Facilitator's Final Report:

Alternative Onsite Sewage Systems Emergency Regulations Ad Hoc Committee

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Institute for Environmental Negotiation

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Executive Summary

Legislation approved in 2009 (Acts of Assembly, 2009, Ch. 220) requires the Board of Health to promulgate emergency regulations to establish performance requirements, the operation and maintenance requirements consistent with requirements contained in Title 32.1-164 of the *Code of Virginia*, and the horizontal setbacks necessary to protect public health and the environment for alternative onsite sewage systems. The regulations must take effect no later than April 6, 2010.

The Alternative Onsite Sewage Systems Emergency Regulations Ad Hoc Committee was comprised of 26 members representing a range of stakeholder interest. The Virginia Department of Health convened the group and the University of Virginia Institute for Environmental Negotiation facilitated. The Committee was tasked with developing recommendations regarding the content and specific requirements of emergency regulations for alternative onsite sewage systems. The Committee met for four all-day meetings from June through August 2009 to discuss each issue and reach as much consensus as possible. The Virginia Department of Health will utilize the recommendations of this group, in conjunction with advice of the Sewage Handling and Disposal Advisory Committee, to draft emergency regulations for consideration by the Board of Health.

Operation and maintenance issues occupied much of the committee's time. There was general agreement that alternative systems are capable of treating effluent to a higher degree than conventional septic systems and there was also recognition that achieving and maintaining this higher level of performance requires careful and regular attention by a trained operator. Particularly in the case of single-family homes there was a concern that owners may not be well informed, especially subsequent owners, that their home utilizes an alternative system and the "do's" and "don'ts" of such systems. For these reasons, operation and maintenance requirements occupied much of the committee's attention. This area was also where the committee achieved substantial consensus about the frequency of required site visits and reports. There was also general agreement that single-family and larger systems pose somewhat distinct issues. Larger systems require more frequent attention and lab testing to confirm performance. For single-family systems, the committee deemed visual and basic field test methods sufficient.

One of the challenges to the committee was how to approach the fact that the regulations apply to both engineer designed systems and "out of the box systems". Regarding performance requirements, the committee found promise in an approach described by the Department of Health at the fourth meeting, which was still under development. The regulations will need to strike a balance for allowing flexible, performance based designs for engineer designed systems in accordance with Title 32.1-163.6 of the *Code of Virginia* while also allowing prescriptive "out of the box" designs.

Horizontal setbacks are currently contained in the state's regulations. Title32.1-163.6 of the Code of Virginia provides flexibility for engineer-designed systems by allowing engineers to deviate from the state regulations, including horizontal setback requirements, except where the setbacks are "necessary to protect the public health and the environment." The state's present

policy (GMP #146) is currently being revised. GMP #146 currently sets aside four categories of horizontal setbacks that cannot be changed by the engineer: shell fish waters, public drinking water sources, private drinking water sources on adjacent properties and sink holes. The committee generally agreed that for engineer-designed systems, all wells, including those on the same property as the onsite system, and natural water bodies (used for drinking water or not) should be added to the list of horizontal setbacks that could not be changed.

The final poll of the committee strongly supported the overall package of proposals including items where there was less than full consensus.

Purpose and Work of the Committee

The Alternative Onsite Sewage Systems Emergency Regulations Ad Hoc Committee met for four all-day meetings in Richmond on June 25, July 16, July 30, and August 20, 2009. The Committee adopted a scoping statement at its first meeting that set out its purposes (Appendix 3). The committee vowed to stay focused on the three topics contained in the 2009 legislation: operation and maintenance, performance requirements, and horizontal setbacks because time to meet was limited. *(See appendix 1 for more detail.)*

The committee adopted a set of ground rules to guide its work (Appendix 3), which included a commitment to seek consensus to the extent possible. For this reason, frequent polls and shows of hands were used to get a general sense of where the members stood, especially in the last two meetings.

Everyone understood that VDH would use the recommendations of this group, in conjunction with advice of the Sewage Handling and Disposal Advisory Committee, to develop emergency regulations for consideration by the Board of Health. To the degree that consensus could be achieved the committee's views were described as carrying great weight. Where there was not consensus, the committee views would be useful to the department and the Board in understanding differing viewpoints.

Committee members represented a wide variety of stakeholder interest: citizens, state regulators, local health departments, onsite sewage system manufacturers, local governments, licensed onsite sewage system operators, evaluators and installers, professional engineers, environmental groups, developers and builders, and private and public owners of large onsite sewage systems. *(See Appendix 5 for a list of committee members.*) Attendance was high at each of the four meetings and a number of individuals developed proposals or cited examples from other states in order to further the committee's work. A web site, http://www.vdh.virginia.gov/EnvironmentalHealth/Onsite/aossersc-resources.htm, was established to contain the many materials that were collected leading up to and during the committee process.

Alternative Onsite Sewage Systems History

Alternative onsite sewage systems are defined in the *Code of Virginia* (§ 32.1-163, effective July 1, 2009) and generally include systems that employ bio-mechanical (i.e. not a septic tank) treatment devices and/or pressure distribution of effluent to the soil. They also include large onsite sewage systems typically referred to as "mass drain fields," "cluster systems," "decentralized systems," or "community systems." Virginia Department of Health (VDH) estimates there are as many as 60,000 of these systems currently being used in the Commonwealth today.

The Board of Health's current regulations (Sewage Handling and Disposal Regulations, 12VAC5-610, the "Regulations") contain relatively few performance requirements for alternative systems and no operation and maintenance (O&M) requirements beyond the basic regulatory requirement that an owner must maintain the system so that it does not "fail." In 2000 the Board of Health began the process of promulgating regulations for the performance and O&M requirements for alternative onsite systems. That regulatory effort has stretched to the present for various reasons, including opposition to some performance requirements because of potential economic impacts.

Legislation approved in 2009 (Acts of Assembly, 2009, Ch. 220) requires the Board of Health to promulgate emergency regulations to establish performance requirements and horizontal setbacks necessary to protect public health and the environment for alternative onsite sewage systems. The regulations, which must go into effect no later than April 6, 2010, must also contain operation and maintenance requirements for alternative onsite sewage systems consistent with requirements contained in the Code at § 32.1-164. The emergency regulations must include a requirement for a comment period of at least 30 days, pursuant to the Administrative Process Act. (*See appendix 1 for more detail.)*

Areas of Greatest Agreement

During the last meeting the committee used a show-of-hands poll to gauge the degree to which consensus had been achieved. The working definition of consensus was whether someone "could live with" a given proposal. The committee was given time to explain their concerns before each poll was taken. The summary of meeting #4 contains the actual poll results (see appendix 10) and should be consulted for each individual item. For purposes of highlighting areas of greatest agreement in this report, a cut off of at least 67% of committee members in support was used.

Operation and Maintenance Requirements

- A licensed operator should be mandated to visit a single-family system within six months of the "first flush" and then on a 12-month interval after that.

- The frequency of a licensed operator's mandated visits to a non-single-family system should be determined by a flow and land based approach. The greater the flow and the smaller the site, the more frequent the required visits.

- All mandated visits, plus those where a reportable incident was found, should require a report to be filed with the Virginia Department of Health. The reports should to be filed on the 10th of the following month from when the visit took place. This should apply to both single-family systems and non-single-family systems.

- The emergency regulations should require existing alternative sewage systems to meet the new inspection and maintenance requirements but not require replacement of in-ground equipment.

- Operator reports should include notation of maintenance work that is needed.

Performance Requirements

- A performance assessment for a single-family system should include visual and field testing.

- A performance assessment for a non-single-family system should include visual, field, and lab testing.

- A non-single-family system should be required to test Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), Fecal Coliform, Total Nitrogen, and qualitative/narrative standards to determine whether the system meets performance standards.

- The committee found promise in an approach combining flexible standards (treatment level, vertical separation) and prescriptive elements (hydraulic and organic loading rates) described by the Department of Health and still under development at the time of the final committee meeting.

- The State of Virginia should establish a program to verify treatment efficacy.

Horizontal Setbacks

- The committee generally agreed that for engineer-designed systems, all wells, including those on the same property as the onsite system, and natural water bodies (used for drinking water or not) should be added to the list of horizontal setbacks that could not be changed.

Areas Where Agreement Was Not Achieved

For the items below, the cut off of at least 67% of committee members in support was not achieved.

- Single-family systems should be required to test Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), Fecal Coliform, and Total Nitrogen.

- Require renewable operating permits that must be renewed every five years or at the time of a change in property ownership.

- Non-single-family systems should be required to have a closure plan with financial backing to ensure continuity of performance.

- Emergency regulations should require "failsafe" capability in all new alternative septic systems.

Discussion

Operation and Maintenance Requirements

Many members stressed the importance of the first flush inspection of a single-family system as a way to educate new owners about best practices and to monitor misuse that could result from users not knowing the best practices for their system. Virtually every member at one time or another referred to the importance of homeowner awareness and knowledge.

The term "reportable incident" still remains to be defined however one approach has been suggested by Virginia Onsite Wastewater Recycling Association's (VOWRA). VOWRA proposed a list of reportable events that require a report from the operator regardless of when they occur.

The idea that VDH requirements and those of DEQ should be as consistent as possible had a logical appeal to many members. An example was having reports filed by the 10th of the month following the site visit. It was suggested that this consistency would make it easier for operators and the agencies alike.

Some members were concerned that if reports included descriptions of needed maintenance work, then information overload would occur and the reporting system would not be simple. Other members viewed the inclusion of comments about needed maintenance work as an opportunity to provide the agency with information about the problems of particular systems. These persons felt the maintenance needs could be informative for a new operator because he/she could read the notes.

While the committee recommended that the emergency regulations should require existing alternative sewage systems to meet inspection and maintenance requirements, some members believed that existing systems should not be required to meet the new performance standards. Other members felt that the performance requirements should also be retroactive.

Performance Requirements

Many members opposed requiring single-family systems to complete lab testing. They explained the cost was too high and the results based on a single sample are not always an accurate reflection of what is going on with the system.

However, there were circumstances where some members favored lab tests for single-family systems, such as when the system failed field tests or when the system was first placed into service.

Horizontal Setbacks

In the online survey the committee split almost half and half over whether engineer designed systems should be required to meet all the horizontal setback requirements. On further discussion the committee generally agreed that for engineer-designed systems, all wells, including those on the same property as the onsite system, and natural water bodies (used for drinking water or not) should be added to the list of horizontal setbacks that could not be changed.

Issues for Consideration Beyond Emergency Regulations

(See appendix 9, question 17 for more detail.)

- Testing procedure for product approval.
- Consumer costs.
- Effects of sea level rise.
- Role of automatic remote monitoring/telemetry system.
- Performance requirements of conveyance systems.
- Role of Regulators.
- Better performance in conventional drainfields.
- Limitations on an operator's ability to "adjust" a system.
- Ability of Operation and Maintenance provider to easily obtain a copy of all plans and permits for the systems they maintain.
- Address whether engineered designs under §32.1-163.6 should be allowed to discharge directly into the groundwater.
- Maintain some consistency between DEQ's programs and this onsite program for the large systems so that operators and owners are not confused moving between the two regulatory agencies.
- Ammonia limit.
- Systems for intermittent use.

Appendices

Appendix 1 - House Bill 2551

VIRGINIA ACTS OF ASSEMBLY -- 2009 SESSION

CHAPTER 220

An Act to amend and reenact § 32.1-163.6 of the Code of Virginia, relating to onsite treatment works designed by engineers.

