FACT SHEET

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

City of Fruitland, Snake River Facility
P.O. Box 324

Fruitland, Idaho 83619

Permit Number: ID-002033-8
Public Notice start date: July 18, 2001
Public Notice expiration date: September 4, 2001

Technical Contact

Name: Madonna Narvaez
Phone: (206) 553-1774
1-800-424-4372 ext. 1774 (within Alaska, Idaho, Oregon, and Washington)
Email: narvaez.madonna@epa.gov

EPA Proposes NPDES Permit Reissuance.

EPA proposes to reissue an NPDES permit to the City of Fruitland, Snake River Facility. The draft permit places conditions on the discharge of pollutants from the facility to the Snake River. 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
- a listing of proposed effluent limitations and other conditions
- detailed technical material supporting the conditions in the permit

The State of Idaho Certification.

EPA is requesting that the Idaho Department of Environmental Quality certify the NPDES permit for City of Fruitland, Snake River Facility, under section 401 of the Clean Water Act.

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.

All written comments and requests should be submitted to the attention of the Director, Office of Water at the following address:

U.S. EPA, Region 10
Re: City of Fruitland, Snake River Facility
1200 Sixth Avenue, M/S OW-130
Seattle, Washington 98101

Comments may also be submitted electronically to the technical contact listed above.

After the Public Notice expires, and all comments have been considered, EPA's Director for the Office of Water in Region 10 will make a final decision regarding permit re-issuance. If no significant 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 within 30 days.

Persons wishing to comment on State Certification should submit written comments by the end date of this public comment period to the Regional Administrator, with a copy to EPA, at the following address:

Regional Administrator, State of Idaho
Department of Environmental Quality
Boise Regional Office
1445 N. Orchard
Boise, Idaho 83706-2239

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.

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OW-130
Seattle, Washington 98101
(206) 553-1774 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

City of Fruitland, Snake River Facility
NPDES Permit No.: ID-002033-8

Facility Mailing Address:
P.O. Box 324
Fruitland, Idaho 83619

II. FACILITY INFORMATION

A. Treatment Plant Description

The city of Fruitland owns and operates a municipal treatment plant (SIC 4952) that provides treatment equivalent to secondary (TES) and disinfection prior to discharge to the Snake River. The plant is designed for an annual average flow of 0.50 mgd.

The plant's service area includes the city and some nearby incorporated areas. The plant receives domestic wastewater from residential and commercial sources. The only significant industrial source is the Coke Bottling Plant. The city collection system has no combined sewers.

The Fruitland Snake River wastewater treatment plant provides treatment equivalent to secondary (TES) using waste stabilization ponds. The treatment plant consists of four cells with a total area of nine acres.

According to the city's engineer, design criteria for the Fruitland Snake River plant are as follows:

Design Parameters	**Design Criteria**
Daily average design flow	0.5 mgd
Design biochemical oxygen demand (BOD_5) load	2500 lb/day
Design total suspended solids (TSS) load	1250 lb/day
Design BOD_5 removal	65%

Since completion of an upgrade in the 1990s, the facility generally has been in compliance with the terms and conditions of the existing permit.

B. Background Information

The NPDES permit for this facility expired on September 27, 1998. 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 that the permittee submits a timely and complete application for a new permit prior to the expiration of the current permit. The City filed a renewal application that was received by EPA on March 26, 1998.

III. RECEIVING WATER

A. Outfall Location/ Receiving Water

This Fruitland plant discharges to the Snake River at river mile 373. USGS data indicate the 7Q10 for this reach is 7115 cfs; the 1Q10 is 6740 cfs.

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.

1. The Idaho *Water Quality Standards and Wastewater Treatment Requirements* (IDAPA 58.01.02.140.16.) protect the Snake River (SW-1, Snake River, Boise River to Weiser River) for the following beneficial use classifications: domestic water supply, cold water biota, salmonid spawning, and primary contact recreation.

The criteria that the State of Idaho has deemed necessary to protect the beneficial uses for the Snake River, and the State's anti-degradation policy are summarized in Appendix A.

2. Oregon Water Quality Standards: The federal regulation at 40 CFR 122.4 states: "No permit may be issued when the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected states."

   The mid-point of the Snake River is the boundary between the states of Idaho and Oregon. Since the Snake River facility discharges to the Snake River, it is possible that the effluent discharged from the facility may affect the water quality of Snake River in Oregon State. Therefore, Oregon State water quality standards must be considered when developing effluent limits.

