



October 30, 2009

David Moore
Water Quality Program-Eastern Regional Office
Washington State Department of Ecology
4601 N. Monroe Street
Spokane, WA 99205-1295

RE: Spokane River and Lake Spokane D.O. TMDL Draft Report, Idaho DEQ Comments

Dear Mr. Moore:

The Idaho Department of Environmental Quality (IDEQ) appreciates the opportunity to comment on the draft report titled "Spokane River and Lake Spokane, Dissolved Oxygen Total Maximum Daily Load, Draft Water Quality Improvement Report, September 2009" prepared by the Washington Department of Ecology (Ecology). Washington's efforts to improve water quality in the Spokane River downstream of Idaho are important to ensure water quality is preserved, beneficial uses are maintained, and that the Clean Water Act is supported. There are numerous concerns over the draft Total Maximum Daily Load (TMDL) that have been voiced during its development that have not been adequately addressed. IDEQ shares many of those concerns such as the application of the TMDL process, identification of actual beneficial uses in Lake Spokane, compliance points for setting load allocations, and targets for dissolved oxygen in Lake Spokane.

IDEQ requests that Ecology consider the comments listed below before finalizing the TMDL and submitting it to the Environmental Protection Agency (EPA) for approval.

General Comments

1. IDEQ agrees with the statement on page 28 of the TMDL that Ecology lacks the authority to establish wasteload or load allocations for sources of pollutants in Idaho. IDEQ is authorized to determine compliance with Idaho Water Quality Standards and make section 401 certification decisions with respect to National Pollutant Discharge Elimination System (NPDES) permits issued to Idaho point source dischargers. IDEQ reserves its right to determine: (a) actions necessary to meet Idaho Water Quality Standards; (b) whether there is a reasonable potential for Idaho dischargers to cause or contribute to a violation of the downstream Washington Water Quality Standards; and (c) assuming a reasonable potential to exceed, the limits or other actions necessary to attain Washington Water Quality Standards.

2. According to the TMDL, the NPDES permits for Washington dischargers will provide the dischargers with a number of different options to achieve wasteload allocations through the development of a Delta Elimination Plan. These options include treatment technology, conservation, effluent reuse, source control, and contribution to nonpoint source controls in the watershed. This TMDL does not address Idaho dischargers, and Washington has no authority to determine limits for or issue NPDES permits in Idaho. IDEQ intends to work with EPA to ensure that, to the extent allowed by applicable law, Idaho dischargers are afforded the same or equivalent options to meet permitted constituent goals. In addition, Idaho will work with EPA to ensure there is an opportunity for Idaho to allocate responsibility for any needed phosphorus reductions between sources in Idaho in a manner which is reasonable and achievable and reflects the financial and technological capabilities of Idaho sources.
3. The TMDL contains a section to describe the Management Implementation Plan (MIP). The TMDL also contains appendix D, Foundation Concepts for the Spokane River TMDL Managed Implementation Plan. The MIP appears to be redundant with appendix D for several sections such as Target Pursuit Actions and likely includes updated language for some of these actions. However, there are sections in appendix D that are not found in the MIP and it is unclear how to interpret or apply the statements made in Appendix D that are not reconciled in the new MIP. For example, on page D-12, it discusses the new Spokane County Treatment plant and identifies that the new facility will achieve a discharge of Total Phosphorus (TP) equal to 10 µg/L at the time of operation through the application of control technology and offsets (delta management). Table 4 on page 28 identifies that Spokane County will have a Waste Load Allocation (WLA) based on a TP discharge limit of 42 µg/L. The TMDL does not adequately explain how these changes occurred and creates confusion with the inclusion of these older documents.
4. In reference to the point sources, the TMDL repeatedly uses the term “seasonal average” to describe effluent concentrations and waste load allocations. The modeling scenarios that were developed to help identify potential WLA’s use terminology such as maximum monthly average and long-term average to describe different concentrations of effluents used in the modeling analysis. Please provide a definition of seasonal average that is consistent with the terminology used in the modeling analysis and better describes how Ecology is using these various terms.
5. The TMDL also repeatedly uses the term “equitable distribution”, mainly in context with the development of effluent limits and waste load allocations for point sources. Please provide some definition or guidance on what factors are considered to meet these criteria of equitable distribution. It is not clear how it is “equitable” to give the largest dischargers, the city of Spokane and the city of Spokane Valley, WLAs based on 42 µg/L TP while, based upon the modeling, all the Idaho dischargers will presumably have their permitted mass loadings based on 36 µg/L TP. This appears to be a significant concept used in the TMDL strategy and yet is never adequately described in the document.

