

2013 Evaluation of the Effectiveness of Chapter 246-272A WAC, On-Site Sewage Systems

November 2013



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Evaluation the Effectiveness of Chapter 246-272A WAC, On-Site Sewage Systems

Introduction

The State Board of Health's rule for on-site sewage systems, Chapter 246-272A WAC, requires the Washington State Department of Health (department) to review the chapter every four years to evaluate its effectiveness and determine areas where revisions may be needed. The rule was adopted in 2005 and the department completed its first evaluation in 2009.

This evaluation used three methods to gather feedback on the rules from our partners and stakeholders. In addition, the department conducted an internal review. We administered the same online survey used in 2009 to solicit feedback from local health jurisdictions (LHJs) (results are listed in Appendix A). We also convened a meeting with the department's on-site wastewater technical advisory group (TAG) (attendees listed in Appendix B) and facilitated a one-day discussion with a review panel of key stakeholders (review panel members listed in Appendix C) to get additional feedback on the rule's effectiveness. A summary of the responses from each method is available in the respective appendices.

Replicating the 2009 online survey allowed the department to compare LHJ responses and changes in views over the four years. We invited all LHJs to participate in the survey and followed up with those who did not respond to the initial email request. We ultimately received feedback from all 35 LHJs. We combined the feedback from the LHJs, TAG, and rule review panel with an internal review by the department to develop this report. The survey responses, a summary of TAG recommendations, and the review panel discussion and recommendations are included in Appendix A, B, and C, respectively. The companion briefing on the findings and recommendations to the State Board of Health is included as Appendix D.

Discussion

More than one in four homes in Washington State is served by a small on-site sewage system. The environmental conditions, population densities, and use of the systems vary greatly. The variation in local conditions results in differences of opinions at the local level. Each LHJ has a unique view of how the rule works in their jurisdiction. Chapter 246-272A WAC was written with the intent that some LHJs would need to address local conditions by adopting their own rules while others would find state rules sufficient to protect the public health in their jurisdiction.

The responses from the LHJ survey as well as the TAG and rule review panel discussions documented a wide range of opinions related to how effective the rules are at the local level. The range of opinions is to be expected when a state-wide rule is applied to varying conditions and regulatory needs at the local level. To help us understand changes at the local health department level, we compared survey responses from the 2009 and 2013 surveys.

Comparison of 2009 & 2013 LHJ Rule Surveys

When comparing evaluation survey data from 2009 with 2013 data, there are changes in responses to all the questions posed. While there is growing interest in updating aspects of the rule, the majority of responses continue to indicate that “no” to “slight” revisions are needed at this time. When asked if the minimum requirements meet the intention of the rule, 94% in 2009 and 91% in 2013 responded that “no” to “slight” revisions were needed.

Echoing feedback received from the TAG and the rule review panel, design requirements is the one section with the most interest in revising the rule. Responses that “no” to “slight” revisions were needed went from 97% in 2009 to 76% in 2013. In the remaining areas of system location, installation, operation, maintenance, and monitoring, the majority of responses continue to indicate that “no” to “slight” revisions are needed at this time.

Survey Response Indicating “No” to “Slight” Revision Needed

	2009	2013
Design	97%	76%
Location	94%	91%
Installation	97%	85%
Operation	91%	79%
Maintenance	83%	79%
Monitoring	82%	79%

Note: Decreasing percentages for these response categories reflect the overall increasing interest in revising the rules.

Key Issues Identified

The department used the rule evaluation process to gather feedback from our partners and stakeholders. Using the feedback we received, together with our internal review, we identified the following three key issues impacting the implementation of the rules.

1. Proprietary treatment product testing requirements
2. Application of treatment levels
3. Minimum land area requirements

1. Proprietary treatment product testing requirements

The rule's testing protocol for proprietary treatment products requires a six month evaluation in controlled conditions at a properly accredited testing facility. Although the tests evaluate and verify product performance under the requirements of the protocols, they do not provide a good understanding of long-term product performance capabilities under real-world conditions. The rule does not provide allowance for testing protocols related to long-term performance of on-site sewage systems nor does it require any follow-up testing.

