

RESPONSE TO PUBLIC COMMENTS

From July 14, 2006 until August 12, 2006, the United States Environmental Protection Agency (“EPA”) solicited public comments on a draft National Pollutant Discharge Elimination System (“NPDES”) permit to authorize effluent discharges from the West Swanzey Wastewater Treatment Facility (“Swanzey WWTF”), which is located in Swanzey, New Hampshire. The draft permit was developed pursuant to an application from the Swanzey Sewer Commission (“Commission” or “Permittee”). After reviewing the comments received, EPA has decided to issue the final permit authorizing the discharge. The following describes and responds to comments, and describes any subsequent changes to the draft permit.

A copy of the final permit may be obtained by writing Jeanne Voorhees, United States Environmental Protection Agency, 1 Congress Street, Suite 1100 (CPE), Boston, Massachusetts, 02114-2023, or by calling (617) 918-1686. Copies may also be obtained from <http://www.epa.gov/region1/npdes/index.html>.

Comments submitted by Mr. Glenn W. Page, Chair, Swanzey Sewer Commission

Comment A1: The Swanzey WWTF was designed for 0.167 million gallons per day (“MGD”). A request was made to use this value for calculating the permit limits instead of 0.16 MGD.

Response A1: EPA requested that the Permittee provide documentation to confirm the design flow of the WWTF. Based on recent information provided by the Permittee, it was confirmed that the design flow of the facility is 0.160 MGD. Thus, the design flow, dilution factor, and mass limits for CBOD₅ and TSS remain unchanged. See Attachment A.

Comment A2: The draft permit, if finalized, will put Swanzey into non-compliance immediately. There is no information in the draft permit or fact sheet indicating a compliance schedule. Swanzey should not be penalized or have to pay fines for non-compliance without the opportunity to negotiate a reasonable schedule to meet the new limits. Any fines may have an impact on our users. The schedule should also include permit limits that Swanzey can achieve in the interim period while work is performed to upgrade the WWTF.

Response A2: New Hampshire Surface Water Quality Regulations (“WQS”) do not authorize compliance schedules in NPDES permits. EPA thus cannot incorporate a compliance schedule into the final permit. However, a compliance schedule, including interim limits, may be established through an EPA-issued administrative compliance order. The Commission should contact Joy Hilton (617.918.1877) of EPA’s Office of Environmental Stewardship to discuss the development of an administrative order, including a reasonable compliance schedule. The final permit does not become effective until sixty (60) days after issuance, which should provide the Permittee with sufficient time to negotiate the terms of an order.

Comment A3: We would like to bring to your attention that the chlorophyll *a* values measured in the Ashuelot River below the West Swanzey WWTF are increased due to our discharge. The interpretation that these measurements indicate pollution (algal growth due to nutrient input) may be in error due to the fact that our wastewater lagoons produce algae. The wastewater is disinfected prior to discharge and that the chlorophyll *a* values, used as an indicator of pollution, are measuring dead algae cells from our facility rather than nutrient impacts producing algae in the river.

Response A3: EPA does not believe that algae, dead or alive, in Swanzey WWTF effluent discharges are the sole, or even primary, source of elevated chlorophyll *a* concentrations downstream of the discharge. Instead, EPA believes that the chlorophyll *a* levels are largely a result of excess plant productivity, which is primarily caused by upstream phosphorus discharges from the Keene WWTF and to a lesser extent by much smaller phosphorus loading from the Swanzey WWTF. Swanzey's chlorophyll *a* contribution constitutes a small fraction of the chlorophyll *a* quantity measured downstream at Stations 14-Ash and 12-Ash. See Fact Sheet at p. 14.

For example, based on an average discharge flow from the Swanzey WWTF (0.078 MGD, August 2005, 2004) and a maximum recorded effluent chlorophyll *a* value of 250.8 ug/l (August 16, 2001 data, Table Two of Fact Sheet), the Swanzey WWTF contributes 0.1632 lbs/day of chlorophyll *a*. Similarly applying chlorophyll *a* levels found at Station 14-Ash on August 16, 2001 at 7Q10 flow, yields 1.33 lbs/day of chlorophyll *a*. August 16, 2001 chlorophyll *a* data from Station 12-Ash, which is even further downstream of the Swanzey WWTF, yields a value of 0.98 lbs/day of chlorophyll *a*. The Swanzey discharge quantity represents about 12 percent of the instream total quantity calculated at Stations 14-Ash (0.1632/1.33) and about 17 percent of the quantity calculated at Station 12-Ash (0.1632/0.98) Comparing these values, it is clear that the Swanzey WWTF chlorophyll *a* accounts for a relatively small fraction of instream chlorophyll *a* observed downstream. Viewed from the perspective instream concentration, the highest observed effluent chlorophyll *a* concentration (250.8 ug/l) discharged at the full design flow of 0.167 MGD under 7Q10 flow condition would result in an instream concentration of 2.3 ug/l (250.8 ug/l divided by the dilution factor, 250.8/111), which is below the observed instream levels of 7.83 ug/l at Station 14-Ash and 5.76 ug/l at Station 12-Ash (August 16, 2001) and far below maximum observed instream values 69.64 ug/l (Station 14-Ash) and 23.77 ug/l (Station 12-Ash) observed on August 29, 2001.

