

## RESPONSE TO PUBLIC COMMENTS

From June 12, 2003 to August 29, 2003, the United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MADEP) solicited public comments on a draft National Pollutant Discharge Elimination System (NPDES) permit, developed pursuant to an application from the City of Newburyport for the reissuance of the permit for the Newburyport Wastewater Treatment Facility in Newburyport, Massachusetts to discharge sanitary and industrial wastewater from outfall 001 to the Merrimack River. A public hearing was requested and held regarding this permit on July 15, 2003.

After a review of the comments received, EPA has made a final decision to issue the permit authorizing the discharge. The following response to comments describes the changes that have been made to this permit from the draft, the reasons for these changes and briefly describes and responds to the comments on the draft permit during the public comment period and the public hearing. A copy of the final permit may be obtained by writing or calling Michele Barden, United States Environmental Protection Agency, 1 Congress Street, Suite 1100 (CPE), Boston, Massachusetts 02114-2023; Telephone (617) 918-1539.

EPA acknowledges and thanks all parties who participated in the permitting process by attending and testifying at the public hearing and by providing written comments on the draft permit. The following parties commented and their comments and EPA's response to those comments can be found on the following pages.

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**A) Comments submitted by Brendan O'Regan, Superintendent, Office of the Sewer Department, City of Newburyport, dated July 15, 2003 and August 27, 2003**

Comment #1: The City does not believe that a dissolved oxygen (DO) effluent limitation should be

incorporated in the WWTF's final NPDES permit.

**Response:** EPA has removed this limit from the final permit. In discussions with the permittee, EPA and MADEP were informed that the few DO results submitted in the application were collected from the beginning of the effluent pump building prior to a drop where air is incorporated. A second set of samples were collected at the end of the building after the drop. Those results were never below 6 mg/l.

**Comment # 2:** That the outfall diffuser dilution factor be maintained at 39:1 as currently accepted and used in the existing WWTF NPDES permit.

As described in the draft NPDES permit fact sheet, a dilution of 30:1 was chosen by EPA for use in the draft permit, apparently based solely upon interpretation of an initial dilution estimate provided in a 1997 hydrographic study conducted by the US Department of Health and Human Services. This initial dilution is described in the draft permit as having "approximated a dilution factor of 30." Because CORMIX model results were inconclusive, this approximated dilution factor was then used to back calculate an average monthly limitation using EPA's chronic toxicity criteria for saltwater.

The City has initiated a review of the report dated August 8, 1997 and wishes to note it is a preliminary draft edition. The City has been unable to ascertain whether a revised draft or final version of this report has been prepared.

The City notes that the dye study conducted in 1997 appears to have used the WWTF effluent flow meter to estimate dye feed rates for analysis. Use of the effluent flow meter, however, would not have been accurate for this purpose, because it has been shown to overestimate the quantity of flow through the treatment facility. By adjusting dye addition rates using the effluent flow meter measurements, as suggested by the report, excess dye would have been added to the discharge resulting in an underestimation of initial dilution at the outfall site.

Notwithstanding the fact that the 1997 report is a preliminary draft, the city notes that the study verifies the previously established dilution factor of 39:1. The first conclusion states the "the minimum initial dilution was in the 27 to 40:1 range determined at a high tide near slack water. The dilution was greater after the tidal current began. Measured dilution with distance from the outfall is illustrated in Figures 9 and 16 of the draft report, which clearly demonstrates that dilution factors increase with increasing distance from the outfall. Accordingly, the City disagrees with EPA's interpretation of the 1997 preliminary draft study as the basis for establishing the 30:1 dilution factor and thus the TRC effluent limitations contained in the permit. The City requests that the previously established dilution factor of 39:1 be maintained and used for the purpose of establishing the TRC limitations.

**Response:** The Newburyport WWTF discharge is to the estuary of the Merrimack River. Determining dilution for this discharge is complicated by numerous, ever-changing conditions such as tides, river input, winds, temperature and salinity. Further complicating the determination of dilution is the limited detailed information on the diffuser and the fact that the diffuser is located in very shallow water with mean low water depths of 2-3 feet. In response to comments received during the public notice period, EPA conducted a new dilution analysis.

A regulatory mixing zone has not been established for the Newburyport WWTF discharge. Therefore, dilution was determined at the edge of the Zone of Initial Dilution (ZID). The ZID is defined as the near-field, which is the region where mixing is driven by momentum, buoyancy and the outfall geometry. The near field can be delineated through modeling.

EPA's Technical Support Document for Water Quality-Based Toxics Control, (March 1991) (TSD) defines the critical design period that should be used when conducting mixing zone analyses. In estuaries without stratification, the critical design conditions includes a combination of low water slack at spring tide for the estuary and design low flow for the riverine flow.

EPA employed the Cornell Mixing Zone Expert System (CORMIX) to conduct the mixing zone analysis. EPA used the draft 1997 US Department of Health and Human Services Hydrographic Study as a data source for the ambient river conditions, such as velocity, temperature and salinity, during a period of low water slack conditions. The ambient conditions were monitored as part of the drogue studies completed in 1997 and have been verified by the MA Division of Marine Fisheries (DMF). Limited "design" information on the outfall diffuser and its geometry was taken from design plans submitted by the permittee. It should be noted that the diffuser has not been inspected to verify that the installation and current conditions are in accordance with the design condition.

EPA re-ran several iterations of the CORMIX model during low water slack conditions. The CORMIX 2 multiport diffuser subsystem returned extremely low dilutions (i.e. 5:1), however, the calculated dilution may be overly conservative due to the very limited water depths which causes plume impingement on the bottom. The CORMIX 1 submerged single port subsystem was then run for a single diffuser port. The dilution reported at the critical design condition was 27.3, which is just below the dilution factor of 30 used in the draft permit. When the model was re-run using the average ebb velocity a dilution factor of 30.5 was returned. EPA believes the dilution factor of 30 used in the draft permit is a reasonable estimate of dilution during critical conditions.

EPA also notes that the dye testing results in the draft hydrographic study were reviewed. The purpose of the hydrographic study was to determine if the effluent from the WWTF impacted the shellfish resource areas. Therefore, the dye studies were conducted at high water tidal periods when the shellfish beds are flooded. They were ultimately not used in determining the dilution factor, since it was determined that the crucial condition, per the TSD was low water, slack tide.

Comment #3: The City does not believe that the proposed new TRC effluent limitations should be incorporated in the WWTF's final NPDES permit.

The Newburyport WWTF uses chlorine as a disinfectant followed by dechlorination using sulfur dioxide to minimize potential impacts of residual chlorine on receiving water biota. As part of its commitment of ensuring appropriate level of disinfection without excessive discharge of chlorine, the City has voluntarily spent in excess of \$75,000 for equipment upgrades and modification to the chlorination and dechlorination processes at the WWTF.

The chlorination/dechlorination process at the WWTF is regulated through flow proportioning. By continuously monitoring flow and adjusting chlorine and sulfur dioxide feed rates, the facility has consistently maintained compliance with technology based fecal coliform levels (i.e. number of colony forming units per 100 ml) as well as discharge limitations for TRC.

