

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 understorey.

RECLAMATION

Restoring mines to their natural state and providing wildlife habitats.

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

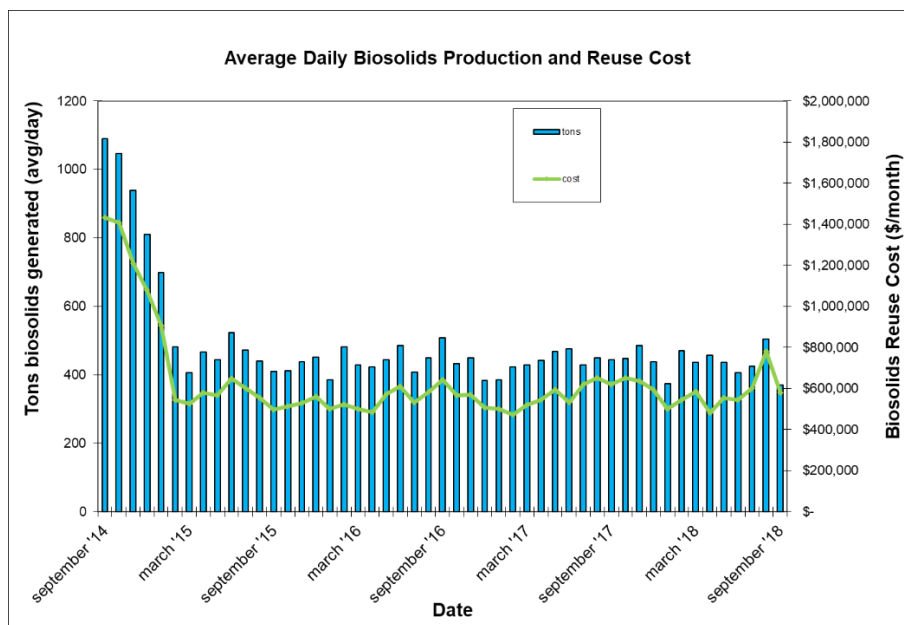
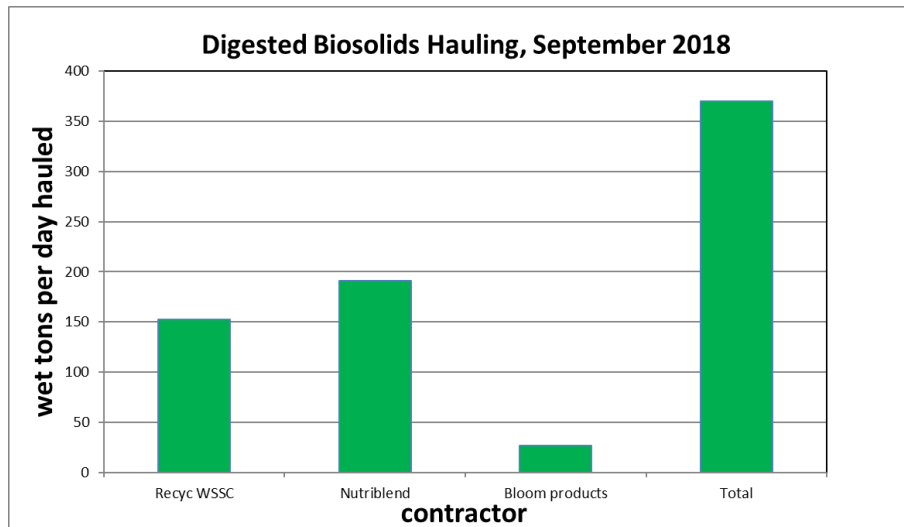
Resource Recovery Division
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The mission of the DC Water Resource Recovery Program is to provide reliable, diversified, flexible, sustainable, environmentally sound, publically acceptable and cost-effective reuse of the Biosolids assets produced by the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



RESOURCE RECOVERY

In September, biosolids hauling averaged 370 wet tons per day (wtpd). The average percent solids for the Class A material was 35.0%. The graph below shows average daily biosolids produced and the associated monthly cost for reuse (transportation and application cost) for a three-year period ending September 2017. In September, diesel prices averaged \$3.41/gallon, and with the contractual fuel surcharge, the weighted average biosolids reuse cost (considering the marketed material) was \$44.05 per wet ton.