[H 2551]

Approved March 27, 2009

Be it enacted by the General Assembly of Virginia:
1. That § 32.1-163.6 of the Code of Virginia is amended and reenacted as follows:
§ 32.1-163.6. Professional engineering of onsite treatment works.
A. Notwithstanding other provisions of this chapter, for purposes of permit approval, the Board, Commissioner, and Department of Health shall accept treatment works designs from individuals licensed as professional engineers pursuant to Chapter 4 (§ 54.1-400 et seq.) of Title 54.1. The designs shall (i) be compliant with standard engineering practice and performance requirements established by the Board and those horizontal setback requirements necessary to protect the public health and the environment, and (ii) reflect that degree of skill and care ordinarily exercised by licensed members of the engineering profession practicing at the time of performance*, and (iii) ensure that the treatment works will meet or exceed the discharge, effluent, and surface and ground water quality standards for systems otherwise permitted pursuant to the regulations implementing this chapter*.
B. The Department may conduct such review of the work and field analysis as deemed necessary to protect the public health and integrity of the Commonwealth's environment.
C. Within 21 calendar days from the date of application for treatment works sized at 1,000 gallons per day or smaller, and within 60 calendar days from the date of application for treatment works sized at more than 1,000 gallons per day, the Department shall (i) issue the requested approval or (ii) set forth in writing the specific reasons for denial.
D. The Department shall establish an engineering design review panel to review the Department's decision to disapprove an onsite sewage system design. The Commissioner shall appoint four individuals licensed as professional engineers pursuant to Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 with expertise in onsite sewage systems to serve on the engineering design review panel with (i) one representing the Department of Health, (ii) one representing the Department of Environmental Quality, (iii) one representing the Virginia Society of Professional Engineers, and (iv) one representing the American Council of Engineering Companies of Virginia. If a state agency is unable to provide a representative in accordance with this subsection, the Commissioner shall appoint another individual licensed as a professional engineer pursuant to Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 with expertise in onsite sewage systems. The members of the design review panel shall appoint a member to serve as Chairman. The design review panel shall be designated a subordinate, as defined in § 2.2-4001, and shall meet as necessary.
E. When the Department denies an application pursuant to subsection C, the owner may appeal that decision in accordance with § 32.1-164.1. Alternatively, the owner, or the professional engineer responsible for an onsite sewage system design with the owner's written consent, may request an informal fact-finding conference before the engineering design review panel established in subsection D.
The request must (i) be in writing, (ii) be received by the Commissioner within 30 days of the professional engineer's receipt of the Department's denial, and (iii) cite the reason or reasons for the request. The informal fact-finding conference shall be held within 45 calendar days of the request. The proceedings of the engineering design review panel shall be governed by the provisions of the Administrative Process Act (§ 2.2-4000 et seq.). Within 30 days following its receipt of the engineering review panel's written recommendations, the Department shall consider the recommendations of the

engineering design review panel and approve the application or re-affirm its denial.
F. When the Department denies an application following review by the engineering design review panel, the owner may appeal that decision in accordance with § 32.1-164.1.
G. This section shall not be construed to require an owner to seek review by the engineering design review panel before appealing a permit denial pursuant to § 32.1-164.1.
H. This section shall not be construed to prohibit any locality from adopting or enforcing any ordinance duly enacted pursuant to Chapter 21 (§ 15.2-2100 et seq.) of Title 15.2.
I. All treatment works designs permitted pursuant to this section shall comply with operation, maintenance, and monitoring requirements as set forth in regulations implementing this chapter.
2. That the Board shall, within 280 days, adopt regulations establishing performance requirements and horizontal setbacks necessary to protect public health and the environment for alternative systems permitted pursuant to the Board's regulations implementing this chapter. Such regulations shall include a requirement for a comment period of at least 30 days, pursuant to the
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Administrative Process Act (§ 2.2-4000 et seq.), and shall contain operation and maintenance requirements consistent with the requirements for alternative onsite sewage systems contained in

§ 32.1-164 of the Code of Virginia.

Appendix 2 - History of the issue

Alternative onsite sewage systems are defined in the *Code of Virginia* (§ 32.1-163, effective 7/1/09) and generally include systems which employ bio-mechanical (i.e. not a septic tank) treatment devices and/or pressure distribution of effluent to the soil. They also include large onsite sewage systems typically referred to as "mass drainfields." Very few alternative onsite sewage systems were installed prior to 1982. VDH estimates there are as many as 60,000 of these systems in the Commonwealth today.

The Board of Health's current regulations (Sewage Handling and Disposal Regulations, 12VAC5-610, the "Regulations") contain relatively few performance requirements for alternative systems and no operation and maintenance (O&M) requirements beyond the basic regulatory requirement that an owner must maintain the system so that it does not "fail." In 2000 the Board of Health began the process of promulgating regulations that will include performance and O&M requirements for alternative onsite systems. That regulatory effort has stretched to the present for various reasons, including opposition to some performance requirements because of potential economic impacts. The Board of Health has published several Notices of Intended Regulatory Action, the most recent on October 13, 2008.

VDH policies encourage owners to properly maintain alternative systems by hiring competent private operators. Some owners of alternative onsite sewage systems have voluntarily entered into maintenance agreements with companies that sell and service alternative onsite sewage systems and components. However, the fact that there are no enforceable, regulatory requirements for O&M and performance of alternative systems at the state level has become a political issue. Many recent legislative changes affect state and local regulation of alternative onsite sewage systems:

2007: Conventional and alternative onsite systems defined (Va. Code § 32.1-163, effective 7/1/09). Board of Health required to establish a program for O&M of alternative systems- the O&M program must require the owner to have the system operated by a licensed operator and visited by the operator as specified in the operating permit, it must require the operator to make reports via a web-based information system that VDH develops and utilizes for tracking, and it must require the operator to pay a fee of $1 at the time a report is filed (Va. Code § 32.1-164.H, effective 7/1/09). Board of Health directed to establish a schedule of civil penalties for violations of the Board's regulations (Va. Code § 32.1-164.I, effective 7/1/08). Authorized Onsite Soil Evaluator program moved from VDH to the Department of Professional and Occupational Regulation (DPOR) as a licensing program. DPOR is required to establish licensing requirements for operators and installers of alternative onsite sewage systems (Acts of Assembly, 2007, Ch. 892, effective 7/1/09).

2008: VDH required to accept designs from a professional engineer as long as those designs are compliant with standard engineering practice and performance requirements established by the Board and those horizontal setback requirements necessary to protect the public health and the environment. The designs do not necessarily have to comply with the Board of Health's regulations and they must reflect that degree of skill and care ordinarily exercised by licensed

members of the engineering profession practicing at the time of performance. As of August 2009, all of the designs submitted by engineers pursuant to the statute have been for alternative systems (§ 32.1-163.6, effective 7/1/08). Exemption from the licensing requirements for professional engineers that allows licensed onsite soil evaluators to design certain conventional and alternative onsite sewage systems (Va. Code § 54.1-402.A.11, effective 7/1/08).

2009: Local governments prevented from prohibiting the use of alternative onsite sewage systems that are approved by VDH; local governments prevented from establishing maintenance standards and requirements for alternative onsite sewage systems that exceed those allowed under or established by the State Board of Health (Acts of Assembly, 2009, Ch. 786). The Code of Virginia says the regulations shall become effective 30 days following final promulgation by the Board of Health of regulations governing the operation and maintenance of alternative onsite sewage systems. Another enactment clause (effective 7/1/09) requires the Board to require each manufacturer of alternative onsite systems to provide operation and maintenance instructions for the Board's approval. Until regulations are in place, owners are required to operate alternative onsite systems in accordance with those instructions, local ordinances, or any applicable regulation or VDH policy, whichever is more stringent. The Board of Health is required to promulgate regulations within 280 days to establish performance requirements and horizontal setbacks necessary to protect public health and the environment for alternative systems permitted pursuant to the Board's regulations. The emergency regulations must include a requirement for a comment period of at least 30 days, pursuant to the Administrative Process Act and shall contain operation and maintenance requirements consistent with the requirements for alternative onsite sewage systems contained in the Code (Acts of Assembly, 2009, Ch. 220).

Appendix 3 - Scoping statement

> *Nearly one in four households in the United States depends on an individual septic (onsite) system (referred to as an onsite system) or small community cluster system to treat wastewater. In far too many cases, these systems are installed and largely forgotten - until problems arise. EPA concluded in its 1997 Report to Congress that "adequately managed decentralized wastewater systems are a cost-effective and long-term option for meeting public health and water quality goals, particularly in less densely populated areas." The difference between failure and success is the implementation of an effective wastewater management program. Such a program, if properly executed, can protect public health, preserve valuable water resources, and maintain economic vitality in a community.* - U.S. EPA (http://cfpub.epa.gov/owm/septic/index.cfm)

Legislation approved in 2009 (Acts of Assembly, 2009, Ch. 220) requires the Board of Health to promulgate emergency regulations to establish performance requirements and horizontal setbacks necessary to protect public health and the environment for alternative onsite sewage systems. The regulations, which must go into effect no later than April 6, 2010, must also contain operation and maintenance requirements for alternative onsite sewage systems.

The Virginia Department of Health (VDH) has contracted with the Institute for Environmental Negotiation to facilitate a series of stakeholder meetings to seek input for the emergency regulations. VDH is seeking recommendations from this stakeholder group in the following subject areas:

1. Horizontal setbacks necessary to protect public health and the environment

2. Performance requirements necessary to protect public health and the environment, and

3. Operation and maintenance requirements consistent with the requirements for alternative onsite sewage systems contained at § 32.1-164 of the Code of Virginia.

VDH will utilize the consensus recommendations of this group, in conjunction with advice of the Sewage Handling and Disposal Advisory Committee, to develop emergency regulations for consideration by the Board of Health. VDH expects that the emergency regulations will form the central core of the performance and operation and maintenance requirements of permanent regulations which are expected to be in place no later than one year after the effective date of the emergency regulations. VDH and the Board of Health place a very high value on the work of this group and will give great consideration and weight to its recommendations. It is important to understand, however, that the Board of Health has the ultimate authority and responsibility for the technical and policy decisions contained in the emergency and regulations.

Appendix 4 - Ground rules

Ad Hoc Committee Members and the Facilitators agree to:

1. Focus attention on the three topics in the Scoping Statement

2. Participate with the knowledge that emergency regulations will be adopted and that consensus recommendations will carry great weight with the Department and the Board in promulgating the emergency regulations

3. Over the course of four meetings, agree to work toward a package that provides the Department the committee's best collective advice for moving forward with the emergency regulations

4. Work in good faith to address all of my concerns on the three topics through the work group process

5. Work toward a goal of consensus and problem solving
    a. See ways to address the full range of interests, my own and those of the others
    b. Ask "why" of myself and "why" of others so as to get behind positions
    c. Maintain an open mind to alternative ways to satisfy interests
    d. Work toward creatively solving problems that are identified
    e. Base my support on the package of recommendations
    f. Voting in the form of straw polls to gauge the general sentiments of the group will be allowed but consensus is the group's decision making goal

6. Prepare and review meeting summaries that capture the discussion and progress in each meeting

7. Final report will include
    a. Recommendations generally agreed to by all
    b. Topics not addressed but important for future consideration
    c. Areas where significant differences could not be worked out along with an explanation of the various perspectives on the issue so that the Department and Board have a basis for resolving the issue in the emergency regulations

8. Notify facilitator if am not able to attend and will send a substitute if appropriate

9. Attending but not "members" of the group will be provided opportunity to speak

Appendix 5 - Committee members

Last Name	First Name	Organization
Benson	Todd	Piedmont Environmental Council
Bishop	Colin	Bord na Móna Environmental Products U.S. Inc.
Coggins	Gary	Virginia Department of Health
Degen	Marcia	Department of Environmental Quality
Fallon	Merle	Fallon, Myers & Marshall, LLP
Fridley	David	Virginia Department of Health
Gentry	Sandra	Gentry Septic Tank Service
Gore	Jeff	Loudon County and the Coalition of High Growth Communities
Hardiman	Barrett	Home Builders Association of Virginia
Hicks	Bob	Virginia Department of Health, Office of Environmental Health Services
Hogan	David	Balzer &Associates Inc.
Jantrania	Anish	Northwest Cascade Inc.
Kennedy	Shawn	Citizen
Lippincott	Jeff	Home Builders Association of Virginia
McCormack	Ted	VACO
Miniclier	Jack	Charles City
Perry	Carl	EZ Set Tank Co Inc
Pinnix	Joel	ACEC

Scott	Ed	EcoSeptix Alliance
Timmons	Bill	Citizen
Thompson	Martin	Fairfax County Health Department
Walker	Tom	Citizen
Ward	Elizabeth	Washington Advisors
Warwick	John	Arcadis

Bullard	Ted	Virginia Department of Health *(non-voting member)*
Knapp	Allen	Virginia Department of Health *(non-voting member)*
Shepherd	Charles	Virginia Department of Health *(non-voting member)*
Stone	Jim	Fauquier County *(non-voting member)*

Appendix 6 - Meeting Summary 1 - June 25, 2009

Meeting #1 of 4 of the Alternative Onsite Septic System Ad Hoc Committee began with a welcome from Bob Hicks of the Virginia Department of Health (VDH), a review of the meeting's agenda, and self-introductions by members. Allen Knapp of VDH summarized the history of various measures related to alternative onsite septic systems which spans ten years and outlined the scope of the current charge to this committee. The 2009 legislation (Acts of Assembly, 2009, Ch. 220) requires that emergency regulations be promulgated within 280 days that address horizontal setbacks, performance requirements, and operation and maintenance procedures for alternative onsite sewage systems. In response to a question from a member of the committee, it was clarified that the legislation applies to all alternative onsite septic systems not just small single-family residential systems or engineered systems.

