

Response to Comments on the Draft NPDES Permit for the City of Hailey: Permit #ID0020303

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Background

On March 14, 2012, the United States Environmental Protection Agency (EPA) Region 10 issued a draft National Pollutant Discharge Elimination System (NPDES) permit for public review and comment for the City of Hailey, Idaho (NPDES Permit #ID0020303). The public comment period closed on April 13, 2012. EPA received comments on the draft permit from the City of Hailey (City) and the Idaho Conservation League (ICL).

Response to Comments Received on the Draft Permit

Comments Regarding Effluent Limits for Total Phosphorus

Comment #1

The City stated that the inclusion of an average weekly limit for total phosphorus (TP) in addition to an average monthly limit is unnecessary. The City stated that the presumed ratio of average weekly load to average monthly load (1.5:1) may not accurately represent realistic performance of the City's wastewater treatment facility and is not linked to the TMDL. The City stated that the average monthly limit is sufficiently protective of water quality and consistent with the *Big Wood River Watershed Management Plan* (Big Wood River TMDL). The City requested that EPA delete the average weekly limits for TP.

Response #1

While EPA agrees that the Big Wood River TMDL does not directly require an average weekly limit, federal regulations require that effluent limits for POTWs be expressed as average monthly and average weekly limits, unless impracticable (*See* 40 CFR 122.45(d)(2) and the fact sheet at Page C-3). The City has not demonstrated that it is impracticable to express the TP effluent limits as average monthly and average weekly limits. Furthermore, the TP effluent limits in the 2001 permit were also expressed as average monthly and average weekly limits, which serves as evidence that it is not impracticable to express TP effluent limits in this manner. Thus, the question of whether or not an average monthly limit alone would be sufficiently protective of water quality is irrelevant, because the effluent limits must be expressed as average monthly and average weekly limits in order to comply with 40 CFR 122.45(d)(2)), even if an average monthly limit alone would protect water quality.

The proposed average weekly limit is, in fact, linked to the TMDL, because it is linked to the average monthly limit, which, in turn, is identical to the TMDL's WLA. Including an average weekly limit in addition to an average monthly limit not only ensures compliance with federal regulations governing the expression of effluent limits in permits; it also ensures that the average discharge of TP in any given week is not so much greater than the average monthly effluent limit that the permittee is likely to violate the average monthly limit due to a single week of high discharge loading.

Regarding the City's statement that the presumed 1.5:1 ratio of the maximum average weekly load to the average monthly load, EPA has reviewed the City's effluent TP data to determine if the assumed 1.5:1 ratio of the maximum average weekly load to the average monthly load accurately reflects the WWTP's performance. As stated above, the TP effluent limits in the City's 2001 permit were expressed as average monthly and average weekly limits, thus, the city was required to report the monthly average and the maximum weekly average TP load each month. EPA calculated the ratios of the reported maximum weekly average TP load to the reported average monthly TP load for each month from July 2001 (the first full month during which the 2001 permit was effective) through March 2012. The ratio was greater than 1.5:1 22% of the time when all data are considered, and 26% of those months when the average monthly TP load was less than or equal to the new average monthly limit of 5.2 lb/day. The 95th percentile ratio was 1.76:1.

Therefore, EPA agrees that the proposed 1.5:1 ratio of the average weekly limit to the average monthly limit does not reflect the historic performance of the City's WWTP. Thus, EPA has changed the ratio to 1.76:1, consistent with the 95th percentile ratio actually observed since July 2001. This results in an average weekly limit of 9.2 lb/day in the final permit, instead of the proposed average weekly limit of 7.8 lb/day. The average monthly limit of 5.2 lb/day is unchanged.

The revised average weekly limit of 9.2 lb/day is more stringent than the average weekly limit in the prior permit (23 lb/day) and thus complies with the anti-backsliding provisions of the CWA and federal regulations (CWA Sections 303(d)(4) and 402(o), 40 CFR 122.44(l)). As explained above, the average monthly limit is identical to the TMDL WLA, thus, the TP limits are consistent with the TMDL.

The purposes of the average weekly limit are to ensure compliance with federal regulations governing the expression of effluent limits in permits (40 CFR 122.45(d)(2)) and to ensure that the average discharge of TP in any given calendar week is not so much greater than the average monthly effluent limit that the permittee is likely to violate the average monthly limit due to a single week of high discharge loading. The revised average weekly limit will serve these purposes.

Comment #2

The City requested that EPA change the TP effluent limits in the draft permit. Specifically, the City requested that EPA apply TP limits only during July – September, with only monitoring and reporting requirements applicable during the rest of the year (October – June). The City also requested that the TP limit be changed to a seasonal (July –September) average limit of 23 lb/day instead of the proposed average monthly and average weekly final effluent limits of 5.2 and 7.8 lb/day, respectively.

The City gave the following reasons for these requested changes:

- The City stated that the State of Idaho has not demonstrated the need for TP WLAs on the Big Wood River. A water quality study of the Big Wood River following the TMDL showed that the combination of the highest TP and TSS concentrations occur during the start of the

snowmelt runoff (HDR 2010). The City stated that this pattern suggests that the period when TP concentrations are greater than the water quality target selected by the Idaho Department of Environmental Quality (IDEQ) is a result of the sediments and phosphorus from natural and nonpoint sources.

