

June, 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](http://dcwater.com/biosolids)

**GREEN ENERGY BIORENEWABLES**

**POWER FROM THE PEOPLE**  
  
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.

**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.

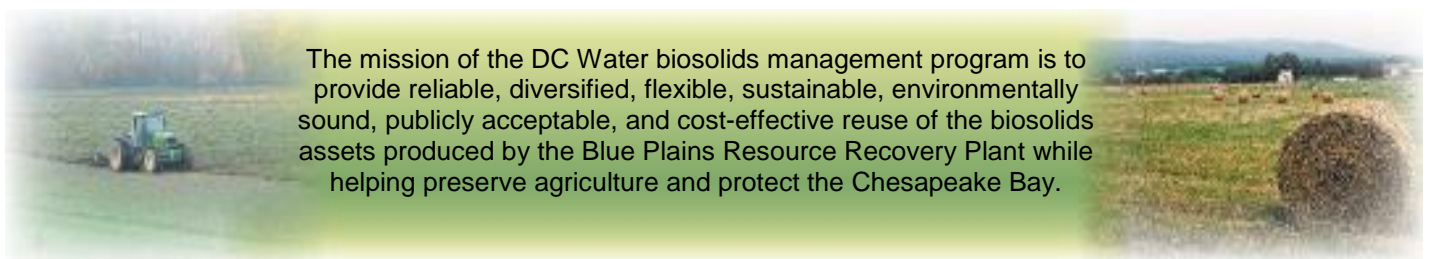
**GREEN BENEFITS:**

- 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

Resource Recovery Division  
 5000 Overlook Avenue SW  
 Washington, DC 20032  
 202-787-4329; 202-787-4226 (fax)  
[cpeot@dcwater.com](mailto:cpeot@dcwater.com)

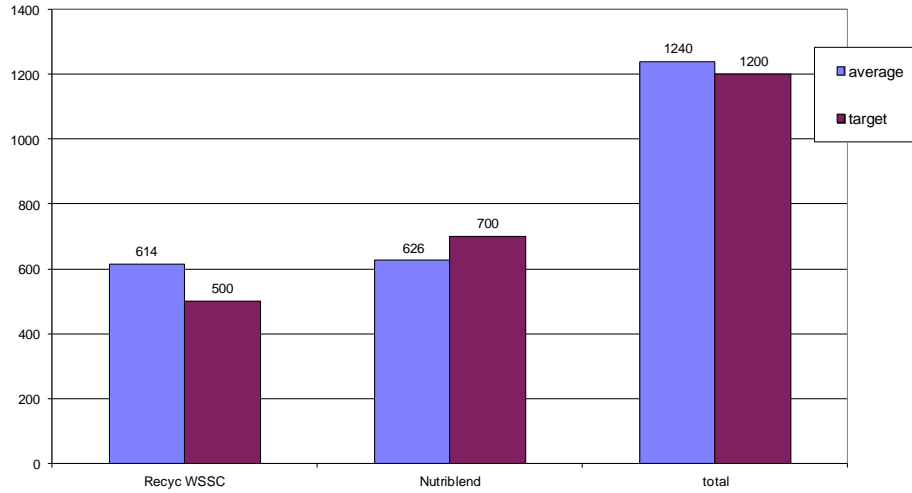
The mission of the DC Water biosolids management program is to provide reliable, diversified, flexible, sustainable, environmentally sound, publicly acceptable, and cost-effective reuse of the biosolids assets produced by the Blue Plains Resource Recovery Plant while helping preserve agriculture and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



