Response to Comments on the Draft NPDES Permit for the City of Kuna

EPA Region 10
April 2009
NPDES Permit #ID-002835-5

Background

On June 13, 2007, EPA issued a public notice of the availability of a draft NPDES permit for the City of Kuna (2007 draft permit). Following the close of the initial public comment period, the Idaho Department of Environmental Quality (IDEQ) modified the Lower Boise River Total Maximum Daily Load (TMDL) to include wasteload allocations for sediment and bacteria for the City of Kuna. EPA reopened the public comment period on October 27, 2008 to take comments on the changes to the draft permit that resulted from the revision to the Lower Boise River TMDL and from comments received during the 2007 public comment period (2008 draft permit).

This document provides responses to all of the comments received on the draft permits during both public comment periods. Any revisions to the permit identified in this document are revisions that were made to the most recent (October 2008) draft permit that was made available for public comment. Any changes reflected in the 2008 draft permit, relative to the 2007 draft permit, were explained in the 2008 fact sheet.

Response to Public Comments on the Draft NPDES Permit

EPA received comments on the draft NPDES Permit from Keller Associates, on behalf of the City of Kuna (Kuna), the City of Nampa, Idaho (Nampa), the City of Boise (Boise), the Association of Idaho Cities (AIC), Veolia Water North America-West LLC (Veolia), the Lower Boise Watershed Council (LBWC), and from Mr. Andy Tiller of Nampa, Idaho.

Section 1: Comments Concerning Water Quality-based Effluent Limits for Total Phosphorus

Comment #1-1

Kuna, AIC, LBWC, and Boise all requested that the phosphorus limits be made less stringent than those proposed in the draft permits and fact sheets. All of these commenters requested that the phosphorus limit be changed to 200 µg/L, and requested that the phosphorus limit be expressed as a seasonal average limit (May – September) instead of the 70 µg/L monthly average and 105 µg/L weekly average limits proposed in the draft permit. The commenters referenced the *Lower Boise River Implementation Plan Total Phosphorus* (IDEQ 2008) and the March 2007 draft *Lower Boise River Total Maximum Daily Load Total Phosphorus*, both prepared by IDEQ and the Lower Boise Watershed Council. These documents contain wasteload allocations of 200 µg/L for most of the point sources in the Lower Boise watershed (*see* the *Lower Boise River Implementation Plan Total Phosphorus* at Table 12 and the draft *River Total Maximum Daily Load Total Phosphorus* at Exhibit 24).

Response #1-1

The commenters are correct that the March 2007 draft *Lower Boise River Total Maximum Daily Load Total Phosphorus* and the *Lower Boise River Implementation Plan Total Phosphorus* contain wasteload allocations that are, in general, equal to 200 µg/L total phosphorus. EPA is required by 40 CFR 122.44(d)(1)(vii)(B) to include effluent limits in NPDES permits, which are "consistent with the assumptions and requirements of any available wasteload allocation prepared by the state *and approved by EPA* pursuant to 40 CFR 130.7" (emphasis added). IDEQ has not sought EPA approval of a wasteload allocation for phosphorus, for this watershed, pursuant to 40 CFR 130.7. Thus, EPA has not approved the allocations in the *Lower Boise River Implementation Plan Total Phosphorus* or the draft *Lower Boise River Total Maximum Daily Load Total Phosphorus* and there is no "available wasteload allocation prepared by the state and approved by EPA pursuant to 40 CFR 130.7," for phosphorus, for this discharge. Therefore, an EPA-approved TMDL does not exist for phosphorus for this discharge and EPA is not required by 40 CFR 122.44(d)(1)(vii)(B) to include effluent limits which are "consistent with the assumptions and requirements" of the *Lower Boise River Implementation Plan Total Phosphorus*.

Section 301(b)(1)(C) of the Clean Water Act and 40 CFR 122.44(d) require EPA to calculate effluent limits for this discharge that are necessary to meet water quality standards. In addition, since the City of Kuna WWTP is a new discharger, the discharge of phosphorus must neither cause nor contribute to the violation of water quality standards (40 CFR 122.4(i)).

The basis for the phosphorus limits in the draft permits (which were identical in both the 2007 and 2008 draft permits) is explained in the 2007 fact sheet, in Appendix E. The phosphorus effluent limits are based on Idaho's narrative criterion for nutrients (IDAPA 58.01.02.200.06) and upon 40 CFR 122.44(d)(1)(vi), which states that, where a State has not developed a numeric criterion for a specific pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contribute to an excursion above the narrative criterion, the permitting authority must establish effluent limits using one or more of three options provided in the rule. These are:

- Establish effluent limits using a calculated numeric water quality criterion that the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use (40 CFR 122.44(d)(1)(vi)(A)), or
- Establish effluent limits using EPA's water quality criteria, published under Section 304(a) of the Clean Water Act (40 CFR 122.44(d)(1)(vi)(B)), or
- Establish effluent limits on an indicator parameter for the pollutant of concern (40 CFR 122.44(d)(1)(vi)(C)).

The discharge has the reasonable potential to cause or contribute to excursions above water quality standards for total phosphorus (Page E-1 of the 2007 fact sheet). Therefore, EPA is required to develop water quality-based effluent limits for total phosphorus (40 CFR 122.44(d)(1)(i – iii)). As stated in the 2007 fact sheet (Page E-1), EPA has, in this case, based the phosphorus effluent limits on a calculated numeric water quality criterion for total phosphorus, which will attain and maintain applicable narrative water quality criteria and will fully protect the designated use (40 CFR 122.44(d)(1)(vi)(A)). When a water quality-based effluent limit is established in an NPDES permit, the permitting authority must ensure that "the

level of water quality to be achieved by limits on point sources…is derived from and complies with all applicable water quality standards" (40 CFR 122.44(d)(1)(vii)(A)). The calculated numeric water quality criterion, in this case, is 70 µg/L total phosphorus. As stated in the 2007 fact sheet, the source for that figure is the Snake River Hells' Canyon TMDL which has been approved by EPA.