- The City stated that there is no substantial site specific water quality analysis to support the selection of the TMDL's 50 µg/L TP in-stream target and no interpretation of this in-stream target in terms of seasonal applicability or an averaging period that is appropriate for effluent discharge permit limits. The City stated that a basis or connection between the selected target and meeting beneficial uses of the river was not established.
- The City stated that averaging over a shorter time frame, such as monthly or weekly effluent limits, is not warranted to be protective of water quality based on the limited development supporting the State of Idaho's selection of the phosphorus in-stream standard. The City stated that short averaging periods for effluent limits fail to account for the variability in nutrient removal treatment performance and discourage effective water resource management strategies that may be beneficial for the watershed, such as the conceptual recycled water program that the City has developed.
- The City stated that the State of Idaho acknowledged in the TMDL that they did not assess water quality conditions and selected an annual allocation as a default rather than determining a need for seasonal limitations. As stated in the TMDL: "Little information or data exists to allow for accounting of seasonality for TSS, TP, or E. coli. Seasonal variation was considered in the development of the TMDL but insufficient water quality data was obtained to allow for seasonal variation calculations" (TMDL p. 67). The City stated that, if any limitations are needed, seasonal limits would be more appropriate for the Big Wood River given its hydrologic characteristics with high springtime and early summer flows.
- The City stated that the proposed draft permit structure is not linked to water recycling initiatives and EPA's integrated water framework. The City stated that it has completed a conceptual evaluation of recycled water production and use and determined that there is significant potential to implement a recycled water program. However, the City will not have an incentive to implement a recycled water program if year-round phosphorus limits are included in its NPDES permit since the greatest demand for recycled water will occur in the summer months, least demand in the spring and fall, and no demand in the winter. By averaging the effluent phosphorus limits over a season, the City will be equally protective of water quality and will have an incentive to use recycled water. Inclusion of a phosphorus limit that is averaged over a seasonal period instead of a monthly period will provide the City with the operational flexibility to manage a recycled water program.

Response #2

EPA cannot establish a seasonal average TP limit of 23 lb/day, applicable exclusively from July – September, for several reasons, which are explained below.

The City's Proposed TP Limit Would Not Be Consistent with the City's WLA in the Big Wood River TMDL

The TP WLA for the City of Hailey in the EPA-approved Big Wood River TMDL is 5.2 lb/day (see the Big Wood River TMDL at Table FFF). As stated on pages C-6 and C-7 of the fact sheet, federal regulations require that NPDES permits include effluent limits that are “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” (40 CFR 122.44(d)(1)(vii)(B)).

As stated on Page C-3 of the fact sheet, “in the TMDL, the loading capacity (for TP) was calculated using the annual average river flow and the maximum monthly average in-stream target of 50 µg/L (0.05 mg/L) total phosphorus (see the TMDL at page 62).... Therefore, it is consistent with the assumptions and requirements of the phosphorus wasteload allocation to establish an average monthly effluent limit equal to the wasteload allocation.”

The City's proposed TP limit is 23 lb/day, as a seasonal average. The magnitude of this limit is more than four times the WLA. Furthermore, it is greater than the total TP loading allocated to all three point sources in the TMDL (17.4 lb/day). Also, the City's proposed averaging period is longer than the monthly averaging period associated with the 50 µg/L in-stream target. In addition to the 50 µg/L monthly average in-stream target, IDEQ also established an 80 µg/L maximum daily in-stream target, which serves as further evidence that IDEQ intended to control short-term maximum concentrations of TP with the TMDL (see the Big Wood River TMDL at Page 62). Furthermore, the Big Wood River TMDL is clear that the WLAs for TP apply year-round (see Page 67).

Therefore, the numeric value, the averaging period, and the seasonal applicability of the TP limit proposed by the City are all inconsistent with the assumptions and requirements of the Big Wood River TMDL's WLA for this facility. Therefore, EPA cannot accept the City's proposed TP limit (40 CFR 122.44(d)(1)(vii)(B)).

The City's Proposed TP Limit Would Not Comply with Federal Regulations Governing how Effluent Limits Must Be Stated

The City's proposed seasonal (July – September) averaging period for TP limits would not comply with federal regulations requiring that, “for continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall unless impracticable be stated as...average weekly and average monthly discharge limitations for POTWs” (40 CFR 122.45(d)(2)). The City of Hailey's Woodside Boulevard WWTP is a POTW as that term is defined in 40 CFR 403.3(q). As explained in the response to comment #1, above, the City has not demonstrated that it is impracticable to express effluent limits for TP as average monthly and average weekly limits. Therefore EPA cannot express the TP limits as a seasonal average limit as proposed by the City.

The City's Concerns about the Big Wood River TMDL Cannot be Addressed through the NPDES Permitting Process

The Environmental Appeals Board has held that TMDL WLAs cannot be challenged in the context of a permit action (Order Denying Review In Re City of Moscow, Idaho, 10 E.A.D. 135). If the City believes that the Big Wood River TMDL should be revised to account for seasonal variation in TP loading or to re-evaluate the 50 µg/L in-stream TP target, the City should work with IDEQ to revise the Big Wood River TMDL. However, it is notable that, in 2009, IDEQ rejected the City's proposal for a revision of the Big Wood River TMDL's TP WLAs, which was more modest than that proposed by the City in its comments on the draft permit (see also the response to comment #3, below).

The TP Limits in the Draft Permit are not Inconsistent with EPA's Draft Integrated Planning Approach Framework

As stated in the memorandum of October 27, 2011 from Nancy Stoner, the acting Assistant Administrator for the Office of water and Cynthia Giles, the Assistant Administrator for the Office of Enforcement and Compliance Assurance, "in embracing an integrated approach to waste- and storm-water management we are not suggesting that existing regulatory or permitting standards that protect public health and water on which communities depend be lowered. Rather, we are simply suggesting that such an approach will help municipalities responsibly meet their CWA obligations by maximizing their infrastructure improvement dollars through the appropriate sequencing of work." EPA's draft Integrated Planning Approach Framework dated January 13, 2012 states that "the integrated planning approach does not remove obligations to comply with the CWA, but rather recognizes the flexibilities in the CWA for the appropriate sequencing of work." The draft Integrated Planning Approach Framework also states that plans should describe regulatory issues to be addressed, including applicable WLAs in an approved TMDL (see Page 3).

The requirement in 40 CFR 122.44(d)(1)(vii)(B) that NPDES permits include effluent limitations consistent with the assumptions and requirements of WLAs in EPA-approved TMDLs is an existing regulatory requirement of the CWA that was promulgated on June 2, 1989 (54 FR 23896). The Big Wood River TMDL was approved by EPA in May 2002. Thus, the requirement for the City of Hailey to comply with effluent limits consistent with its WLA in the Big Wood River TMDL is an existing regulatory requirement of the CWA, which is not modified in any way by EPA's draft Integrated Planning Approach Framework.

The draft Integrated Planning Approach Framework points out that compliance schedules can be used to allow NPDES permit holders time to achieve compliance with water quality-based effluent limits (Page 5, see also 40 CFR 122.47 and IDAPA 58.01.02.400.03). The final permit includes a four year and eleven month compliance schedule for the new, more-stringent water quality-based TP effluent limits.