A proposed set of ground rules and expectations was reviewed and accepted by the committee. The most important elements were acknowledgement that the committee's work needs to be completed in only four meetings, that the focus must be on the three elements in the legislation (horizontal setbacks, operation and maintenance, and performance standards), and that consensus recommendations are the goal. It was emphasized by Bob Hicks in his welcome and again by Allen Knapp in his explanatory remarks and reiterated in the ground rules that committee recommendations based on consensus arrived at through a problem solving process will receive great weight in the department's and the Board of Health's adoption of emergency regulations. In turn, it is expected that the emergency regulations will become the core of permanent regulations to follow.

While the meeting's agenda focused one at a time on the three elements in the legislation, throughout the discussions it became clear that the three topics are interdependent and must ultimately be addressed as a set of linked program components. The objective for today's agenda was to begin the discussion of each topic and to identify issues or agreements that should be pursued in subsequent meetings.

Horizontal Setbacks:

While it was acknowledged that alternative systems are capable of providing a higher level of treatment than conventional systems, there was great reluctance on the part of many members to modify current horizontal setback/separation requirements absent assurances that systems were performing at their potential.

Several members affirmed the primary goal of setbacks, as well as other program elements, is to protect the public's health. Another member pointed out that environmental health was an important goal along with human health. Later in the discussion financial resources and agency capability were also mentioned as key factors in designing a workable program. Simplicity for all concerned was also mentioned as an important attribute.

Some members focused on technologies that offer warning systems or that remotely notify an operator or that might shut down a system and not accept additional waste until a malfunction had been corrected. It was not clear whether these were felt to be sufficient safeguards to warrant adjusting horizontal setbacks.

Some members questioned whether setbacks should be designed for a properly running system (e.g. an alternative system performing at its design level) or a failed system (regardless of whether it is a failed conventional or alternative system). Another member expressed the view that the bottom line for any system should be no impact on neighboring properties. Another person called for better data if standard separation distances were to be reduced. In response to a question about other states' setbacks, it was indicated that they are "all over the map". Another Virginia advisory committee addressing systems designed by PE's last year recommended that horizontal separation distances not be reduced for several key resources: shellfish waters, public drinking water sources, private drinking water sources on adjacent property and sinkholes.

The question remained at the end of discussion of whether some, not necessarily all, separation distances might be adjusted for alternative systems once operation and maintenance and performance standards requirements had been established. This seemed to be a proposition that at least some members were willing to consider.

Operation and Maintenance (O&M)

The discussion of operation and maintenance began with the facilitator asking "what would the elements of optimal O&M requirements" explaining that a list of these elements could be useful as a measuring stick later on in the committee's work for evaluating different O&M program options. One member asked for a clarification of the role of DPOR compared to VDH. It was explained that DPOR addresses qualifications and licensing of persons performing tasks like operation and maintenance while VDH and this committee are responsible for defining what licensed persons actually must do in performing O&M services.

By examining the flip chart and typed records kept by the facilitators, a number of "optimal elements" were suggested or implied by the discussion.

- Clear statements of responsibility of the home builder, initial and subsequent homeowners, designers, installers, operation and maintenance personnel
- Clear, simple, plain English written manuals that are, among other things, homeowner friendly and that address topics like the consequences of disabling alarm or similar systems (apparently a not uncommon practice)
- O&M manuals that are kept current (web based?)
- Minimum number of site visits (one vs two per year was suggested as the real choice)
- System elements to be examined and evaluated (distinguish between inspections and full O&M)
- Protocols for sample collection and processing
- A method/process for reporting that a visit has been completed and the results of the inspection and maintenance (available to local governments as well as VDH)

- Method of paying for the reporting system (one suggestion was that the Code of Virginia already contains a requirement for operator charges for posting data)
- A requirement that the O&M person not be the same person who designed the system
- A method to fund enforcement and apply penalties when needed
- Method for assuring that an O&M contract is in force at all times
- A set of requirements that takes into account the limited financial means of some residents

Many members suggested looking at the O&M requirements of other states and adapting them for Virginia. Some members expressed an interest in separating regulations for single-family homes from other alternative systems. Another idea was to separate alternative systems according to size. One conclusion that came across from the discussion was the importance of the O&M component of any program that might be proposed. It was also clear that O&M could become so complex as to become unworkable so the call for simplicity/clarity and for a minimum set of O&M standards that protect public health and the environment took on additional importance.

Performance Standards

Using two sketches, Allen Knapp described the current standards as a mixture of qualitative and prescriptive standards. Two issues emerged from the discussion as being especially important. The issue of establishing a logical and a workable compliance point was discussed. There was also discussion on the performance constituents; what will be measured and what are the standards not to be exceeded.

Some members contributed that the standard should be non-degradation of ground water though there was a question of whether data were available about current ambient levels. An observer suggested that, following the pattern of early surface water standards, the performance standards should be technology based, at least initially. Another person questioned the usefulness of a measurement taken at a single point in time/location for single-family uses. When asked what we are trying to protect, some members said groundwater, others drinking water and others waters with which humans might come into contact (the analogy of swimmable).

The discussion on performance standards did not gain as much momentum as the previous two topics.

Next Steps

At the next committee meeting, a review of the programs in other states will be presented including North Carolina as suggested by one member. Also, possibilities suggested by VOWRA (Virginia Onsite Wastewater Recycling Association, http://www.vowra.org) as well as previous work developed by VDH will be examined.

Appendix 7 - Meeting Summary 2 – July 16, 2009

Meeting #2 of the Alternative Onsite Sewage Systems Emergency Regulation Ad Hoc Committee began with an introduction by facilitator Bruce Dotson and self-introductions by members and those in the audience. The facilitator noted the diverse make-up of the group and pointed out the significant influence this committee can potentially have on the Department and the Board of Health's adoption of emergency regulations if consensus can be reached through a problem solving process.

The summary from meeting #1 was reviewed and the facilitator reminded the committee of its three tasks, to provide recommendations for operation and maintenance requirements, performance requirements, and horizontal setbacks. He noted that several important points came out of meeting #1: the three tasks of the committee (operation and maintenance, performance requirements, and horizontal setbacks) are interrelated, each depends to a degree on the others; the goals are to protect public health and environmental health keeping in mind financial resources and personnel capacity. Overarching these, the regulations should be simple. The committee accepted the summary as written with two comments: the legislation actually refers to performance requirements not standards and consumer protection should also be a goal.

An issue that emerged from the discussion was whether or how homeowner affordability should be addressed. Some felt that environmental and human health protection is the objective and that affordability is not a criterion. They cited parallels like urban sewer fees and other costs of homeownership where the homeowner is responsible for paying for necessary services. Others felt that affordability did warrant at least consideration and was one factor to be taken into account in the overall balance of considerations.

Focus on Single-family Systems

During meeting #1 it was observed that the legislation applies to all alternative onsite systems. At this stage of the discussions however, considering diverse systems introduces a level of complexity that makes it difficult to focus on one or a few issues at a time. For this reason it was suggested and agreed that for this meeting the focus would be on single-family systems. Later meetings will then discuss all systems including non single-family systems.

Five presentations were given over the course of meeting #2, three emphasizing operations and maintenance and two addressing performance requirements. Virginia Onsite Wastewater Recycling Association's (VOWRA) draft recommendations focused on operation and maintenance and were presented by Bob Lee. Allen Knapp of VDH summarized North Carolina's O&M regulations. Later in the meeting, Colin Bishop explained a risk based approach that he had developed for determining the frequency of inspections. Arizona's performance requirements were also summarized by Colin and a proposed set of principles for setting performance regulations was offered by Anish Jantrania.

Copies of documents related to these proposals as well as a very large number of other resources are now available at a web site that VDH has established for public access. It is titled "Resources

for the Alternative Onsite Sewage Emergency Regulations Stakeholder Committee" and can be found at http://www.vdh.virginia.gov/EnvironmentalHealth/Onsite/aossersc-resources.htm. Since these documents are available in their entirety, only very brief summaries are included in this facilitator's meeting summary below.

Operation and Maintenance

VOWRA Draft

Bob Lee explained that VOWRA is a trade association made up of individuals from different areas of onsite systems that come together to talk about bettering the onsite wastewater industry. The Virginia Department of Health asked VOWRA to put together a straw man operation and maintenance approach a number of months ago. Key features in the VOWRA draft proposal are site visit frequency, monitoring frequency, change of ownership, reportable/non reportable events, levels of violations, and renewable operation permits.

The VOWRA draft defines a routine site visit as "Routine site visits ordinarily consist of assessing the function and compliance of the onsite sewage system, performing routine maintenance, making or causing adjustments in the operation of the OSS and in kind replacement of normal wear and tear parts such that the OSS can be expected to function adequately until the next scheduled routing site visit." The proposed frequency of routine site visits is an initial visit within 90 days of start-up or sale to a new owner and then every 6 months thereafter (except for privies, holding tanks, or septic lpd's). Sampling/monitoring is proposed to take place in conjunction with the initial visit and is then conditioned on results from that point on. If a sample fails, a retest must take place within 90 days. If the test result is a pass, the next sample would be taken in two years.

At the conclusion of the O&M portion of the meeting, participants listed "positive take-always" and a number of the features of the VOWRA draft were included (see below).

North Carolina Regulations

North Carolina's O&M regulations are expressed in several tables. Systems are classified by their size and type. Types V and VI and their subcategories are alternative systems. Based on the type/subcategory of system the tables prescribe the type of permits required, the frequency of the local health department's oversight responsibilities, the entity approved for managing the system, the minimum system inspection/maintenance frequency, and the required reporting frequency.

For example a type V system with a flow of 0-1,500 GPD, the minimum inspection/maintenance frequency is 6 months by a public management entity with a certified operator or a private certified operator. Results are to be reported each 6 months. Health department review will take place annually. The frequency of inspection/maintenance increases with flow, 1,500-3,000 GPD systems must be visited every 3 months, over 10,000 GPD requires weekly inspections/maintenance.

The simplicity and clarity of the North Carolina system appealed to many committee members.

Risk Factors and Frequency of Inspections

Before Colin Bishop explained a proposal that uses a risk assessment table to determine the frequency of inspections, he asked committee members to brainstorm factors they believed to be associated with risk. After hearing their results, which largely confirmed his proposal, he explained that his proposal is based on risk factors such as how many people occupy a residence, % usage of the design flow, how big the property is, site limitations such as soil, the type/complexity of the onsite system, dispersal method, disinfection if applicable, and climate. For each item, a score of 1-4 is assigned. A simple table translates the total score into a frequency of inspection. Colin explained that it is the risk based approach, not necessarily the specific numbers, that he is proposing.

One committee member said that she tried the method and found it easy to use and that it indicated that her system would need inspection annually. Several members commented that the North Carolina approach is also somewhat risk based but to a lesser degree than this proposal.

