

EXhibit 12

**DRAFT FACT SHEET  
NPDES PERMIT MODIFICATION  
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY  
WASTE WATER TREATMENT PLANT AT BLUE PLAINS  
WASHINGTON, DC**

December 14, 2006

**NPDES Permit Number: DC0021199**

## **1. NOTICE OF PERMIT MODIFICATION**

The United States Environmental Protection Agency, Region III (EPA) has decided to modify the permit issued on January 24, 2003 to the District of Columbia Water and Sewer Authority (WASA), for the discharge of treated municipal wastewater from the Blue Plains Wastewater Treatment Plant and treated and untreated storm water through the District of Columbia's combined sewer system, as described in the permit application and herein. As discussed below, EPA finds modification to be appropriate in light of its review of the permit conditions, as well as certain issues raised by the permittee and by Friends of the Earth and the Sierra Club, each of which filed petitions with the Environmental Appeals Board (Board) requesting review of certain provisions of the December 16, 2004 modification of the January 24, 2003 permit.

On August 18, 2006, the EPA offered for public comment a draft permit which contained several modifications to replace the former language regarding water quality based requirements for Combined Sewer Overflow (CSO) discharges found at Part III.E.1 with a provision similar to that in the NPDES permit issued in 1997. In addition, that modification removed the numeric limits contained in Part III. E. 2. which had been derived from specific District of Columbia total maximum daily loads (TMDLs) for pollutants in the Anacostia River and for Rock Creek and its tributaries, along with the related monitoring and reporting requirements contained in Part III. Sections E. 3 and 4.

The August 18, 2006 public notice of the draft permit modification contained a proposed interim effluent limit for nitrogen, which took into account the Ambient Water Quality Criteria for the Chesapeake Bay and its Tidal Tributaries (EPA-903-R-03-002), which have been incorporated into the District of Columbia Water Quality Standards, as well as the water quality standards of the Commonwealth of Virginia and the state of Maryland. The August 18, 2006 draft modified permit also proposed a revised annual discharge goal for nitrogen.

EPA received comments from several interested parties, including, WASA, the Blue Plains Regional Committee, the Chesapeake Bay Foundation, EarthJustice and the

Commonwealth of Virginia and the state of Maryland. The comments questioned the technical basis for the specified interim limit and asserted that the nitrogen limit in the permit should reflect the final nitrogen allocation given to the facility as a result of the Chesapeake Bay Agreement. The Blue Plains allocation is 4.689 million pounds total nitrogen. Having considered these comments, EPA has decided to propose a modification to the permit, incorporating an effluent limit that will achieve the final Chesapeake Bay allocation: a total annual discharge of total nitrogen of no more than 4.689 million pounds. The limit would be effective immediately. The affected provisions of the permit are: Part I. Section B., footnote 10. And Part IV. Section E.

All permit requirements are based on the Clean Water Act (33 U.S.C. § 1251 *et seq.*), hereinafter referred to as the Act, and NPDES regulations (40 C.F.R. Parts 122, 124 and 133).

## **2. PERMITTING AUTHORITY**

The NPDES Permitting authority is: U.S. Environmental Protection Agency, Region III (EPA), Office of Watersheds (3WP13), 1650 Arch Street, Philadelphia, PA 19103. The permit writer is: Mary Letzkus (215-814-2087), NPDES Permits Branch.

## **3. PERMITTEE**

The Permittee is: District of Columbia Water and Sewer Authority (WASA), Blue Plains Wastewater Treatment Plant, 5000 Overlook Avenue, Washington, DC 20032. The contact person is: Walter Bailey (202-787-4172).

## **4. EFFECTIVE DATES**

The modifications to the permit will become effective 30 days after the final determinations are made, unless a petition for review by the Environmental Hearing Board request for an evidentiary hearing is filed within 30 days after receipt of the final determination. The modified permit shall expire on February 25, 2008.

