FACT SHEET

NPDES Permit Number: ID-002021-4
Date:
Public Notice Expiration Date:

The United States Environmental Protection Agency (EPA) proposes to re-issue a National Pollutant Discharge Elimination System (NPDES) permit to:

CITY OF PRESTON
70 West Oneida
Preston, Idaho 83263

and requests the state of Idaho to certify this NPDES permit pursuant to 40 CFR Part 124.53.

NPDES Permit Re-Issuance

EPA proposes to re-issue an NPDES permit to the City of Preston. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant effluent to **Worm Creek** and transfer of sewage sludge (biosolids) to a surface disposal facility at the **Franklin County Landfill** pursuant to the provisions of the Clean Water Act (CWA).

This Fact Sheet includes:

- information on public comment, public hearing and appeal procedures;
- a description of the current discharge and biosolids practices;
- a listing of past and proposed effluent limitations, schedules of compliance and other conditions;
- a map and description of the wastewater discharge and surface disposal location; and
- detailed technical material supporting the conditions in the permit.

Idaho State Certification

EPA requests the Idaho Division of Environmental Quality to certify the NPDES permit for the City of Preston, under section 401 of the CWA. The state provided preliminary comments prior to the Public Notice period which have been incorporated or addressed into the fact sheet and draft permit.

Public Comment

Persons wishing to comment on or request a Public Hearing for the proposed 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 Hearing must be submitted to EPA as described in the Public Comments Section of the attached Public Notice.

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

Availability of Documents

The draft NPDES permit and other related documents can be obtained or reviewed 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 (EPA)
Region 10
Park Place Building, 13th Floor
1200 Sixth Avenue, OW-130
Seattle, Washington 98101
(206) 553-1214 or
1-800-424-4372

This material is also available from:

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

Preston City Office
70 West Oneida Street
Preston, Idaho 83263
(208)852-1817

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I. BACKGROUND

A. Applicant

City of Preston
Wastewater Treatment Plant (WWTP)

Facility Location:
1004 East 8 South
Preston, Idaho 83263

Mailing Address:
70 West Oneida
Preston, Idaho 83263

Facility Contact: Scott Martin, Public Works Director
(208)852-2930

B. Activity

The city of Preston is located in the southeastern corner of Idaho in the county of Franklin. The city owns and operates a municipal wastewater treatment plant that provides secondary treatment and disinfection of wastewater prior to discharge in Worm Creek, a tributary of the Cub River.

The plant receives domestic wastewater from residential and commercial sources; there are no significant industrial dischargers. The facility average design flow is 1.2 million gallons per day (mgd) with an instantaneous peak flow of 1.8 mgd. Details about the treatment process are discussed in Appendix A and a map showing the location of the facility is located in Appendix B.

C. Facility History. The existing wastewater treatment plant is the result of three major construction projects. The first primary treatment facility was constructed on-site in 1942, consisting of settling and anaerobic sludge digestion. Improvements to the primary system and secondary processes were added in 1966. The additions included a trickling filter, secondary clarifier, chlorine disinfection and head works (screening, comminution and mechanical grit removal). By the late 1970s, the treatment plant had begun to experience problems, both mechanical and loading in nature. This led to the most recent construction project in 1989 that resulted in the construction of a new facility using an oxidation ditch and UV disinfection.

D. Permit History

Date	Action
October 18, 1974	Initial permit issuance - contained compliance schedule to meet secondary treatment. Expiration date: December 31, 1976.
December 15, 1976	Permit modification to extend the expiration date to June 30, 1977.
June 29, 1978	Applied for 301(i) extension of the secondary treatment deadline.
February 1, 1979	Permit re-issuance. Effluent flow limit had been increased from 0.75 mgd to 2.0 mgd. Modification of pH range was changed to 6.5-9.0 from 6.0-9.0. Effluent biochemical oxygen demand (BOD_5) and total suspended solids (TSS) loadings were limited to 126 lb/day from 153 lb/day. Expiration date: March 1, 1984.
June 29, 1984	Permit re-issuance. Effluent BOD_5 and TSS loadings were increased to 153 lb/day. Storm sewer system conditions and disinfection requirements were added to the permit. Expiration date: June 28, 1989.
August 25, 1989	Permit re-issuance. Average monthly BOD_5 and TSS effluent loadings were increased to 300 lb/day. Average weekly and fecal coliform limits were added to the permit. Sludge management requirements were included in the permit. Expiration date: August 24, 1994
September 1, 1994	Application received for permit re-issuance.

E. Plant Performance

A review of the Discharge Monitoring Reports (DMRs) and Compliance Sampling Inspection Reports for the past five years shows that the existing Preston plant has had trouble complying with the terms of the current permit and have reported several violations. A summary of the plant performance for the past five years is provided in Table I-1.

The violations indicated in Table I-1 mainly occurred in 1993 and 1995, however the compliance inspections for 1996 and 1997 showed noncompliance with percent removal TSS and fecal coliform, and the 1997 inspection showed noncompliance

with percent removal BOD_5. These excursions may have occurred from infiltration and inflow (I/I) of groundwater contaminated with diesel fuel and oil (hereinafter referred to as "oil"). The oil is believed to have caused several past upset events that have interfered with the biological processes of the treatment facility. However, the plant operator has indicated that there has not been an oil problem with the recent irrigation season.

TABLE I-1. SUMMARY OF PLANT PERFORMANCE (1993 - 1998)

Parameter	Average Plant Performance	# Reported Violations
Flow	0.73 mgd	N/A
Effluent BOD_5	12.5 mg/L	10
	78 lbs/day	4
Effluent TSS	12.2 mg/L	12
	73 lbs/day	4
% Removal, BOD_5	89%	14
% Removal, TSS	92%	10
Fecal Coliform	53 colonies/100 mL	15
pH	within 6.30-8.80	1

II. RECEIVING WATER

Worm Creek, Idaho

The City of Preston WWTP effluent discharges to Worm Creek through outfall 001, located at latitude 42°04'27" and longitude 111°50'59". Worm Creek is located in the Bear River Basin. The creek flows southward approximately 15 miles into the Cub River in Cache County, Utah. During the irrigation season, much of Worm Creek is diverted for agricultural purposes.

The state of Idaho water quality standards (IDAPA, 1996) designates agricultural water supply, cold water biota and secondary contact recreation as uses and salmonid spawning and primary contract recreation as future uses for Worm Creek. Since Worm Creek is an interstate water, it also must meet Utah's water quality standards (UDEQ, 1994). The Utah standards classify Worm Creek as a Class 2B, 3B and 4 water body to be protected for secondary contact recreation, warm water species and agricultural uses.

III. EFFLUENT LIMITATIONS

Sections 101, 301(b), 304, 308, 401, 402 and 405 of the CWA provide the basis for the effluent limitations and other conditions in the draft permit. The EPA evaluates discharges with respect to these sections of the CWA and the relevant NPDES regulations in determining which conditions to include in the permit.

In general, EPA first determines which technology-based limits are required to be incorporated into the permit (40 CFR Part 122.44[a]), as well as best management practices or other requirements. Technology-based limits for municipal facilities are derived from secondary treatment standards (40 CFR Part 133.102) and based on end-of-pipe technology. However, the CWA requires NPDES permitted discharges to demonstrate compliance with state water quality standards.