   The *Oregon Water Quality Standards and Beneficial Uses* (Oregon Administrative Code 340-041) classify this section of the Snake River for the following beneficial uses: public and private drinking water supply, industrial water supply, irrigation, livestock watering, salmonid fish rearing (trout), salmonid fish spawning (trout), resident fish (warm water) and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality.

   In general, the Idaho water quality criteria will be protective of the beneficial uses established by Oregon, with the following exceptions: Oregon's standard for pH is more stringent, and its designation of salmonid spawning as a beneficial use of the river requires more stringent

dissolved oxygen and temperature criteria. However, since the effluent from the Snake River facility will be significantly diluted before reaching the Oregon side of the Snake River, it is anticipated that the effluent will not effect the Oregon water quality standards. Therefore, only Idaho water quality standards will be considered when developing effluent limits.

C. Water Quality Limited Segment

A water quality limited segment is any waterbody, 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. The Snake River has been listed as a water quality limited segment. This section of the river has been listed as water quality limited for bacteria, nutrients, and temperature. In the State of Oregon this section of the Snake River has been listed as water quality limited for temperature and toxics (mercury).

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. The Idaho Department of Environmental Quality (IDEQ) issued an amendment to the Snake River TMDL on May 11, 2000 which was subsequently approved by EPA Region 10 on May 31, 2000. This amended TMDL addresses bacteria issues related to this section of the Snake River. A TMDL for nutrients for this lower portion of the Snake River is planned once a TMDL for upstream reaches is completed.

Neither the Idaho Department of Environmental Quality (IDEQ) nor the Oregon Department of Environmental Quality (ODEQ) has established a TMDL for this portion of the Snake River. However, the IDEQ is scheduled to complete a TMDL by December 2001, and the ODEQ is scheduled to complete a TMDL in 2005.

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 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 waterbody are being met. For more information on deriving technology-based effluent limits and water quality-based effluent limits see Appendix B. The following summarizes the proposed effluent limitations that are in the draft permit.

A. The pH range must be between 6.5 - 9.0 standard units.

B. There must be no discharge of floating solids or visible foam other than in trace amounts.

C. Table 1, below, presents the existing effluent limits for BOD_5 and TSS. Previous loading limits were based on 40 CFR § 133.103(b), which allows for adjustment of effluent limits for POTWs that receive over ten percent of their flow or load from

one industrial category. Effluent limits are then calculated as the sum of industrial and domestic allowances. Industrial allowances are developed from applicable effluent guidelines or best professional judgement, and cannot exceed the amount which would be permitted if such an industry were a direct discharger.

Table 1. Existing BOD_5 and TSS Limitations		
Parameter	Average Monthly	Average Weekly
BOD_5, mg/L (lbs/day)	45 (230)	65 (370)
TSS, mg/L (lbs/day)	70 (440)	105 (640)

Since the existing permit was issued, the number of industrial dischargers have decreased. The BOD_5 and TSS concentration and mass limits are not continued from the existing permit. The BOD_5 and TSS mass limits are established based on a facility average annual flow of 0.50 mgd. The mass based limit is calculated as follows: concentration X design flow X 8.34.

monthly average = 45 mg/L X 0.5 mgd X 8.34 = 188 lbs/day
weekly average = 65 mg/L X 0.5 mgd X 8.34 = 271 lbs/day

D. A technology-based total residual chlorine limit has been included in the permit. Table 1a. below summarizes the proposed effluent limitations and monitoring requirements for the City of Fruitland, Snake River Facility.

Table 1a. Effluent Limitations and Monitoring Requirements						
PARAMETER	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS		
	Average Monthly Limit	Average Weekly Limit	Daily Maximum Limit	Sample Location	Sample Frequency	Sample Type
Flow, MGD	Report	---	Report	Influent or effluent	Continuous	Recording
Biochemical Oxygen Demand (BOD_5)	45 mg/l	65 mg/l	---	Influent and Effluent	1/week	24 hr comp
	188 lb/day	271 lb/day	---			
Total Suspended Solids	70 mg/l	105 mg/l	---	Influent and Effluent	1/week	24 hr comp
	292 lb/day	438 lb/day	---			
Ammonia (as N), mg/L	Report	---	Report	Effluent	1/ 2 mos	24 hr comp
Total Kjeldahl Nitrogen, mg/L	---	---	Report	effluent	1/quarter	24 hr comp
Nitrate - Nitrite (as N), mg/L	---	---	Report	effluent	1/quarter	24 hr comp
Total Phosphorus (as P), mg/L	---	---	Report	effluent	1/quarter	24 hr comp
Orthophosphorous (as P), mg/L	---	---	Report	effluent	1/quarter	24 hr comp

