

December, 2015

Biosolids Resource Recovery Monthly Report

NUTRIENTS and CARBON RECYCLING

FARMING



Prevents carbon and nutrients release at \$10000 per acre.

SILVICULTURE



Increase yield and improve understorey.

RECLAMATION



Restoring sites to their natural state and providing wildlife habitat.

URBAN RESTORATION



Grow trees and reduce runoff.



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.

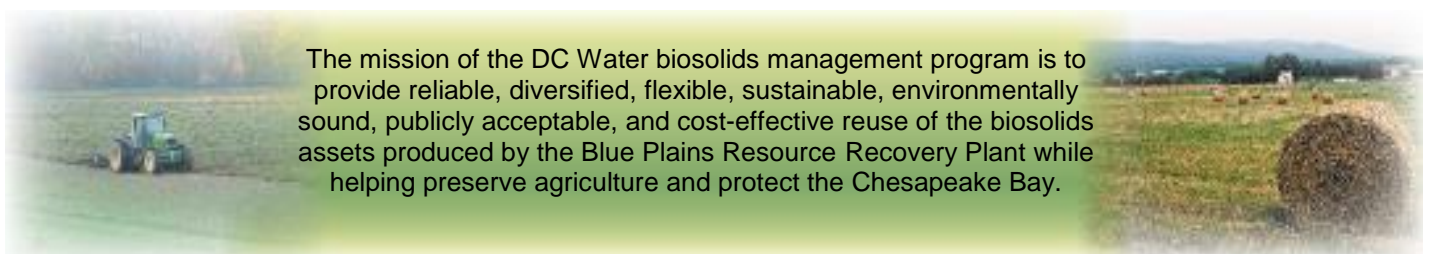
GREEN BENEFITS:

- 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 CO₂e 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

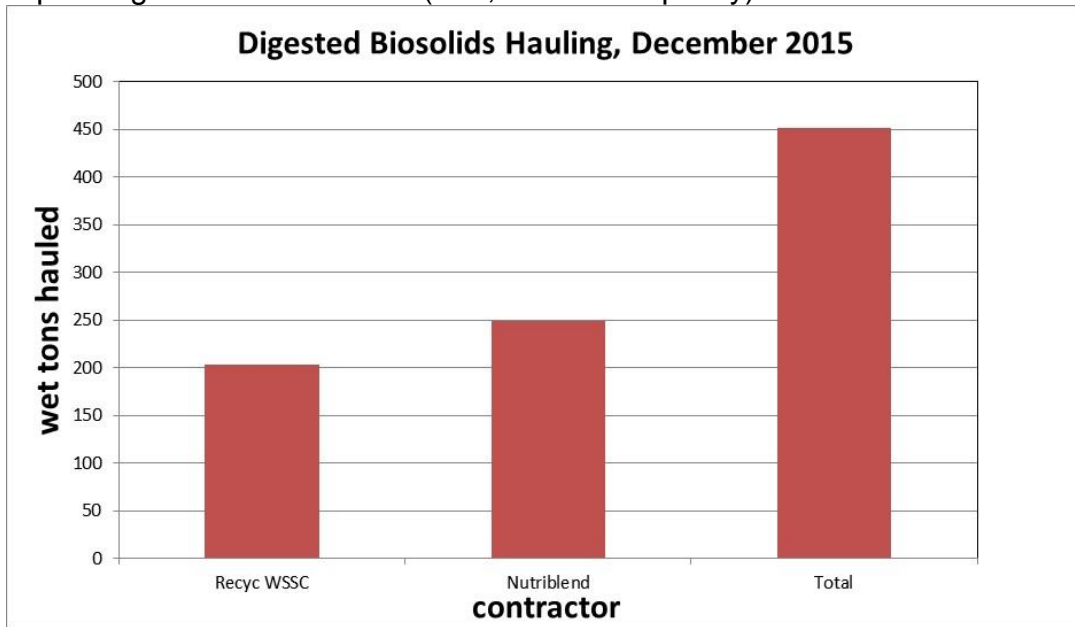
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The mission of the DC Water biosolids management program is to provide reliable, diversified, flexible, sustainable, environmentally sound, publicly acceptable, and cost-effective reuse of the biosolids assets produced by the Blue Plains Resource Recovery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