Water quality-based limits are derived from state water quality standards to protect the water quality of state waters. Therefore, the effluent limitations are developed from technology available to treat the pollutants (technology-based limits) and limits that are protective of the designated uses of the receiving water (water quality-based limits). The proposed permit will reflect whichever limits (technology-based or water quality-based) are more stringent.

A. Summary of Draft Permit Limitations

For wastewater treatment plants, technology-based limits cover three parameters: five day Biochemical Oxygen Demand (BOD_5), total suspended solids (TSS) and pH. In the permit application, the City of Preston identified the following additional pollutants as being present in their discharge: fecal coliform bacteria, temperature, DO, fluoride, arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Fluoride, arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver were indicated as present because of a previous analysis that was performed on the treatment plant effluent. The analysis showed that these pollutants are present in levels well below the maximum allowable level for water quality. Therefore, the draft permit is proposing the effluent limitations for BOD, DO, fecal coliform, pH, and TSS and monitoring for temperature.

Table III-1 presents the City of Preston's proposed effluent limitations for their wastewater treatment plant. For comparison purposes, the table also shows the effluent limitations of the current permit.

TABLE III-1. PROPOSED EFFLUENT LIMITATIONS									
Parameter	**Units**	**Monthly Average**		**Weekly Average**		**Maximum Daily**		**Minimum Daily**	
		Current (1989)	**Draft (1998)**	**Current (1989)**	**Draft (1998)**	**Current (1989)**	**Draft (1998)**	**Current (1989)**	**Draft (1998)**
Ammonia	mg/L	---	2.10	---	---	---	3.89	---	---
	lb/day	---	21	---	---	---	39	---	---
BOD_5[1]	mg/L	30	30	45	45	---	---	---	---
	lb/day	300	300	450	450	---	---	---	---
DO	mg/L	---	---	---	---	---	---	---	6.0
Fecal Coliform	colonies / 100 mL	100	200[2]	200	200[3]	---	800	---	---
Nitrite as N	mg/L	---	2.11	---	---	---	6.56	---	---
	lb/day	---	40	---	---	---	66	---	---
pH	s.u.	---	---	---	---	9.0	9.0	6.0	6.5
Total Phosphorus[4]	mg/L	---	0.05	---	---	---	0.06	---	---
	lb/day	---	0.5	---	---	---	0.6	---	---
TSS[1]	mg/L	30	30	45	45	---	---	---	---
	lb/day	300	300	450	450	---	---	---	---

1 The average monthly percent removal shall be greater than 85% and calculated from the arithmetic mean of the influent and effluent values.
2 Based on a geometric mean of all samples taken in that month.
3 Based on a geometric mean of all samples taken in that week.
4 These limits are deferred until March 31, 2003.

B. Water Quality Criteria

1. The following Idaho water quality criteria are applicable to pollutants of concern for Worm Creek:

IDAPA 16.01.02.051.01 Antidegradation

IDAPA 16.01.02.060 Mixing Zone

IDAPA 16.01.02.200.02 Toxic Substances

IDAPA 16.01.02.200.03	Deleterious Materials
IDAPA 16.01.02.200.05	Floating, Suspended, or Submerged Matter
IDAPA 16.01.02.200.06	Excess Nutrients
IDAPA 16.01.02.200.07	Oxygen Demanding Materials
IDAPA 16.01.02.250.01	Primary and Secondary Contact Recreation (fecal coliform bacteria)
IDAPA 16.01.02.250.02.a	Aquatic Life (pH, dissolved oxygen [DO])
IDAPA 16.01.02.250.02.c	Cold Water Biota (DO, ammonia, turbidity)
IDAPA 16.01.02.250.2.d	Salmonid Spawning (DO, temperature)
IDAPA 16.01.02.420.01	Point source Sewage Wastewater Discharge Restrictions

2. The following Utah water quality criteria are applicable to pollutants of concern for Worm Creek:

R317-2-6	Mixing Zones
Table 2.14.1	Numeric Criteria for Domestic Purposes, Recreation, and Agricultural Uses (fecal coliform, DO, pH, turbidity, BOD, nitrate as N, phosphate as P)
Table 2.14.2	Numeric Criteria for Aquatic Wildlife (DO, temperature, pH, turbidity, ammonia as N, BOD, nitrate as N, phosphate as P)

C. Mixing Zone. Due to lack of data available for Worm Creek at Preston, Idaho, no mixing zone was used to calculate reasonable potential for any effluent parameter in the draft permit.

D. Evaluation of Effluent Limitations

1. Biochemical Oxygen Demand, five-day (BOD_5)

The City of Preston WWTP is a secondary treatment facility that is subject to the federal technology-based requirements for BOD_5. These requirements state that the 30-day average shall not exceed 30 mg/L, the 7-day average shall not exceed 45 mg/L, and the 30-day average percent removal shall not be less than 85 percent. Furthermore, the Idaho water quality standards require that sewage wastewater discharges limit BOD to the equivalent of 85 percent removal but not more than a 30-day average concentration of 30 mg/L.

Additionally, the Utah water quality standards require that BOD in the receiving water is less than 5 mg/L. The Utah boarder is located approximately six miles downstream of the point of discharge and there are several tributaries that add to the flow between the point of discharge and the Utah boarder. Therefore, it has been determined, using best professional judgement, that the effluent does not have the reasonable potential to violate this standard. Therefore, the technology-based limits will be the proposed limits in the draft permit.

The draft permit proposes the following BOD_5 limits: 30 mg/L (300 lb/day) average monthly limit, 45 mg/L (450 lb/day) average weekly limit, and >85% removal.

2. Deleterious Materials. The Idaho water quality standards require surface waters of the state to be free from deleterious materials in concentrations that impair designated beneficial uses.

The draft permit meets this requirement by meeting Idaho water quality standards.

3. Dissolved Oxygen (DO)

The Idaho water quality standards require surface waters of the state to be free from oxygen-demanding materials in concentrations that would result in an aerobic water condition. Additionally, these standards for Cold Water Biota and Salmonid Spawning require that the DO concentration exceed 6.0 mg/L at all times. Utah water quality standards for aquatic

wildlife and secondary contact recreation require a minimum dissolved oxygen level of 5.5 mg/L. Since the more limiting case applies, Idaho water quality standards for DO will be applied to this facility.

The draft permit is proposing that DO is >6.0 mg/L in the permittee's effluent at the point of discharge.

4. Fecal Coliform Bacteria

Fecal coliform is a non-pathogenic indicator species whose presence suggests the likelihood that pathogenic bacteria are present. Idaho water quality standards for secondary contact recreation require that fecal coliform bacteria shall not exceed 800 colonies/100 mL at any time, 400 colonies/100 mL in more than ten percent of the total samples taken over a thirty day period, and a geometric mean of 200/100 mL based on a minimum of five samples taken over a thirty day period. The disinfection requirements for sewage wastewater treatment plant effluent further state that fecal coliform concentrations in secondary treated effluent must not exceed a geometric mean of 200/100 mL based on no more than one week's data and a minimum of five samples.

The Utah water quality standards for secondary contact recreation require that fecal coliform bacteria shall not exceed a geometric mean of 200 colonies/100 mL over a thirty day period. Since the more limiting case applies, Idaho water quality standards for fecal coliform bacteria will be applied to this facility.

The draft permit is proposing the following fecal coliform limits: 800 colonies/100 mL maximum daily limit; 200 colonies/100 mL average weekly limit based on a geometric mean of all samples taken during the week; and 200 colonies/100 mL average monthly limit based on a geometric mean of all samples taken during the month. A review of the facility performance over the past five years indicates that the facility will be able to meet these limits.