Table 1a. Effluent Limitations and Monitoring Requirements						
PARAMETER	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS		
	Average Monthly Limit	Average Weekly Limit	Daily Maximum Limit	Sample Location	Sample Frequency	Sample Type
Total Residual Chlorine [1,2]	0.5 mg/l	0.75 mg/l	–	Effluent	5/week	grab
	2.1 lb/day	3.1 lb/day	–			
Dissolved Oxygen	---	---	Report	Effluent	1/month	grab
Mercury[5]	---	---	report	Effluent	1/quarter[5]	24 hr composite
Fecal Coliform Bacteria **May 1 – September 30**	50/100 ml	200/100 ml	---	Effluent	1/week	grab
Fecal Coliform Bacteria **October 1 – April 30**	---	200/100 mL[4]	---	Effluent	1/week	grab
E. coli Bacteria [1,4]	126/100 ml	---	406/100 ml	Effluent	1/ month	grab

1 Reporting is required within 24 hours if the maximum daily limit is violated.
2 This is an instantaneous minimum.
3 The average weekly fecal coliform count must not exceed a geometric mean of 200/100 ml based on a minimum of five (5) samples per week. See Part VI for the definition of geometric mean.
4 A geometric mean of 126 organisms per 100 ml must be based on a minimum of 5 samples taken every 3 to 5 days over a thirty day period. The daily maximum applies to a single sample.
5 Sampling must continue until a total of 10 samples have been collected and analyzed. Mercury must be analyzed as total and methods which can achieve a method detection limit of at least 0.001 µg/L must be used.

V. MUNICIPAL SEWAGE SLUDGE/BIOSOLIDS MANAGEMENT

The biosolids conditions in the administratively extended permit were based on best professional judgment since EPA had not promulgated biosolids regulations at the time of permit issuance. Since that time EPA has promulgated regulations for the use and disposal of biosolids. Therefore, the biosolids requirements contained in the administratively extended permit have not been incorporated into the proposed permit.

EPA Region 10 has recently decided to separate the permitting of wastewater discharges and the disposal of biosolids. Under the Clean Water Act, EPA has the authority to issue separate "sludge only" NPDES permits for the purposes of regulating biosolids. EPA has historically implemented the biosolids standards by inclusion of the requirements in facility's NPDES wastewater permit, the other option authorized by the Act.

EPA will issue a sludge-only permit to this facility at a later date. This will likely be in the form of a general permit through which EPA can cover multiple facilities. In anticipation of that occurring, the City has submitted an updated sludge application.

Meanwhile, the environment will be protected since 1) the permittee's sludge activities will continue to be subject to the national sewage sludge standards at 40 CFR Part 503 and 2) IDEQ conducts a program to review and approve biosolids activities. Part 503 contains provisions relating to pollutants in sewage sludge, the reduction of pathogens in sewage sludge, the reduction of the characteristics in sewage sludge that attract vectors, the quality of the exit gas from a sewage sludge incinerator stack, the quality of sewage

sludge that is placed in a municipal solid waste landfill unit, the sites where sewage sludge is either land applied or placed for final disposal, and sewage sludge incinerators. The Act prohibits any use or disposal of biosolids not in compliance with these standards. EPA has the authority under the Act to enforce these standards directly, including in the absence of a permit. The Act does not require the facility to have a permit prior to the use or disposal of its biosolids.

VI. 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 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. Table 1 above presents the proposed effluent monitoring requirements.

EPA developed *Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies* (EPA, 1996) to help determine if the frequency of effluent monitoring may be reduced from the requirements in a permittee's current NPDES permit. This guidance document was used to determine if the frequency of effluent monitoring for BOD_5, TSS, and total residual chlorine could be reduced. The guidance document allows permitting authorities to use a statistical analysis of the permittee's historical effluent data to reduce unnecessary monitoring while at the same time maintaining a high level of environmental protection. Based on this guidance document, and the compliance history of the facility for the last five years it was found that monitoring for BOD_5, and TSS could not be reduced from the existing requirements for once per week. This is because new limits are being established for BOD_5 and TSS. The guidance does not allow for a reduction until after one permit cycle upon issuing effluent limitations. Total residual chlorine will remain at daily because of the proposed new technology-based average weekly effluent limit. In addition, based on evaluation of the data and that no effluent limit are needed for ammonia, effluent monitoring for ammonia has been reduced to once every other month. These changes were made in the draft permit.

