

FACT SHEET

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

Joint School District #171
(Timberline High School)
P.O. Box 789
Orofino, ID. 83544

Permit Number: ID-002391-4
Public Notice date:

EPA Proposes NPDES Permit Reissuance.

EPA proposes to issue an NPDES permit to Joint School District #171 - Timberline High School (THS). The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to an unnamed ditch which flows into Grasshopper Creek. 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, monitoring requirements, 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 THS, 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 the Lewiston Regional Office, State Office Building, 1118 F Street, Lewiston, ID 83501.

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 the permit is appealed to the Environmental Appeals Board.

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/offices/water/npdes.htm.

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OW-130
Seattle, Washington 98101
(206) 553-2108 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

TABLE OF CONTENTS

I.	APPLICANT	4
II.	FACILITY INFORMATION	4
III.	RECEIVING WATER	4
	A. Receiving Water/Outfall Location	4
	B. Water Quality Standards	4
	C. Water Quality Limited Segment	5
IV.	EFFLUENT LIMITATIONS	6
VI.	SLUDGE REQUIREMENTS	8
VII.	OTHER PERMIT CONDITIONS	8
	A. Quality Assurance Plan	9
	B. Additional Permit Provisions	9
VIII.	OTHER LEGAL REQUIREMENTS	9
	A. Endangered Species Act	9
	B. State Certification	9
	C. Permit Expiration	9
APPENDIX A		A-1
	Facility Location	A-1
APPENDIX B		
	Water Quality Standards	B-1
APPENDIX C		C-1
	Basis for Effluent Limitations	C-1
APPENDIX D		D-1
	Water Quality Based Effluent Limitations	D-1
APPENDIX E		E-1
	Endangered Species Act	E-1
APPENDIX F		F-1
	IDEQ Preliminary Comments on the Draft Permit	F-1

I. APPLICANT

Joint School District #171
Timberline High School
NPDES Permit No.: ID-002391-4

Facility Mailing Address:
P.O. Box 789
Orofino, Idaho 83544

II. FACILITY INFORMATION

Joint School District #171 owns and operates a wastewater treatment plant (WWTP) that serves approximately 250 students, faculty, and administrators at Timberline High School (THS) which is located approximately 5 miles outside of Weippe, Idaho. Treatment of wastewater consists of flow through an aerated concrete cell, a sludge settling tank, and then a final polishing pond. Sludge was removed when the aerated lagoon was cleaned and repaired in 1991. The sludge tank between the aerated cell and the facultative pond was cleaned out during the summer of 1997. Records show the WWTP discharges periodically from September through July at a rate of 0.0001 cfs to 0.005 cfs. No discharge has been reported in August.

The NPDES permit for the WWTP expired on June 30, 1977. A renewal application was submitted to EPA in July 2000. A map has been included in Appendix A which shows the approximate location of the THS and the discharge location.

III. RECEIVING WATER

A. Receiving Water/Outfall Location

The treated effluent from the facility is discharged from Outfall 001 via an unnamed ditch to Grasshopper Creek. Grasshopper Creek flows approximately 6 miles to its confluence with Jim Ford Creek. There are no USGS gaging stations on Grasshopper Creek; therefore, flows in Grasshopper Creek were estimated using accepted analytical techniques in the Jim Ford Creek TMDL.

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 criteria that the State of Idaho has deemed necessary to protect the beneficial uses for this portion of Grasshopper Creek and the state's anti-degradation policy are summarized in Appendix B.

Section IDAPA 58.01.02.120.08., of the Idaho *Water Quality Standards and Wastewater Treatment Requirements* protects Grasshopper Creek for cold water biota, primary contact recreation, and domestic water supply.

C. Water Quality Limited Segment

A water quality limited segment is any waterbody, or definable portion of a 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. Grasshopper Creek has been listed as water quality limited for nutrients, temperature, pathogens (bacteria), habitat modification, and flow.

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 waterbody can assimilate without violating a state's water quality standards and allocates that load to known point sources and nonpoint sources.