5. 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. This includes any petroleum products

that cause a sheen or coating on the water surface. The size and extent of the sheen or coating should be documented in the facility's daily log book.

The draft permit proposes that the facility meet a narrative standard for floating, suspended or submerged matter.

6. Nutrients

Nutrients consist of phosphorus, nitrogen and carbon compounds. Idaho water quality standards require that surface waters of the United States within Idaho shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses. Furthermore, both Idaho and Utah water quality standards provide water quality criteria for nutrients.

The nutrients of concern for this facility are ammonia, nitrates, and phosphorus. The state of Idaho is adding Worm Creek to the list of impaired water bodies for nutrients and will be working on a TMDL to be issued in 2000. Studies (Ecosystem Research Institute, 1995 and 1998) performed on Worm Creek show that average annual loads in 1993 were from four to twelve times those measured in the Preston WWTP. This indicates that a concentrated source is entering the creek and high loads are not just a factor of high flows. This suggests that, although the WWTP contributes to nutrients and bacterial water quality problems in Worm Creek, it is not the major factor and nonpoint sources remain the primary concern for this tributary.

The state of Idaho has only developed a narrative criteria for excess nutrients and has aquatic life criteria for ammonia, whereas the state of Utah has aquatic life criteria for ammonia, total phosphorus, and nitrates.

a. Ammonia. The ammonia criteria is the same for both Idaho and Utah. Using the 95th percentile temperature (20°C) and pH (7.5) the acute criterion is 12 mg/L and the chronic criterion is 2.09. Since this water body is limited for nutrients, the criterion will be applied at the end-of-pipe (See Appendix C for calculations). The data from the 1995 Report shows that the facility can generally comply with end-of-pipe limits, but will need to operate the plant very efficiently.

The draft permit proposes the following Ammonia limits: 2.10 mg/L (21 lb/day) average monthly limit, 3.89 mg/L (39 lb/day) maximum daily limit.

b. Nitrite. Nitrification is the biological oxidation of ammonia to nitrate with nitrite formation as an intermediate. Since ammonia and nitrite forms of nitrogen are toxic, these are the ones that are limited. The aquatic life criterion in the state of Utah for nitrite is 4 mg/L. Since this water body is limited for nutrients, the criterion will be applied at the end-of-pipe (See Appendix C for calculations). The data from the 1995 Report shows that the facility can generally comply with end-of-pipe limits, but will need to operate the plant very efficiently.

The draft permit proposes the following Nitrite limits: 4.01 mg/L (40 lb/day) average monthly limit, 6.56 mg/L (66 lb/day)maximum daily limit.

c. Total Phosphorus.

Phosphorus as phosphate is one of the major nutrients required for plant nutrition and is essential for life. In excess of critical concentration, phosphates stimulate plant growths. This excess growth can lead to noxious plant growth, especially in lakes and reservoirs, and eutrophication or aging of waters.

The aquatic life criterion in the state of Utah for total phosphorus is 0.05 mg/L. Since this water body is limited for nutrients, the criterion will be applied at the end-of-pipe (See Appendix C for calculations). The data from the 1995 Report shows that the facility will not be able to meet this requirement and will need to conduct a treatment capability study, therefore, a schedule of compliance may be necessary. EPA anticipates that the City will work with the state to develop an acceptable compliance schedule.

The schedule of compliance includes major milestones which outline how the facility will come into compliance with the final limit before the end of the five year term of this permit. Federal requirements for schedules of compliance are specified under 40 CFR 122.47 and state of Idaho requirements are found at IDAPA 16.01.02.400.03. Anticipating a permit effective date of April

1999, a final compliance date of March 31, 2003, has been pre-selected to allow at least one year data to be collected from the facility for the next permit re-issuance. The actual dates will be determined from the compliance schedule developed by the City and the State. Additionally, the facility shall submit a report to EPA and the IDEQ in January of each year which outlines the progress made towards reaching the final compliance date.

The draft permit proposes the following Total Phosphorus limits: 0.05 mg/L (0.5 lb/day) average monthly limit, 0.06 mg/L (0.6 lb/day) maximum daily limit. However, these limits will be deferred until the final compliance date [March 31, 2003].

7. pH

The technology-based limitation, based on federal regulations (40 CFR Part 133.102) is 6.0 to 9.0 standard units. The Idaho water quality standards for aquatic life gives an allowable pH range of 6.5 to 9.5 standard units. Additionally, the Utah water quality standards gives an allowable pH range of 6.5 to 9.0 standard units for designated uses. Since the more limiting case applies, the lower limit of 6.5 and the upper limit of 9.0 will apply to the facility's effluent.

The draft permit proposes a pH limit of 6.5 to 9.0 standard units.

8. Temperature

The Idaho water quality standards have temperature criteria for cold water biota and salmonid spawning. Waters designated for cold water biota are required to exhibit water temperatures at or below twenty-two degrees C with a maximum daily average of no greater than nineteen degrees C. Alternatively, waters designated for salmonid spawning are required to exhibit water temperatures at or below thirteen degrees C with a maximum daily average of no greater than nine degrees C during the time periods for salmonid spawning and incubation for indicated species. Idaho Fish and Game indicated that Bonneville Cutthroat, Rainbow and Brook trout have been identified in the Bear River Basin and would very likely be found in Worm Creek. Therefore, the temperature criteria for salmonid spawning would apply from October 1 through July 15.

The Utah water temperature criteria for warm water species requires water temperatures to remain at or below twenty-seven degrees C with a maximum temperature increase of four degrees C.

Since the more limiting case applies, Idaho water quality standards for temperature apply to this facility. The facility has conducted some self-monitoring for temperature of their effluent. A comparison of effluent temperatures and Idaho water quality criteria are provided in Table III-2. This data shows that the facility will be able to meet the temperature requirements from July 16 through September 31, but there is some question whether they will be able to meet the temperature requirements from October 1 through July 15. The question comes from the lack of data for the receiving water, thus the effect of the effluent temperature on the receiving water is unknown.

TABLE III-2. IDAHO WATER QUALITY CRITERIA AND EFFLUENT DATA FOR TEMPERATURE

Date Applicable	Receiving Water Criteria		Effluent Data	
Oct 1 - Jul 15	Instantaneous maximum	≤13°C	Winter range	8.2 - 14.8°C
	Maximum daily average	≤9°C	Winter annual average	10.5°C
Jul 16 - Sep 31	Instantaneous maximum	≤22°C	Summer range	10.4 - 17.6°C
	Maximum daily average	≤19°C	Summer annual average	14.7°C

Since temperature has not historically been sampled for in the receiving water, no limits will be imposed on the facility. However, monitoring of temperature will be included as a condition of the permit to enable reasonable potential to be determined for the next re-issuance of the permit (see section on Monitoring for more details).

No limit for temperature is proposed in the draft permit.

9. Total Residual Chlorine (TRC)

The WWTP uses chlorine as a back-up for disinfection in the event of a power outage. The facility has not used this system since the construction of the oxidation ditch in 1989. Since this is a rare event with a short occurrence time, no limit will be imposed on the facility. However, monitoring of the effluent during the use of the chlorination system will be required.

No limit for TRC is proposed in the draft permit.

