

# FACT SHEET

The United States Environmental Protection Agency (EPA)  
Plans To Reissue A  
National Pollutant Discharge Elimination System (NPDES) Permit To:

Kootenai-Ponderay Sewer District  
511 Whiskey Jack Road  
Sandpoint, ID 83864

Permit Number: ID-002122-9  
Public Notice start date: May 2, 2001  
Public Notice expiration date: June 1, 2001

## **EPA Proposes NPDES Permit Reissuance.**

EPA proposes to reissue an NPDES permit to the Kootenai-Ponderay Sewer District. The draft permit places conditions on the discharge of pollutants from the Kootenai-Ponderay Sewer District's wastewater treatment facility to Boyer Slough. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a description of the current discharge and current sewage sludge (biosolids) practices
- a listing of proposed effluent limitations, schedules of compliance, and other conditions
- a map and description of the discharge location
- technical material supporting the conditions in the permit

## **The State of Idaho Proposes Certification.**

EPA is requesting that the Idaho Department of Environmental Quality certify the NPDES permit for the Kootenai-Ponderay Sewer District, under section 401 of the Clean Water Act. The State provided preliminary comments on the draft permit, and these comments have been incorporated into the draft permit.

## **Public Comment.**

Persons wishing to comment on, or request a Public Hearing for, the draft permit may do so in writing by the expiration date of the Public Notice. A request for a Public Hearing must State the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be in writing and should be submitted to EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, EPA's regional Director for the Office of Water will make a final decision regarding permit reissuance.

Persons wishing to comment on State Certification should submit written comments by the Public Notice expiration date to the Idaho Department of Environmental Quality (IDEQ) at 2110 Ironwood Parkway, Coeur d'Alene, Idaho 83814. A copy of the comments should also be submitted to EPA.

If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If comments are received, EPA will address the comments and issue the permit. The permit will become effective 30 days after the issuance date, unless a request for an evidentiary hearing is submitted within 30 days.

**Documents are Available for Review.**

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday (See address below). Draft permits, Fact Sheets, and other information can also be found by visiting the Region 10 website at "[www.epa.gov/r10earth/water.htm](http://www.epa.gov/r10earth/water.htm)."

United States Environmental Protection Agency  
Region 10  
1200 Sixth Avenue, OW-130  
Seattle, Washington 98101  
(206) 553-0523 or  
1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The Fact Sheet and draft permit are also available at:

EPA Idaho Operations Office  
1435 North Orchard Street  
Boise, Idaho 83706  
(208) 378-5746

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## **I. APPLICANT**

Kootenai-Ponderay Sewer District  
511 Whiskey Jack Road  
Sandpoint, ID 83864  
NPDES Permit No.: ID-002122-9

Facility Mailing Address:  
P.O. Box 562  
Kootenai, Idaho 83840

## **II. FACILITY INFORMATION**

### **A. Treatment Plant Description**

The Kootenai-Ponderay Sewer District (District) owns and operates a facility which treats domestic sewage from local residents and commercial establishments. The facility receives wastewater from one significant industrial discharger - Cygnus Corporation, a metal finishing facility. Cygnus currently discharges approximately one or two 1,000 gallon batches of wastewater per month. The wastewater treatment facility has a design flow of 0.800 million gallons per day (mgd). Recent data show an average daily flow rate from Outfall 001 of 0.319 mgd and a peak daily flow rate of 0.696 mgd. During the past several years, the facility has undertaken a program to reduce infiltration and inflow into the wastewater treatment system.

Raw sewage is initially pumped to an unlined 1.8 million gallon primary aeration pond, which overflows into an unlined 3.0 million gallon secondary aeration pond. From the secondary pond, sewage flows through a pipe into an unlined 0.5 million gallon chlorine contact pond and then to one of three lined sand filter ponds. From the filter ponds, treated effluent is discharged via Outfall 001 to Boyer Slough, a tributary of Pend Oreille Lake. The facility has the capability to bypass the sand filters during very high flow events.

No sludge has ever been removed from any of the ponds. The District estimates that the primary aeration pond is at 30-50 percent of sludge capacity and does not anticipate disposing of sludge during the life of this permit.

### **B. Background Information**

The NPDES permit for the wastewater treatment plant expired on September 25, 1989. Under federal law, specifically, the Administrative Procedures Act (APA), a federally issued NPDES permit is administratively extended (i.e., continues in force and effect) provided the permittee submits a timely and complete application for a new permit prior to the expiration of the current permit. Since the District did submit a timely application for a new permit, the current permit was administratively extended.

A review of the facility's Discharge Monitoring Reports<sup>1</sup> for the past 5 years shows, consistent long-term compliance with permit limits. A map has been included in Appendix A which shows the location of the treatment facility and the discharge location.

