

RESPONSE TO COMMENTS

REGARDING THE REISSUANCE OF THE NPDES PERMIT

SOUTHWORTH COMPANY NPDES Permit No. MA0005011

Introduction:

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) solicited public comments from July 27, 2007, through September 10, 2007, on the draft National Pollutant Discharge Elimination System (NPDES) permit to be issued to the Southworth Company, Turners Falls, MA (Southworth).

The Draft NPDES Permit is for the discharge of treated process wastewater to the Turners Falls Power Canal, and non-contact cooling water and power generation water to the Connecticut River.

During the public-notice (comment) period EPA-New England received comments from the Connecticut River Watershed Council (CRWC), the United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), and the permittee, the Southworth Company.

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's and MassDEP's responses to comments received on the draft NPDES permit and any appropriate changes made to the public-noticed draft permit as a result of the comments. The final permit is substantially similar to the draft permit that was available for public comment. EPA did, however, improve certain requirements and correct errors in the permit as a result of the comments raised. These improvements are summarized below and are reflected in the Final Permit.

Changes Made to the Final Permit

1. The pH range limitation for Outfall 002 is changed from 6.0 -- 8.3 std units, to 6.5 -- 8.3 std units. Also, the requirement concerning pH changes in the receiving waters has been moved to a different place in the permit to avoid the misunderstanding that the requirement applies to the effluent.
2. The frequency of temperature monitoring at Outfall 002 is increased from weekly to daily.
3. The frequency of Acute Whole Effluent Toxicity Testing is increased from three to four times per year. The months when the testing for WET and nutrients is to be done has been synchronized -- and will be done during the months of March, June, October, and December to avoid the month of September, when the Power Canal is drained.

4. The name of the receiving water for Outfall 001 has been changed from "North East Utilities Power Canal" to "Turners Falls Power Canal".
5. The Final Permit adds a provision prohibiting discharges to the Power Canal when it is drained for maintenance.
6. The Final Permit requires "daily, when discharging" for flow "measurement frequency" at Outfall 002. Daily estimates of the flow are required to correspond with the daily temperature monitoring. A footnote is also added to clarify that the monthly average is only for the days when discharging.

Corrections Made to the Final Permit

1. Corrected several errors in numbering the footnotes to the tables of effluent limits and monitoring requirements.
2. Corrected the description of the monitoring point for Outfall 002. The monitoring point includes non-contact cooling water, but not power generation water.

Comments from the Connecticut River Watershed Council

COMMENT NO. 1

pH sampling has been changed from daily to weekly at outfalls 001 and 002. This does not appear to be consistent with anti-backsliding regulations. We recommend that EPA stick with daily sampling of pH, especially because pH sampling is not terribly difficult.

COMMENT NO. 2

We recommend the effluent limitations for pH be made consistent with Massachusetts Water Quality Standards: 6.5 to 8.3 pH units.

RESPONSES NO. 1 AND 2

The Draft Permit proposed pH limits for both Outfall 001 and Outfall 002 of 6.0 to 8.3 std units, no more than 0.5 units outside of the background range, and no change from background conditions that would impair any designated use of the receiving waters. These proposed requirements were carried forward from the expired permit. As noted in the comment, the proposed monitoring frequency was reduced from daily to weekly.

The Massachusetts water quality standards require that Class B Waters be within the range of 6.5 to 8.3 std units (with the same provisions that they shall not be more than 0.5 std units outside of the background range, and that there be no change from background conditions that would impair any designated use of the receiving waters).

EPA reviewed the pH sampling results generated under the expired permit. There were no violations of the expired permit pH range during the past few years in either Outfall 001 or Outfall 002. However, there were numerous pH results between 6.0 and 6.5 std units in Outfall 001. Outfall 002 had only one pH result in recent years between 6.0 and 6.5 std units.

Outfall 001 discharges into the Turners Falls Power Canal, which provides abundant dilution (greater than 1000 to 1) for the process waste discharge. Therefore, EPA does not believe there is reasonable potential for the pH criteria to be violated in the receiving water, nor does EPA believe more frequent monitoring of pH would provide additional useful information. Consequently, the Final Permit maintains the weekly monitoring frequency for pH for Outfall 001.