EPA recognizes that the Snake River Hells Canyon TMDL's 70 µg/L load allocation for the Boise River applies at the mouth of the Boise River (see the 2007 fact sheet at Page E-1). However, as is also stated in the 2007 fact sheet (Page E-2), concentrations of phosphorus in both the Boise River and Indian Creek far exceed 70 µg/L. Thus, neither Indian Creek nor the Boise River currently has the assimilative capacity to dilute discharges of phosphorus from the City of Kuna's WWTP. As a result, an effluent limit greater than 70 µg/L will not ensure compliance with water quality standards.

Furthermore, as discussed in the 2008 fact sheet (Pages 10 – 11), new dischargers such as the Kuna WWTP are subject to additional permitting restrictions found in 40 CFR 122.4(i). Given that the receiving waters currently have no assimilative capacity, any discharge of phosphorus greater than 70 µg/L would "contribute to the violation of water quality standards," which would be a violation of 40 CFR 122.4(i).

As stated above, EPA could have established effluent limits using EPA's water quality criteria, published under Section 304(a) of the Clean Water Act (40 CFR 122.44(d)(1)(vi)(B)). In this case, EPA chose to apply the in-stream target and wasteload allocation from the downstream Snake River Hells Canyon TMDL pursuant to 40 CFR 122.44(d)(1)(vi)(A), in lieu of the 304(a) criteria, because the Snake River Hells Canyon TMDL represents a site-specific determination of the in-stream concentration of phosphorus that will ensure the attainment of beneficial uses in the Snake River (downstream from the discharge). However, the fact that EPA's recommended water quality criterion for phosphorus for the receiving waters is 42.5 µg/L (EPA 822-B-00-016, Page 18, Table 3c) serves as evidence that the 200 µg/L phosphorus limits proposed by the commenters would not, in fact, achieve a level of water quality that is derived from, and complies with all applicable water quality standards, as required by 40 CFR 122.44(d)(1)(vii)(A).

Because the Snake River Hells Canyon TMDL analysis demonstrates that elevated phosphorus concentrations are causing water quality problems downstream from the Kuna discharge, and thus requires reductions in phosphorus loading and concentration in the Boise River to remedy this condition, and because phosphorus is a parameter that can be directly measured and limited in an effluent, it is not appropriate to establish effluent limits for an indicator parameter pursuant to 40 CFR 122.44(d)(1)(vi)(C).

In a CWA Section 401 certification, States may include a statement of the extent to which conditions of a draft permit may be made less stringent without violating State law or water quality standards (40 CFR 124.53(e)(3)). IDEQ has stated in its CWA Section 401 certification that less stringent phosphorus concentration limits of 200 µg/L could be imposed in the permit. However, EPA has not included the less-stringent phosphorus concentration limits in the final permit for the reasons explained above. States may not condition or deny a certification on the grounds that State law allows a less-stringent permit condition (40 CFR 124.55(c)).

Revisions to the Revised Draft Permit

None.

Comment #1-2

Nampa stated that very little, if any, of the Kuna effluent will actually reach the Boise River. Nampa, Boise and AIC stated that the trading framework prepared by Ross and Associates in 2000 shows that Indian Creek contributes 20% of its flow to the Boise River, with the remainder going into the Riverside Canal for irrigation (see p. 8-11 of the Framework Document). Thus, Nampa stated that Kuna's effluent limits should be multiplied by a factor of five (the reciprocal of 20%). In comments on the 2007 draft permit, Boise, AIC and Nampa suggested that the effluent limit should be 350 µg/L (the proposed 70 µg/L effluent limit, multiplied by 5). In its comments on the 2008 draft permit, Nampa stated that the effluent limit for dischargers into Indian Creek should be 1 mg/L (the 200 µg/L wasteload allocation for most of the point sources in the Lower Boise River drainage, multiplied by 5).

Boise and AIC stated one of the key principles of the trading framework is environmental equivalency, because in the Lower Boise watershed, location of the discharge matters due to the significant and substantial amount of reuse that occurs within the watershed. A method to determine environmental equivalency was developed and incorporated into the Lower Boise Trading Framework expressly to ensure that trades were developed that were environmentally protective and equivalent.

Boise and AIC stated that the Fact Sheet proposes application of the Parma target directly at the end of pipe without consideration of the location, reuse, or associated environmental equivalency. The permit limits for Kuna should be developed using the principle of environmental equivalency that all stakeholders and regulatory agencies have helped craft and is a key principle in the Lower Boise River and State of Idaho Trading Framework and Policies. If EPA or IDEQ have new data that show a different ratio is applicable or the state or federal framework and policy supporting trading and environmental equivalency have changed, the Fact Sheet should reflect that.

Boise and AIC stated that failure to include the core principle of environmental equivalency in the determination of proposed effluent limits for the Kuna WWTP establishes a biased and unlevel playing field and a substantial disincentive for municipal WWTPs to trade in the lower Boise watershed and statewide. If the trading tool is to be useful and effective, application of environmental equivalency in the development of NPDES permit requirements is necessary.

Response #1-2

The Lower Boise Trading Framework is irrelevant to the establishment of water quality-based effluent limits for phosphorus in the Kuna NPDES permit prior to the development and EPA approval of a total maximum daily load for phosphorus in the Lower Boise watershed. See the response to comment #1-1, above. The fact that water is withdrawn from Indian Creek for irrigation purposes does not mean that the City of Kuna's discharge of phosphorus does not affect the phosphorus concentration in Indian Creek and in the Boise River, nor does the diversion of water from Indian Creek create any assimilative capacity within Indian Creek or the Boise River to dilute discharges of effluent with phosphorus concentrations greater than 70 µg/L.

EPA agrees with the commenters that the location ratios are a mechanism to account for the fact that, due to diversions and natural processes, some of the phosphorus loading discharged to the Boise River and its tributaries (including Indian Creek) may not reach the mouth of the Boise River.

The location ratios decrease, but do not eliminate, contributions to water quality standards violations resulting from discharges of phosphorus at concentrations greater than 70 µg/L. Because there is no assimilative capacity for phosphorus in either Indian Creek or the Boise River, applying the Parma target at the end of pipe is the only way to ensure that the discharge derives from, complies with, and does not contribute to violations of Idaho's water quality standards, as required by NPDES regulations (40 CFR 122.4(i), 40 CFR 122.44(d)(1)). *See also* the response to Comment #1-1.