Comment #3

The City suggests that EPA request that IDEQ issue an errata for the TP WLAs. The City states that, in the Big Wood River TMDL, the State of Idaho did not demonstrate the need for a total

phosphorus limit, did not select the in-stream target of 0.050 mg/L with site-specific data, and did not evaluate the seasonal need for a total phosphorus limit by arbitrarily selecting an annual allocation.

The City requested that EPA postpone any new total phosphorus effluent limitations until such as time as errata are issued, either until the next NPDES renewal or via a re-opener.

Response #3

EPA will not request that IDEQ issue an errata for the TP WLAs. In 2009, IDEQ denied the City's request to revise the City's WLA for TP in the Big Wood River TMDL (see letter from Bill Allred, IDEQ Regional Administrator to Mayor Richard Davis, Tom Hellen, and Bill Benko, May 26, 2009). IDEQ referenced this denial of the City's request in its CWA Section 401 certification of the City of Hailey permit, dated April 12, 2012. Specifically, IDEQ stated in the 2009 letter to Mayor Richard Davis and others that:

"...(T)he TP request of 15.0 lb/day TP into Segment 2 of the Big Wood River represents an increase by 2.9 times from the 5.2 lb/day TP TMDL limit. This creates an overall increase in the point sources of Segment 2 from 17.4 lb/day TP to 27.2 lb/day TP, or an increase of 1.6 times. In order to consider this option, it would require subtracting 9.8 lb/day TP from the nonpoint sources (Load Allocation), and thus impose a 23.7% reduction in the allocation for the nonpoint sources. This is a significant reduction in the load allocation to nonpoint sources and would need to be considered by the Watershed Advisory Group. IDEQ considers this reduction unacceptable without some form of a nonpoint source total phosphorus reduction implementation plan and schedule."

Note that the City's proposed revision to its TP WLA in the Big Wood River TMDL (i.e. an average monthly limit of 15 lb/day, applicable year-round), was more modest than the revision the City proposed for its TP effluent limits in its comments on the draft permit (a seasonal average of 23 lb/day, applicable from July – September only), yet the proposal was nonetheless rejected. EPA agrees with IDEQ's reasoning explained in the 2009 letter to Mayor Richard Davis and others for not revising the Big Wood River TMDL to provide a larger WLA to the City and will not request that IDEQ revise the TP WLAs in the Big Wood River TMDL.

EPA has no basis to postpone inclusion of TP effluent limits that are consistent with the assumptions and requirements of the City's WLA in the Big Wood River TMDL. However, the final permit does include a four-year and eleven-month schedule of compliance for the final water quality-based TP limits that are based on the TMDL.

Comments Regarding Effluent Limits for Total Suspended Solids

Comment #4

ICL stated that the average monthly TSS effluent limits in the draft permit are not consistent with the Big Wood River TMDL's WLA for this facility. ICL stated that the Big Wood River TMDL established a Total Suspended Solids (TSS) WLA of 3.3 tons/year for the City of Hailey WWTP.

ICL notes that, on a daily basis, the WLA in the fact sheet is equivalent to 18 lbs/day; however, the draft permit proposes an average monthly TSS limit of 45 lb/day. ICL asserts that EPA's conclusion that the proposed effluent limits are "consistent with the assumptions and requirements" of the TMDL is unsupported for the following reasons:

- ICL stated that the fact sheet relies on certain methodologies for accounting for variability in effluent discharge and relies on an EPA document entitled *Technical Support Document for Water Quality-based Toxics Control* or TSD. ICL stated that EPA has used the TSD's methodologies to develop limits for TSS, not toxic pollutants. ICL stated that this is an inappropriate and unsupported use of the methodologies described in the TSD.
- ICL stated that the average monthly effluent limit was calculated using what appears to be a totally arbitrary multiplier. ICL stated that EPA cites the average monthly limit as being calculated by multiplying the facility's TMDL WLA, converted to a daily load (18 lbs/day) by 2.51. EPA states that this multiplier of 2.51 is the result of a "relationship" shown in Table 5-2 in the TSD. ICL stated that Table 5-2 has 200 different ratios and that the discussion in the fact sheet therefore fails to provide the information required for reviewers to review or replicate EPA's conclusion. ICL stated that, although Table 5-2 contains 200 possible ratios, none of these ratios is "2.51" – the ratio that EPA has chosen to utilize.
- ICL states that the proposed effluent limits authorize discharges that exceed the WLA for this facility. If the facility were to discharge TSS at 45 lbs/day for every day of the year, it would be in compliance with the draft permit. Doing so would result in an annual TSS discharge of 8.2 tons/yr. ICL stated that an effluent limit that provides for a lawful discharge of 8.2 tons/year of TSS is not consistent with the WLA in the EPA approved TMDL of 3.3 tons/year.

Response #4

EPA believes that the proposed average monthly effluent limit of 45 lb/day is, in fact, consistent with the assumptions and requirements of the WLA in the TMDL, for the reasons explained below.

The TSD Was Properly Used to Calculate the Average Monthly Limits in the Draft Permit

EPA's guidance for writing NPDES permits (U.S. EPA NPDES permit Writers' Manual, 2010) specifically addresses the development of water quality based effluent limits using the procedures from the TSD. (See chapter 6)

"The terminology used and procedures described in this manual when discussing both assessing the need for and calculating WQBELs are based on the procedures in EPA's Technical Support Document for Water Quality-Based Toxics Control <www.epa.gov/npdes/pubs/owmo264.pdf> (hereafter TSD). *Those procedures were developed specifically to address toxic pollutants but have been appropriately used to address a number of conventional and nonconventional pollutants as well.*" (emphasis added, see Page 6-11)

Therefore, consistent with this guidance, EPA appropriately relied on the statistical methods in the TSD.