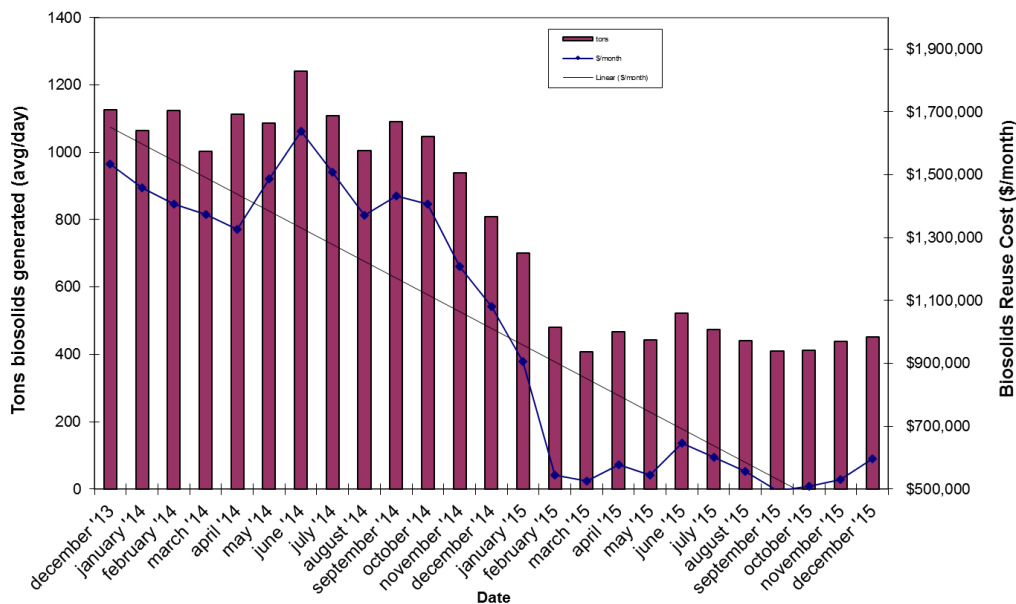


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In December, biosolids hauling averaged 452 wet tons per day (wtpd). The graph below shows the total hauling by contractor for the month of December. The average percent solids for the digested material was 30.1%. At the end of December the Cumberland County storage pad had approximately 11,561 tons (~25,000 tons capacity), Cedarville lagoon had approximately 0 tons of Blue Plains biosolids (~30,000 tons capacity), Goochland pad had 1000 tons, and Fauquier lagoon had 1126 tons (~15,000 tons capacity).

