

## **DRAFT PROPOSAL FOR CECIL COUNTY SUPPLEMENTARY CLASS B BIOSOLIDS INSPECTION PROGRAM**

### **Proposed Action**

At the direction of the Cecil County Executive and Cecil County Council, the Cecil County Health Department Environmental Health Services Division was requested to draft a proposed plan and cost analysis for entering into a delegation agreement with Maryland Department of the Environment (MDE) for supplemental monitoring of Class B biosolids application sites. The purpose of the supplemental inspections is to determine compliance with Code of Maryland Regulations 26.04.06 and the conditions contained within the Sewage Sludge Utilization Permit issued by MDE.

Environment Article 9-244(c)(3) of the Annotated Code of Maryland authorizes MDE to use the Sewage Sludge Utilization Fund to contract with a County, at the County's request, to provide supplemental inspections and monitoring of Class B biosolids application sites. According to MDE, during calendar year 2012, the maximum eligible amount for reimbursement for Cecil County would be \$1,348.20.

### **Statement of Purpose**

The purpose of the supplemental inspection program is to verify compliance of biosolid applications with Sewage Sludge Utilization Permits by increasing site inspections at Cecil County Class B biosolids application sites. Maryland Department of the Environment attempts to inspect biosolids application sites at least once during application, once after application is complete, and once for verification of crop planting with Nutrient Management Plans. Additional inspections ~~will~~ **could** be conducted by Cecil County Health Department personnel.

### **Possible Program Duplication of Effort**

Currently, MDE Compliance Inspectors regulate and inspect wastewater treatment plants, which include the generation of Class B biosolids, and biosolid application sites. Inspection frequency for application sites is given in the table below. MDE **also** investigates complaints relating to biosolids applications.

Currently, Maryland Department of Agriculture reviews Nutrient Management Plans, conducts compliance reviews for a statistical sample of all plans received, and investigates complaints regarding applications not in compliance with Nutrient Management Plans.

### **Cecil County Supplemental Program Inspection Implementation**

During calendar year 2012, biosolids application activity and MDE inspections in Cecil County are listed in the following table:

Site Identifier	2012 Application Dates	2012 MDE Site Visits
CE 9 Augustine Herman Hwy 260 acres	3/14	3/20 and 5/10
CE 10 Crystal Beach Rd 640 acres	3/19, 3/20, 3/21, 3/22, 3/24, 3/26, 3/28, 3/30, 4/3, and 4/4	3/16, 3/23, 3/30, 4/4, 4/19, and 5/10
CE 11 Grove Neck Rd 80 acres	4/5, 4/9, and 4/10	4/10 and 4/19
CE 13 Crystal Beach Rd 44.5 acres	4/4 and 4/5	4/4, 4/19, and 5/10

Cecil County Health Department supplementary inspections ~~will~~ **could** occur on the first day of site inspection and 48 hours after **the initial** application. During the 48 hour follow-up inspections, any additional applications occurring that day will also be inspected. Applications occurring on weekends or State holidays ~~will~~ **could** be inspected on the next business day.

Site Identifier	2012 Application Dates	Cecil County Health Department Site Visits under Proposed Plan (2012 data)	
		Initial visit	48 hr follow-up
CE 9 Augustine Herman Hwy 260 acres	3/14	3/14	3/16
CE 10 Crystal Beach Rd 640 acres	3/19 3/20 3/21 3/22 3/24 3/26 3/28 3/30 4/3 4/4	3/19 3/20 3/21 3/22 (weekend) 3/26 3/28 3/30 4/3 4/4	3/21 3/22 3/23 3/26 (weekend) 3/26 3/28 3/30 4/2 (weekend) 4/5 4/6
CE 11 Grove Neck Rd 80 acres	4/5 4/9 4/10	4/5 4/9 4/10	4/9 (weekend) 4/11 4/12
CE 13 Crystal Beach Rd 44.5 acres	4/4 4/5	4/4 4/5	4/6 4/9 (weekend)

Cecil County Health Department personnel will conduct the site inspection utilizing a form comparable to “Caroline County Sewage Sludge Utilization Inspection Form-Land

Application” (copy attached). Any violations will be reported to MDE within 24 hours. Enforcement of permit violations would be by MDE.

### **Sampling of Biosolids**

The Cecil County Health Department does not recommend sampling of Class B biosolids at the application site. The following scientific sources support this recommendation.