6. In the section on nonpoint sources, table 5 shows the percent reductions that were applied to the tributary sources for the modeling scenarios. The TMDL does not provide any documentation on how these reductions were determined or any documentation of what type of best management practices might be utilized to achieve these reductions. Note #1 in Table 5 says, "these reductions must be met prior to assigning credits for nonpoint source reductions as part of a dischargers Delta Elimination Plan." Without documentation available in the TMDL that further describes the controls used in the modeling analysis, it will be very difficult to ascertain whether or not the Best Management Practices included in a delta elimination plan or Avista's Water Quality Action Plan are separate and unique from the reductions identified in the load allocation scenario for nonpoint sources. It appears that there is a great potential for confusion and possible double-counting of proposed nonpoint source control efforts due to the lack of specific details in the TMDL.
7. Please remove the names of John Tindall and Robert Steed from the "Acknowledgements" on page ix. While this is a considerate gesture, the TMDL does not reflect input from IDEQ staff.

Water Quality Issues

8. The designated beneficial uses and associated criteria for the Lake Spokane Reservoir are incorrect. In addition, it is unclear in the TMDL how phosphorus load reductions will ultimately benefit the beneficial uses that are identified in the TMDL as having recurring impairments. The beneficial use of Core Summer Salmonid Habitat and the fish that the Core Summer Salmonid Habitat designation protects have never been attained, nor are they likely to be attained through any pollution reduction effort.
9. The population of salmonids that the Core Summer Salmonid Habitat beneficial use protects has not been described adequately to identify impairment based on dissolved oxygen concentration and DO depth profile. Baseline population data for this water has not been established to show when and how impairment might occur, and without this baseline data, it is not clear how Ecology will determine when the beneficial use is restored. The TMDL focuses on compliance with criteria and bears no documented relationship with the beneficial use of Core Summer Salmonid Habitat.
10. Ecology's concern regarding excess Blue-green algae blooms is valid and should be the basis and the objective of the TMDL. Blue-green algae, however, have also not been adequately described or documented to demonstrate beneficial use impairment. The presence of Lake Spokane Reservoir and the habitat conditions within Lake Spokane Reservoir predates the authorization of the Clean Water Act (1972) and Ecology's subsequent designation of the Core Summer Salmonid Habitat beneficial use. The current dissolved oxygen concentrations (profile) in Lake Spokane Reservoir exceed (better) all other Eastern Washington reservoirs. Current dissolved oxygen concentrations are also completely within acceptable limits for a reservoir being managed for warm water fish and put-and-take (hatchery) trout.

