UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply To
Attn Of: OW-134

JAN 31 2001

David Mabe, Administrator
State Water Quality Programs
Idaho Division of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706-1255

RECEIVED
FEB - 1 2001
IDHW-DEQ
Coeur d'Alene Field Office

Dear Mr. Dave Mabe:

The U.S. Environmental Protection Agency (EPA) is pleased to approve the nutrient TMDLs for Hayden Lake, Hauser Lake, and Twin Lakes in the Upper Spokane Subbasin submitted to us on December 26, 2000. The segment information on the TMDLs being approved is:

| Waterbody | HUC Number | TMDL Parameter |
|---|---|---|
| Hayden Lake | 17010305 7555 | Nutrients |
| Hauser Lake | 17010305 3562 | Nutrients |
| Twin Lakes | 17010305 7561 | Nutrients |

We are impressed by the cooperative effort of the Idaho Division of Environmental Quality (IDEQ) staff and local watershed interests in building on the Clean Lakes Program effort and developing these TMDLs. We look forward to implementation of the TMDLs, and to continuing collaborative work on the water quality issues in the Upper Spokane watershed. By EPA's approval, these TMDLs are now incorporated into the State's Water Quality Management Plan under Section 303(e) of the Clean Water Act.

Your submittal letter also recommended a number of changes to the 303(d) list. It is my understanding that IDEQ will formally submit these recommended changes to the 303(d) list to EPA as a package along with the other potential changes. We will act on those recommendations at that time. Your letter also deferred temperature TMDLs for 3 segments of the Spokane River and a DO TMDL for Hauser Lake. We look forward to receipt of schedule change requests for these deferrals.

If you have any comments or questions, please feel free to call me at (206) 553-1261, or you may call Leigh Woodruff of my staff at (208) 378-5774.

Sincerely

for Robert R. Robichaud

Randall F. Smith, Director
Office of Water

cc: Don Essig, IDEQ
Geoff Harvey, IDEQ

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STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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DEC 26 2000
IDHW-DEQ
Coeur d'Alene Field Office

1410 North Hilton • Boise, Idaho 83706-1255 • (208) 373-0502

Dirk Kempthorne, Governor
C. Stephen Allred, Director

December 19, 2000

Mr. Randall Smith, Director
Office of Water
USEPA, Region 10
1200 6th Ave
Seattle WA 98101

**RE: Upper Spokane Subbasin Assessment and TMDLs (HUC 17010305)**

Dear Mr. Smith:

Enclosed please find DEQ's "Subbasin Assessment and Total Maximum Daily Loads of Lakes and Streams Located on or Draining to the Rathdrum Prairie (17020305)", dealing with 303(d) listed waters in an area also know as the Upper Spokane subbasin. This constitutes our formal submission to the Environmental Protection Agency of TMDLs addressing three (3) listed waters in this subbasin. Total phosphorus TMDLs were prepared for Hayden Lake, Hauser Lake and Twin Lakes (two water bodies considered as one) to address 303(d) listing for nutrient impairment of water quality.

The Idaho Department of Environmental Quality believes these TMDLs meet all requirements under §303(d) of the federal Clean Water Act, and current EPA regulations.

The assessment also covers five other segments or waters listed on Idaho's 1998 303(d) in this subbasin, plus Spirit Lake, mistakenly identified on the list as being in the Pend Oreille HUC (17010214). Please note that metals contamination on three segments of the Spokane River have been addressed previously, in the jointly prepared and issued Coeur d'Alene Basin Metals TMDL of August 14, 2000.

As a result of our assessment, in addition to the TMDLs DEQ is recommending the following changes to Idaho's 303(d) list:

Fish Creek and Rathdrum Creeks to be de-listed for both nutrients and sediment;
Hauser, Hayden, and Twin Lakes to be de-listed for sediment; and Spirit lake to be de-listed for dissolved oxygen, nutrients and sediment.

DEQ is also deferring a temperature TMDL for three segments of the Spokane River, determining the proper course of action there to be a use attainability analysis and re-designation to seasonal cold use.

