexible approach to meet DO targets that are provided for the Washington dischargers in the draft TMDL and the associated draft permits. The draft TMDL should be reissued to address this inequity and to ensure a coordinated watershed based approach to attaining the standard throughout the river.

Non Point Source Controls

The draft TMDL relies upon a nonpoint source control plan to attain the DO target of 10 ug/l. The plan described in the draft TMDL is a bi-state plan to address both Washington and Idaho non point source controls:

> The DO TMDL study recommended that both point sources and NPSs of phosphorus be identified and mitigated. The purpose of this proposed study, which will be conducted in three phases, is to identify and quantify NPSs into the Spokane River and Lake Spokane, to identify best management practices (BMPs) to address the NPSs, to evaluate the cost-effectiveness and longevity of the identified BMPs, and to prepare an implementation plan for reduction of NPS based on the selected BMPs.

Spokane River Dissolved Oxygen Draft TMDL, Appendix E, at 112 "Draft Work plan Bi-State Non-Point Source Study – Phase 1."

The draft TMDL will reassess whether the DO standard is being attained at five and ten year intervals. It will in effect "offset" WLAs with reductions achieved by reductions in LA's from these non point source control efforts. The City's draft permit issued by EPA does not allow for any similar offsets based on non point source controls. The City was part of the non point source control study and plan during the Spokane River collaboration. As noted earlier Ecology and EPA subsequently, without explanation removed the Idaho dischargers from the TMDL. Since the City is no longer part of the TMDL, it is under no obligation to participate in the non point source plan contained in the TMDL. The TMDL should be revised correct any references to non point source controls by the City.

Inconsistent Approach to Ammonia Limits

The current permit limits for ammonia for the City were set in 2002. In denying a permit modification request in 2004 by the City to remove numeric effluent limitations for ammonia, EPA relied upon comments from the Department of Ecology that the ammonia limits were needed to avoid causing or contributing to a violation of Washington State's DO standard.

The City reasonably expected that additional monitoring and modeling of the river by Ecology and EPA since 2004 to support the issuance of a revised TMDL would result in more flexible ammonia limits. Control of ammonia is assessed to address low DO in combination with controls of CBOD5 and phosphorous. The City more recently

requested that EPA revise the ammonia limits in its comments on the February 2007 draft permit.

Contrary to the position of Ecology in 2004, the draft TMDL now states that more stringent ammonia limits are not necessary and will not be included in the draft Washington permits to implement the TMDL:

> Ecology examined the sensitivity of dissolved oxygen in Lake Spokane to varying ammonia loads from the dischargers. The wasteload allocations in Table 6 are predicted to result in less than 0.01 mg/L decrease in dissolved oxygen in Lake Spokane. Therefore, dissolved oxygen in Lake Spokane appears to be less sensitive to ammonia.

Draft TMDL, at 10.

Ecology should confirm that this conclusion applies to all dischargers to the Spokane River or explain why a different analysis would apply to Idaho dischargers. The draft TMDL (and related Washington draft permits) confirm that Ecology's 2004 interpretation of the need to immediately control ammonia levels was premature and is not supported by the current modeling or monitoring data.

Advanced Wastewater Treatment Phosphorous Removal

The draft TMDL acknowledges that "...there is no well-established technology that can reliably treat a variety of wastewater discharges to meet water quality standards." Draft TMDL, at 26. The draft specifically states:

> Considerable phosphorus reductions are needed to improve dissolved oxygen levels in the Spokane River and Lake Spokane. Currently, there is no well-established technology that can reliably treat a variety of wastewater discharges to meet water quality standards. However, technology exists that can significantly reduce phosphorus from wastewater treatment plant effluent and that can bring current dischargers much closer to the levels required by water quality standards. The Spokane River TMDL Collaboration refers to the difference between what technology improvements can achieve and the TMDL targets as "the Delta" (Spokane River TMDL Collaboration, 2006).
>
> Phosphorus reductions will occur from a combination of installing the most effective phosphorus removal treatment and other phosphorus reduction actions. Phosphorus reduction actions or target pursuit actions are either required or available steps dischargers can take to upgrade their

> technology and eliminate their Delta. Dischargers without a Delta do not need to perform target pursuit actions.

Draft TMDL, 26 and 27.

In April 2007, EPA Region 10 issued a report Advanced Wastewater Treatment to Achieve Low Concentrations of Phosphorous. The foreword to the report acknowledges the assistance of Ken Merrill Washington Department of Ecology. The draft TMDL does not cite or refer to this report despite the fact that it was issued prior to issuance of the draft TMDL and was prepared with the assistance of Ecology staff. Ecology should review this report and make it clear whether the draft TMDL should be revised to acknowledge the results of this study. Conversely if Ecology does not support the conclusions of this report if should so state.