10. Total Suspended Solids (TSS)

The City of Preston WWTP is a secondary treatment facility that is subject to the federal technology-based requirements for TSS. These requirements state that the 30-day average shall not exceed 30 mg/L, the 7-day average shall not exceed 45 mg/L, and the 30-day average percent removal shall not be less than 85 percent. Furthermore, the Idaho water quality standards require that sewage wastewater discharges limit TSS to the equivalent of 85 percent removal but not more than a 30-day average concentration of 30 mg/L.

The draft permit proposes the following TSS limits: 30 mg/L (300 lb/day) average monthly limit, 45 mg/L (450 lb/day) average weekly limit, and >85% removal.

11. Toxic Substances

The Idaho water quality standards require surface waters of the state to be free from toxic substances in concentrations that impair designated beneficial uses. EPA has evaluated Preston's discharge in accordance with the Agency's policy for controlling the discharge of toxic substances. Because the City of Preston is a small community with no significant industrial wastewater contributors, the proposed permit does not include numeric effluent limitations to assess potential effluent toxicity. However, the draft permit does require that the permittee meet the narrative criteria of "no toxics in toxic amounts" be released to the environment and biomonitoring as required by the federal regulations (see Whole Effluent Toxicity section for biomonitoring requirements).

12. Turbidity

The Idaho water quality standards for cold water biota require that turbidity shall not exceed background turbidity by more than fifty NTU instantaneously or more than twenty-five NTU for more than ten consecutive days. Additionally, Utah water quality standards for secondary contact recreation and warm water species requires that turbidity shall not exceed background turbidity by more than ten NTU. Since turbidity is directly related to total suspended solids, the State has asserted that monitoring and limiting TSS shall prove protective of this requirement.

No limit for turbidity is proposed in the draft permit.

E. Antidegradation. In proposing to reissue this permit, EPA as considered Idaho's antidegradation policy. This provision states that "the existing instream water uses and the level of water quality necessary to protect the existing uses will be maintained and protected." This policy is designed to protect existing water quality when the existing water quality is better than that required to meet the standard and to prevent water quality from being degraded below the standard when existing quality just meets the standard. The draft permit will result in decreases in the authorized pollutant loadings to Worm Creek. Therefore, the draft permit will not result in degradation of water quality and is consistent with Idaho's antidegradation policy.

IV. MONITORING REQUIREMENTS

Section 308 of the CWA and federal regulation 40 CFR Part 122.44(i) requires that monitoring be included in permits to determine compliance with effluent limitations. Additionally, monitoring may be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality. Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. The permittee is responsible for conducting the monitoring and for reporting results with Discharge Monitoring Reports (DMRs) to EPA.

A. Effluent Monitoring. Table IV-1 presents the effluent monitoring requirements for the draft permit. For comparison purposes, the table also includes the monitoring requirements of the current permit. Where the requirements differ, a discussion will be provided in the table notes.

TABLE IV-1: EFFLUENT MONITORING FREQUENCY REQUIREMENTS

Parameter	Current Permit (1989)	Draft Permit (1998)
Ammonia as N[3]	NR[2]	1/week
BOD_5	2/week	2/week
DO[3]	NR[2]	2/week
Fecal Coliform Bacteria[3]	2/week	5/week
Flow	continuous	continuous
Nitrite as N[3]	NR[2]	1/week
pH[4]	daily	5/week
Total Phosphorus as P[3]	NR[2]	1/week
Temperature[3]	NR[2]	5/week
TSS	2/week	2/week
Total Residual Chlorine (TRC)[1,4]	daily	5/week

1 When used.
2 NR means Not Required.
3 New requirement to ensure compliance with Idaho water quality standards.
4 Changed to clarify number of samples; weekend sampling not required.

B. Ambient Monitoring. The purpose of ambient monitoring is to determine water quality conditions as part of the effort to evaluate the reasonable potential for the discharge to cause an instream excursion above water quality criteria. The draft permit requires the permittee to conduct quarterly ambient (in-stream) monitoring upstream and downstream of outfall 001. Upstream monitoring shall consist of ammonia, BOD_5, DO, flow, pH, fecal coliform bacteria, nitrites, total phosphorus and temperature. Downstream monitoring shall consist of ammonia, pH, total phosphorus and temperature.

V. SLUDGE MANAGEMENT

Since the issuance of the current permit, the sludge management regulations (40 CFR Part 503) have been promulgated. These regulations were designed so that the standards are directly enforceable against most users or disposers of sewage sludge, whether or not they obtain a permit. Therefore, the publication of Part 503 in the *Federal Register* on February 19, 1993, served as notice to the regulated community of its duty to comply with the requirements of the rule, except those requirements that indicate that the permitting authority shall specify what has to be done.

Even though Part 503 is largely self-implementing, Section 405(f) of the CWA requires the inclusion of sewage sludge use or disposal requirements in any NPDES permit issued to a Treatment Works Treating Domestic Sewage (TWTDS). In addition, the sludge permitting regulations in 40 CFR Parts 122 and 124 have been revised to expand its authority to issue NPDES permits with these requirements. This includes all sewage sludge generators, sewage sludge treaters and blenders, surface disposal sites and sewage sludge incinerators. Therefore, the requirements of 40 CFR Part 503 have to be met when sewage sludge is applied to the land, placed on a surface disposal site, placed on a municipal solid waste landfill (MSWLF) unit, or fired in a sewage sludge incinerator.

Requirements are included in Part 503 for 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 MSWLF unit, the sites where sewage sludge is either land applied or placed for final disposal, and for a sewage sludge incinerator. The sections of Part 503 applicable to this facility's proposed practices are Section A (General Provisions, 503.1-9), Section C (Surface Disposal, 503.19-29) and Section D (Pathogen & Vector Control, 503.30-33). Additionally, Part 503 requires compliance with Part 258 for disposal of sewage sludge in a landfill (MSWLF).

A. Activity

Preston's sludge is strictly domestic in nature. The sludge is wasted from the oxidation ditch and transported for dewatering in a gravity thickening unit for several months. The sludge is then drawn from the thickening unit, routed to a vertical screw press for further dewatering, and fed through a chute to a City maintenance truck bed for hauling to a separate sludge only surface disposal facility.

The sewage sludge disposal practices at the surface disposal site are regulated under the federal standards. Franklin County has submitted a separate NPDES

permit application (ID-002783-9) because the two facilities have separate owners and operators and there are separate requirements in the regulations for preparers (WWTP) and disposers (MSWLF) of sewage sludge. Basically, for surface disposal, the sludge from the City of Preston WWTP will be sent to the Franklin County Landfill and disposed in a ditch, separate from residential garbage, where it is allowed to dry for 24-hours before it is covered with soil. When the sludge is land filled, it is disposed in a ditch with the residential garbage and covered within 24-hours. A map showing the location of the Franklin County Landfill is located in Appendix B.

B. Sludge Management Requirements. To ensure compliance with the CWA and the federal standards for the use or disposal of biosolids (40 CFR Part 503), the draft permit contains the requirements of this section.

1. Health & Environment. The CWA Section 405(d)(4) requires that the environment and public health be protected from toxic effects of any pollutants in sludge using a combination of the national standards for some pollutants, and permits for the use of others. Therefore, the draft permit requires the permittee to handle and use or dispose of sludge in such a way as to protect human health and the environment. The permittee is also responsible for determining the pollutants allowed to accumulate in the sewage sludge and for preventing harm to human health and the environment from those pollutants.