### III. RECEIVING WATER

#### A. Outfall Location/Receiving Water

The treated effluent from the District's wastewater treatment facility is discharged from Outfall 001 to Boyer Slough, which flows approximately one-half mile from the discharge point into Pend Oreille Lake. There is currently no available flow data for Boyer Slough. Sand Creek is another tributary of Pend Oreille Lake, which flows into the lake approximately five miles southwest of the mouth of Boyer Slough. USGS Station 12392660 is located on Sand Creek near the discharge into Pend Oreille Lake. 1988 through 1990 and 1991 through 1993 flow data are available for this station. The lowest flow recorded during these periods in Sand Creek was 2.4 cubic feet per second (cfs) or 1.55 mgd. Low flow periods of less than 5 cfs consistently occur in August and September. The approximate area of the Sand Creek drainage upgradient of the USGS station is 36.6 square miles compared to approximately 6.9 square miles upgradient of Outfall 001 in the Boyer Slough drainage. Based on the Sand Creek low flow data and the ratio of the Sand Creek and Boyer Slough drainage areas, EPA has estimated a low flow of 0.45 cfs or about 0.29 mgd in Boyer Slough in the vicinity of the discharge.

#### B. Water Quality Standards

A State's water quality standards are composed of use classifications, numeric and/or narrative water quality criteria, and an anti-degradation policy. The use classification system designates the beneficial uses (such as cold water biota, contact recreation, etc.) that each water body is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary, by the State, to support the beneficial use classification of each water body. The anti-degradation policy represents a three tiered approach to maintain and protect various levels of water quality and uses.

The Idaho *Water Quality Standards and Wastewater Treatment Requirements* (IDAPA 58.01.02.101.01.) do not include specific designated use classifications for Boyer Slough. As an undesignated water body, the use classifications that apply are: cold water biota and primary or secondary contact recreation. Pend Oreille Lake is protected for domestic water supply, cold water biota, and primary contact recreation. It is also protected for salmonid spawning and designated as a Special Resource Water. Under IDAPA 58.01.02.400.01b, "no existing wastewater treatment facility can increase its discharge of pollutants above the design capacity of its existing wastewater treatment facility to any water designated as a special resource water...if pollutants significant to the designated beneficial uses can or will result in a reduction of the ambient water quality of the

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<sup>1</sup>Discharge monitoring reports are forms used by the permittee to report the results of monitoring that is conducted to verify that they are adhering to the effluent limitations and conditions in their NPDES permit.

receiving special water as measured immediately below the applicable mixing zone.” The District has not proposed to increase the discharge of pollutants above the design capacity of the existing wastewater treatment facility. Because Pend Oreille Lake has a primary contact recreation designated use, EPA has also applied this use to Boyer Slough.

The criteria that the State of Idaho has deemed necessary to protect the beneficial uses for this portion of the Pend Oreille Lake Subbasin, and the State’s anti-degradation policy are summarized in Appendix B.

C. Water Quality Limited Segment

A water quality limited segment is any water body, or definable portion of water body, where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards. Boyer Slough is not listed as water quality limited. Pend Oreille Lake has been listed as water quality “threatened” due to increasing levels of nutrients in the lake and the threat of metals pollution from historic mining in the Clark Fork River basin.

Section 303(d) of the Clean Water Act (CWA) requires States to develop a Total Maximum Daily Load (TMDL) management plan for water bodies determined to be water quality limited. A TMDL documents the amount of a pollutant a water body can assimilate without violating a State’s water quality standards and allocates that load to known point sources and nonpoint sources.

In April 2000, the Idaho Department of Environmental Quality (IDEQ) submitted the *Clark Fork/Pend Oreille Subbasin Assessment/Total Daily Maximum Load* (Subbasin Assessment). The Subbasin Assessment indicates that Pend Oreille Lake is currently meeting water quality standards. The State has decided, however, to develop a “preventive” TMDL for the lake to avoid future impairment of designated uses.

**IV. EFFLUENT LIMITATIONS**

In general, the Clean Water Act requires that the effluent limits for a particular pollutant be the more stringent of either technology-based effluent limits or water quality-based effluent limits. A technology-based effluent limit requires a minimum level of treatment for municipal point sources based on currently available treatment technologies. A water quality-based effluent limit is designed to ensure that the water quality standards of a water body are being met and they may be more stringent than technology-based effluent limits. For more information on deriving technology-based effluent limits and water quality-based effluent limits see Appendix C.

The following summarizes the proposed effluent limitations that are in the draft permit for Outfall 001.

1. The pH range shall be between 6.5 - 9.0 standard units.

2. For any month, the monthly average effluent concentrations for five-day biochemical oxygen demand (BOD<sub>5</sub>) and total suspended solids (TSS) shall not exceed 15 percent of the monthly average influent concentrations.
3. There shall be no discharge of floating solids or visible foam, or oil and grease other than trace amounts.
4. Table 1, below, presents the proposed average monthly, average weekly, and instantaneous maximum effluent limits for BOD<sub>5</sub>, TSS, escherichia coli (E. coli) bacteria, fecal coliform bacteria, and total residual chlorine.

<b>TABLE 1: Monthly, Weekly and Daily Effluent Limitations Outfall 001</b>			
Parameters	Average Monthly Limit	Average Weekly Limit	Instantaneous Maximum Limit
BOD <sub>5</sub>	30 mg/L (86 lbs/day)	45 mg/L (129 lbs/day)	---
TSS	30 mg/L (101 lbs/day)	45 mg/L (152 lbs/day)	---
E. coli Bacteria	126 /100 ml	---	406 /100 ml
Fecal Coliform Bacteria	---	200/100 ml	---
Total Residual Chlorine <sup>1</sup>	0.5 mg/L/0.011 mg/L	0.75 mg/L	0.019 mg/L
<sup>1</sup> From the effective date of the permit through June 30, 2004, the total residual chlorine limits will be 0.5 mg/L (average monthly) and 0.75 mg/L (average weekly). After June 30, 2004, the total residual chlorine limits will be 0.011 mg/L (average monthly) and 0.019 mg/L (instantaneous maximum).			