The Permittee should be aware that EPA looked to a number of factors when assessing nutrient impacts in the receiving waters, not only chlorophyll *a* (i.e. instream phosphorus levels and macrophyte and periphyton field observations). See Fact Sheet pages 14–16.

Comment A4: We ask that EPA and NHDES revisit the sampling data performed in 2001 and 2002 because the data was collected prior to improvements made to the Keene WWTF and may not reflect the current state of the river. We also ask that EPA wait until the TMDL river study is performed with the new data before imposing new limits. There

are also plans to remove a dam in West Swanzey which may change the characteristics of the river and any assumptions in the TMDL study.

Response A4: EPA is not aware of any improvements made by the Keene WWTF that would impact EPA's determination that eutrophic conditions persist in the Ashuelot River, as indicated earlier by the 2001 and 2002 data. Although the Keene WWTF improvements referred to by the commenter are unspecified, EPA understands that in late 2005 Keene begun chemical addition (aluminum) for removal of copper that has also resulted in lower phosphorus effluent discharges. EPA believes that reliance upon the earlier data collected in 2001 and 2002 data is reasonable given that the phosphorus reductions realized subsequent to copper treatment would not have had an appreciable affect on instream TP concentrations. Even after such treatment, the Keene WWTF effluent discharges still contains phosphorus in concentrations that will cause or contribute to violations of water quality standards. According to DMR data, in recent months average monthly phosphorus effluent concentrations have ranged from a low of 0.75 mg/l in June 2006 to a high of 1.55 mg/l in April 2006, both well above the 0.2 mg/l that EPA has determined to be necessary to ensure compliance with WQS. The administrative record for the permit contains evidence of eutrophic conditions that have been observed since 2001, such as the presence of duckweed and other nuisance aquatic plant growth associated with eutrophication.

EPA is also aware that several illicit wastewater connections to Keene's storm drain system have been redirected to the Keene WWTF. See Affidavit of Eric Swope, dated August 22, 2006. The information provided by Keene does not identify the magnitude of the nonpoint source load reductions associated with these improvements. However, it is very unlikely they would impact water quality sufficient to justify imposition of a less stringent phosphorus limit, because these loadings would be relatively small in proportion to point source loading.

Under current conditions (i.e., West Swanzey and Keene WWTFs flows), at sample station 14-ASH, located just below the Swanzey WWTF, the combined TP loading from the Keene and Swanzey WWTF's represents approximately 65% of the TP loading and the nonpoint sources represent approximately 35% of the TP load when calculated on an annual loading basis. See NHDES *Total Phosphorus Loading Analysis for the Ashuelot River TMDL* at page 3 While stormwater events can deliver substantial amounts of total phosphorus, much of it is in particulate form, which is not as readily available for uptake by aquatic plant growth as the dissolved form discharged by the WWTFs. In the Ashuelot River, the impact of point source loading from the Keene and West Swanzey WWTFs will be more pronounced relative to stormwater contributions during the low flow conditions under which standards must be met. Therefore, while it is important to address, the stormwater source reductions in this case will be expected to have a comparatively minor effect on the analysis of permit limits necessary to achieve standards under 7Q10 conditions.

The State of New Hampshire has conducted sampling to perform a TMDL on the segment of the Ashuelot River from the Keene WWTF to the Swanzey WWTF, but does

not anticipate completing the TMDL until 2009. Although the TMDL is expected to provide allocations for phosphorus, EPA believes that it is reasonable to move forward with a water quality-based phosphorus effluent limitation in light of the existing nutrient impairment of the receiving water, which exhibits cultural eutrophication, and the uncertainty (heightened by numerous past delays) regarding the date for completion and final approval of the TMDL. Following approval of the TMDL by EPA, these wasteload allocations will be used as a basis for the phosphorus effluent limitation in any subsequently issued NPDES permit. 40 C.F.R. § 122.44(d)(1)(vii)(B). EPA regulations do not require that a wasteload allocation be completed before a water quality-based limit may be included in a permit. Rather, the NPDES permit must be “consistent with the assumptions and requirements of any available wasteload allocation.” (Emphasis added).