## **5. PUBLIC NOTICE.**

A modified draft permit will be offered for a 30-day public comment on December 14, 2006, at which time EPA will publish notice in the *Washington Times*. In addition to the notice in the *Times*, in accordance with the requirements found at 40 C.F.R. Section 124.10(c)(1), EPA will mail copies of the notice, draft permit and draft fact sheet to persons living in the District of Columbia and the surrounding area who are known to EPA to be interested in such matters. The public comment period will begin on December 15, 2006 and end on January 19, 2007. This period of time is slightly longer than 30 days to allow for two holidays.

## **6. BRIEF DESCRIPTION OF THIS ACTION.**

## A. Background

On January 24, 2003, the Director, Water Protection Division, made final determinations with respect to permit issuance and a final permit was issued to the permittee. Petitions to review certain provisions of the permit were timely filed with the Environmental Appeals Board by both the permittee and Friends of the Earth and the Sierra Club. Following a period of negotiations, EPA published notice of proposed modifications to the permit intended both to resolve the issues presented in the petitions for review, as well as to add provisions to the permit intended to conform to the Phase II permitting provisions of the 1994 CSO Policy. The final permit modification was issued on December 16, 2004. Both the permittee and Friends of the Earth and Sierra Club filed timely petitions for review of certain of the CSO Phase II provisions of the modified permit, specifically to Part III. Sections E. 1 through 4. In addition, the permittee asserted that EPA should have included a compliance schedule for implementation of the Long Term Control Plan into the permit. The schedule is included in a Consent Decree between EPA and the permittee.

In an effort to resolve the issues underlying the petitions for review, the parties engaged in negotiations, which were ultimately unsuccessful. However, based upon its own review of the provisions, as well as issues raised in the negotiations, EPA decided to propose modifications to the challenged provisions. Accordingly, on August 10, 2006, EPA withdrew the challenged permit provisions. As described above, on August 18, 2006, EPA offered a modified permit for public comment which set forth proposed modifications to the challenged provisions. In addition, at that time EPA proposed to modify the permit to include an interim total nitrogen discharge limit, and a total nitrogen discharge goal. Upon consideration of the comments on the proposed interim nitrogen discharge limit and the proposed nitrogen discharge goal, EPA is proposing to include a final nitrogen discharge limit that reflects the Chesapeake Bay allocation for Blue Plains. EPA will provide responses to comments received both on the August 18, 2006 proposal and this proposal when the final modified permit is issued.

## B. Proposed Modifications to the Modified Final Permit.

EPA proposes to modify the following permit condition:

### 1. Part IV. Section E. Total Nitrogen

In accordance with Chesapeake Bay 2000, EPA developed the Ambient Water Quality Criteria for the Chesapeake Bay and its Tidal Tributaries (EPA-903-R-03-002) (April 2007 and periodic modifications) (EPA Bay Criteria) in order to achieve and maintain the water quality conditions necessary to protect the aquatic living resources of the Bay and its tidal tributaries. The EPA Bay Criteria represent the nutrient and sediment criteria expressed dissolved oxygen (DO), water clarity and chlorophyll.

The existing permit contains a total annual nitrogen discharge goal of no greater than 8,467,200 pounds per year. The states of Maryland and Delaware, the Commonwealth of Virginia and the District of Columbia recently adopted changes to their water quality criteria and refined aquatic life uses for tidal Chesapeake Bay waters and EPA has approved those changes as consistent with the Bay Criteria Guidance. The revisions to the Chesapeake 2000 Agreement establishes a goal of achievement of the EPA Bay Criteria by 2010. By including a nitrogen limit in the Blue Plains permit, EPA is intending to move forward achievement of that goal, as well as toward compliance with the DC water quality standards and those of the other affected states.

Based upon the EPA Bay Criteria Guidance and prospective state water quality standards, EPA and the Bay states established cap loadings for the major basins for each of the states for nitrogen, phosphorous and sediment. The states were to develop tributary strategies to achieve the agreed to allocations. The process used to develop the allocations is set forth in *Setting and Allocating the Chesapeake Bay Basin Nutrient and Sediment Loads*, (EPA 903-R-03-007), December 2003. The District of Columbia tributary strategy did not achieve the allocated loading for nitrogen and, therefore, is inappropriate as the basis for establishing permit limits for the DC portion of the Blue Plains Facility. However, the tributary strategies developed by Maryland and Virginia were shown to achieve the nutrient and sediment allocations. Both of these strategies allocated nutrient loadings for their portion of the Blue Plains Sewage Treatment Plant. EPA therefore combined the allocated nutrient loadings for Blue Plains from the Maryland and Virginia Tributary strategies with a recalculated allowable nitrogen loading for the DC portion of the Blue Plains wastewater treatment plant in order to achieve the DC nitrogen cap load. This combined allowable loading from the three jurisdictions yields the allowable nitrogen loading from the entire Blue Plains facility in order to achieve the relative cap loading from each jurisdiction.