Revisions to the Revised Draft Permit

None.

Comment #1-3

AIC and Boise stated that the EPA-approved Snake River Hells Canyon TMDL was developed as a seasonal TMDL to meet seasonal average chlorophyll-a conditions. Federal regulations (40 CFR 122.44.(d)(1)(vii)(B)) require that NPDES requirements be "…consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7." Therefore, it appears as though appropriate statistical approaches consistent with the approved Snake River Hells Canyon TMDL need to be applied to monthly and weekly limits based on the seasonal average target of 70 µg/l at Parma (e.g., TSD statistics or 1.5 multiplier approach proposed in the fact sheet).

Response #1-3

The commenters are correct that the 70 µg/L load allocation for the Boise River in the EPA-approved Snake River Hells Canyon TMDL (SR-HC TMDL) applies seasonally, from May through September. This time frame has been reflected in the draft permit (phosphorus effluent limits apply only during this season). EPA also agrees that the SR-HC TMDL is intended to meet a seasonal average chlorophyll-a target.

However, the 70 µg/L load allocation is not expressed as a "seasonal average." The commenters do not explain why they believe the 70 µg/L load allocation is a seasonal average. The TMDL repeatedly states that the 70 µg/L load allocation and in-stream target is a maximum value.

Specifically, the discussion of the SR-HC TMDL's identification of nutrient targets begins on Page 283, in section 3.2.8. On Page 297, the SR-HC TMDL states that the average chlorophyll a target of 0.14 mg/L corresponds to a *maximum* total phosphorus concentration of 0.07 mg/L. The executive summary (on Page w) states that the target for total phosphorus is "a *maximum* of 0.07 mg/L total phosphorus instream" (emphasis added). The SR-HC TMDL states repeatedly (on Page ii of the abstract, on Pages p and u of the executive summary, and on Pages 63, 83, 152, 176, 267, 304, 443 and 447 of the body) that the total phosphorus target for this reach of the Snake River is "*less than or equal to* 0.070 mg/L" (emphasis added).

Regarding the load allocations for tributaries to the Snake River (including the Boise River) the SR-HC TMDL states, in a footnote to Table 4.0.9, that "the SR-HC TMDL target for total

phosphorus for each tributary is a concentration of *less than or equal to* 0.07 mg/L total phosphorus as measured at the mouth of the tributary and applies from May through September."

The SR-HC TMDL's use of the phrase "less than or equal to" or the word "maximum" to describe the phosphorus target for the Snake River and load allocations for its tributaries demonstrates that this is not a seasonal average concentration but a maximum concentration. Therefore, the 70 µg/L target has been implemented in the permit directly as the average monthly limit.

Revisions to the Revised Draft Permit

None.

Section 2: Comments Regarding Monitoring and Reporting Requirements

Comment #2-1

The City of Kuna requested that the term "minimum level" be changed to "minimum quantitation level" (MQL). The City of Kuna stated that the term "minimum quantitation level" is defined in Standard Methods and is used by local laboratories during their quality assurance and quality control (QA/QC), and that none of the local laboratories recognize the term "minimum level" or utilize a "minimum level" in their methods or QA/QC. The City of Kuna also requested that the permit contain a definition of "minimum quantitation level."

Response #2-1

The term "minimum quantitation level" or "limit of quantitation" is defined in *Standard Methods for the Examination of Water and Wastewater* as "the constituent concentration that produces a signal sufficiently greater than the blank that it can be detected within specified limits by good laboratories during routine operations. Typically it is the concentration that produces a signal ten standard deviations above the reagent water blank signal." The definition of the term "minimum level" is provided in the draft permit

The intent of requiring certain minimum levels in the permit is to ensure that the monitoring results are adequately sensitive. It appears from the definition of "minimum quantitation level" in *Standard Methods* that specifying certain minimum quantitation levels will serve the purpose of ensuring adequate sensitivity for the monitoring required by the permit.

Revisions to the Revised Draft Permit

The term "minimum level" or ML has been replaced with "minimum quantitation level" or MQL and a definition of "minimum quantitation level" has been included in the permit.

Comment #2-2

The City of Kuna requested that the maximum MQL for total Kjeldahl nitrogen be changed from 50 µg/L to 100 µg/L.

Response #2-2

EPA agrees that a MQL of 100 µg/L, for total Kjeldahl nitrogen, is acceptable.

Revisions to the Revised Draft Permit

The MQL for total Kjeldahl nitrogen has been changed from 50 µg/L to 100 µg/L.

Comment #2-3

The City requested that the monitoring frequency for phosphorus be reduced from three times per week to twice per week. The City stated that this would allow for the use of the same composite samples to perform laboratory analyses.

Response #2-3

EPA agrees that two 24-hour composite samples for total phosphorus per week will be adequate to characterize the discharge.

Revisions to the Revised Draft Permit

EPA has changed the required sampling frequency for phosphorus from three times per week to twice per week.

Comment #2-4

The City requested that the permit require upstream monitoring of phosphorus in the receiving water, once per month.

Response #2-4

EPA agrees that it is reasonable to require upstream monitoring of phosphorus in the receiving water, once per month.

Revisions to the Revised Draft Permit

EPA has included a requirement for upstream monitoring of phosphorus in the receiving water, once per month.

Comment #2-5

Boise and AIC stated that the permit contains new language at III.A for non-routine discharges and that the Fact Sheet identifies that "boilerplate" language contained in sections III-V as "non-negotiable." Commenters recognize and generally agree with the need for addition of the new non-routine language at section III.A.

Commenters state that the new language is open ended and the terms "...spill, discharge, or bypass..." that trigger a mandatory duty to collect extra samples are not all defined (bypass is but spill and discharge are not) in the definitions section of the permit.

The non-routine sampling requirement would be significantly enhanced by additional discussion in the Fact Sheet concerning this new requirement (e.g. how does this apply to facilities that may not have staff on site 24/7…) and by defining the terms "spill" and "discharge", at least as it applies to this provision, in the definitions section of the permit.

Nampa stated that this requirement puts undue responsibility on the treatment plant personnel because it relies on subjective judgments of what constitutes a discharge that "may be reasonably expected to cause or contribute to a violation that is unlikely to be detected by a routine sample."