Under the draft permit, EPA proposes to modify the existing maximum day permit limit for total residual chlorine of 0.30 mg/l and replace it with an average monthly discharge limitation of 0.23 mg/l and a maximum daily limit of 0.39 m/l. The City respectfully disagrees with the proposed revisions to the TRC effluent limitations for the following reasons:

- The key factor in deriving the TRC effluent limitations contained in the draft permit is the available dilution.
- The revised average monthly total residual chlorine concentration of 0.23 mg/l will increase operation and maintenance (O&M) costs for dechlorination, but is not anticipated to have any beneficial impact on receiving water quality.
- Reducing the TRC level at the down gradient end of the chlorine contact tank may adversely impact disinfection efficiency of the treatment facility. At the NPDES permit flow rate (3.4 MGD), it has been calculated that an additional 33 minutes of detention time is achieved in the outfall pipe prior to discharge to the receiving waters through the multi-port diffuser. Reducing the TRC level prior to entering the outfall pipe would reduce the concentration of disinfectant available over the 33-minute contact time in the outfall pipe. The potential impacts of reducing the TRC concentration on disinfection effectiveness must be considered prior to modifying /reducing the existing effluent limitation for TRC. The lower average daily flows experienced at the WWTF would reduce the above-referenced contact time.

**Response:** The issue of the dilution factor was addressed in a previous response. The dilution factor will remain 30 as set forth in the draft permit. The Total Residual Chlorine limits are based on the National Recommended Water Quality Criteria, 2002 (EPA-822-R-02-047). In the previous permit, the chronic criteria (monthly average) was used to calculate the acute limit (maximum daily). This error resulted in a maximum day limitation which was more stringent than required. EPA has corrected that error in this permit and has included a monthly average limit based on the chronic criteria..

**Comment #4:** The City will continue to work with the Massachusetts Division of Marine Fisheries in developing a suitable notification procedure if shellfish restrictions are removed from the Merrimack River Estuary. For the follow reasons, the City does not believe that continuous monitoring for TRC is necessary or appropriate.

- Continuous monitoring equipment was installed during the past year to track TRC effluent concentrations prior to discharge. Plant operators are continuing to develop experience with its operation. Continuous monitoring equipment is not available to assess TRC levels prior to dechlorination.

- Continuously monitoring chlorine levels prior to dechlorination offers only an indirect measure of disinfection capability, since disinfection effectiveness also depends on contact time and the total suspended solids concentration of the effluent.
- The Newburyport WWTF has not had a history of chlorination failures in the past and this performance can be expected in the future.
- Operation of continuous chlorine monitors/analyzers cannot be performed reliably without daily grab sampling for calibration purposes. Under the current permit, daily grab sampling is used to confirm total residual chlorine concentrations in the effluent. Since daily grab sampling results are required by either system, and noting that analytical data is more accurate than continuous monitors, the City feels that the additional O&M expenditures required for continuous monitors does not enhance overall chlorination/dechlorination system reliability or effectiveness.
- Existing internal feed-back systems are already in place to identify if there are problems with either the chlorine feed system or the dechlorination system.
- According to our review of continuous chlorine analyzers, we are informed that [they] are viewed as "secondary instruments," meaning that they require regular calibration from a standard method or primary laboratory instrument. Our supplier recommends that the daily calibration sample for the analyzer is a better data source to determine chlorine residual compliance.
- In light of the above, the City believes that it would be more beneficial to conduct additional grab sample tests of total chlorine residual both prior to and following the dechlorination process. The City suggests increasing the frequency of grab sampling from once per day, as contained in the existing permit, to sampling at points both prior to and following dechlorination two times per day, as proposed in the draft permit.

Response: The Newburyport WWTF is *required* to develop an immediate warning system with the Massachusetts Division of Marine Fisheries to notify DMF of a disinfection failure or if TRC concentrations exceed the permit limit. *This is a requirement regardless of the shellfish resource classification.* The city must submit a letter to EPA and MADEP within twelve (12) months of the effective date of the permit, detailing the system and its operation.

The permit requires the permittee to continuously monitor TRC levels prior to dechlorination. This condition is an essential element of the immediate warning system which is a requirement of this permit. EPA recognizes that the continuous monitoring of total residual chlorine levels prior to dechlorination is only an indirect measure of disinfection effectiveness, but it is crucial to protect the downstream shellfishing resources.

EPA has reconsidered using continuous monitoring of TRC as a compliance requirement. In the final permit, EPA is requiring that TRC be monitored continuously and will require the City to report the results of grab samples on its DMRs for compliance determinations. The permittee must collect four (4) TRC grab samples daily, two (2) prior to dechlorination and two (2) post-dechlorination. Two of the samples must be collected concurrent with the daily

Fecal Coliform Bacteria sample. The permittee is reminded that monitoring and records must be in compliance with the Part II - General Conditions which is attached to the permit. These conditions require that samples and measurement must be representative of the monitored activity. Records of monitoring must include the date, exact place and time of sampling or measurement, the individual who performed the sampling or measurements, the date the analyses was performed, the individual who performed the analyses, the methods or techniques used and the results of the analyses. It is also noted that any monitoring done more frequently than required by the permit using approved test methods shall be reported (Please see Part II General Conditions D. 1.(d).)

Grab samples shall be compared with data from the continuous analyzers, including the date and time each grab sample is taken and this information shall be attached to the monthly DMRs. Eight (8) continuous recording charts, two charts per week showing weekly data, one for pre-dechlorination and one for post-dechlorination, shall be submitted with the monthly DMRs. The permittee shall report the average monthly and daily maximum discharge of TRC using the grab sample data collected post-dechlorination.

Comment #5: The City does not believe that the requirement should be added to install a continuous chlorine monitor prior to dechlorination. First, the capital cost of adding a second continuous chlorine monitor prior to dechlorination is expected to range from \$30,000 to \$40,000. The City contends that this amount of money will be necessary to achieve other requirements in the permit that will enhance overall treatment efficiency or effectiveness.

In summary, for the reasons described above, the City requests the following:

1. That the requirement to install additional monitoring equipment to measure and continuously record total chlorine residual prior to the dechlorination process be removed from the final permit.
2. That the requirement to continuously record total chlorine residual prior to discharge to the outfall diffuser be removed from the final permit.

Response: As stated above, EPA believes this is an essential element of this permit and necessary to protect the shellfish bed resources downstream.

Comment #6: As acknowledged in the Fact Sheet issued by the EPA (pages 3 and 4) for the Draft NPDES Permit, inflow and infiltration (I/I) removal have been prioritized by a city wide I/I study. In addition to the city wide I/I study, funding in the capital budget has been provided to perform television inspections of sewer pipelines, sewer manhole frame and cover replacement work, testing and sealing, pipeline lining, and other sewer system rehabilitation work. Additional I/I control is achieved through the City's on-going sewer line maintenance program that results in every sewer line being inspected and cleaned at a frequency of every 4 to 6 years.

The City requests that a clarification be added to the request for I/I control plan information to ensure that the City is permitted to provide existing information cost-effectively.

In addition, in light of the significant level of sewer line maintenance and I/I work completed,

underway, and planned, the City requests that the timeframe for submission of an I/I plan (Part I.C.3 of the draft permit) be adjusted from within six (6) months of the effective date of the permit to within twelve (12) months of the effective date of the permit. The adjustment to the timeframe is requested in order to provide sufficient time for the City to assess the cost implications of this permit requirement; to allocate appropriate funds within the Sewer Department operating budget and obtain approval of the funding from the City Council; and to procure any needed consulting engineer and/or specialty contractor services. We are currently in the FY04 Budget cycle (July 2003 to June 2004). Preparation of the FY05 budget will begin in February 2004 and be completed by June 2004. There will also be a need to dedicate an appropriate amount of time to assure proper procurement of these services.

