

March, 2014

# Biosolids Resource Recovery Monthly Report

**NUTRIENTS and CARBON RECYCLING**

**FARMING**  
  
Provides carbon and nutrients valued at \$300.00 per acre.

**SILVICULTURE**  
  
Increases yield and improves sustainability.

**RECLAMATION**  
  
Restoring meads to their natural state and providing wildlife habitats.

**URBAN RESTORATION**  
  
Grow trees and reduce runoff.

**dc water is life** BLUE PLAINS ADVANCED WASTEWATER TREATMENT PLANT: **A RESOURCE RECOVERY FACILITY**

water • nutrients • carbon • energy

**dcwater.com/biosolids**

**GREEN ENERGY BIORENEWABLES**

**POWER FROM THE PEOPLE**

**THERMAL HYDROLYSIS PROCESS (THP) AND DIGESTION FACILITY**

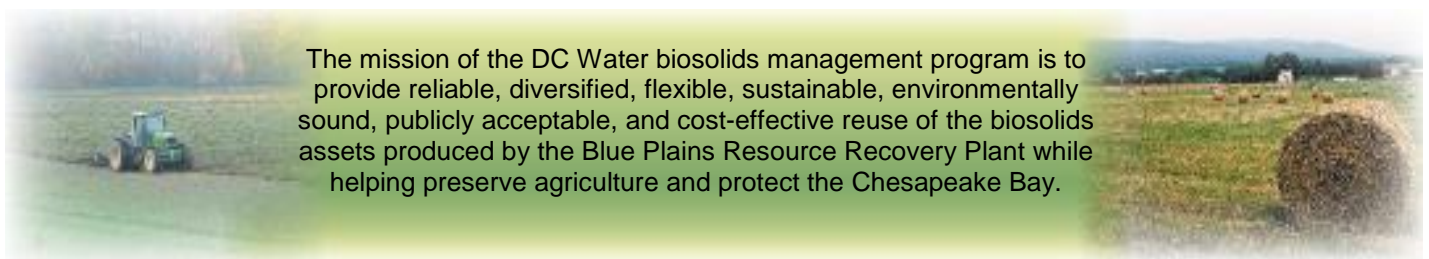
DC Water will be the first in North America to use thermal hydrolysis for wastewater treatment. When completed, this facility will be the largest plant of its kind in the world.

**GREEN BENEFITS:**

- Produce combined heat and power, generating 13 MW of electricity
- Save DC Water \$10 million annually cutting grid demand by a third (DC Water is the largest consumer of electricity in the District)
- Reduce carbon emissions by approximately 50,000 metric tons of CO<sub>2</sub>e per year.
- Reduce trucking by 1.7 million miles per year.
- Save \$10 million in biosolids trucking costs
- Produce Class A biosolids to grow trees, sequester carbon and reduce runoff.

## DC Water

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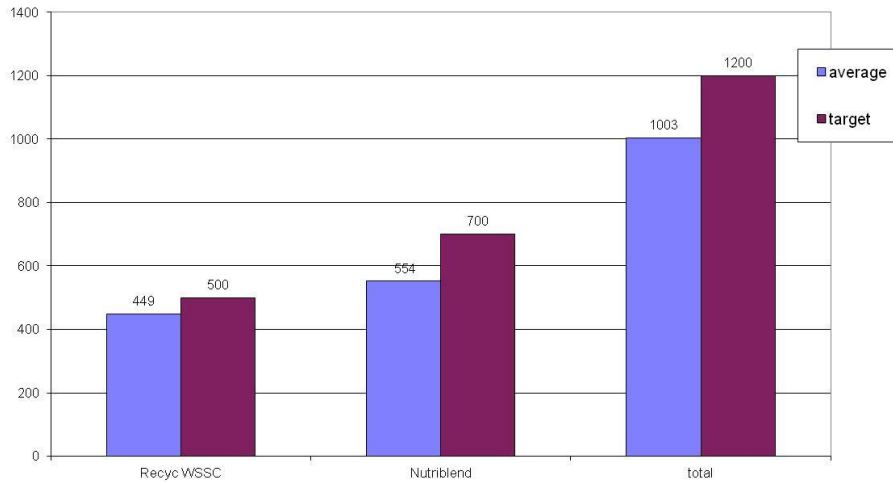


The mission of the DC Water biosolids management program is to provide reliable, diversified, flexible, sustainable, environmentally sound, publicly acceptable, and cost-effective reuse of the biosolids assets produced by the Blue Plains Resource Recovery Plant while helping preserve agriculture and protect the Chesapeake Bay.