Response #2-5

The first paragraph of Part III.A of the draft permit is identical to regulatory language in 40 CFR 122.41(j). The language in the second and third paragraphs of Part III.A is not contained in the NPDES regulations. It was added to ensure that any spills, bypasses, treatment plant upsets, or other non-routine events will not result in violation of the effluent limits and to ensure that, if the effluent limits are violated due to those events, that this noncompliance is reported. The third paragraph prescribes how such samples will be collected, analyzed, and reported. This language is necessary to assure compliance with the CWA and the limits of the permit and is therefore authorized by 40 CFR 122.41(j)(1), 122.44(i), 122.48, and Section 308 of the Clean Water Act.

For the purposes of interpreting this part of the permit, the term "discharge" means a "discharge of pollutants" as that term is defined in 40 CFR 122.2. EPA believes the word "spill" is self-explanatory, and has not provided a definition of "spill" in the permit.

Revisions to the Revised Draft Permit

The permit has been edited to include a definition of the term "discharge" in Part III.A, and other edits have been made to Part III.A for clarity.

Comment #2-6

Veolia stated that Part I.D of the draft permit requires concurrent testing "of all chemical and physical parameters required in Part I.B." of the permit. This includes the effluent limitations and monitoring requirements in Table 1. In general, this should not be a problem since these can be used for both the routine testing and the WET requirements. However, Table 1 also lists the Expanded Effluent Testing for NPDES Application Form 2A, Part D, which includes all the heavy metals and organic compounds (a series of tests that cost about $3,000). This would require the expanded test series be performed twice per year under the toxicity testing requirements. Table 1 requires this series of tests (Expanded Effluent Testing) be performed 3 times in 5 years in preparation of permit renewal application.

Table 1 is extensive, but we presume the USEPA did not intend to include all the expanded effluent testing listed in the table each time WET testing was to be performed. We suggest that the Expanded Effluent Testing be excluded from the WET testing analytical requirements.

Response #2-6

The commenter is correct that it was not EPA's intent to require the expanded effluent testing (in Part D of NPDES application form 2A) to be performed concurrently with every WET test. The final permit requires the permittee to analyze a split of each sample collected for the chemical and physical parameters required in Part 1.B, with required sampling frequently of quarterly or more frequently, which excludes the expanded effluent testing.

Revisions to the Revised Draft Permit

The language of Part I.D.1 has been changed such that expanded effluent testing need not be performed on a split of the samples collected for WET testing.

Comment #2-7

Veolia stated that Table 3 in Part I.C of the revised draft permit provides the Surface Water Monitoring requirements. Under these provisions, temperature analysis is required monthly.

Footnote 1 of Table 3 provides redundant provisions for performance of one temperature monitoring for the months of April, May, June, July, August, September, and October. Veolia suggested that footnote 1 of Table 3 be deleted for clarity.

Response #2-7

It was the intent of Table 3 of the revised draft permit and its footnotes to require monthly surface water monitoring for temperature *only* during the months of April, May, June, July, August, September and October. Thus, footnote #1 is not redundant. As explained in the response to Comment #4-8, the final permit requires monthly surface water monitoring for temperature during the month of March, in addition to the months during which it was proposed to be required in the revised draft permit.

Revisions to the Revised Draft Permit

For clarity, Table 3 has been edited so that the frequency for temperature (and dissolved oxygen) monitoring reads "See note 1," and footnote one explains that monitoring is to occur once per month, during the months of March, April, May, June, July, August, September, and October.

Comment #2-8

Veolia asked what the 40 CFR Part 136 references are for the approved procedures for total phosphorus as P analysis meeting the method detection limit (MDL) and minimum level (ML) requirements of the Permit. Note that per Part III.C, no other methods have been specified in the Permit. Veolia suggested a statement providing guidance for analytical method approval procedures for analysis of pollutants not specified in 40 CFR 136.

In a related comment, Keller Associates stated that the local laboratory cannot achieve a minimum level for phosphorus of 70 µg/L. Keller Associates stated that the local laboratory's minimum level for phosphorus is 150 – 200 µg/L. Keller Associates requested that the permit contain a compliance evaluation level of 150 – 200 µg/L.

Response #2-8

As stated in the response to Comment #2-1, EPA has deleted references to the term "minimum level" in the permit in favor of the term "minimum quantitation level," which is defined in *Standard Methods for the Examination of Water and Wastewater*.

The following table lists some of the analytical methods for phosphorus in 40 CFR Part 136, Table IB, and their associated quantification or detection limits.

Table 1: Partial List of Approved Analytical Methods for Phosphorus (40 CFR Part 136, Table IB)

Method	Detection or Quantification Limit	Detection or Quantification Limit Description
EPA 365.1	10 µg/L	Lower limit of the applicable range
EPA 365.3	10 µg/L	Lower limit of the applicable range
EPA 365.4	10 µg/L	Lower limit of the applicable range
Standard Methods 4500-P E	10 µg/L	Minimum detectable concentration
Standard Methods 4500-P F	1 µg/L	Lower limit of the applicable range
USGS I-4600-85	10 µg/L	Lower limit of the applicable range
USGS I-4610-91	10 µg/L	Method detection limit

The term "method detection limit" (the detection or quantification limit type given for USGS method I-4610-91) (MDL) is defined in 40 CFR Part 136, Appendix B as "the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the sample." Some methods provide a range of concentrations, within which the method is applicable or usable. For these methods, the table lists the lower limit of the applicable range, as published in the method. For Standard Methods 4500-P E, the method states that that the "minimum detectable concentration" is 10 µg/L, but the 18th Edition of *Standard Methods for the Examination of Water and Wastewater* does not provide a definition of the term "minimum detectable concentration."

All of the methods listed in Table 1, above, have a detection limit or a lower limit of the applicable range of 10 µg/L or less. Thus, EPA believes that most if not all of the methods listed (which are approved for NPDES purposes) would be able to quantify the effluent phosphorus concentration, at the average monthly concentration effluent limit of 70 µg/L. Thus, a compliance evaluation level of 150 – 200 µg/L would not be appropriate.

Application and approval processes for alternative test procedures are provided in 40 CFR 136.4 and 136.5, respectively. As stated in the permit (Part III.C), methods that have been approved as alternate test procedures under 40 CFR 136.5 may be used for the monitoring required by the permit.