2. State Laws and Future Federal Standards. The federal regulations (40 CFR Part 122.41[a]) require the permittee to comply with the standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement. Therefore, a condition has been incorporated into the draft permit that requires the permittee to comply with all existing federal and state laws, and all regulations applying to sewage sludge use and disposal.

3. Protection of Surface Waters from Sludge Pollutants. Section 405(a) of the CWA specifically prohibits any practice where sludge pollutants removed in a treatment works at one location would ultimately enter surface waters at another location without a specific permit. Under this requirement, the permittee is required to protect surface waters from release of pollutants (i.e., metals, nutrients, pathogens, etc.) contained in the sludge. Therefore, the draft permit includes a requirement for the

permittee to develop individual site practices to prevent the release of pollutants in sewage sludge to surface waters.

4. Pathogen and Vector Attraction Reduction. Since the sewage sludge is covered within 24 hours of placement at the surface disposal site, the facility is not required to meet one of the Class A or Class B pathogen reduction alternatives in Part 503.32 or the vector attraction reduction methods listed in Part 503.33. Therefore, the draft permit includes a requirement for the permittee to ensure that the surface disposal site covers the sludge within 24 hours.

5. Sludge Management Plan. The City has developed a sludge plan that details other sewage sludge disposal options if the disposal site is not available. The plan is currently being reviewed and must be approved by the Director and IDEQ prior to implementation. The only alternate option the City has indicated for this permitting period is landfill. Thus, the City will continue surface disposal of sewage sludge and will landfill the sludge if surface disposal is no longer an option.

C. Monitoring.

1. Surface Disposal. Part 503.26 requires surface disposal sites to monitor sewage sludge quality. Since the surface disposal site is owned and operated by the generator of the sewage sludge (City of Preston), the draft permit proposes that the permittee perform the sludge monitoring activities. This monitoring will consist of annual sampling and analysis of the parameters listed in Table V-1.

TABLE V-1. ANNUAL SLUDGE MONITORING REQUIREMENTS

Pollutants[1]	**Pathogens**	**Vector Attraction Reduction**
Arsenic	none	none
Chromium		
Nickel		

1 Percent solids of sewage sludge must be monitored to report pollutant concentrations on a dry weight basis.

2. Landfill. Part 503 does not impose monitoring requirements for the owner/operator of the MSWLF or the preparer (City of Preston WWTP).

However, 40 CFR Part 503.4 states that any person who prepares sewage sludge that is disposed in a MSWLF unit shall ensure that the sewage sludge meets the requirements in 40 CFR Part 258. The two main requirements that pertain to this facility are the exclusions for disposal of hazardous waste and liquids restrictions. To meet these requirements, the preparer must ensure the sewage sludge is not hazardous and that sewage sludge does not contain free liquids.

In order to demonstrate that the sludge disposed to the landfill is not hazardous, the draft permit proposes that the permittee conduct an annual Toxicity Characteristic Leaching Procedure (TCLP) test. Since the vector attraction treatment process (lime addition) produces a sludge that contains no free liquids, no requirement for free liquids testing (e.g., Paint Filter Liquids Test) is proposed in the draft permit.

VI. SPECIAL CONDITIONS

A. Quality Assurance Project Plan (QAPP). Under 40 CFR Part 122.41(e), the permittee is required to ensure adequate laboratory controls and appropriate quality assurance procedures in order to properly operate and maintain all facilities which it uses. Therefore, this permit requires the permittee to develop a QAPP that will assist in planning for the collection and analysis of samples in support of the permit and in explaining data anomalies when they occur. The proposed permit requires the permittee to submit a QAPP within 90 days of the effective date of the permit.

B. Best Management Practices (BMPs)

Section 402 of the CWA and federal regulation 40 CFR Part 122.44(k) authorize EPA to require best management practices (BMPs) in NPDES permits. BMPs are measures for controlling the generation of pollutants and their release to waterways. For municipal facilities, these measures are typically included in the facility Operation & maintenance (O&M) plans. These measures are important tools for waste minimization and pollution prevention.

The draft permit requires that the permittee develop a plan and implement BMPs within 180 days of permit issuance. EPA has a guidance manual (EPA, 1993) that may provide some assistance in the development of BMPs. Specifically, the permittee must consider spill prevention and control, optimization of chemical use, public education aimed at controlling the introduction of household hazardous materials to the sewer system and water conservation. Furthermore, it is

considered a good management practice to maintain a log of daily plant operations and observations. To the extent that any of these issues have already been addressed, the permittee need only reference the appropriate document/section in its O&M. Additionally, the BMP operating plan must be amended whenever there is a change in the facility or in the operation of the facility which materially increases the potential for an increased discharge of pollutants.

C. Whole Effluent Toxicity (WET)

WET tests are laboratory tests that use small vertebrate and invertebrate species or plants to measure the toxicity of an effluent. The municipal application regulations (40 CFR Part 122.21[j][1]) require POTWs with design influent flows equal to or greater than 1.0 mgd, and POTWs with approved pretreatment programs, to submit results of WET testing with their permit application. Additionally, EPA regulations at 122.44(d)(1) in effect require whole effluent data and criteria when characterizing effluents. The WET approach measures the aggregate effect of all toxicants in the effluent.

Since national criteria for toxicity have not been promulgated, Region 10 uses the chronic criterion of 1.0 TUc as recommended by the TSD (EPA, 1991). If no mixing zone is authorized, then the 1.0 TUc must be met at end-of-pipe. Since Worm Creek flows year round, it is reasonable to assume that dilution from the receiving water will lower the potential for toxic effects. However, the stream flow of Worm Creek has not been measured so it is difficult to determine the exact amount of dilution that would occur. Therefore, a trigger point of 1.5 TUc was determined to be protective of the receiving water designated uses for the duration of this permit. Monitoring for stream flows have been incorporated into the draft permit so that this trigger could be re-evaluated during the next permitting cycle.

The draft permit proposes that WET testing for two species be conducted semi-annually. However, if the tests from the first year indicate no toxicity, then the permittee is only required to repeat the toxicity testing in the fourth year. The results of the WET tests shall be submitted with the DMR and a final report will be due by the end of the month. The results of the WET tests shall be considered during permit re-issuance.

VII. OTHER LEGAL REQUIREMENTS

A. Endangered Species Act

The Endangered Species Act (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) if the agency's actions could beneficially or adversely affect any threatened or endangered species. Therefore, EPA requested a listing of threatened or endangered species in the vicinity of the City of Preston WWTP from NMFS and USFWS.

In a letter dated September 28, 1998, the US Fish and Wildlife Service (USFWS) did not identify any species that were listed in the area of the proposed discharge and further stated that the proposed project is unlikely to adversely impact any threatened or endangered species under its jurisdiction in Worm Creek. The National Marine Fisheries Service (NMFS) did not identify any listed, proposed, or candidate species in the vicinity of the proposed discharge in a letter dated November 17, 1998. Therefore, EPA has determined that issuance of this permit is not likely to adversely affect any species in the vicinity of the discharge.

B. State Certification. Since this permit authorizes discharge to Idaho State waters, Section 401 of the CWA requires EPA to seek state certification before issuing a final permit. This certification by the state ensures that federally issued permits are in compliance with the laws of the state. EPA is requesting Idaho State officials to review and provide appropriate certification to this NPDES permit pursuant to 40 CFR Part 124.53. Additionally, in accordance with 40 CFR Part 124.10(c)(1), public notice of the draft permit has been provided to the state of Idaho agencies having jurisdiction over fish, shellfish , and wildlife.