## V. MONITORING REQUIREMENTS

Section 308 of the Clean Water Act and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and ambient data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The Permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports to EPA.

Table 2 presents the proposed effluent monitoring requirements for Outfall 001 and Table 3 presents the proposed ambient monitoring program.

**TABLE 2: Kootenai-Ponderay Wastewater Treatment Facility  
Monitoring Requirements, Outfall 001**

Parameter	Sample Location	Sample Frequency	Sample Type
Flow, mgd	Effluent	Continuous	recorder
BOD <sub>5</sub> , mg/L	Influent and Effluent	1/week	8-hour composite
TSS, mg/L	Influent and Effluent	1/week	8-hour composite
pH, standard units	Effluent	5/week (Monday - Friday)	grab
Fecal Coliform Bacteria, colonies/100 ml	Effluent	1/week	grab
E. coli Bacteria, colonies/100 ml	Effluent	5/month	grab
Temperature, °C	Effluent	1/month	recorder
Total Residual Chlorine, mg/L	Effluent	5/week	grab
Total Ammonia (as N), mg/L	Effluent	1/month	8-hour composite
Total Kjeldahl Nitrogen, mg/L	Effluent	1/month	8-hour composite
Nitrate (as N), mg/L	Effluent	1/month	8-hour composite
Nitrite (as N), mg/L	Effluent	1/month	8-hour composite
Total Phosphorous (as P), mg/L	Effluent	1/month	8-hour composite

**TABLE 3: Kootenai-Ponderay Sewer District  
Ambient Monitoring Requirements**

Parameter	Sample Location	Sample Frequency	Sample Type
pH	Upstream of Outfall	1/month	grab
Temperature, °C	Upstream of Outfall	1/month	grab
Total Ammonia, mg/L	Upstream of Outfall	1/month	grab

Note: Ambient monitoring shall start upon the effective date of the permit and continue for 12 months.



## **VI. SLUDGE (BIOSOLIDS) REQUIREMENTS**

No sludge has been removed to date from any of the ponds and the District does not anticipate managing any sludge generated at the wastewater treatment facility during the life of the permit.

EPA Region 10 recently decided to separate wastewater and sludge permitting. Under the Clean Water Act (CWA), EPA has the authority to issue separate sludge-only permits for the purposes of regulating biosolids. EPA will issue a sludge-only permit to this facility at a later date, as appropriate.

Until future issuance of a sludge-only permit, any sludge management and disposal activities at the facility continue to be subject to the national sewage sludge standards at 40 CFR Part 503 and any requirements of the State's biosolids program. The Part 503 regulations are self-implementing, meaning that permittees must comply with them whether or not a permit has been issued. Therefore, the CWA does not require the facility to have a permit prior to use or disposal of biosolids.

## **VII. OTHER PERMIT CONDITIONS**

### **A. Quality Assurance Plan**

The federal regulation at 40 CFR 122.41(e) requires the Permittee to develop and submit a Quality Assurance Plan to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. The Permittee is required to complete a Quality Assurance Plan within 60 days of the effective date of the final permit. The Quality Assurance Plan shall consist of standard operating procedures the Permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting.

### **B. Nutrient TMDL Reopener Clause**

As indicated in Section III.C., the State is in the process of developing a preventive TMDL for nutrients in the Pend Oreille Lake watershed. The draft permit provides for nutrient monitoring at Outfall 001 and includes a specific reopener clause to incorporate any applicable nutrient wasteload allocations when the TMDL is finalized.

### **C. Total Residual Chlorine Compliance Schedule**

The highest recorded level of total residual chlorine in the discharge during 1999 and 2000 was 1.2 mg/L. The draft permit includes a 3-year compliance schedule for the District to comply with the water quality-based effluent limitations for total residual chlorine. During the interim period, the total residual chlorine limits will be set at the technology-based limits of 0.5 mg/L (monthly average) and 0.75 mg/L (weekly average). Although levels have occasionally been observed above these limits, the District has consistently been able to provide an adequate level of disinfection at chlorine levels below these interim limits.

### **D. Additional Permit Provisions**

Sections II, III, and IV of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because they are regulations, they cannot be challenged in the context of an NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

## **VIII. OTHER LEGAL REQUIREMENTS**

### **A. Endangered Species Act**

The Endangered Species Act requires federal agencies to consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service if their actions could adversely affect any threatened or endangered species. EPA has determined that issuance of this permit will not affect any of the endangered species in the vicinity of the discharge. See Appendix D for further details.