Revisions to the Revised Draft Permit

None.

Comment #2-9

Kuna requested that the discharge monitoring report (DMR) due date be changed from the 10th day of the month following the monitoring month to the 28th day of the month following the monitoring month. The commenter stated that standard turnaround time for laboratory analyses is 10 to 14 working days, and that Kuna may therefore not have the results of all of the required monitoring until the 14th of the month following the monitoring month. Kuna stated that it needs time to assemble and analyze the data, prepare the monthly report, conduct quality assurance and quality control on the data and report, and sign and submit the final report. Kuna stated that a reasonable amount of time to obtain all of the monitoring data and complete a monitoring report is 28 days.

Veolia requested that the DMR due date be changed to the 15th or 20th day of the month following the monitoring month due to the need to send total phosphorus analysis out to a commercial laboratory capable of providing analysis of phosphorus in wastewater to the required low method detection limit and minimum level.

Response #2-9

EPA does not agree with the City that it is necessary to change the DMR due date to the 28th day of the month following the monitoring month, but EPA does agree with Veolia that it would be reasonable to change the DMR due date to the 20th day of the month following the monitoring month.

Revisions to the Revised Draft Permit

The DMR due date has been changed from the 10th to the 20th day of the month following the monitoring month.

Section 3: Comments Regarding Effluent Limitations for Total Suspended Solids (TSS)

Comment #3-1

During the first public comment period (*i.e.*, for the 2007 draft permit), Kuna requested that the mass-based effluent limits for total suspended solids (TSS) be set at an average monthly limit of 876 lb/day and an average weekly limit of 1314 lb/day, which would be the mass-based expression of the technology-based effluent limits for TSS.

Response #3-1

The mass limits for TSS proposed in the original draft permit were not technology-based effluent limits; they were water quality-based effluent limits, as explained on Pages 9 and C-4 of the 2007 Fact Sheet. While the City is correct that Sections 301(b)(1)(b) and 304(d)(1) of the Clean Water Act, as well as 40 CFR Part 133, require POTWs to meet effluent limitations based on secondary treatment, Section 301(b)(1)(C) of the Act also requires that permits contain "any more stringent limitations, including those necessary to meet water quality standards." The federal regulation at 40 CFR 122.44(d)(1)(vii)(B), which implements Section 301(b)(1)(C) of the Act, requires that water quality-based effluent limits are "consistent with the assumptions and requirements of any available wasteload allocation for the discharge" in an approved TMDL.

After the permit was first issued for public comment in 2007, IDEQ revised the Lower Boise River TMDL, such that the TMDL now includes a wasteload allocation for sediment, for Kuna, which is equal to 876 lb/day (monthly average). This figure is equal to the technology-based effluent limit for TSS (40 CFR 133.102(b)(1), 40 CFR 122.45(b)(1)). EPA has approved this revision to the TMDL. Because the TMDL addendum demonstrates that the City of Kuna may discharge 876 lb/day of TSS, on a monthly average basis, while still ensuring compliance with water quality standards, the TSS effluent limits have been changed to 876 lb/day, in the revised draft permit (*i.e.*, 2008 draft permit), as explained in the 2008 Fact Sheet (Page 9). Therefore, the City's comment was addressed in the 2008 draft permit.

Revisions to the Revised Draft Permit

None.

Comment #3-2

Boise stated that the addendum to the Lower Boise River TMDL will allow Kuna to use nearly half of the TSS reserve for growth. Boise stated that this did not appear to be necessary because the proposed discharge is new, the membrane bioreactor technology to be employed will produce substantially better than secondary quality effluent, and application of secondary treatment requirements will meet the Lower Boise River TMDL's in-stream water quality targets for sediment at the end-of-pipe and will thus not consume any TSS assimilative capacity.

Response #3-4

EPA agrees with Boise that the secondary treatment requirements will ensure compliance with the Lower Boise River TMDL's in-stream concentration targets for sediment at the end-of-pipe. However, the Lower Boise River TMDL allows a finite mass loading of TSS to be discharged from point sources to the Boise River and its tributaries. Thus, it was necessary to modify the TMDL to allocate a portion of the reserve for growth to City of Kuna's WWTP. It should be noted that, although several other WWTPs in the Lower Boise drainage are subject to the same concentration effluent limits for TSS as the City of Kuna's facility, these facilities were also granted mass-based wasteload allocations in the Lower Boise River TMDL for sediment and bacteria.

EPA disagrees with the City of Boise's statement that the proposed TSS wasteload allocation (and the effluent limits that are consistent with it) will consume "nearly half of the TSS reserve for growth." In the original Lower Boise River TMDL, the reserve for growth was 3.62 tons per day. The City of Kuna's wasteload allocation in the TMDL addendum is 876 pounds per day, which is 0.438 tons per day. Thus, the fraction of the original reserve for growth that was granted to the City of Kuna is:

$$0.438 \div 3.62 = 0.121 = 12.1\%$$

Thus, Kuna's wasteload allocation uses 12.1% of the original reserve for growth, which is much less than half. As shown in the TMDL addendum, the remaining reserve for growth, after subtracting the new wasteload allocations for Kuna and Avimor, is 3.098 tons per day.

Revisions to the Revised Draft Permit

None.

Section 4: Other Comments

Comment #4-1

The City requested that the phrase "or instantaneous maximum limits" be deleted from the permit, in Part I.B.2. The City stated that there are no instantaneous maximum limits in the permit.

Response #4-1

The City's statement that there are no instantaneous maximum limits in the permit is incorrect. Footnote #1 to Table 1 of the revised draft permit reads as follows: "The E. Coli bacteria counts must not exceed a monthly geometric mean of 126/100 ml and a single sample (instantaneous) maximum of 576 organisms per 100 ml. See Part V for the definition of geometric mean." So, while the "576" value appears in the "maximum daily limit" column of Table 1, it is clear from footnote #1 to Table 1 that this is actually an instantaneous maximum limit, not a maximum daily limit. *See also* the 2008 fact sheet at Table 2 and the 2007 fact sheet at Table 1. Therefore, the phrase "instantaneous maximum limits" has not been deleted from the permit.