A dissolved oxygen (DO) TMDL for Hauser Lake is deferred based on the expectation that TMDL total phosphorus reductions will bring DO into compliance with water quality standards, as is the case in nearby Spirit Lake. We will follow-up with a schedule change request to accommodate these deferrals.

The enclosed documents are the product of a concerted and cooperative effort by DEQ and local watershed interests, and builds on many years of Clean Lakes Program effort. We look forward to your prompt approval as we continue the important work of implementing these TMDLs, as well as developing other TMDLs. Please contact Don Essig, 208-373-0119 or Geoff Harvey, 208-769-1422 if you have questions.

Sincerely,

David Mabe
State Water Quality Programs Administrator

DM/DE/lg

Enclosure

cc: Christine Pysk, USEPA Region 10
Leigh Woodruff, USEPA Idaho Operations Office
Steve Allred, DEQ (w/o enclosure)
Gwen Fransen, DEQ, Coeur d'Alene (w/o enclosure)
Geoff Harvey, DEQ, Coeur d'Alene (w/o enclosure)
Doug Conde, Attorney Generals Office (w/o enclosure)
Michael McIntyre, DEQ (w/o enclosure)
Don Essig, DEQ (w/o enclosure)

# TMDL Review

| | |
|---|---|
| TMDL: | **Upper Spokane (Rathdrum Prairie) Subbasin Assessment and TMDLs** |
| Pollutant: | **Nutrients** |
| Waters Addressed: | Hauser Lake |
| Review Completed: | 1/9/01 |
| Reviewers: | Donna Walsh |

## Required TMDL Elements

| | | |
|---|---|---|
| 1. Are waters addressed by the TMDL identified and consistent with the §303(d) list: | Yes [x] | No ☐ |
| 2. Loading Capacity: | Yes [x] | No ☐ |
| 3. Load Allocations: | Yes [x] | No ☐ |
| 4. Wasteload Allocations: | Yes [x] | No ☐ |
| 5. MOS: | Yes [x] | No ☐ |
| 6. Seasonal Variation: | Yes [x] | No ☐ |
| 7. Evaluation of critical conditions: | Yes [x] | No ☐ |
| 8. Reasonable Assurance | Yes [x] | No ☐ |
| 9. Public Participation | Yes [x] | No ☐ |

## Documents Reviewed:


1. Sub-basin assessment and Total Maximum Daily Loads of Lakes and Streams Located on or Draining to the Rathdrum Prairie (17010305), Idaho Department of Environmental Quality Coeur d'Alene Regional Office, November 22, 2000

2. Hayden Lake Watershed Management Plan, Panhandle Health District, Coeur d'Alene, Idaho, 1994

3. USEPA, 1991. Guidance for Water Quality-based Decisions: The TMDL Process. U.S. Environmental Protection Agency. EPA 440/4-91-001. April, 1991.

4. IDEQ, 1999b. Overview for the Implementation of Nonpoint Source TMDLs. Final Draft. Idaho Division of Environmental Quality. August, 1999.

| | Reviewers Comments |
|---|---|
| Identification of Waters | Waters addressed by the nutrient TMDL are identified on p. 6 of document #1 as follows:<br><br>Hauser Lake, 17010305 3562<br><br>This is consistent with listing of this water in the 1998 Idaho 303(d) list. |
| Targets | The nutrient standard in Idaho is a narrative standard stating that "surface waters of the state shall be free from excess nutrients..." The goals of the Hauser Lake Watershed Management Plan are to maintain the level of phosphorous in the short term and to reduce the level of phosphorous in the lake in the long term. The Idaho Department of Ecology chose the goal of reducing the phosphorous by 25 % which was the goal chosen by the Twin Lakes Management Plan for Twin Lakes. This goal works out to be 13 ug/L total Phosphorus at Sechi depth. This goal is within suggested guidelines and should protect the beneficial uses of the lake.. |
| Load Capacity | The current total phosphorus ten year average at Sechi depth is 17.4 ug/L so a 25% reduction in total phosphorus equates to a goal of 13 ug/L total phosphorous Since the estimated current load is 1010 kg total phosphorus per year the load capacity is 676 kg/year. An estimated phosphorous load reduction of 333 kg phosphorous per year is required to meet the lake plan goal. The margin of safety is set as 10 % of the load capacity and 608 kg phosphorous per year is allocated. |
| Load Allocation | The load allocations are presented on page 3 of the Hauser Lake TMDL (found in the middle of the document #1) Atmospheric fallout and waterfowl inputs are not reduced because they are very difficult to control. The loading from aquatic plant decay is not reduced because control of aquatic plants could adversely affect the fishery. Phosphorous loading from internal sediments is 28.5 % of the current load so control of the internal contribution is critical to reducing the nutrient concentration. Alum treatment will be used to reduce this part of the load and will reduce the internal loading by almost 80%. 20 to 50 % reductions will be required from the other sources to meet the loading capacity.<br><br>Our review has concluded that these load allocations are adequate. |
| Wasteload Allocations | There are no point sources of nutrients in the watershed. |