In the meantime, as required by 40 C.F.R. § 122.44(d)(1), reissued permits must include limits necessary to ensure compliance with water quality standards, including narrative criteria. As discussed in the Fact Sheet (pages 3–7), EPA has an obligation under the Clean Water Act to establish permit limits necessary to meet water quality criteria. EPA is required to use available information to establish water quality limits when issuing a permit for a discharge which is shown to have a reasonable potential to cause or contribute to a violation of state water quality standards. See 40 CFR § 122.44(d)(1)(i). EPA has used the data collected by NHDES for the TMDL, and has established water quality-based limits for total phosphorous using this data, applicable narrative state water quality standards, federal water quality criteria guidance and other relevant information discussed in the “Nutrients” section of the Fact Sheet. EPA believes that the proposed limits represent the minimum levels of control necessary to achieve water quality standards. NHDES has limited resources for conducting TMDLS, and to date has not completed any eutrophication-related TMDLS.

The Homestead Woolen Mill Dam is currently scheduled for removal in the summer/fall of 2007. Removal of this dam will have some beneficial effect on water quality and, in particular, will improve aquatic life habitat in certain stretches of the river. However, the dam is upstream of the Swanzy WWTF. Its removal will result in the transport of greater amounts of phosphorus downstream to other reaches with significant aquatic plant growth and may exacerbate nutrient impacts below the Swanzy WWTF.

Comment A5: The changes to the NPDES permit will require new treatment processes that require planning, design and construction. The final cost impacts of these changes are not known at this point, but they are thought to be significant. Our sewer users may be significantly impacted. We need time to understand the ramifications and educate our users. Any plans for plant upgrades in order to meet the new NPDES permit conditions should include time for the Swanzy Sewer Commissioners and our users to prepare and review any studies, reports, cost estimates, user rate impacts, and other issues relative to this issue.

Responses A5: Please see Response A2. Compliance schedules that are implemented through administrative compliance orders typically establish a reasonable timeframe for

planning to consider alternatives and their associated costs, including an affordability analysis. We encourage the Swanzey Sewer Commission to contact EPA's Office of Environmental Stewardship to discuss the terms of a reasonable compliance schedule in greater detail.

Comment A6: Of particular concern is the information included in the fact sheet for the draft permit. This information indicated that all the studies have not been completed and will not be completed until 2009 and therefore these treatment plant changes may or may not be necessary.

Response A6: As stated in Response A4, EPA has relied in part on the data collected by NHDES for the TMDL to establish water quality-based limits for total phosphorous and concluded that the proposed limits represent the minimum levels of control necessary to achieve water quality standards. Based on its understanding of the receiving water conditions and the data that will underlie the future TMDL, EPA expects the TMDL to result in effluent limits that are at least as stringent as the final permit limit of 1.0 mg/l.

Comment A7: It appears that the goal is to achieve a TP level of less than 0.10 mg/l in the Ashuelot River. If Keene is given a limit of 0.2 mg/l and West Swanzey a limit of 1 mg/l, the total phosphorus discharged allowed is approximately 11.4 lb per day. If it is feasible with the technology utilized by Keene to achieve a lower phosphorus limit, please consider allowing Swanzey a higher level and Keene a lower limit. Swanzey could consider a payment to Keene for capital and annual operational expenses as compensation for this trade off, as long as it is comparable to the cost Swanzey would be paying for treatment onsite. This eliminates the need for design and construction of new facilities and additional staffing needs.

An example of this type of arrangement is Keene at a limit of 0.1 mg/l and Swanzey at a limit of 4.6 mg/l. If the technology Keene installs can technically achieve this limit, then the phosphorus goal can be achieved. It also may be appropriate to have Keene at the limit of 0.1 mg/l which is the goal on the instream TP concentration, since at times their wastewater is the majority of the river flow.

Response A7: EPA supports the implementation of voluntary water quality trading that reduces the cost of compliance with water quality-based requirements, including pre-TMDL trading in nutrient impaired waters so long as the trades are properly designed. See EPA Office of Water Quality Trading Policy (January 13, 2003). As the Trading Policy states:

EPA supports pre-TMDL trading in impaired waters to achieve progress towards or the attainment of water quality standards. EPA believes this may be accomplished by individual trades that achieve a net reduction of the pollutant traded or by watershed-scale trading programs that reduce loadings to a specified cap supported by baseline information on pollutant sources and loadings.