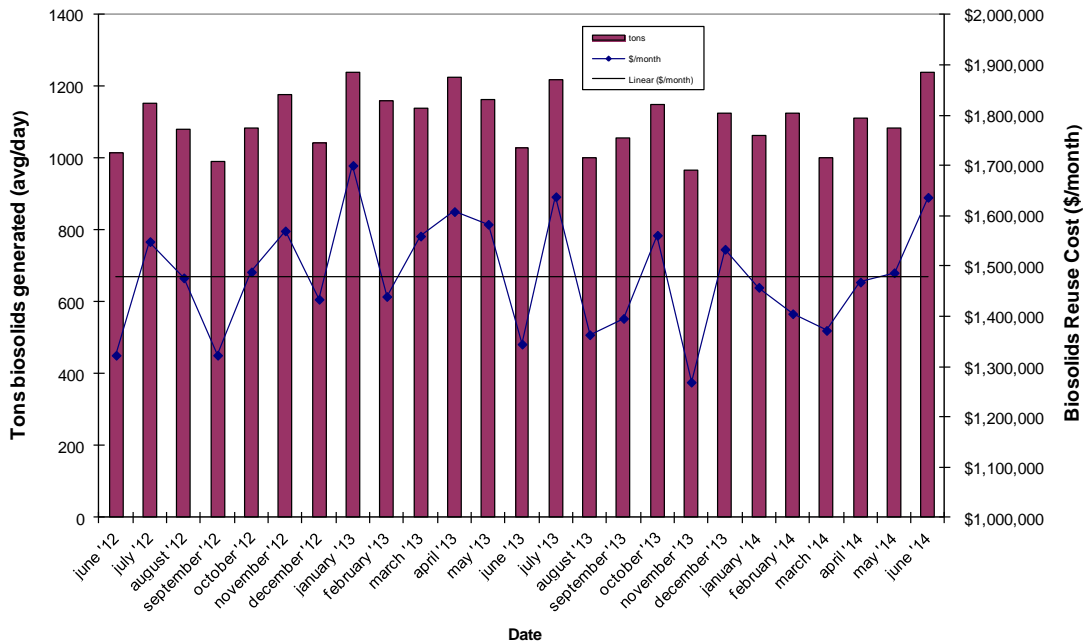
## June 2014 Resource Recovery Report

In June, biosolids hauling averaged 1240 wet tons per day. The graph below shows the hauling by contractor for the month of June. Average % solids for the unlimed cake was 27.6%. Average lime dose for the month was 18.0%. At the end of June the Cumberland County storage pad had 17,657 tons (~25,000 tons capacity), and the Cedarville lagoon had approximately 0 tons of Blue Plains biosolids (~30,000 tons capacity).

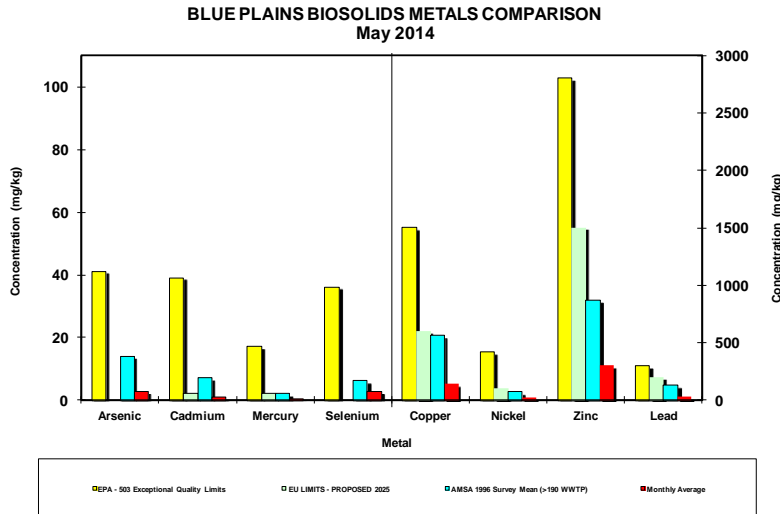
Average Daily Hauling by Contractor for June 2014



