RESPONSE TO PUBLIC COMMENTS FOR DRAFT NPDES PERMIT MA0101591

TOWN OF MIDDLEBOROUGH
WASTEWATER TREATMENT FACILITY
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MIDDLEBOROUGH, MA 02346

On July 8, 2003, the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MADEP) released for public notice and comment a draft National Pollutant Discharge Elimination System (NPDES) permit for the above draft NPDES permit. The public comment period for this draft permit expired on August 7, 2003.

The following comments are received from the permittee during the public comment period:

Comment No. 1: Phosphorus Limit
The phosphorous limit is being reduced from 1.0 mg/L to 0.20 mg/L. The permit states that it will become effective 60 days from signing. This would probably be November 2003, making the new phosphorous limit effective April 01, 2004. It is requested that the 0.20 mg/L become effective April 2005. This will allow us one full season to develop a compliance strategy. We currently employ two point ferric chloride addition for phosphorous removal. In addition, we have portable 275-gallon tote / metering pump platforms which can be utilized to full scale test additional phosphorous removal chemicals and dosing points. Where we have sand-filtration, the addition of secondary chemical feed has the potential to meet the new more stringent requirement. In addition to full scale chemical application to meet the new limit, we would contact and visit POTW's which have achieved compliance with the 0.20 mg/L limit, to determine what additional strategies we can employ to insure compliance with the new more stringent limit. The immediate implementation of the 0.20 mg/L requirement will only succeed in placing us in non-compliance. The period of one season to maximize the existing facility potential to meet the new 0.20 mg/L limit is requested.

Response :
EPA agrees. The monthly average limit of 0.20 mg/l for phosphorus will now become effective on April 1, 2005. We have changed the permit accordingly in new footnote No. 12.

Comment No. 2 : Total Residual Chlorine (TRC)
The draft permit states: The limit at which compliance / non-compliance determinations of Total Residual Chlorine (TRC) will be based in the Minimum Level (ML). The ML for TRC has been defined as 50 ug/L. Any TRC value below 20 ug/L shall be reported as below detection level. This appears to be contradictory. In the last sentence should the 20 ug/L read 50 ug/L ? We use Method 4500C1 G, DPD. What is the correct Detection Level for reporting purposes ?

Response :
The numerical numbers of 50 ug/l are typographical errors. They should be 20 ug/l. Detection level for reporting purpose is 20 ug/l. Any test result less than 20 ug/l will be reported as zero in the DMRs. The permit is changed accordingly. Use of Method 4500C1 G, DPD is permissible and is included in the draft permit.

Comment No. 3 : Copper and Lead Testing Methodology

The minimum level (ML) for total copper and lead are defined as 3 ug/L. This value is the minimum detection level for copper and lead using EPA approved Furnace Atomic Absorption Method 220.2 for copper and 239.2 for lead respectively. Our contract laboratory utilizes Method SM 3113B for both copper and lead. This is shown in 40 CFR 136 as an EPA accepted method.

Does EPA approve method SM 3113B as an acceptable method for reporting purposes specific to this permit ?

How is a value of less than 3 ug/L to be reported ? The actual value obtained, below detection level (BDL) or zero ?

Response :

Use of SM 3113B is permissible for testing of both copper and lead. This is equivalent to Method 220.2 for copper and Method 239.2 for lead.

Values less than 3 ug/l will be reported as zero on the DMRs. This language is added in footnote 8 of the permit.

Comment No. 4 : Lead, Total

The permit establishes a lead limit for the first time. The fact sheet indicates that the data from which the determination was made that the potential existed to exceed the Gold Book lead standards were the Discharge Monitoring Reports from October 2000 to October 2002. These results were taken from the quarterly toxicity reports. The toxicity laboratory has advised that the chemistry subcontract laboratory performs the lead analysis by method 200.9.

Upon review of all data produced for the toxicity test chemistry results, it is apparent that even the diluent, the upstream sample of the Nemasket River, exceeded Gold Book criteria of three of nine occasions.

A summary of those results is shown below.

Lead, Total ug/L	Influent	Effluent	Diluent
10-00	8.8	2.4	<1
01-01	12.0	1.5	4.1
04-01	1.4	5.8	2.1
07-01	9.3	<1	<1
10-01	25.0	18.0	3.4
01-02	13.0	<5	<5
04-02	6.1	<1	<1
07-02	1.1	1.6	<1
10-02	8.6	<1	<1

One Sample has a reported minimum detection level of 5 ug/L and was therefore inconclusive.

The Gold Book establishes a lead limit of 0.69 ug/L for the receiving stream.

Where analysis of the receiving stream has produced values which exceed that level, it needs to be determined if the overall results are accurate, and if in fact, the in-stream levels of the Nemasket River, upstream of the POTW, do occasionally exceed Gold Book criteria.

We propose that a monthly monitoring requirement for lead in the receiving stream be included in the new permit. It is recommended that a single monthly grab sample, taken upstream of the POTW, at the same location toxicity test diluent water is collected, be collected on the same day the POTW collects the twenty-four hour composite for lead, and that the sample be analyzed by the same method appropriate for the final effluent, as indicated in the permit.

The development of a comparative data base for both in-stream and final effluent lead concentrations utilizing the same test methodologies may be valuable in future decision making.