EPA also supports pre-TMDL trading that achieves a direct environmental benefit relevant to the conditions or causes of impairment to achieve progress towards restoring designated uses where reducing pollutant loads alone is not sufficient or as cost-effective.

EPA encourages the Permittee to review the Trading Policy, particularly the section entitled "Common Elements of Credible Trading Programs." EPA believes that it is premature to provide for a trading mechanism in the final permit given that there is no indication that the City of Keene is willing to undertake greater than required control in order to generate saleable pollution credits. However, if the City of Keene and the Town of Swanzey agree to an acceptable trading arrangement that meets the requirements of the CWA, the municipalities can seek a modification of their respective permits to incorporate the specifics of the trading plan. A trading scheme could also be incorporated in an administrative order.

Comment A8: We question the need for year round phosphorus limits. If there is concern over particulate phosphorus settling in the river and resolubilizing, it should be weighed against the high river flow and shallow depth, which imply low potential for resolubilization of phosphorus in deep, low DO sections of the river.

Response A8: The phosphorus effluent limit of 1.0 mg/l is a seasonal limit and is only applied between April 1st through October 31st. The permit does require year-round monitoring. See Permit, Part I.A.1. As the commenter notes, EPA imposed the monitoring condition to evaluate the potential for particulate phosphorus to settle downstream of the discharge and to release into the water column during warmer months. See Fact Sheet at p. 17. EPA indicated that if sampling shows the dissolved fraction of phosphorus to be high, a winter limit would not be necessary. EPA's focus is to understand and to minimize the impact of particulate phosphorus. Merely displacing the effects of such loading further downstream does not address the underlying water quality concern. Although high river flow will help to flush particulate downstream, there is still a potential for phosphorus to settle behind impoundments downstream, for example in Hinsdale.

EPA has reconsidered the frequency of orthophosphorus monitoring and has decided to reduce the frequency from once per week to once per month. Also, EPA has reduced the frequency of total phosphorus monitoring during November 1st through March 31st to twice per month. EPA does not expect significant weekly variability in the effluent given its long detention time in the lagoons.

Comment A9: Phosphorus limits are seasonal from April 1 through October 31. This seven month period seems excessive. Please consider a May through September period.

Response A9: In order to prevent cultural eutrophication, it is critical to control phosphorus inputs during the entire growing season. Excessive phosphorus discharged during the growing season accumulates in plant biomass and is often retained in the system through settling in slow moving/impoundment sections of the river. Phosphorus

can then recycle into the water column, exacerbating eutrophic conditions during critical periods. Imposing a phosphorus limit in May through September would not be protective since, in EPA's experience, aquatic plant growth begins in April and continues through October in New England rivers.

Comment A10: Year round testing is required for phosphorus in the draft permit, based on the concern that particulate phosphorus that settles in the river could become re-dissolved. No discussion is made on the flushing of the river during rainfall and runoff events and this impact on moving the particulate phosphorus downstream. Certainly the potential for flushing is greater than the potential for release of dissolved phosphorus within the water quality limited segments of the river.

Response A10: Please see Responses A4 and A8 above.

Comment A11: Total phosphorus and orthophosphorus have to be tested during the non-summer periods on a weekly basis. If the need to obtain the ratio of orthophosphorus to total phosphorus, certainly this can be accomplished with the summer time testing and periodic testing during the non-summer. We ask that the frequency of the total phosphorus and orthophosphorus during November to March be reduced to one time per month. Further we ask that EPA consider including only orthophosphorus in the permit during November to March, rather than both orthophosphorus and total phosphorus.

Response A11: Please see Responses A4 and A8 above. The purpose behind the orthophosphorus monitoring condition is to determine the percentage of dissolved phosphorus and particulate phosphorus. EPA cannot determine this fraction without sampling for total phosphorus.

Comment A12: The permit indicates that we must achieve a minimum of 85% CBOD₅ and TSS removal on a monthly basis. We are concerned that the testing of influent CBOD₅ may give a false measurement due to the inhibitory chemicals added to the test. This may make it difficult to achieve the 85% removal requirements for CBOD₅. Nitrification bacteria are not normally present in high enough concentrations in the influent and therefore request that the influent BOD₅ and effluent CBOD₅ be utilized to measure percent removal.