All ten members of the rule review panel indicated that issues related to treatment products, long-term field performance, and verification and correction of sub-standard performance should be addressed in rule-making (Appendix C). We also received comments expressing concern with field performance of treatment products in the LHJ survey responses as well as in the TAG meeting (Appendices A and B).

2. Application of treatment levels

On-site sewage system treatment levels requirements are listed in WAC 246-272A-0230, Table VI and WAC 246-272A-0280, Table IX of the rule to apply appropriate levels of treatment to address different site risks. These tables help match treatment components, distribution methods, and site and soil conditions to ensure adequate treatment is achieved to protect public health. The evaluation identified problems with the treatment levels and soil types and conditions established in Tables VI and IX of the WAC and the need to reevaluate the effluent treatment requirements and corresponding soil treatment capabilities to ensure effective treatment. Since the last rule revision in 2005, additional studies on soil treatment and risk-based methods have been completed that can help us more accurately match treatment levels with the range of site characteristics that exist throughout the state.

3. Minimum land area requirements

The land area requirement in WAC 246-272A-0320(2)(d)(ii)(A) establishes a minimum lot size of 12,500 square feet per single family home for developments with public water supplies. As written, it is unclear whether the minimum lot size must be applied to developments with community off-site drainfields or if it should be applied strictly to drainfields located on the same lots where the sewage is generated.

A second land area requirement that needs clarification is the provision in WAC 246-272A-0320(5)(e) that allows the local health officer to permit the installation of an on-site sewage system where minimum land area requirements or lot sizes cannot be met. A proposed development may meet all of the criteria in this subsection for the local health officer to permit the installation of an OSS on a legal lot of record that is substantially smaller than the minimum 12,500 square lot size. The problem arises when the land area for the development is insufficient

to minimize public health effects or risks from the accumulation of contaminants in surface or ground water. Local health officers identified the lack of clarity for what is allowed as a confusing problem because of the confusion created by not having a clear minimum lot size requirement.

Conclusions

Our evaluation of chapter 246-272A WAC considered the responses to the LHJ survey and the TAG and rule review panel discussions, together with information gathered within the department. While a comparison of 2009 and 2013 survey results show growing interest in updating aspects of the rule, the majority of responses continue to indicate that “no” to ‘slight’ revisions are needed at this time. The evaluation resulted in identification of three key issues and a number of smaller issues that need to be addressed through rule-making. However, the feedback from this evaluation is not compelling enough to offset the cost of rule-making.

Recommendations

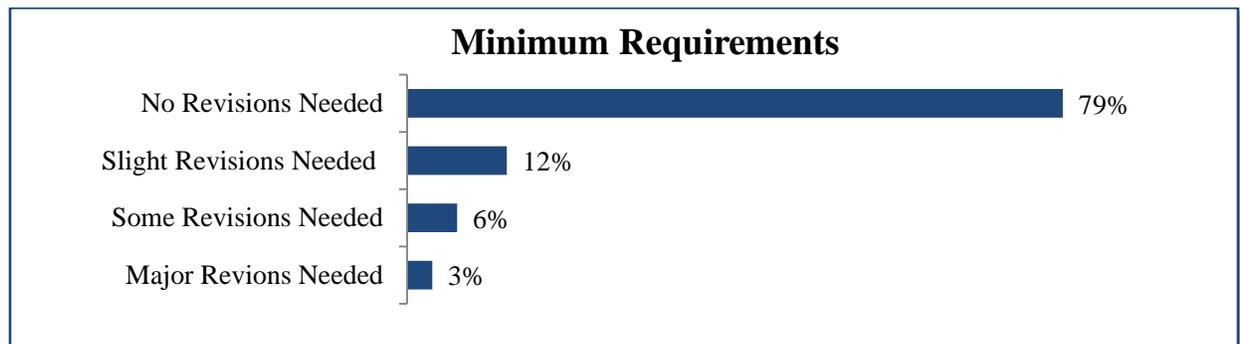
We recommend that the Board retain the existing rules and the department implement the following steps:

- Research and clarify technical aspects of the three areas identified in the rule that need revision, and provide guidance to clarify the intent and application of the rule requirements.
- Continue to provide technical assistance, monitor inquiries for new or recurring topics, and target our technical support activity as needed.
- Continue to develop and assist at the national level in preparing standards for evaluating new technologies.
- Continue to track rule issues and future need to revise the rules.