11. It is not reasonable to model Lake Spokane Reservoir as though it were a natural lake for the purposes of TMDL beneficial use impairment, or TMDL load allocation.
12. The scenarios simulated with the CE-QUAL-W2 model that determine load allocations did not accurately account for the newer, increased flow regimes that are required in the Federal Energy Regulatory Commission (FERC) license for the Post Falls Hydroelectric Project. These new flow regimes from Post Falls Dam are significantly higher than those used to develop the TMDL load allocations. Using lower flow regimes discounts dilution effects and minimizes the waters assimilation response to nutrients through the TMDL reach of the Spokane River and Lake Spokane Reservoir. It is not appropriate to attribute different flows than will actually occur to the Margin of Safety (MOS) required in TMDLs. Typically the Margin of Safety accounts for 10% of the load allocation to provide a buffer against uncertainty.
13. In the modeling strategy used to identify dissolved oxygen impairment caused by the operation of Long Lake Dam, Ecology developed a water quality goal or benchmark for total phosphorus in the riverine segment of the water body. Ecology elected to use a criterion of 10 µg/L for total phosphorus. The selection of this criterion influenced the selection of the modeling scenario #1, see page 21, and critically influenced other important decisions that may affect permit limits that EPA develops for the Idaho point sources. The TMDL does not describe the process the Ecology used to select this water quality benchmark and more information is warranted to support the selection of this benchmark value. IDEQ continues to object to the adoption of 10 µg/L water quality goal or benchmark with the following concerns: 1) the upper part of Lake Spokane Reservoir and the area that the water quality goal or benchmark is being applied is in an area that is transitional between EPA's Western Mountains and Xeric West aggregate level III ecoregions. The criteria should also be transitional, somewhere in the range between 10 and 21.88 µg/L; 2) nutrient criteria developers caution the use of reference conditions alone to derive criteria. A weight of evidence approach which addresses all key elements should be pursued; 3) the data base from which EPA's suggested nutrient criteria was developed contains annual medians for some water bodies, and is made from all data available and is not randomly sampled. Random sampling is needed in order to remove bias prior to application of statistics; 4) the data base also contains zeros which EPA assumed is an accurate measurement, and were included in the statistics. Laboratories do not report zero for these types of analysis. Western mountain III aggregate ecoregion has not been peer reviewed and there has not been a determination of how many zero values are affecting statistical applications; 5) the data base contains many values below method detection limit (10.0 µg/L, EPA 365.1); 6) data were combined without regard to data quality objectives (accuracy, precision), or field quality assurance and quality control process; 7) peer review of EPA's suggested nutrient criteria concluded that defensible reference conditions could not be derived and that seasons should limit data analysis; 8) The data used to develop the 10 µg/L water quality goal have not been tested for normality even though normal statistics (%tile) have been applied; 9) the frequency distribution approach used by EPA is arbitrary and results in inappropriate, stringent criteria that do not focus on environmental outcomes. By definition 75% of all water will not meet resulting nutrient standards; 10) Ecology's application of oligotrophic lake criteria to a non-oligotrophic riverine assessment point is inappropriate.

14. The Spokane River TMDL, particularly under Wasteload Allocations, identifies that reductions should be equitably distributed among point sources, with a goal of establishing achievable reductions. It is inappropriate to base wasteload permitted discharges on a technologically based target that lacks consensus and peer review. The technology based targets have no cause and effect relationship to beneficial use support and creates an assumption that nutrient loading from NPDES permitted discharges in Idaho are on parity with Washington dischargers much closer to Lake Spokane Reservoir. The most downstream Idaho discharger (City of Post Falls) is over 40 miles upstream from the start of Lake Spokane Reservoir. Assimilative capacity for the Spokane River is greater between the Idaho border and Lake Spokane Reservoir than assimilative capacity from Spokane to Lake Spokane Reservoir. The assumptions used in the scenario development regarding the reduction in phosphorus loads from Idaho do not, but should, take into account this difference in assimilative capacity that occurs throughout the riverine portion of this waterbody.
15. Implementation of the Spokane River TMDL calls for reductions in phosphorus, carbonaceous biological oxygen demand (CBOD) and ammonia (NH₃) to meet WLAs by 2019. Monitoring is slated for 2019 to detect a response in Lake Spokane Reservoir that is manifested by increased DO. Adaptive Management is identified in the TMDL to refine load allocations based on monitoring that would occur within 10 years of the TMDL development (not approval of the TMDL, or completion of TMDL implementation). This response, i.e. increased dissolved oxygen, is not likely to be detected due to the continued impact of nutrients stored in sediments. It is possible that nutrient reductions prescribed in the TMDL or through implementation monitoring could be masked by persistent sediment oxygen demand that would result in future prescribed nutrient reductions beyond reasonable WLA capabilities and economic feasibility.

