



*Ocean Advocacy
Since 1984*

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

May 22, 2008

RE: Draft NJPDES Renewal Permit for the Bayshore Regional Sewerage Authority, NJPDES Permit # NJ0024708.

VIA STANDARD MAIL AND FASCIMILE AND EMAIL

Dear Mr. Thompkins:

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 # NJ0024708 for the Bayshore Regional Sewerage Authority (BRSA) to discharge to surface water. The effluent from this facility flows into a lagoon at the Monmouth County Bayshore Outfall Authority (MCBOA), Union Beach Pumping Station at Latitude 40° 26' 56.8" Longitude 74° 10' 54.6". The effluent is then discharged into the Atlantic Ocean approximately 4000 feet offshore at Latitude 40° 23' 30.0" Longitude 73° 57' 39.0". The 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 permit and submits the following comments.

In general, this discharge is a significant threat to marine life and is not being monitored or regulated in a way that is protective of public health. The NJDEP found that the data BRSA submitted were not representative of the effluent discharged. Thus, the proposed monitoring requirements are insufficient and important information is missing. This should result in immediate state management and oversight of operations until accurate data is provided. Moreover, levels of certain pollutants are excessively high, above state allowances, and toxic to marine life. The NJDEP draft permit is further flawed in that there are allowances for effects to be obscured by the dependence and reliance on MCBOA's ocean discharge permit. COA is also concerned that the Department may approve several different public access and restricted access reuse options under this permit that could threaten public health. The draft permit would allow reuse of wastewater without necessary contaminant limitations nor public review and comment. Significant permit modifications and pollution limits must be established for this draft. Therefore, COA urges this draft permit be revised to reflect the concerns below and not be approved at this time.

- Adriatic for a Living Ocean
- American Littoral Society
- Arthur Kill Coalition
- Asbury Park Fishing Club
- Bayberry Garden Club
- Bayshore Saltwater Flyrodders
- Belford Seafood Co-op
- Belmar Fishing Club
- Beneath The Sea
- Bergen Save the Watershed Action Network
- Berkeley Shores Homeowners Civic Association
- Cape May Environmental Commission
- Central Jersey Anglers
- Citizens Conservation Council of Ocean County
- Clean Air Campaign
- Coalition Against Toxics
- Coalition for Peace & Justice
- Coastal Jersey Parrot Head Club
- Coast Alliance
- Communication Workers of America, Local 1034
- Concerned Businesses of COA
- Concerned Citizens of Bensonhurst
- Concerned Citizens of COA
- Concerned Citizens of Montauk
- Dosil's Sea Roamers
- Eastern Monmouth Chamber of Commerce
- Environmental Response Network
- Explorers Dive Club
- Fisheries Defense Fund
- Fishermen's Dock Cooperative
- Fisher's Island Conservancy
- Friends of Island Beach State Park
- Friends of Liberty State Park
- Friends of Long Island Sound
- Friends of the Boardwalk
- Garden Club of Englewood
- Garden Club of Fair Haven
- Garden Club of Long Beach Island
- Garden Club of Morristown
- Garden Club of Navesink
- Garden Club of New Jersey
- Garden Club of New Vernon
- Garden Club of Oceanport
- Garden Club of Princeton
- Garden Club of Ridgewood
- Garden Club of Rumson
- Garden Club of Short Hills
- Garden Club of Shrewsbury
- Garden Club of Spring Lake
- Garden Club of Washington Valley
- Great Egg Harbor Watershed Association
- Highlands Business Partnership
- Highlands Chamber of Commerce
- Hudson River Fishermen's Association/NJ
- Interact Clubs of Rotary International
- Jersey Coast Shark Anglers
- Jersey Shore Audubon Society
- Jersey Shore Captains Association
- Jersey Shore Running Club
- Junior League of Monmouth County
- Junior League of Summit
- Kiwamis Club of Manasquan
- Kiwamis Club of Shadlow Lake Village
- Leonardo Party & Pleasure Boat Association
- Leonardo Tax Payers Association
- Main Street Wildwood
- Marine Trades Association of NJ
- Monmouth Conservation Foundation
- Monmouth County Association of Realtors
- Monmouth County Audubon Society
- Monmouth County Friends of Clearwater
- Montauk Fisherman's Emergency Fund
- National Coalition for Marine Conservation
- Natural Resources Protective Association
- Navesink River Municipalities Committee
- Newcomers Club of Monmouth County
- NJ Beach Buggy Association
- NJ Commercial Fishermen's Association
- NJ Council of Dive Clubs
- NJ Environmental Federation
- NJ Environmental Lobby
- NJ Marine Educators Association
- NJ PIRG Citizen Lobby
- NJ Sierra Club
- NJ Windsurfing Association
- Nottingham Hunting & Fishing Club
- NYC Sea Gypsies
- NY/NJ Baykeeper
- NY Marine Educators Association
- Ocean Advocates
- Ocean Conservancy
- Ocean County Citizens for Clean Water
- Ocean Divas
- Ocean Wreck Divers
- Outreach/First Presbyterian Church of Rumson
- Piscataway Saltwater Sportsmen Club
- Raritan Riverkeeper
- Riverside Drive Association
- Rotary Club of Long Branch
- Saint George's by the River Church, Rumson
- Saltwater Anglers of Bergen County
- Sandy Hook Bay Catamaran Club
- Save Barnegat Bay
- Save the Bay
- SEAS Monmouth
- Seaweeders Garden Club
- Shark River Cleanup Coalition
- Shark River Surf Anglers
- Sheepshead Bay Fishing Fleet Association
- Shore Adventure Club
- Shore Surf Club
- Sierra Club, Shore Chapter
- Soroptimist Club of Cape May County
- South Monmouth Board of Realtors
- Staten Island Friends of Clearwater
- Strathmere Fishing & Environmental Club
- Surfers' Environmental Alliance
- Surfrider Foundation, Jersey Shore Chapter
- TACK I
- Terra Nova Garden Club
- Unitarian Universalist Congregation of Mon. County
- United Boatmen of NY/NJ
- United Bowhunters of NJ
- Volunteer Friends of Boaters
- Waterspint
- Women's Club of Brick Township
- Women's Club of Keapport
- Women's Club of Long Branch
- Women's Club of Merchantville
- Zen Society