Response A12: Secondary treatment regulations are found at 40 CFR Part 133. The regulations describing the minimum level of effluent quality attainable by secondary treatment are found in 40 CFR § 133.102, and include 30 day average percent removals of 85% for both BOD₅ and TSS. Alternatively, the regulations allow the use of CBOD₅ limits in lieu of BOD₅ at the discretion of the permitting authority, but require that the CBOD₅ 30 day average percent removal be 85% (see 40 CFR § 133.102(a)(4)(iii)). The comparison of two different parameters, BOD₅ and CBOD₅, would not provide an accurate assessment of percent removal between influent and effluent.

The Permittee expresses concern that the influent CBOD₅ test may give "a false measurement due to the inhibitory chemicals added to the test" and adds that

“nitrification bacteria are not normally present in high enough concentrations in the influent.” EPA is unsure of the Permittee’s concern. The CBOD₅ test is based on the inhibition of nitrification, so the presence or absence of nitrifying bacteria is of no practical concern. In Comment A18, the Permittee adds the concern that the chemicals used to inhibit nitrification in the influent sample may also be inhibiting carbonaceous BOD. The CBOD₅ test is an EPA-approved method and if done correctly should not inhibit carbonaceous BOD in either the influent or effluent samples.

Comment A13: It appears that monitoring for aluminum is required for the full year, even though our phosphorus limit will be seasonal (April through October). We assume that the monitoring requirement is based on EPA’s assumption that an aluminum based chemical will be used to remove phosphorus. We ask that if an aluminum based chemical is utilized for phosphorus removal, testing be limited to the same period as the phosphorus limit.

Response A13: Part I.A.I, Footnote 6, has been changed and requires aluminum sampling only during the months when aluminum compounds are added to the wastewater flow to enhance removal of phosphorus or other pollutants. If, at the time of permit issuance, the facility does not add aluminum compounds, then sampling is not required. If, in the future, the Permittee decides to add these compounds, then EPA and NHDES must be notified 60 days prior to commencing such additions. Thereafter, the Permittee is required to sample aluminum concurrently with phosphorus samples at the frequency specified in the permit.

Comment A14: Twenty-four hour influent composite sampling equipment is required to be constructed if we implement a major upgrade. We do not believe we have the necessary hydraulic grade to install a parshall flume. We are concerned about the high cost of installing an influent flow meter and need to investigate this further.

Response A14: This condition has been omitted from the final permit at the request of NHDES.

Comment A15: The draft NPDES permit indicates that effluent sampling be performed at the same time and same weekday of every month. This may be difficult if personnel are sick or on holiday. Since the permit offers no flexibility, we ask that this requirement be removed. Our staff will schedule the sampling for the same day of the week, but must need the flexibility to adjust the sampling schedule due to normal and routine events that occur from time to time.

Response A15: The referenced provision, Part I.A.1, Footnote 13, has changed to Footnote 12 in the final. This footnote is intended to ensure that sampling conditions are uniform to the extent possible in order to ensure that the data is representative and was not intended to place unnecessary or unreasonable logistical burdens on the Permittee. EPA has accordingly revised the condition by adding that deviations will be permitted for good cause, the grounds for which must be explained in correspondence attached to the Permittee’s monthly DMR submittals.

Comment A16: Costs for treatment facility modifications have been developed in concept by our Engineers depending on the level of treatment (i.e. phosphorus and ammonia) required by our new permit. These concepts included a low cost (\$100,000 to \$150,000) and high cost option (\$1M to \$1.5M) for the phosphorus removal and a cost range (\$2.5M to \$3M) for phosphorus and ammonia removal.

The low cost phosphorus removal option includes the addition of a new baffle in lagoon #3, chemical metering systems, and a low cost structure to house the chemical metering equipment. The high cost phosphorus removal option includes the addition of a chemical injection manhole, a new flocculating clarifier, chemical metering equipment and sludge wasting pumps. It is assumed that sludge will be wasted back to the lagoons. The cost option including phosphorus and ammonia removal involves converting the aerated lagoon system to an activated sludge process.

Response A16: As discussed in Response A5, EPA anticipates that a reasonable compliance schedule will be established through an administrative compliance order allowing for necessary planning, design and construction.

Comment A17: For the parameters listed in Part I.A.1, it is requested that a design flow of 0.167 MGD is used for calculating permit limits. This applies to all mass based limits in the table.

Response A17: See Response A1.

Comment A18: Part I.A.1, footnote 2 requires that influent CBOD₅ testing be used to measure percent removal. We believe that testing the influent CBOD₅ is questionable. The inhibition of nitrifiers in the BOD₅ bottle may also inhibit the carbon-utilizing bacteria. We ask that influent BOD₅ be utilized for percent removal calculations.