Engineering and Modeling Issues

16. The current technologies available (not including reverse osmosis or entirely eliminating the discharges from the wastewater treatment plants to the Spokane River) to treat down to the projected 36 µg/L total phosphorous (TP), as shown in Modeling Scenario #1, may not be able to consistently meet this targeted concentration. The model runs of the Idaho discharges at 50 µg/L (scenario #2) and 100 µg/L (discharger model runs) show very small increases in the dissolved oxygen deficits in Lake Spokane Reservoir. Permitted effluent limits based on 70 µg/L to 100 µg/L for TP would be much more achievable based on the current phosphorus control technology and would provide a greater degree of certainty that facilities constructed over the next seven (7) years will comply with the permit limits and waste load allocations.

17. In Appendix E of the TMDL, the term “limit of technology” is used to describe how the effluent limits were established in developing the modeling scenarios. The TMDL does not provide any details on what constitutes the limit of technology. A definition should be provided that is consistent with the delta management strategy discussed in the MIP section. In Appendix D, references to the delta management such as “there is not well-established technology that can reliably treat a variety of wastewater discharges and achieve the River phosphorus levels required to improve DO sufficiently to meet water quality standards” create further confusion about the certainty and availability of technology to achieve the waste load allocations derived from modeling scenario #1.
18. In the section on Load and Wasteload Allocations, Ecology shows equation #1 to describe how waste load allocations are calculated from an effluent concentration. Table 4 lists the effluent concentrations for each point source which were derived from Scenario #1. The TMDL and the modeling report by PSU referenced in the TMDL do not adequately describe the differences between the permit limits and the modeling limits and why Ecology chose to use the lower effluent limits versus the maximum monthly averages to calculate the waste load allocation.
19. The TMDL provides a WLA for a new point source discharge- Spokane County (8 mgd at a TP concentration of 42 µg/L for a load of 2.80 lb./day). It is not clear how this is considered an “equitable” distribution of the point source reductions when it is actually an additional load. The allowance for population growth within Spokane County that this WLA provides takes away from the other existing point sources and the loads that can be discharged in Idaho. Please provide a more complete explanation of the logic behind allowing a new source and load to an already over-allocated watershed.
20. It is recommended that the September 15, 2009 Portland State University report titled “Spokane River Modeling Scenarios Report 2009” be included in the appendix of the final Ecology TMDL report.
21. The September 2009 modeling report from Portland State University contains a model run with higher flows as prescribed by the new FERC license issued to Avista for the operation of the Post Falls dam. The modeling report and the TMDL do not discuss the results of the FERC flow model run nor is there a discussion of how these model results would be used in the waste load allocation process.

Please contact me, John Tindall, or Robert Steed if you have any questions about IDEQ’s concerns or comments.

Sincerely,



Daniel Redline
Regional Administrator

Mr. David Moore
October 30, 2009
Page 7

G:\Administration\Redline\Spokane River TMDL\Draft Spokane River DO TMDL Comment Letter_final.doc

cc: Toni Hardesty, IDEQ
Barry Burnell, IDEQ
Shelley Landry, U.S. Representative Walt Minnick Office -- Coeur d'Alene
Karen Roetter, U.S. Senator Mike Crapo Office -- Coeur d'Alene
Sid Smith, U.S. Senator James Risch Office -- Coeur d'Alene
Sid Fredrickson, City of Coeur d'Alene
Terry Werner, City of Post Falls
Ken Windram, HARSB
Meghan Lunney, Avista
Christine Psyk, EPA Region 10
Jim Wertz, EPA IOO