**Response:** It is true the City has provided significant information regarding infiltration and inflow reduction efforts. The I/I Control Plan and Annual Report required as a condition of this permit is a state certification requirement. This requirement has been made of all POTWs in Massachusetts. If the City already has an adequate I/I control program, this permit requirement does not place a significant financial burden on the City.

The permittee is required to evaluate their existing I/I control program with regard to the minimum requirements outlined in the permit. The annual report is required to be submitted annually by the anniversary date of the effective date of the final permit.

**Comment #7:** The City requests that the timeframe for conducting an inspection of the diffuser be adjusted from within twelve (12) months of the effective date of the permit to within twenty-four (24) months of the effective date of the permit. Additionally, the City requests that the permit schedule submission of the inspection report within thirty (30) months of the effective date of the permit (the draft permit does not specify a schedule for submission of the outfall inspection report). The adjustments to the timeframes are requested in order to provide sufficient time for the City to assess the cost implications of this permit requirement; assess the condition of the outfall and prioritize any needed maintenance activities; to allocate appropriate funds within the Sewer Department operating budget and obtain approval of the funding from the City Council; and to procure any needed consulting engineer and/or specialty contractor services.

**Response:** The timeframe for conducting the diffuser inspection has been extended to 18 months from the effective date of the permit. The inspection report shall be submitted to EPA and MADEP within 6 months of the completion of the inspection at the addresses found in Section F of the permit.

**B) Comments submitted by M.R. Eigerman, President, Island Futures Group on behalf of the Island Futures Group, Newburyport, MA, dated July 15, 2003 and August 29, 2003**

**Comment #1:** IFG remains gravely concerned over the current proposal to expand the City's sewer system to all of Plum Island – an action that would contribute at least 425,000 gallons per day of nitrogen- and bacteria-laden sewage to the Facility for “treatment” and discharge into the Merrimack River at a location directly upriver of public shellfish beds. On April 28, 2003, the City filed an application for sewer extension permit with the DEP that

purportedly “supersedes” the City’s prior application of June 26, 2001. In that application, the City indicates that the Plum Island Sewer Project would discharge approximately 424,500 gallons per day of sewage into the Facility – a 40 percent increase over the 273,000 gallons per day that previously was disclosed by the City to DEP and EPA. According to the application, those flows would result from sewage discharges from 1,210 existing dwellings, as well as the additional 647 bedrooms that would be added to existing dwellings and the 242 bedrooms that would be part of the 88 new dwellings that are both authorized for construction under the City’s and the Town of Newbury’s respective “growth-control” regulations. Actual flows may be higher than 425,000 gallon per day if the number of existing bedrooms and the amount of potential future development have not been accurately estimated.

Response: As stated in the Fact Sheet, the decision to allow a sewer extension is not an NPDES permit issue. Sewer extensions are reviewed and approved by MADEP and for projects meeting the Massachusetts Environmental Policy Act (MEPA) review thresholds, the MEPA program provides a comprehensive level of project review. This project was reviewed under the MEPA process and an Environmental Impact Report (EIR) was completed. The Massachusetts Secretary of Environmental Affairs has issued a certificate to this project.

It should be noted, however, that the City of Newburyport is responsible for assuring that any additional flows to the facility will not lead to violations of NPDES permit limits. Furthermore, the permit requires that when the flow discharged for a period of 90 days exceeds 80 percent of the design flow, the permittee is required to submit to the permitting authorities a projection of loadings up to the time the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality plans.

Comment #2: Today, over thirty years after the passage of the Act, the "fishable-swimmable" goal established by the Congress for the Merrimack River estuary remains unachieved. This is due, in a material part, to the discharge from the Facility. The quality of effluent from the Facility is not consistent with satisfying the SB/SA standards set for its receiving waters and areas influenced by tidal effects.

Response: The segment of Merrimack River in the vicinity of discharge, defined in the Massachusetts Surface Water Quality Standards as Creek Brook, Haverhill to the Atlantic Ocean is classified as Class SB, CSO with Shellfishing (Restricted). The only SA classification on the Merrimack River is for The Basin in the Merrimack River Estuary, Newbury and Newburyport. The Basin, although downstream from the Newburyport WWTF, is far outside the zone of initial dilution. EPA believes the effluent limitations and the conditions of the permit are consistent with the Clean Water Act.

The classification has been discussed with MADEP. MADEP concurs that the SB classification is correct.

According to MADEP, this segment of the Merrimack River (MA84A-06) does support the primary contact (“swimmable”) and secondary contact (“fishable”) recreation designated uses. However, this segment is listed on the 2002 Integrated Waters list as a segment requiring a

TMDL for pathogens and priority organics. The area is currently (November 2003) classified by DMF as Prohibited for shellfishing; however, a report is due to be released by DMF which will reclassify the area as Restricted. The 1999 MADEP Assessment reports that the geometric mean for each of the eleven (11) DMF classification sampling stations, sampled between February 1996 and July 2000, does not exceed 68 cfu/100 ml. The report, however, also notes that four tributaries of this segment of the Merrimack (Morrill, Middle, Shad and Black Rock Creeks) have been sampled by DMF. The highest fecal coliform bacteria counts have been found in Black Rock Creek following heavy rain events (maximum is greater than 2,400 cfu/100 ml).

Comment #3: The Draft Permit does not require that *currently known* technical problems which exist at the Facility, such as those concerning the flow meters, flow splitting to clarifiers, deficient aeration, and laboratory mismanagement, be corrected within a reasonable time period.

Response: Given the questions about the accuracy of flow measurements, EPA believes the following requirements will help ensure that the reported flows are representative as required by the Part II-General Conditions. The permittee must develop a plan for conducting a monthly calibration to assure representative flows are reported. A copy of the plan must be submitted to EPA and DEP within 60 days of the effective date of the permit. The plan methodology shall be followed after 30 days of submittal, if there are no comments from EPA or DEP. Annually, the permittee shall submit a report documenting the annual calibration of the influent and effluent meters. The annual calibration must include a volumetric test. All reported flows must be certified as consistent with the Part II - General Conditions.

Furthermore, NPDES permits provide limitations and conditions necessary to achieve the goals of the Clean Water Act. All individual NPDES permits also include Part II-General Conditions. The Part II requirements, Section B, require the permittee to properly operate and maintain all facilities at all times. Proper operations includes adequate laboratory controls and appropriate quality assurance procedures. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action.

Comment #4: IFG also is concerned that the Draft Permit is premised on an artificially low and incorrect estimate of expected additional sewage flow from the Plum Island Water and Sewer Project, since the City recently revised upward that flow estimate by 40 percent.

Response: The permit limits are based on a monthly average design flow not on historic flow records. However, as previously stated, the City of Newburyport is responsible for assuring that any additional flows will not lead to violations of NPDES permit limits.

Comment #5: Finally, and most importantly, the Draft Permit is based on an *incorrect* water quality classification for the Merrimack River.

Response: EPA and MA DEP disagree. As previously stated, the segment of Merrimack River in the vicinity of discharge, defined in the Massachusetts Surface Water Quality Standards as Creek

Brook, Haverhill to the Atlantic Ocean (mile points 21.09 to 0.0) is classified as Class SB, CSO with Shellfishing (Restricted). The only SA classification on the Merrimack River is for The Basin in the Merrimack River Estuary, Newbury and Newburyport. The Basin although downstream from the Newburyport WWTF is significantly outside the zone of initial dilution.