Response :
EPA agrees that in-stream monitoring data will provide useful information. However, EPA is not requiring in-stream monitoring in the permit. The permittee may do this voluntarily if it chooses and provide the information to EPA and MADEP for future decision making.

<u>The following comments are received from The Riverways Program during the public comment period</u> :

Comment No. 1 :
"The facility is required to test carbonaceous BOD and not BOD as is typical of most public wastewater treatment facilities. Is there a reason why this plant has a CBOD monitoring and limitation requirement instead of the more traditional BOD requirement?"

Response :
The CBOD and NH_3 permit limits were developed in a waste-load allocation as necessary to maintain dissolved oxygen concentrations in-stream. CBOD is an appropriate parameter where the permit also limits NH_3 because the standard BOD test would double count the oxygen demand due to nitrification.

Comment No. 2 :
"The Fact Sheet says the plant performs year round nitrogen removal though they have only a brief seasonal limit and no year round monitoring requirement for ammonia. The ammonia limit and monitoring, unlike the April through October limit for phosphorus, TRC and bacteria, begins in June. Ammonia can be both acutely and chronically toxic to aquatic species, particularly juvenile stages of many fish which would be present in early and late spring. If a year round limit of ammonia is not considered necessary to protect the aquatic life of the river, the season should at a minimum be expanded to April. Data for the facility shows some elevated concentrations have occurred during winter months and we advocate for an expanded monitoring and reporting requirement over the remainder of the year."

Response :

EPA agrees with the need for an expanded monitoring and reporting requirement for ammonia from November 1 to May 31 is appropriate. The permit is changed accordingly.

At the present time the permittee is nitrifying the wastewater and will continue to do so in the future. During the months of April and May of 2002, total ammonia in the effluent is recorded as 0.2 mg/l and 0.14 mg/l respectively. A review of ammonia indicates that there is no reasonable potential of toxicity for the months of April and May. The ammonia limits will remain effective beginning in June as stated in the draft permit. EPA will monitor the results and if necessary appropriate action will be taken.

Comment No. 3 :
"The twice per week monitoring requirement for phosphorus will produce a valuable cache of the data on the concentrations and loadings of this nutrient into the river system. Given the nitrogen sensitivity of Mount Hope and Narragansett Bays downstream of this facility and the need to develop a TMDL for nitrogen for these water bodies, a twice weekly monitoring requirement for nitrate, nitrite and total Kjeldahl nitrogen would be equally valuable to accurately assess the loadings of nitrogen from this facility and the efficiency of the nitrogen removal process at the plant through the seasons. We encourage the more rigorous twice weekly monitoring schedule in lieu of only monthly monitoring for nitrogen compounds."

Response :
The effluent concentrations of total nitrogen and its compounds in municipal wastewater do not typically vary substantially. EPA believes monthly monitoring will provide enough data to support development of a TMDL.

Comment No. 4 :
"We also believe the EPA's national guidance for nutrients and more specific ecoregion recommendations provide compelling, scientifically and ecologically valid rationale for instituting nitrogen concentration and loading limits for this facility and negate the line of reasoning to wait until a TMDL/waste load allocation is completed before assigning limits. There are documented problems in Mount Hope and Narragansett Bays and the Taunton River placing them on the list of impaired waters for organic enrichment. An interim step of establishing at least conservative nitrogen limits based on national guidance is warranted. Certainly many WWTP have nitrogen limits despite the lack of a completed TMDL when there are waters downstream of discharges with recognized problems associated with excess nutrient loads. While the information on TKN and ammonia in the Fact Sheet shows a most months have reasonable monthly averages, the concentrations, during this same period for nitrate-nitrogen had levels of 32 mg/lm (12/02) despite year round nitrogen removal at this facility."

Response :
Due to the multiple sources of nitrogen and the far-field impacts relative to many of the areas, EPA and MADEP believe that a comprehensive study is important before establishing limits. Limits on nitrogen discharges are among the controls that may be included in future permits. Any planning for additional wastewater abatement facilities done by the permittee should include a consideration of abatement options that can either achieve higher levels of control of nitrogen than are currently required or that can be most cost effectively retrofitted to provide higher

levels of control.

Comment No. 5 :
"The facility chlorinates only seasonally and the TRC requirements reflect this seasonal treatment however should there ever be an extraordinary circumstance, chlorination may be required outside of the season permitted. The permit, while requiring notification by the permittee to EPA and DEP, should also include a clause requiring TRC monitoring and adherence to the seasonal limits in the case of this unlikely out of season circumstance."

Response :
EPA agrees and a statement is added under footnote 7 of the permit accordingly.

Comment No. 6 :
"The facility has had problems with some of its toxicity tests. The NOAEL 7 data tests with Ceriodaphnia dubia listed in the on-line PCS data base shows four failures out of the last nine tests, (with April 2003 results not reported)- almost a fifty percent failure rate. The same tests with Pimephales promelas also had some problems meeting permit requirements. The Fact Sheet did not discuss the compliance record of the facility or if there has been any investigation into the toxicity problems at this facility. What actions have been or will be undertaken to investigate and correct the problems highlighted by the chronic NOEC testing?"

Response :
EPA's NPDES Permit Unit has not discussed these exceedances with the permittee. We will inform our Compliance Unit regarding this matter. You may call Steve Couto of EPA's Water Technical Unit at (617) 918- 1765 if you wish to discuss this matter further.