Response A18: See Response A12.

Comment A19: Part I.A.1, page 3 of the draft permit indicates that phosphorus limit is required from April 1 through October 31st. Water quality limiting segments occurred in August. Please consider a change in the time period to a May through September permit limit requirement.

Response A19: See Response A9.

Comment A20: Part I.A.1, page 3 of the draft permit indicates aluminum testing is required year round. No aluminum is utilized in the treatment process. Testing for this parameter is not justified on a weekly basis. We ask that it be removed from our permit or the sampling frequency be reduced to quarterly.

Response A20: See Response A13.

Comment A21: Part I.A.1, Footnote 2 of the draft permit requires influent CBOD₅ testing. We believe that the results of this testing may be erroneous due to the inhibiting chemicals impacting all bacteria. We also take exception to installing an influent flow meter in order to perform a 24 hour composite sampling program. Installation of a flow meter may not be possible given the hydraulic grade of the WWTF.

Responses A21: See Response A12 regarding influent CBOD₅ testing and Response A14 regarding the influent flow measurement.

Comment A22: Part I.A.1, Footnote 7 requires the chemical used to control phosphorus be recorded in pounds. We ask that the chemical be allowed to be recorded in gallons, along with a data sheet on the composition of the chemical. Liquid volume is the most likely method of feeding and is normally recorded when dosing for phosphorus removal.

Response A22: After consulting with NHDES, EPA has removed this requirement from the Final Permit.

Comment A23: Part I.A.1, Footnote 13 of the draft permit requires effluent sampling on the same day each week. This requirement offers no flexibility due to normal and periodic situations such as sickness, vacation or plant demands. We ask that this requirement be reworded to allow this flexibility.

Response A23: See Response A15.

Comment A24: Part I.A.1, Footnote 14 requires that the DO be measured as a single grab sample. We request that the EPA remove from the permit the single grab sample requirement for DO analysis and replace it with “Grab sample or Analysis in situ.” We use the Membrane Electrode Methods as described in Standards and Methods 18th Edition, 4500-OG, and as pointed out in the procedure, Analysis in situ (probe directly in outfall) eliminates errors caused by sample handling and storage.

Response A24: A grab sample conducted using the probe specified above meets the permit requirements since it is an approved method for measuring DO. The permit has been changed to reflect this condition.

Comment A25: Part I.A.2., Footnote 4 required the percent removal based on CBOD₅. We believe that the influent CBOD₅ test may be erroneous and ask that the influent BOD₅ test be utilized in place of the CBOD₅ test for percent removal calculations.

Response A25: See Response A12.

Comment A26: Part I.A.2., Footnote 4 indicates a design flow of 0.16 MGD. Please utilize 0.167 MGD in this calculation.

Response A26: See Response A1.

Comment A27: Part I.C, Note 1 indicates “adequate” staff. We are assuming that our current staffing covers this requirement.

Response A27: The referenced provision is based on 40 CFR § 122.41(e) (“Proper Operation and Maintenance”), which requires the permittee to, “at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee” to comply with permit limits. See also, 40 CFR § 122.41(a) (“Duty to Comply”). The Permittee’s compliance record is evidence that the plant is sufficiently staffed to meet the requirements of the existing permit. It is possible that staffing requirements may change as a result of the new permit requirements. The Permittee rather than EPA is better positioned to make this determination.

Comment A28: Part I.C., Note 3 requires annual reporting for I/I actions. We question the need for this requirement given our small user base, low flows and minimal I/I concerns within the collection system.

Response A28: The permit requires the Permittee to control inflow and infiltration to the extent required to prevent Sanitary Sewer Overflow violations and I/I-related effluent discharge violations at the facility. The annual reporting requirement will assist EPA to measure compliance with permit requirements by outlining the actions that have been taken to prevent such violations. Given the small user base and minimal I/I issues, it is anticipated that the level of effort required for reporting will be commensurately small.

Comment A29: We request the pH range be changed to 6 to 9 S.U. and we be allowed to demonstrate to NHDES that this is similar to the naturally occurring pH of the receiving water or that the receiving water is not significantly impacted.

Response A29: Please see Part I.H.1 of the permit, which outlines a process for pH adjustments. The Permittee must first demonstrate to NHDES that the discharge to the receiving water from a specific outfall is within a specific numeric pH range which does not alter the naturally occurring receiving water pH. The Permittee may then submit a written request to EPA for a change in the permitted pH limit range provided that the new range is not less restrictive than 6.0 to 9.0 Standard Units. The Permittee's written request must include an approval letter from NHDES.

