Clean Ocean Action

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Ocean Advocacy Since 1984

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July 11, 2008

Howard P. Tompkins
Chief, Bureau of Point Source Permitting Region 1
P.O. Box 029
Trenton, NJ 08625

Cc: Leon Moss

RE: DRAFT NJPDES RENEWAL PERMIT FOR THE LONG BRANCH SEWERAGE AUTHORITY, NJPDES PERMIT # NJ0024783.

VIA EMAIL AND FASCIMILE

Dear Mr. Tompkins:

Clean Ocean Action is a regional, broad-based coalition of over 125 conservation, environmental, fishing, boating, diving, student, surfing, women's, business, service, and community groups with a mission to improve the degraded water quality of the marine waters of the New Jersey/New York coast. These comments are in response to the draft New Jersey Pollutant Discharge Elimination System (NJPDES) permit # NJ0024783 for the Long Branch Sewerage Authority (LBSA) to discharge to surface water. The effluent from this facility is discharged into the Atlantic Ocean approximately 1920 feet offshore at Latitude 40° 18' 47.7" Longitude 73° 58' 9.8". The draft permit also contains conditions allowing the permittee to beneficially reuse treated effluent for restricted on-site only purposes at this time. Clean Ocean Action (COA) has reviewed the draft permit and urges the Department to <u>not</u> approve it at this time.

The LBSA facility is close to exceeding treatment capacity. The Department needs to investigate the remaining capacity of the facility, as the Daily Maximum flow rate was 8.56 MGD[1], which is 3.16 MGD above the flow design of 5.4 MGD. This facility discharges directly into the ocean, yet there is no numerical flow limit for discharge. COA requests an explanation for why there is not a limit. We reviewed the data available online for LBSA and found that from Aug. 2001 to Aug. 2007, four months exceeded 80 % of the flow design. Also, 22 % of the monthly daily maximums exceeded the flow design. Although these past exceedances do not require the facility to develop a CAP, COA urges the Department to closely monitor the frequency of high flow rates in the event that a CAP is required and to enforce a numerical flow limit.

[1] Permit Summary Table: Page 26 of facility Fact Sheet included in this draft permit # NJ0024783

Because "*there is a definite likelihood that the effluent plumes from the LBSA and TOSA facilities could reach the shore*,"[2] the Department must replace fecal coliforms with enterococci as the bacterial indicator and require effluent limitations for enterococci. The Surface Water Quality Standards, N.J.A.C. 7:9B, were recently amended to replace fecal coliforms with enterococci in marine waters. The Department must eliminate the *"monitor only"* status for Enterococci and replace it with *"limitations"* based on the new Surface Water Quality Standards (N.J.A.C. 7:9B) for bacteria. The Department must convert to the appropriate bacterial indicators, so as not to put the environment or the public at risk.

COA would like to emphasize that it is the NJPDES permittee's responsibility to meet the SWQS for both bacteria and chlorine producing oxidants (CPOs). This may also require that the effluent be dechlorinated prior to discharge or an alternative disinfection method has to be utilized that does not produce toxic chlorine residuals or byproducts. In addition, without an enterococci limitation in NJPDES permits, the Department will not be able to *"develop total maximum daily loads (TMDLs) and to regulate wastewater discharges"* in accordance with SWQ Criteria.

COA also requests an update on the status of the Department's investigation as it pertains to this facility, including:

1. What is the frequency of the current enterococci monitoring efforts?
2. How many data points have been submitted to the Department by this facility to date?
3. What analytical method was utilized?
4. How do the enterococci and fecal coliform data compare?
5. What is the frequency and magnitude of unexplained enterococci spikes recorded by this facility?

COA looks forward to reviewing the bacterial indicator data available from this facility and reserves the right to provide additional comments based on this review.

BOD and TSS removal data on the LBSA website is not support by the facts. The LBSA website states that "[s]ince 1998, the LBSA has averaged a removal of 95% Suspended Solids and 95% BOD before discharging into the Atlantic Ocean (www.lbsa.net/about.htm)."[3] However, the data from the last six years (89.9 % Total Suspended Solids and 93.3 % BOD removal) do not support this statement. Nor do the removal percentages for 6/99-6/00 reported as TSS 91.8 % and BOD 91.9 % in the 2001 permit. We do not understand how the averages on the website were calculated and find

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[2] Hires, R.I., T. Manewattana, S. Thomas, T.O. Herrington. 1990. *Outfall Siting Study in Northern New Jersey Coastal Waters*. Stevens Institute of Technology, March 1990. (as cited in Omni Environmental Corporation. 1997. *Report Addressing the Federal Ocean Discharge Criteria for the Long Branch Township Sewerage Authority, Township of Ocean Sewerage Authority, and South Monmouth Regional Sewerage Authority Ocean Outfalls*. July 21, 1997.)