However, it is evident from the City's comment that the use of a footnote to designate the E. coli limits as a monthly geometric mean limit and an instantaneous maximum limit could be confusing. Therefore, in the final permit, the 576 organism per 100 ml limit is more clearly identified as an instantaneous maximum limit in Table 1.

Revisions to the Revised Draft Permit

The words "instantaneous maximum limit" now appear in Table 1, in the same cell as the 576 organism per 100 ml E. coli limit.

Comment #4-2

AIC and Boise stated that the proposed maximum daily limit of 576 cfu per 100 ml appears to be included based upon an incomplete reading of the state water quality standards. AIC and Boise stated that the Fact Sheet provides no regulatory or technical basis for the instantaneous E. coli.

AIC and Boise stated that IDAPA 58.01.02.080.03 clearly identifies that an exceedance of the 576 cfu/100 ml value triggers additional sampling only, which is already included in the permit. The proposed instantaneous E. coli limit should be removed from the Fact Sheet and permit.

Response #4-2

IDAPA 58.01.02.080.03 is not relevant to E. coli, rather, it discusses an exemption from temperature water quality standards under certain circumstances. However, IDAPA 58.01.02.251.01.b states that "a water sample exceeding the E. coli single sample maximums below indicates likely exceedance of the geometric mean criterion, but is not alone a violation of water quality standards."

The commenters' statement that "the Fact Sheet provides no regulatory or technical basis for the instantaneous E. coli (limit)" is incorrect. The bases for both the monthly geometric mean and the instantaneous maximum E. coli limits are explained beginning on Page C-3 of the 2007 Fact Sheet. The inclusion of the instantaneous maximum limit is explained in the following paragraph, which appears on Page C-4 of the 2007 Fact Sheet:

> "The goal of a water quality-based effluent limit is to ensure a low probability that water quality standards will be exceeded in the receiving water as a result of a discharge, while considering the variability of the pollutant in the effluent (*Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, 1991). Because a single sample value exceeding 576 organisms per 100 ml indicates a likely exceedance of the geometric mean criterion, EPA has imposed an instantaneous (single grab sample) maximum effluent limit for E. coli of 576 organisms per 100 ml, in addition to a monthly geometric mean limit of 126 organisms per 100 ml, which directly implements the water quality criterion for E. coli. This will ensure that the discharge will have a low probability of exceeding water quality standards for E. coli."

Revisions to the Revised Draft Permit

None.

Comment #4-3

Boise, AIC, Nampa, and Kuna objected to various aspects of the phosphorus management plan requirements in the draft permit.

Boise and AIC stated that they agree and support the general concept of pollution prevention and application of BMPs, however, they have concerns that an additional requirement for an

approvable facilities management plan is duplicative (e.g. NPDES/CWA enforceable limits), overly prescriptive, and limits innovation.

The requirement to develop a Phosphorus Management Plan reflects good facilities planning practices. However, and as a practical matter, each Plan's scope must be scaled to match WWTF size, complexity, and service area (e.g. small residential only WWTFs should have simpler requirements than large WWTFs with complex industrial and commercial dischargers) and allow for innovation and efficiency at the individual WWTF scale (e.g. less prescriptive).

An additional concern relates to the general application of the detailed and extensive requirements contained in section II.B of the permit, particularly if they are applied uniformly to small residential WWTFs (e.g. staff expertise/workload/capacity) and existing WWTFs within the watershed and statewide; especially if there is a subsequent loss of flexibility to implement cost effective treatment solutions. For example, the permit assumes that phosphorus reductions shall be made from a finite list of activities (see Part II.B.6). However, it could be that a treatment and reuse approach to meet the phosphorus reduction requirements (i.e., adding a "scalping" facility below a large industrial facility and reusing the effluent) would be more appropriate and cost effective. As this is just one among many other potential innovative solutions, it does not appear to be appropriate to include prescriptive plan elements as permit requirements at this time.

Kuna stated that it should be free to develop its own plans to satisfy effluent water quality limits. The City argued that 40 CFR 122.44(k), which requires the inclusion of best management practices requirements in NPDES permits under certain circumstances, does not apply to the facility. The regulations require best management practices to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. The City stated that items 1 and 2 do not apply because the WWTP discharges neither stormwater nor industrial wastewater. The City stated that item 3 does not apply because phosphorus removal is a standard process for wastewater treatment plants and the effluent limits in the Kuna permit are being achieved at other treatment facilities in the United States. The City stated that item 4 does not apply because the WWTP will be specifically designed to remove phosphorus to the extent necessary to meet effluent limits. The City stated that most of the types of non-domestic sewer users named in the phosphorus management plan requirements as being possible contributors of phosphorus to the WWTP are not present within the service area.

Nampa stated that the phosphorus management plan would be expensive to prepare, and that the draft permit would not allow adequate time to implement and complete the plan. Nampa also noted that the phosphorus management plan requires considerable research to locate other WWTPs using similar treatment technology, and that most of the WWTPs in Canyon and Ada counties are unique.

Response #4-4

As stated in the 2008 Fact Sheet (Page 16-17), EPA deleted the phosphorus management plan requirements from the revised draft permit, because the permit contains other requirements that

adequately address phosphorus. Thus, a phosphorus management plan is not necessary in this case, and these comments were addressed in the 2008 draft permit.

Revisions to the Revised Draft Permit

None.

Comment #4-5

Nampa stated that the USGS gauge on Indian Creek used to obtain receiving water flow data for use in developing the permit is seven miles below the proposed Kuna discharge point, and that Indian Creek increases its volume several fold between the proposed Kina discharge point and the USGS station. Nampa argues that this would lead to inaccurate calculations for water quality based effluent limits. Nampa notes that the permit for XL Four Star Beef (ID-000078-7) requires monitoring of the flow rate of Indian Creek, at a location closer to the proposed Kuna discharge point, and that creek flow rates measured at that location would more closely resemble those at the proposed Kuna discharge point. Nampa also suggests that the Kuna permit include a requirement to monitor flow in Indian Creek.

Mr. Andy Tiller of Nampa, Idaho also requested that the permit include a requirement to monitor flow in Indian Creek.