Clean Ocean Action is concerned about MCBOA's near capacity Daily Maximum flow rate of 32.8 MGD (permitted capacity of 33 MGD). The design flow for BRSA is 16 million gallons per day (MGD) with an average monthly flow of 8.66 MGD and Daily Maximum of 22.9 MGD to the lagoon that flows into MCBOA. Currently, the permit does not contain a numerical flow limitation. The Township of Middletown Sewerage Authority (TOMSA) also contributes to MCBOA, with an average flow of 8.0 MGD and maximum of 15.6 MGD. So if the daily maximum flows occur at these facilities at the same time, the total flow into MCBOA would be 38.5 MGD (or 5.5 MGD above capacity). What is being done to ensure that BRSA and TOMSA assist in limiting potential flow exceedance at MCBOA?

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 determined all of the permittee's concerns were addressed with both the adoption of the SWQS and availability of approved USEPA methods. There should be sufficient monitoring data (5 years) to support the transition at this facility. 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.

We also urge the Department to investigate the use of rapid methods for the detection of enterococci, thus enabling facilities to identify and resolve problems with disinfection systems in a timely manner.

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 current bacterial indicator data available from this facility and reserves the right to provide additional comments based on this review.

Water Quality Based Effluent Limits (WQBELs) must be required at this facility to ensure compliance with MCBOA's discharge permit. If WQBEL's are only imposed for MCBOA

discharge, is it then the case that only MCBOA may be held accountable for permit exceedance? How do MCBOA's effluent limitations and regulatory restrictions control what happens at BRSA and the Township of Middletown Sewerage Authority (TOMSA)? To ensure the protection of the marine environment, all contributing facilities should be required to meet SWQS before the effluent leaves their facility. In addition, substantial concerns regarding the WQBELs for BRSA need to be addressed, including implementation schedules, analytical methods and monitoring frequencies being used for these calculations. These are as follows:

A. Chlorine Producing Oxidants (CPO):

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 LC₅₀ 0.040 mg/L).¹ CPO have been found to reduce filtration and reproduction in rotifers, lobsters and fish.² 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.³ 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.⁴

The need for an immediate CPO standard is evident for this facility, as the Daily Maximum value of **9.6 mg/L** reported in the Permit Summary Table⁵ is 20 times higher the final limit of 0.48 mg/L set by the Department and over 870 times higher than the New Jersey's Chronic Surface Water Quality Criteria (SWQC) and over 505 times higher than Acute SWQC. 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. A WQBEL is suggested to be more appropriately addressed at MCBOA, however toxic levels of CPO have been already documented in MCBOA's discharge. Therefore, WQBELs are necessary at both BRSA and TOMSA to mitigate this problem.