To achieve the EPA Bay Criteria, the Bay-wide annual nutrient loading goals are 175 million pounds of nitrogen and 12.8 million pounds of phosphorus. The District of Columbia's portion of the Bay allocation is divided among non-point sources, WASA and CSOs. Blue Plains is the largest waste water treatment plant (WWTP) on the Bay and is the only WWTP located in the District of Columbia. As noted, the state Maryland and the Commonwealth of Virginia also allocated some of their nitrogen and phosphorus cap loading to the Blue Plains facility. Together these cap allocations assigned to the Blue Plains facility yield a total nitrogen allocation of 4.689 million pounds per year. The calculations for total nitrogen are as follows:

- a. Total nitrogen allocation to the District of Columbia: 2.4 million pounds/year
  - b. Total nitrogen load allocation to non-point sources (DC): 280,000 pounds/year
  - c. Total nitrogen load allocated to CSO's (DC after implementation of the LTCP): 5,300 pounds/year
- DC portion of the Blue Plains allocation: 2,115,000 pounds/year  
Maryland portion of Blue Plains allocation: 1,993,000 pounds/year

- f. Virginia portion of Blue Plains allocation: 581,000 pounds/year
- g. Total Blue Plains allocated load 4,689,000 pounds/year total nitrogen
- h. Total Blue Plains concentration equivalent: 4.2 mg/l

Based upon this formula, the final mass load limit for Blue Plains equates to an annual average effluent concentration of 4.2 mg/l or a total mass load of 4,689,000 pounds per year for total nitrogen, which is the new limit proposed in this draft permit. EPA understands that the Blue Plains facility is not currently capable of achieving this limit. In order to do so, it is anticipated that new treatment technologies must be installed at the Blue Plains facility. Therefore, EPA intends to establish a schedule for compliance with the nitrogen limit in a separate enforceable document that will be issued simultaneously with the final permit. One means of achieving this is through a modification to the Consent Decree between EPA and the permittee in U. S. v District of Columbia Water and Sewer Authority, et al., Civil Action No: 1:002CV02511(Dist Ct. D.C.), which would incorporate a schedule and criteria for compliance with the nitrogen limit.

In addition to meeting the EPA Bay criteria, the proposed modification to the total nitrogen limit complies with 40 CFR Section 122.4(d) compliance with water quality standards for all the affected states. It also meets the requirements of 40 CFR Section 122.44(d) Water Quality Standards. It can be concluded that an annual nitrogen load at Blue Plains which exceeds the 4.689 million pounds per year mass load has a reasonable potential to cause or contribute to an exceedance of the state water quality standards.

WASA has advised that in 2007, the plant may undergo significant disruption to the Biological Nitrogen Reduction (BNR) process due to construction. During the times of scheduled maintenance, or shutdown due to construction, the permittee is required to advise EPA of the date, time and duration of the proposed maintenance or shutdown. For the purpose of compliance during such time that there is a pre-approved shutdown of one or more reactor units, the total nitrogen daily load will be adjusted based on available reactor capacity. Compliance with the interim limit will be based on a calendar year beginning with January 1 and ending on December 31 each year.

## 7. FACILITY DESCRIPTION.

The Blue Plains Wastewater Treatment Plant is the largest advanced waste water treatment plant in the world. It covers 150 acres, has a design capacity of 370 million gallons per day (mgd), and a peak capacity of 1.076 billion gallons per day. The collection system includes 1,800 miles of sanitary and combined sewers, 22 flow-metering stations, nine off-site waste water pumping stations and 16 storm water pumping stations within the District. Separate sanitary and storm sewers serve approximately two-thirds of the District. In older portions of the system, such as the downtown area, combined sanitary and storm sewer systems are prevalent.