Average Daily Biosolids Production and Reuse Cost



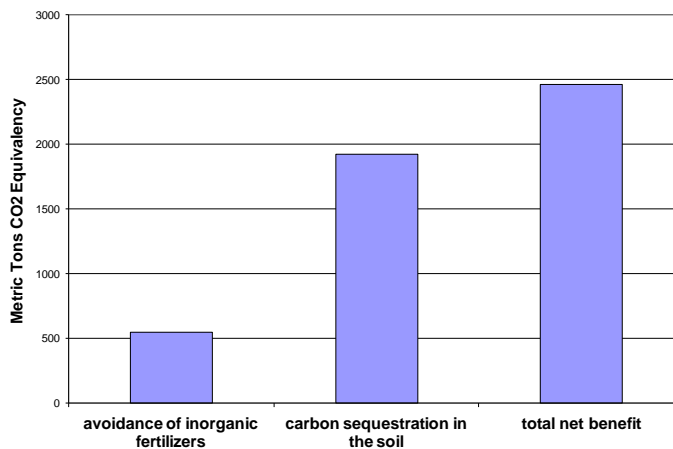
The graphs below show the EPA regulated heavy metals in the Blue Plains biosolids for the month of May 2014. As can be seen in the graphs, the Blue Plains levels are considerably below the regulated exceptional quality limits, the national average levels surveyed in 1996, and the European Union (EU) 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 May coming directly from the plant and from storage facilities equaled 39,648 tons. Taking into account the fuel required to transport biosolids to the field, the net benefit of the land applied material is 2461 metric tons CO<sub>2</sub> equivalent avoided emissions. This is equivalent to taking 5,012,554 car miles off the road in the month of May (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 124,388 metric tons CO<sub>2</sub> equivalent.

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



## June Highlights

### DC Water Biosolids Compost Use

In the past year we have delivered nearly 66 tons of compost to 11 community gardens in all four quadrants and six of the eight wards of DC. Staff is in discussion with several more gardens who are interested in getting compost.

Staff has had several community gardens run trials of our compost versus other soil amendments. The feedback has been overwhelmingly positive. GreenSEED garden reported 4.9 pounds of kale in a plot grown with our compost, and 1.3 pounds in an equivalent plot without our compost. This harvest was donated to DC Central Kitchen, a food bank for individuals struggling with food insecurity. Washington Youth Garden reported that the cabbage and celery grown in the biosolids bed was three times bigger and healthier than the same crops grown in a compost mix that they prepare themselves. The Hall Farm shared the photo below (left) of tomatoes grown in our compost (left) versus store bought compost (right). The tomato plant in biosolids is far larger and greener.

 <p>DC Water Compost      Store Bought Compost</p>	
	<p>Since the beginning of 2013 staff has given away ~ 98 tons of compost to employees or used it on-site at Blue Plains. For employees that recorded their loads, 95 individual employees have taken more than 140 loads. Staff established a vegetable garden at Blue Plains to show to staff and visitors on tours how well the biosolids compost works and that it can be used to grow delicious produce. In the past year, staff have harvested nearly 80 pounds of vegetables, fruits and herbs and distributed them to Blue Plains staff in various offices.</p>

### Blue Plains Solar Power Project

The DC Water Blue Plains solar power project RFQ was advertised on June 8<sup>th</sup>. This RFQ is designed to solicit qualifications from firms capable of building out solar power capacity on the 157 acres at Blue Plains, at the providers expense, with the understanding that DC Water would sign a power purchase agreement to purchase the power for use at Blue Plains. Preliminary feasibility estimates indicate that accessible

areas could provide 8 – 10 MW of power during daylight hours. Due to federal tax incentives and the high value of the solar renewable energy credits (SRECs) in DC, staff believes the solar power can be purchased for less than our current grid power costs. The responses to the RFQ are due July 9<sup>th</sup>, and staff expects a highly competitive field for the prequalified list, after 33 firms requested the RFQ package from DETS. DETS will request full proposals from the prequalified firms, due September 17<sup>th</sup>, with contract review and approval leading to a mid-January start date for construction.

### Presentations and Tours

Staff led tours for several groups this past month, including a group from the World Bank (carbon emissions reduction efforts), Microbe Magazine (ENR and digester project), and Bloomberg News (digester project). In addition, staff presented at the annual meeting of the National Clean Cities Coalition, whose efforts include reduction of carbon footprints through the promotion of biogas reuse in vehicles.

### NRL Resource Recovery Meeting

Staff met with engineers and planners from the Naval Research Lab (NRL) about the possibility of sharing resources with them. Talk centered on reuse of our final effluent and waste heat from the CHP project. This was an initial meeting, and all parties agreed to continue the discussion, and NRL staff committed to examining their needs and reporting back to DC Water staff.

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