Comment A30: We question the need for influent flow measurement due to the difficulty in installing a parshall flume. We ask that this requirement be deleted or that a major upgrade be defined as a \$500,000 cost or a process change from lagoons to other secondary treatment technologies.

Response A30: Please see Response A14.

Comments submitted by Barbara Skuly, Chair, Ashuelot River Local Advisory Committee (ARLAC)

Comment B1: ARLAC supports the addition of the maximum daily limit of total residual chlorine 1 mg/L for reasons as cited in the Fact Sheet.

Response B1: This comment is noted for the record.

Comment B2: The reported TSS monthly, weekly and maximum daily levels are 12 mg/l, 17.4 mg/l and 17 mg/l, respectively. The limits in the proposed permit are 30 mg/l, 45 mg/l, and 50 mg/l, respectively. While Swanzey has reported removal rates greater than 85%, these permit limits are above reported maximum daily amount of 38 mg/L. Doesn't the antidegradation provision come into play here to maintain existing water quality standards in regard to TSS?

Response B2: Under New Hampshire's antidegradation provisions, existing water quality is determined on the assumption that point sources are discharging at their allowed loadings under low flow conditions. See Env.-Ws 1708.08(b). An antidegradation analysis is not applicable here because there has been no proposed increase in the permitted loadings to the waterbody. See Env.-Ws 1708.02(b). The fact that the Permittee is discharging below its TSS limit is not a basis to impose a more stringent limit. An NPDES permit is designed to ensure that a permittee discharging at its permitted limits will ensure compliance with applicable water quality standards, including specific criteria designed to achieve designated uses. EPA has determined that the TSS effluent concentration limits, which are consistent with secondary treatment standards set forth in 40 CFR § 133.102(b), are sufficiently stringent to ensure compliance with water quality standards.

Comment B3: ARLAC supports incorporating phosphorus limits for the Swanzey WWTF. Along with the abundance of periphyton in the summer months, the fact sheet describes the high chlorophyll *a* levels and DO violations from the Swanzey WWTF that contribute to the eutrophication of the river. However, the limit of 1 mg/L seems high since that would produce an instream concentration of 0.109 mg/L only if and when Keene's WWTF achieves its permit level. This concentration is barely the 1986 Quality Criteria of Water (Gold Book) criterion for free flowing streams (0.1 mg/L) and does not meet the NHDES level of concern at 0.05 mg/L. Since Swanzey would most likely have to upgrade its treatment system to reduce phosphorus, doesn't it make sense to set a lower limit that would result in a more protective river level independent of Keene's progress?

Response B3: As explained in the Fact Sheet (p. 17), if the Keene WWTF does not achieve a total phosphorus limit of 0.2 mg/l, and/or the necessary instream results are not achieved, the Swanzey WWTF permit may be modified or revoked and reissued, in accordance with 40 CFR § 122.62, to account for higher background conditions, which would ultimately result in a lower total phosphorus limit for the Swanzey WWTF. See Draft Permit, Part I, Section I (Reopener Clause). EPA is now in the process of responding to comments received on the Keene draft permit and expects to issue a final permit shortly.

Based on the existing record, EPA believes that the Gold Book criterion of 0.1 mg/l is sufficient to ensure compliance with applicable water quality standards. The Gold Book criterion was developed from an effects-based approach as opposed to the more stringent eco-region criterion, which was developed on the basis of reference conditions. Initially, EPA has opted for the effects-based approach because it is often more directly associated with an impairment to a designated use (i.e. fishing, swimming). The effects-based approach provides a threshold value above which adverse effects (i.e., water quality impairments) are likely to occur. It applies empirical observations of a causal variable (i.e., phosphorus) and a response variable (i.e., chlorophyll *a*) associated with designated use impairments. Reference-based values are statistically derived from a comparison within a population of rivers in the same eco-region class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent minimally impacted conditions. EPA believes that the effects-based approach was preferable to the reference based approach, as it has access to instream water quality sampling data available for the receiving waters as well as information regarding the nature of the designated use impairments on the Ashuelot River. As noted in the Fact Sheet (p. 13), NHDES identified 0.05 mg/l total phosphorus as a level of concern. See e.g. New Hampshire Volunteer River Assessment Program 2002 Ashuelot River Water Quality Report (NHDES June 2003). While EPA views the level of concern with interest, the value is not a state criterion. New Hampshire is still in the process of developing numeric nutrient criteria.