As stated in the fact sheet, the specific part of the TSD that was used in the calculation of TSS effluent limits for the City of Hailey was the equation used to calculate an average monthly limit based upon a pre-determined long-term average (LTA) WLA (see TSD at table 5-2). Typically, for effluent limits for toxic pollutants based upon two-value (i.e. acute and chronic) water quality criteria, the LTA WLA would have been calculated based on the acute and chronic WLAs, as shown in Box 5-2 and Table 5-1 of the TSD. In this case, the WLA in the Big Wood River TMDL is expressed as an annual total load of 3.3 tons per year, which can be converted to an annual average load in units of lb/day (18.1 lb/day in this case¹). Once the WLA is converted to an annual average value, it is approximately equivalent to the LTA WLA, for the purposes of effluent limit calculations. Thus, it is appropriate to calculate average monthly limits from the annual average WLA, using the equation in Table 5-2 of the TSD.

The Multiplier Used to Calculate the Average Monthly Limit was Not Arbitrary

As stated in the fact sheet (Page C-6 and C-7), “The average monthly and average weekly loading limits for TSS are calculated based on the annual total wasteload allocation as well as the variability of the effluent TSS load, using the relationship shown in Table 5-2 of the TSD.” ICL notes in its comments that Table 5-2 has 200 possible ratios, and none of the ratios listed is equal to 2.51, which is the multiplier used in this case. This is because EPA did not use the *values* printed in the table to calculate the multiplier; rather, EPA used the *equation* which is printed in the table and which produces the values in the table. The direct use of the equation rather than the values in the table allows for a more precise calculation of the multiplier than is possible using the table (even if interpolation is used), because the table only includes certain values for the coefficient of variation (CV) and sampling frequency, whereas, if the equation is used, then the exact CV and sampling frequency can be used. The equation is:

$$AML = LTA \times \exp(z_a \sigma_n - 0.5 \sigma_n^2)$$

Where:

$$\sigma_n^2 = \ln(CV^2/n + 1)$$

$$\sigma_n = \sqrt{\sigma_n^2}$$

$z_a = 1.645$ for 95th percentile probability basis

$n =$ number of sampling events

In this case, the multiplier was calculated based on the variability of the City of Hailey’s average monthly discharges, as reported on the City’s discharge monitoring reports (DMRs) from February 2001 through April 2009. The average of the monthly average TSS loads was 13.8 lb/day, and the standard deviation of the monthly average TSS load was 11.3 lb/day, thus, the coefficient of variation (CV) is $11.3 \div 13.8 = 0.819$.

When setting an average monthly limit based on a LTA WLA, the goal is to assess the variability of the monthly averages (i.e., the expected ratio between the long-term average and the maximum

¹ $3.3 \text{ tons/year} \times 2000 \text{ lb/ton} \div 365 \text{ days/year} = 18.1 \text{ lb/day}$

monthly average). The TSD equations are based on the assumption that the CV has been calculated based on individual data points. In this case, EPA evaluated the CV of the monthly average TSS loads, as reported on the DMRs. Because the City of Hailey was required to sample its effluent for TSS at least once per week (see the 2001 permit at Table 1, on Page 5), each reported monthly average TSS load represents the average of at least four samples. The monthly averages will be less variable (i.e. have a lower CV) than the individual daily loads. The equation in Table 5-2 can be adapted to assess the variability of the monthly average data by setting the “number of samples” equal to one. This is appropriate because, in this case, any single “sample” from the data set used to calculate the effluent variability is, in fact, an *average* of at least four individual samples. Thus:

$$\sigma_1^2 = \ln(\text{CV}^2/1 + 1) = \ln(0.819^2 \div 1 + 1) = 0.5134$$

$$\sigma_1 = \sqrt{\sigma_1^2} = 0.7166$$

$$\exp(z_a \sigma_n - 0.5 \sigma_n^2) = \exp(1.645 \times 0.7166 + 0.5 \times 0.5134) = 2.51$$

Note that the CV in this case (0.819) is close to 0.8. The LTA multiplier shown in Table 5-2 of the TSD for a CV of 0.8 and $n = 1$ is 2.48, which is close to the multiplier calculated from the actual CV.

Thus, the multiplier used to calculate the average monthly TSS limit from the annual WLA was not arbitrary and was based on EPA permitting guidance (i.e., the TSD).

An Average Monthly Limit Must Be Set Higher Than an Annual Average WLA to Account for Effluent Variability

On Pages C-6 and C-7, the fact sheet states that:

“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 (see TSD at Section 5.3.1). The average monthly and average weekly loading limits for TSS are calculated based on the annual total wasteload allocation as well as the variability of the effluent TSS load, using the relationship shown in Table 5-2 of the TSD.

The average monthly limit is 45 lb/day, which is calculated as 2.51 times the wasteload allocation translated to a daily load. The monthly average effluent limits will nonetheless ensure that the facility will have a low probability of exceeding its 3.3 ton-per-year wasteload allocation because facilities must generally operate below their average monthly limits most of the time in order to ensure consistent compliance (see TSD at figure 5-3). Therefore, the TSS effluent limits are consistent with the assumptions and requirements of the wasteload allocation.”

As explained in Section 5.2.2 of the TSD, “all permit limits, whether technology-based or water quality-based, are set at the upper bounds of acceptable performance. The purpose of a permit

limit is to specify an upper bound of acceptable effluent quality.” In Section 5.3.1, the TSD states that “the limits must ‘force’ treatment plant performance, which, after considering acceptable effluent variability, will only have a low statistical probability of exceeding the WLA and will achieve the desired loadings.”

In general, federal regulations require effluent limits for continuously discharging POTWs to be expressed as average monthly and average weekly discharge limitations, meaning the highest allowable averages of discharges measured over a calendar month or a calendar week (40 CFR 122.2, 122.45(d)(2)). Because effluent discharges are not constant, an effluent limit that specifies the maximum allowable average discharge over a short period of time (e.g., a month or week) must be set higher than the long-term average discharge that the limit is intended to achieve. If such a short-term effluent limit were set equal to an annual average WLA, it would be more stringent than intended.²

EPA Has Assured that the Permits Will Meet the Annual WLA

There is a low probability that the permittee would exceed the annual WLA. The average monthly TSS limits in the draft permit represent the expected maximum monthly average effluent load that the City would discharge, if its long-term average TSS load were equal to the WLA (3.3 tons per year, or, equivalently, 18.1 lb/day), assuming that the effluent variability remains the same as it has been in the past. Thus, as stated on Page C-7 of the fact sheet, “The monthly average effluent limits will nonetheless ensure that the facility will have a low probability of exceeding its 3.3 ton-per-year wasteload allocation because facilities must generally operate below their average monthly limits most of the time in order to ensure consistent compliance (see TSD at figure 5-3).”