### **B. State Certification**

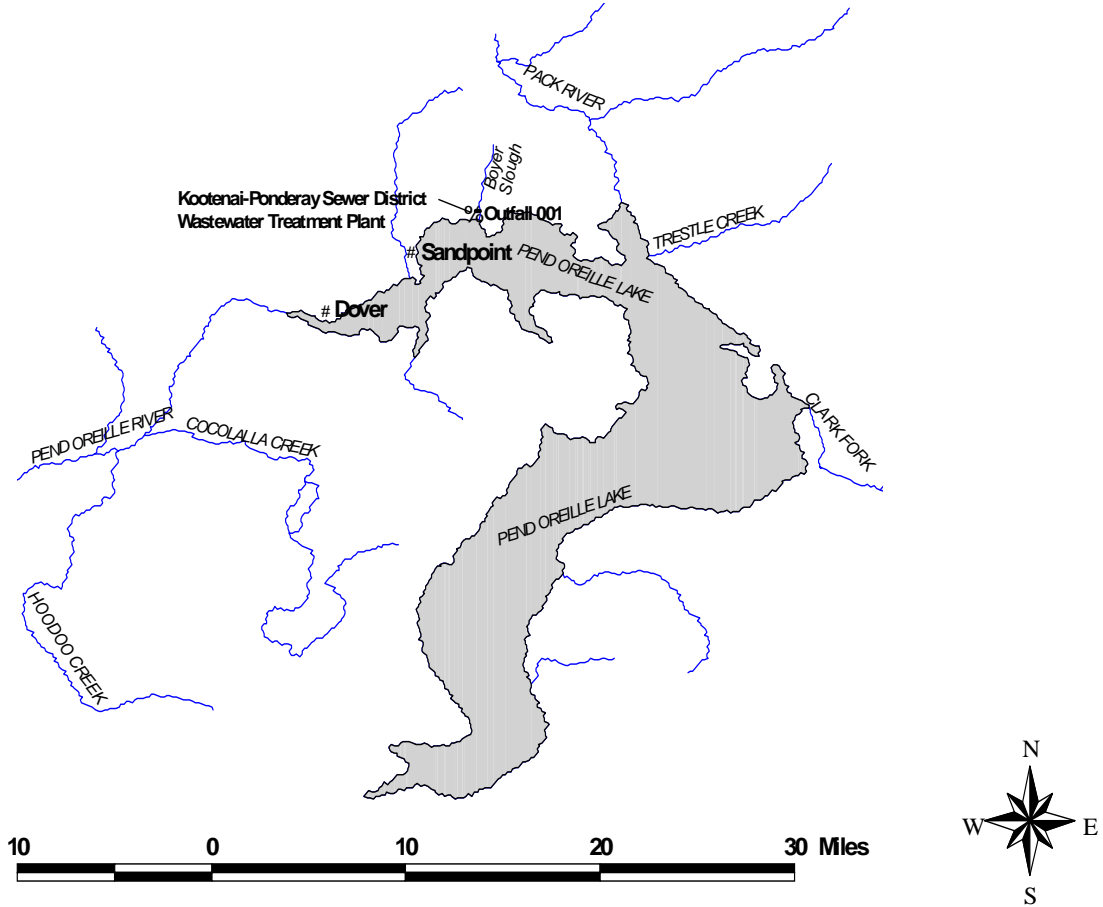
Section 401 of the Clean Water Act requires EPA to seek State certification before issuing a final permit. As a result of the certification, the State may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards.

### **C. Permit Expiration**

This permit will expire five years from the effective date of the permit.

APPENDIX A

# Kootenai-Ponderay Sewer District Wastewater Treatment Plant and Outfall 001 Locations



**APPENDIX B**  
**Water Quality Standards**

**(A) Water Quality Criteria**

For the Kootenai-Ponderay Sewer District, the following water quality criteria are necessary for the protection of the beneficial uses of Boyer Slough and Pend Oreille Lake:

1. IDAPA 58.01.02.200.02 - Surface waters of the State shall be free from toxic substances in concentrations that impair designated beneficial uses. These substances do not include suspended sediment produces as a result of nonpoint source activities.
2. IDAPA 58.01.02.200.05 - Surface waters of the State shall be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.
3. IDAPA 58.01.02.200.06 - Excess Nutrients. Surface waters of the State shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses.
4. IDAPA 58.01.01.200.08.a - Sediment. Sediment shall not exceed quantities specified in section 250 and 252, or , in the absence of specific sediment criteria, quantities which impair designated beneficial uses. Determinations of impairment shall be based on water quality monitoring and surveillance and the information utilized as described in Subsection 350.
5. IDAPA 58.01.250.01.a - Hydrogen ion concentration (pH) values within the range of 6.5 to 9.5 standard units.
6. IDAPA 58.01.250.01.c - Total chlorine residual: (i) One hour average concentration not to exceed 19 ug/l and (ii) four day average concentration not to exceed 11 ug/L.
7. IDAPA 58.01.02.250.02 - Cold Water: waters designated for cold water aquatic life are to exhibit the following characteristics:
  - i. Dissolved oxygen concentration exceeding 6 mg/l at all times.
  - ii. Water temperature of 22°C or less with a maximum daily average of no greater than 19°C.
  - iii. The one hour average concentration of un-ionized ammonia (as N) is not to exceed  $(0.43/A/B/2)$  mg/L, where:  
  