Appendix A – Local Health Jurisdiction Survey Responses

All local health jurisdictions responded to the survey. For each question, responders were asked to rank the amount of revision they felt was needed in the rule in order to adequately address the given task, from “no revision needed” to “major revision needed”. Below each question is a graph that summarizes the ranking responses for that question. Individual comments are listed below each graph.

Question: Do the minimum requirements meet the intention of the rule?



We have our own on-site regulations in King County. In many cases, our regulations are more stringent than the WAC.

In some respects, they are overkill in protecting public health. Pretreatment requirements are excessive and not supported by the realities found in the field.

I think the rules provide sufficient guidance so that LHJs can create programs to meet the intent of the rule. The Board of Health needs to determine whether the programs adopted and implemented across the state are sufficient to meet the intent of the rules.

Need some reference to when you need an onsite septic system and need some reference to wastewater shall not be discharged to surface water or upon the surface of the ground. In a previous version of the rule there was a straight forward statement regarding Sewage from any on-site sewage system shall not be discharged to surface water or upon the surface of the ground. This was removed but it actually was not clear enough because it references sewage from an onsite sewage system and that does not address the sites that are discharging that DO NOT have any system at all. In our local code we have a section called Adequate Sewage Disposal Required and it seems that there should be some similar basic reference in the state code as well. JCC 8.15.060 (1) Every residence, place of business, or other building or place where people congregate, reside or are employed shall be connected to an approved public sewer. If no public sewer is available, the building sewer shall be connected to an on-site sewage system approved by the Health Officer. Said sewage disposal system shall be built or rebuilt, constructed and maintained in such manner as to meet the requirements as prescribed by the Health Officer in

accordance with minimum requirements and standards of WAC 246-272A and this code. Such system may include the use of waterless toilet devices in conjunction with an approved gray water system or other proprietary products approved by Washington State Department of Health. It is a very high bar to argue with someone if we have to prove that what they are doing is having an adverse effect to public health.

Clarifications needed

There are many bodies of water other than Puget Sound that are being significantly impacted by OSS how about protecting them all. Why isn't DOH providing education to the inspectors in the State? WOSSA is fine for installers, but they have zero classes that benefit a regulator who has been in the position for more than a year. There have been a few, but there needs to be a more concerted effort by DOH.

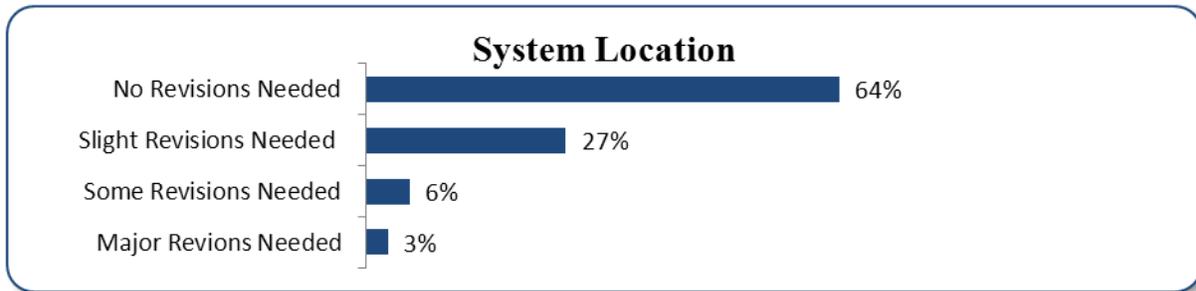
I believe vertical separation requirements for septic systems should be re-evaluated. 36" vertical separation for gravity systems is drastic. Since doing regulatory work for 20 years, I'm not sure that the increased vertical separation is warranted.

The additional cost, maintenance, continuing operation and viability of alternative systems do not support the change.

It is beneficial to the local health that state rules be created with a focus on the "minimum" of minimum requirements.