Outfall 002 discharges into the main stem of the Connecticut River, which at times can have very low flows, due to the large amount of water bypassed through the Power Canal. EPA agrees that an appropriate pH range for Outfall 002 is from 6.5 to 8.3 std units because of the very low dilution flow that is available in the main stem during certain periods of the year. Therefore, the Final Permit includes a more stringent allowable pH range of 6.5 to 8.3 std units for Outfall 002. As with Outfall 001, EPA does not believe more frequent monitoring of pH would provide additional useful information or is necessary to evaluate compliance with the new limit. Therefore, the Final Permit maintains the weekly monitoring frequency for pH for Outfall 002.

The anti-backsliding requirement is found in Section 402(o) of the Clean Water Act. Section 402(o) generally prohibits reissuance of NPDES permits to contain effluent limits which are less stringent than the previous permit, with several specified exceptions. Since the pH limit is not being made less stringent, and the anti-backsliding provisions found in Section 402(o) do not apply to monitoring frequencies, the proposed permit is not inconsistent with anti-backsliding.

See Comment and Response No. 19 for further discussion of the pH requirements.

COMMENT NO. 3

The draft permit proposes to eliminate the temperature sampling requirement from outfall 001 altogether. We object to this change, and request that twice weekly sampling be re-instated. If the facility can test the effluent for BOD and TSS, it should be able to test the temperature of the effluent before it hits the canal. The removal of this testing requirement is not consistent with anti-backsliding regulations. It is important to test effluent temperatures so that regulators can model temperature effects given the known flow rate of the canal system. It is stated that testing the change in the temperature of water in the canal is difficult. We have observed that the velocity of the water running through the canal at this location is very high. However, there is a bridge just downstream of the discharge point. We don't understand why the company couldn't easily purchase a field meter with

which it could measure temperature by lowering the probe into the water at the bridge. Or, someone could lower a bucket into the canal, fill it with water, lift up, and use a hand-held infrared thermometer to get readings of the water in the bucket. The temperature data provided in the Fact Sheet (DMR Summary) only contains one point of temperature data, and that data point is an error (as we discussed over the phone). Completely eliminating temperature sampling is not justified.

Massachusetts Water Quality Standards require that the in-stream water temperature shall not exceed 83° F and the rise in temperature due to the discharge shall not exceed 5° F. We need to know that this facility remains in compliance during the next five years.

COMMENT NO.4

The frequency of temperature sampling from outfall 002 has been changed from daily to weekly when discharging. We recommend that EPA stick with daily sampling when discharging.

RESPONSES NO. 3 AND 4

As stated above with respect to pH, there is abundant dilution in the Power Canal for Outfall 001, but much less for Outfall 002. For that primary reason, the temperature monitoring was eliminated for Outfall 001, and the temperature limit was maintained for Outfall 002 in the Draft Permit.

EPA agrees that the temperature monitoring at Outfall 002 should continue to be monitored on a daily basis as required in the expired permit. This is because of the lower dilution available in the main stem of the Connecticut River and the fact that non-contact cooling water is discharged via Outfall 002. Therefore, the Final Permit includes a daily temperature monitoring frequency for Outfall 002.

EPA has again reviewed the question of temperature monitoring for Outfall 001. Since the dilution and water velocity at the outfall point in the Turners Falls Power Canal are so great at Outfall 001, the effect of this discharge will be essentially impossible to measure. As stated in the Fact Sheet, "EPA has re-evaluated the potential thermal impacts for Outfall 001 and has concluded that any increases in river temperature resulting from the discharge at Outfall 001 would be very minimal and at most times indiscernible. For example, the calculated increase in river temperature downstream of Outfall 001 for a discharge temperature of 20 degrees F above the river temperature during 7Q10 flow conditions (1250 cfs) would be approximately 0.017 degrees F. This calculation assumes zero heat loss to the atmosphere which results in a conservative overestimate of the calculated temperature rise caused by the discharge. Also, temperature data collected by the permittee in the Power Canal upstream and downstream from Outfall 001 during June and July 2006 showed no difference between upstream and downstream temperatures for

all monitoring events. Therefore, EPA believes there is no reasonable potential to violate Massachusetts' water quality standards for temperature."

The commenter provided no new information to persuade EPA that temperature monitoring at Outfall 001 would provide any useful environmental protection information. Therefore, temperature monitoring at Outfall 001 has not been added to the Final Permit.