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

D. Facility Changes or Alterations. The facility is required to notify EPA of any planned physical alteration or operational change to the facility in accordance with 40 CFR Part 122.41(1). This requirement has been incorporated into the proposed permit to ensure that EPA and IDEQ are notified of any potential increases or changes in the amount of pollutants being discharged. This will allow evaluation of the impact of the pollutant loading on the receiving water.

E. Interstate Waters. Under 40 CFR Part 124.10(c)(1)(iii), EPA must give notice of this permit action to any affected state. Notice has been given to Utah Department

of Environmental Quality and other Utah state agencies (as defined in this regulation) potentially impacted by this action.

VIII. REFERENCES

Ecosystem Research Institute. 1998. *Water Quality Study for the Bear River in Idaho.* Report to the U.S. Bureau of Reclamation, Salt Lake City, Utah.

Ecosystem Research Institute. 1995. *Lower Bear River Water Quality Management Plan.* Report to Bear River Resource Conservation and Development Project, Logan, Utah.

EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control.* U.S. Environmental Protection Agency, Office of Water, EPA/505/2-90-001, March 1991.

EPA. 1993. *Guidance Manual for Developing Best Management Practices (BMP).* U.S. Environmental Protection Agency, Office of Water, EPA/833/B-93-004.

EPA. 1996. *U.S. EPA NPDES Permit Writer's Manual.* U.S. Environmental Protection Agency, Office of Water, EPA/833/B-96-003.

IDAPA. 1996. *Water Quality Standards and Wastewater Treatment Requirements.* Idaho Department of Health and Welfare Rules, Title 01, Chapter 02.

UDEQ. 1994. *Standards of Quality for Water of the State.* Utah Department of Environmental Quality, Division of Water Quality, Utah Administrative Code, R317-2.

IX. ACRONYMS

BMPs	Best management practices
BOD	Biochemical oxygen demand
BOD_5	Biochemical oxygen demand, five-day
°C	Degrees Celsius
CFR	Code of Federal Regulations
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EPA	U.S. Environmental Protection Agency

ESA	Endangered Species Act
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Division of Environmental Quality
lb	pounds
mg/L	milligrams per liter
mL	milliliter
MSWLF	Municipal solid waste landfill
N	Nitrogen
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NR	Not required
OW	Office of Water
P	Phosphorus
POTW	Publicly owned treatment works
QAPP	Quality assurance project plan
sp.	Species
TRC	Total residual chlorine
TSD	Technical Support document (EPA, 1991)
TSS	Total suspended solids
TWTDS	Treatment works treating domestic sewage
USFWS	U.S. Fish and Wildlife Service
WET	Whole effluent toxicity
WQBEL	Water quality-based effluent limit
WWTP	Wastewater treatment plant

