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DRAFT Meeting Highlights
Residential Graywater Advisory Committee
November 15, 2019 1:00 pm - 3:00 pm
MDE 1800 Washington Blvd. Baltimore, MD 21230
Patuxent Conference Room (6th floor)

In addition to meeting highlights, this document includes the following cumulative list of follow-up for action or possible future attention.

FOLLOW-UP ITEMS: (Cumulative Listing. See completed items below)

A. Work Tasks:

1. Invite graywater system vendors to brief the Committee. MDE will organize.
2. Comments on the draft regulations from Committee members by December 15.

B. Regulation-oriented Issues:

1. Clarification or removal of Sec. 2(2)(b).
2. How explicit to be on different levels of approval, e.g., One or two approvals? Plumbing approval for interior and health department approval for irrigation? Nature of the approval: Registration, general permit, individual permit, other?
3. How explicit to be in specifying what entities at the local level have an approval and oversight role.
4. What level of specificity about plumbing details should be included in the regulation?
5. Page 13, E7 - Suggested removal of gravity-only system element.

C. Regulation Implementation Issues:

D. Possible Topics of Recommend by the Committee:

1. Consideration of laundry water in statute
2. Consideration of commercial and residential building reclaimed water systems in statute

E. Questions for Review by Assistant Attorney General:

1. Can regulations be formulated to allow local authorities to opt-in to adopting a graywater program?
2. Can regulations be formulated to allow local authorities to opt-in to parts of a graywater program, e.g., adopting outdoor irrigation but not indoor toilet flushing?
3. Confirm that regulations can define different types of graywater, based on level of treatment, in addition to the definition in statute.
4. Would it be allowable to adopt regulations for irrigation apart from toilet flushing, to be done at a later time?

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COMPLETED FOLLOW-UP ITEMS:

A. Work Tasks:

1. David Duree shared information on soil sensors used to automate control of irrigation.
2. Flow-chart associated with approvals. WSSC shared how its procedures work at the November 15, 2019 meeting (incorporated into November Meeting Highlights).
3. Nasser Kamazani (Montgomery County) shared guidance on procedures they have used for onsite water reuse pilot projects.

November 2019 Graywater Committee Meeting:

Attendees Present:

Barry Glotfelty – Frederick Co. Health Dept., MACHO
Ching Tien, MDE
Ed Singer, Carroll County Health Dept., MACHO
Gary Anotonides, Ches. Env. Prot. Assn
Tom Buckley, WSSC Water
Jenny Willoughby, City of Frederick, MML
Jim George, MDE
Joseph Radtka, MD State Board of Plumbing
Massoud Negahban-Azar, UMD
Matt Cummers, Calvert County Health Dept.
Matt Rowe, MDE
Mike Harmer, WSSC Water
Nasser Kamazani, Montgomery County
Nony Howell, MDE
Sara Albrecht, MDE
Zohreh Movahed, CWEA Water Reuse Committee

Attendees on the Phone:

Claire Welty – UMBC
Dave Duree, Advanced Systems, Drip Irrigation
Mike Moulds, Kent County DPW/MACO
Nancy Mayer, Mayer Brothers Onsite Systems Inspection & Service LLC

Meeting Highlights

1. Welcome and Introductions
2. Follow-up Items

Context: Jim George set the context of the discussion by affirming the sense of the Committee to table indoor toilet flushing for now. The intent is to address the broader regulation structure and processes associated with outdoor irrigation uses. This will help avoid getting bogged down in the complexities of indoor use and allow more rapid overall progress.

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Local Approval and Oversight Processes: At the October meeting WWSC representatives agreed to outline how the local approval and oversight process works in their utility district. Tom Buckley (WSSC) described a seven-part process, inserted below:

Description of a general Project Flow for a decentralized water reuse project in WSSC's jurisdiction:

- 1.) Scope is limited to Commercial/Industrial projects; residential reuse is not permitted at this time.*
- 2.) WSSC promulgated plumbing code changes in 2013 to codify the commingling of plumbing systems with internal water reuse system components and interconnections with same. Montgomery County DER or Prince Georges County Health have yet to develop/approve regulations for decentralized water reuse systems.*
- 3.) Each County will review a project for applicability; will grant approval only on case-by-case basis (pilot projects), where system is recognized as capable to treat source water and produce water which is safe and adequate for the proposed use. County's also claim responsibility for monitoring and enforcement of safe water standards.*
- 4.) County provides WSSC with letter of approval, which qualifies a project eligible for a plumbing permit.*
- 5.) Using WSSC Code, Chapter 9, WSSC reviews a building's regular plumbing systems in conjunction with the commingled reuse system for:
 - a. backflow protection / required back-up supply of potable water*
 - b. metering, where applicable; this can be quite complicated*
 - c. separation, marking, and labeling; required signage**
- 6.) WSSC Inspection for only the plumbing components relating to # 5.*
- 7.) Applicable County enforces ongoing requirements for maintenance, monitoring and reporting of water treatment process. Have not seen evidence that this is actually taking place.*

In follow-up discussion, WSSC noted a potential three-pronged approach to local involvement:

1. Health Department - Quality and Treatment issues.
2. Environment Department (or Environmental Health) - Irrigation issues.
3. Building/Permits - Plumbing issues (WSSC role in its case)

Clarification was provided by WSSC that the sources of water being reused were rainwater and HVAC condensate, with limited graywater experience and no current use of foundation dewatering water (some concern about contamination).