Operation and Maintenance "Positives" List

To gain a sense of closure on the discussion of O&M, the committee members were asked to identify those things that had been discussed that they saw as positive ideas for consideration as Virginia draws up its regulations. (The Risk Factor approach had not yet been presented by the time that this list was assembled so it could not be considered for inclusion.) In no particular order, things that members liked as "positives" were:

- Need minimum frequency of monitoring, with maintenance as needed
- Inspection 2 times per year, which also refreshes homeowner knowledge of system
- Flexibility to have more frequent site visits if required
- First flush inspection, then at intervals after that
- Permit at sale of the house
- Improve quality assurance
- System of classification – simple
- Regulatory agency oversight combined with private inspections
- Service contracts (Oregon mentioned)
- Minimum standards will become the standard (discussed as both good and bad)
- Should have an education component
- Common "dos and don'ts" among manufacturers
- Require manufactures to provide a period of warranty for O&M as part of the sale of system
- Prevention savings, pay now and avoid expensive repairs later
- Simple blanket categories (simplicity, simplicity, simplicity)

Performance Requirements

Arizona

Colin Bishop described Arizona's performance requirements as being a hybrid code which recognizes that alternative onsite treatment technology is moving forward and therefore the code has to be flexible for the future.

All systems must show they can have a 20-year operational life. Designs are based on a series of general permits for the different types of systems and designs are based as well as on design flows, wastewater and site characteristics. Performance standards address four constituents (BOD, TSS, coliform, nitrogen). Performance is measured at the end of the pipe.

There was some discussion about whether the Arizona approach was truly performance based which clarified that it is a hybrid system. There was also discussion about whether measurement was at the end of the pipe, a very important concern among some members.

Anish Jantrania's performance regulations concept paper

The proposal describes the role of performance regulations as regulations that "allow licensed professional engineers to design wastewater systems for permitting based on performance standards that are required to be met at specified boundaries when measured by the methods specified in the regulations." The logic of the approach is that you define what is being looked for; how to find it; and what to do when you find something you don't want. The regulations also specify the frequencies at which performance standards will be measured and reported, how the results will be assessed and enforcement criteria.

The proposed regulations consist of five items:

1. Performance Requirements/ Standards/Specifications/Goals/Expectations – these are essentially narrative performance requirements such as removing waste water without exposing it to people or the environment.
2. Performance Measurement Methods/Tools – one of the technology standards under this heading is the installation of a pipefitting so that an inspector can determine the cause of a back up. Effluent quality is determined by either a loading rate calculator or a flow area index method.
3. Performance Monitoring and Reporting Frequencies – the suggestion is once per year for the parameters listed in the operating permit and at the time of property transfer for those same parameters.
4. Performance Results Assessment and Enforcement Criteria – permits would be reissued for those systems that are performing satisfactorily and those in violation would be issued corrective orders with dates by which compliance must be achieved.
5. Procedure for securing construction and operation permits – the professional engineer designs the system and certifies its installation and then hands it off to a responsible management entity (RME)

The vocabulary of performance requirements, which is the term actually used in the legislation, is more inclusive than the narrower term performance standards used in our first meeting.

Performance Requirement "Positives" List

To gain a sense of closure on the discussion of performance requirements, the committee members were asked to identify those things that had been discussed that they saw as positive ideas for consideration as Virginia draws up its regulations. These included:

- Set numerical standard for important constituents
- Four constituents as in Arizona
- Measure in order to achieve performance and then get compliance
- Emerging pollutants should also be addressed
- Compliance points must be specified
- Should use end of pipe standards
- Need checks and balances and penalties for non-compliance
- Performance based standards that maximize options
- Combine prescriptive and bottom line standards for flexibility
- Maximize options and adaptability to change (such as changing water table)
- Fail safe technology
- Vertical reduction should be tied to how your treatment can perform
- Need a minimum vertical separation from ground water that isn't zero
- Not overly technical/implementation
- Avoid "condemnation" by rule/make usable

Next steps

The next meeting on July 30 (10-3:30) will build on the list of positives generated above with the goal of finding areas where the members generally agree, areas where they disagree, and areas where topics have been identified that lie outside the scope of this group but which should be addressed elsewhere.

Appendix 8 - Meeting Summary 3 – July 30, 2009

Meeting #3 of the Alternative Onsite Sewage Systems Emergency Regulation Ad Hoc Committee began with a review of the agenda and goals for meeting #3. Facilitator Bruce Dotson reminded the committee that the plan is to present a draft final report to the committee at meeting #4 if sufficient progress can be made at meeting #3. The report will include recommendations generally agreed to by all; topics with significant differences that could not be worked out; and topics the group did not have time to address.

The summary from meeting #2 was reviewed and members were asked if they had any changes or modifications for the summary. One member noted a comment from the meeting was not recorded accurately. Under the Operation and Maintenance "Positives" list the statement will now read "Common dos and don'ts among manufactures, useful but need to be brought to the attention of owners". The summary was then approved with the stated modification.

A hand out titled "Areas of Agreement" was given out at the beginning of the meeting by the facilitator who explained the chart would serve as a guide for the meeting's discussion. The "Agreement" heading is an hypothesis whose truth or not will be determined by the day's discussions. Each row on the chart was a topic that had been generated from the discussions during meetings #1 and #2. The topics also had varying degrees of agreement from committee members. The numbered item served as a question and the letters as options for answers that were generated from the previous meetings. The facilitator challenged the group to find common ground on the topics. The first chart was Operation and Maintenance, the second chart was Performance Requirements, and the third chart was of topics that had been previously brought up although without in depth discussion. As with meeting #2, this meeting's discussion only included single-family systems.

Operation and Maintenance

Topic 1 – Inspection frequency

There were five options generated from past meetings regarding operation and maintenance inspection frequency. By show of hands, the committee expressed their preferred frequency.

a. Operation and maintenance inspections are based on a regular interval that does not include first flush.
    - 0 hands
b. Operation and maintenance inspections are based on a risk-based frequency.
    - 2 hands
c. Operation and maintenance inspections are based on a set interval of time.
    - 2 hands
d. Operation and maintenance inspections are based on an established first flush interval of time, and then future visits are based on a set interval of time.
    - 16 hands

e. Operation and maintenance inspections are based on inspection results.
    - Zero hands

The majority of members favored *operation and maintenance inspections based on an established first flush interval of time, then future inspections are based on a set interval of time.* Many of the members supported the *first flush interval of time* due to the amount of damage that can be unknowingly done by an owner before the first inspection. Another member questioned what this requirement would mean when there has been a change of ownership, and how to ensure the new owner is knowledgeable about their system. Another member replied the *first flush interval of time* should be repeated when there is a transfer of ownership.

Members then discussed what the first flush interval of time should be. A member voiced support for less than six months due to the amount of damage that can be done in six months if a system is used improperly. In response to the suggestion another member suggested a 90 day first flush time period. A second poll was taken about the first flush interval of time.

a. Six-month first flush interval of time
    - 8 hands
b. 90-day first flush interval of time
    - 11 hands

Some members were concerned how the Department of Health would know when a home became occupied since that time is not always the same as when the occupancy permit was issued. Those members stressed that it is important to test the system after the home has been occupied and the system is in use, but also with enough time to let the system mature. The facilitator asked Allen Knapp from Virginia Department of Health if the department can easily determine when an owner has moved in. Allen responded that the department cannot easily determine that, but rather the first flush date may have to be from the date the operating permit is signed.

A third poll was taken on the frequency of inspections after the first flush visit.

a. Annual visits
    - 16 hands
b. Inspection every six months
    - 3 hands

Members discussed if reporting to the Health Department would be once a year, or each time a system is inspected. Allen answered the statute requires a report for every mandated visit. Therefore a report would be submitted to the Department each time an inspection is completed.

Topic 2 – Inspection Components

There were three options generated in past meetings regarding inspection components. The committee voted for their preferred components.

a. Inspect system components for mechanical working order
    - 19 hands
b. Verify maintenance has been performed
    - Did not take poll
c. Performance assessment: visual, lab, field monitoring
    - Did not take poll

All members agreed an inspection must check system components for mechanical working order. Topic 2-2 did not get polled, only discussed. Some members suggested requiring the service provider to complete an inspection checklist after each visit, which is then reported to VDH. Another member suggested including a comment section of the report to explain issues that can't be captured in just a check box. Allen reminded the committee they should specify the scope and basic elements of the inspection components.

The members then discussed if a performance assessment should be required and if so, what would be assessed. One member suggested that before deciding if a lab test is required, you have to figure out what you're going to test. Another member suggested to not vote on the specifics at the time, but rather to take a poll on whether assessing the performance of a system is required. Another poll was taken and all members agreed that, though they don't know the performance standards yet, but in general terms of site visit components, performance assessment should be a part of the visit.

After lunch in the interest of getting as much accomplished at meeting #3 as possible the facilitator suggested treating each topic as a question and without any discussion, only a show of hands, vote. The group agreed.

Topic 3 – Consumer notice

The facilitator asked the group to express themselves on what happens at the time of sale.

a. Certification of function at time of sale (first flush visit)
    - 5 hands
b. Renewable operating permit
    - 5 hands
c. Record in Land Record/Grantor Index and Deed
    - 11 hands

Option c is required of all new systems as of July 1, 2009. A member suggested this also apply to systems existing before July 1, 2009.

Topic 4 – Service Contract

The facilitator asked the group for a show of hands on service contract conditions.

a. Health Department requires service contracts and enforces violations

- 5 hands

b. Owner is required to name an operator and the operator consents to being named
   - 2 hands
c. Health department reviews whether the maintenance report has come in. If it hasn't then the Health Department contacts the owner
   - 12 hands

Performance Requirements

Topic 1 – Performance Requirements

The facilitators asked the group to consider performance requirements.

a. Narrative – qualitative (e.g. no backing up of sewage into fixtures, no pooling on ground)
   - 0 hands
b. Numerical – quantitative (numeric values assigned)
   - 1 hand
c. Both a & b
   - 18 hands

Topic 2 – Point of assessment

The facilitator asked the group to express their views on the preferred point of compliance at which it is decided if a system meets the requirements.

a. End of a treatment train
b. Property line
c. Defined by system
d. A & B

The group did not vote on topic 2. They decided to move to Topic 3 – what to measure, which will decide the point of assessment, and Topic 4 – meeting performance standards. There was not enough time at the end of the meeting to take a poll on the point of assessment. For Topic 3 the group addressed the constituents to measure, and for Topic 4 they expressed the view that prescriptive requirements would be included in the performance standards. Allen Knapp suggested from the conversation it sounds like point of assessment will be some combination of a, b and c.

Topic 3 – What to measure

The facilitator asked the group for a show of hands on what should be measured to determine if a system meets the performance requirements. Members were in favor or against each of the six options.

a. BOD

- 9 hands

b. TSS
   - 10 hands
c. Fecal coliform
   - 11 hands
d. Total nitrogen
   - 11 hands
e. Endocrine disruptors
   - 0 hands
f. Other quantitative standards, but unspecified as to what they are right now
   - 16 hands

In response to the discussion about endocrine disruptors, a member suggested VDH should be alert to and deal with problem constituents as problems arise and more is learned.

Topic 4 – Meeting performance standards

Allen Knapp asked the group if the emergency regulations were going to include prescriptive standards as well as performance standards, would performance standards have prescriptive, end of pipe standards or not?

a. The regulation will have prescriptive requirements
   - 18 hands
b. The regulation will be a pass/fail criteria
   - 0 hands

One member asked if the performance standards could be tiered so lab testing will be appropriate to systems that are out of the box but not the same for systems that are in the ground. Another member asked if tests could be done on an interval such as 2 years or 5 years. Or can engineered designs have one frequency and prescriptive another frequency? Another member asked if a qualified operator could decide when to test. Another member asked what the testing procedure would be for product approval.