As stated above in Responses No. 1 and 2, above, anti-backsliding applies to limitations being made less stringent. This is a monitoring frequency issue and the anti-backsliding provisions found in Section 402(o) do not apply to monitoring frequencies. Thus, the proposed permit is not inconsistent with anti-backsliding.

COMMENT NO. 5

The title to Section 4 of the Fact Sheet is "Receiving Water Description." However, this section does not include any description of the Power Canal. As the Power Canal receives the majority of Connecticut River flow, is a passage way for migrating fish, and contains habitat for many fish and aquatic insects, some of them state-listed (as observed once a year when the canal is drained and volunteers help save fish and bugs), it is important to recognize the Power Canal as a receiving water worthy of description. Otherwise, you should not count it as a receiving water, and instead regulate the outfall of the Power Canal as one big discharge point into the Connecticut River. In general, we wish Mass DEP (and EPA as reviewers) would make an effort to include all receiving waters with NPDES permitted discharges into the Integrated List. The Power Canal in Turners Falls and the Canal system in Holyoke are both considered receiving waters for NPDES discharges, but neither has made it onto the radar screen of the MA Integrated List. Many other water bodies fit this description.

RESPONSE NO. 5

The Fact Sheet did not clearly explain that the Turners Falls Power Canal is considered part of the Connecticut River by EPA. In developing the Southworth permit, the requirements for Outfall 001 were developed assuming it discharges to the River -- with all the appropriate protections due to any Massachusetts River.

The Connecticut River-Turners Falls Power Canal is not individually identified in the Massachusetts Water Quality Standards; the stream segment is only identified as "Turners Falls Dam to Holyoke Dam"

The MassDEP Integrated List (303(d) & 305(b)) does not identify the Power Canal as a segment. Therefore, there have been no assessments done on the reach during the biennial review.

MassDEP will soon begin its assessment of the Connecticut River watershed and will consider adding the Turners Falls Power Canal as a segment to be assessed. Therefore, it may be included in the 2008 Integrated List evaluation.

COMMENT NO. 6

The chronic toxicity sampling has been eliminated in this permit. Given the facility has failed its acute and chronic toxicity tests a few times in the past three years, this elimination seems unwarranted. It also seems inconsistent with anti-backsliding regulations. The chances that sampling only three times a year will catch an intermittent problem seems extremely low. We recommend that quarterly acute and chronic WET testing be required in an updated permit.

RESPONSE NO. 6

As discussed above, the dilution for Outfall 001 in the Turners Falls Power Canal is very high. Because of that, there was no Chronic WET limit in the expired permit. Results were "reported" only. Therefore, the facility did not "fail" its chronic WET testing. Since the dilution and water velocity at Outfall 001 are so high, EPA does not believe the chronic test provides any useful environmental protection information. No new information was provided that persuaded EPA that this testing should be continued. Therefore, the chronic WET testing monitoring requirement is not included in the Final Permit.

Also, as discussed above, this is not inconsistent with anti-backsliding because no limitation is being made less stringent.

Regarding Acute WET testing, the comment is correct that there have been test results which have failed the 50% limitation in the expired permit. The acute test *does* provide useful information and the testing and limitation requirements have been continued. EPA agrees with the comment that the testing frequency should be increased from three times per year to quarterly, consistent with common WET testing frequencies at other facilities. Therefore, the Final Permit includes a quarterly testing frequency for Acute WET at Outfall 001.

COMMENT NO. 7

Storm water discharged via outfall 002 should be regulated in this permit, rather than regulated separately by a NPDES general permit. That the stormwater discharges into an outfall pipe (002) shared with a regulated discharge under permit 0005011 is reason enough to incorporate everything into one permit.

RESPONSE NO. 7

EPA believes storm water for Outfall 002 is adequately and effectively regulated by the existing general permit. This is consistent with numerous other facilities which have both

storm water and non-storm water discharges and are covered under both the storm water Multi-Sector General Permit and an individual permit.

COMMENT NO. 8

It is odd that there are no flow limits imposed on outfalls 001 and 002. No rationale is given in the Fact Sheet (pages 6 and 7). The Fact Sheet frequently cites calculations demonstrating that the impacts of the discharges on the Power Canal or the Connecticut River are likely to be minimal, but these all assume an average flow. If the flow rate was to rise significantly, the facility may not be able to meet its permit limits for TSS and BOD.