In March 2000, the Idaho Department of Environmental Quality (IDEQ), the Nez Perce Tribe, and EPA jointly completed the *Jim Ford Creek Total Maximum Daily Load, Watershed Management Plan*. The following summarizes the TMDL findings as they apply to THS's discharge:

1. The TMDL did not establish a wasteload allocation for ammonia because data did not show a reasonable potential for this pollutant to be found at levels that exceed water quality criteria.
2. The TMDL did not address flow or habitat modification.
3. Temperature requirements do not apply to the discharge from THS because data indicate the WWTP is not a source of heat to Grasshopper Creek during the critical period (April through July).
4. Outfall 001 is assigned a loading 1.3 pounds per month of total phosphorus over the averaging period (April - July).

5. Outfall 001 is assigned a loading of 0.3 pounds/month (existing load) for Total Inorganic Nitrogen (TIN) over the averaging period (April-July).
6. Outfall 001 is assigned a fecal coliform load allocation at the existing primary contact recreation level of 50 cfu/100 ml during the primary contact recreation season of May 1 through September 30.

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 limits. A technology-based effluent limit requires a minimum level of treatment for 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 waterbody are being met, and they may be more stringent than technology-based effluent limits. For more information on deriving technology-based and water quality-based effluent limits, see Appendices C and D.

The following summarizes the effluent limitations that are included in the draft permit.

1. The pH range shall be between 6.5 - 9.0 standard units.
2. 65% Removal Requirements for BOD₅ and TSS: For any month, the monthly average effluent concentration shall not exceed 35 percent of the monthly average influent concentration.
3. There shall be no discharge of floating solids or visible foam, or oil and grease other than in trace amounts.
4. Table 1, below, presents the proposed average monthly, average weekly, and instantaneous maximum effluent limits for BOD₅, total suspended solids (TSS), escherichia coli (E. coli) bacteria, fecal coliform bacteria, total phosphorus, and TIN.

TABLE 1: Monthly, Weekly and Daily Effluent Limitations

Parameters	Average Monthly Limit	Average Weekly Limit	Instantaneous Maximum Limit ¹
BOD ₅	45 mg/L	65 mg/L	---
	2.25 lbs/day	3.25 lbs/day	
TSS	70 mg/L	105 mg/L	---
	3.5 lbs/day	5.25 lbs/day	
E. coli Bacteria	126/100 ml	—	406/100 ml
Fecal Coliform Bacteria (May 1 through September 30)	---	50 colonies/100 ml	—
Fecal Coliform Bacteria (October 1 through April 30)	---	200/100 ml	---
Total Phosphorus (April 1 through July 31)	0.8 mg/l	1.60 mg/L	---
	0.04 lbs/day	0.08 lbs/day	---
TIN (April 1 through July 31)	0.2 mg/l	0.4 mg/l	---
	0.01 lbs/day	0.02 lbs/day	---
¹ Reporting is required within 24 hours of an instantaneous maximum violation.			

V. MONITORING REQUIREMENTS

Section 308 of the Clean Water Act and federal regulation 40 CFR 122.44(i) require that monitoring be included in permits to determine compliance with effluent limitations. Monitoring may also be required to gather data for future effluent limitations 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. Data evaluated during the preparation of the TMDL for Grasshopper Creek showed there was no reasonable potential for the THS discharge to violate state water quality standards. Table 2 presents the proposed effluent monitoring requirements based on the minimum sampling necessary to adequately monitor the facility's performance.