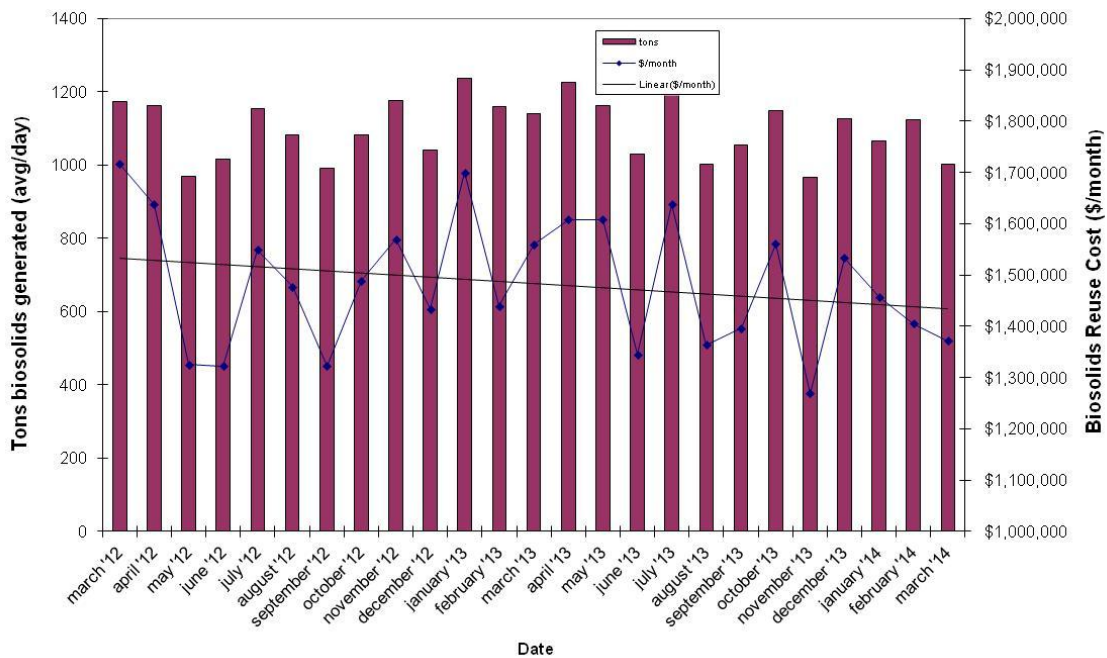
## March 2014 Resource Recovery Report

In March, biosolids hauling averaged 1003 wet tons per day. The graph below shows the hauling by contractor for the month of March. Average % solids for the unlimed cake was 27.3%. Average lime dose for the month was 17.1%. 422 tons went to composting. At the end of March the Cumberland County storage pad had ~18,000 tons (~25,000 tons capacity), and the Cedarville lagoon had approximately ~16,000 tons (~30,000 tons capacity).

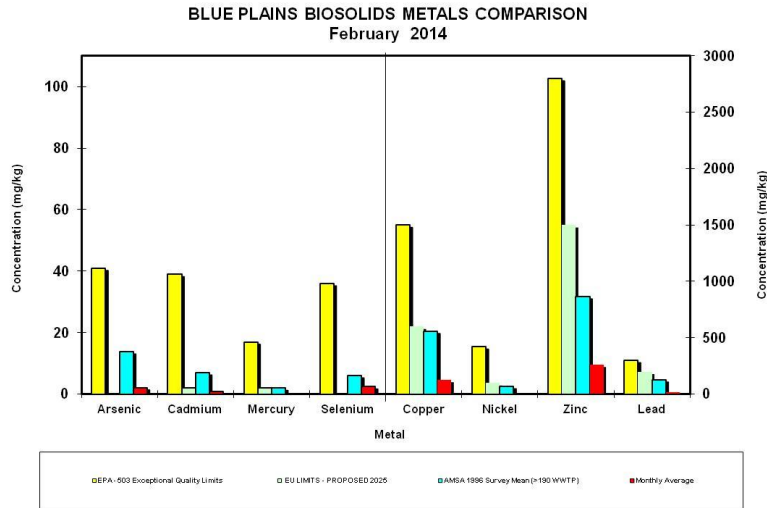
Average Daily Hauling by Contractor for March 2014