Comment #6: Because of these issues, IFG respectfully submits that the Draft Permit cannot be issued in its current form, and that substantial additional review must be performed by EPA and the DEP. Given the paucity of technical information which exists concerning the operation and maintenance of the Facility, the success of the City I/I removal program, and whether the removal of non-polluted I/I flows will offset the addition of nitrogen-containing sewage from the Plum Island, IFG believes that the City must be required to prepare a comprehensive wastewater management plan in accordance with the DEPs requirements *before* EPA and DEP can complete that additional review. Once that review is completed, IFG believes that EPA and DEP must again issue the NPDES permit in *draft form* for public notice and comment.

Response: EPA believes it has sufficient information on which to base the permit. The city of Newburyport submitted a complete application and has provided additional information, as requested.

Comment #7: The Draft Permit proposes to establish an average monthly flow limit of 3.4 MGD. Compliance with that limit would be based on the “rolling twelve-month average” flow. Unlike the Facility’s current permit, which measures average monthly flow based on the average flow for the month in question, the Facility instead would be allowed to average the “average monthly flow” for the current month with the “average monthly flows” for the preceding eleven months.

As such, the Draft Permit’s revision to this average monthly flow limit represents an *increase* in the volume of effluent that is authorized for discharge. This increase in flow – coupled with the fact that an unknown volume of relatively clean I/I water will be replaced with 425,000 gallons per day of sewage from Plum Island – means that a larger amount of pollutants will be discharged to the Merrimack River estuary. That increase constitutes “back-sliding” which is expressly prohibited by the EPA’s anti-backsliding regulations. *See* 40 CFR § 122.44(1). In addition, there is no indication that this increase was reviewed in compliance with the DEP’s antidegradation requirements. *See* 314 CMR § 4.04. (IFG also notes that the increase in flow authorized by the Draft Permit likely violates the provisions of the Massachusetts Ocean Sanctuary Act, as the facility discharges directly into the North Shore Ocean Sanctuary. *See* MGLc132A§§ 15, 16A, 16B and 16C.)

EPA and DEP apparently realize this issue, as the Draft Permit imposes average weekly and monthly mass limitations on discharges of BOD and TSS. IFG congratulates EPA and DEP for imposing these limitations, although it notes that these limits would allow an increased amount of TSS and BOD to be discharged from the Facility (based on the fact that the Facility currently discharges a substantial quantity of relatively clean I/I flows). Because of this fact, IFG believes the mass limitations for TSS and BOD set forth in the Draft Permit may not be stringent enough to protect water quality and existing uses in the Merrimack River, and

opposes any proposal to weaken or remove these limitations from the final NPDES Permit.

**Response:** The flow limit is now expressed as an annual average, rather than a monthly average as in the current permit. This change is being made to all POTW permits in MA at the request of MADEP. The purpose of this change was to allow some variation in POTW flows in response to wet weather, and in recognition that the flow rate used as the monthly average is in most cases presented in the treatment plant planning documents as an annual monthly average. As part of this change in how flow limits are written, DEP and EPA agreed that mass limitations for BOD and TSS should be included as permit conditions to ensure that existing controls on mass discharges of BOD and TSS were maintained, in order to prevent degradation of the receiving water.

To provide some background, every treatment plant has any number of design flows. The design engineer could provide a design flow for any time period, including yearly, monthly, daily, and hourly. A design flow is simply the flow rate which the designer establishes can be adequately treated over a given time period. Typically, a treatment facility can provide adequate treatment for higher flow rates for short periods than it can for long periods, meaning that design flow increases as the time period decreases. The annual average design flow is almost always provided in the planning documents for POTWs. Other design flow rates are not as consistently calculated or provided in planning documents. The Newburyport facilities plan, dated February 1974, estimates the annual average flow of 3.4 mgd and a peak flow of 9.45 mgd.

Therefore, the previous use of an annual average flow as a monthly average limit provided some conservatism to the permit by not allowing the facility to operate at its maximum monthly hydraulic capacity. We believe that this was the intention of EPA and MADEP in limiting the flow in this manner. We have now decided to relax the flow limit somewhat, but have sought to balance this action by imposing mass limitations on the discharge of BOD and TSS to ensure that the easing of the flow restriction does not result in a significant increase of pollutants during months when the monthly average discharge flow exceeds the limit established in the current permit. We have also strengthened the I/I requirements of the permit to ensure that the permittee maintains efforts to minimize extraneous flows to the collection system.

EPA believes this policy changes does not constitute “back-sliding” or require State antidegradation review.

**Comment #8:** IFG also notes that the Draft Permit fails to impose similar mass limitations on discharges of fecal coliform bacteria or total residual chlorine. EPA’s and DEP’s failure to impose such limitations constitute a clear violation of each agency’s applicable “anti-backsliding” and “antidegradation” regulations. This fundamental flaw is sufficient to require that mass limitations for these pollutants be established, that the required antidegradation analysis be performed, and the permit be reissued in draft form for public notice and comment.

**Response:** Fecal coliform bacteria are measured as colony forming units per 100 milliliters of sample. These units are not appropriately expressed as a mass. This is consistent with 40 CFR

122.45(f) i.

The Total Residual Chlorine (TRC) limitations shall remain as concentration limitations. The National Recommended Water Quality Criteria for TRC are expressed as concentrations, and therefore, it is consistent for the permit limitations to be expressed in the same units. This is consistent with CFR122.45(f) ii.

Comment #9: The Draft Permit contains no mass limitations on the discharge of total residual chlorine (“TRC”) from the Facility. Of greater importance, is the fact the Draft Permit would authorize the Facility to *increase* its maximum daily discharge of TRC to 0.39 mg/l, from the 0.30 mg/l limit that is set forth in the current permit. This increase clearly violates the provisions of 40 CFR § 122.44(l), notwithstanding the explanation proffered by the agencies in the fact sheet. As such, the maximum daily limit set forth in the current NPDES Permit must be retained, and a mass limit established for discharges of TRC that reflects a discharge of 3.4 MGD of effluent from the Facility.

Response: Please see the response to comment A .3.

Comment # 10: In addition, IFG notes that the Draft Permit requires the Facility, due to its proximity to shellfish bed resources, to “work with the Massachusetts Division of Marine Fisheries to develop an immediate warning system notifying DMF of a disinfection failure or if TRC concentrations exceed the permit limit.” Due to the current and future value of these shellfish resources, and the potential for substantial harm to public health and the environment to result from a disinfection failure or TRC exceedence, IFG requests that EPA and DEP *require* the Facility to develop and submit that system to each agency for review and approval within six months of issuance of the final Permit for the Facility.

Response: EPA has required the permittee to work with MA DMF to develop an immediate warning system. EPA believes that MADMF, as the agency who is legally charged with managing the shellfish resources in Massachusetts should be the lead in working with the City on this system. EPA shall require the permittee to submit a letter, within 12 months of the effective date of this permit, detailing the system and its operation.

Comment #11: The Draft Permit continues the current Permit’s average monthly and maximum daily discharge limits for fecal coliform bacteria of 200/100 ml and 400/100 ml, respectively. Those limits are predicated on the Facility discharging effluent to a class “SB” water, as designated by the DEP.

A review of DEP’s water quality regulations indicates, however, that the Merrimack River *is not classified as SB* at the location of the Facility’s discharge. Rather, those regulations establish that the receiving water body in question – namely, the Merrimack River between mile points 21.9 to 0.0 – is classified as SB with Restricted Shellfishing, or SB(R). *See* 314 CMR § 4.06(3), Figure 25 and Table 25. In addition, a downriver area in close proximity to the Facility, the Basin, is classified as a SA water with Open Shellfishing (Class SA(O)).

