

## RESPONSE TO COMMENTS

Permittee: City of Hansen  
Wastewater Treatment Facility  
Permit No.: ID-002244-6

**Background:** On September 24, 1997, EPA proposed to reissue the NPDES permit for the City of Hansen Wastewater Treatment Facility. The draft permit included wasteload allocations of the recently completed *Middle Snake River Watershed Management Plan* (Management Plan). The Management Plan addresses total phosphorus loading in the Middle Snake River. The public notice of the proposal initiated a 45-day comment period which expired on November 10, 1997. This document summarizes the comments EPA received regarding the City of Buhl draft permit and EPA's response to those comments.

**Comment 1.** *Daily limitations for fecal coliform are not necessary. Given the mixing zone for fecal coliforms, the current weekly and monthly limitations seem reasonable for this facility.*

### **Response.**

According to the State of Idaho Water Quality Standards, the Snake River at the point of discharge from the City of Hansen Wastewater Treatment Plant (WWTP) is protected for primary and secondary contact recreation. Under section 16.01.02250.01a. of the Idaho Water Quality Standards, between May 1 and September 30, waters designated for primary contact recreation must not contain fecal coliform bacteria in concentrations exceeding 500/100 mL at any time, and 200/100 mL in more than 10 percent of the total samples taken over a thirty day period, and a geometric mean of 50/100 mL based on a minimum of five samples taken over a thirty day period.

Waters designated for secondary contact recreation (IDAPA section 16.01.02250.01b.) are not to contain fecal coliform bacteria in concentrations exceeding 800/100 mL at any time. The daily maximum fecal coliform limit in the proposed permit is based directly on this maximum allowable concentration.

Section 16.01.02420.05a. of the Idaho Water Quality Standards, "Disinfection Requirements for Sewage Wastewater Treatment Plant Effluent" requires 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 worth of data and a minimum of five samples. The weekly average limit in the proposed permit is based directly on this fecal coliform concentration.

The Clean Water Act requires that limitations in permits meet state water quality standards. Because the daily maximum and weekly average fecal coliform limits in the proposed permit are based on the Idaho water quality standards they will be retained in the final permit. This was

discussed with the State of Idaho<sup>1</sup> and the State concurred that the daily and weekly fecal coliform limits should be retained in the final permit.

**Comment 2.** *Daily and monthly limitations for phosphorus. EPA received a number of comments regarding the appropriate term for the phosphorus limitation (i.e. daily, monthly, or some other averaging period).*

EPA proposed a monthly and daily limitation for phosphorus. The Idaho Department of Environmental Quality (DEQ) provided the following comment in a letter dated November 6, 1997: “Deletion of the total phosphorus daily limit should be considered. Phosphorus, biologically does not have a “toxic” effect and is not a toxic rather a pollutant of concern. It seems that a daily limit does not have significance if a monthly average limit is observed.”

Other comments regarding the inclusion of the daily limit include:

- use of a daily limitation for wastewater treatment facilities located in temperate climates, could, depending upon the amount of reduction required, eliminate the use of biological nutrient removal (BNR) as an option due to operating performance
- EPA is being arbitrary and capricious and other Regions and States have allowed only quarterly or rolling annual averages for phosphorus limitations.
- In order to participate in effluent trading, annual or quarterly limits would be required. Daily limits are not relevant in an effluent trading situation between point/nonpoint sources.

**Response.**

The NPDES regulations at 40 CFR 122.45(d) require that all permit limits be expressed, unless impracticable, as both average monthly limits (AMLs) and maximum daily limits (MDLs) for all discharges other than publicly owned treatment works (POTWs), and as average weekly limits (AWLs) and AMLs for POTWs.

The objective in setting effluent limits is to establish limits that will result in the effluent meeting the wasteload allocation (WLA) under normal operating conditions virtually all the time. While not possible to guarantee, through permit limits, that a WLA will never be exceeded, it is possible to use procedures which can account for extreme values. Permit limits can be established

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<sup>1</sup> Phone conversation, Patty McGrath (EPA) with McMasters (IDEQ). April 14, 1998.

that will have low statistical probability of exceeding the WLA and will achieve the desired loading. The statistical procedures used by EPA to determine effluent limitations are described in the Technical Support Document for Water Quality-based Toxics Control (EPA March 1991). As discussed in the fact sheet accompanying the draft permit, EPA followed the statistical procedures of the TSD in developing the AML and MDL for facilities in the Middle Snake River watershed, including the City of Hansen.

Developing both an average monthly limit and a maximum daily limit (average weekly limit for POTWs) meets the requirements of EPA regulations and also assures that the long-term average loading requirements of total phosphorus to Middle Snake River system, as specified in the management plan, is being met. Having both an AML and MDL also ensures good performance of the treatment system. Setting a MDL establishes an upper bound on effluent values used to determine the monthly average and provides a measure of effluent compliance during operational periods between monthly sampling.