Monitoring for nitrate-nitrite, total kjeldahl nitrogen, and total phosphorus have been included in the draft permit to support the development of the TMDL for the Payette River. Monitoring for those parameters have been reduced to collecting only 12 more samples per parameter. Monitoring for mercury is to support future development of a TMDL in the Snake River for mercury, based on Oregon water quality standards. Monitoring for mercury must continue until 12 monthly samples have been collected and analyzed. Table 2 describes the surface water monitoring requirements.

Table 2: Surface Water Monitoring Parameter, Locations, and Method Detection Limits

Parameter	Units	Upstream Sampling Frequency	Downstream Sampling Frequency	Method Detection Limit (MDL)
Flow	mgd	1/month	-----	-----
BOD_5	mg/L	[1]	-----	-----
TSS	mg/L	[1]	-----	-----

Table 2: Surface Water Monitoring Parameter, Locations, and Method Detection Limits				
Parameter	Units	Upstream Sampling Frequency	Downstream Sampling Frequency	Method Detection Limit (MDL)
Fecal Coliform Bacteria	colonies/100 ml	[1]	-----	-----
E. coli bacteria	colonies/100 ml	[1]	-----	-----
Dissolved Oxygen	mg/L	[1]	[1]	-----
Total Phosphorus	mg/L	[1]	[1]	-----
Ortho-phosphorus	mg/L	[1]	[1]	-----
Total Ammonia as N	mg/L	[1]	[1]	----
Total Kjeldahl Nitrogen	mg/L	[1]	[1]	-----
Nitrate-Nitrite	mg/L	[1]	[1]	-----
Temperature	°C	[1]	[1]	-----
pH	standard units	[1]	[1]	-----
Mercury	: g/L	[2]	-----	.001 : g/L

1 Monitoring must be conducted during the months of January, May, August and November. Should the city not be able to complete the surface water monitoring and D.O. measurements at either the Snake or Snake River facilities due to ice or inclement weather during a specific month, the city must provide written notification to EPA with the monthly discharge monitoring report for that month and complete the measurements as soon as possible. Monitoring must continue until a total of twelve (12) samples per parameter have been collected and analyzed.

2 Mercury must be analyzed as total. Mercury must be monitored quarterly until a total of twelve (12) separate samples have been collected.

VII. OTHER PERMIT CONDITIONS

A. Quality Assurance Plan

The federal regulation at 40 CFR 122.41(e) requires the Permittee to develop 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 120 days of the effective date of the final permit and to certify completion of the plan to EPA. The Quality Assurance Plan must consist of standard operating procedures the Permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting.

B. Facility Planning

The permit also requires that the permittee compute an annual average value for flow, and BOD_5 and TSS loading entering the facility based on the previous 12 months of data or all data available. When the average annual values exceed the 85 percent of the design criteria for the WWTF three months in a row, the permittee is required to develop a facility plan and schedule within 18 months from the date of the exceedance. This plan or strategy is required to ensure that

the permittee will continue to comply with permit limits if capacity is being exceeded.

C. 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 that may occur in the vicinity of the discharge.

Reissuance of an NPDES permit for City of Fruitland, Snake River Facility discharges will not result in habitat destruction, nor will it result in changes in population that could result in increased habitat destruction for any threatened or endangered species that may occur in the vicinity of the discharge.

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
WATER QUALITY STANDARDS

1. Water Quality Criteria

For the City of Fruitland, Snake River Facility discharge, the following water quality criteria are necessary for the protection of the beneficial uses of the Snake River:

a. IDAPA 58.01.02.200.02 - Surface waters of the State must be free from toxic substances in concentrations that impair designated beneficial uses. Furthermore, IDAPA 58.01.02.210.01 incorporates the National Toxics Rule by reference as found in 40 CFR 131.36(b)(1) that includes numeric criteria for toxic substances.

b. IDAPA 58.01.02.200.05 - Surface waters of the State must 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.

c. IDAPA 58.01.02.250.01.a. - Hydrogen ion concentration (pH) values within the range of 6.5 to 9.5 standard units.

d. IDAPA 58.01.02.250.01 c. – The one-hour average total residual chlorine concentration must not exceed 19 ug/L, and the four-day average total residual chlorine concentration must not exceed 11 ug/L.

e. IDAPA 58.01.02.250.02.b. – Water temperatures of 22 degrees C or less with a maximum daily average of no greater than 19 degrees C.