Because the Merrimack River at the point of discharge *is officially classified by the Commonwealth of Massachusetts* as a class SB(R) water, the fecal coliform bacteria discharge limits set forth in the Draft Permit are not correct, and are not sufficient to protect the designated water quality uses. Instead, DEP's regulations mandate that: (a) fecal coliform bacteria discharges from the Facility not exceed a median or geometric mean MPN of 88 per 100 ml, and (b) that no more than 10% of effluent samples from the Facility exceed a fecal coliform bacteria MPN of 260 per 100 ml. *See* 314 CMR § 4.05(b)(4)(a). Given the SB(R) classification of the receiving water, the proximity of SA(O) classified waters to the Facility, and the fact that discharges from the Facility likely impact those SA(O) waters, it is imperative that Draft Permit be revised to: (a) reduce the limits for fecal coliform discharges from the Facility to the levels specified by 314 CMR § 4.05(b)(4)(a); and (b) establish mass limitations on the discharge of fecal coliform bacteria which reflect a discharge of 3.4 MGD of effluent per day.

Response: The fecal coliform bacteria limits have been revised to reflect the SB Restricted criteria in the Massachusetts Surface Water Quality Standards. Accordingly, the final permit contains a monthly average geometric mean limit of 88/100 ml and a maximum daily limit of 260/100 ml.

EPA notes that on November 24, 2003, the Massachusetts Division of Marine Fisheries issued an advisory announcing the "conditional re-opening" of the Merrimack River Clam Flats.

Given that this is a more stringent water quality-based permit limit, the permittee has been given a compliance schedule of four (4) months from the effective date of the permit (for a total of 6 months, since the effective date is 60 days after signature) to comply with a monthly geometric mean limit of 88/100 ml and a maximum daily limit of 260/100 ml. Until that time, the previous permit's monthly geometric mean limit of 200 colony forming units (cfu)/100 ml and maximum daily limit of 400 cfu/100 ml remains in place.

Comment #12: The Draft Permit proposes that discharges from the Facility have a dissolved oxygen ("DO") content of not less than 5.0 mg/l. IFG enthusiastically supports this requirement, and urges that it not be relaxed or deleted from the final Permit.

Response: Please see the response to comment A .1.

Comment #13: IFG previously has raised concerns with both EPA and DEP concerning the existence of brown foam in the area of the Facility's effluent outfall.

IFG understands each agency's position that there is not direct "proof" that the brown foam is caused by the Facility's discharge. However, IFG also is not aware that either agency, except for the sampling undertaken by DEP, has undertaken any analysis as to the cause of the brown foam. Given the relatively low levels of fecal coliform in the surface water upstream and downstream of the Facility, the fact that the brown foam occurs primarily in the area of the Facility, and the fact that high levels of fecal coliform were present in both the foam and the

Facility's effluent on the day of sampling, it seems highly probable that a link exists between the Facility's discharge and the brown foam, and that the foam is not attributable to effluent discharges from wastewater treatment facilities located upriver.

Response: We are not aware of any direct link between Newburyport's discharge and the brown foam observed in the River. If such a link were found, this would constitute new information pursuant to 40 CFR 122.62(a)(2), which would support a modification of the permit.

Comment #14: IFG applauds EPA's and DEP's decision to require the Facility to monitor and report concentrations of ammonia nitrogen in its effluent. However, IFG believes that the Facility should also monitor and report concentrations total nitrogen and nitrate in its discharge. As the agencies know, in addition to creating nitrification problems, the excessive discharges of nitrogen can also lead to low DO levels in the receiving water body (for example, ammonia nitrogen exhibits a high chemical oxygen demand, or COD, when it breaks down to nitrate in the environment).

Response: EPA has added monthly reporting requirements for Total Ammonia, Total Kjeldahl Nitrogen, Nitrate and Nitrite.

Comment #15: IFG has reviewed the engineering evaluation performed for the City on the calibration of both the influent and effluent meters. A fundamental conclusion of that study is that both meters are not correctly installed at the Facility. In response to this information, the Draft Permit merely requires the Facility to calibrate both meters on an annual basis. This response is not adequate.

Instead, IFG believes that the Facility should be required to retrofit both meters, within the next twelve months, to ensure that they are correctly installed. Until that time, the Facility should be required to report flow measurements that are taken at both meters, as opposed to only the influent meter as the Draft Permit would require.

Response: Please see the response to comment B.3.

Comment #16: Many of the problems which exist with respect to the Facility, and which are identified by IFG in this letter, stem from the lack of information concerning the Facility's operations and the impact of those operations on the Merrimack River. IFG notes that in instances such as this, the DEP's practice is require the applicant (in this case the City) to develop a comprehensive wastewater management plan in accordance with State regulations, and to both reflect and implement that plan in concert with the NPDES permit. IFG can only question why such planning was not required here, as development of such a plan would have avoided, and indeed likely would have addressed and resolved, the anti-backsliding and antidegradation issues raised by the Draft Permit. As such, IFG submits that the NPDES permit must impose a comprehensive wastewater management planning requirement on the Facility.

Response: EPA does not have the authority through the NPDES program to require comprehensive

wastewater management planning.

Comment #17: The permit should include a limitation on maximum daily flow

Response: EPA does not believe a maximum daily flow limit is necessary to achieve the goals of the Clean Water Act. If EPA were inclined to set a maximum daily limit, it would be difficult to determine what that value would be. The facility plan only includes a peak (instantaneous) flow value.

Comment #18: The permit should require the construction of upgrades to the facility's aeration system and secondary clarifiers before the facility is allowed to accept additional flows from any new sewer system extension or connection.

Response: EPA can only issue schedules in permits for construction necessary to achieve new water quality requirements, and EPA can only require construction through enforcement actions where necessary to correct violations of a permit or the Clean Water Act.

Comment #19: The facility must promptly determine whether it discharges foam in violation of the draft permit conditions.

Response: Please see the response to comment B.13.

Comment #20: The facility must be required to calibrate its faulty measurement meters on a monthly basis and be subject to an enforceable schedule requiring the installation of the new measurement meters.

Response: Please see the response to comment B.3.

Comment #21: The facility should be required to install additional emergency generation equipment.

Response: In accordance with Part C.4 of the permit, Alternative Power Source, the permittee is required to provide an alternative power source which is sufficient to operate its treatment works as defined at 40 CFR 122.2.

Comment #22: The City must be required to timely document the results of its I/I removal program.

Response: The City must submit a summary report of all activities undertaken to minimize I/I during the previous calendar year. The first annual report is due, by the anniversary date of the effective date of the permit. The permittee is also required to submit an I/I control plan within 6 months of the effective date of the permit. Details of these requirements can be found in Part C.3 of the permit.

**C) Comments submitted by Robert V. Finneran, Esq., Newburyport, MA, dated August 27, 2003**

Comment #1: Others have commented at length about the facility discharge meters. Apparently the meters have documented calibration flaws. While I lack the technical sense to add much to the intelligent criticisms of others, I can add a few common sense observations about the discharge meters. We need accurate and consistently reliable discharge readings.

Response: Please see the response to comment B.3.

Comment #2: As far as I can determine, the truth is that pollution threatens our water quality and the cause is hidden. The Applicant and the discharge facility have too much at stake to be considered impartial and reliable reporters. There is a significant lack of independent data at the facility discharge area and the Merrimac (sp) River mouth. More data is needed and the data must be independently verified.