Average Daily Biosolids Production and Reuse Cost



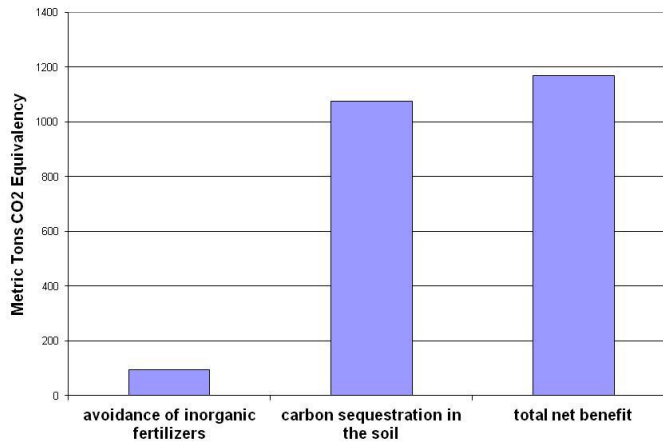
The graphs below show the EPA regulated heavy metals in the Blue Plains biosolids for the month of February 2014. As can be seen in the graphs, the Blue Plains levels are considerably below the regulated exceptional quality limits, the national average levels surveyed in 1996, and the European Union (EU) limits. The EU limits are more conservative than the USEPA limits, and Blue Plains biosolids metals content is lower than the EU standards as well.



### Environmental Benefits

The quantity land applied in February coming directly from the plant and from storage facilities equaled 14,613 tons. Taking into account the fuel required to transport biosolids to the field, the net benefit of the land applied material is 1,170 metric tons CO<sub>2</sub> equivalent avoided emissions. This is equivalent to taking 2,383,653 car miles off the road in the month of February (assumes 20 mpg, 19.4 lb CO<sub>2</sub> equivalent emissions/gallon gas – EPA estimate). The cumulative total avoided carbon emission since January, 2006 is 110,778 metric tons CO<sub>2</sub> equivalent.