1. The Environmental Protection Agency (EPA) through National Pollutant Discharge Elimination System (NPDES) permits requires pretreatment of non-residential wastewater which may contain contaminants that adversely affect the operation of a wastewater treatment plant or use of the sludge generated by the plant. (See [http://cfpub.epa.gov/npdes/home.cfm?program\\_id=3](http://cfpub.epa.gov/npdes/home.cfm?program_id=3)) The objectives of the National Pretreatment Program are stated in 40 CFR 403.2, as follows:
  - Prevent the introduction of pollutants into a Publicly Owned Treatment Works (POTW) that will interfere with the operation of the POTW, including interference with its use or disposal of municipal sludge;
  - Prevent the introduction of pollutants into a POTW that will pass through the treatment works or otherwise be incompatible with such works; and
  - Improve opportunities to recycle and reclaim municipal and industrial wastewaters and sludges.
2. Wastewater treatment plants generating the biosolids are required to test them on a routine basis. The testing must show the biosolids being sent for land application meet Federal Class B biosolids criteria. Testing is required for contaminants specified in Federal Regulations, which are those listed in Code of Maryland Regulations 26.04.06.
3. Prior to EPA releasing final regulations of Title 40 Part 503 of the Clean Water Act (the 503 rule), data collected on over 400 pollutants from 180 sewage treatment plants throughout the country was analyzed to produce estimates of the range of pollutants in sewage sludge. This information was used along with risk assessment and risk management processes to identify the contaminants to be monitored and the maximum limits for each (for an in-depth discussion, see <http://www.vdh.virginia.gov/epidemiology/DEE/documents/biosolids.pdf>).
4. The Clean Water Act requires EPA to periodically reassess the 503 rule to address public health concerns. The National Research Council (NRC) of the National Academies conducted an independent review of the 503 rule and published *Biosolids Applied to Land: Advancing Standards and Practices* in 2002.
5. According to the Virginia paper cited above, most pharmaceuticals are highly water soluble and are unlikely to occur in biosolids. “The NRC Committee did not believe there was adequate evidence that pharmaceuticals were likely to occur in biosolids at concentrations sufficient to warrant their inclusion in a biosolids risk assessment, however they urged continued monitoring of research in that area.”

6. From 1998 to 2000, the Interagency Steering Committee on Radiation Standards evaluated the presence of radioactive materials in wastewater and sewage sludge. Surveys were sent to 631 wastewater treatment plants asking about nonresidential wastewater sources, treatment processes, and sludge disposal practices. Sampling of 313 plants focused on plants most likely to have higher levels of radioactive materials. The report concluded that radiation levels in wastewater are generally comparable to what can be found in local soils. (See <http://www.epa.gov/radiation/docs/tenorm/832-r-03-002.pdf>).
7. “Land Application of Manure and Class B Biosolids: An Occupational and Quantitative Microbial Risk Assessment” (Brooks, McLaughlin, Gerba, & Pepper, *Journal of Environmental Quality*, 2011) evaluates the health risk of Class B Biosolids and animal manure to applicators and the nearby residents. They conclude that when directly compared, microbial risk from animal manure was greater than from Class B biosolids.
  - “The microbial quality of Class B biosolids falls within definable limits”.
  - Even using conservative assumptions, the “predicted risk from consumption of fresh food crops without considering a longer harvest delay (12 to 30 months)” is no greater than  $4 \times 10^{-5}$ . The addition of harvest delays reduces the risk of infection to less than  $1 \times 10^{-12}$ .
  - The risk of infection associated with consumption of groundwater at a biosolids application site is less than  $6 \times 10^{-9}$ .
  - The risk of infection from aerosols at 330’ downwind of the application area is less than  $1 \times 10^{-6}$ .
8. Interviews with personnel who have sampled biosolids at the application site (John Nickerson of Queen Anne’s County Health Department, Ed Class of MDE Compliance) found that the test results were consistent with reports generated by the wastewater treatment plants, testing was costly, testing consumed a lot of time, and results were not available until days after the application. Neither of the individuals has sampled biosolids in recent years.

The review of recent scientific studies related to possible health effects associated with biosolids application on land, and creation of any additional testing requirements and maximum contaminant levels belongs at the Federal and State level and is beyond the scope of the local Health Department.

### Impact Statement based on 2012 Cecil County Biosolids Application Data

***Financial Impact:***

Activity	Job Classification	Units	Unit cost	Total cost per event	Number of events (2012)	Total cost (2012)
Receiving inspection request, PatTrac input, documentation for reimbursement	Office Service Clerk	0.25 hrs	\$20.55 /hr	\$5.14	46	\$236.44
Driving to sites, round trip	Environmental Sanitarian II	1.0 hrs	\$33.16 /hr	\$33.16	20 trips	\$663.20
Site inspection during application, completion of paperwork	Environmental Sanitarian II	1.0 hrs	\$33.16 /hr	\$33.16	16 inspections	\$530.56
Follow-up site inspection, completion of paperwork	Environmental Sanitarian II	0.5 hrs	\$33.16 /hr	\$16.58	16 inspections	\$265.28
Vehicle mileage		40 miles (avg)	\$0.565 /mile	\$22.60	20 trips	\$452.00
Administrative review and processing, incidental costs			7 %			\$150.32
<b>Total for 2012</b>		47.5 hours 800 miles				\$2297.80

Total estimated expenditure: \$2,297.80

Total available MDE funds: \$1,348.20

Net revenue gain/loss: (-\$949.60)

Note: Sanitarian time is estimated from a Caroline County biosolids inspection form for a 44 acre site, with travel time added. This corresponds to the smallest application site in Cecil County. It is likely that larger sites will require even more time and expense.

Any referrals of violations to MDE will add to time and cost.

***Human Resources impact:***

Biosolids applications in Cecil County occur in the months of March through June. In 2012, all biosolids applications occurred between March 14 and April 5. Site inspections would occur almost every day for a month. Work is required to be conducted by a licensed Environmental Sanitarian. The application of biosolids coincides with the seasonal test period for soil evaluations, a time when removing local Health Department personnel for a supplemental monitoring program would be most challenging, and would likely impact other services being offered.

Please contact Fred von Staden, Environmental Health Services Division Director, at 410-996-5160 or [fred.vonstaden@maryland.gov](mailto:fred.vonstaden@maryland.gov) with questions about this draft proposal.