Response: The NPDES program by regulation depends on self-reporting by facilities. The Part II General Requirements included as part of every NPDES permit states in Section C.1.e, "The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both."

There is significant water quality data for the mouth of the Merrimack River. For nearly a decade, the Massachusetts Division of Marine Fisheries has been collecting and analyzing water quality data collected at the mouth of the Merrimack and in the vicinity of the discharge. MA DMF will be issuing a report on November 1, 2003 addressing water quality shellfishing and in this area.

Comment #3: I have concerns surrounding the Massachusetts Division of Marine Fisheries located on Plum Island. Where the Applicant and facility management seek to increase chlorination levels of its discharge, I do not want such chlorine level in our water or in our fish. My concerns are for the clam flats across the way in Salisbury and downstream at Joppa. What I do seek is a restricted chlorine discharge limit. Also, whenever the facility discharges in excess of its permit, the facility should immediately and automatically notify the Massachusetts Division of Marine Fisheries. This concerns the food people consume. A monthly average or periodic mean, even with a subsequent notification, is not adequate to protect public health.

Response: The Newburyport WWTF did not request to increase the chlorination level in their discharge. Please see the response to comment A.3.

Comment #4: I am told that the discharge facility does not handle surface and storm runoff from the Applicant municipality. The parties say that this is a plus in their determination to seek an expanded and extended discharge permit. On the other hand, in my opinion, I feel that surface

and storm runoff is one of the greatest threats to our water quality. Surely the Applicant permit can be considered in light of the Applicant's surface and storm runoff when its discharge is into the same watershed area as its wastewater facility. This is the spirit and substance of the Clean Water Act and its your Agency's obligations to protect the water here at the mouth of the Merrimac (sp)River.

Response: This facility is served by a separate sewer collection system, so significant quantities of storm water are not sent to this facility. In fact, the final permit includes reporting for inflow and infiltration (groundwater and stormwater) reductions.

Storm water discharges from municipalities in EPA Region 1, New England are covered by Region 1's general permit for storm water discharges from small municipal separate storm sewer systems (MS4s). The City of Newburyport is regulated under this program, which requires the city to develop and implement a storm water management program. The storm water management program consists of six minimum control measures: public education and outreach; public participation; detection and elimination of illicit discharges; regulation of runoff from construction which disturbs an acre; regulation of post construction runoff from new development and redevelopment; and good house keeping in municipal operations. Additional information concerning EPA's storm water program is available on line at [cfpub1.epa.gov/npdes/stormwater](http://cfpub1.epa.gov/npdes/stormwater) is addressed through the stormwater permitting. On December 9, 1999, the Phase II Stormwater regulations were published. The date for submission of an NOI for coverage under the region's permit was July 30, 2003.

Comment #5: Until and unless the Applicant can demonstrate the discipline and capacity to responsibly handle an additional 500,000 gallons of wastewater per day, whether by construction of new facilities or by vastly improving existing facilities, the applicant facility cannot accept wastewater from the Plum Island Project.

Response: Please see the response to comment B.1.

**D) Comments submitted by David J. McFarlane, Newburyport, MA, dated July 27, 2003**

Comment #1: It is strongly recommended that as a stipulation of the new permit that comprehensive wastewater management planning be performed as soon as possible and particularly before construction begins to extend sewer to Plum Island.

Response: Please see response to comment B.16.

Comment #2: Prior to new permit issuance it is asked why flows to capacity should not be provided along with an estimated time period to capacity? This should be required as the plant exceeded its permit requirement with flows over 80% of design flow for over 90 consecutive days followed by exceeding or reaching it (sp) design permit limits for 3 consecutive months. In addition the plant has been reported to be near design capacity over recent years, is facing new growth and future Plum Island flows and the amount of additional flow capacity from I/I

rehabilitation work appears uncertain and likely insufficient based of a review of available data.

Response: EPA has reviewed Discharge Monitoring Reports (DMRs) from the Newburyport WWTF as part of the reissuance process. Based on that data, EPA disagrees that the facility has exceeded 80% of the design flow for 90 consecutive days.

Comment #3: It is recommended that the discrepancies and uncertainties between the plant meters be resolved either with new meters or by other adequate means prior to permit reissuance.

Response: Please see the response to comment B.3.

Comment #4: The rationale for relaxing the monthly flow requirement to a yearly or 12 month average is understood with the inclusion of mass limits on BOD and TSS. It is still believed that this is relaxation albeit somewhat compensated by the mass limits and that it will not prevent excessive pollution over long periods from occurring during heavy flows that can be balanced for administrative compliance by low flow and load months during the year. Of concern particularly is pollution from fecal coliform bacteria and TRC which may be excessive during heavy flow conditions and are unlikely to be diminished sufficiently to meet water quality requirements. Also, until assurance that flows are being reliably measured there remains a concern that mass loading will not be properly accounted for. If this approach is to be pursued, daily reliable flow data for both influent and effluent should be report along with maximum daily and monthly flow data. Also a maximum monthly flow should be imposed consistent with the plants design capability.

Response: Please see the responses to comments, B.3 and B.7.

Comment #5: Can the water quality requirements for fecal coliform bacteria defined for this state's define SB(R) location be met following discharge from the diffuser? If not what other procedures are the permitting authorities using to assure the permit requirements will sufficient to meet water quality requirements? How close to the diffuser discharge can water quality requirements be met and does this require a mixing zone to be defined? Can a mixing zone be used in this estuary with SB(R) quality waters?

Response: The fecal coliform bacteria limits established in this permit are consistent with the Massachusetts Surface Water Quality Standards. A regulatory mixing zone has not been establish for this discharge.

Comment #6: Are other dilution factors in addition to those associated with the diffuser employed for this location? Are the dilution factors for the diffuser the same for gravity flow and pumped effluent flow to the diffuser?

Response: Please see the response to comment A.2.

Comment #7: Since the draft permit requires TRC to be continuously recorded it seem appropriate and is recommended that TRC readings at the same time the daily grab sample is taken for fecal coliform be reported in DMRs.

Response: Concurrent grab sampling for fecal coliform bacteria and TRC is required. Please see the response to comment A.4.

Comment #8: What is EPA's position on this anti-backsliding matter relative to TRC and the relaxation from monthly average to an annual average flow requirement?

Response: Please see the responses to comments, A.3 and B.7.

Comment # 9: Are TRC values listed appropriately in the draft permit as average monthly values and maximum daily values? How does this relate to the Gold Book criteria? How will these levels be calculated and reported and how will they be calculated and reported if they are defined in EPA gold book for marine waters.

Response: Please see the response to comment A.3.

Comment #10: DEP agreed that the influent meter be utilized for regulatory reporting requirements in a letter dated on June 27, 2001. This letter received on the day a sewer extension permit application was submitted to DEP for extending sewer to PI, included statements that "A correlation between all measuring location indicated that the readings at the influent meter were confirmed to be accurate." And: "For the effluent meter an error was found and corrected." The department agreed that the influent meter be utilized for regulatory reporting requirements. It also required to be informed of action to be taken for correcting the inaccuracy at the effluent metering station and submit evidence that both the influent and effluent meter reflect the actual flow entering and leaving the wastewater treatment facility."

Based on data subsequent to this time it is unclear if the meters remained error free and if so for how long. It is also unknown of what action was taken at that time and subsequently for correcting the meter inaccuracy.