2. 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:

a. Tier 1 – **Maintenance of Existing Uses for all Waters -** The existing in stream uses and the level of water quality necessary to protect the existing uses must be maintained and protected.

b. Tier 2 **– High Quality Water –** Where the quality of the water exceeds levels necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water, that quality must be maintained and protected unless the Department finds, after full satisfaction on the intergovernmental coordination and public participation provisions of the Department's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the Department must assure water quality adequate to protect existing uses fully.

c. **Tier 3 - Outstanding Resource Waters –** Where high quality waters constitute an outstanding natural resource, such as waters of national and state parks and wildlife refuges, and waters of exceptional recreational or ecological significance,

that water must be maintained and protected from the impacts of point and nonpoint source activities.

The Snake River is a Tier 2 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 ensures that the existing beneficial uses for the Snake River will be maintained.

APPENDIX B
BASIS FOR EFFLUENT LIMITATIONS

The CWA requires dischargers to meet performance-based requirements (also known as technology based effluent limits). 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 designed to ensure that water quality standards are met. The draft 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.

1. Technology-Based Effluent Limitations

a. The BOD_5 and TSS concentration and mass limitations have been recalculated, based on the total design flow from the Snake River facility, rather than individual industrial categories, since the industrial flow is no longer greater than 10 percent of the total flow. Previous loading limits were based on 40 CFR § 133.103(b), which allows for adjustment of effluent limits for POTWs that receive over ten percent of their flow or load from one industrial category. Effluent limits would are calculated as the sum of industrial and domestic allowances. Industrial allowances are developed from applicable effluent guidelines or best professional judgement, and cannot exceed the amount which would be permitted if such an industry were a direct discharger.

Table 1. Existing BOD_5 and TSS Limitations

Parameter	Average Monthly	Average Weekly
BOD_5, mg/L (lbs/day)	45 (230)	65 (370)
TSS, mg/L (lbs/day)	70 (440)	105 (640)

Since the existing permit was issued, the number of industrial dischargers have decreased. The BOD_5 and TSS concentration and mass limits are not continued from the existing permit. The BOD_5 and TSS mass limits are established based on a facility average annual flow of 0.50 mgd.

b. On September 20, 1984, EPA revised the Secondary Treatment Regulations (40 CFR 133.102) for facilities that use trickling filters or waste stabilization ponds as the principal process. These revisions established effluent limitations for Treatment Equivalent to Secondary Treatment (40 CFR 133.105). Furthermore, the State of Idaho has adjusted the suspended solids effluent limitations for waste stabilization ponds in accordance with 40 CFR 133.103(c) (IDAPA16.01.01.420.02.b.ii). The resulting minimum discharge requirements for waste stabilization ponds in Idaho are summarized in the table below:

Parameter	Average Monthly	Average Weekly	Percent Removal
Biochemical Oxygen Demand (5-day), mg/L, (lbs/day)	45 (230)	65 (370)	65
Suspended Solids, mg/L, (lbs/day)	70 (440)	105* (640)	65*
Although not specified in IDAPA16.01.02.420.02.b.ii, a weekly average effluent limitation for suspended solids has been established in accordance with 40 CFR 122.45(d)(2), and continues this weekly average limit from the existing permit. In addition, percent removal requirements for TSS have been included in accordance with 40 CFR § 133.105(c).			

Discharge Monitor Report (DMR) data for the past two years indicates that the facility is not able to meet more stringent effluent limitations for BOD_5 than those established in the existing permit. Therefore, BOD_5 effluent limitations for Treatment Equivalent to Secondary Treatment are still valid, in accordance with 40 CFR 133.105(f)(1), based on past performance of the facility. The proposed effluent limits for BOD_5 and TSS are as follows:

Parameter	Monthly Average	Weekly Average	Percent Removal
Biochemical Oxygen Demand, (5-day) mg/L	45	65	65
Total Suspended Solids, mg/L	70	105	65

EPA methodology and regulations at 40 CFR 122.45(b) and 122.45(f) require BOD_5 and TSS limitations to be expressed as mass based limits using the design flow (0.5 mgd) of the facility. The loading is calculated as follows: concentration X design flow X 8.34. Using this formula the BOD_5 and TSS permit limits are:

BOD_5 loading, monthly average = 45 mg/L X 0.5 MGD X 8.34 = 188 lbs/day
BOD_5 loading, weekly average = 65 mg/L X 0.5 MGD X 8.34 = 271 lbs/day
TSS loading, monthly average = 70 mg/L X 0.5 MGD X 8.34 = 292 lbs/day
TSS loading, weekly average = 105 mg/L X 0.5 MGD X 8.34 = 438 lbs/day

c. Federal regulations at 40 CFR § 133.102(c) require the pH to be in the range of 6.0 to 9.0 S.U. Evaluation of compliance data show that the facility is able to meet this requirement. The limits in the permit are based on the more stringent of the water quality criteria (6.5 - 9.5) and technology-based limits and are 6.5 to 9.0 S.U.