Response #4-5

As stated on Pages 15-16 of the 2008 fact sheet, EPA has included a requirement that the City of Kuna monitor the flow rate of the receiving stream on a monthly basis.

EPA has reviewed the Indian Creek flow data collected by the XL Four Star Beef facility and has found that the stream data collected by XL Four Star Beef generally show higher, not lower, stream flow rates than those measured at the USGS gauge used to develop water quality-based effluent limits in the draft permit. A direct comparison of the two is not possible because the periods of record of the two sources of monitoring data do not overlap. However, the average Indian Creek flow rate measured by XL Four Star Beef between August 2000 and September 2005 was 68.1 CFS, while the average flow rate measured at the USGS gauge between October 1981 and September 1996 was 42.9 CFS.

Therefore, use of the flow data collected at the USGS station in developing the Kuna permit (as was done in the draft permit) appears to be conservative, relative to using stream flow data collected by XL Four Star Beef. If the receiving water flow monitoring required by the draft permit shows that the flow data collected at the USGS station are not representative of stream flow rates at the point of discharge, EPA will consider this when the permit is reissued.

Revisions to the Revised Draft Permit

None.

Comment #4-6

Boise stated that the Fact Sheet contains no reasonable potential analysis or other technical or regulatory basis for the inclusion of a total residual chlorine limit or monitoring. Mr. Andy Tiller of Nampa, Idaho noted that the permit contains chlorine limits and asked whether chlorination was to be used as a backup to UV disinfection.

Response #4-6

Chlorination will not be used as a backup to disinfection. The 2007 fact sheet does, in fact, contain a reasonable potential analysis for chlorine (Table D-2 on Page D-3). The basis for the chlorine effluent limits is provided in appendices D and F of the 2007 fact sheet.

Revisions to the Revised Draft Permit

None.

Comment #4-7

Mr. Andy Tiller of Nampa, Idaho stated that the ammonia limits seemed too high for the stream flow at the point of discharge. Mr. Tiller stated that the ammonia limits are generally less stringent than those in the permit for the City of Nampa, downstream.

Response #4-7

The basis for the ammonia limits in the permit is provided in appendices D and F of the 2007 fact sheet. The most likely reason for the apparent inconsistency between the ammonia limits in the Kuna permit and those in the Nampa permit is that, after the Nampa permit was issued in 1999, the State of Idaho adopted, and EPA approved, new water quality criteria for ammonia, which are less stringent than those that were in effect at the time the Nampa permit was issued.

Revisions to the Revised Draft Permit

None.

Comment #4-8

Mr. Andy Tiller stated that Kuna's draft permit does not contain any dissolved oxygen limit, only monitoring requirements. Indian Creek designated beneficial uses at the proposed point of Kuna's discharge includes "salmonid spawning." Salmonid spawning requires a high dissolved oxygen concentration. Will the lack of oxygen requirement impact the Creek's salmonid spawning?

Response #4-8

The 2008 Fact Sheet stated that EPA determined that the discharge would not cause or contribute to violations of Idaho's water quality standards for dissolved oxygen (DO) (Page B-1). The water quality standard cited (IDAPA 58.01.02.250.02.a) is the DO criterion for cold water aquatic life.

During times of salmonid spawning and incubation, the salmonid spawning DO criterion applies. The salmonid spawning water column DO criterion is a "[o]ne (1) day minimum of not less than six point zero (6.0) mg/l or ninety percent (90%) of saturation, whichever is greater" (IDAPA 58.01.02.f.i.2.a). At times other than salmonid spawning and incubation periods, the cold water aquatic life criterion for dissolved oxygen applies. This criterion is "Dissolved Oxygen Concentrations exceeding six (6) mg/l at all times (IDAPA 58.01.02.250.02.a)." The spawning period is March through June (*See* the *Indian Creek Subbasin Assessment* at Page 29).

Both criteria require a water column dissolved oxygen concentration of at least 6.0 mg/L. As stated in the 2008 Fact Sheet, the discharge will not result in DO concentrations less than 6.0 mg/L. This evaluation was performed using conservative assumptions for effluent and receiving

water flow rate and quality. However, from March through June, when the salmonid spawning criterion applies, the applicable criterion could be greater (more stringent) than 6.0 mg/L, if 90% of saturation is greater than 6.0 mg/L DO.

There are limited water quality data available for DO near the point of discharge. Therefore, EPA will require upstream and downstream surface water monitoring for dissolved oxygen and upstream biochemical oxygen demand once per month, during the months of March through October. This will ensure that dissolved oxygen sampling occurs during the salmonid spawning period as well as other times when water temperatures tend to be warm and dissolved oxygen concentrations tend to be low. In addition, surface water monitoring requirements for temperature have been extended to apply from March through October, and surface water monitoring requirements for temperature now apply both upstream and downstream, in order to allow for calculation and reporting of percentage of DO saturation. If these data show that the discharge has the reasonable potential to cause or contribute to violations of Idaho's water quality standards for dissolved oxygen, EPA will include water quality-based effluent limits for BOD and/or DO when the permit is reissued.

Revisions to the Revised Draft Permit

EPA has added a requirement for upstream and downstream surface water monitoring for dissolved oxygen, and has changed the temperature surface water monitoring requirements such that they apply from March – October, and require sampling both upstream and downstream.

Comment #4-9

Veolia stated that Part I.A.3 of the draft permit states that the permit authorizes the discharge of "only those pollutants" that have been "clearly identified in the permit application process."

Many other constituents may be discharged which are inherent to a POTW and which have not been "clearly identified in the permit application process". Examples are DBPs, EDCs, etc. some of which are regulated pollutants and some of which are not currently regulated.

We suggest that this language be modified to address regulation of only those constituents identified in the Permit.

Response #4-9

EPA understands that the discharge may contain constituents that are not specifically regulated with effluent limitations or monitoring requirements. The quoted permit language does not prohibit the discharge of these additional constituents.

The permit application states that the discharge consists of treated sewage. The term "pollutant," in this context, refers to the treated sewage and all of the constituents that compose it, not to the individual chemical constituents. However, the permit does require that the permittee report planned changes to the facility that could significantly increase the quantity or change the nature of the pollutants discharged (Part IV.I), or new introductions of pollutants to the POTW from indirect dischargers (Part III.I).