However, ICL is correct that it is possible that the permittee could comply with the average monthly limits and yet discharge more TSS than allocated in the TMDL. Therefore, as explained in the response to comment #5, below, EPA has included an annual average effluent limit for TSS, which directly ensures that the annual loading of TSS will not exceed 18.1 lb/day, on average (or, equivalently, 3.3 tons per year total).

Comment #5

ICL stated that EPA has not proposed a TSS effluent limit consistent with the tons/yr (or annual loading) format of the TSS WLA in the Big Wood River TMDL. ICL stated that the absence of an annual limit is a deficiency that EPA needs to correct prior to issuance of this permit.

Response #5

EPA agrees that an annual limit for TSS is appropriate in this case. As explained in the response to comment #4, above, because federal regulations require that effluent limits for POTWs that discharge continuously must generally be expressed as average monthly and average weekly limits

² In Section 5.3.1, the TSD specifically recommends against setting a relatively short-term maximum permit limit equal to a relatively long term WLA, because the limit would be overly stringent. The TSD’s specific example of this is setting the maximum daily limit equal to the chronic WLA.

(40 CFR 122.45(d)(2)), for the draft permit, EPA attempted to reconcile the difference between the averaging period of the WLA (annual) and the averaging periods of the limits (monthly and weekly) in a way that accounts for the variability of the effluent TSS loading.

As explained in the response to comment #4, above, EPA disagrees with ICL's statements that the average monthly TSS limits proposed in the draft permit were arbitrary and an improper use of the TSD. However, ICL is correct that it is possible (albeit unlikely) that the permittee could comply with the average monthly limits and yet discharge more TSS than allocated in the TMDL. In fact, this occurred in 2008.³ The monthly average TSS loads measured during 2008 were as shown in Table 1, below:

Table 1: Average Monthly Effluent TSS Loads Measured in 2008	
Month	Average Monthly TSS Load (lb/day)
January	14.5
February	34
March	32
April	25
May	24
June	23
July	23
August	27
September	28
October	20.1
November	4.3
December	<8
Annual Average	21.9
Max. Monthly Avg.	34

Therefore, EPA has established an annual average effluent limit for TSS of 18.1 lb/day. This limit is equal to the 3.3 ton-per-year WLA converted to a daily load.⁴ EPA chose to express the TSS effluent limits as an annual average (in lb/day) instead of an annual total, because this is consistent with the way the monthly and weekly limits are expressed. This will simplify the calculation of loads for compliance purposes, because the annual average load is calculated in a manner similar to an average monthly or weekly load.

EPA has determined that the City can comply with an annual average limit of 18.1 lb/day immediately upon the effective date of the final permit. This annual average load has not been exceeded in the past three years (2009, 2010, and 2011). Therefore, a compliance schedule is not necessary for this new water quality-based effluent limit.

³ The 18.1 lb/day WLA was also exceeded in 2002, however, in 2002, there were three months in which the average monthly TSS load was greater than the proposed average monthly limit of 45 lb/day.

⁴ $3.3 \text{ tons/year} \times 2000 \text{ lb/ton} \div 365 \text{ days/year} = 18.1 \text{ lb/day}$

EPA has also included average monthly and average weekly limits in addition to the annual average limit of 18.1 lb/day. The average monthly limit in the final permit is identical to that in the draft permit (45 lb/day). The average weekly limit has been changed to 141 lb/day, as explained in the response to comment #6, below. The average monthly and average weekly limits ensure that the permit complies with federal regulations governing the expression of effluent limits in NPDES permits for POTWs that discharge continuously (40 CFR 122.45(d)(2)). In addition, the average monthly and average weekly limits will ensure that the maximum discharge in any given month or week is not so much greater than the annual average limit that the City is likely to violate the annual average WLA due to one or two months of relatively high discharge loading.

Comment #6

ICL stated that the calculation of the average weekly effluent limit incorrectly used technology-based effluent limit methodology rather than water quality-based limits. ICL stated that the fact sheet states that the average weekly TSS limit was set at 68 lbs/day, which is 1.5 times the average monthly limit and that this is “consistent with the technology-based concentration limits.” ICL stated that the Big Wood River is listed as 303(d) for TSS and there is a TMDL that has established a TSS WLA for this facility. As such, it is not appropriate for this facility’s effluent limits to be technology-based. Rather, this facility’s limits need to be water quality-based.

Response #6

As stated in the fact sheet at Pages C-1 and C-2, “The concentration and removal rate limits for BOD₅ and TSS are the technology-based effluent limits of 40 CFR 133.102. *However, the mass limits for BOD₅ and TSS are more stringent than the technology-based effluent limits. The mass limits for TSS are water quality-based effluent limits that are consistent with the assumptions and requirements of the wasteload allocation for the discharge in the Big Wood River Watershed Management Plan*” (emphasis added). This statement is true for all of the TSS mass limits in the final permit, regardless of their averaging period (annual, monthly or weekly). See also Table C-5, on Page C-7 of the fact sheet.

The technology-based TSS loading limits for the City of Hailey, which do not appear in the permit, would be calculated using the equation shown on Page C-1 of the fact sheet. The technology-based TSS loading limits are:

Average monthly limit:

$$30 \text{ mg/L} \times 1.6 \text{ mgd} \times 8.34 = 400 \text{ lb/day}$$

Average weekly limit

$$45 \text{ mg/L} \times 1.6 \text{ mgd} \times 8.34 = 600 \text{ lb/day}$$

The proposed water quality-based average monthly and average weekly TSS loading limits in the draft permit are 45 lb/day and 68 lb/day, respectively. These limits represent an 89% reduction

relative to the technology-based effluent limits. The fact that EPA used the same ratio between the average monthly and average weekly limits (1.5:1) as used in the technology-based limits does not mean that the average weekly TSS limits are technology-based rather than water quality-based.