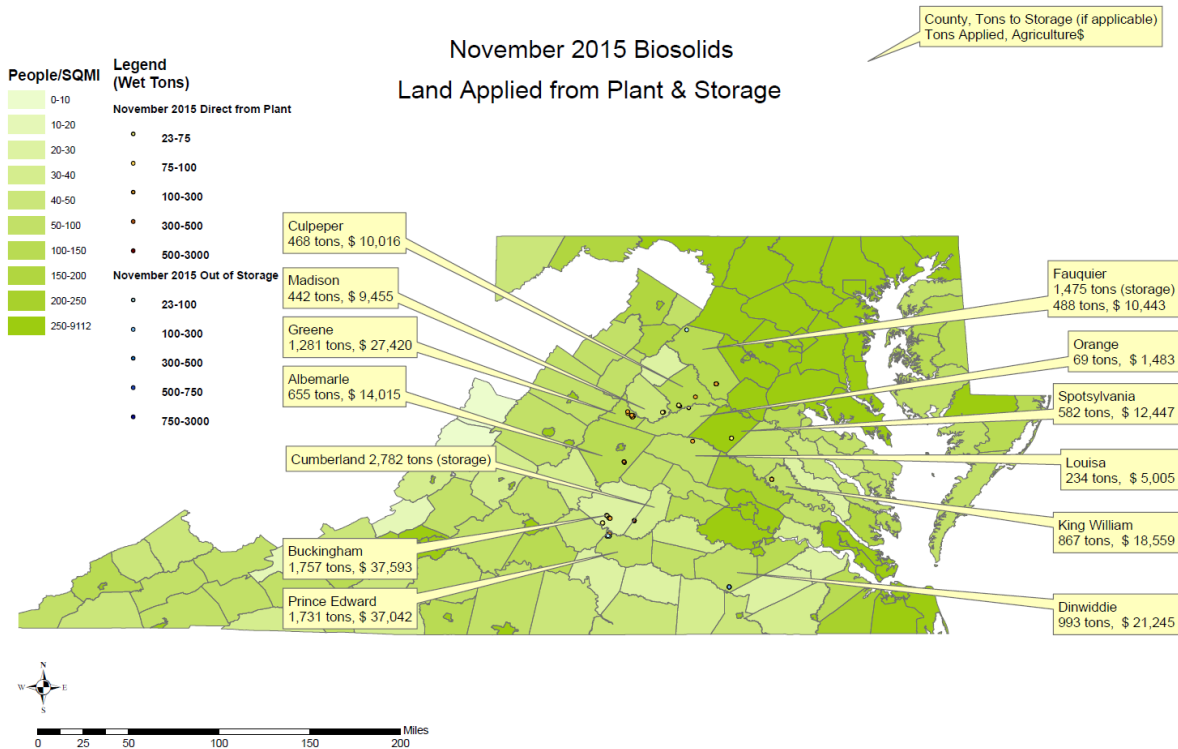


Average Daily Biosolids Production and Reuse Cost



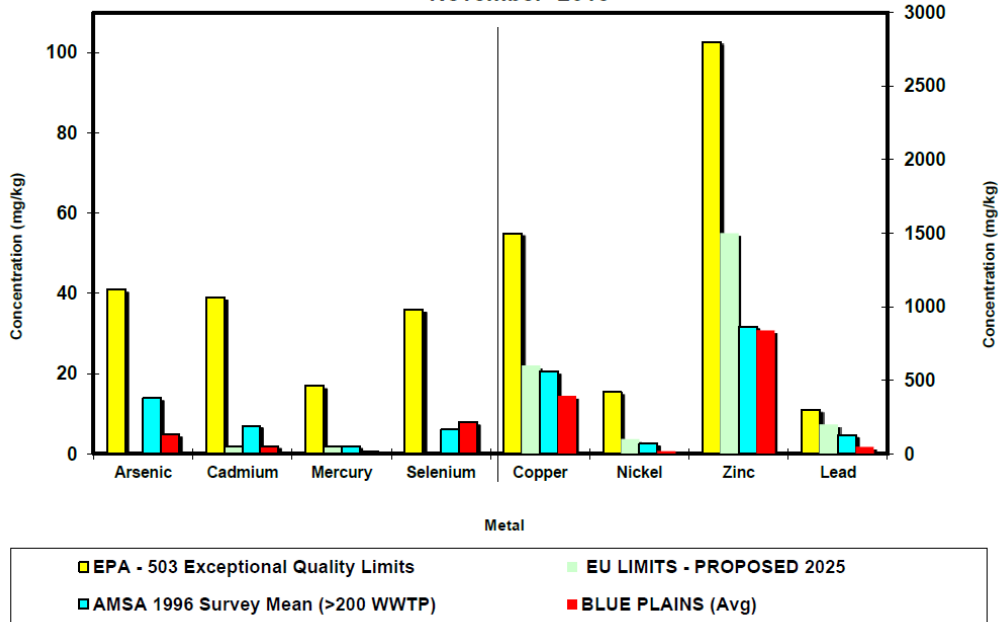
Please note the drop in biosolids management costs (second graph above, right vertical axis) due to the reduction in solids production since digesters came on line, and also due to the drop in fuel costs. In December, diesel prices averaged \$2.47/gallon and with the contractual fuel surcharge the weighted average biosolids reuse cost in December for the two contracts (DC Water and WSSC) was \$39.75/wet ton. For comparison, in December 2014 the average diesel price was \$3.49/gal and the average contract cost was \$42.54/wet ton.

Map of Blue Plains Biosolids Applications and Agricultural \$'s for November 2015

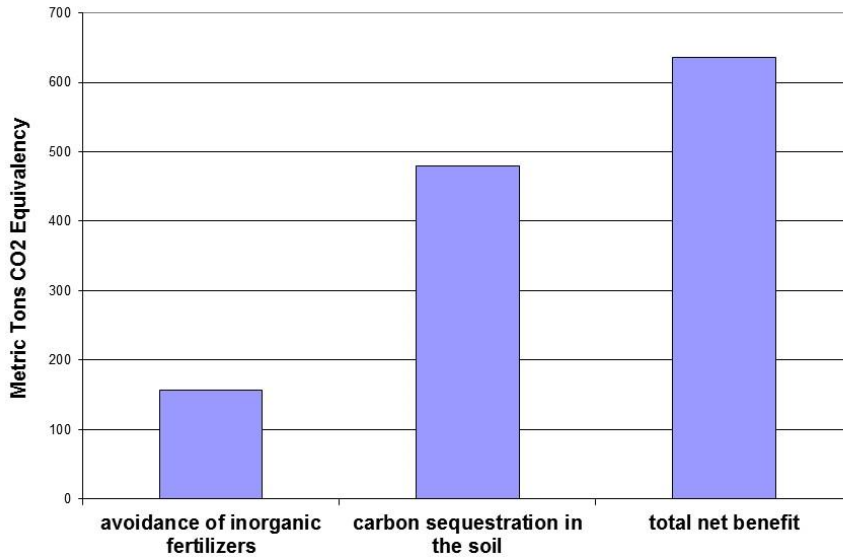


The graph below show the EPA regulated heavy metals in the Blue Plains biosolids for the month of November 2015. As can be seen in the graphs, the Blue Plains levels are considerably below the regulated exceptional quality limits, the national average levels surveyed in 1996, and the European Union (EU) 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.

**BLUE PLAINS BIOSOLIDS METALS COMPARISON
November 2015**



**DCWater Biosolids Recycling Program
Greenhouse Gas Balance Benefits
November 2015 Totals**



Environmental Benefits

The quantity land applied in November coming directly from the plant and from storage facilities equaled 13,882 tons. Taking into account the fuel required to transport biosolids to the field, the net benefit of the land applied material is 636 metric tons CO₂ equivalent avoided emissions. This is equivalent to taking

1,295,737 car miles off the road in the month of November (assumes 20 mpg, 19.4 lb CO₂ equivalent emissions/gallon gas – EPA estimate). The cumulative total avoided carbon emission since December, 2006 is 142,337 metric tons CO₂ equivalent.