Revisions to the Revised Draft Permit

None.

Comment #4-10

Veolia stated that the Schedule of Submissions item 7 and Part I.A.2. require that the Phosphorus No Net Increase Plan be submitted to the IDEQ for review, approval gained by the IDEQ and a statement certifying IDEQ approval be delivered to the USEPA prior to discharging.

We suggest that the permit language be modified to "submitted to IDEQ" prior to discharge. The City of Kuna cannot control the approval of, nor the related time frames for approval by the IDEQ. Requiring IDEQ approval prior to discharge could create an unwarranted delay in the progress of bring this needed treatment facility online.

Response #4-10

The requirements in Part I.A.2 of the revised draft permit were based on IDEQ's draft Clean Water Act Section 401 certification, dated October 3, 2008. EPA is required to include conditions of a State CWA Section 401 certification that are necessary to assure compliance with the CWA and appropriate requirements of State law (CWA Section 401(d); 40 CFR 124.53(e); 124.55(a)(2)). The draft CWA Section 401 certification dated October 3, 2008 stated that "*prior to discharging phosphorus*, the City of Kuna shall develop and *obtain DEQ approval* of a plan that describes how the City will comply with IDAPA 58.01.02.054.04" (emphasis added).

On November 4, 2008, after the public comment period for the revised draft permit began, IDEQ revised its draft CWA Section 401 certification. The language of the final certification (dated February 19, 2009) regarding Part I.A.2 of the draft permit is practically identical to the draft certification dated November 4, 2008.

The final permit states that "no discharge in excess of…1.1 lb/day (0.5 kg/day) may occur until DEQ has approved of" a plan that describes how Kuna's discharge will be consistent with the 1.1 lb/day allocation. Specifically, the plan must describe "any measures the City will implement to ensure that the addition of phosphorus that is in excess of (the 1.1 lb/day allocation) will be offset from May 1 through September 30" and the plan must "include a schedule for implementation of the offset measure(s)."

Unlike the draft certification dated October 3, 2008 (which was the most recent version available at the time the public comment period for the draft permit began on October 27, 2008), the final certification does not include a prohibition on the discharge of phosphorus. It simply limits the discharge of phosphorus to 1.1 lb/day, until IDEQ approves a plan, prepared by Kuna, to offset any load in addition to 1.1 lb/day. Therefore, the WWTP may discharge immediately, as long as the mass discharge of phosphorus from May 1st through September 30th is less than 1.1 lb/day, on a monthly average basis, and Kuna complies with all other conditions of the permit (including the phosphorus concentration limits).

Revisions to the Revised Draft Permit

Consistent with the final certification, the final permit allows a discharge of up to 1.1 lb/day total phosphorus from May 1st through September 30th, prior to IDEQ approval of a plan that describes how Kuna's discharge will be consistent with the 1.1 lb/day allocation. After IDEQ approval of the offset plan, the permittee may discharge as much as 2.0 lb/day total phosphorus from May 1st through September 30th. The 70 µg/L and 105 µg/L total phosphorus concentration limits are in effect at all times from May 1st through September 30th.

Comment #4-11

Veolia stated that Part 1.A.2.a of the draft permit requires that the City ensure that the total Phosphorus load in the Indian Creek/Lower Boise Watershed from May 1 to September 30th remain constant or decrease.

We suggest that the City of Kuna does not have jurisdiction or the capability of regulating any and all point and non-point sources discharging into the Indian Creek/Lower Boise Watershed.

We also believe that this requirement may be construed to conflict with Part I.A.3 and suggest that this requirement be removed or modified to address only the actual discharge from the Kuna wastewater treatment facility.

Response #4-11

As stated in the response to comment #4-10, the requirements in Part I.A.2 of the revised draft permit were based on IDEQ's draft Clean Water Act Section 401 certification, dated October 3, 2008. EPA is required to include conditions of a State CWA Section 401 certification that are necessary to assure compliance with the CWA and appropriate requirements of State law (CWA Section 401(d); 40 CFR 124.53(e); 124.55(a)(2)). The draft CWA Section 401 certification dated October 3, 2008 required Kuna to develop and obtain DEQ approval of a plan that would "describe the measures the City will implement to ensure that, notwithstanding the addition of phosphorus from the City's discharge, the total load of phosphorus from May 1 through September 30 remains constant in the Indian Creek/Lower Boise watershed," and this language is reflected in the draft permit.

As discussed in the response to comment #4-10, above, the language of the final certification (February 19, 2009) differs from that of the October 3, 2008 draft certification. The final certification now requires that the plan describe "any measures the City will implement to ensure that the addition of phosphorus that is in excess of (1.1 lb/day) will be offset from May 1 through September 30." Therefore, the final certification requires Kuna to address only the actual discharge from the WWTP.

Revisions to the Revised Draft Permit

The final permit requires that the City develop and obtain IDEQ approval of a plan to offset any any discharge of phosphorus that is in excess of 1.1 lb/day on a monthly average basis, prior to discharging more than 1.1 lb/day total phosphorus on a monthly average basis. The final permit requires the permittee to address only the actual discharge from the WWTP (as opposed to requiring the total watershed load to remain constant or decrease).

Other Revisions to the Revised Draft Permit

The maximum penalty amounts in Part IV.B of the permit have been changed based on the Civil Monetary Penalty Inflation Adjustment Rule, as mandated by the Debt Collection Improvement Act of 1996 (DCIA). *See* 73 FR 75340.

References

EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. EPA/505/2-90-001. March 1991.

EPA. 2000. *Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria: Rivers and Streams in Nutrient Ecoregion III.* Office of Water. EPA 822-B-00-016. December 2000.

IDEQ. 2000. *Lower Boise River Effluent Trading Demonstration Project: Summary of Participant Recommendations for a Trading Framework.* Prepared for the Idaho Division of Environmental Quality by Ross and Associates Environmental Consulting, Ltd. September 2000.

IDEQ. 2001. *Indian Creek Subbasin Assessment.* Idaho Department of Environmental Quality. December 2001.

Lower Boise Watershed Council (LBWC) and IDEQ. 2007. Draft. *Lower Boise River, Total Maximum Daily Load, Total Phosphorus.* March 12, 2007.

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