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|---|---|
| Margin of Safety | A margin of safety of 10% of the loading capacity is assigned. An additional margin of safety is the deposition of phosphorous mineral in the lake bottom. The level of this mechanism has not been estimated and is ignored in the loading capacity calculations.<br><br>Our review has concluded that the TMDL adequately incorporates a margin of safety. |
| Seasonal Variation and Critical Conditions | Seasonal variation was considered. However since lakes serve as watershed sinks and buffer seasonal flows, the TMDL was developed based on a yearly average. Though plant growth conditions are critical during the summer months, the growth nutrients are conserved by the lake so the TMDL is based on yearly averages without regard to seasonality.<br><br>The TMDL adequately considers seasonal variation in loading. |
| Reasonable Assurance | There are no point sources of nutrients in the watershed so reasonable assurance is not applicable. |
| Public Participation | The Upper Spokane (Rathdrum-Spokane) Sub-basin Assessment and the Hauser, Hayden and Twin Lake nutrient TMDLs were submitted for a thirty day public comment period between August 25, 2000 and September 25, 2000. During the public comment period the Panhandle Basin Area Group met on September 20, 2000 and the opportunity was afforded the public to comment on the documents.<br><br>Our review has concluded that public participation and documentation requirements (40 CFR Part 25) have been satisfied. |

**Reviewers Recommendation/Additional Comments**

**Each of the required elements and assumptions of this TMDL are adequately identified and explained. The TMDL provides a clear basis to conclude that the allocations will achieve water quality standards, and that information gathered in follow-up monitoring and studies will be used to further refine the TMDL.**

**It is recommended that the TMDL be approved.**

# TMDL Review

| | |
|---|---|
| TMDL: | **Upper Spokane (Rathdrum Prairie) Subbasin Assessment and TMDLs** |
| Pollutant: | **Nutrients** |
| Waters Addressed: | Twin Lakes (Upper Lake and Lower Lake) |
| Review Completed: | 1/9/01 |
| Reviewers: | Donna Jabs Walsh |

| Required TMDL Elements | | |
|---|---|---|
| 1. Are waters addressed by the TMDL identified and consistent with the §303(d) list: | Yes [x] | No ☐ |
| 2. Loading Capacity: | Yes [x] | No ☐ |
| 3. Load Allocations: | Yes [x] | No ☐ |
| 4. Wasteload Allocations: | Yes [x] | No ☐ |
| 5. MOS: | Yes [x] | No ☐ |
| 6. Seasonal Variation: | Yes [x] | No ☐ |
| 7. Evaluation of critical conditions: | Yes [x] | No ☐ |
| 8. Reasonable Assurance | Yes [x] | No ☐ |
| 9. Public Participation | Yes [x] | No ☐ |

Documents Reviewed:


1. Sub-basin assessment and Total Maximum Daily Loads of Lakes and Streams Located on or Draining to the Rathdrum Prairie (17010305), Idaho Department of Environmental Quality Coeur d'Alene Regional Office, November 22, 2000

2. Twin Lakes Management Plan, Clean Lakes Coordinating Council, Coeur d'Alene, Idaho, November, 1991

3. USEPA, 1991. Guidance for Water Quality-based Decisions: The TMDL Process. U.S. Environmental Protection Agency. EPA 440/4-91-001. April, 1991.