TABLE 2: Treatment Plant Monitoring Requirements

Parameter	Sample Location	Sample Frequency ¹	Sample Type
Flow, mgd	Effluent	Weekly	Instantaneous
BOD ₅ , mg/l	Influent and Effluent	1/month	Grab
TSS, mg/l	Effluent	1/month	Grab
pH, standard units	Effluent	5/week (Mon.-Fri.)	Grab
E. coli Bacteria colonies/100 ml	Effluent	5/month ²	Grab
Fecal Coliform Bacteria colonies/100 ml	Effluent	5/week	Grab
Total Ammonia, mg/l	Effluent	1/month	Grab
Total Phosphorus, mg/l	Effluent	1/month	Grab
TIN, mg/l	Effluent	1/month	Grab
<p>1. Samples shall be collected when discharges are occurring from the treatment plant. During months when there are no discharges at any time during the month, the permittee shall submit DMRs reporting no discharge from Outfall 001.</p> <p>2. Samples must be taken every three to five days over a thirty-day period.</p>			

VI. SLUDGE REQUIREMENTS

Currently, sludge from the WWTP accumulates in the bottom of the first cell and in the sludge tank located between the two cells of the system. The permittee does not anticipate having to remove the sludge from either of these locations during the term of this permit (five years).

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 submit a Quality Assurance Plan within 60 days of the effective date of the draft 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. 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 E 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
Facility Location**

Map of the Lower Clearwater River Watershed (and facility locations)

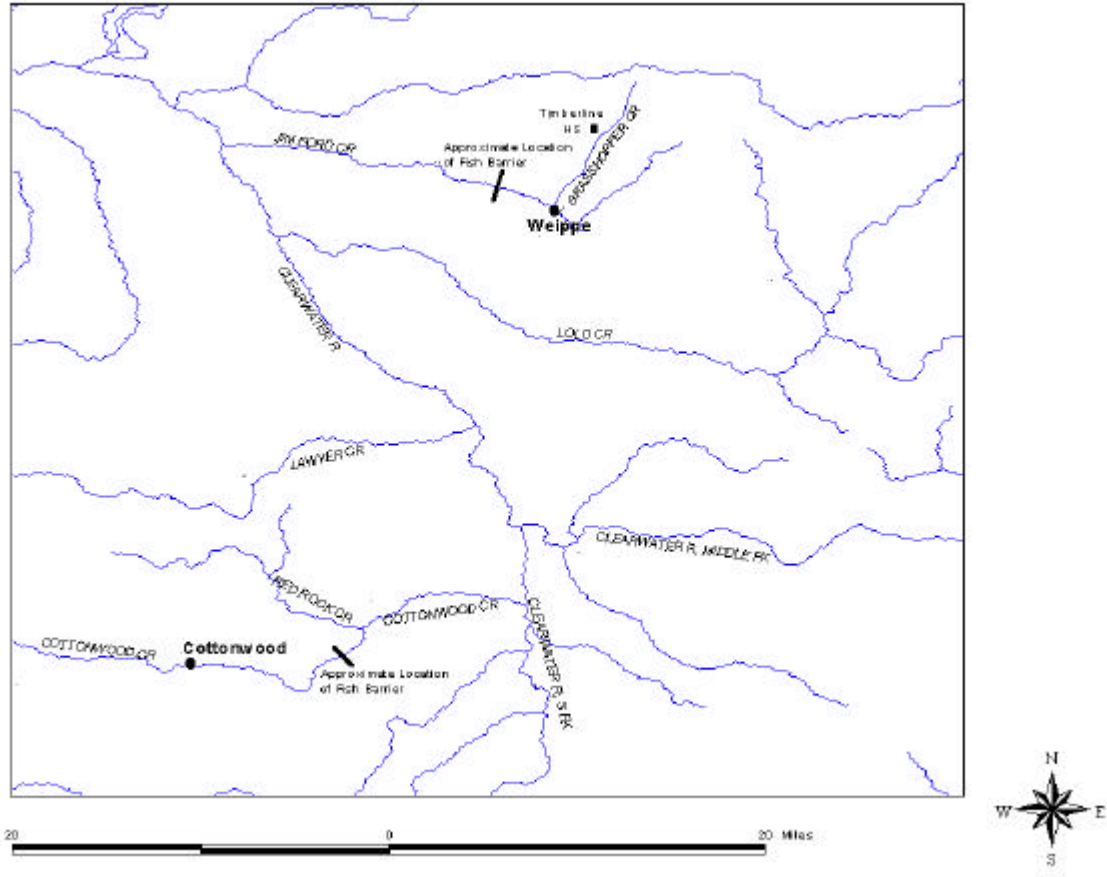


Figure 1. Map of Jim Ford Creek and Cottonwood Creek Watersheds

APPENDIX B
Water Quality Standards

(A) Water Quality Criteria

For THS, the following water quality criteria are necessary for the protection of the beneficial uses of Grasshopper Creek:

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 58.01.02.250.02 - 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

$$B = 1 \text{ if the pH is } \geq 8.0, \text{ or}$$

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

- iv. The four day average concentration of un-ionized ammonia (as N) is not to exceed $(0.66A/B/C)$ mg/L, where:

$$A = 1.4 \text{ if T is } \geq 15^\circ\text{C, or}$$

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

$$B = 1 \text{ if the pH is } \geq 8.0, \text{ or}$$

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

$$C = 13.5 \text{ if pH is } \geq 7.7, \text{ or}$$

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

7. 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.
- 8 IDAPA 58.01.02.252.01 - Domestic Water Supply: radioactive materials or radioactivity not to exceed concentrations specified in Idaho Department of Environmental Quality Rules, IDAPA 58.01.08, "Rules Governing Public Drinking Water Systems." These rules incorporate the Federal maximum contaminant levels for radioactive materials at 40 CFR 141.
9. IDAPA 58.01.02.252.02 - Agricultural Water Supply: water quality criteria will generally be satisfied by the water quality criteria set forth in Section 200 (General Surface Water Quality Criteria).

(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.

Grasshopper Creek is a Tier 1 waterbody, therefore, 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 for Grasshopper Creek will be maintained.

APPENDIX C Basis for Effluent Limitations

THS is a non-municipal discharger referred to as a Treatment Works Treating Domestic Sewage (TWTDS). National performance based effluent limitations for TWTDS discharges have not been promulgated by EPA. In these cases, effluent limitations are developed using Best Professional Judgment (BPJ).

The authority for BPJ is contained in Section 402(a)(1) of the CWA. The NPDES regulations at 40 CFR § 125.3 define what factors must be considered when establishing BPJ-based conditions in a permit. In this case, BPJ-based limits have been incorporated into the draft permit based on the secondary treatment standards for municipal wastewater treatment plants (POTWs).

Section 301 of the CWA established a required performance level, referred to as “secondary treatment,” that all publicly-owned treatment works (POTWs) were required to meet by July 1, 1977. EPA developed “secondary treatment” regulations which are specified in the 40 CFR 133. These technology-based effluent limits identify the minimum level of effluent quality attainable by secondary treatment in terms of five-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

The definition of secondary treatment includes special considerations regarding waste stabilization. The regulations allow alternative limits for facilities, such as THS, using waste stabilization ponds. Those alternative limits are called “treatment equivalent to secondary treatment.”

The regulation also includes a provision for an Alternative State Requirement [40 CFR 133.105(d)]. This allows the state the flexibility to set permit limits above the maximum levels for “treatment equivalent to secondary treatment.” For waste stabilization ponds, the Idaho *Water Quality Standards and Wastewater Treatment Requirements* at IDAPA 58.01.02.420.02.b. has established average monthly limits for BOD₅ and TSS:

- BOD₅

Average Monthly Limit	45 mg/l
Average Weekly Limit	65 mg/l
Percent Removal	65%

- TSS

Average Monthly Limit	70 mg/l
Average Weekly Limit	105 mg/l
Percent Removal	65%

Although not specified in the Idaho water quality standards, weekly average effluent limitations for BOD₅ and TSS have been established in accordance with 40 CFR 122.45(d)(2). The average weekly limit is approximately 1.5 times the value of the monthly average limitation.