The Blue Plains Wastewater Treatment Plant serves the District of Columbia, Montgomery and Prince Georges Counties in Maryland and Fairfax and Loudoun counties in Virginia. Waste water capacity for the District of Columbia is allocated at 153 mgd; the Washington Suburban Sanitary Commission (which serves Montgomery and Prince Georges Counties in Maryland), has an allocation of 169.6 mgd; Fairfax County, Virginia, has an allocation of 31 mgd; Loudoun County has an allocation of 16.4 mgd; and other Potomac interceptor users share an allocation of 16.4 mgd.

During wet weather, the plant flow capacity varies depending upon whether or not the peak flow occurs for greater than or less than four (4) hours. The plant has two discharge points, Outfalls 001 and 002.

Outfall 002, which also discharges to the Potomac River, is the principle discharge point. Treatment for this outfall includes primary treatment, secondary treatment, nitrification, biological nitrogen removal, filtration, disinfection and dechlorination. Outfall 001 functions as an excess flow conduit and is used to avoid hydraulic overloads to the plant during wet weather. Effluent from Outfall 001, which also discharges to the Potomac River, receives primary treatment, disinfection and dechlorination. For the purpose of this permit, Outfall 001 has been characterized as a CSO-related by-pass, pursuant to the 1994 Combined Sewer Overflow Policy ("CSO Policy").

The treatment plant and sewer system discharge to the Potomac and Anacostia Rivers, Rock Creek and tributary waters. In its Water Quality Standards (WQS), the District of Columbia has designated these streams for primary contact recreation, aesthetic enjoyment, aquatic life, water oriented wildlife, raw water source for industrial water supply and for navigational use.

The permittee operates a CSO system which has a total of 62 outfalls. There are 15 CSOs which discharge to the Anacostia, 13 CSOs on the Potomac, and 30 CSOs that discharge to Rock Creek. This system is designed to convey waste to the treatment plant and to prevent wet weather flow from exceeding the hydraulic capacity of the sewers and/or the treatment plant. EPA requested an accounting of all outfalls in the CSO system. Included among the outfalls identified in the permit are Outfalls 004, 008, 061 and 062, which are emergency relief points at pump stations. They are not authorized to discharge.

During the life of this permit, the waste water treatment plant will undergo a program of improvement and rehabilitation, which will affect most of the treatment processes at the plant. The construction has been divided into seven major phases which necessitates the removal of significant process tankage from service. During the construction period, as significant plant facilities will be out of service in nearly every plant process, an estimated 25 percent reduction will be required in the amount of wet weather peak flows receiving full treatment and the wet weather peak flows receiving primary/disinfection treatment.

The Blue Plains Waste Water Treatment Plant consists of the following treatment technologies:

*Primary Treatment* - a waste water treatment process that allows particles which float or settle to be separated from the water being treated. At Blue Plains, this process includes the following processes: raw wastewater pumping; grit removal; grease separation and primary sedimentation. Solids removed from the process are treated by digestion, elutriation and dewatering.

*Secondary Treatment* - is a waste water treatment process used to convert dissolved or suspended materials into a form which can be separated from the water being treated. This process usually follows primary treatment by sedimentation. At Blue Plains, secondary treatment is accomplished by means of a modified-aeration step-feed activated sludge process. The secondary treatment facilities are comprised of aeration basins, secondary sedimentation basins, sludge return and wasting systems, the secondary blower facilities with associated blowers and diffusers and pumping stations. At Blue Plains carbon is reduced by use of coarse bubble diffused aeration and the plant uses chemical precipitation for phosphorus removal.

*Biological Nitrogen Removal (BNR)* - a process whereby ammonia nitrogen is converted to nitrate nitrogen. The process also includes denitrification facilities for nitrogen removal, filtration for effluent polishing and chlorination for effluent disinfection. Blue Plains retrofitted existing facilities to enable full plant BNR operation in the spring of 2000.