B. Ammonia (Total as N):

This draft permit requires monitoring and reporting only for ammonia, suggesting that WQBEL's be established at MCBOA. In the Permit Summary Table, the sampling frequency is daily. Section D. 1. DSN-001A must include ammonia as a parameter to be monitored, as it is currently omitted from that section. In addition, 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.

¹ Bender *et al.*, 1977

² Capuzzo *et al.*, 1976, 1977; Capuzzo, 1977, 1979a

³ Buckley, 1976

⁴ Grothe and Eaton, 1975; Buckley, 1977; Travis and Heath, 1981

⁵ Permit Summary Table: Page 20 of facility Fact Sheet included in this draft permit # NJ0024694

C. Whole Effluent Toxicity:

The Department recommends a WET WQBEL be established at MCBOA instead of at the facility, with only the minimum state standard of >50 % and the Toxicity Reduction Implementation Requirement (TRIR) retained. Because WET has been found in quantifiable amounts in the BRSA effluent and has reasonable potential to cause, or contribute to an excursion above the SWQ criteria, for regulatory purposes, a WQBEL must be included in this permit. In addition, the quarterly monitoring frequency requirements in this draft permit **are not sufficient** to adequately detect and assess variations in effluent toxicity between and within years.

D. Dissolved Oxygen (DO):

The northern New Jersey nearshore 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. We are encouraged that there is a monitoring and reporting requirement for DO at BRSA. The draft permit states that “the establishment of effluent limitations for DO will be more appropriately addressed in NJPDES MCBOA permit.” As stated by the Department in the draft permit Fact Sheet, DO “is listed in the *New Jersey 2006 Integrated Water Quality Monitoring and Assessment Report* as having water quality violations for the receiving waters in which the permittee discharges” and yet, the recently approved 2007 permit for MCBOA does not include a WQBEL for DO. **The Department must reopen the MCBOA permit and establish an effluent limitation for DO.**

E. Nitrogen:

Effluent standards should also be developed and established for Total Nitrogen at BRSA 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 increased algal biomass and reduced 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 the contribution of nitrogen to coastal waters by point sources.

F. Toxic Metals, Organic Compounds and Cyanide:

- i. For reasons stated above, WQBELs for all toxic metals, organic compounds, and cyanide must be established for BRSA in addition to MCBOA.
- ii. COA has repeatedly urged the Department to increase the frequency of monitoring of pollutants to monthly intervals. The annual or semi-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.
- iii. The Department has had the ambient water quality study results and Work/Quality Assurance Project Plan (“Work/QAPP”) for chloroform for over one year. COA requests copies of the data collected, study results, and the work plan.
- iv. We recognize that the Department may need to impose the action level for toluene until an ambient study and work plan are completed. However, the three year timeframe for the toluene study is excessive. The study should be completed

within one year from the effective date of the permit (EDP) and an effluent limitation must be imposed within two years of from the EDP. COA requests copies of the data collected, study results, and the work plan.

- v. The proposed action levels for chloroform and toluene were compared to the data in the summary table. For chloroform, the monthly average concentration limit 19.9 µg/L is well above the current data of monthly average of 4.82 µg/L, with a daily maximum of 13.5 µg/L. However, the loading level of 1.2 kg/day most probably will not be met, as current data show a monthly average of 9.18 kg/day, with a daily maximum of 57.4 kg/day. For toluene, the monthly average of the data is 1.51 µg/L and daily maximum of 4.10 µg/L are within the 9.2 µg/L action level. Loading level data were not available for toluene. Also, because samples are collected only once a month, the probability of greater levels of both toluene and chloroform being discharged in toxic amounts is high.
- vi. Given that quantifiable amounts of toluene and chloroform were detected in the effluent, the proposed action levels for chloroform and toluene are inappropriate and insufficient. The Department must establish effluent limitations in this permit as required in N.J.A.C. 7:14A-6.16(a).

G. Mixing Zones:

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 CPOs to marine organisms (see Section A above), eliminating the use of mixing zones is particularly important when calculating CPO limitations.