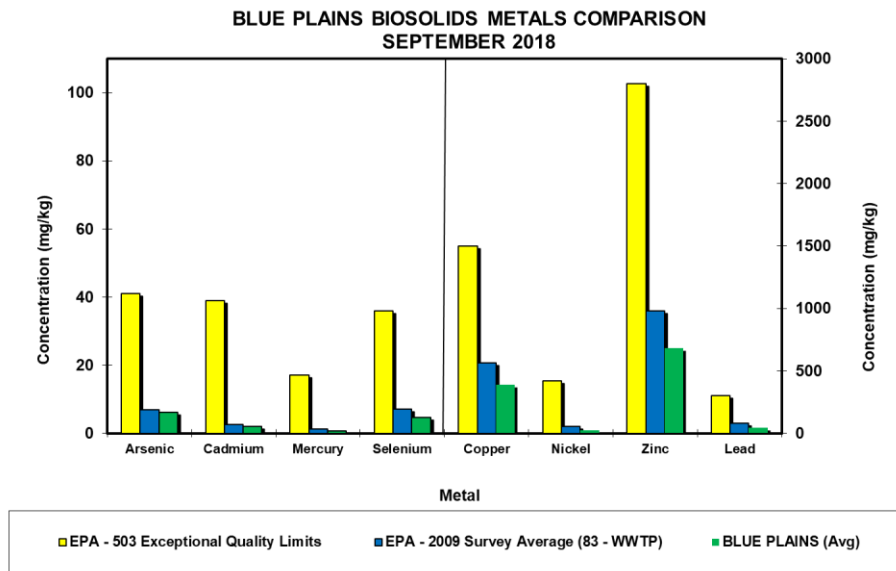


The average quantities of Class A biosolids transported and applied on farms by the two major contracts (WSSC's Recyc and DC Water's Nutriblend) and the quantities marketed as Bloom are shown on the graph above. In September, 798 wet tons of Bloom were distributed to 12 customers.

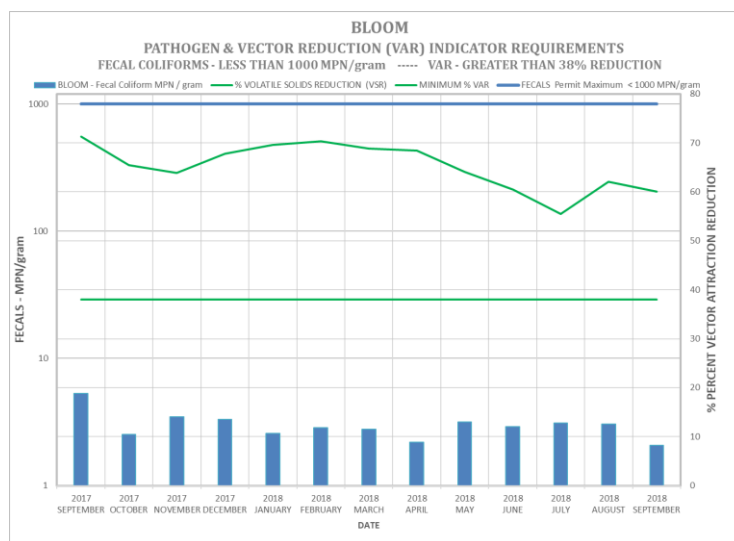
Product Quality

All biosolids produced during the month of September met Class A Exceptional Quality (EQ) requirements

required by EPA. The graph below shows the EPA regulated heavy metals average concentrations in the Class A biosolids. The concentrations are considerably below the regulated exceptional quality limits (EPA-503 Exceptional Quality Limits) and the national average (EPA-2009 Survey Average).