RESPONSE NO.8

For this permit, discharge flows are not directly used in the calculation of the limitations primarily because of the large dilution available for Outfall 001 and because the limitations for Outfall 002 are set equal to the criteria (pH and temperature) adopted in the Massachusetts Water Quality Standards. As a result, flow limits are not necessary.

The limitations on TSS and BOD in Outfall 001 are based on anti-backsliding from the limits in the expired permit (which were previously based on treatment technology standards set forth in the categorical standards of 40 CFR 430). During development of the Draft Permit, the technology-based limits were re-calculated using current information for the facility (production rates and discharge flows applied for by the permittee) and the treatment technology standards set forth in the categorical standards of 40 CFR 430. The re-calculated technology-based limits were determined to be less stringent than the limits from the expired permit and therefore, were not proposed in the Draft Permit because of anti-backsliding requirements. If the facility were to increase production rates or discharge flows, it would have to amend its application. If that were not done, the facility would be discharging wastes not applied for -- in effect, discharging without a permit.

For Outfall 002, the pH and temperature limitations are based on meeting the in-stream standards assuming there is no dilution and is not dependent on discharge flow rates.

COMMENT NO. 9

As we discussed over the phone, I am wondering if the 7Q10 for the Connecticut River took into consideration the flow being diverted into the Power Canal. The value given, 1,250 cfs, seems quite high for the bypass channel section of the Connecticut River. Moreover, it is based on a gaging station that is no longer in operation [EPA was not willing to use data from that gage in the Northfield Mount Hermon School's NPDES permit, so use of it here is inconsistent with that permit]. We request that the 7Q10 of the bypass channel be reviewed, and that the impacts from outfall 002 be reevaluated given a potentially revised 7Q10.

COMMENT NO. 10

Attachment D shows calculations for the discharge flows of outfall 002. However, it appears to use a 7Q10 that was used for the Connecticut River rather than the Power Canal. As stated on page 9 of the Fact Sheet, the minimum flow through the canal is supposed to be 1,400 cfs. However, this seems odd, given that the 7Q10 of the whole river (without splitting the flows) may be less than that. We request that EPA look further into the flow rates of the river channel, the Power Canal, and the calculations for outfalls 001 and 002.

RESPONSES NO. 9 AND 10

EPA has looked further into the question of the drought flows in the Connecticut River and the Turners Falls Power Canal. These flows are highly regulated and the concept of a statistical "drought flow", or "7Q10" is not meaningful in this situation. The comment in the fact sheet about the 7Q10 being estimated to be 1250 cfs could have been explained better by calling it the "regulated flow equivalent of the drought flow"

Regarding the Turners Falls Power Canal, into which Outfall 001 discharges, the flow of 1,250 cfs used for determining limits is not based on stream gage statistics. The Federal Energy Regulatory Commission (FERC) License for the Vernon Hydroelectric Facility, which is located upstream in New Hampshire, requires that it discharge at least 1250 cfs downstream, unless the upstream flow is less (However, discussion with Vernon's operating authority indicated that it is almost always at least 1250 cfs). There are two significant tributaries into the Connecticut River in the approximately 22 miles between the Vernon Facility and the Turners Falls Dam. The Turners Falls Dam is required to release at least 120 cfs downstream during the late summer. Assuming that the tributaries contribute at least 120 cfs, then at least 1250 cfs will be released into the Power Canal during the late summer period. Although this is not exact, it is a reasonable approximation for the 7Q10 drought flow in this highly flow regulated situation.

Regarding the natural channel of the Connecticut River, into which Outfall 002 discharges, the following information was provided by the operator of the Turners Falls Dam, FirstLight Power Resources Inc. which diverts water into the Power Canal:

Starting on May 1st the operator must release 200 cfs through the fishway. When fish migrations begin, the operator must release 400 cfs until migration ceases, and must release a minimum of 120 cfs until river temperatures drop below 7 degrees Celsius. As a result, during the late summer there will be at least 120 cfs in the river. This is the practical equivalent of the "drought flow" in this flow-regulated situation.

COMMENT NO. 11

We would like to note that the permit and the Fact Sheet both mention Northeast Utilities. Northeast Utilities sold all their power generating facilities in MA and CT last year. The Turners Falls dam is now owned and operated by FirstLight Power Resources Inc. (see <http://www.neenergyinc.com/generation/default.asp>). Please make appropriate changes.