APPENDIX A

PROCESS DESCRIPTION

HEAD WORKS

- Control box
- Flow measurement

PRIMARY TREATMENT

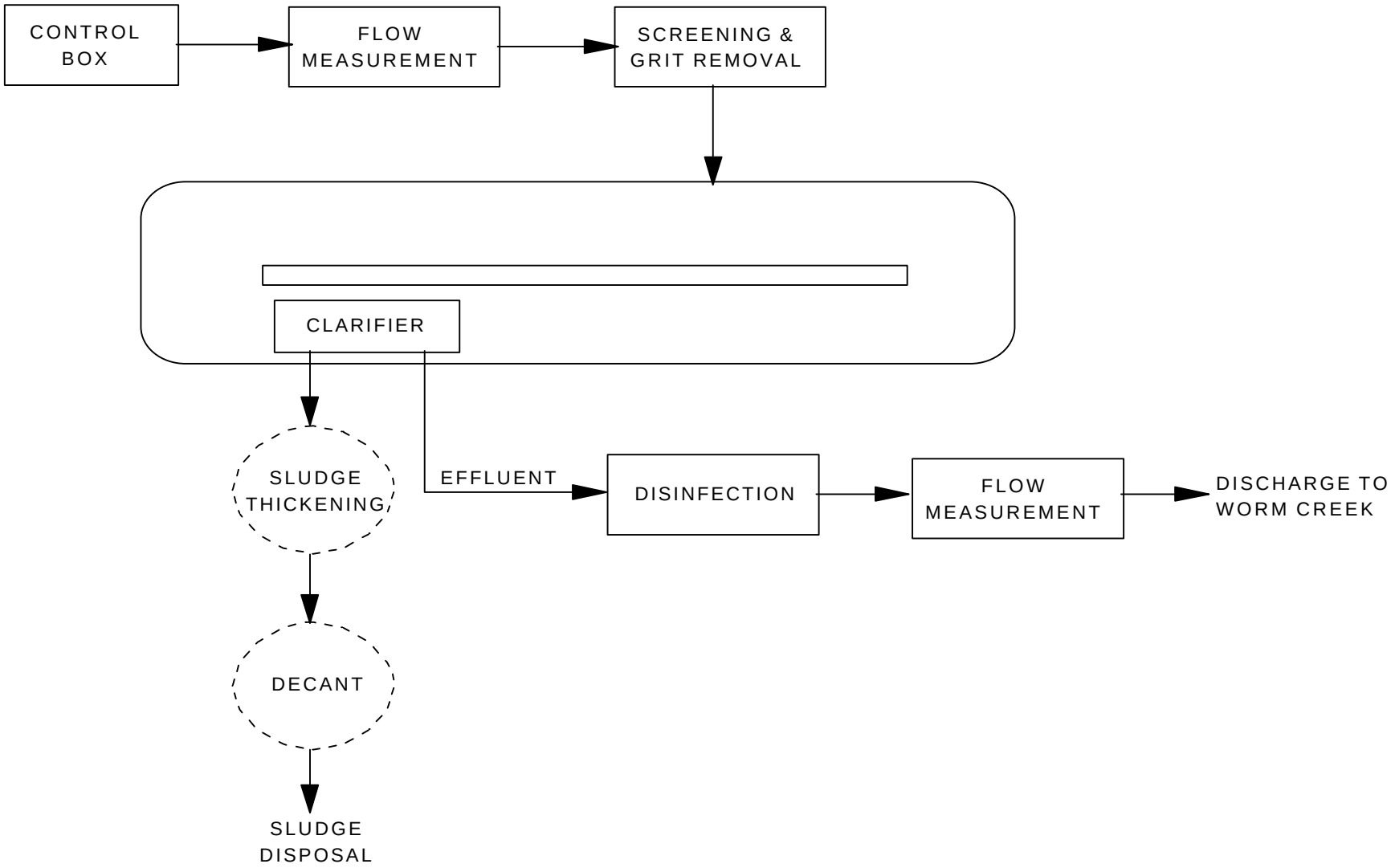
- Mechanical bar screen
- Grit removal

SECONDARY TREATMENT

- Oxidation ditch
- Rotors
- Boat clarifier
- UV disinfection
- Flow measurement

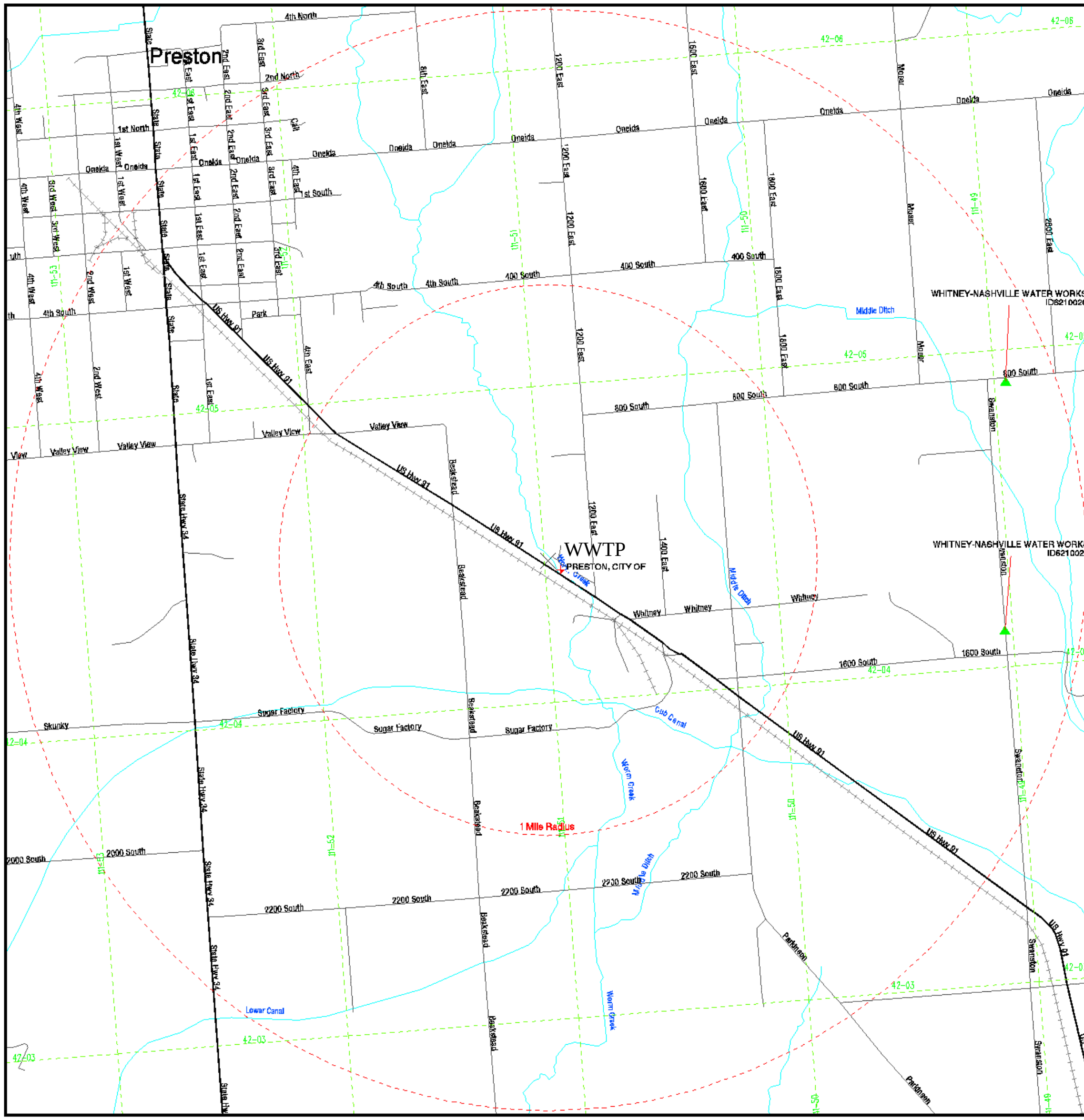
BIOSOLIDS HANDLING

- Gravity thickening
- Dewatering (chemical addition and vertical screw press)


CONTROL BOX
FLOW MEASUREMENT
SCREENING & GRIT REMOVAL
CLARIFIER
SLUDGE THICKENING
EFFLUENT
DISINFECTION
FLOW MEASUREMENT
DISCHARGE TO WORM CREEK
DECANT
SLUDGE DISPOSAL

APPENDIX B

MAP



Preston, Idaho

City of Preston WWTP

Lat: 42 4 27 Long: 111 50 59
FRANKLIN County, ID.

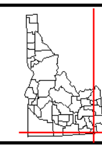
This computer representation has been compiled by the U.S. Environmental Protection Agency (EPA) from sources which have supplied data or information that has not been verified by the EPA. This data is offered here as a general representation only, and is not to be used for commercial purposes without verification by an independant professional qualified to verify such data or information. The EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any loss or injury resulting from reliance upon the information shown.

LEGEND

Note: Facility labeling turned off for categories with more than 50 points. Some facilities without good addresses may plot at zip code centroids. Facility points have been restricted to user specified area.

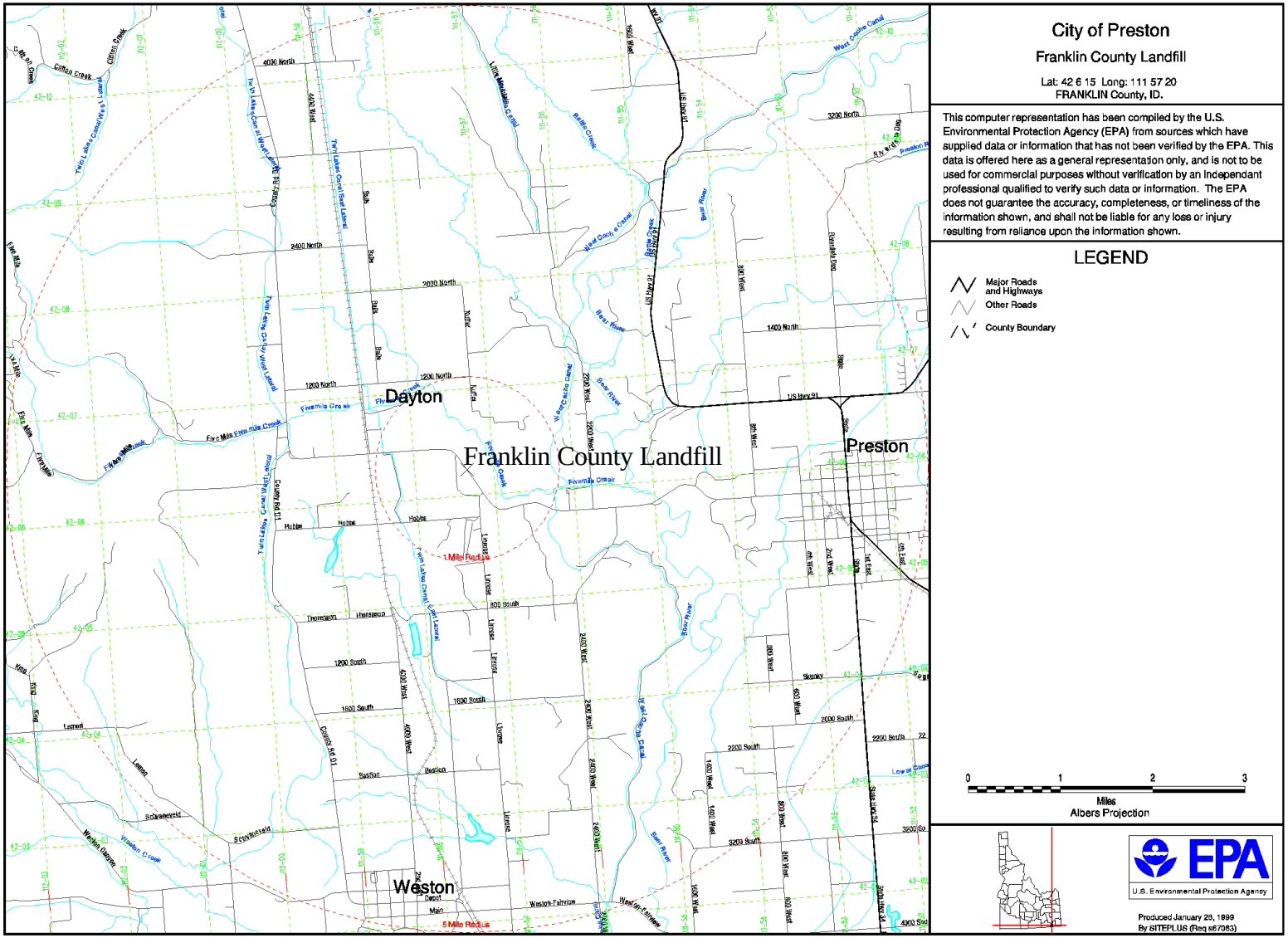
- PCS Facility Site
- Public Water Supply EPA SDWIS System
- Major Roads and Highways
- Other Roads
- National Park/Recreation Area
- County Boundary