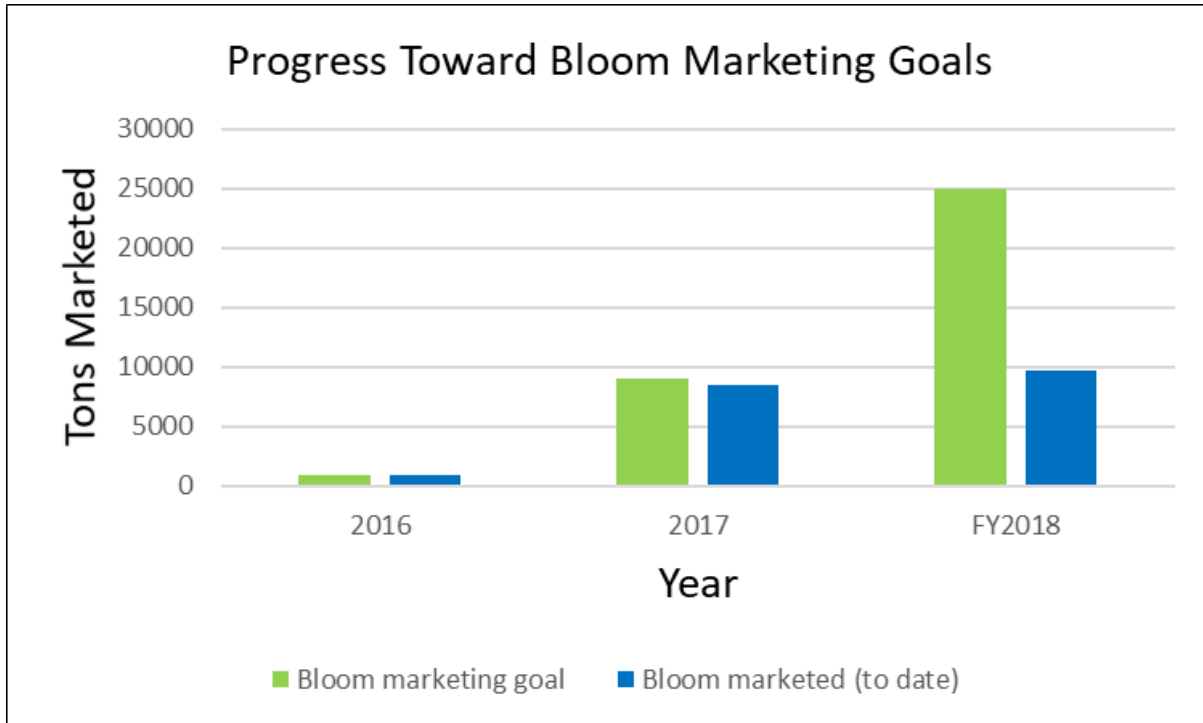


The graph below shows both Vector Attraction Reduction (VAR) and Fecal Coliform (FC) results in the Class A product, both of which are required to maintain the Class A Exceptional Quality (EQ) status. Vector Attraction Reduction is measured by the reduction in Volatile Solids (VS) or organic compounds that are odorous and attract nuisance vectors such as flies and rodent. DC Water anaerobic digesters reduced VS by over 65 percent, well above the required 38 percent minimum. In addition, the graph shows fecal coliforms levels in the Class A product. Fecal coliforms are indicators of disease causing organism (pathogens), and must be below 1,000 MPN/g to meet Class A standards. The FC levels in the Class A product are two orders of magnitude less than the maximum allowable level.