The water quality-based effluent limits for TSS are expressed exclusively as loads (i.e., the concentration limits are technology-based) because the WLA for TSS in the Big Wood River TMDL is expressed exclusively as load (i.e., tons per year). If the effluent flow rate were sufficiently low, the City could comply with the water quality-based mass limits for TSS, without discharging a lower concentration of TSS than required by the technology-based limits.

Because the WLA is expressed as an annual total load (i.e, tons per year), the effluent loading of TSS in any given week is only of concern if it ultimately results in noncompliance with the average monthly or annual average limit. Therefore, similar to the average weekly TP limits (see the response to comment #1), EPA has reviewed the City's effluent TSS data to determine if the assumed 1.5:1 ratio of the maximum average weekly load to the average monthly load accurately reflects the WWTP's performance. The TSS effluent limits in the City's 2001 permit were expressed as average monthly and average weekly limits, thus, the city was required to report the monthly average and the maximum weekly average TSS load each month. EPA calculated the ratios of the reported maximum weekly average TSS load to the reported average monthly TSS load for each month from July 2001 (the first full month during which the 2001 permit was effective) through March 2012. The ratio was greater than 1.5:1 41% of the time when all data are considered, and 42% of those months when the average monthly TSS load was less than or equal to the new average monthly limit of 45 lb/day. The 95th percentile ratio was 3.5:1.

Therefore, EPA believes that the proposed 1.5:1 ratio of the average weekly limit to the average monthly limit does not reflect the historic performance of the City's WWTP. But for the antibacksliding requirements of the CWA and federal regulations (CWA Sections 303(d)(4) and 402(o), 40 CFR 122.44(l)), EPA believes it would be appropriate to change the ratio to 3.5:1, consistent with the 95th percentile ratio actually observed since July 2001. This would result in an average weekly limit of 158 lb/day in the final permit, instead of the proposed average weekly limit of 68 lb/day. This water quality-based limit is more stringent than the technology-based limit (600 lb/day), however, it is less stringent than the average weekly TSS limit in the 2001 permit (141 lb/day). Therefore, to ensure compliance with the antibacksliding provisions of the Clean Water Act, EPA has continued forward the 141 lb/day average weekly TSS limit in the 2001 permit. The average monthly limit of 45 lb/day is unchanged. The ratio between the average weekly and average monthly limit is thus 141:45, or 3.1:1.

The purposes of the average weekly limit are to ensure compliance with federal regulations governing the expression of effluent limits in permits (40 CFR 122.45(d)(2)) and to ensure that the average discharge of TSS in any given calendar week is not so much greater than the average monthly effluent limit that the permittee is likely to violate the average monthly limit due to a single week of high discharge loading. The revised average weekly limit will serve these purposes.

Comment #7

ICL stated that the Big Wood River TMDL established TSS WLAs for The Meadows, the City of Hailey WWTP and the City of Ketchum WWTP. The WLA and the proposed permit effluent limits for TSS at these facilities are displayed in the table below.

Facility	From TMDL		From Draft NPDES		Permit limit greater than WLA by: (tons/yr)
	TSS WLA (tons/yr)	Converted Daily WLA (lb/day)	Proposed TSS AML (lb/day)	Converted Annual (tons/yr)	
Meadows	0.6	3.3	8.3	1.5	0.9
Hailey	3.3	18	45	8.2	4.9
Ketchum	26.5	145	275	50.2	23.7
Total	30.4	166.3	328.3	59.9	—
Total amount of TSS discharge authorized in excess of WLA					29.5 tons/yr

ICL stated that each draft NPDES permit fails to limit TSS discharge at the respective facility to the WLA identified in the TMDL. As a result, each of these facilities is being authorized to discharge at levels that are not consistent with the WLAs in the TMDL.

ICL stated that, if each facility operated at the maximum levels allowed in their draft permits, the resulting discharge would exceed the WLAs developed in the Big Wood TMDL by 29.5 tons/year, or, equivalently, 162 lb/day. This represents a nearly 100% increase in TSS discharge beyond what the Big Wood River TMDL authorizes.

ICL stated that the TMDL was developed to reduce TSS discharge to the Big Wood River and restore water quality to the point that the river could be removed from the 303(d) list. ICL stated that permit limits that allow for a 100% increase in TSS discharge are not consistent with the TMDL. ICL stated that the limits issued in the final versions of these NPDES permits need to be the same as the WLAs that have been developed for these facilities.

Response #7

EPA agrees that the Big Wood River TMDL was developed to reduce TSS discharge to the Big Wood River and thereby restore water quality. However, EPA disagrees that the draft permits for the City of Hailey, City of Ketchum, and The Meadows allow an increase in TSS discharge. In fact, neither the draft nor the final permits allow an increase in TSS discharges relative to previously-authorized levels. Table 2, below, provides a comparison of the average monthly effluent limits in the draft and final permits relative to the prior permits.

Facility	Prior Permit AML (lb/day)	2012 Permit TSS AML (lb/day)
Meadows	25	8.3
Hailey	94	45
Ketchum	505	275
Total	624	328.3

As shown in Table 2, based solely on average monthly TSS limits, the draft reissued permits for The Meadows, the City of Hailey, and the City of Ketchum require a 47% reduction in TSS load relative to the prior permits.

Furthermore, as explained in the response to comment #5, to address the concern that it is possible (albeit unlikely) that the City of Hailey could comply with the average monthly limits and yet discharge more TSS than allocated in the TMDL, EPA has established an annual average effluent limit for TSS of 18.1 lb/day, which is equal to the 3.3 ton-per-year WLA converted to a daily load.

These same concerns were also raised for the City of Ketchum and The Meadows. Therefore, EPA has also established annual average effluent limits for TSS for the City of Ketchum and The Meadows, which are equal to those facilities' annual total WLAs converted to daily loads. Thus, the reissued permits for Hailey, Ketchum, and The Meadows assure that the TSS loading from these sources, both individually and cumulatively, is no greater than that allocated in the Big Wood River TMDL.

Comments Regarding Monitoring Requirements

Comment #8

The City stated that, in Table 3, on Page 8 of the draft permit, the freshwater acute toxicity testing is 96 hours, but the referenced method is a 7-day chronic reproduction and growth weight testing. These are two separate methods and should be clarified. The City requested that EPA revise Table 3 to have the matching freshwater acute toxicity texts with the appropriate methods.