WSSC made plumbing code changes, but Prince George's and Montgomery counties did not mirror those changes. It was noted that the parts of these counties outside of the WSSC sewer district would likely have different administrative processes. It was noted that State regulations prohibit septic systems in areas where public water and sewer systems exist.

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The idea of a “sanitary district” approach to administration was suggested by a Committee member. The district would align with master water and sewer planning and be opt-in. The concept of a professional board was raised as another oversight approach.

Matt Cummers (Calvert Env Health) mentioned a potential role for Public Works. Ching Tien (MDE) noted local health department role in site assessments for septic systems, which have similarity to subsurface irrigation with graywater. Some discussion occurred about a private sector role in site evaluations. Some environmental health members of the Committee indicated that experience with that approach has been mixed, particularly in fractured rock areas of central/western Maryland.

Cheng Tien (MDE) noted the possibility of limiting the discharge rate to that which plants could uptake the water.

The group discussed potential concerns about bacterial growth in irrigation piping that could cause clogging. After wide-ranging discussion involving those members with experience, this concern was deemphasized.

Oversight of graywater irrigation was put into context by how failing septic systems are currently addressed, often going for many years without enforcement due to limited resources, lack of administrative enforcement/penalty authority and higher priorities of court systems.

The workload associated with graywater system approval and oversight is a persistent theme for some committee members. A Committee member posited whether the legislation could be amended to require local fees be collected to fund an increased workforce. Another member noted that the State uses its authority to direct money from the Bay Restoration Fund (BRF) to local programs that administer the septic system BAT program. It was also noted that annual service of the BAT systems, by private service providers, is reported via an online system to which both local and State staff have access. This could be a potential model for graywater system maintenance.

The Committee discussed some technical details of subsurface drip irrigation. One member indicated that drip systems below a few inches of mulch should be acceptable. The Committee was informed that drip irrigation under mulch is allowed in the draft regulation. Another member suggested we might want to clearly define “ponding” to support enforcement.

Committee members noted that the treatment piece is new for the environmental health departments; however, they have experience with treatment associated with some individual water wells. It was further observed that current practice is for wells to be inspected and certified for potability upon construction with no requirement for any future sampling (Baltimore County has elected to require sampling when properties are transferred).

The Committee discussed the four classes of wastewater effluent treated at a central plant. The higher the class, the higher the quality and less restrictions on human exposure. Classes 1 - 3 have no chlorine requirements. Class 4 requires a chlorine residual.

Tom B. (WSSC) asked if public health studies have been conducted on untreated graywater. Jim George (MDE) noted anecdotal information from California in which it's estimated there were a million cases of graywater use, before State regulations were established, with no reported cases of public health incidents.

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Nasser Kamazani (Montgomery County) offered to share their guidance on water reuse pilot projects. They currently have no required standard operating procedures for inspections; however, the County is tracking the pilots. (The material will be shared with the Committee).

David Duree let the Committee know that he has forwarded information on a system for controlling irrigation water using soil moisture sensors and electronic controls. (The material will be shared with the Committee).

The Committee turned its attention to Type II graywater, in the draft regulations. Type II graywater entails filtering to achieve an average of 10 mg/l BOD and 10 mg/l TSS. Some Committee members were familiar with disc filters mentioned by a member, as being fairly common. No requirements are expressed for fecal bacteria in Type II graywater. A question was posed about how long Type II graywater may be stored; currently, the regulation has no restriction on length of storage (Type I graywater may not be stored longer than 24-hours).

As currently proposed, Type II graywater may be used for surface drip irrigation. A Committee member suggested it might be better to restrict Type II graywater to sub-surface drip irrigation to further reduce health risk. Others asked why would we need a Type II quality level if both Type I and Type II were restricted to subsurface drip irrigation? The answer is the difference Type II in storage time limits .

The issue of the storage tank being indoors or outdoors was discussed. Some potential energy savings associated with pumping was mentioned if graywater is stored outdoors rather than in the basement. Odor was mentioned, though it was noted that compost toilets have their storage indoors.

The group discussed the down-sides of using chlorinated effluent for irrigation or discharging to a septic system. A Committee member suggested that ultraviolet (UV) treatment is becoming fairly common and cost effective.

At 3pm the Committee wrapped up. Matt Rowe (MDE) suggested that the Committee members provide comments on the draft regulations by December 15, 2019. The group appeared to think that was a reasonable next step.

Next Meeting: TBD. Likely in February. Avoid 3rd Wednesday and 3rd Thursday of the month.

- END -