[3] www.lbsa.net/about.htm accessed on May 27, 2008.

them misleading. We realize this is beyond the scope of draft permit, but would still like the Department to require the facility to correct their website.

Overall, the sampling frequency at this facility is <u>extremely low</u> for almost all of the parameters compared to other dischargers. BOD, TSS, enterococci, ammonia, Dissolved Oxygen, and Chlorine Produced Oxidants should all be tested *daily* not 2 per week or less. WET testing should be conducted monthly or at least quarterly, as only once per year is inadequate to assess effluent toxicity. The frequency of toxic metals, organic compounds and cyanide should all be at least quarterly.

Moreover, COA continues to urge the Department to reject the "allowance" of a mixing zone when developing all WQBELs. Due to the highly toxic nature of CPO to marine organisms (see Section A above), eliminating the use of mixing zones is particularly important when calculating CPO limitations and other toxins such as cyanide. We are not aware of any outfall studies at this facility or others in NJ that prove that unreasonable degradation within the mixing zone does not occur and that SWQ's are indeed met at the edge of the mixing zone.

A. Chlorine Producing Oxidants (CPO):
The 3-year delay in implementation of a CPO standard is unacceptable. Why is such a long implementation period allowed? CPO are highly toxic to marine organisms even at very low concentrations, resulting in both acute and chronic effects. The silverside (*Menidia menidia*), a fish that is present in New Jersey marine waters, is considered one of the most sensitive marine/estuarine species (96-hour LC_{50} 0.040 mg/L).[4] CPO have been found to reduce filtration and reproduction in rotifers, lobsters and fish.[5] In fish, CPO can affect the transport of oxygen in blood by reacting with the hemoglobin of the red blood cells to form methemoglobin, inhibiting the cell's ability to bind oxygen.[6] As CPO concentrations are increased, severe hemorrhaging occurs throughout the body and from the fins. In addition, the body of the fish becomes covered with a mucous coating, and the fish shows increased "coughing" and erratic swimming.[7]

The need for an **immediate CPO standard** is evident for this facility, as the Daily Maximum value of **2.3 mg/L** reported in the Permit Summary Table[8] is **<u>4.8</u>** <u>times higher</u> than the final limit of 0.48 mg/L set by the Department. Further, this daily maximum is <u>over 209 times higher</u> than the New Jersey's Chronic Surface Water Quality Criteria (SWQC) and <u>over 121 times higher</u> than Acute SWQC. Even the average daily value, **0.87 mg/L**, is almost <u>double</u>

[4] Bender *et al.*, 1977
[5] Capuzzo *et al.*, 1976, 1977; Capuzzo, 1977, 1979a
[6] Buckley, 1976
[7] Grothe and Eaton, 1975; Buckley, 1977; Travis and Heath, 1981
[8] Permit Summary Table: Page 26 of facility Fact Sheet included in this draft permit # NJ0024783

the Department's final limit. This level of CPO is unacceptable and will cause unreasonable degradation to the marine environment, as it is acutely and chronically toxic to marine organisms within and around the discharge pipe. WQBELS are necessary at LBSA to mitigate this problem. Dilution factors due to the allowance of mixing zones do not protect marine life near the end pipe from CPO.

B. Ammonia:
This draft permit requires monitoring and reporting only for ammonia. Dilution factors are not appropriate given the toxicity of ammonia to marine organisms. Instead of waiting to evaluate whether a WQBEL is necessary in the next permit, a determination should be made following a one-year period of data collection. If excursions have occurred, then a WQBEL must be established by the Effective Date of Permit (EDP) plus 1.5 years. Section D. 1. DSN-001A, which specifies the frequency of monitoring for parameters, does not include ammonia. In the Permit Summary Table, the sampling frequency is 2 per week. However, the 24-hour composite sample type is not appropriate, unless 4 separate samples are collected and analyzed every 6 hours, as ammonia is highly reactive. The data collected from NJDEP's Coastal Monitoring Network 2002-2007 indicates an impairment of ambient water quality, as concentrations used in Table 1, page 13 exceed the Surface Water Quality Criteria. A WQBEL must be established at LBSA without a dilution factor.