**DCWater Biosolids Recycling Program  
Greenhouse Gas Balance Benefits  
February 2014 Totals**

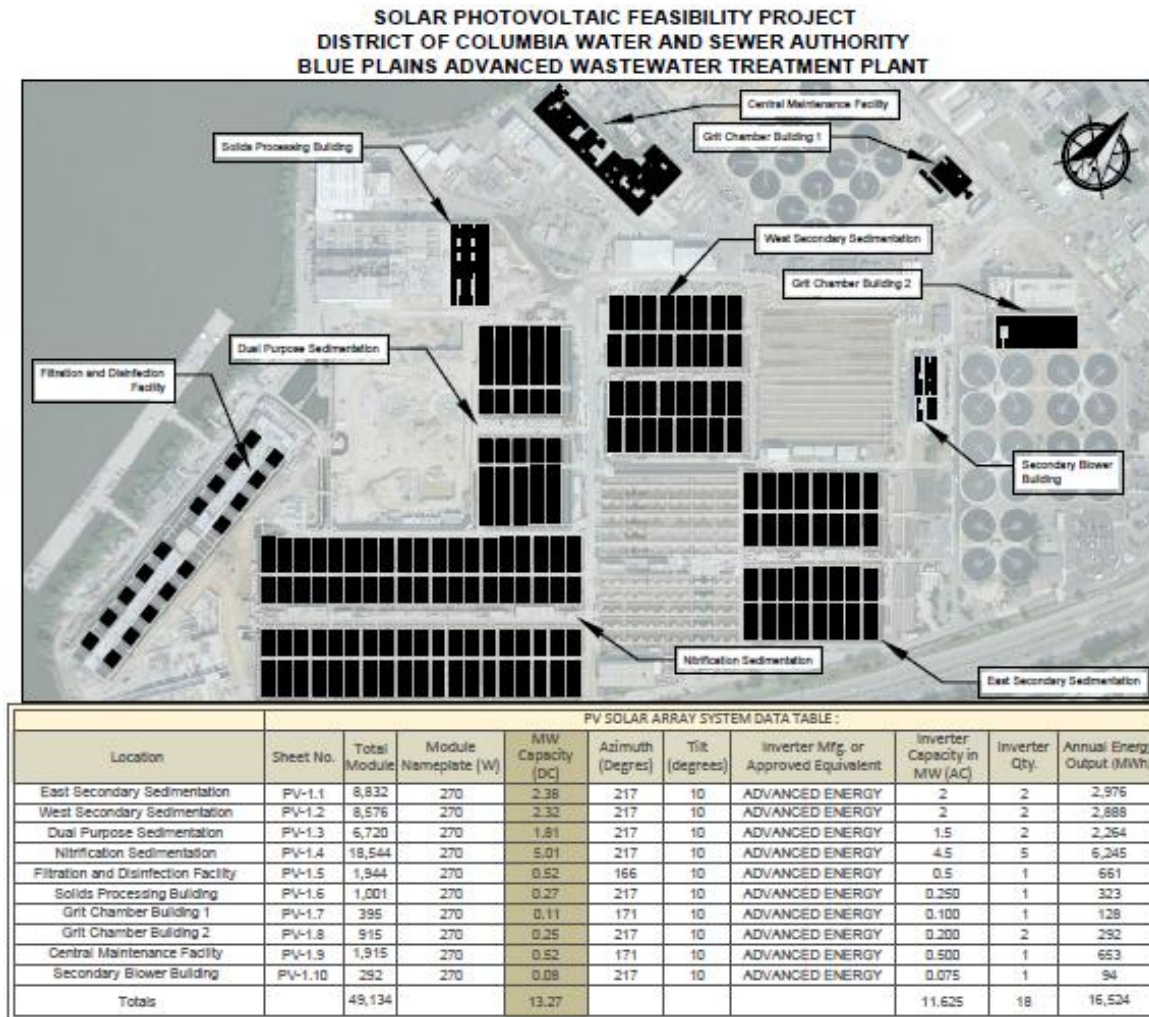


## March Highlights

Staff gave a guest lecture at Johns Hopkins University on the resource recovery efforts underway at Blue Plains. The lecture included a description of the digester project and plans to maximize the asset of the digester gas and biosolids product.

Staff gave several tours of the digester facility and of the entire plant, including two busloads of middle school students, Engineering News Record, Houghton Mifflin, and The Washington Post. Several of the efforts will end in published articles on the digester process and resource recovery efforts.

Staff coordinated a meeting to discuss risks associated with a potential large scale solar panel installation at Blue Plains. Discussion of a series of identified risks and the associated solutions resulted in direction for staff to develop an RFQ for firms to design, build, own, and operate solar facilities at Blue Plains. The likely procurement and contract method will be RFP and a Power Purchase Agreement to sell the power (at less than grid process) to DC Water. The preliminary identified potential at Blue Plains is 11.6 MW (during daylight hours).



Staff attended and presented the generators perspective at an annual training for Virginia Agricultural Extension agents. The training, entitled Land Application of biosolids in Virginia: In-Service Training Workshop was designed to answer questions agents have regarding biosolids land application in an agricultural setting.

Staff launched a co-digestion task force, with the intent of investigating the possibility of feeding outside wastes into the digesters for generation of additional gas and tipping fees. The intent is to learn as much as possible during the first two years of operation so that the when the digesters are at steady state and operating smoothly, we can begin co-digestion. Samples of foodwaste are currently being fed into the pilot digesters at Bucknell University, where researchers are studying foaming issues, gas production, and other important parameters.

### Map of Blue Plains Biosolids Applications and Agricultural \$'s for February 2014