Solving a non-statewide issue with a state rule can be restrictive to local health. It is often best to allow local health to resolve local issues locally (over-use of the word local was intentional, apologies for all other poor grammar). Guidance and suggestions for these solutions can be provided through the RS&Gs.

Question: Do the rules effectively regulate the system location?



More latitude needed to for local hydrology/topography/geology/climatology etc.

Address some locational standards such as setbacks to geothermal borings, better definition of surface water to help define appropriate setbacks, address floodplains with OSS placement, setbacks to stormwater control devices

Problems with Table IV

1-lack of a setback between upgradient interceptor, curtain drains, foundation drains, drainage ditches, other features that may allow effluent to surface to sewage tank, d-box or non-perforated sewer lines. While in the ideal world these components are water tight we clearly do not exist in an ideal world pipes are poorly glued, crack, settle, grout cracks, is degraded by gases, tanks crack and settle, connections leak, etc. Even with monitoring annually or every 3 years many of the items above would not be observed because the discharge would be to a feature that either drains off site or to ground water. A minimum of a 2 5 setback would be appropriate. Relying on water quality sampling at some time in the future is not an adequate response.

2-lack of a setback to a property line. Precise property lines are often not known and there are a number of ground disturbing activities that occur along property lines such as fence building. Suggest 2.

3- Need to deal with setbacks to storm water facilities, both the impact of placing infiltration trenches/pits 10 upgradient of the drainfield resulting in potential hydraulic overloading, and from the OSS to ground or surface waters. 0210 (6) the reference should be to the most recent criteria for sewage works

The minimum lot sizes specified should be defined as the minimum lot sizes allowed period. We continue to have to justify why under sized lots may not utilize an OSS and the WAC, while specifying minimum lot sizes, has allowances for lots that would otherwise be too small. This creates issues where owners feel that they can install an OSS when in reality they should not.

Clarifications needed

See below.

There has been a study done in Wisconsin "Septic System Density and Infectious Diarrhea in a Defined Population" that links the density of septic systems to childhood visits to the ER for diarrhea. How about some change in monitoring and/or treatment levels for increased density areas? The study was found here: VOLUME 111 | NUMBER 5 | May 2003 Environmental Health Perspectives

Surface water types may be able to be better defined in regards to setbacks (road ditch vs. drainage ditch vs. culverted water vs. irrigation ditch vs. creek etc.)

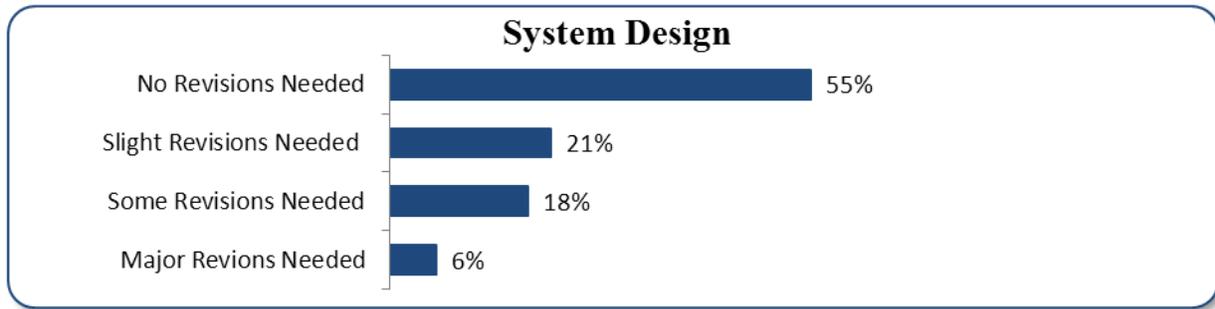
Maybe add some content to Soil and site evaluation section that states that professional engineers/designers performing soil evaluations shall have some basic background, education or training in soils to perform the soil evaluation.

Table nine repair is hard to deal with. Not allowing disinfection limits our option. How much more effective is disinfection units? We have a lot of disinfection units in the field that are not being maintained. We need to know if the UV is needed or does the unit knock down the pathogens enough to protect public health when 12 inches of soil is present?