Bloom Marketing

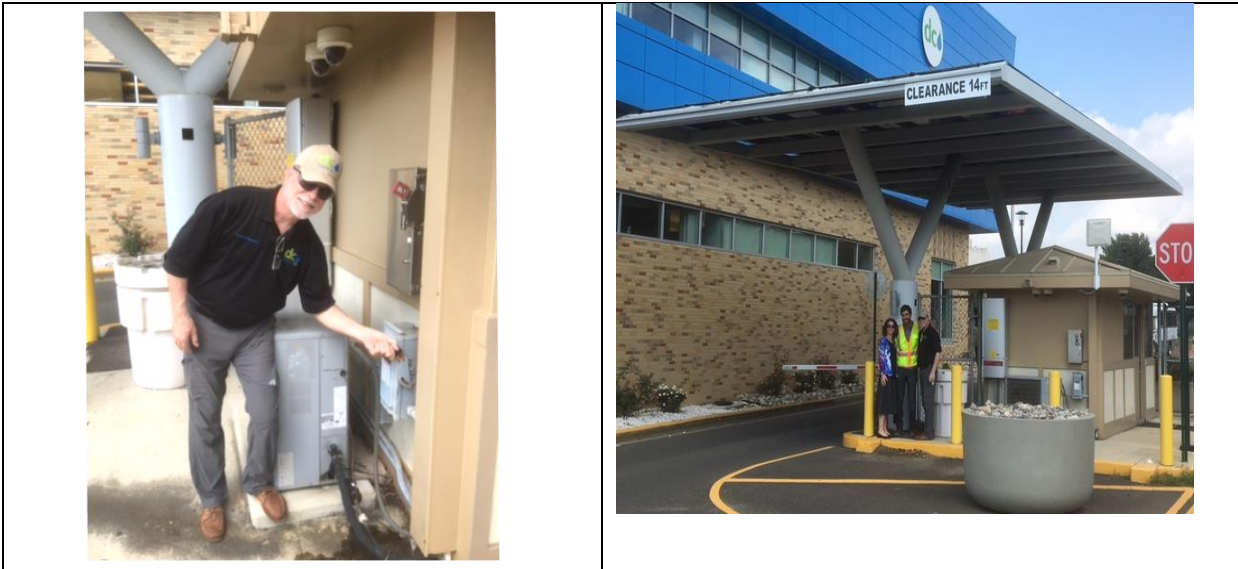
Bloom sales as of October 1st total 9678 tons for the fiscal year. This represents 39% of the goal 25,000 tons. Goals were set last year for this year, and we and our marketing partner Blue Drop strove to meet this aggressive goal, but fell short. As of October 1st, Blue Drop hired a soil amendment sales specialist, Doug Miller, who knows the market in the region. In addition, we have an agreement for commission based sales in Virginia and are working on an agreement with another firm that specializes in soil amendment marketing.



Resource Recovery Highlights

Staff succeeded in obtaining an interconnection agreement for the (relatively) small solar panel system on top of the guard shack near the visitor center at Blue Plains. These panels had gone in with the visitor center, but the interconnection agreement (ICA) with Pepco (our power company at the time) required to operate the panels stalled and was never completed. The Pepco ICA approval system was cumbersome, and as part of the recent merger agreement with Constellation, our new provider promised to streamline the process. Staff resubmitted the application and gained approval in a few short weeks. With the approved ICA in hand, staff invited Steve Caldwell to ceremoniously throw the switch and start generating solar power. Staff will now register the panels in the GATS system for REC recovery and sales. Con Schwartz, Maureen McGowan, Steve Caldwell, James Fotouhi all are to be congratulated for making this facility a reality.

Guard Shack Solar Power



Bloom Reuse and Value Map

This map shows where Bloom was reused on agricultural land and sold into the market as a soil amendment product. The numbers represent the value of the product applied in each county, which accounts for the nitrogen value in the biosolids.

Legend (Wet Tons)

August 2018 Out of Storage

- 16.25 - 85.00
- 85.00 - 153.75
- 153.75 - 222.50
- 222.50 - 291.25
- 291.25 - 360.00

August 2018 Direct From Plant

- 23.39 - 105.98
- 105.98 - 188.57
- 188.57 - 271.16
- 271.16 - 353.75
- 353.75 - 436.34

Bloom Distribution

- Bloom Distribution

Population Density (per sq mi)

- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50-100
- 100 - 150
- 150 - 200
- 200 - 250
- 250 - 9112

August 2018 Biosolids Land Applied from Plant & Storage and Bloom Distribution