- Federal regulations at 40 CFR 122.45(f) require BOD₅ and TSS limitations to be expressed as mass based limits using the design flow of the facility. The loadings are calculated as follows: concentration X design flow X 8.34, so

BOD₅ Monthly Average Loading = 45 mg/l X 0.006 mgd X 8.34 = 2.25 lbs/day

BOD₅ Weekly Average Loading = 65 mg/l X 0.006 mgd X 8.34 = 3.25 lbs/day

TSS Monthly Average Loading = 70 mg/l X 0.006 mgd X 8.34 = 3.5 lbs/day

TSS Weekly Average Loading = 105 mg/L X 0.006 mgd X 8.34 = 5.25 lbs/day

Federal regulations include a percent removal requirement for TSS and are, therefore, more restrictive than state requirements and must be included in the permit.

- **pH:** The Idaho state 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).
- The Idaho *Water Quality Standards and Wastewater Treatment Requirements* (IDAPA 58.01.02.420.05.a) require that fecal coliform concentrations in treated effluent not exceed a geometric mean of 200 colonies/100mL based on no more than one week's data and a minimum of five samples. Since the TMDL allocation of 50 colonies/100 ml only applies during May 1 through September 30, the draft permit includes a limit of 200 colonies/100 ml during the remainder of the year.
- Escherichia Coli (E. coli) Bacteria

The Idaho *Water Quality Standards and Wastewater Treatment Requirements* (IDAPA 58.01.02.251.01), require that waters designated for primary contact recreation, such as Grasshopper Creek, are not to contain E. coli bacteria significant to the public health in concentrations exceeding:

1. A single sample of four hundred and six (406) E. coli organisms per one hundred (100) ml; or
2. A geometric mean of one hundred and twenty-six (126) E. coli organisms per one hundred (100) 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 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 draft permit include a instantaneous maximum limit of 406 organisms/100 ml, and an average monthly limit of 126 organisms/100 ml.

The Grasshopper Creek TMDL also established a wasteload allocation of 50 colonies/100 ml for fecal coliform during May 1 through September 30. This allocation has been included in the draft permit as a weekly average limit.

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 ₅	45 mg/L	65 mg/L	---	---	---	---	---	---	45 mg/L	65 mg/L	---	---
	2.25 lbs/day	3.25 lbs/day			---	---			2.25 lbs/day	3.25 lbs/day		
BOD ₅ , Percent Removal	65	---	---	---	---	---	---	---	65	---	---	---
TSS	70 mg/L	105 mg/L	---	---	---	---	---	---	70 mg/L	105 mg/L	---	---
	3.5 lbs/day	5.25 lbs/day			---	---			3.5 lbs/day	5.25 lbs/day		
TSS, Percent Removal	65	---	---	---	---	---	---	---	65	---	---	---
Fecal Coliform Bacteria (May-September)	---	---	---	---	---	50/100 ml	---	---	---	50/100 ml	---	---
Fecal Coliform Bacteria (October-April)	---	200/100 ml	---	---	---	---	---	---	---	200/100 ml	---	---
E. coli Bacteria	---	---	---	---	126/100 ml	---	406/100 ml	---	126/100ml	---	406/100 ml	---
Total Phosphorus (4/1-7/31)	---	---	---	---	0.8 mg/L	1.60 mg/L	---	---	0.8 mg/L	1.60 mg/L	---	---
	---	---			0.04 lb/day	0.08 lb/day			0.04 lb/day	0.08 lb/day		
TIN (4/1-7/31)	---	---	---	---	0.2 mg/	0.4 mg/L	---	---	0.2 mg/L	0.4 mg/L	---	---
	---	---			0.01 lb/day	0.02 lb/day			0.01 lb/day	0.02 lbs/day		
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												

APPENDIX D
Water Quality Based Effluent Limitations
for Total Phosphorus &
Total Inorganic Nitrogen (TIN)

The purpose of a permit limit is to specify an upper bound of acceptable effluent quality. For water quality based requirements, the permit limits are based on maintaining the effluent quality at a level that will comply with the water quality standards, even during critical conditions in the receiving water (i.e., low flows). These requirements are determined by the wasteload allocation (WLA). The WLA dictates the required effluent quality which, in turn, defines the desired level of treatment plant performance or target long-term average (LTA).