Response #8

EPA agrees that the two chronic toxicity test methods listed in Table 3 of the draft permit are 7-day methods. The final permit does not list the duration of the chronic tests. The permit requires chronic (not acute) whole effluent toxicity testing.

Comment #9

The City stated that, on Page 9 of the draft permit, the toxicity reduction evaluation (TRE) workplan is required prior to the toxicity testing. The City stated that the TRE workplan is unnecessary and will not be used if the testing results show that the effluent quality meets the toxicity requirements. The City requested that EPA revise the requirement to have the TRE workplan required within 180 days after toxicity testing, if the effluent is not meeting the toxicity requirements.

Response #9

EPA believes it is necessary and appropriate to require permittees to develop TRE workplans prior to measuring an actual exceedance of whole effluent toxicity (WET) limits or triggers. As stated on Page 4-1 of EPA's *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, "while TREs and (Toxicity Identification Evaluations) are generally site-specific and the TRE's details can only be determined once it has been triggered, generic TRE plans can be made

ahead of time. Where the permitting authority includes a TRE provision in the permit, EPA recommends that the discharger be required to submit, within 60 to 90 days of the effective date of the permit, a plan for responding to noncompliance with the WET limit or permit requirement.” Preparing the TRE workplan in advance allows for a faster response to and correction of toxicity in the effluent.

Comment #10

The City stated that, in Section I.D.6, Page 11 of the draft permit, the requirement, “For temperature, surface water monitoring results must be submitted to EPA and IDEQ with the monthly DMRs” poses technical and safety challenges for the City. The City stated that during previous efforts to monitor river temperature, the probes were destroyed and lost during high flow events in the river. If the download of the temperature probe recordings were done quarterly, this would reduce risk and time requirements for City personnel.

The City stated that the location of temperature sampling is a life safety issue for City personnel. The City requests the flexibility to locate upstream and downstream temperature monitoring at locations that will provide safe access for personnel. The City requested that EPA revise the reporting frequency for water temperature to quarterly to coincide with the other parameters in Table 4.

Response #10

EPA agrees that it is appropriate to allow the City to collect and submit temperature data less frequently than monthly, in order to ensure safe access to the monitoring equipment. However, because monitoring for temperature is only required from April – October each year, quarterly reporting is not appropriate.

EPA has changed the reporting requirements for temperature as follows. In the final permit, the City is required to report the temperature data twice per year. Temperature data for April - May must be reported with the July DMR (due August 10th) and data for June - October must be reported with the December DMR (due the following January 10th).

This ensures that, if there is a problem with the April - May monitoring, the City has an opportunity to correct it and still collect valid data for August through October. The City has roughly 70-day windows to retrieve the temperature loggers (i.e., between June 1st and August 10th for the April – May data, and between November 1st and the following January 10th for June – October data), which should ensure safe retrieval.

The permit does not require specific monitoring locations for receiving water monitoring of temperature or any other parameters. The permit requires monitoring stations to be established in the Big Wood River above the influence of the facility’s discharge, and below the facility’s discharge at a point where the effluent and the Big Wood River are completely mixed (see the permit at Part I.D.1). EPA believes this requirement provides adequate flexibility in finding monitoring locations that allow for safe access.

Comment #11

The City stated that the list of parameters for which receiving water monitoring is required in Table 4, on Page 12 of the draft permit, is cited in the Fact Sheet (p. 14) as having been specified in IDEQ's 401 certification. The City stated that the list of parameters in Table 4 includes parameters that are not listed in the 401 certification (p. 1). The City requested that EPA remove the parameters not listed in the 401 certification from the surface water monitoring requirements (Table 4); alkalinity, cadmium, cyanide, lead, nickel, and silver.

Response #11

EPA agrees that receiving water monitoring for cadmium, cyanide, lead, nickel and silver are not necessary. Receiving water monitoring for these parameters is not specified in IDEQ's CWA Section 401 certification, nor is routine effluent monitoring required for these parameters.

However, EPA believes it is appropriate to require receiving water monitoring for alkalinity, even though it is not stipulated in the CWA Section 401 certification. The effluent and receiving water monitoring for alkalinity will better characterize the discharge's effect on the pH of the receiving water, which may influence the effluent limits for pH in future. As such, the receiving water monitoring for alkalinity is reasonably required to develop or assist in the development of effluent limits for pH. Therefore, the requirement for receiving water monitoring for pH is authorized by Section 308(a) of the CWA.

Other Comments

Comment #12

The City stated that it had previously commented on the *Big Wood River Watershed Management Plan* and related documents. The City stated that the wasteload allocations cited in the NPDES permit should be properly qualified and footnoted as the result of incomplete analyses and provisions made to allow the allocations to be revised in the future (increased or decreased) as a result of additional information that provides the foundation for a more complete water quality analysis. The City stated that such provisions should be made to alleviate concerns about anti-backsliding constraints or other requirements that might unnecessarily restrict the City's discharge based on incomplete information in this first NPDES permit to include wasteload allocations.

Response #12

EPA assumes that the City is referring to the wasteload allocations (WLAs) in the *Big Wood River Watershed Management Plan* and the *Errata to the Big Wood River Watershed Management Plan (TMDL) of 2002*, hereinafter referred to as the "Big Wood River TMDL" and the "TMDL Errata," respectively.

These total maximum daily loads (TMDLs) have been approved by EPA pursuant to 40 CFR 130.7. As stated on pages C-6 and C-7 of the fact sheet, federal regulations require that NPDES permits include effluent limits that are "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” (40 CFR 122.44(d)(1)(vii)(B)). Because EPA is required by regulation to include effluent limits consistent with WLAs in an approved TMDL, it is neither necessary nor appropriate to “qualify” or “footnote” any effluent limitation that is based on a WLA in an approved TMDL.

If the City feels that the WLAs in the Big Wood River TMDL or the TMDL Errata are the result of incomplete analyses or are otherwise incorrect, the City should work with IDEQ to revise the TMDLs. TMDL WLAs cannot be challenged in the context of a permit action (Order Denying Review In Re City of Moscow, Idaho, 10 E.A.D. 135).