Has any such action been taken and evidence submitted and did or has EPA agreed with the use of the influent meter based on current knowledge or any new evidence?

Response: Please see the response to comment B.3.

Comment #11: It appears the DMR's continued to report flows as those recorded at the effluent meter until

the ending months of 2002 but then used influent meter reading through June of 2003. It is also noted that annual flows for the last three years submitted with the permit application are influent flow averages.

Does EPA as well as DEP concur that this is an appropriate submittal for the prior three years of flow and that effluent data on discharges are less accurate? What other action other than annual calibration has been performed since June 2001?

Response: EPA has no evidence that information provided by the permittee is not representative.

**E) Comments submitted by Anne Giblin, Ph.D., Senior Scientist, Marine Biological Laboratory, Woods Hole, MA, dated August 26, 2003**

Comment #1: The existing permit allows a discharge of total residual chlorine (TRC) 0.3 mg/l and the new permit proposes to increase this to 0.39 mg/l. I was quite surprised to see that the EPA is considering increasing TRC when the discharge is into marine waters.

Response: Please see the response to comment A.3.

Comment #2: It is critical that the plant meet reasonable dissolved oxygen limit if marine resources are to be protected. I note that the current plant has reported very low values for dissolved oxygen for 2002, less than 1.6 mg/l for an average daily discharge.

Response: Please see the response to comment A.1.

Comment # 3: I was surprised to see that only ammonia (+ammonium) is being measured. This will not allow the EPA to calculate the total nitrogen load coming from the plant. Although TMDLs have not yet been established for nitrogen in estuaries it is likely that they are coming. It is important that both the City of Newburyport and the EPA know the total N being discharged from the plant. In addition, a better idea of the nitrogen species will help determine if the plant is operating properly, and if nitrite is being discharged. Nitrite is normally a minor component of the total N being discharged but it is harmful to marine organisms. Under conditions of low oxygen, such as are currently present in the plant, nitrification may stop at nitrite, rather than being carried all the way through to nitrate. I suggest that at a minimum the plant monitor nitrate, nitrite and TKN, which is standard for most secondary plants today. The sum of these will give total N. Because this plant discharges into surface waters a measure of ammonia (+ammonium), separate from TKN would also be advisable.

Response: Please see the response to comment B.14.

Comment #4: The City of Newburyport is clearly basing their assumption that they will not exceed the capacity of the plant with further expansion on these new lower flows. This is a critical

assumption and must be carefully examined. Finally, it is also critical that good data on flows be obtained. Important decisions on this permit cannot be made relying on flow meters which do not agree and which are known to be inaccurate.

Response: Please see the response to comment B.1.

**F) Comments submitted by Robin Guritz, Newburyport, MA, dated August 25, 2003**

Comment #1: I was told the Plum Island project was not going to be a topic of discussion at the public hearing, so I was quite shocked to here the first 5 speakers to oppose the permit all alluded to the additional demands on the plants due to the Plum Island project.

Response: Please see the response to comment B.1.

**G) Comments submitted by James Corbin, Vice Chairman/Acting Chairman, Salisbury Harbor Commission, dated August 15, 2003**

Comment #1: The Commission is concerned that the proposed approval of this permit will exacerbate the existing water quality problems in the Merrimac (sp) River. These problems have been investigated by The Salisbury Harbor Commission, the Harbormaster, and the Town's Health Agent and have identified the Newburyport outfall as the source of the brown foam that floats in the river. On June 26, 2002, Massachusetts DEP personnel together with town officials witnessed brown foam rising to the surface at the location of the Newburyport outfall pipe. Samples were taken and then tested. These and numerous other samples taken in our harbor near the Newburyport Treatment plant outfall pipe show high levels of fecal matter. Our records of testing results, combined with comments by numerous boaters and fisherman, clearly indicates that a problem exists which must be addressed.

Response: Please see the response to comment B.13.

Comment #2: The Salisbury Harbor Commission urges you not to allow any increase in the quantity of discharge or increase in pollutants discharged by the Newburyport Wastewater Treatment Facility.

Response: The permittee has not made any requests for increases in permit limits.

**H) Comments submitted by Judith Chaffee, Newbury, MA, undated**

Comment #1: Which is more pervasive in causing the pollution, the Newburyport Treatment Plant or the Septic Systems on Plum Island and along the Parker River? If you do not have a direct answer, then more study is needed. If you do have then answer, then that should influence your decision in granting or denying the permit.

Response: The National Pollutant Discharge Elimination System permitting process is not necessarily one of granting or denying permits. The Newburyport WWTF submitted a re-application as required by regulation. NPDES permits are issued for a term no longer than 5 years and the Newburyport permit was up for re-issuance. The Newburyport WWTF has not requested any change in coverage (i.e. increase in flow) from their existing permit. EPA through the NPDES program is responsible for issuing permits with effluent limitations and conditions which protect the interests of the Clean Water Act. For more information please see 40 CFR 122.

Please also see the response to comment B.1.

**I) Comments submitted by Susan Vladeck, Newbury, MA, dated July 16, 2003**

Comment #1: To begin with, foam is everyone's problem and can just as well come from up river as it can come from the septic systems on Plum Island that are out of compliance with title 5. The discussion around the expanded needs for sewerage treatment focused on Plum Island. However, increased development in Newburyport, the opening of the Audubon facility on the Plum Island Turnpike, and the future opening of the new headquarters for the Parker River Refuge are similar in kind, and all demand regional long term planning for development and growth. The wastewater plant may need to keep pace, but that is a planning issue.

Response: Please see the response to comment B.1.

Comment # 2: I would like to see you grant permit number MA0101427, with the requested amendments by Newburyport, to the city of Newburyport.

Response: Please see the response to comment H.1.

**J) Comments submitted by Kent McLeroth, Newbury, MA, undated**

Comment #1: No one has demonstrated that any brown foam is in any way connected with the Newburyport Wastewater Treatment Facility. As you know, there are numerous treatment plants up and down the Merrimack River, some operating at much higher capacities and much less efficiently than the Newburyport facility, and their discharge eventually winds up here. The foam and discoloration may be seen well upriver from the Newburyport facility, indicating the problem is originating elsewhere. To restrict the exemplary operation of the Newburyport Wastewater Treatment Facility, with no evidence that is causing a problem, is clearly unfair.

Response: Please see the response to comment B.13.

Comment #2: This permit is not about the Plum Island project, but about Newburyport's ability to treat wastewater. If the Island Futures Group hopes to stop the Plum Island Project, as is their

publically stated mission, they should do so with the merits of their case against the project itself, not by interfering with Newburyport's ability to treat wastewater.

Response: Please see the response to comment B.1.

Comment #3: In closing, I ask that you make your decision based on scientific fact rather than the misdirection offered by the opponents of the Plum Island Project. I ask that you take into consideration the exemplary performance of the facility and staff of Newburyport Wastewater Treatment. I ask that you grant the City of Newburyport Permit Number MA0101427, with the amendments requested by Superintendent O'Regan.

Response: Please see the response to comment H.1.

**K) Comments submitted by Sue McLeroth, Newbury, MA, undated**

Comment #1: It is my opinion that the Island Futures Group is using this forum to try and stop the Plum Island water/sewer project. They would love to have these stricter limitations put on the plant to make it impossible for the Plum Island project to hook up to the treatment plant.

Response: Please see the response to comment B.1.

Comment #2: My request is that you grant the City of Newburyport Permit number MA0101427, with the amendments requested by Superintendent O'Regan.