4. IDEQ, 1999b. Overview for the Implementation of Nonpoint Source TMDLs. Final Draft. Idaho Division of Environmental Quality. August, 1999.

| | Reviewers Comments |
|---|---|
| Identification of Waters | Waters addressed by the nutrient TMDL are identified on p. 6 of document #1 as follows:<br><br>Twin Lakes 17010305 7561<br><br>This is consistent with listing of this water in the 1998 Idaho 303(d) list. |
| Targets | The nutrient standard in Idaho is a narrative standard stating that "surface waters of the state shall be free from excess nutrients..." The Twin Lakes Management Plan has a goal for the lake of 25% reduction of total phosphorous. The average total phosphorous concentration of Upper Twin Lake surface water is 29.8 ug/L and Lower Twin Lake is 15.4 ug/L. A 25 % reduction would indicate the goals of 22 ug/l total phosphorous for the upper lake and 11.5 ug/l total phosphorous for the lower lake (10 year average). |
| Load Capacity | Based on the target and the estimated load, a 35% reduction in total phosphorous is required for Upper Twin Lake (100-(29.8/22 x 100)). The estimated load to Upper Twin Lake is 738 kg TP per year, so the loading capacity of Upper Twin Lake is 480 kg TP per year (738-(738 X.35)).<br><br>A 34% reduction is required for Lower Twin Lake (100-(15.4/11.5 X 100)). An estimated load of 556 indicates a loading capacity of 367 kg total phosphorous per year. |
| Load Allocation | The load allocations for Upper Twin Lake are given on page 4 of the Twin Lakes TMDL found near the middle of Document #1. Internal loading and precipitation, were assigned their current loads (no reductions were required) so the load reductions were divided among the remaining three sources of tributaries, wastewater, and grazing.<br><br>The load allocations for Lower Twin Lake are given on page 5 of the Twin Lakes TMDL. The precipitation load was not reduced. The allocation assumes a new tributary load of 178 kg phosphorous per year based on the phosphorous reduction in the waters of the upper lake, which is the primary tributary of the lower lake.<br><br>Our review has concluded that these load allocations are adequate. |
| Wasteload Allocations | There are no point sources of nutrients in the Twin Lakes watershed. |
| Margin of Safety | A margin of safety of 10% of the loading capacity is assigned.<br><br>Our review has concluded that the TMDL adequately incorporates a margin of safety. |

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| Seasonal Variation and Critical Conditions | Seasonal variation was considered. However, since lakes serve as watershed sinks and buffer seasonal flows, the TMDL was developed based on a yearly average. Though plant growth conditions are critical during the summer months, the growth nutrients are conserved by the lake so the TMDL is based on yearly averages without regard to seasonality. |
| Reasonable Assurance | There are no point sources of nutrients in the watershed so reasonable assurance is not applicable. |
| Public Participation | The Upper Spokane (Rathdrum-Spokane) Sub-basin Assessment and the Hauser, Hayden and Twin Lake nutrient TMDLs were submitted for a thirty day public comment period between August 25, 2000 and September 25, 2000. During the public comment period the Panhandle Basin Area Group met on September 20, 2000 and the opportunity was afforded the public to comment on the documents.<br><br>Our review has concluded that public participation and documentation requirements (40 CFR Part 25) have been satisfied. |

**Reviewers Recommendation/Additional Comments**

**Each of the required elements and assumptions of this TMDL are adequately identified and explained. The TMDL provides a clear basis to conclude that the allocations will achieve water quality standards, and that information gathered in follow-up monitoring and studies will be used to further refine the TMDL.**

**It is recommended that the TMDL be approved.**

# TMDL Review

| | |
|---|---|
| TMDL: | **Upper Spokane (Rathdrum Prairie) Subbasin Assessment and TMDLs** |
| Pollutant: | **Nutrients** |
| Waters Addressed: | Hayden Lake |
| Review Completed: | 1/9/01 |
| Reviewers: | Donna Walsh |