Topic 5 – Failsafe

Next, Colin Bishop passed out a document about failsafe systems. Colin said the goal now should not be to figure out the details, but to agree on the concept of failsafe systems. He said in order to protect public health and the health of waterways you need a system that stops the moving of effluent forward when a system fails. One member expressed concern that if a system shut down due to malfunction it could make it difficult for the operator to get it up and running again. Another member commented a failsafe system should not be required of everyone as a result of the neglect of some. Next the group took a poll on failsafe systems.

a. Failsafe capability is required
   - 9 hands

b. Failsafe capability is not required
    - 5 hands

The last chart was of topics that had been previously brought up although without in depth discussion. This chart included consumer cost; effects of sea level rise; role of automatic remote monitoring/telemetry systems; and horizontal separation. These topics were not discussed during meeting #3.

Next Steps

At the end of the meeting the facilitator discussed sending out a chart similar to that used in meeting #3, this time including non single-family systems. The members agreed to fill in the chart and send it back to the facilitator before meeting #4. The last meeting on August 20 (10-3:30) will build from members' responses to this "between the meetings poll" and from meeting #3 topics.

Appendix 9 - Committee online poll results

(Members of the committee completed an online poll between meetings #3 and #4. The results of the online poll were reviewed during meeting #4, and a final poll was then taken at meeting #4 See appendix 10 for more detail.)

Question 1

How often should a licensed operator be mandated to visit a single family system after the initial "first flush" visit?

	Response Percent	Response Count
12 months	78.9%	15
6 months	10.5%	2
90 days	5.3%	1
Other	5.3%	1
answered question		19
skipped question		0

Other		
1	During the second meeting when the members were divided into small groups, all groups unanimously agreed that it should be based on the risk factors of flow/hydraulic loading, occupants/organic loading and environmental sensitivity of the site. Some groups also added type of treatment technology. These four make sense to me as a minimum. The "one size fits all" approach has not proven successful in other states.	Aug 13, 2009 8:56 PM

Question 2

How often should a licensed operator be mandated to visit a NON single family system?	Response Percent	Response Count
Same as single-family systems	0.0%	0
More often than a single-family system- based on a formula that increases the frequency based on flow	31.6%	6
More often than a single-family system- based on a formula that takes into account flow, total land area (project area), and other factors such as proximity to sensitive environments or other natural features ("risk-based approach")	57.9%	11
Other	10.5%	2
answered question		19
skipped question		0

Other		
1	increasing frequency based on flow and complexity of treatment process	Aug 13, 2009 7:25 PM
2	refer to the DEQ chart as modified by Ms Degen.	Aug 13, 2009 9:38 PM

Question 3

When should it be mandated that a report be filed with the Virginia Department of Health? (Please choose 1 per column)

	Single Family System	NON Single Family System	Response Count
Any and every visit is to be reported	0.0% (0)	100.0% (2)	2
Only mandated visits require a report	100.0% (3)	66.7% (2)	3
All mandated visits require a report, plus if during any non mandated visit a "reportable incident" is encountered, a report must also be filed	100.0% (16)	87.5% (14)	16
		Add comment as appropriate	0
		answered question	19
		skipped question	0

Question 4

Should the report include notation of maintenance work that is needed?

	Response Percent	Response Count
Yes	84.2%	16
No	15.8%	3
Add comment as appropriate		3
answered question		19
skipped question		0

Add comment as appropriate		
1	The system is compliant or non-compliant. Maintenance is a separate issue.	Aug 12, 2009 6:26 PM
2	Include time frame to expected completion of this work.	Aug 13, 2009 3:50 PM
3	but should address why is wasn't done this trip	Aug 13, 2009 7:25 PM

Question 5

What should be included in a performance assessment? (Select all that apply)			
	Single Family System	NON Single Family System	Response Count
Visual/observation (e.g. general condition of the system, is the media flooded, color of effluent, smell, is the dispersal field "spongy")	100.0% (18)	100.0% (18)	18
Field testing (e.g. Ph, CL, SS)	81.3% (13)	100.0% (16)	16
Lab testing (e.g. BOD, Nitrogen)	43.8% (7)	100.0% (16)	16
None of the above, performance assessment should not be required	100.0% (1)	0.0% (0)	1
		Add comment as appropriate	8
		answered question	19
		skipped question	0

Add comment as appropriate		
1	As long as there is an O&M agreement and AOSS installed, operated & maintained by licensed professional, then mandatory lab testing not needed.	Aug 12, 2009 6:15 PM
2	Lab testing of specific constituents may be appropriate for both types of systems at a limited frequency or on an initial basis during the first year to verify "design justification" of innovative or non-standard systems, or for manufacturer's product approval process.	Aug 12, 2009 6:26 PM
3	PH, CL, SS, BOD, N to be tested at first flush visit and then at yearly intervals. Failed tests to be repeated at 90 day intervals until passed, then return to annual testing.	Aug 13, 2009 3:50 PM
4	For SFH would consider reducing the lab testing based on historical performance - reduced frequency with each good set of numbers	Aug 13, 2009 7:25 PM
5	At a minimum, lab testing should be required on technologies seeking initial approval. Also, lab sampling could be used when general indicators and field testing indicate there is a problem.	Aug 13, 2009 8:56 PM
6	report as required by DEQ chart as modified by Ms Degen.	Aug 13, 2009 9:38 PM
7	Visual/observation of the system should be required with every mandated visit. However, field testing and lab testing can and/or should be on a separate schedule. For example, for Non single family systems, if a 4 annual visits are mandated 3 could require field testing and one lab testing.	Aug 14, 2009 4:33 PM
8	The need for laboratory tensting should be based on flow.	Aug 14, 2009 4:56 PM

Question 6

What should be measured to determine whether a system meets the performance requirements? (Select all that apply)			
	Single Family System	NON Single Family System	Response Count
Biochemical Oxygen Demand (BOD)	66.7% (12)	**94.4% (17)**	18
Total Suspended Solids (TSS)	70.6% (12)	**94.1% (16)**	17
Fecal Coliform	68.8% (11)	**100.0% (16)**	16
Total nitrogen	62.5% (10)	**93.8% (15)**	16
Qualitative, narrative standards	**100.0% (15)**	80.0% (12)	15
None of the above	**100.0% (1)**	0.0% (0)	1
		Add comment as appropriate	6
		answered question	19
		skipped question	0

Add comment as appropriate		
1	Need conservative, baseline prescriptive standards for all AOSS-basic levels of treatment, constituent levels, etc. for various flows.	Aug 12, 2009 6:15 PM
2	Depends on system design - additional testing parameters may be warranted. Point of compliance is not necessarily "end of pipe" - but can be if designed that way. What happens if it's a prescriptive design and testing shows failing results? TN may be appropriate depending on the inclusion of a nitrogen standard in the regs. Ironically Fecal Coliform is the only current true contaminant on the list but there is no reason to test for it because we know that 12-18 of unsaturated soil mitigates FC. And, it's extremely difficult to sample and test FC in the vadose zone as VDH discovered during Advantex/Ecoflo/Puraflo testing. BOD and TSS could be appropriate EOP tests to verify efficacy of treatment unit, assuming there is an EOP. But a treatment works does not necessarily end at the "secondary treatment unit" - there can be a soil component or some in-ground tertiary treatment. Prescriptive designs could be deemed approved (as is the current practice) while Performance Based Designs by Engineers may include an EOP requirement consistent with "secondary effluent standards". Clearly some systems would then only be appropriate for a prescriptive design because their configuration would not allow for an EOP test.	Aug 12, 2009 6:26 PM
3	See comments for #5.	Aug 13, 2009 3:50 PM
4	FC and TN should only be measured if the design requires that these parameters be controlled. BOD and TSS should only be measured if the design is based on the system producing a given effluent quality.	Aug 13, 2009 7:25 PM
5	DEQ chart.	Aug 13, 2009 9:38 PM

Question 6 continued

Add comment as appropriate		
6	Two points to add here, first this response is limited to prescriptively designed systems, systems designed beyond any prescriptive standards should evaluate fecal coliforms (and perhaps BOD and TSS). Second, for non-single family systems, this response only applies to the frequency set for lab testing as disccused in question 5.	Aug 14, 2009 4:33 PM

Question 7

What should happen at the time of sale of a single family home using an alternative septic system? (Select all that apply)

	Response Percent	Response Count
Record in Land Record/Grantor Index & Deed (Currently required)	68.4%	13
Amend the residential property disclosure act (Va. Code § 55-517 et seq.) to require the seller to disclose the function and state of the property's alternative septic system	57.9%	11
Renewable operating permit that must be renewed every 5 years or at time of sale	52.6%	10
Other	10.5%	2
answered question		19
skipped question		0

Other		
1	permitsshould be subject to revokation at any time when found to be failing	Aug 13, 2009 2:24 PM
2	No need to do anything; lending industry will require disclosure.	Aug 13, 2009 9:38 PM

Question 8

Should failsafe capability be required in all new alternative septic systems? (choose 1 per column)			
	Single Family System	NON Single Family System	Response Count
Yes	80.0% (8)	100.0% (10)	10
No	100.0% (11)	81.8% (9)	11
		Add comment as appropriate	7
		answered question	19
		skipped question	0

Add comment as appropriate		
1	Fail safe is not necessary for 500gpd single family systems, but may be appropriate for larger volumn systems. An "auto-dialer" to a licensed operator is an appropriate failsafe mechanism on a large system (>10,000 gpd).	Aug 12, 2009 6:26 PM
2	Should notify operator of existence of problem. This may not be possible/practical on systems without pumps and controls (ex. gravity from house to peat moss module[s] to pad or drainfield.)	Aug 13, 2009 3:50 PM
3	Definitions of failsafe may be subjective. If a system doesn't put sewage on the ground, put backs it up in the house, is that failsafe?	Aug 13, 2009 4:10 PM
4	I would consider only if there was some unique situation where the system would be allowed ONLY IF they put in the failsafe	Aug 13, 2009 7:25 PM
5	It is impossible to have a failsafe system.	Aug 13, 2009 9:38 PM
6	In my opinion, failsafes should only be considered if they can be shown to pose no public health risk. From what we have discussed previously, I would have concern that in some instances, a failsafe would do more than simply inconvience the homeowner. If the owner continues to ignore the problem to a point where wastewater backed up into the house or surfaced at the tank.	Aug 14, 2009 4:33 PM
7	In a aerobic system sizing the drainfield without taking into account the aerobic treatment is a fail safe of sorts.	Aug 14, 2009 4:56 PM

Question 9

How many treatment levels should the Emergency Regulations establish? For background see attachment to the 8/12 email for questions 9-12. (Choose 1 per column)			
	Single Family System	NON Single Family System	Response Count
Two: septic effluent and secondary	100.0% (10)	50.0% (5)	10
Three: septic effluent, secondary, and "beyond secondary"	62.5% (5)	87.5% (7)	8
Three, but also require disinfection for anything beyond septic effluent	75.0% (3)	100.0% (4)	4
Other	66.7% (2)	100.0% (3)	3
		Please explain	5
		answered question	19
		skipped question	0

Please explain		
1	There should only be a secondary treatment standard for alternative systems. However, a designer could include tertiary treatment as part of the "treatment works" or include disinfection to overcome certain risk factors could then be established as a "permit requirement".	Aug 12, 2009 6:26 PM
2	"Beyond secondary" would define treatment levels for disinfection but not require disinfection for all alternative systems? Correct?	Aug 13, 2009 3:50 PM
3	For larger systems where TN is an issue, consider creating a BNR level of 8 mg/l TN. (Biological Nutrient Removal) This mimics the DEQ base technology standard for TN, it's relatively easy to hit, and has a basis in available technology.	Aug 13, 2009 7:25 PM
4	See Colin Bishop proposal for single family. Non single family needs a matrix as well.	Aug 13, 2009 8:56 PM
5	I believe there exists a strong case to support the reduction in field area required for highly treated effluent. I also believe that due to the sheer volume generally associated with Non-single family systems and their ability to mound water that disinfection is a sound approach to further protect groundwater.	Aug 14, 2009 4:33 PM

Question 10

Do you agree that the Emergency Regulations should establish prescriptive relationships between the quality of effluent applied to the soil and the loading rates (typically hydraulic and organic) used by designers? (choose 1 per column)			
	Single Family System	NON Single Family System	Response Count
Yes	87.5% (14)	93.8% (15)	16
No	100.0% (4)	50.0% (2)	4
I don't know	100.0% (1)	100.0% (1)	1
		Add comment as appropriate	5
		answered question	19
		skipped question	0

Add comment as appropriate		
1	Regulations should require designers to justify their hydraulic and organic loading rates and may include a prescriptive standard for non-engineered prescriptive designs.	Aug 12, 2009 6:26 PM
2	I think the state should state provide a max loading for soils based on the quality of effluent.	Aug 13, 2009 7:25 PM
3	Based on soil sizing formula, like Arizona	Aug 13, 2009 8:56 PM
4	Oversight and enforcement of the program will be impossible without prescriptive standards.	Aug 13, 2009 9:41 PM
5	Yes, but this should be in addition to performance standards for non-prescriptive designs.	Aug 14, 2009 4:33 PM

Question 11

Should the Emergency Regulations require all engineered designs under § 32.1-163.6 to comply with all horizontal setbacks contained in the Board of Health's regulations?