 $A = 1$  if the water temperature (T) is  $\geq 20^{\circ}\text{C}$ , or  
 $A = 10^{(0.03(20-T))}$  if  $T < 20^{\circ}\text{C}$ , and  
  
 $B = 1$  if the pH is  $\geq 8.0$ , or  
 $B = (1 + 10^{(7.4-\text{pH})}) \div 1.25$  if pH is  $< 8.0$
  - iv. The four day average concentration of un-ionized ammonia (as N) is not to exceed  $(0.66A/B/C)$  mg/L, where:

A = 1.4 if T is  $\geq 15^{\circ}\text{C}$ , or  
A =  $10^{(0.03(20-T))}$  if T <  $15^{\circ}\text{C}$ , and

B = 1 if the pH is  $\geq 8.0$ , or  
B =  $(1 + 10^{(7.4-\text{pH})}) \div 1.25$  if pH is < 8.0

C = 13.5 if pH is  $\geq 7.7$ , or  
C =  $20(10^{(7.7-\text{pH})}) \div (1 + 10^{(7.4-\text{pH})})$  if the pH is < 7.7

8. IDAPA 58.01.02.251.01. - Waters designated for primary contact recreation are not to contain E. coli bacteria significant to the public health in concentrations exceeding:
- i. A single sample of four hundred and six E. coli organisms per one hundred ml; or
  - ii. A geometric mean of one hundred and twenty six E. coli organisms per one hundred ml based on a minimum of five samples taken, every three to five days, over a thirty day period.
9. IDAPA 58.01.02.251.01 (**applicable to Pend Oreille Lake only**) - Waters designated for salmonid spawning are to exhibit the following characteristics during the spawning period and incubation for the particular species inhabiting those waters:
- i. Dissolved oxygen.
    - (1) Intergravel dissolved oxygen - (a) one day minimum of not less than 5.0 mg/L; (b) seven day average mean of not less than 6.0 mg/L.
    - (2) Water-column dissolved oxygen - one day minimum of not less than 6.0 mg/L or 90% of saturation, whichever is greater.
  - ii. Water temperatures of  $13^{\circ}\text{C}$  or less with a maximum daily average not greater than  $9^{\circ}\text{C}$ .
  - iii. Ammonia - as defined in IDAPA 58.01.02.250.02.c.i., and IDAPA 58.01.02.250.02.c.ii.

**(B) Anti-Degradation Policy**

The State of Idaho has adopted an anti-degradation policy as part of their water quality standards. The anti-degradation policy represents a three tiered approach to maintain and protect various levels of water quality and uses. The three tiers of protection are as follows:

- Tier 1 - Protects existing uses and the level of water quality necessary to protect those uses.
- Tier 2 - Protects the level of water quality necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water in waters that are currently of higher quality than required to support these uses. Before water quality in Tier 2 waters can be lowered, there must be an anti-degradation review consisting of: (1) a finding that it is necessary to accommodate important economic or social development in the area where the waters are located (2) full satisfaction of all intergovernmental coordination and public participation provisions; and (3) assurance that the highest statutory and regulatory requirements for point sources and best management practices for nonpoint sources are achieved. Furthermore, water quality may not be lowered to less than the level necessary to fully protect the “fishable/swimmable” uses and other existing uses.

- Tier 3 - Protects the quality of outstanding national resources, such as waters of national and State parks and wildlife refuges and waters of exceptional recreational or ecological significance. There may be no new or increased discharges to these waters and no new or increased discharges to tributaries of these waters that would result in lower water quality.

Boyer Slough and Pend Oreille Lake are Tier 1 water bodies. Water quality should be such that it results in no mortality and no significant growth or reproductive impairment of resident species. An NPDES permit cannot be issued that would result in the water quality criteria being violated. The draft permit contains effluent limits which ensure that the existing beneficial uses of Boyer Slough and Pend Oreille Lake will be maintained.

**APPENDIX C**  
**Basis for Effluent Limitations**

The Clean Water Act (CWA) requires Publicly Owned Treatment Works (POTWs) to meet performance-based requirements (also known as technology-based effluent limits) based on available wastewater treatment technology. EPA may find, by analyzing the effect of an effluent discharge on the receiving water, that technology-based effluent limits are not sufficiently stringent to meet water quality standards. In such cases, EPA is required to develop more stringent water quality-based effluent limits which are designed to ensure that water quality standards are met.

Furthermore, technology-based effluent limits don't always limit every parameter that is in an effluent. For example, technology-based effluent limits for POTWs only limit five-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and pH. Yet effluent from a POTW may contain other pollutants such as chlorine, ammonia, or metals depending on the type of treatment system used and the service area of the POTW (i.e., industrial facilities as well as residential areas discharge into the POTW). In these cases, where technology-based effluent limits do not exist for a particular pollutant, EPA must determine if the pollutants will cause or contribute to a violation of the water quality standards for the water body. If they do, EPA is required to develop water quality-based effluent limits designed to ensure that water quality standards are met.

The proposed effluent limits reflect whichever limits (technology-based or water quality-based) are more stringent. The following explains in more detail the derivation of technology-based effluent limits and water quality-based effluent limits. Part A discusses technology-based effluent limits, Part B discusses water quality-based effluent limits, and Part C compares the technology-based effluent limits with the water quality-based effluent limits, and shows the effluent limits that are proposed in the draft permit.