RESPONSE NO. 11

EPA has visited the referenced website, and it is not clear whether the power generating facility at Turners Falls has been sold or simply taken a new name. In order to avoid confusion about the recent change or possible changes of this sort in the future, EPA has modified the permit to use a more generic name for the Canal. It is now referred to in the permit as the "Turners Falls Power Canal" which should avoid any confusion in the future. In this Response to Comments document the Turners Falls Power Canal is simply referred to as the "Power Canal."

COMMENT NO. 12

We calculate that the maximum daily limit for TSS, 1,000 lbs/day, with an average discharge volume of 0.7 MGD from outfall 001, translates to a maximum discharge concentration of 171.2 mg/L. This is very high, approximately three times higher than the typical limits for municipal wastewater treatment facilities. Given that this stretch of the river is impaired for TSS, we recommend that the limits be tightened to start the process of fixing the water quality impairment before having to do an expensive TMDL.

RESPONSE NO. 12

As stated in the Fact Sheet for this permit, "Technology-based requirements are promulgated for the Pulp, Paper, and Paperboard Point Source Category at 40 CFR Part 430. The Turners Falls Mill operations fall under Subpart K of that regulation -- Fine and Lightweight Papers from Purchased Pulp Subcategory (Fine Paper Produced from Purchased Pulp -- Cotton Fiber Furnish Subdivision). This regulation includes limitations for BOD₅, TSS, pH, and the toxic pollutants, pentachlorophenol and trichlorophenol, which are often used as biocides in this type of mill. Effluent limitations must be based on that regulation, unless more stringent limitations are necessary to comply with the state water quality standards or anti-backsliding from current permit limits."

Limits for TSS were calculated from the Subpart K regulation and compared with water quality-based limits and anti-backsliding limits. The TSS limits in the expired permit were considerably more restrictive than the technology-based limits. Therefore, based on anti-backsliding, they were used in the proposed permit.

Water quality-based limits are intended to protect the water quality standards after mixing with the drought flow of the receiving water. As discussed above, the receiving water dilution in the Power Canal is very large and immediate, due to the volume and velocity of flow, and the diffuser installed at the facility.

Calculating the concentration of TSS after mixing with the receiving water yields a concentration increase of only about 0.15 mg/l. This is a worst-case calculation, assuming the maximum allowable TSS discharge loading (1000 lb/day), at the maximum discharge flow (0.7 mgd) and at the drought flow of the receiving water (Power Canal). Therefore, the water quality-based limit for TSS is much less restrictive and therefore is not applicable in this case.

Discussions with the MassDEP indicated the reason for TSS impairment in this stretch of the Connecticut River was upstream bank erosion. EPA believes the proposed permit limits for TSS at Southworth are fully adequate to protect the Power Canal and the Connecticut River.

COMMENT NO. 13

We are glad to see that the Southworth Company performs an annual maintenance shutdown during the week that the Power Canal is drained for maintenance. While we assume that no discharges occur from this facility into the Canal during that week, we would like an explicit statement saying so.

RESPONSE NO. 13

Since the Power Canal is the main water supply to Southworth, discharges are not likely to occur when it the Power Canal is drained. However, EPA agrees with this comment, and the Final Permit prohibits discharges to the Power Canal when the Power Canal is drained for maintenance.

COMMENT NO. 14

We support the requirement that the facility undertake an impingement monitoring study. We are also glad that the bar rack openings at the facility are only 1/2 inch, which certainly would limit the impingement of fish.

RESPONSE NO. 14

EPA acknowledges this comment in support of the 316(b) study requirement.

Comments from the National Marine Fisheries Service**COMMENT NO. 15**

Upon review of the draft Permit and accompanying Fact Sheet, NMFS is concerned about the demonstration of effluent toxicity on page 7 of the Fact Sheet, particularly since shortnose sturgeon are known to spawn just downstream of the discharge location.

RESPONSE NO. 15

Outfall 001 discharges into the Turners Falls Power Canal, which provides abundant dilution (greater than 1000 to 1 at low flow conditions) for this process waste discharge. Also, the dilution occurs immediately after introduction of the discharge into the Power Canal due to Southworth's diffuser and the high velocity of the water flow past the diffuser in the Power Canal.