Response: Please see the response to comment H.1.

**L) Comments submitted by Neil Harrington, Town Manager, Town of Salisbury, on behalf of the Salisbury Board of Selectman, dated July 15, 2003**

Comment #1: First, the Town of Salisbury is opposed to the potential approval of any plan that will cause an increase in Total Residual Chlorine (TRC) levels in the Merrimack River estuary.

Response: Please see the response to comment A.3.

Comment #2: Second, Salisbury objects to the proposal to bring a potential 424,500 gallons per day of sewage to the Newburyport plant with the inclusion of Plum Island and the Turnpike area bordering the estuary.

Response: Please see the response to comment B.1.

Comment: # 3: Even if the Plum Island sewer project is approved, it would make more sense to require that the outfall pipe from Newburyport treatment plant be extended than to exacerbate the current unhealthy situation for wildlife that currently make their homes in Salisbury waters. The enclosed picture illustrates one of the potential results of the current outflow situation. Please do not make a bad situation worse.

Response: Please see the response to comment B.13.

Comment #4: Finally, as you know, the Town of Salisbury received a federal EPA grant in 1989 to provide for construction of wastewater and conveyance facilities. The terms of the grant included conditions that required the Town to implement mitigation measures relative to the discharge of wastewater into the Town's POTW so as to prevent any negative impact on the Town's wetlands, floodplains, or barrier beach areas. Specifically, the conditions prohibited connections to the Town's sewer system from "any new development" built within these three areas [wetlands, floodplains, or barrier beach areas]. Why then would the EPA be considering the approval of a NPDES permit for the Newburyport wastewater treatment facility that would eventually facilitate the extension of sewer to the environmentally sensitive Plum Island barrier beach area? Is the EPA contemplating the discouragement/prohibition of additional connections to such a sewer system from any future "new development" on Plum Island.

Response: EPA has the authority to determine how EPA grant monies are used by grantees as in the case of the Salisbury POTW. The Plum Island project, however, is not using EPA grant monies for the project and as such EPA does not have the authority to set such conditions.

Please also see the responses to comments, B.1 and H.1.

**M) Comments submitted by John L. Davenport, Conservation Law Foundation, dated July 15, 2003**

Comment #1: CLF endorses the comments on the above draft NPDES Permit (the "Draft Permit") submitted by Island Futures Group, Inc. in its letter of today's date.

Response: EPA appreciates the Conservation Law Foundation participation in the NPDES permitting process. Please see the responses to the Island Futures Group's comment in Section B.

Comment #2: Without derogating from IFG's other comments, we are particularly concerned that the City of Newburyport Wastewater Treatment Facility will not be able to handle the additional sewerage flows, - now estimated by the City at 425,000 GPD (a 40% increase from its original estimate), - from the proposed expansion of the sewer system to Plum Island without violating the Clean Water Act and further degrading the Merrimack River estuary, making achievement of the "fishable-swimmable" goal established by Congress for that estuary and the reopening of its public shellfish beds even more unlikely. There is not enough evidence to

support the City's contention that these additional flows of nitrogen-loaded sewage will be neutralized by the I/I program's removal of an unknown amount of non-polluted flows from the system.

Response: Please see the responses to comments B.1 and B.2.

Comment #3: CLF is also concerned with the use of the rolling twelve-month average to determine compliance with the Draft Permits's average monthly flow limit of 3.4 MGD. That revised method of calculation, particularly when combined with the substitution of the additional sewage flows from Plum Island for an unknown volume of relatively clean water removed from the system by the I/I program, results in an increase in the discharge flow limit from the current permit in violation of the EPA's anti-backsliding provisions and without the review required by the DEP's antidegradation provisions.

Response: Please see the response to comment B.7.

Comment #4: CLF joins with IFG in urging that the Draft Permit not be issued in its current form until the City develops a comprehensive wastewater management plan in accordance with DEP regulations and EPA and DEP then perform additional review to resolve the several issues raised in IFG's letter.

Response: Please see the response to comment B.16.

Comment #5: CLF also believes with IFG that, following such review, EPA and DEP must issue the revised NPDES Permit in draft form for public notice and comment.

Response: EPA does not believe that the information submitted during the public comment period has raised substantial new questions pursuant to 40 CFR 124.15 and do not, therefore, justify the need for a new draft permit.

**N) Comments submitted by Lou Wagner, Regional Scientist, Massachusetts Audubon Society, Lincoln, MA, dated July 10, 2003**

Comment #1: Questions have recently been raised regarding plant capacity and we are pleased to see this issue evaluated and resolved during the permitting process. We are pleased EPA has included a provision in the draft permit requiring measures to ensure compliance with discharge limits should future flows reach 80 percent of plant design flow for 90 consecutive days.

Response: EPA appreciates Massachusetts Audubon Society's participation in the NPDES permitting process.

Comment #2: We are especially pleased to learn from the draft permit fact sheet that closed shellfish beds located in the Merrimack River estuary may be reopened for restricted conditional shellfishing and that provisions have been included in the draft permit to ensure that if this occurs, discharge limits for the WWTP will be adjusted accordingly to ensure the protection of this resource.

Response: EPA appreciates Massachusetts Audubon Society's participation in the NPDES permitting process.

Comment #3: Mass Audubon supports the draft permit issued by EPA. We believe that this permit will help to protect and restore water quality in the Merrimack estuary.

Response: EPA appreciates Massachusetts Audubon Society's participation in the NPDES permitting process.

**M) Comments submitted by Paul Diodati, Director, Commonwealth of Massachusetts, Division of Marine Fisheries, Boston, MA, dated July 9, 2003.**

Comment #1: Marine Fisheries believes the effluent limitations in the permit, including enhanced monitoring of the chlorination process for the effluent, will serve to better protect anadromous and marine fishery resources in the designated receiving waters.

Response: EPA appreciates DMF's participation in the NPDES permitting process.

**N) Comments submitted by W.W. "Chip" and Barbara Wyser, Newburyport, MA, dated July 17, 2003**

Comment #1: The ongoing efforts by Newburyport's Sewer Department to create capacity at the wastewater treatment plant by reducing "I&I" (inflows and Infiltration) has not been completed, nor has final verification of the results been independently evaluated.

Response: Please see the response to comment B.1.

Comment #2: We are concerned that the Sewer Department has no valid 20-year plan to accommodate predictable growth in demand for treatment. If we are to run out of capacity in 10 years, is it wise to be spending significant money to rehab this elderly plant?

Response: The NPDES permit requires proper operation and maintenance. Effluent limits must be met, there is the 80% of design flow trigger, but no requirement for long-term planning.

Comment #3: The plant uses significant amounts of Potassium Permanganate in the inflow to mitigate odor. We are concerned about the influence of this chemical on the toxicity of the outflow.

Response: The concentrations of potassium permanganate are very dilute. No toxicity problems have been indicated in the Whole Effluent Toxicity testing which is a requirement of the permit.

Comment #4: Plum Islanders have a problem with excessive nitrates in their soil, and we do not believe the wastewater treatment plant monitors that element in its outflows.

Response: The Newburyport WWTF is required to monitor and report the results for Total Ammonia, Total Kjeldahl Nitrogen, Nitrate and Nitrite. However, high nitrate levels in Plum Island soils can probably be attributed to failing septic systems.

EPA believes the comments and responses detailed above adequately represent the comments heard at the public hearing held at the Newburyport Public Library on July 15, 2003. Copies of the complete transcript may be review at EPA's Region 1 office.