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Miles
Albers Projection



EPA
U.S. Environmental Protection Agency

Produced November 04, 1998
By SITEPLUS (Req s56678b)


Franklin County Landfill
Dayton
Preston
Weston
1 Mile Radius
5 Mile Radius
City of Preston
Franklin County Landfill
Lat: 42 6 15 Long: 111 57 20
FRANKLIN County, ID.
This computer representation has been compiled by the U.S. Environmental Protection Agency (EPA) from sources which have supplied data or information that has not been verified by the EPA. This data is offered here as a general representation only, and is not to be used for commercial purposes without verification by an independant professional qualified to verify such data or information. The EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any loss or injury resulting from reliance upon the information shown.
LEGEND
Major Roads and Highways
Other Roads
County Boundary
0 1 2 3
Miles
Albers Projection
EPA
U.S. Environmental Protection Agency
Produced January 29, 1999
By SITEPLUS (Req s67083)

APPENDIX C

CALCULATIONS

AMMONIA

1. Waste load allocations: Criteria applied end-of-pipe
   $WLA_{a,c}$=12 mg/L
   WLA_c=2.09 mg/L

2. Calculate long term averages
   $LTA_{a,c}=WLA_{a,c}\cdot\exp(0.5\sigma^2-z\sigma)$ (EPA, 1991, Table 5-1 Acute)
   CV=ratio of standard deviation to mean=1.3
   $\sigma^2=\ln(CV^2+1)=0.990$
   $\sigma=0.995$
   $z_{99}=2.326$
   $LTA_{a,c}$=1.95 mg/L

   $LTA_c=WLA_c\cdot\exp(0.5\sigma_4^2-z\sigma_4)$ (EPA, 1991, Table 5-1 Chronic)
   $\sigma_4^2=\ln(CV^2/4+1)=0.352$
   $\sigma_4=0.594$
   LTA_c=0.63 mg/L

3. Lowest LTA: LTA_c=0.63 mg/L

4. Calculate MDL concentration and loading
   $MDL=LTA_c\cdot\exp(z\sigma-0.5\sigma^2)$ (EPA, 1991, Table 5-2 Maximum Daily Limit)
   MDL= <u>3.89 mg/L</u>
   MDL load=(3.89 mg/L)(1.2 mgd)(8.34)= <u>39 lbs/day</u>
   design flow=1.2 mgd

5. Calculate AML concentration and loading
   $AML=LTA_c\cdot\exp(z\sigma_n-0.5\sigma_n^2)$ (EPA, 1991, Table 5-2 Average Monthly Limit)
   n=4 (# samples per month)
   AML= <u>2.10 mg/L</u>
   AML load=(2.10 mg/L)(1.2 mgd)(8.34)= <u>21 lbs/day</u>

NITRITE

1. Waste load allocation: Criteria applied end-of-pipe
   WLA_c=4 mg/L

2. Calculate long term average
   $LTA_c=WLA_c \cdot \exp(0.5\sigma_4^2-z\sigma_4)$ (EPA, 1991, Table 5-1 Chronic)
   CV=ratio of standard deviation to mean=0.6
   WLA multiplier=$\exp(0.5\sigma_4^2-z\sigma_4)$=0.527 (EPA, 1991, Table 5-1 99th percentile)
   LTA_c=2.11 mg/L

3. Calculate MDL concentration and loading
   $MDL=LTA_c \cdot \exp(z\sigma-0.5\sigma^2)$ (EPA, 1991, Table 5-2 Maximum Daily Limit)
   LTA multiplier=$\exp(z\sigma-0.5\sigma^2)$=3.11 (EPA, 1991, Table 5-2 99th percentile)
   MDL= <u>6.56 mg/L</u>
   MDL load=(6.56 mg/L)(1.2 mgd)(8.34)= <u>66 lbs/day</u>
   design flow=1.2 mgd

4. Calculate AML concentration and loading
   $AML=LTA_c \cdot \exp(z\sigma_n-0.5\sigma_n^2)$ (EPA, 1991, Table 5-2 Average Monthly Limit)
   n=4 (# samples per month)
   LTA multiplier=$\exp(z\sigma_n-0.5\sigma_n^2)$=1.90 (EPA, 1991, Table 5-2 95th percentile)
   AML= <u>4.01 mg/L</u>
   AML load=(4.01 mg/L)(1.2 mgd)(8.34)= <u>40 lbs/day</u>

TOTAL PHOSPHORUS

1. Waste load allocation: Criteria applied end-of-pipe
   WLA_c=0.05 mg/L

2. Calculate long term average
   $LTA_c=WLA_c \cdot \exp(0.5\sigma_4^2-z\sigma_4)$ (EPA, 1991, Table 5-1 Chronic)
   CV=ratio of standard deviation to mean=0.2
   WLA multiplier=$\exp(0.5\sigma_4^2-z\sigma_4)$=0.797 (EPA, 1991, Table 5-1 99th percentile)
   LTA_c=0.0399 mg/L

3. Calculate MDL concentration and loading
   $MDL=LTA_c \cdot \exp(z\sigma-0.5\sigma^2)$ (EPA, 1991, Table 5-2 Maximum Daily Limit)
   LTA multiplier=$\exp(z\sigma-0.5\sigma^2)$=1.55 (EPA, 1991, Table 5-2 99th percentile)
   MDL= <u>0.06 mg/L</u>
   MDL load=(0.06 mg/L)(1.2 mgd)(8.34)= <u>0.6 lbs/day</u>
   design flow=1.2 mgd

4. Calculate AML concentration and loading
   $AML=LTA_c \cdot \exp(z\sigma_n-0.5\sigma_n^2)$ (EPA, 1991, Table 5-2 Average Monthly Limit)
   n=4 (# samples per month)
   LTA multiplier=$\exp(z\sigma_n-0.5\sigma_n^2)$=1.25 (EPA, 1991, Table 5-2 95th percentile)
   AML= <u>0.05 mg/L</u>
   AML load=(0.05 mg/L)(1.2 mgd)(8.34)= <u>0.5 lbs/day</u>