	Response Percent	Response Count
Yes	47.4%	9
No	42.1%	8
I don't know	10.5%	2
Add comment as appropriate		5
answered question		19
skipped question		0

Add comment as appropriate		
1	The setbacks in GMP146 seem appropriate. There has been no comment over the past year that horizontal setbacks in GMP 146 are problematic, either from designers or regulators.	Aug 12, 2009 6:26 PM
2	each system should be designed to assure no migration across property line	Aug 13, 2009 2:24 PM
3	However, a VDH or local approval process for variations from precribed setbacks could be an option.	Aug 13, 2009 9:41 PM
4	They should comply with all horizontal setbacks that are intended to strictly protect public health. Those standards based on "best practices" should be allowed to be waived when the designer believes they can be overcome safely.	Aug 14, 2009 4:33 PM
5	Adequate supporting evidence or data should be considered to allow for 'variances'	Aug 14, 2009 6:18 PM

Question 12

If you answered 'no' to the question 11, do you agree that the Emergency Regulations should preserve the same horizontal setback requirements as the current GMP #146 (Shellfish waters, any public drinking water source, any private drinking water source on an adjacent property, and sink holes)?

	Response Percent	Response Count
Yes	81.8%	9
No	18.2%	2
I don't know	0.0%	0
Add comment as appropriate		3
answered question		11
skipped question		8

Add comment as appropriate		
1	at a minimum the same setbacks should apply	Aug 13, 2009 2:24 PM
2	It may also be appropriate to consider extending the private drinking water source to include existing wells (or at least wells of a certain class and construction).	Aug 14, 2009 4:33 PM
3	Adequate supporting evidence or data should be considered to allow for 'variances'	Aug 14, 2009 6:18 PM

Question 13

If you answered 'no' to question 12, which horizontal setback requirements should be preserved?

	Response Count
	2
answered question	2
skipped question	17

Response Text		
1	All those listed above in #12, but also from drinking water source on owners property and also from the surface waters currently listed in our regulations.	Aug 13, 2009 6:50 PM
2	All horizontal setbacks remain, with the option for variances based on engineered designs with engineering board review and consensus.	Aug 14, 2009 6:18 PM

Question 14

Should VDH have a procedure in the emergency regulations that requires manufacturers to verify treatment efficacy before being allowed for use in Virginia? (If you answer 'yes' skip to question 16)

	Response Percent	Response Count
Yes	83.3%	15
No	16.7%	3
I don't know	0.0%	0
Add comment as appropriate		3
answered question		18
skipped question		1

Add comment as appropriate		
1	Although this is appropriate for prescriptive, non-engineered designs.	Aug 12, 2009 6:26 PM
2	Except that as you move into large systems, there are engineering standards that are used to design treatment works. These are well known and well used technologies that should not have to go through a separate VDH process. Works for <1000 gpd though.	Aug 13, 2009 7:25 PM
3	I think there continues to be merit to this approach, especially, in that it allows for systems to be designed by qualified professionals who are not PEs, but PEs should be able to go outside of this when they can demonstrate compliance.	Aug 14, 2009 4:33 PM

Question 15

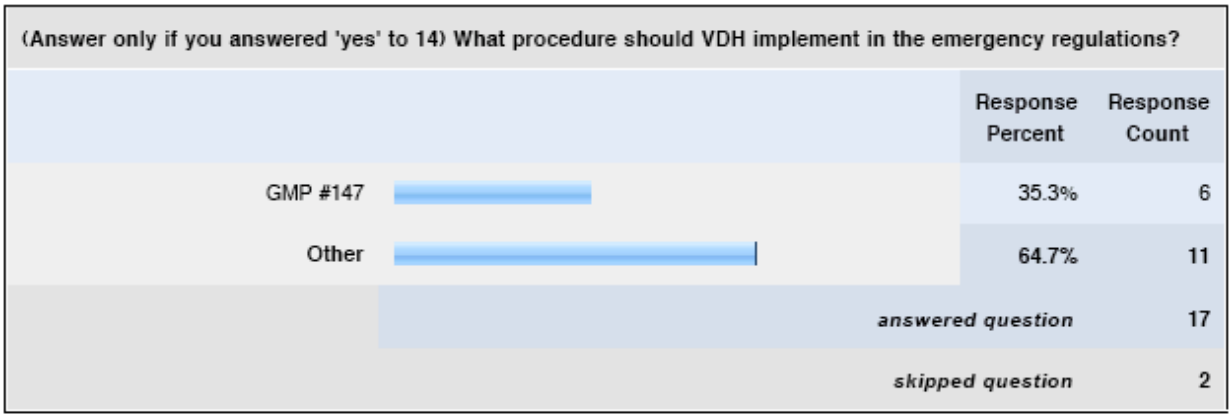
(Skip this question if you answered 'yes' to 14) Do you think VDH should allow private designers absolute freedom in choosing whether a particular treatment technology will meet the performance standards set in the emergency regulations?

	Response Percent	Response Count
Yes	100.0%	3
No	0.0%	0
I don't know	0.0%	0
Add comment as appropriate		3
answered question		3
skipped question		16

Add comment as appropriate		
1	I think including the term "absolute" is a prejudicial term. PE's should have the freedom to choose the treatment and dispersal technology used in the design of a treatment works.	Aug 12, 2009 6:26 PM
2	This is required by Va Code section 32.1-163.6	Aug 13, 2009 9:38 PM
3	They should have the freedom to choose a treatment approach that will meet the standards. But, this approach must be verifiable. They must demonstrate that their choice is in fact meeting the performance standards.	Aug 14, 2009 4:33 PM

Question 16

(Answer only if you answered 'yes' to 14) What procedure should VDH implement in the emergency regulations?



	Response Percent	Response Count
GMP #147	35.3%	6
Other	64.7%	11
answered question		17
skipped question		2

Other		
1	GMP 147 is fundamentally flawed.	Aug 12, 2009 6:26 PM
2	Something more meaningful and valuable than GMP#147....	Aug 13, 2009 5:20 AM
3	at a minimum	Aug 13, 2009 2:24 PM
4	Not sure. If GMP #147 is currently working, keep it.	Aug 13, 2009 3:50 PM
5	NSF 40 (BOD/TSS) and NSF 245 (Nitrogen) testing, at least.	Aug 13, 2009 6:50 PM
6	NOt familiar with GMP 147	Aug 13, 2009 7:25 PM
7	GMP #147 needs some modification	Aug 13, 2009 8:56 PM
8	I don't have a reply, yet.	Aug 13, 2009 9:41 PM
9	VIrginia Tech or NC State wastewater technology testing? Other 3rd party testing facility?	Aug 14, 2009 6:18 PM
10	.25 (Ksat)	Aug 14, 2009 9:31 PM
11	Monitoring and testing. Conventional or generally approved system reserve	Aug 17, 2009 6:30 PM

Question 17

Please list any additional topics that you feel have not been discussed but that are important given the scope of the committee's work. (Please list in order of priority)

	Response Count
	15
answered question	15
skipped question	4

	Response Text	
1	If performance-based approval of AOSS is retained, then performance bond must be posted to cover costs of system failure.	Aug 12, 2009 6:15 PM
2	Large Volume Systems Performance Requirements of Conveyance Systems	Aug 12, 2009 6:26 PM
3	Role of Regulators; What should be the cost of permitting? Purpose of regulatory review? Overall cost of permit requirements and process of getting a permit? Permit versus Registration? Is there a way to reduce the cost of meeting the requirements for getting the permit? What is the value of soil/site documentation when secondary or better treatment is used? Many other items...	Aug 13, 2009 5:20 AM
4	Can the new regulations be applied to existing AOSS? Should VDH work toward better performance in conventional drainfields?	Aug 13, 2009 2:24 PM
5	1. O&M requirements should be made retroactive for all previously installed alternative systems. (Grace period of six months or one year from effective date of regulation?) 2. Operators need limits on what they can and cannot do to "adjust" the system. If they are changing pump timing or other design parameters, do they need to consult with designing party? When would changes require new permit from VDH? It's not uncommon for an O&M provider to "tweak" the system until it's functioning to prevent frequent alarms, but these changes sometimes go beyond manufacturer guidelines and design specifications. 3. O&M provider should be required to obtain and keep a copy of all plans and permits for the systems they maintain. These should be made available through the health department without excessive paperwork requirements (FOIA forms, fees, etc.) Perhaps one copy should be mailed/emailed to the O&M contract holder at the time the operations permit is issued. Subsequent O&M providers would need to request a copy from VDH or property owner (who may or may not have it or know what needs to be included.)	Aug 13, 2009 3:50 PM
6	Does the group feel that engineered designs under § 32.1-163.6 should be allowed to discharge directly into the groundwater, as they are frequently permitted today?	Aug 13, 2009 6:50 PM
7	There is a lot of overlap between DEQ's programs and this onsite program for the large systems. It would be good to maintain some consistency between the programs so that operators and owners are not confused moving between the 2 regulatory agencies.	Aug 13, 2009 7:25 PM
8	1. Ammonia limit of 5 mg/l, with 10 mg/l on grab sample. 2. Systems for intermittent use.	Aug 13, 2009 8:56 PM

Question 17 continued

	Response Text	
9	I think that DEQ has a set of regulations for discharge permits that can be adapted for onsite systems. These regs and the format will be familiar to the operators, particularly for the larger systems. This includes the financial responsibility requirements.	Aug 13, 2009 9:38 PM
10	There should be a requirement for financial surety, performance bond or similar assurance from the developer or other responsible party. There is a requirement similar to this for the land application of biosolids. These are complex systems that can be very expensive to repair/replace, and often times the developer is long gone and the homeowner is left with the expense. Maybe this could be required just for systems that deviate from established prescriptive standards.	Aug 13, 2009 9:41 PM
11	All existing alternative systems should be subject to the emergency regulations.	Aug 14, 2009 4:56 PM
12	none	Aug 14, 2009 5:16 PM
13	Definitions: Secondary Effluent= 30mg/l TSS, 30gm/l BOD5, 30mg/l TKN ADVANCED (is this a bad word?)Secondary= 10mg/l TSS, 10mg/l BOD5, 10mg/l TKN Discussion: This is VA's current model for wastestrength design parameters (like it or not). It has been argued that soil does not recognize the difference between 30/30 and 10/10. This may be true, it may not be. But it IS absolute that 10/10 effluent contains 1/3rd of the ammount of constutuents than 30/30. Topics for discussion within the committee: '10/10 and 30/30 designs should utilize the same loading rate' 'Secondary effluent maintain 12" vertical standoff to limiting feature, Advanced secondary effluent maitain 6" vertical standoff to limiting feature.' More aggressive 'engineered' designs would require additional levels of treatment. This is more or less how designer/engineers are interpreting now anyway, so no surprizes. Simple and rational.	Aug 14, 2009 6:18 PM
14	Will alternative systems installed before emergency regulation take effect be required to meet O&M regulations?	Aug 17, 2009 6:30 PM
15	VDH Needs public input on larger systems	Aug 17, 2009 9:45 PM

Appendix 10 - Meeting Summary 4 – August 20, 2009

Meeting #4 of the Alternative Onsite Sewage Systems Emergency Regulation Ad Hoc Committee began with a review of the day's agenda. Facilitator Bruce Dotson then reminded the group that groups are almost never unanimous on all points. Rather, the group has to be practical about the issues and ask themselves if they can "live with" the proposal. He asked the members to ask themselves "if the Virginia Department of Health came out with regulations that followed these principles, could I live with it". He also pointed out that after considering each issue separately it is important to step back to evaluate the whole package of proposals. Someone may not agree on a particular proposal but overall find the package something they can support. It is also important that all members feel that the process has been fair and that all points of view have been heard in deciding to support the overall package.