To support the implementation of EPA's national policy for controlling the discharge of toxicants, EPA developed the "Technical Support Document for Water Quality-Based Toxic Control" (EPA/505/2-90-001, March 1991, TSD). The following is a summary of the procedures recommended in the TSD in deriving water quality-based effluent limitations for toxicants. This procedure translates wasteload allocations for total phosphorus to "end of the pipe" effluent limits.

1. Calculation of Total Phosphorus Limits

Federal regulations at 40 CFR 122.44(d)(vii)(B) require EPA to incorporate effluent limits, based on WLAs from the State's TMDL, into NPDES permits.

In translating the wasteload allocation (WLA) into permit limits, EPA followed the procedures in the TSD. The first step in developing limits is to determine the time frame over which the WLAs apply. In general, the period over which a criterion applies is based on the length of time the target organism can be exposed to the pollutant without experiencing an adverse effect. For example, aquatic life criteria generally apply as one-hour averages (acute criteria) or four-day averages (chronic criteria). In the case of total phosphorus, the target organisms are aquatic vegetation which respond to high phosphorus concentrations with excess growth, resulting in eutrophication. The period over which this effect occurs is uncertain. However, EPA believes that applying the WLAs as monthly averages is appropriate.

The WLA for phosphorus must then be statistically converted to an average monthly limit and an average weekly limit.

- A. Average Monthly Limit: In this case, because the averaging period for the pollutant is monthly, no conversion is necessary and the monthly average permit limit is equal to the WLA. The TMDL provided THS with a WLA of 1.3 lbs/month. Based on the WLA, the average monthly limit is 0.04 lbs/day.
- B. Average Weekly Limit: Derivation of the average weekly limit from the monthly average limit is based, in part, on the coefficient of variation (CV) for the effluent. The AWL is calculated using the following relationship:

$$\frac{\text{Average Weekly Limit}}{\text{Average Monthly Limit}} = \frac{\exp[Z_m \sigma - .5\sigma^2]}{\exp[Z_a \sigma - .5\sigma^2]}$$

where:

- Z_m = percentile exceedance probability for AWL (99%) = 2.326
- Z_a = percentile exceedance probability for AML (95%) = 1.645
- CV = .6 (there are no effluent phosphorus data, therefore a default value of 0.6 was used,

as recommended by the TSD)

$$n = 4 \text{ (number of sampling events per month)}$$

$$\sigma_n^2 = \ln[(CV^2/n) + 1] = \ln[(0.6^2/4) + 1] = 0.08618$$

$$\sigma_n = (.08618)^{1/2} = 0.2936$$

$$\sigma^2 = \ln(CV^2 + 1) = \ln(0.6^2 + 1) = 0.30748$$

$$\sigma = (.30748)^{1/2} = 0.5545$$

$$\text{Average Weekly Limit} = \frac{3.11}{4} = 2.01$$

$$\text{Average Monthly Limit} = 1.55$$

$$\text{Average Weekly Limit} = 2.01 \times 0.04 \text{ lbs/day} = 0.08 \text{ lbs/day}$$

- **Calculation of Total Inorganic Nitrogen (TIN) Limits**

Calculation of TIN limits is accomplished using the same procedure and formulas as were used to calculate the phosphorus limits:

- A. **Average Monthly Limit:** In this case, because the averaging period for the pollutant is monthly, no conversion is necessary and the monthly average permit limit is equal to the WLA. The TMDL provided THS with a WLA of 0.3 lbs/month. Based on the WLA, the average monthly limit is 0.01 lbs/day.
- B. **Average Weekly Limit:** Derivation of the average weekly limit for TIN is done using the same formula as was used for total phosphorus. Thus,

$$\text{Average weekly Limit} = 2.01 \times 0.01 \text{ lbs/day} = 0.02 \text{ lbs/day}$$

new reference number (1-4-01-SP-827) and an updated species list through March 1, 2001. There were no additions or changes to the previous list. USF&WL asked EPA to formulate a list of species based on these documents.