**A. Technology-based Effluent Limitations**

The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as "secondary treatment," that all POTWs were required to meet by July 1, 1977. EPA developed "secondary treatment" regulations which are specified in 40 CFR Part 133. These technology-based effluent limits apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD<sub>5</sub>, TSS, and pH. The definition of "secondary treatment" includes special considerations regarding waste stabilization ponds. The regulations allow alternative limits for facilities, such as the Kootenai-Ponderay Sewer District, using waste stabilization ponds. These alternative limits are called "treatment equivalent to secondary treatment." However, the current permit for the facility includes effluent limitations based on the secondary treatment regulations, i.e., it does not include the less stringent "treatment equivalent" limits. Since the facility has consistently complied with the current permit limits for BOD<sub>5</sub>, TSS, and pH, they have been retained in the draft permit. The technology-based limits applicable to the discharge from Outfall 001 are as follows:

1. 5-day Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS), concentration based limits:

BOD<sub>5</sub> and TSS

Average Monthly Limit =	30 mg/L
Average Weekly Limit =	45 mg/L
Percent Removal Requirements =	85 %

2. 5-day Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS), mass based limits: Federal regulations at (40 CFR § 122.45 (f)) require BOD<sub>5</sub> and TSS limitations to be expressed as mass based limits using the design flow of the facility. The facility has a design flow of 0.8 mgd. The loading is calculated as follows: concentration X design flow X 8.34.

BOD<sub>5</sub> and TSS loading, monthly avg. = 30 mg/L X 0.8 mgd X 8.34 = 200 lbs/day

BOD<sub>5</sub> and TSS loading, weekly avg. = 45 mg/L X 0.8 mgd X 8.34 = 300 lbs/day

The current permit includes monthly and weekly average mass based BOD<sub>5</sub> limits of 86 and 129 lbs/day, and monthly and weekly average mass based TSS limits of 101 and 152 lbs/day. Due to anti-backsliding provisions at 40 CFR § 122.44(l), the draft permit cannot include less stringent limits than the current permit unless there is substantial additional influent loading to the facility. In fact, the influent flows into the facility have generally decreased due the District's programs to reduce infiltration and inflow. The District has also had no recent difficulty complying with the current permit limits. Therefore, the draft permit retains the mass based limits from the current permit.

3. pH: The pH range must be between 6.0 - 9.0 standard units.
4. Total Residual Chlorine: EPA Region 10 policy is to establish limits for total residual chlorine in discharges from facilities that use chlorine disinfection. The average monthly, technology-based total residual chlorine limit for Outfall 001 is 0.5 mg/L. Based on similar systems, maintaining this level over a minimum of 15 minutes will provide adequate disinfection. The average weekly, technology-based limit for total residual chlorine has been established as 1.5 times the average monthly limit.

**B. Water Quality-Based Effluent Limits**

1. Statutory Basis for Water Quality-Based Limits

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards by July 1, 1977. Discharges to State waters must also comply with limitations imposed by the State as part of its certification of NPDES permits under section 401 of the CWA.

The NPDES regulation (40 CFR 122.44(d)(1)) implementing section 301 (b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.

The regulations require that this evaluation be made using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the



pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water quality standards are met, and must be consistent with any available wasteload allocation.

## 2. Procedure for Deriving Water Quality-Based Effluent Limits

The first step in developing a water quality-based permit limit is to develop a wasteload allocation for the pollutant. A wasteload allocation is the concentration (or loading) of a pollutant that the Permittee may discharge without causing or contributing to an exceedance of water quality standards in the receiving water. Wasteload allocations for this permit have been determined in one of the following ways:

- (a) Where the receiving water quality does not meet water quality standards, the wasteload allocation is generally based on a TMDL developed by the State. A TMDL is a determination of the amount of a pollutant from point, non-point, and natural background sources, including a margin of safety, that may be discharged to a water body without causing the water body to exceed the criterion for that pollutant. Any loading above this capacity risks violating water quality standards.

Section 303(d) of the CWA requires States to develop TMDLs for water bodies that will not meet water quality standards after the imposition of technology-based effluent limitations to ensure that these waters will come into compliance with water quality standards. The first step in establishing a TMDL is to determine the assimilative capacity of the water body (the loading of pollutant that a water body can assimilate without exceeding water quality standards). The next step is to divide the assimilative capacity into allocations for non-point sources (load allocations), point sources (wasteload allocations), natural background loadings, and a margin of safety to account for any uncertainties. Permit limitations are then developed for point sources that are consistent with the wasteload allocation for the point source.

The State has completed a Subbasin Assessment for Pend Oreille Lake, which shows that the lake is currently meeting water quality standards. The State is in the process of developing a preventive nutrient TMDL for the lake.

- (b) In some cases, a mixing zone is not authorized, either because the receiving water already exceeds the criteria, the receiving water flow is too low to provide dilution, or the State does not authorize one. In such cases, the criterion becomes the wasteload allocation. Establishing the criterion as the wasteload allocation ensures that the Permittee will not contribute to an exceedance of the criteria.