The group then reviewed Meeting Summary #3 and was given the opportunity to comment on its contents. One member asked the question phrased under Topic 4 be changed to "if the emergency regulations were going to include prescriptive standards as well as performance standards, would performance standards have prescriptive, end of pipe standards or not". The group agreed to accept the meeting summary with the change.

A handout with the table of contents for the final report was given to the group at the beginning of the meeting. When the facilitators met with the Virginia Department of Health (VDH) to discuss how the four meetings would proceed, IEN thought the report could be written and brought to the group for their review by meeting #4. Over the course of the meetings it became apparent that all four meetings would be needed to discuss the three areas of Operation and Maintenance, Performance Standards, and Horizontal Setbacks. Following Meeting #4 the facilitators will write the report and distribute it to the committee members who will have a week to offer any comments. Comments received by the facilitators will be included in the final report's appendix. The Board of Health is meeting October 16 to address the emergency regulations.

A member of the committee said the accelerated time schedule gives him concern. Another member was concerned that if at the end of the public comment period the emergency regulations automatically went into the effect there would not be enough time to make changes based on public comments. It was also suggested that the Attorney General issue guidance on the legal effects of the emergency regulations and the time line.

Bob Hicks, Director of the Virginia Department of Health's Office of Environmental Services, thanked the group for their participation in the meetings. He told the group that when VDH drafts the emergency regulations for the Board of Health, they are looking at not only how the majority voted, but also the reasons why people didn't support the vote. Bob also encouraged the group to give feedback on the final report and stay a part of the process.

Between meetings #3 and #4 an online poll was distributed to the 24-committee members. The poll sought to gather more information from the committee on the topics they had been polled on during meeting #3. Additionally, members were asked to provide comments regarding topics

they did not get to discuss during the meetings. Bruce thanked the committee members for their participation in the poll. 19 out of 24 people completed the poll. The poll results were compiled and given to the group at the beginning of the meeting. The facilitator asked the group to go through the poll question by question; when appropriate discuss questions in more depth; have representatives from VDH provide input; and have members speak who would like to provide additional information for any question. The balance of the meeting went through each question.

Question 1: *How often should a licensed operator be mandated to visit a single-family system after the initial "first flush" visit?*

In the online poll, 12 out of 19 people supported mandating a licensed operator to visit a single-family system 12 months after the initial "first flush".

Bruce reminded the group that during meeting #3 the question was when the first flush visit gets made. The challenge for VDH is that they don't know when occupancy has occurred. Bruce asked Allen Knapp to give his input from the VDH perspective. Allen advised going with the operating permit date for the sake of simplicity. Allen said if there's a better way to do it for the regulations then that can be implemented. He is concerned about VDH being able to determine when someone moves into a house.

A member asked if this would apply to existing systems. Allen said the group should provide their input on whether the regulation would affect existing systems. The facilitator recorded the question for the group to return to later in the meeting. A member said it would be a conflict of interest if the same person selling a system was also maintaining the system and filing reports with VDH.

A straw poll was taking on whether the committee could live with the first flush visit being required within six months of operating permit issuance and then after that a 12-month interval.
19 people said they could live with it
1 did not

Question 2: *How often should a licensed operator be mandated to visit a non single-family system?*

In the online poll, 11 out of 19 people supported licensed operators being mandated to visit a non single-family more often than a single-family system – based on a formula that takes into account flow, total land area (project area), and other factors such as proximity to sensitive environments or other natural features ("risk based approach").

Allen asked the group what parameters are used in a risk based analysis. He suggested putting a matrix in the regulations that was similar to the Department of Environmental Quality's (DEQ) approach which would consider flow and flow concentrations (density). A handout from Marcia Degen and Merle Fallon regarding recommendations for large (non single-family) systems was given to the group for their review. The purpose of their proposal is to make the VDH

regulations as similar as possible to the existing DEQ regulations for consistency and ease of use. This is an idea that VDH also supports.

A member suggested VDH require a closure plan as a financial guarantee to be able to maintain a non single-family system in the event the owner abandons the system or is no longer to afford the performance requirements or monitoring requirements. The facilitator recorded the question for the group to return to later in the meeting.

The facilitator proposed a modification to question 2. The group was asked if without proposing time periods now, could they could live with the concept of a flow based and land based (density) approach.
19 people said they could live with it
1 did not

Question 3: *When should it be mandated that a report be filed with the Virginia Department of Health?*

In the online poll, 16 out of 19 people supported all mandated visits to single-family systems require a report, plus if during any non-mandated visit a "reportable incident" is encountered, a report must also be filed. 14 out of 19 people supported the same for a non single-family system.

A committee member mentioned again this could be a case of asking the fox to watch the hen house, a conflict of interest if the same operator is installing, maintaining and filing reports on a system they designed. The member said the operator may not want to have a negative report about their system.

Merle and Marcia's proposal also addressed the timeframe that a report has to be filed. They suggested having the same requirement for VDH as DEQ, the 10th of the month following when the visit took place.

Allen was asked what VDH will do with the reports, and he responded that in the beginning they will be looking to see if the reports are coming in. If a report isn't coming in VDH will focus on having people get their systems visited by an operator. Then over time VDH can grow the complexity of the program.

The facilitator asked the group if they could live with the requirement of reporting at all mandated visits plus those with a reportable incident, and requiring the reports to be filed on the 10th of the following month from when the visit took place. This would apply to both single-family systems and non single-family systems.
19 people said they could live with it
1 did not

Question 4: *Should the report include notation of maintenance work that is needed?*

In the online poll,16 out of 19 people supported including in the report notation of maintenance work that is need. A member stated if maintenance is needed the operator should speak to the homeowner, but when doing a regulatory report to the Health Department a system is either compliant or non compliant. Another member expressed concern over information overload and stressed the need to keep the reporting simple.

Another member said they voted yes on the question because they didn't view it as a compliance non-compliance issue but rather as a comment section on the report to record what needs to be done. They said the comment section could also provide valuable information for the agency in the future. Other members said more information is needed on why systems are failing – are they being used according to the specifications? Additionally, information is needed to see if certain systems are consistently having problems. Also mentioned was the benefit for a new operator on an existing system of being able to read the notes.

The facilitator asked the group if they could live with the report including notation of maintenance work that is needed.
15 said they could live with it
5 did not

Question 5: *What should be included in a performance assessment?(allowed multiple responses)*

In the online poll, 18 out of 19 people supported visual /observation and 13 out of 19 people supported including field testing in a performance assessment of a single-family system.

On non single-family systems, 18 out of 19 people supported visual/observations; 16 out of 19 people supported field testing; and 16 out of 19 supported lab testing in a performance assessment.

A member encouraged the use of lab testing for systems seeking statewide approval. Another member expressed concern over the consequences for non-compliance. A member also said just because this is hard doesn't mean we need to go back too far. Other members said field testing is neither time consuming nor expensive, but could provide the Health Department with valuable information. Additionally, field testing could lead to lab testing. Another member was concerned with the components of field testing, but not against field testing all together.

The facilitator asked the group if they could live with visual and field testing for single-family systems, and visual, field, and lab testing for non single-family systems.
18 people said they could live with it
2 did not

Question 6: *What should be measured to determine whether a system meets the performance requirements?*

In the online poll, 12 out of 19 people supported BOD and TSS; 11 out of 19 people supported Fecal Coliform; 10 out of 19 supported total nitrogen; and 15 out of 19 people suggested

qualitative/ narrative standards for measuring to determine whether a single-family system meets performance requirements.

For non single-family systems, 17 out of 19 people supported BOD; 16 out of 19 people supported TSS and Fecal Coliform; 15 out of 19 people supported total nitrogen; and 12 out of 19 people supported qualitative/ narrative standards.

A member asked if the testing would apply to systems that had been tested in the past. Another member said they hope the committee recommends that this apply across the board to all existing systems.

Allen addressed the topic of sampling and test data for systems seeking approval into the state, a topic that had been brought up previously in the meeting, and the state already has a procedure for this. On the question of requiring lab sampling for every single-family systems he said he is against it, but thinks there is value in sampling the population of systems in some fashion for the purpose of field verification of performance.

The facilitator asked the group to vote on whether they could live with requiring single-family systems to test BOD, TSS, Fecal Coliform, total nitrogen, and qualitative/narrative standards to determine whether the system meets performance standards.
5 people said they could live with it
15 did not

Then the group was asked if they could live with requiring all non single-family systems to test BOD, TSS, Fecal Coliform, total nitrogen, and qualitative/narrative standards to determine whether the system meets performance standards.
16 people said they could live with it
4 did not

Question 7: *What should happen at the time of sale of a single-family home using an alternative septic system? (allowed multiple responses)*

In the online poll, 13 out of 19 people supported recording in Land Record/Grantor Index & deed. 11 out of 19 people supported amending the residential property disclosure act to require the seller to disclose the function and state of the property's alternative septic system. 10 out of 19 people supported a renewable operating permit that must be renewed every 5 years or at time of sale.

Allen told the group amending the Residential Disclosure Act is outside the purview of the Health Department, although the department does have the opportunity to propose amendments. A group member said a valid operating permit is required for almost all loans and this would create a problem if permits expired at the time of sale. Additionally, realtor education could be combined with the Residential Disclosure Act. Another member was concerned that renewable operating permits would be too cumbersome. Another member said from an awareness standpoint, having the permit renewed at every time of sale could help inform the homeowner

about the system. Another member asked if the Health Department would be able to track when a house was sold to know when a permit should be issued. Allen said there isn't statewide capability right now, but would have to be the local health department. Members of the committee from local Health Department were asked if they thought the counties they work in could keep track of when a house was sold to know when a permit should be issued. The members responded that some would be able to while others would not. Another member said the state has information on all alternative systems and has to ensure all systems are operating properly. Therefore they will know when a system hasn't had a visit by a licensed operator. Another member asked if there was a different mechanism for making sure homeowners understand what they own.

The facilitator asked the group if they could live with the emergency regulations including a requirement for a renewable operating permit that must be renewed every 5 years or at time of sale.
5 people said they could live with it
15 did not

Question 8: *Should failsafe capability be required in all new alternative septic systems?*

In the online poll, 11 out of 19 people said failsafe capability should not be required in all new single-family alternative septic systems. 10 out of 19 people said failsafe capability should be required in all new non single-family alternative septic systems.

A member defined failsafe for the group saying there are different ways to get there, but the idea is to not have partially treated effluent moving forward in the system. A member was worried that an absolutely failsafe system is not possible. Another member said problems could be caught during maintenance visits.

The facilitator asked the group if they could live with the emergency regulations requiring failsafe capability in all new alternative septic systems.
7 people said they could live with it
13 did not

Question 9: *How many treatment levels should the emergency regulations establish?* (Questions 9 & 10 were addressed together)

In the online poll, 10 out of 19 people supported two treatment levels for single-family systems. 7 out of 19 people supported three treatment levels and 5 out of 19 people supported two treatment levels for non single-family systems.