One commenter expressed the concern that a daily limit may eliminate the use of biological nutrient removal (BNR) as an option due to operating performance. BNR is a type of enhanced activated sludge treatment process that causes/allows the return activated sludge to become anoxic (usually by installing an anoxic tank in the return piping between pump station and the mixing chamber at the head of the aeration basins). When the sludge become anoxic, the bacteria begin to uptake the phosphates (presumably to use the oxygen on the phosphate for respiration, leaving elemental phosphorus or complex organic phosphorus as the end-product). This process can be effective in controlling phosphates, but because it is biological, it is susceptible to the same concerns as activated sludge performance during cold weather situations. The commenter states that this technology can reduce phosphorus by 80-85%. The Management plan requires a 20% reduction for food processors and a 34% reduction for POTWs, at the end of five years. Both of these reductions are measured from the monthly average, not the daily limitations, and are significantly less than BNR potential optimal performance. Furthermore, analysis of phosphorus data for the two food processing facilities suggest that more effort is needed to meet the proposed AML rather than the short-term proposed MDL. The monthly average values for the two food processing facilities exceeded the proposed AML 87% and 76 % of the time. For both facilities the daily values exceeded the proposed MDL only 9% of the time. Site specific analysis would need to be conducted to determine if BNR is precluded by the inclusion of a MDL but no evidence has been presented that would indicate that the phosphorus reductions, small relative to BNR reduction potential, could not be met with this technology in this watershed.

EPA is also interested in pursuing market-based incentives, such as effluent trading, to reduce nutrient loading in the Mid-Snake River watershed. At this point no trades have been established or proposed and therefore are not reflected in this permit modification or reissuance. Should trades be established at a later date EPA will work with the participating parties in order to facilitate trades and to establish appropriate mechanisms to make the trades enforceable.

EPA will include the AML and MDL for phosphorus as proposed for the food processors as required by the regulation. For POTWs in the Mid-Snake watershed, EPA will drop the MDL and instead have an AML and an average weekly limitation (AWL), also consistent with the regulation. No evidence has been presented during the comment period that these limitations, which are based on targets established in the approved management plan, “are impracticable” as cited by the regulations. The MDL of 5.5 lbs/day in the proposed permit was dropped and a weekly limitation of 6.6 lbs/day was added. The AWL was calculated using an n of 4 samples per month, a default coefficient of variation (CV) of 0.6, and the corresponding MDL/AML ratio in Table 5-3 of the TSD.

After reviewing the comments EPA realizes that sampling once during the month, as proposed for small POTWs in the Mid-Snake watershed, is not adequate in order to determine compliance with the average monthly limitation (weekly sampling was proposed for food processors and larger municipal facilities in the watershed). For this reason, EPA is requiring weekly sampling for phosphorus for all municipal and food processing facilities in the Middle-Snake River. This requirement increases assurance that the average monthly limitation is being met by averaging four or five weekly samples a month versus one sample. It is also consistent with the weekly, monthly effluent limitations of the permit.

**Comment 3.** *The facility requested that BOD<sub>5</sub> and TSS sampling be reduced to 4 per month from 1 per week.*

**Response.** The permit has been revised accordingly.

### **Other Changes to the Draft Permit**

Endangered Species Consultation: The U.S. Fish and Wildlife Service has issued a Biological Opinion on the effects of EPA issuing this and eight other NPDES permits that authorize discharge into the Middle Snake River. The Services’s opinion is that the proposed action is not likely to jeopardize the continued existence of listed snail species in the action area. The opinion also includes an “Incidental Take Statement”. Under the terms of Section 7(b)(4) and Section 7(o)(2) of the Endangered Species Act, take of species that is incidental to an agency’s action is not prohibited provided that such taking is in compliance with the terms and conditions of the Incidental Take Statement. The Service identified eight “reasonable and prudent measures” that must be addressed by EPA in order to minimize incidental take. As described in the Biological Opinion, measures listed in the Incidental Take Statement are “non-discretionary, and must be implemented by the EPA so that they become binding conditions of any grant or permit issued to the applicant...”

In order to meet the conditions specified in the Incidental Take Statement, EPA has revised the twenty-four hour notice of noncompliance reporting requirements in section II

of the permit. The permittee shall report conditions that endanger listed snail species to both EPA and the U.S. Fish and Wildlife Service within 24 hours from the time a permittee becomes aware of the circumstances. Likewise, written reports on noncompliance occurrences that endanger listed Snake River snails must be sent to the Service. Changes to address these reporting requirements have been made to the final permit. No other revisions to the NPDES permit language are necessary to address the conditions of the Biological Opinion.