2. Water Quality-based Evaluation

a. 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.

b. Reasonable Potential Determination

When evaluating the effluent to determine if water quality-based effluent limits are needed based on chemical specific numeric criteria, a projection of the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern is made. The chemical specific concentration of the effluent and ambient water and, if appropriate, the dilution available from the ambient water are factors used to project the receiving water concentration. If the projected concentration of the receiving water exceeds the numeric criterion for a specific chemical, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required.

As mentioned above, sometimes it is appropriate to allow a small area of ambient water to provide dilution of the effluent. These areas are called mixing zones. Mixing zone allowances will increase the mass loading of the pollutant to the water body, and decrease treatment requirements. Mixing zones can be used only when there is adequate ambient flow volume and the ambient water is below the criteria necessary to protect designated uses.

i. 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 are determined in one of the following ways:

(1) TMDL-Based Wasteload Allocation

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 (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.

(2) Mixing zone based WLA

When the State authorizes a mixing zone for the discharge, the WLA is calculated by using a simple mass balance equation. The equation takes into account the available dilution provided by the mixing zone, and the background concentrations of the pollutant.

(3) Criterion as the Wasteload Allocation:

In some cases a mixing zone cannot be authorized, either because the receiving water already exceeds the criteria or the receiving water flow is too low to provide dilution. 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 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.

c. Water Quality-Based Effluent Limits

i. Toxic Substances

The Idaho water quality standards require surface waters of the state to be free from toxic substances in concentration that impair designated uses.

ii. Floating, Suspended or Submerged Matter

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 or that may

impair designated beneficial uses. Therefore, the draft permit specifies that there must be no discharge of floating solids or visible foam in other than trace amounts.

iii. Excess Nutrients

The Idaho state water quality standards require surface waters of the state be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses. The Snake River has been listed as water quality limited for nutrients. As of this date a TMDL has not been established for this reach of the river. Nutrient monitoring has been incorporated into the draft permit. The results of this monitoring will be used in the development of the TMDL. A reopener clause has also been incorporated into the draft permit to allow the permit to be reopened to incorporate the determinations made in the TMDL.

iv. Fecal Coliform Bacteria

The Snake River is listed as water-quality limited for pathogens. Since there is no dilution available, the facility must meet the criteria at the end of the pipe. This will ensure that primary contact recreation uses are met in the river. The effluent limits are as follows:

Average Weekly Limit = 200 colonies/100 ml.

The permit currently in effect has the following loading requirements:

<u>May 1 - September 30</u>: Average Monthly Limit = 50 colonies/100ml
Average Weekly Limit = 100 colonies/100ml

<u>October 1 - April 30</u>: Average Monthly Limit = 100 colonies/100ml[1]
Average Weekly Limit = 200 colonies/100 ml

New water quality standards adopted by Idaho in May 2000 removed the fecal coliform limits and adopted *E. coli* bacteria limits. Average weekly disinfection requirements for sewage wastewater treatment plant effluents were included, since the 100 colonies/100 ml no longer apply.

(1) *E. coli bacteria*

The Idaho state water quality standards require waters designated for primary contact recreation not contain *E. coli* bacteria in amounts exceeding:

(a) a single sample of 406/100 ml; or
(b) a geometric mean of 126/100 ml based on a minimum of five samples taken every three to five days over a thirty-day period.

These limits have been included in the draft permit.

(2) 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.

v. Total Residual Chlorine (TRC)

Water quality based TRC effluent limits have been calculated and found to be less stringent than technology-based limits. Technology-based limits have been included in the proposed permit. The Water Pollution Control Federation's *Chlorination of Wastewater* (1976) states that a properly designed and maintained wastewater treatment facility can achieve adequate disinfection if a 0.5 mg/L chlorine residual is maintained after 15 minutes of contact time.

Additionally, the NPDES regulation at 40 CFR 122.45(d) requires permit limits for publicly owned treatment works be expressed as average monthly limits (AMLs) and average weekly limits (AWLs) unless impracticable. The AWL is expressed as 1.5 X AML, or, in this case, 0.75 mg/L.