Comment B4: ARLAC recognizes that adding phosphorus limits to the discharge permit would likely create an economic obstacle for the Town of Swanzey. We hope that the EPA and the NHDES would be able to assist the Town in developing and financing the best and most economically feasible method to achieve phosphorus levels that are more compatible with the health of the Ashuelot River.

Response B4: EPA does not provide direct financial assistance to municipalities that must undergo treatment plant upgrades in order to comply with permit limits. EPA expects the economic impacts of the upgrade to be considered in any compliance schedule imposed through an administrative order. The Town of Swanzey is encouraged to work with NHDES to secure funds available through the State Revolving Fund (SRF) program.

Comment B5: Since Swanzey's permit application showed an elevated level of 35.0 mg/l of ammonia (as N), we would like to see a reasonable level placed in the current permit rather than simply a requirement to monitor ammonia. Given the delay in action on NPDES permit, ARLAC believes it would be prudent to incorporate a protective level now rather than wait another 24 years for a limit to be added.

Response B5: Given the limited data available to EPA (a single ammonia sample), EPA was unable to determine whether a reasonable potential exists for ammonia to cause or contribute to a violation of water quality standards. If, however, this single sample was applied, it would indicate that ammonia has no reasonable potential to cause or contribute to a violation of water quality standards. Using 35 mg/l of ammonia (as N), the estimated

instream concentration of ammonia would be 0.30 mg/l (35 mg/l divided by the dilution factor 115). This value is well below the NHDES freshwater aquatic life criteria for ammonia at a pH of 7.0 su (acute criterion 36.1 mg/l and chronic criterion 3.08 mg/l).

Given the limited data, the permit requires that ammonia sampling be conducted twice per month from May 1st to September 30th to capture critical low flow months. This data will be used to do a reasonable potential analysis and determine whether permit limits are necessary.

Additionally, ammonia data will be collected for quarterly Whole Effluent Toxicity (WET) tests. If ammonia toxicity occurs, the permit may be modified or revoked and reissued, in accordance with 40 CFR § 122.62, to account for ammonia toxicity. See Draft Permit, Part I, Section I (Reopener Clause).

Comments submitted by Stephen J. Stepenuck, Swanzey Conservation Commission

Comment C1: We agree with the addition of phosphorus limits for the health of the river. However, the proposed limit on total phosphorus of 1.0 mg/l will, according to your calculations, result in an in-river concentration of 0.11 mg/l. As you ‘point out, that concentration would almost meet the “gold book” standard of 0.1 mg/l. However,, the state of New Hampshire’s level of concern” is 0.05 mg/l, considerably lower. Considering the long-standing aquatic-plant problem in this section of the river, the presence of resident geese, the uncertainty of success by the City of Keene’s POTW in reducing the phosphorus levels in its effluent, and the twenty-four years elapsed since the last permit’s issuance, we believe that a lower phosphorus limit should be sought. Since the financial impact on Swanzey could be large, we hope that federal and state help would be available toward achieving more desirable lower phosphorus concentrations.

Response C1: See Responses B3 and B4.

Comment C2. The proposed TSS effluent limitations have been set above those of the worst month’s performance from January 2004 to September 2005, and at several times the average performance of the plant. This seems to offer no incentive to improve plant performance. Rather, it appears to overlook poor performance. While temporary problems will occur, the proposed effluent limitations seem not to provide for any improvement in the health of the river, and could easily “bless” degradation in water quality.

Response C2: Please see Comment B2 above. The TSS limitations are consistent with secondary treatment regulations for POTWs. EPA does not believe that a more stringent limit is necessary to meet water quality standards and would thus be overly protective. The commenter should note that imposing more stringent limits based on performance may serve as a disincentive to discharge at levels well below permit limits. Were EPA to tighten otherwise protective permit limits on the basis that the permittee is outperforming permit requirements, a permittee, despite the general requirement to operate and maintain

the facility as efficiently as possible, may be disinclined to make all efforts to optimize effluent quality in order to avoid more stringent permit limits in the future.

Comment C3: The name of the element phosphorus has been misspelled in the permit and fact sheet documents many times.

Response C3: EPA notes that there is more than one accepted spelling of phosphorus, but agrees that the permit and fact sheet should adopt a consistent version throughout.

Comment C4: Our Conservation Commission recognizes that NPDES permits play an integral role in achieving the goals of the Clean Water Act. We hope that the USEPA will partner with small communities like Swanzey to provide the proper financial support to implement water quality improvement without placing economic hardship upon the town's taxpayers.

Response C4: Please see Comment B4 above.