Once the wasteload allocation has been developed, the EPA applies the statistical permit limit derivation approach (if appropriate) described in Chapter 5 of the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001, March 1991, hereafter referred to as the TSD) to obtain monthly average, and weekly average or daily maximum permit limits. This approach takes into account effluent variability, sampling frequency, and water quality standards.

3. Specific Water Quality-Based Effluent Limits

(a) **Toxic Substances**

The Idaho Water Quality Standards require surface waters of the State to be free from toxic substances in concentrations that impair designated uses. There is one significant industrial discharge to the facility. Cygnus Corporation discharges approximately 1-2 batches of 1,000 gallons each of wastewater to the District's treatment plant each month. The District has issued an industrial user permit to the facility, which establishes effluent limitations for pH, metals, and cyanide based on the applicable pretreatment standards for metal finishing at 40 CFR Part 433. The concentrations of priority pollutants from other sources in the District are expected to be minimal. Therefore, the pretreated effluent from Cygnus Corporation would be diluted about 200:1 in typical wastewater treatment plant operations. Applying this dilution factor, compliance with industrial user permit limits for metals and cyanide in the discharge will ensure no toxicity in the discharge from Outfall 001.

(b) **Floating, Suspended or Submerged Matter/Oil and Grease**

The Idaho Water Quality Standards require surface waters of the State to be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions that may impair designated beneficial uses. Therefore, a narrative condition is included in the draft permit that States there must be no discharge of floating solids or visible foam or oil and grease other than trace amounts.

(c) **Excess Nutrients**

The Idaho Water Quality Standards require surface waters of the State to be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses. Pend Oreille Lake is not currently water quality limited for nutrients. However, the State is in the process of developing a preventive nutrient TMDL for the watershed. Therefore, the draft permit includes monthly nutrient monitoring requirements and a specific reopener clause to allow incorporation of nutrient wasteload allocations when a TMDL is finalized.

(d) **Sediment/Total Suspended Solids (TSS)**

Boyer Slough and Pend Oreille Lake are not listed as water quality limited for sediment. Therefore, requirements more stringent than technology-based requirements are not necessary.

(e) **pH**

The Idaho Water Quality Standards require surface waters of the State to have a pH value within the range of 6.5 - 9.5 standard units. It is anticipated that a mixing zone will not be authorized for the water quality-based criterion for pH,

therefore, this criterion must be met before the effluent is discharged to the receiving water. The technology-based effluent limits for pH are 6.0 - 9.0 standard units, and also must be met before the effluent is discharged to the receiving water. To ensure that both water quality-based requirements and technology-based requirements are met, the draft permit incorporates the lower range of the water quality standards (6.5 standard units) and the upper range of the technology-based limits (9.0 standard units).

(f) **Dissolved Oxygen (D.O.)**

The Idaho Water Quality Standards require the level of dissolved oxygen (D.O.) to exceed 6 mg/L at all times for water bodies that are protected for aquatic life use. Boyer Slough and Pend Oreille Lake are not water quality limited for D.O. According to the Subbasin Assessment, D.O. levels of 7.8 to 14.0 mg/L have been observed in Pend Oreille Lake. Therefore, a water quality based effluent limit has not been proposed for this parameter.

(g) **Temperature**

The Idaho Water Quality Standards require ambient water temperatures of 22°C or less with a maximum daily average of no greater than 19°C. Further, water temperatures of 13°C or less with a maximum daily average not greater than 9°C are required for salmonid spawning use during the spawning and incubation periods. Boyer Slough and Pend Oreille Lake are not listed as water quality limited for temperature. There are no temperature data currently available for the discharge from Outfall 001 or Boyer Slough. Temperatures as high as 22.5°C have been observed in Pend Oreille Lake. The draft permit requires monthly temperature monitoring at Outfall 001 and ambient temperature monitoring for one year in Boyer Slough immediately upstream of the outfall. These data will define temperature levels in the discharge and background levels in Boyer Slough, and can be used to develop future permit limits, as appropriate.

(h) **Ammonia**

Boyer Slough and Pend Oreille Lake are not water quality limited for ammonia. However, there are no available ammonia data for the discharge from Outfall 001 nor are data available for Boyer Slough. In addition to ammonia monitoring required for the discharge, the District will be required to perform one year of monthly monitoring for total ammonia, temperature, and pH in Boyer Slough immediately upstream from the discharge. These data will define ammonia levels in the discharge and background levels in Boyer Slough, and provide pH and temperature needed to determine applicable criteria. They can then be used to develop future permit limits, as appropriate.

(i) **Escherichia Coli (E. Coli) Bacteria**

According to the Idaho Water Quality Standards, waters designated for primary contact recreation, such as Boyer Slough and Pend Oreille Lake, are not to

contain E. coli bacteria significant to the public health in concentrations exceeding:

- a. A single sample of 406 E. coli organisms per one hundred ml; or
- b. A geometric mean of 126 E. coli organisms per one hundred ml based on a minimum of five samples taken, every three to five days, over a thirty day period.

It is anticipated that a mixing zone will not be authorized for E. coli bacteria, therefore, the criteria must be met before the effluent is discharged to the receiving water. The proposed water quality-based effluent limits in the permit include an instantaneous maximum limit of 406 organisms/100 ml, and an average monthly limit of 126 organisms/100 ml.