C. Whole Effluent Toxicity (WET):
The annual monitoring frequency requirements in this draft permit **is not sufficient** to adequately detect and assess variations in effluent toxicity between and within years. Because of the high contaminant concentrations measured at LBSA, WET testing must be conducted on a monthly basis.

D. Dissolved Oxygen (DO):
The New Jersey coastal waters often experience dangerously low D.O. levels during the summer months. To address this impairment, point sources of low DO waters need to be identified and mitigated. A DO measurement of only once per month is not sufficient, instead daily or biweekly measurements would be more appropriate for evaluating the discharge.

E. Nitrogen:
Effluent standards should also be developed and established for Total Nitrogen at LBSA and other facilities that discharge to coastal waters. Nitrogen is the primary limiting nutrient in marine waters. The discharge of nitrogen from wastewater treatment facilities (WWTFs) contributes to increases in algal biomass and reductions in dissolved oxygen concentrations due to the decay of associated organic matter. To address the dissolved

oxygen impairment of New Jersey waters, it is necessary to identify and minimize the contribution of nitrogen to coastal waters by point sources.

F. Toxic Metals, Organic Compounds and Cyanide:
   i. The need for WQBELs must be reexamined. The use of dilution factors has resulted in unacceptably high and toxic wasteload allocation values. The allowable chloroform concentration of 254,100 µg/L is 121 times the human health Surface Water Quality criteria. The allowable copper concentration is 42 times the acute SWQ and 121 times the chronic SWQ. The maximum reported value for copper (134 µg/L) exceeds the acute SWQ by 129.2 µg/L! Total cyanide was found to be within limitations but without a dilution factor, the total cyanide is 8 times more than the SWQ, which is unacceptable.
   ii. COA has repeatedly urged the Department to increase the frequency of monitoring of pollutants to monthly intervals. The annual monitoring frequency requirements listed in this draft permit **are not sufficient** to adequately detect and assess variations in toxin levels between and within years.

COA is concerned that Reclaimed Water for Beneficial Reuse may be approved for this facility <u>without adequate data on the effluent to be reused, without any limitations or conditions for several important contaminants, and without a public comment period</u>. The permit allows the Department to approve several different public access and restricted access reuse options via **only minor modification** to the permit.

- The draft permit states "[t]he following Reclaimed Water for Beneficial Reuse sections (8-14) of the permit are for informational purposes only. These sections are inactive and not effective until such time as the Department activates the requirements in these sections with minor modifications." COA requests clarification on these statements, including the implications of these sections being inactive and not effective. If the inactivity of these sections jeopardizes the Department's ability to regulate the quality of wastewater or will cause harm to the environment in any way, the Department must cease all diversion of wastewater until these sections are reactivated.
- The RWBR Technical Manual's guidelines for preparation of Reuse Feasibility Studies for Wastewater Treatment Facilities do not include a requirement that the facility submit their last five (5) years of effluent monitoring data. Until an amendment is made to the RWBR Technical Manual, the Department must include the above requirement in the facility's permit, to allow for comparison with relevant limitations/conditions of the requested reuse. Simply reviewing five (5) years worth of priority pollutant scans from the wastewater facility is not sufficient to characterize the potential contaminants in the effluent stream or identify additional treatment that may be necessary

Clean Ocean Action urges the Department to either require this facility to first submit a Reuse Feasibility Study, or refrain from approving any additional reuse of wastewater until the newly proposed requirements are adopted and the Reclaimed Water for Beneficial Reuse Sections 8-14 are activated.

In conclusion,
COA finds that this facility has not tested the effluent frequently enough to properly evaluate the contaminants in the discharge. We are very concerned that this facility is indeed releasing toxins in toxic amounts in the effluent. The draft permit should not be approved until it is improved and sampling frequency is increased.

We thank you in advance and look forward to your reply.

Sincerely,

Cindy Zipf
Executive Director

Jennifer Samson, Ph.D.
Principal Scientist

Heather Saffert, Ph.D.
Staff Scientist