Because of those factors, there was no *Chronic* Whole Effluent Toxicity (WET) limit in the expired permit.

EPA's review of *Acute* WET test results reported between March 2003 and September 2006 showed that 3 of the 12 tests conducted for this discharge did not meet the 50% limit. Given the very large dilution available in the receiving water, toxic impacts beyond the outfall are likely to be very localized and minimal. EPA has concluded, based on the large dilution ratio, the design of the diffuser, and observation of the flow in the Power Canal, that complete mixing with the diluting flow occurs within a few feet of the diffuser discharge ports. Therefore, any residual acute toxicity will not affect downstream spawning areas for shortnose sturgeon. However, as stated in the Fact Sheet, EPA will continue to monitor the results of future toxicity tests and should the trend of occasional toxicity exceedences continue, EPA may require the permittee to perform a Toxicity Identification Evaluation (TIE) and a Toxicity Reduction Evaluation (TRE).

EPA does not consider toxicity to be an issue for Outfall 002 because Outfall 002 contains only pass-through of power generation water and non-contact cooling water and periodic storm water runoff which is regulated by a separate permit. Therefore, no WET testing is required.

COMMENT NO. 16

NMFS is also concerned that the proposed temperature limit (83°F) is above the temperature reported in the literature that may cause adverse effects to this species.

RESPONSE NO. 16

One correction, which has been made in the final permit as a result of comments from the Southworth Company, is that the monitoring point for Outfall 002 is only on the non-

contact cooling water discharge, not the entire flow of Outfall 002. This is appropriate since the non-contact cooling water is the only discharge from Outfall 002 that is covered by this permit.

As stated above, there is abundant and immediate dilution for Outfall 001 ($>1000/1$), but less for Outfall 002 (see below). Primarily for that reason, the temperature monitoring was eliminated for Outfall 001, and the temperature limit and monitoring were maintained for Outfall 002 in the Draft Permit.

EPA has re-examined the potential temperature impacts at Outfall 002, considering dilution as follows: Outfall 002 contains pass-through of power generation water and non-contact cooling water (plus periodic storm water runoff which is regulated by a separate permit). The maximum flow in Outfall 002 is about 4 million gallons per day (mgd). The portion of that flow which is non-contact cooling water varies greatly. The cooling water is for the air conditioning at the facility, which occurs only in the summer, so there is no cooling water discharge during other times of the year. The maximum discharge (during summer) of non-contact cooling water is 0.4 mgd, and averages about ten percent of that maximum. There is always some pass through of water in the power generation flume when the cooling water is being used, but it is not possible to quantify that minimum diluting flow within Outfall 002.

Regarding the natural channel of the Connecticut River, into which Outfall 002 discharges, the following information was provided by the FirstLight Power Resources Inc. which diverts water into the Power Canal:

Starting on May 1st the operator must release 200 cfs through the fishway. When fish migrations begin, the operator must release 400 cfs until migration ceases, and must release a minimum of 120 cfs until river temperatures drop below 7 degrees Celsius. As a result, during the late summer there will be at least 120 cfs in the river. This is the practical equivalent of the "drought flow" in this flow-regulated situation.

Therefore, the dilution available for the non-contact cooling water under worst case conditions [maximum discharge of cooling water (0.4 mgd = 0.62 cfs), assuming zero dilution within Outfall 002, and minimum flow in the natural channel of the Connecticut River (120 cfs)] is at least 194/1.

Based on all of the above information, the maximum increase in temperature in the receiving water due to Outfall 002 will be extremely small. For example, if the River temperature in the late summer is 75 °F and the cooling water discharge temperature is 83 °F, the temperature after mixing will be about 75.04 °F. Also, at spawning time in the spring, this area of the Connecticut River and downstream areas will not likely be at drought conditions, so dilution will be much greater.

The effects of Outfall 002 on temperature of the Connecticut River will be extremely small as long as the discharge temperature limit is met. Therefore, EPA agrees that the temperature monitoring at Outfall 002 should continue to be monitored on a daily basis as required in the expired permit to ensure compliance. The Final Permit has been revised to include this monitoring frequency increase. The temperature limitation of 83° F remains in the Final Permit.