Finally, since the federal regulation at 40 CFR § 122.45 (f) requires limitations to be expressed as mass based limits using the design flow of the facility, mass based limits have been added to the draft permit. The mass based limit is calculated as follows: concentration X design flow X 8.34.

monthly average = 0.5 mg/L X 0.5 mgd X 8.34 = 2.1 lbs/day
weekly average = 0.75 mg/L X 0.5 mgd X 8.34 = 3.1 lbs/day

The average monthly limit is 0.5 mg/L (2.1 lbs/day) and the maximum daily limit is 0.75 mg/L (3.1 lbs/day).

vi. Dissolved Oxygen

The Snake River is not listed as water quality-limited for dissolved oxygen (D.O.). The state water quality standards require the level of D.O. to exceed 6 mg/L at all times for water bodies that are protected for aquatic life use. Effluent data are not available to determine if the facility is meeting this requirement. Effluent monitoring will be required in the draft permit in order to determine if the facility will require a permit limit in the future.

The existing permit contains D.O. limitations for the treatment lagoons of minimum of 2 mg/L. The basis for this was that Idaho had accepted a general convention establishing a minimum D.O. level of 2 mg/L in the effluent and the treatment lagoons, in order to assure that odors are minimized. EPA had established the requirement because it is an important diagnostic tool for the operation of a lagoon system. However, review of the DMR data since 1997 has shown no violations of the limit. Based on this evaluation, EPA proposes to remove the in-cell limitation for D.O., as well as the monitoring requirement.

vii. Ammonia

IDEQ has developed water quality criteria to protect aquatic life against short term and long term adverse impacts from ammonia. A reasonable potential analysis was conducted and it was found that water quality-based effluent limits are not required for ammonia. The permit does require continued monitoring for ammonia.

Reasonable Potential Analysis

Total Ammonia

In the case of the Snake River the beneficial use that needs to be protected is aquatic life. The acute criterion for ammonia is 1.18 mg/L and the chronic criterion is 0.200 mg/L. The acute criterion protects against short term impacts to aquatic life, and the chronic criterion protects against long term impacts to aquatic life.

When evaluating the effluent to determine if a water quality-based effluent limit (WQBEL) is needed based on chemical specific numeric criteria, a projection of the receiving water concentration (downstream of where the effluent enters the receiving water) for the pollutant of concern is made. If the projected concentration of the receiving water exceeds the applicable numeric criterion, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standards, and a WQBEL is required.

The following mass balance equation is used to determine the downstream receiving water concentration:

$$C_d = \frac{(C_e \text{ X } Q_e) + (C_u \text{ X } (Q_u \text{ X } \%MZ))}{Q_e + (Q_u \text{ X } \%MZ)}$$

where,
C_d = receiving water concentration downstream of the effluent discharge
C_e = maximum projected effluent concentration = 26.2 mg/L
Q_e = maximum effluent flow = 0.77 cfs
C_u = upstream concentration of pollutant = .125 mg/L
Q_u = upstream flow = 7115 cfs (7Q10)
%MZ = assume 25 percent mixing zone is authorized by the IDEQ

When determining the projected receiving water concentration, EPA's *Technical Support Document for Water Quality-based Toxics Controls* (TSD, 1991) recommends using the maximum projected effluent concentration. To determine the maximum projected effluent concentration (C_e) EPA has developed a statistical approach to better characterize the effects of effluent variability. The approach combines knowledge of effluent variability as estimated by a coefficient of variation (CV) with the uncertainty due to a limited number of data to project an estimated maximum concentration for the effluent. Once the CV has been calculated, the reasonable potential multiplier used to derive the maximum projected effluent concentration (C_e) can be found in Table 3-1 of EPA's TSD. A reasonable potential multiplier may vary from a low of 1 to a high of 368.

The maximum projected concentration (C_e) for the effluent is equal to the highest observed concentration value of the data set multiplied by the maximum projected concentration. Data from January 31, 1995 through January 31, 2001 was used to determine the maximum projected concentration. The highest value observed was 26.2 mg/L. The CV is 0.54. The reasonable potential multiplier is 1.59. The maximum projected concentration (C_e) is 26.2 mg/L (16.5 X 1.59).

The downstream receiving water concentration (C_d) is:

$$C_d = \frac{(C_e \text{ X } Q_e) + (C_u \text{ X } (Q_u \text{ X } \%MZ))}{Q_e + (Q_u \text{ X } \%MZ)}$$

$$C_d = \frac{(26.2 \text{ X } 0.77) + (0.125\text{X } (7115 \text{ X } 0.25)}{0.77 + (7115 \text{ X } 0.25)} = \quad 0.136 \text{ mg/L}$$

The projected concentration downstream is less than the chronic criterion for ammonia (0.200 mg/L), therefore, a water quality-based effluent limit is not required.