Coeur d'Alene has previously objected to the timing of the release of this report during the comment period on its draft permit. It is not clear why Region 10 chose to issue this report and how the report relates, if at all, to the Idaho permit conditions. The principal author of the report, Dave Ragsdale, has made clear that he is adverse to EPA and the draft permit. *See* Ex.4, J. Hegengruber, *Spokesman Review*, "Scientist Departure Taints River Cleanup Plan" (Sept. 10, 2007). The bias of the report is amplified by the participation in the development of the document by Ken Merrill. Mr. Merrill, whose extensive self-serving emails have been submitted as part of the comments by environmental groups on the draft permits for the Idaho dischargers, acknowledges in the recent news article that he is no longer invited to participate in the Spokane River TMDL process. *Id.* This conflict of interest is no less than the participation of Bonnie Beavers, legal counsel with the Center for Justice, who is also counsel for the Sierra Club and author of a comment letter on behalf that organization on the draft Idaho permits.

Coeur d'Alene was never provided an opportunity to review and comment on the report before it was published. This fact is troubling given the participation of Ken Merrill and Bonnie Beavers in drafting the report and the extensive reliance of Ms. Beavers on the report in her comments on behalf of the Sierra Club.

The report itself is not accurate in its evaluation of treatment plants. The report states, for example, that "[t]he total phosphorus concentrations achieved by some of these WWTPs are consistently near or below 0.01 mg/l." In reality, of the 23 plants included in the report, only Breckenridge, Colorado, Stamford, New York, and Walton, New York actually report average phosphorus less than 0.01 mg/l. These are relatively small plants with rated capacities of 3 mgd, 0.5 mgd and 1.55 mgd, respectively. In contrast to these plants, the much larger 6.0 mgd capacity Coeur d'Alene plant has anaerobic digestion facilities for solids stabilization, which impacts liquid stream performance. It is not technically sound to compare the results from three small plants with larger facilities and unique conditions on the Spokane River.

Ecology should acknowledge the process to evaluate treatment technologies that was an important part of the collaborative effort to develop the Washington TMDL for the Spokane River. As part of that process there was a specific workshop held on August 16, 2006, to evaluate treatment technology. That discussion included the applicability of treatment technologies used at other locations and the sensitivity to local wastewater characteristics and water chemistry conditions. This in turn led to local pilot treatment studies at Inland Empire Paper, the City of Spokane and the City of Coeur d'Alene. Many of the advanced treatment technologies included in the Ragsdale report were tested in these local studies including:

- Zenon Membrane Filtration
- US Filter Trident
- Blue Water Technology Dual Sand Filtration
- Parkson Dual Sand Filtration

The following table presents a summary of the total phosphorus results from the pilot testing in Coeur d'Alene.

Summary of City of Coeur d'Alene Phosphorus Pilot Testing[1]

Technology	Final Effluent Total Phosphorus – All Data Reported (µg/l)[2]	Final Effluent Total Phosphorus – Excluding Data Excursion Due to Equipment (µg/L)[3]
Zenon ZW-500 Membrane Filtration	67.4	24.1
US Filter Trident THS-1	19.2	19.2
Blue Water Technology BluePro Dual Sand Filtration	21.4	21.4
Parkson D2 Dual Sand Filtration	84.1	39.6

[1] Preliminary Coeur d'Alene pilot study results were presented by Mario Benisch, HDR Engineering, at the August 16, 2006 Treatment Process Workshop.
[2] Effluent phosphorus performance data (all data) from Table 3 of the City of Coeur d'Alene "Tertiary Phosphorus Removal Technology Pilot Study," Final Draft Report, May 2007.
[3] Effluent phosphorus performance data (excluding equipment caused excursions) from Table 4 of the City of Coeur d'Alene "Tertiary Phosphorus Removal technology Pilot Study," Final Draft Report. May 2007.

Contrary to the conclusions in the Ragsdale report, none of the treatment technologies included in pilot testing produced effluent total phosphorus of 0.01 mg/l or less. Further, the variability of pilot testing results exhibit the sensitivity to local applications,

wastewater characteristics, water quality conditions, and site specific operations when pursuing extremely low effluent phosphorus. For example, the Parkson Dynasand D2 Pilot Test Report, February 5, 2007, notes that the "data collected during this pilot study points to the fact that there was too much soluble non-reactive phosphorus in the waste stream to consistently achieve an effluent Total Phosphorus of less than 0.01 mg/l." *See* Ex. 5.

It is important to note that pilot testing is highly controlled and represents the best possible conditions under which treatment technologies might perform. Full-scale operations would not be expected to perform as well as pilot testing since full-scale plants cannot be operated under such tightly controlled conditions and must accept the recycle loadings from solids processing facilities.

It would be inappropriate for Ecology to rely on the conclusions in the Ragsdale report to shorten the compliance schedule or later the adaptive management approach in the draft TMDL. The conclusions presented in the Ragsdale report as so-called "observations" are not science and they do not reflect a qualified engineering opinion. Actual experience on the ground, with the Coeur d'Alene plant and two other treatment plants on the Spokane River in just the past year demonstrate conclusively that the conclusions in the Ragsdale report are without merit.

Coeur d'Alene is committed to improving water quality in the Spokane River. That commitment is reflected in our funding and participation in the collaborative process. It is also reflected in the on-going facility planning by the City. We have asked, based on our experience with our facility, pilot testing in the Spokane River and in consultation with licensed professional engineers who actually design and implement treatment technology, for nine years to achieve compliance with the final limits in the draft permit.

The City appreciates your consideration of these comments.

Sincerely,

H. Sid Frederickson
Wastewater Superintendent