(j) **Total Residual Chlorine**

The acute and chronic water quality criteria for total residual chlorine are 0.019 mg/l and 0.011 mg/l, respectively (IDAPA 58.01.02.250.01.c.i and ii). While there are no upstream monitoring data for total residual chlorine, there are no other sources of chlorine in the vicinity of the discharge and chlorine dissipates rapidly in water. Therefore, upstream concentrations are assumed to be zero. As indicated in Section III.A. of this Fact Sheet, the estimated low flow in Boyer Slough is 0.29 mgd. Based on Idaho's Water Quality Standards, a mixing zone cannot be more than 25 percent of the stream flow, so the maximum possible mixing zone is 0.07 mgd. Since the recent peak discharges have been as high as approximately 0.7 mgd and the design flow rate is 0.8 mgd, the dilution provided by any mixing zone would be minimal. Therefore, EPA has applied the water quality standards for total residual chlorine at the outfall (0.019 mg/L instantaneous maximum limit and 0.011 mg/L average monthly limit). Because total residual chlorine has been measured in the effluent at levels above 1 mg/L, there is reasonable potential to exceed the water quality-based limits and they have been included in the draft permit. However, because the District cannot currently comply with the water quality-based limits, a 3-year compliance schedule has been provided. During the interim period, the facility must comply with the applicable technology-based limits as described in Section A.4. above.

**C. Comparison of Technology-based Effluent Limits and Water Quality-based Effluent Limits**

The following table compares the technology-based effluent limits with the water quality-based effluent limits. The proposed effluent limits in the draft permit are the more stringent of the two types of limits.

Parameter	Technology-based Effluent Limits				Water quality-based Effluent Limits				Proposed Effluent Limits in Draft Permit			
	AML	AWL	IML	range	AML	AWL	IML	range	AML	AWL	IML	range
BOD <sub>5</sub>	30 mg/L	45 mg/L	---	---	---	---	---	---	30 mg/L	45 mg/L	---	---
	86 lbs/day	129 lbs/day			---	---			86 lbs/day	129 lbs/day		
BOD <sub>5</sub> , Percent Removal	85	---	---	---	---	---	---	---	85	---	---	---
TSS	30 mg/L	45 mg/L	---	---	---	---	---	---	30 mg/L	45 mg/L	---	---
	101 lbs/day	152 lbs/day			---	---			101 lbs/day	152 lbs/day		
TSS, Percent Removal	85	---	---	---	---	---	---	---	85	---	---	
Fecal Coliform Bacteria	---	200/100 ml	---	---	---	---	---	---	---	200/100 ml	---	---
E.Coli Bacteria	---	---	---	---	126/100 ml	---	406/100 ml	---	126/100 ml	---	406/100 ml	
Total Residual Chlorine <sup>1</sup>	0.5 mg/L	0.75 mg/L	---	---	0.011mg/L	---	0.019 mg/l	---	0.5/ 0.011 mg/L	0.75 mg/L	0.019 mg/L	---
pH	---	---	---	6.0-9.0	---	---	---	6.5-9.5	---	---	---	6.5-9.0

AML means Average Monthly Limit  
AWL means Average Weekly Limit  
IML means Instantaneous Maximum Limit  
--- means no limit

<sup>1</sup> During the first three years of the permit, interim total residual chlorine limits are set at 0.5 mg/L (monthly average) and 0.75 mg/L (weekly average). After the third year, the District must comply with the final limits of 0.011 mg/L and 0.019 mg/L. Note that the final limits for total residual chlorine are not quantifiable using EPA approved analytical methods. EPA will use the Minimum Level of 0.100 mg/L as the compliance evaluation level for chlorine. If an analytical value is less than the method detection limit for chlorine, the Permittee shall report "less than the numerical detection limit" on the discharge monitoring report.

**APPENDIX D**  
**Endangered Species Act**

Section 7 of the Endangered Species Act (ESA) requires federal agencies to request a consultation with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service regarding potential effects an action may have on listed endangered species.

In a letter dated July 24, 2000, the U.S. Fish and Wildlife Service identified the gray wolf as being a federally-listed endangered species and the bald eagle and bull trout as federally listed threatened species in the vicinity of the District's discharge. The westslope cutthroat trout was also identified as a species of concern. The National Oceanic and Atmospheric Administration, National Marine Fisheries Service did not identify any additional species within the area of the discharge.

EPA has determined that the requirements contained in the draft permit will not have an impact on the gray wolf, bald eagle, bull trout, or westslope cutthroat trout. Hunting and habitat destruction unrelated to wastewater treatment facility operations are the primary causes of the gray wolf's decline. Specific threats to bald eagles identified by the U.S. Fish and Wildlife Service include logging, overgrazing of cottonwood saplings, agricultural development, lowered food supply, pesticide contamination, hydroelectric dams, shooting, recreation-related human disturbance, use of strychnine, and possible lead poisoning. None of these threats are related to the discharge from the wastewater treatment facility. For the bulltrout and westslope cutthroat trout, the draft permit specifically ensures compliance with Idaho Water Quality Standards. It also provides for nutrient monitoring and a reopener for future nutrient wasteload allocations consistent with the State's efforts to protect water quality throughout the Pend Oreille Lake watershed.