EPA has again reviewed the question of temperature monitoring for Outfall 001. Since the dilution and water velocity at the outfall point in the Turners Falls Power Canal are so great at Outfall 001, the effect of this discharge will be essentially impossible to measure. As stated in the public notice Fact Sheet, "EPA has re-evaluated the potential thermal impacts for Outfall 001 and has concluded that any increases in river temperature resulting from the discharge at Outfall 001 would be very minimal and at most times indiscernible. For example, the calculated increase in river temperature downstream of Outfall 001 for a discharge temperature of 20 degrees F above the river temperature during 7Q10 flow conditions (1250 cfs) would be approximately 0.017 degrees F. This calculation assumes zero heat loss to the atmosphere which results in a conservative overestimate of the calculated temperature rise caused by the discharge. Also, temperature data collected by the permittee in the Power Canal upstream and downstream from Outfall 001 during June and July 2006 showed no difference between upstream and downstream temperatures for all monitoring events. Therefore, EPA believes there is no reasonable potential to violate Massachusetts' water quality standards for temperature."

COMMENT NO. 17

The levels of Total Suspended Solids (TSS) reported in the DMR Summary demonstrate that TSS in the treated effluent was often between 100 and 400 mg/L. This is above the level that may affect the viability of shortnose sturgeon eggs.

RESPONSE NO. 17

The limitations on TSS and BOD in Outfall 001 are based on anti-backsliding from the limits in the expired permit (and are more stringent than the treatment technology standards set forth in the categorical standards of 40 CFR 430). The limits are unrelated to the discharge flow. Water quality-based limits would be based on the discharge flow and the dilution flow. However, the dilution flow is so high that the anti-backsliding limits for TSS and BOD are more restrictive (See Response No. 12).

The DMR results for TSS discharges during recent years were reported in units of pounds per day, not milligrams per liter. EPA has estimated the concentrations in mg/l which resulted in the reported lb/day, using the discharge flow applied for in Outfall 001 (0.7 mgd). The estimated concentrations varied from 12.5 mg/l to 113 mg/l.

Because of the high and immediate dilution at Outfall 001, the increase in the suspended solids concentration in the receiving water (Power Canal) will be no more than about 0.1 mg/l under all of the worst case assumptions (low flow conditions in the receiving water,

maximum discharge flow, and maximum historical concentration of TSS in the discharge). Therefore, EPA has concluded that there is no cause for concern for fish species in the receiving water, including shortnose sturgeon. EPA also has added to the Final Permit a provision prohibiting waste water discharges to the Power Canal during the Canal's annual draw down event when sufficient dilution is not available.

Note on Responses to Comments from the National Marine Fisheries Service

Based on the information detailed in Response to Comments (15 to 17), it is EPA's determination that the operation of this facility, as governed by the Final Permit, is not likely to adversely affect the shortnose sturgeon or its critical habitat in the Connecticut River. EPA sent a separate communication to NMFS Protected Resources Division providing the basis for this determination which is described in the above responses. NMFS has reviewed EPA's responses and in a letter to EPA has concurred with this determination.

Comments from the Southworth Company

COMMENT NO. 18

In regards to outfall 001 on page 2, section 1.a. of the draft permit pertaining to the new requirement of reporting on Total Nitrogen and Total Phosphorus, we request that this requirement be tri-annual as opposed to the quarterly testing proposed. This would allow us to have our contract laboratory perform this analysis in conjunction with our tri-annual toxicity testing, thus eliminating the need to order special testing at different intervals which would be at additional expense for us. We believe this would not be detrimental to the quality of the information you are hoping to collect on these parameters.

RESPONSE NO. 18

As stated in Response No. 6, above, EPA has increased the chronic WET testing frequency from three times per year (tri-annual) to four times per year (quarterly). Although this will involve some additional expense for the permittee, it eliminates the issue of different testing intervals for the nutrients and the WET testing. The rationale for increasing the WET testing frequency is explained in Response No. 6. Response No. 22, below, contains additional commentary on the times for the quarterly WET testing (and nutrient testing).

COMMENT NO. 19

Also in regards to outfall 001 on page 5, section I.A.3., we have questions about the statement:

“The ph of the effluent shall not be less than 6.0 or greater than 8.3 standard units at any time, and no more than 0.5 units outside of the

background range. There shall be no change from background conditions that would impair any designated use of the receiving waters.”