EPA developed an endangered/threatened species list based on the County List, the document: Threatened, Endangered, Candidate, and Species of Concern Biological Information and Guidance.

City of Weippe: The City of Weippe owns and operates a facility which treats domestic sewage from local residents and commercial establishments. There are no significant industrial dischargers to the system. The facility has a design flow of 0.536 million gallons per day (mgd). Because of the minimum instream dilution requirement provided by the existing permit, the facility can typically only discharge during January through June each year. During 1999 (January through April) and 2000 (February through April), the average daily flow rates were 0.370 mgd and 0.424 mgd. The facility provides biological treatment in three aerated lagoons, as well as disinfection by chlorination prior to discharging effluent to Jim Ford Creek.

During Summer 1991, the city enlarged the holding capacity of the lagoons. The enlargement of the first lagoon apparently thinned the clay seal and caused a leak. An underdrain was installed to provide drainage which now discharges at a low rate (<0.01 cubic feet per second or cfs) to Grasshopper Creek year around. Grasshopper Creek flows into Jim Ford Creek immediately upstream of Outfall 001. The underdrain has been identified as a source of fecal coliform loadings to Grasshopper Creek. The draft permit includes a requirement that the underdrain discharge be eliminated within two years of the effective date of the permit.

Timberline High School: Sewage from the Timberline High School is treated in a series of two lagoons. The first lagoon is cement lined and provides mechanical aeration. The second lagoon discharges via Outfall 001 to Grasshopper Creek approximately six miles upstream of the confluence with Jim Ford Creek. Discharge from the system generally occurs during the school year from September through June; however, some discharges have been reported throughout the year. The average flow rate is 0.002 mgd and the maximum flow during the past year was 0.004 mgd.

City of Cottonwood: The City of Cottonwood owns and operates a facility which treats domestic sewage from local residents and commercial establishments. Sewage is initially treated in aeration lagoons (3 primary and a series of 2 secondary lagoons). The three primary lagoons and the first secondary lagoon are lined with bentonite along the side adjacent to Cottonwood Creek. From the fifth lagoon, water is pumped to chlorination. Approximately 50 percent of the flow subsequently undergoes dechlorination. As required by the existing NPDES permit, the facility is not allowed to discharge effluent to the creek from April through October. From May through October, the city land applies treated wastewater to approximately 40 acres of poplar trees. Land application is performed under a permit issued by the Idaho Department of Environmental Quality (IDEQ). A french underdrain has been installed between the irrigation area and the creek to collect seepage. Collected seepage is combined with lagoon effluent prior to chlorination in the treatment system.

Only during the past year has the city been able to reliably measure and report discharge flow data. Recent average monthly discharge flows (12/99-3/00) ranged from 0.3 to 1.46 mgd. The NPDES permit application reports a maximum daily flow rate for the past year of 1.60 mgd.

- 2. Endangered/Threatened Species List:** Based on the above information EPA developed the following list.

Bull Trout, Snake River Fall Chinook Salmon, Snake River Steelhead, Bald Eagle, Grey Wolf, Canada Lynx, Ute Ladies' Tresses, MacFarlane's Four-o'clock, Spaldings Catchfly, Water Howellia

There were no proposed or candidate species listed for any of the facilities.

III. Preliminary Determination

EPA has determined that the issuance of the proposed permits for the Cities of Cottonwood and Weippe and Joint School District #171 (Timberline High School) will have no affect on any of the listed species applicable to each of the facilities. The natural barriers on both Jim Ford Creek and Cottonwood Creek preclude the salmonids from reaching the area of the permitted discharges. In addition, the draft permits do not allow discharges during extreme low flow conditions in order to assure compliance with the state's water quality standards and to coincide with the TMDLs that have been completed for these streams.