Question 10: *Do you agree the emergency regulations should establish prescriptive relationships between the quality of effluent applied to the soil and the loading rates (typically hydraulic and organic) used by designers?*

In the online poll, 14 out of 19 people agreed the emergency regulations should establish prescriptive relationships between the quality of effluent applied to the soil and the loading rates for single-family systems.

For non single-family systems, 15 out of 19 people agreed the emergency regulations should establish prescriptive relationships between the quality of effluent applied to the soil and the load rates.

Allen shared a handout he prepared that offered one alternative approach. This was not an idea that had been aired previously but is one that VDH has been working on for some time. It relates treatment level, loading rates, vertical separation and specified performance standards. There were a number of clarification questions about the new approach which seemed to have good potential to provide both flexibility and prescriptive results at the same time.

Since this was a new proposition for the group and they didn't have much time to review it, the facilitator asked the group to vote whether the proposal by Allen was potentially promising or potentially troubling.
14 people said the proposal was potentially promising
4 people said the proposal was potentially troubling
Note: at this point in the meeting, two members had to leave so that the totals are now smaller

The facilitator asked those who voted it was potentially troubling to explain their concerns. One member said they felt this proposal was mixing conventional and alternative standards, although they said they weren't sure they understood it. Another was concerned about merging prescriptive requirements and engineered designs. Another member was concerned the design requirements would impact land use decisions.

Question 11: *Should the emergency regulations require all engineered designs under §32.1-163.6 to comply with all horizontal setbacks contained in the Board of Health's Regulations?* (Questions 11, 12 & 13 were addressed together)

In the online poll, 9 out of 19 people answered yes while 8 out of 19 people answered no.

Allen explained GMP 146 has set aside four horizontal separations that are critical, and then asked if any more should be added to the list. Allen then clarified this question is only for engineered systems. A member noted it was peculiar a homeowner's own drinking water is not included on the list of four. Another member responded the homeowner has control over the operation since it is on their property. Another member said we are obligated to protect people from themselves.

The facilitator noted an additional question has come out of the conversation regarding whether all wells should be included on the list where setbacks could not be changed for an engineer designed system.
15 people said they could live with it
4 did not

A member suggested adding all natural water bodies to the list. A poll was taken on how many people could live with adding natural water bodies to the list where setbacks could not be changed for an engineer designed system.
12 people said they could live with it
6 did not

*(*Questions 14, 15 & 16 were addressed together) **Question 14:** *Should VDH have a procedure in the emergency regulations that requires manufactures to verify treatment efficacy before being allowed for use in Virginia*

In the online poll, 15 out of 18 people supported having a procedure in the emergency regulations that requires manufactures to verify treatment efficacy before being allowed for use in Virginia.

The facilitator asked the people who voted no to explain their concerns. One member said it would be resource intensive. Another member said Virginia should get out of testing. Another member suggested the state put resources into auditing existing systems.

The facilitator asked the group if they could live with Virginia having a program to verify treatment efficacy that would be Virginia's own program.
16 people said they could live with it
2 did not

At this point, having completed the list of topics on the online poll, the facilitator asked participants to step back from the individual propositions that had been addressed above and to focus on the overall package.

The facilitator then asked the group if they could live with the overall package.
17 people said they could live with it
1 did not

Several issues had been placed "in the parking lot" earlier in the meeting and attention then turned to these topics.

The facilitator then asked the group if the regulations should apply to existing systems. A member said certain things like inspections and reporting procedures shouldn't be grandfathered. Once systems are in the ground systems and might not meet the new standards, applying new rules might put a burden on homeowners to dig up their systems. Another member said inspections should be required on all systems. Another two member said no grandfathering maintenance and monitoring.

The facilitator asked the group if they could live with the emergency regulations contained a requirement that would apply retroactively to existing alternative systems (includes

inspection and maintenance, but not in ground mechanical part replacement nor performance standards).
16 said they could live with it
2 did not

The facilitator then brought up another parking lot issue, the concept of a closure plan for non single-family systems. A member said the closure plan and financial security ensures continuity of performance. Allen said VDH has explored this to some detail and that it is not an easy issue. One member suggested the operator could potentially be the holder of that bond that they operate as a utility. One member said the developer should not hold the bond. Another member suggested this should be addressed in the regulation rather than the emergency regulation. A vote was not taken on this topic.

Next steps
Facilitators will prepare the final report and distribute to the committee members. Committee members will have one week to submit any comments which will be attached in an appendix.

Appendix 11 - Comments received from committee members in response to this report

Comments from Ted McCormack, Virginia Association of Counties

While the 95 members of the Virginia Association of Counties (VACo) recognize that Alternative On Site Sewage Systems (AOSS) can be effective tools to address the failure of septic systems or to treat effluent in environmentally sensitive areas, the proper installation and regular maintenance of those systems is vital to protect public health and the environment.

In the past, some counties in the faster growing regions of the Commonwealth experienced problems with the failure of the alternative systems due to a) improper installation, b) faulty operation, or c) inadequate maintenance by homeowners. To address such issues, those counties adopted their own requirements for AOSS. Other counties, concerned about the impact of the failure of AOSS on surface or groundwater resources or the Chesapeake Bay, followed suit.

The adoption of state licensing of AOSS installers in July 2009 will help remove one area of concern to counties. Of greater moment, however, is the future pre-emption of all local oversight of AOSS upon the adoption of final operations and maintenance regulations by the Board of Health. Since it is expected that the emergency regulations will be a basis for the final regulations, it is important to counties that the emergency rules ensure that AOSS will be operated and maintained in a manner that protects the public health and the environment.

Toward that end, VACo fully supports all of the "Areas of Agreement" contained in the Facilitator's Final Report dated August 31, 2009.

In addition, VACo offers the following comments to be included with the final report:

Renewable Operating Permits – VACo recommends that all AOSS operating permits be renewed every five years. Currently, once an AOSS operation permit is issued by local health departments, that permit is good forever, unless there is some sort of violation of the permit conditions. If it is the goal to make Virginia Department of Health (VDH) AOSS requirements consistent with Department of Environmental Quality permits for ease of administration, then an expiration date of five years on the VDH permit would afford local health departments the opportunity to follow up on the system and ensure that it is still working properly years later.

Reportable Incident – VACo recommends that the affected local government be notified in writing as soon as possible when a reportable incident, as to be defined in the regulations, occurs. Because the failure of an AOSS has a greater potential of impacting surface and groundwater resources than traditional septic systems, it is important that the affected locality be notified promptly of those incidents and the steps taken to correct the identified problem.

Financial Assurance – VACo recommends that, at a minimum, all non-single-family AOSS have financial assurance to ensure continuity of system performance. Often the operation of community AOSS falls to homeowner associations that let the financial obligation to operate and maintain properly those facilities lapse over time. Once that occurs, affected residents bring political pressure to bear on local elected officials to have the locality assume the operation of the community system. Local officials are then confronted with the unenviable choice of assuming responsibility for the community AOSS in order to protect public health and the environment.

Disclosure – VACo recommends that the emergency and final regulations require disclosure at the time of sale of any property the presence of any existing AOSS and identify by reference the applicable operations and maintenance regulations for each component of the system. The current requirement that the presence of such systems be recorded with the deed of trust is not sufficient notification to prospective property owners.

Program Funding – VACo recommends the administrative fees be increased to cover the costs of administering the new AOSS operation and maintenance emergency and final regulations. This fee increase takes on greater significance in light of recent budget cuts that have significantly reduced staffing at local health departments as well as the prospect of even more cutbacks in the near future. Additionally, VACo supports expansion of the existing AOSS indemnification fund to allow innocent homeowners to draw upon the fund in the event of AOSS failures when no other recourse is available.

In closing, VACo is appreciative of the opportunity to have one of its staff members serve on the Alternative On Site Sewage Systems Emergency Regulations Ad Hoc Committee and to comment on the final report of that body.

Comments by Anish Jantrania

Regulations that create unequal (non-uniform) requirements for operation, maintenance, and monitoring will have adverse impact on a long-term basis. For example, not requiring effluent quality sampling and lab analysis for treatment units installed at individual homes while requiring the same for treatment units installed to serve a group of homes WILL send the wrong signals to the designers and mainly to land developers.

How can a regulatory program ensure that the effluent quality meets permit requirements without on going monitoring of it? If effluent quality sampling is not required for single home treatment unit then it must not be required for the treatment plant serving a group of homes. If effluent quality sampling is required for large treatment plants then it MUST be required for single home systems. Use the table that I have proposed for sampling frequency for all size of treatment plants.

Requiring absolute prescriptive design standards for engineer design system defeats the main purpose of performance-based permits for large (non single family home) permits. I strongly suggest that for large community systems the performance-based regulation first defines the performance requirements and then specifies the methods for performance validation on an ongoing basis and lets the engineer design the system that is appropriate for a given site condition. Forcing engineers to meet predefined design standards for large effluent disposal system is one of the biggest regulatory problem that needs to be solved.

Comments from Jeff Gore, Loudon County/Coalition of High Growth Communities

The following comments address the few areas where I feel the report did not quite capture the sentiments of the committee, and on some issues that warrant further consideration despite not being included in the consensus recommendations.

1. **Laboratory testing for single family systems.** Laboratory test should be required of single family AOSS if field testing and visual inspections indicate a problem that warrants more comprehensive testing. The final report indicates consensus on requiring field and visual tests for single family systems, but is silent whether or not there would be any scenario under which further, laboratory testing should be required. Support for defining events or conditions that would trigger laboratory testing for these systems was expressed by committee members.

2. **Renewable Permits.** In the online survey, the majority of committee members favored renewable operational permits with a five-year expiration date by a vote of 10-9. The Virginia Department of Health staff and others asserted that a renewable permit would be administratively cumbersome; yet, systems permitted by the Virginia Department for Environmental Quality must be renewed, and are not "lifetime" permits. This topic deserves further discussion, and should not be removed from consideration for inclusion in the emergency or final regulations by the Health Department.

3. **Financial assurance.** The report indicates that no agreement was reached on whether or not to require the posting of a maintenance or performance bond, or some other form of financial surety to cover the costs of eventual failure or replacement of large, community AOSS systems. It was my impression, however, that there was clearly general agreement among all committee members that such a requirement made sense and should be part of the group recommendations, even if no formal vote was taken on the matter. The emergency and final regulations should at the very least contain such a requirement for large AOSS systems, and such a requirement should be considered for systems serving individual residences as well.

4. **Operator reports.** The report indicates that there was no consensus on whether or not routine operator reports should contain information on required or suggested maintenance. However, the committee vote was 16-3 in favor of such a requirement; therefore this should be a committee recommendation. Such information would not only serve to inform homeowners of system requirements and encourage preventive maintenance, but it would also give the state and local

health departments a wealth of data that could be used to further study the performance of the various approved systems across the state.

5. **Residential property disclosure.** Eleven out of 19 committee members voted in favor of amending the property disclosure statutes to require the existence of an AOSS to be disclosed as a part of a real estate sales transaction. It was pointed out that Realtors would resist such efforts. Nonetheless, it should be an official committee recommendation of the committee. It was also suggested that the mortgage industry will take care of this issue by requiring inspections of AOSS as a part of property sale transactions, yet this has not been researched or confirmed. The Health Department should research this matter with the mortgage industry and develop an outreach program to Virginia Realtors.

6. **Fees.** Even though there was not much discussion of this topic, the current fees imposed by the Health Department are woefully inadequate to cover the costs of administering this new operation and maintenance program, especially in light of recent budget and staff reductions in the Department. The $75.00 operating permit fee and the $1.00 operator report fees should be revisited by the Department and increased under applicable regulatory authority. In addition, the existing AOSS indemnification fund should be broadened to provide a source of funds for innocent homeowners to draw upon in the event of system failures when no recourse is available or successful against the developer, homebuilder, installer, operator or other responsible party.

I hope these comments are helpful as this process moves forward towards adoption of emergency and eventual final regulations. Loudoun County and the Coalition of High Growth Communities appreciate the opportunity to be represented on the Ad Hoc Committee. We look forward to continued participation in this important effort to develop a model Alternative Onsite Sewage System program that will protects the public health and environment.