

## RESPONSE TO COMMENTS

Permittee: City of Buhl  
Wastewater Treatment Facility  
Permit No.: ID-002066-4

**Background:** On September 24, 1997, EPA proposed to reissue the NPDES permit for the City of Buhl 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.** *The City of Buhl cannot meet the Total Suspended Solids (TSS) limitations of 70 mg/L (average monthly) and 105 mg/L (average weekly) during summer months without a major upgrade to the lagoon system.*

### Response.

The City submitted yearly summaries of TSS analysis for 1996 and 1997 indicating the following:

TSS Discharge	
Range	8.0 - 148.4 mg/L
95th percentile of high values	131.9 mg/L
95th percentile of low values	77.4 mg/L

The information shows that based on present operations, the facility is not able to meet the current limits. The current limits are based on Idaho regulations at IDAPA 16.01.02420.01(b)(ii) which specify that TSS shall not exceed a thirty-day average of 70 mg/L. It appears that the monthly average value was multiplied by 1.5 in order to obtain a Best Professional Judgment (BPJ) weekly average limitation of 105 mg/L.

The State will not certify increasing the weekly average limitation from current limitations.<sup>1</sup> Instead, they recommend that sampling for TSS be modified, in order to avoid the increased algae growth. The current limits will be retained.

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<sup>1</sup> Telephone conversation with Narvaez (EPA) and McMasters (DEQ), April 16, 1998.

**Comment 2.** *With algae growth in the lagoon system, the pH limitation of 6.5 to 9.0 cannot be met during the summer months.*

**Response**

Regulations at 40 CFR Part 133.102(c) allow for pH greater than 9.0 when it is demonstrated by the POTW that

- inorganic chemicals are not added as part of the treatment process, and
- contributions from industrial sources do not cause the pH of the effluent to less than 6.0 or greater than 9.0.

The facility can easily meet the lower limitation of pH of at least 6.0, and the summer time excursions appear to be attributable to algae growth. For those reasons, EPA is revising the permit limitations to require a **pH range of 6.5 to 9.5**. The upper bound is based on State of Idaho regulations at IDAPA 16.01.02250.02(a)(i), which requires a pH range of 6.5 to 9.5. In order for the permittee to be allowed to discharge at a pH greater than 9.5, they must apply to the State for a variance from this state water quality standard.

**Comment 3.** *Sixty days from the effective date of the permit is not sufficient time in which to write the Quality Assurance Plan (QAPP) and have it approved by the city Council, which only meets once per month.*

**Response.** The permit has been revised to allow for the submittal of the plan within 120 days of the effective date of the permit.

**Comment 4.** *The sample type for fecal coliform bacteria in the draft permit is required to be a grab-composite. Fecal coliform testing procedures call for grab samples.*

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

**Other Changes to the Permit**

1. “Grab-composite” was defined and clarified. A grab-composite consists of a minimum of 3 aliquots over an 8-hour period.
2. Fecal coliform sampling was decreased to 5 samples per month from 5 samples per week. 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 secondary contact recreation.

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 weeks 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>2</sup> and the State concurred that the daily and weekly fecal coliform limits should be retained in the final permit.

3. The City of Buhl plans to store the sewage sludge generated at their wastewater treatment facility in the lagoons for the life of the permit. All references to crop trials and other permitted disposal sites have been removed from the permit.
4. The total phosphorus daily limits have been removed, weekly limitations have been added, and monitoring frequency increased to 4 times per month from once per month.

Based on similar comments received from the State and other permittees covered under the Management Plan, daily limitations for total phosphorus have been removed, but weekly limitations have been added and monitoring for total phosphorus has been increased to 4 times per month from monthly.

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.”

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<sup>2</sup> Phone conversation, Patty McGrath (EPA) with McMasters (IDEQ). April 14, 1998.

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.

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 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.

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 29.1 lbs/day in the proposed permit for the City of Buhl was dropped and a weekly limitation of 34.8 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 of 2.01 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 and monthly effluent limitations of the permit.

5. 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.