## Required TMDL Elements

| | | |
|---|---|---|
| 1. Are waters addressed by the TMDL identified and consistent with the §303(d) list: | Yes [x] | No ☐ |
| 2. Loading Capacity: | Yes [x] | No ☐ |
| 3. Load Allocations: | Yes [x] | No ☐ |
| 4. Wasteload Allocations: | Yes [x] | No ☐ |
| 5. MOS: | Yes [x] | No ☐ |
| 6. Seasonal Variation: | Yes [x] | No ☐ |
| 7. Evaluation of critical conditions: | Yes [x] | No ☐ |
| 8. Reasonable Assurance | Yes [x] | No ☐ |
| 9. Public Participation | Yes [x] | No ☐ |

## Documents Reviewed:


1. Sub-basin assessment and Total Maximum Daily Loads of Lakes and Streams Located on or Draining to the Rathdrum Prairie (17010305), Idaho Department of Environmental Quality Coeur d'Alene Regional Office, November 22, 2000.

2. Hayden Lake Watershed Management Plan, Panhandle Health District, Coeur d'Alene, Idaho, 1994

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4. IDEQ, 1999b. Overview for the Implementation of Nonpoint Source TMDLs. Final Draft. Idaho Division of Environmental Quality. August, 1999.

| | Reviewers Comments |
|---|---|
| Identification of Waters | Waters addressed by the nutrient TMDL are identified on p. 6 of document #1 as follows:<br><br>Hayden Lake, 17010305 3555<br><br>This is consistent with listing of this water in the 1998 Idaho 303(d) list. |
| Targets | The nutrient standard in Idaho is a narrative standard stating that "surface waters of the state shall be free from excess nutrients..." The Hayden Lake Watershed Management Plan chose the goal of total phosphorus at Sechi depth of 7 ug/L (10 year average) for this lake. This is within suggested guidelines and should protect the beneficial uses of the lake. |
| Load Capacity | The current total phosphorus ten year average at Sechi depth is 7.75 ug/L so a 10.7% reduction in total phosphorus is required to meet the 7 ug/L goal. Since the measured load is 3610 kg total phosphorus per year the load capacity is 3223 kg/year. An estimated phosphorous load reduction of 386.3 kg phosphorous per year is required to meet the lake plan goal. The margin of safety is set as 10 % of the load capacity and 2901 kg phosphorous per year is allocated. |
| Load Allocation | The load allocations are presented on page 3 of the Hayden Lake TMDL (found in the middle of the document #1) Atmospheric fallout was allocated the current load because of the difficulty of controlling this source. The rest of the source allocations were reduced by an additional few percentages to account for maintaining the current atmospheric fallout load.<br><br>Our review has concluded that these load allocations are adequate. |
| Wasteload Allocations | There are no point sources of nutrients in the watershed. |
| Margin of Safety | A margin of safety of 10% of the loading capacity is assigned. An additional margin of safety is the deposition of phosphorous mineral in the lake bottom. The level of this mechanism has not been estimated and is ignored in the loading capacity calculations.<br><br>Our review has concluded that the TMDL adequately incorporates a margin of safety. |

| | |
|---|---|
| Seasonal Variation and Critical Conditions | Seasonal variation was considered. However, since lakes serve as watershed sinks and buffer seasonal flows, the TMDL was developed based on a yearly average. Though plant growth conditions are critical during the summer months, the growth nutrients are conserved by the lake so the TMDL is based on yearly averages without regard to seasonality. |
| Reasonable Assurance | There are no point sources of nutrients in the watershed so reasonable assurance is not applicable. |
| Public Participation | The Upper Spokane (Rathdrum-Spokane) Sub-basin Assessment and the Hauser, Hayden and Twin Lake nutrient TMDLs were submitted for a thirty day public comment period between August 25, 2000, and September 25, 2000. During the public comment period the Panhandle Basin Area Group met on September 20, 2000 and the opportunity was afforded the public to comment on the documents.<br><br>Our review has concluded that public participation and documentation requirements (40 CFR Part 25) have been satisfied. |

**Reviewers Recommendation/Additional Comments**

**Each of the required elements and assumptions of this TMDL are adequately identified and explained. The TMDL provides a clear basis to conclude that the allocations will achieve water quality standards, and that information gathered in follow-up monitoring and studies will be used to further refine the TMDL.**

**It is recommended that the TMDL be approved.**