In conversation with EPA, it was clarified that this statement is standard language incorporated into most NPDES permits for class B receiving waters. We understand the intent is to ensure adequate protection of the receiving water in regards to pH. It is our position that the effluent gross value for pH in the range of 6.0 to 8.3 provides adequate protection of our receiving water due to the large dilution factor of our effluent to canal flow levels. To ensure these limits are met, we have automatic diversion capability set up to discontinue pumping if we approach our pH limits. Our concern is that the Effluent Gross PH change (range) 0.5 daily maximum which first appeared on DMR’s we received in June 2005 was generated from this statement. We requested clarification on this new reporting parameter via phone conversation and in writing multiple times since these DMR’s were received. As stated above we believe we ensure adequate protection of our receiving stream without this parameter on our DMR’s. If this parameter must remain on our DMR’s, we again request clarification as to what additional monitoring and reporting would be required of us in regards to this parameter.

RESPONSE NO. 19

The requirement in the Massachusetts water quality standards regarding pH units outside the background range is to be applied in the receiving waters, not the discharge pipe. The way the DMRs were prepared under the expired permit was in error, due to an Agency misunderstanding of the expired permit. In order to avoid future misunderstanding, EPA has revised the final permit, by moving the statement from Part I.A.3. to Part I.A.13.

COMMENT NO. 20

In regards to Outfall 002 on page 3, section 1.b., we believe the statement in the first paragraph is misleading in that it implies we are monitoring both the power generation water (pass through from the power canal) and non-contact cooling water for the referenced parameters. The power generation water is a portion of this discharge’s flow and should be mentioned in the fact sheet, but the monitoring requirements have always pertained only to the non-contact cooling water portion of this discharge. Monitoring of the non-contact cooling water takes place prior to it re-mixing with the power generation water. This was identified and clarified as being correct during a site visit to our facility by EPA and DEP on November 28th, 2006. The purpose of this visit was to gather facts to assist in the preparation of this NPDES draft permit.

RESPONSE NO. 20

This comment is correct, and the wording was misleading. A change has been made in the final permit to indicate that only the non-contact cooling water component of the

discharge is monitored in Outfall 002. Additional discussion of this issue is contained in Response No. 16, above. EPA does not consider it necessary to monitor the power generation component of this discharge, as it is simply passed through the power generation wheel from the Power Canal to the natural channel of the Connecticut River.

COMMENT NO. 21

Also in regards to outfall 002 on page 3, section 1.b., we question the measurement frequency for flow being "continuous". The previous permit required a once per month estimate of flow for this discharge. Continuous would imply that there is either a flow meter or a recorder associated with this discharge. We would anticipate a designation of once/month (or some other required interval) when discharging, similar to the requirements for temperature and pH for this discharge. This designation would also imply that the new reporting requirement for a monthly average associated with this flow would be divided by operating days and not calendar days. This should be clarified as we often have months at the beginning or end of the cooling season with only one or two days of discharge.

RESPONSE NO. 21

This comment is correct, and the change has been made to require "daily, when discharging" for flow "measurement frequency" at Outfall 002. Daily estimates of the flow are required to correspond with the daily temperature monitoring. A footnote is also added to clarify that only days when discharging should be used to calculate the monthly average.

COMMENT NO. 22

We request that the sampling months for toxicity testing be changed from March, June, and September to March, June, and October. We are making this request due to a change in the operation of the North East Utilities Power Canal as dictated by ISO New England. In prior years, the Power Canal was drained for maintenance work in July or August. Beginning this year (2007), ISO New England will not authorize the curtailment of any generating capacity during peak demand months. Therefore, the annual canal maintenance has been changed to September. Southworth must schedule its annual maintenance outage during this same time period when the Power Canal is drained. It may be difficult to obtain the necessary samples for the Acute Whole Effluent Toxicity Test with the annual maintenance outage in the same month if the maintenance downtime becomes extended. We anticipate that the annual maintenance period will remain in September, but we also request that the permit state that Acute Whole Effluent Toxicity Testing will be scheduled in a month not containing the annual maintenance outage if the schedule were to change at a future date. If the scheduled outage were to change to a month different than September, we would conduct the testing in September.

RESPONSE NO. 22

As stated in Responses No. 6 and 18, above, the frequency of WET testing has increased and is now synchronized with nutrient monitoring. Therefore, EPA has revised the schedule for these tests to be done during March, June, October, and December in the Final Permit.