Total Residual Chlorine

In the case of the Snake River the beneficial use that needs to be protected is aquatic life. The acute criterion for chlorine is .019 mg/L and the chronic criterion is 0.011 mg/L. The acute criterion protects against short term impacts to aquatic life, and the chronic criterion protects against long term impacts to aquatic life.

When evaluating the effluent to determine if a water quality-based effluent limit (WQBEL) is needed based on chemical specific numeric criteria, a projection of the receiving water concentration (downstream of where the effluent enters the receiving water) for the pollutant of concern is made. If the projected concentration of the receiving water exceeds the applicable numeric criterion, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standards, and a WQBEL is required.

The following mass balance equation is used to determine the downstream receiving water concentration:

$$C_d = \frac{(C_e \text{ X } Q_e) + (C_u \text{ X } (Q_u \text{ X } \%MZ))}{Q_e + (Q_u \text{ X } \%MZ)}$$

where,
C_d = receiving water concentration downstream of the effluent discharge
C_e = maximum projected effluent concentration = 3.08 mg/L
Q_e = maximum effluent flow = 0.77 cfs
C_u = upstream concentration of pollutant = 0.0 mg/L
Q_u = upstream flow = 7115 cfs (7Q10)
%MZ = assume 25 percent mixing zone is authorized by the IDEQ

When determining the projected receiving water concentration, EPA's *Technical Support Document for Water Quality-based Toxics Controls* (TSD, 1991) recommends using the maximum projected effluent concentration. To determine the maximum projected effluent concentration (C_e) EPA has developed a statistical approach to better characterize the effects of effluent variability. The approach combines knowledge of effluent variability as estimated by a coefficient of variation (CV) with the uncertainty due to a limited number of data to project an estimated maximum concentration for the effluent. Once the CV has been calculated, the reasonable potential multiplier used to derive the maximum projected effluent concentration (C_e) can be found in Table 3-1 of EPA's TSD. A reasonable potential multiplier may vary from a low of 1 to a high of 368.

The maximum projected concentration (C_e) for the effluent is equal to the highest observed concentration value of the data set multiplied by the maximum projected concentration. Data from January 31, 1995 through January 31, 2001 was used to determine the maximum projected concentration. The highest value observed was 2.2 mg/L. The CV is 0.4. The reasonable potential multiplier is 1.4. The maximum projected concentration (C_e) is 3.08 mg/L (2.2 X 1.4).

The downstream receiving water concentration (C_d) is:

$$C_d = \frac{(C_e \text{ X } Q_e) + (C_u \text{ X } (Q_u \text{ X } \%MZ))}{Q_e + (Q_u \text{ X } \%MZ)}$$

$C_d =$ 0.00133 mg/L

The projected concentration downstream is less than the chronic criterion for chlorine (0.011) mg/L), therefore, a water quality-based effluent limit is not required. Since reasonable potential for chlorine was not indicated, the draft permit proposes technology-based limits of 0.5 mg/l (2.1 lbs/day) average monthly limitation and 0.75 mg/L (3.1 lbs/day) average weekly limitation.

APPENDIX C
ENDANGERED SPECIES ACT

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

On August 18, 2000, NMFS sent an e-mail to EPA Region 10 indicating that there are no listed or threatened species at the location of the City of Fruitland, Snake River Facility discharge.

The USFWS website for Snake County, Idaho identified the gray wolf and bald eagle as being federally-listed threatened species occurring in Payette County, Idaho (the location of the Snake River discharge). This list has not changed according to the updated species list (1-4-01-SP-827) dated June 1, 2001.

EPA has determined that the requirements contained in the draft permit will not have an impact on the gray wolf and bald eagle. Hunting and habitat destruction are the primary causes of declines of the gray wolf. Issuance of the draft NPDES permit for City of Fruitland, Snake River Facility, will not result in habitat destruction, nor will it result in changes in population that could result in increased habitat destruction. Furthermore, issuance of this draft permit will not impact the food sources of the gray wolf.

The primary reasons for the decline of the bald eagle are destruction of their habitat and food sources and widespread historic application of DDT. This permit will not impact any of these issues.

The gray wolf is included on the list as an experimental and non-essential population in the area. Habitat management plans are not developed for these populations. Therefore, EPA has determined that issuance of this permit will **not affect** any of the endangered species that may occur in the vicinity of the discharge.

APPENDIX D

MAP OF WASTEWATER TREATMENT PLANT LOCATION

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