*Nitrification* - an aerobic process in which bacteria change the ammonia and organic nitrogen in waste water into oxidized nitrogen (usually nitrate). The second stage biological oxygen demand (BOD) is sometimes referred to as the "nitrification stage," first stage BOD is called the "carbonaceous stage." Blue Plains employs sparged air turbines for oxygenation.

*Denitrification* - an anaerobic process that occurs when nitrite or nitrate ions are reduced to nitrogen gas and bubbles are formed as a result of this process. The bubbles attach to the biological flocs and float the flocs to the surface of the secondary clarifiers. This condition is often the cause of rising sludge observed in secondary clarifiers or gravity thickeners. At Blue Plains, the denitrification facilities are able to treat the entire plant flow under limited conditions of process load and temperature.

*Filtration and Disinfection and Dechlorination* - includes multimedia filtration of nitrified effluent and disinfection of the filtered effluent by chlorination and dechlorination prior to discharge.

*Solids Process* - includes gravity thickening and anaerobic digestion of primary sludges, air flotation thickening of waste activated and chemical sludges, vacuum filtration of the thickened and digested sludges and direct off-site disposal of the vacuum filter cake.



*Chemical Addition* - Chemicals may be employed in the liquid stream treatment operations for a variety of functions. The chemicals employed and the treatment application are described briefly below.

*Odor Control* - Chlorine may be applied at raw wastewater pumping station numbers 1 and 2 and to the effluent from the grit removal facilities.

*Settleability Enhancement* - Polyelectrolytes (polymers) may be added as follows: Influent to primary sedimentation; Influent to secondary sedimentation; and Influent to nitrification sedimentation

*Phosphorus Removal* - Iron salts including ferric chloride, ferrous sulfate and liquid alum may be added to the unit process as follows: primary sedimentation, secondary treatment, nitrification and effluent filtration.

*Metal Salts* - are used for the precipitation of phosphorus and as an aid in enhancing Settleability of sludges and mixed liquors.

*pH* - Lime is applied to the effluent to nitrification in order to maintain an adequate pH level for the nitrification process.

*Foam Control* - Commercial defoamant compounds can be added to secondary treatment and nitrification as needed.

*Disinfection* - the process used to kill most microorganisms in wastewater including essentially all disease causing bacteria. At Blue Plains, chlorine is used to disinfect effluent discharged from both plant outfalls.

*Dechlorination* - as noted above, chlorine is used to disinfect effluent discharged at both plant outfalls; however, excess chlorine is removed from the effluent by the addition of sulfur dioxide.

*Solids Processing* - Polymers are used in the dissolved air floatation thickening process as stabilization along with ferric chloride for aiding dewatering during vacuum filtration and at the centrifuges as a dewatering aid.

## **8. PERMIT EFFLUENT LIMITS.**

The permit effluent limits remain the same, except for the nitrogen limit referenced above.

## **9. GENERAL PERMIT CONDITIONS.**

General conditions are requirements that must be incorporated into every permit, in accordance with 40 C.F.R. Sections 122.41 and 122.42. These requirements delineate the legal, administrative and procedural requirements of the permit. No provisions of this part have been modified from the December 16, 2004 permit.

#### **10. COMBINED SEWER SYSTEM PERMIT CONDITIONS.**

These conditions are designed to comply with the 1994 CSO Policy.

#### **11. SPECIAL CONDITIONS.**

The Special Conditions remain unchanged from the January 24 permit with the exception of the following:

- Part IV.E has been modified to include a revised goal of a discharge of no more than 5,800,000 pounds of total nitrogen per year.

**12. Public Notice Publication Date:** August 18, 2006

**13. DC 401 Certification Received:** October 31, 2006, however, a new certification for the proposed nitrogen limit of 4.689 million pounds per year will be requested.

**14. Commonwealth of Virginia Comments Received:** October 5, 2006, however a new request for the proposed nitrogen limit of 4.689 million pounds per year will be requested.

**15. State of Maryland Comments Received:** September 27, 2006, however, a new request for comments regarding the proposed nitrogen limit of 4.689 million pounds per year will be requested.

**16. NMFS Comments Received:**