IV. Possible Effects of the Permits on Endangered/Threatened Species

- (A) **Salmonid Species:** Similar factors affect all of the salmonid species in the area of the three referenced discharges. They include widespread habitat blockage from hydrosystem management and potentially deleterious genetic effects from straying and introgression from hatchery fish. Other identified threats include forestry, agriculture, mining, and urbanization that have degraded, simplified, and fragmented habitat. The already existing barriers to fish movements and anadromous fish migration, and the instream physical habitat limitations, preclude salmonid occurrence in the vicinity of the discharges. This is evidenced by existing fisheries data for each creek, which show salmonids only below the barriers which are approximately 10 miles below the Cottonwood discharge, 2 miles below the Weippe discharge, and 8 miles below the Timberline High School discharge. Issuance of the permits will have no impact on any of these issues; therefore, EPA has determined that permit reissuance will have no affect on any of the listed salmonid species.
- (B) **Bald Eagle:** The primary reasons for the decline of the bald eagle are destruction of their habitat and food sources and widespread historic application of DDT. The proposed permits will have no impact on any of these issues. Therefore, EPA has determined that the issuance of the three NPDES permits for the above facilities will have no affect on bald eagles.
- (C) **Gray Wolf:** Hunting and habitat destruction are the primary causes of the species decline. Issuance of the NPDES permits for the above three facilities will not result in habitat destruction, nor will it result in changes in population that could result in increased habitat destruction. Issuance of the permits will not impact the food sources of the gray wolf. Therefore, EPA has determined that the reissuance of the permits for the above facilities will have no affect on gray wolves.
- (D) **Canada Lynx:** The primary reasons for the decline of the lynx is over trapping. Several management options have been recommended to prevent over trapping including prohibiting exploitation in hare refugia, a combination of tree harvest suspensions in the more accessible trapping areas during low hare years, and a quota system as lynx numbers increase. The proposed permits will have no impact on any of these issues. Therefore, EPA has determined that the reissuance of the three NPDES permits for the above facilities will have no affect on the Canada Lynx
- (E) **Ute Ladies' Tresses, McFarlane's Four-o'clock, Spaldings Catchfly, and Water howellia:**

The primary reasons for the decline of these plant species are habitat loss or modification through development, stream channelization, water diversions, vehicular travel, surface disturbance associated with mining or agriculture, removal of trees near waterways, increased siltation due to logging, road building, and livestock grazing are all examples of activities that may impact these species. None of the threats to the plant species are associated with the three wastewater treatment facilities or reissuance of their permits. EPA has determined that the reissuance of the NPDES permits will have no affect on the listed plant species.

APPENDIX F
IDEQ Preliminary Comments on the Draft Permit

By letter, dated April 26, 2001, IDEQ submitted comments on the draft NPDES permit for THS. The following are the relevant comments submitted:

The effluent limits for maximum daily E. coli are incorrect. It should be 406 cfu/100ml as that is the acute standard for primary contact recreation. This information is correctly stated in the fact sheet in Appendix B. Sampling frequency for E. coli is correctly stated as five/month; however, they need to be taken no greater than 5 days apart. In other words, if the first sample is taken on the first day of the month, then sample days of the month have to be 1, 6, 11, 16, 21.

Also, the wastewater treatment requirements require that the 200cfr/100ml standard be sampled five times in one week in order to calculate a geometric mean. The fact sheet states that we will allow one sample per week to meet this requirement. We suggest these sampling requirements remain at the 200cfs/100ml standard sampled five times in one week in order to calculate a geometric mean.

There are subtle differences in monitoring requirements among the three permits. For example, Weippe has to do 8-hour composite sampling for BOD, TSS, and TP, whereas the others do not. Weippe does a 5 per month grab for fecal, the others do a once a week grab for fecal. Cottonwood samples BOD and TSS once a week, Weippe once a month, and Timberline twice a month. And there may be other sampling differences, all of which are not clear to us why they are different. We suggest that all permits have consistent sampling requirements whenever possible.