If, in the future, the TMDL is modified to establish revised WLAs that result in less-stringent effluent limits relative to those in the final permit, and the cumulative effect of the revised load and wasteload allocations in the revised TMDL will cumulatively assure attainment of water quality standards, the effluent limits may be revised without running afoul of the anti-backsliding provisions of the Clean Water Act (CWA) (Section 303(d)(4)(A)). Revisions to the Big Wood River TMDL’s WLAs would also be considered “new information” and therefore cause for modification of the permit under 40 CFR 122.62(a)(2). Because the CWA and federal regulations already provide adequate provisions to allow the permit to be modified or reissued with revised effluent limits based on revised TMDL WLAs, it is not necessary to include such provisions in the permit.

Comment #13

The City stated that, in Table 1, on Page 5 of the draft permit, the E. coli limit expressed in units of CFU/day unnecessarily duplicates the limit expressed as CFU/100 ml. As stated in the Errata, “The wasteload allocations for E. coli (in colony forming units, or CFU, per day) in Tables H, XX, HHH, and PPP are based on achieving the E. coli criteria of 126 cfu/100 milliliters (based on a 30-day geometric mean) at the point of discharge (i.e., ‘end of pipe’)” (IDEQ 2011).

The City stated that it is not necessary to have both concentration and load requirements in a NPDES permit particularly for constituents not expressed in pounds per day for loads. The monthly geometric mean of 126 cfu/100 mL is equal to the WLA, which is the Idaho water quality standard, and is protective of surface water quality. The City requested that EPA delete the E. coli limit that is expressed in CFU/day.

Response #13

As stated on Page C-6 of the fact sheet:

“Federal regulations require that ‘effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge’ in a total maximum daily load (TMDL) that has been prepared by the State and approved by EPA. The Big Wood River Watershed Management Plan is a TMDL that was approved by EPA on May 15, 2002. The TMDL was modified by IDEQ in November 2011, and the

modification was approved by EPA in February 2012. The modified TMDL's wasteload allocation for E. coli for this discharge is 7.63 billion (7.63×10^9) CFU/day."

While the sentence from the TMDL Errata quoted by the City in its comments is accurate, the next sentence in the TMDL Errata reads, "both the 10^9 cfu/day load and achieving the E. coli criteria as an end-of-pipe concentration limit are part of the wasteload allocation, and *both limits should be incorporated when updating NPDES permits for the City of Hailey, City of Ketchum, and Meadows WWTPs*" (emphasis added, see the TMDL Errata at Page 1).

Clearly, IDEQ intended for the WLAs to be represented in the permits as both concentration (i.e. CFU/100 ml) and load (i.e. CFU/day) limits. If EPA did not include CFU/day limits for E. coli in the permit, the E. coli limits would not be consistent with the assumptions and requirements of the WLA and thus would not comply with federal regulations (40 CFR 122.44(d)(1)(vii)(B)).

Comment #14

The City stated that, in Table 1 on Page 6 of the draft permit, under the column "Parameter" for the item "NPDES Application Form 2A Expanded Effluent Testing" the callout "See Part I.B.9" does not exist. The City requested that EPA correct the callout to reference the appropriate section.

Response #14

This reference should have read "See Part I.B.7." The reference has been corrected in the final permit.

Comment #15

The City made several comments on the Fact Sheet for the draft permit. Specifically, the City stated that:

- In Section I.A, on Page 7 of the fact sheet, the information for "Contact" should be updated remove the reference to Ray Hyde, Public Works Manager and replace it with Tom Hellen, Public Works Manager.
- In Section II.B, on Page 7 the fact sheet reads, "A map has been included in Appendix A..." The City stated that there is not a map in Appendix A.
- On Page C-6, the City stated that, for the sentence "...and the maximum monthly geometric mean in-stream target of 126 CFU/100 ml total phosphorus," the reference should be to E. coli, not total phosphorus. Also, the City stated that the reference should be to the TMDL Errata, not the Big Wood River TMDL.
- On Page E-1, the City stated that, for the sentence "The USFWS county species list for Fremont County lists..." The City requested that EPA correct the reference to read "Blaine County" and check that the listed species are correct for Blaine County.

Response #15

The fact sheet is a final document, the purpose of which is to explain the conditions in the draft permit. As such, EPA will not edit the fact sheet in response to these comments. EPA will, however respond to the substantive issues raised by these comments.

EPA acknowledges that Ray Hyde is no longer the public works manager for the City of Hailey and that that position is currently held by Tom Hellen.

EPA acknowledges that the map referenced on Page 7 of the fact sheet appears in Appendix B, not Appendix A.

EPA acknowledges the error in the sentence on Page C-6 of the fact sheet, which reads, “in the TMDL, the loading capacity was calculated using the annual average river flow and the maximum monthly geometric mean in-stream target of 126 CFU/100 ml total phosphorus (see the TMDL at Page 63).” This sentence should have read “126 CFU/100 ml E. coli” instead of “...total phosphorus.” However, the referenced page of the Big Wood River TMDL (page 63) does, in fact, state that the in-stream target for E. coli is a monthly geometric mean 126 CFU/100 ml. The commenter is correct that the TMDL Errata also states that the in-stream target is a monthly geometric mean of 126 CFU/100 ml. Thus, while the TMDL Errata made changes to the E. coli WLAs for point sources, it did not make changes to the in-stream target for E. coli.

EPA acknowledges the error on Page E-1 of the fact sheet where it is stated that, “the USFWS county species list for Fremont County lists the following threatened and endangered species.” This sentence should have read “Blaine County” instead of “Fremont County.” EPA has verified that the species listed in the fact sheet are correct for Blaine County.

These errors in the fact sheet did not result in any errors in the draft permit conditions.

References

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. 1996. *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*. May 31, 1996.

EPA. 2010. *U.S. Environmental Protection Agency NPDES Permit Writers' Manual*. Office of Wastewater Management. Water Permits Division. State and Regional Branch. EPA-833-K-10-001. September 2010.

IDEQ. 2002. *The Big Wood River Watershed Management Plan*. Twin Falls Regional Office. March 11, 2002.

IDEQ. 2011. *Errata to the Big Wood River Watershed Management Plan (TMDL) of 2002*. November 2011.