COA commends the Department for investigating and determining the data submitted are not representative of the effluent discharged from BRSA. We share the Department’s concern in this manner. COA requests the study that was used to make this determination. In Section M, the Department requires BRSA “to permanently modify its current sampling” to obtain representative data. However, the implementation period of 3 years is excessive. BRSA needs to modify its sampling immediately and submit a report with reliable data as soon as possible.

COA is concerned that Reclaimed Water for Beneficial Reuse may be approved for this facility without adequate data on the effluent to be reused, without any limitations or conditions for several important contaminants, and without a public comment period. 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.

N.J.A.C. 7:14A-12 Appendix B and C should be amended to include a monitoring and reporting requirement for some of the most critical emerging contaminants so the Department can begin to develop WQBELs and assess whether additional treatment of the effluent is required in the near future.

- Several Emerging Contaminants have been identified and shown to negatively impact or harm aquatic life. Emerging Contaminants include pharmaceutically active compounds (antibiotics, heart and pain medications, anti-depressants, illicit drugs, etc.) and endocrine disruptors (birth control pills and other hormone-based medications, pesticides, polybrominated diphenylethers (PBDE), phthalates, plasticizers, etc.). These chemicals may promote antibiotic resistance in pathogenic bacteria, impair the ability of organism to develop, function, and/or reproduce, increase the vulnerability of an organism to disease and environmental stress, and/or be fatal. Some emerging contaminants have also been shown to bioaccumulate in marine life, thus presenting an additional food-borne human health risk. USEPA considers the aquatic organisms to be most at risk of exposure to emerging contaminants.
- USGS and USEPA scientists analyzed treated wastewater from 10 WWTPs and found 28 to 50 pharmaceuticals and emerging contaminants in the effluent. Commonly detected compounds included antimicrobial disinfectants (triclosan), antibiotics (sulfamethoxazole), musk fragrances (tonalide), antihistamines (diphenhydramine), and antiepileptic drugs (carbamazepine). WWTP are considered a significant source of emerging contaminants in the streams that were sampled.⁶
- USGS and the Center for Disease Control (CDC) sampled pre-treated and treated effluent in a drinking water treatment plant in New Jersey whose receiving water included discharge of effluent from upstream municipal sewage-treatment plants. Forty (40) emerging contaminants were detected in one or more samples of stream water or untreated water supplies in the treatment plant; 34 were detected in more than 10 percent

⁶ Glassmeyer, S.T., Furlong, E.T., Kolpin, D.W., Cahill, J.D., Zaugg, S.D., Werner, S.L., Meyer, M.T., and Kryak, D.D., 2005, [Transport of chemical and microbial compounds from known wastewater discharges – Potential for use as indicators of human fecal contamination](#); Environmental Science and Technology, v. 39, no. 14, p. 5157-5169, doi: 10.1021/es048120k.

of these samples. Several of these compounds also were frequently detected in samples of treated water.⁷

The Department is taking positive steps toward a better understanding of baseline conditions off the New Jersey coastline. Clean Ocean Action supports the Department on its efforts in developing a regional ocean observing system in cooperation with Rutgers University and other partners in the Mid-Atlantic Coastal Ocean Observing Regional Association (MACOORA). COA understands that the 2007 Benthic Assessment and Index study of the New Jersey coast is complete. We therefore request a copy of the data and results from this research effort, as well as an update on how these data will be used to assess the ambient conditions of New Jersey's coastal waters. We would also like to be updated on any on-going related studies to be conducted. Will sampling continue in 2008? If so, will additional sites, such as around wastewater facility outfalls, be investigated?

In conclusion, the draft BRSA as presented is deeply flawed. First, the data are not representative of the discharge and thus are not creditable for the purpose of making judgments and decisions. This problem needs to be addressed immediately. This permit must be deemed incomplete and not move forward until reliable data are obtained and an alternative sampling report is submitted and approved. We request a copy of this new sampling report and associated data. Second, effluent limitations must be established and enforced at BRSA, and not just extended through MCBOA's permit. These levels must also be safe for marine life and public health. Finally, the beneficial reuse section must allow for public review and comment should any modifications to current provisions be considered. We would like to review and comment on the **revised draft permit**. We also request a meeting to discuss these concerns and look forward to a written reply to the substantial issues raised in our comments.

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

Sincerely,



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Executive Director



Jennifer Samson, Ph.D.
Principal Scientist



Heather Saffert, Ph.D.
Staff Scientist

⁷ USGS webpage on Research Projects: Emerging Contaminants
http://toxics.usgs.gov/regional/emc/water_treatment.html