The setbacks between OSS and stormwater infiltration systems in WAC 246-272A and Ecology's stormwater manual are not consistent with each other. OSS regs require minimum setback of 10 feet; Ecology manual stipulates a 100 feet setback in Section 4.3.1 of Volume V.

Section 280 Repair of failures, Table IX: should have a caveat for those site conditions with less than 25' horizontal separation and less than 12" inches vertical separation such that the health officer along with the designer has the discretion to determine the feasibility of installing a sewage system under these circumstances.

Question: Do the rules effectively regulate the system design?



Lincoln County has no certified designers and very few Engineers that are willing to travel here to do design work so additional requirements, such as requiring designers or engineers on all systems would be cost prohibitive or a burden on the homeowner.

At some point in time, the lack of effectiveness of UV disinfection must be addressed. Also, DOH needs to spend more time training LHJ's on newly approved technologies. We continue to have new technologies approved at the State level, but with little idea on how these systems will work in the long-term (see UV comments above). The LHJ's then must try on a county-by-county basis how to make the bugs work. My guess is that there is a lot of differences on how the newer technology systems, especially the proprietary systems are being reviewed in each county. Perhaps the NSF testing model (ideal conditions especially with ATU's) needs to be re-examined as this does not represent the real world.

See comment above (#3).

Streamline treatment level standards to eliminate TLC, address waivers on existing lots of record (Griffin vs. Thurston Co BOH issue), update ST1 exemption criteria, access at grade for all systems, update definition of expansion, define filter fabric specifications, Need to review treatment system performance level (e.g. A, B, C, etc...) requirements particularly the use of disinfection units to meet the fecal coliform levels. Not sure the added cost/maintenance issues surrounding these units justify the added level of treatment.

0230 (2) (d) and (e) 1- Further discuss the issue of rooms being used as bedrooms, look at developing a definition of bedroom/sleeping room. 2- add something about evaluating wastes from non-typical residential sources such as RV wastes, multifamily, multiple kitchens, surges. Maybe anything that is not a single family residence should be designed at 150% similar to commercial.

0230 (2) (f)/(g) Have a conversation about the idea of using cubic feet of soil in addition to a minimum vertical separation of 1. For example-could you put in double the amount of pressurized system and reduce to 1 of vertical sep., for 2 bedroom, .6 ap rate = 400 square feet underlain by 2 of vert. Sep X 400 = 800 cubic feet of soil. To get to the same cubic feet of

treatment media if you had only 1 of vertical sep. you would need 800 square of trench. This may be an economic issue, not technical and I can see it getting very complicated but think its worth having the conversation 0230 (5) The local health officer may approve a design Remove the reference to a design. What if the design is no longer approvable 20-35 years from now???

We should not be approving a design for the reserve area today for some point in the future. This section should have a statement that the reserve area shall meet code at the time of application for installation. Please don't imply otherwise.

Why don't we have a section in system design for pump chambers? Need the basics of minimum sizing, issue of grinder pumps and adequate settling, etc. This shouldn't only be located in a guideline as we have many conventional gravity systems that use a pump to get the wastewater to the field.

0234 (3) (a) Why is there a maximum of 10 depth?? If we are using sand lining to get to deeper adequately drained and unsaturated soils why the limit of 10? Are we misunderstanding something here?

0234 (3)(c) Could there be a statement about the desirability of minimizing the width of the bed? Maximizing oxygen transport? We have seen a number of problems with beds and would like a discussion about the issues.

RS&G's require timers on pressure systems whether they would be beneficial or not...it would be preferred if the RS&G's stated that timers may be used rather than must be used.

Clarifications needed

All systems should be designed by DOL licensed designers or engineers. Some counties have already headed this way and it just ensures a better level of consistency and quality. The role of the LHJ should be to monitor and ensure compliance, not to make the soil or design calls.

The RS&G's are required to adequately design a system. Need to keep the RS&G's updated as much as possible. Would it be possible to include some of the items noted in the RS&G's in the code for clarity and to make it a requirement vs. a recommendation?

See comments in number 2

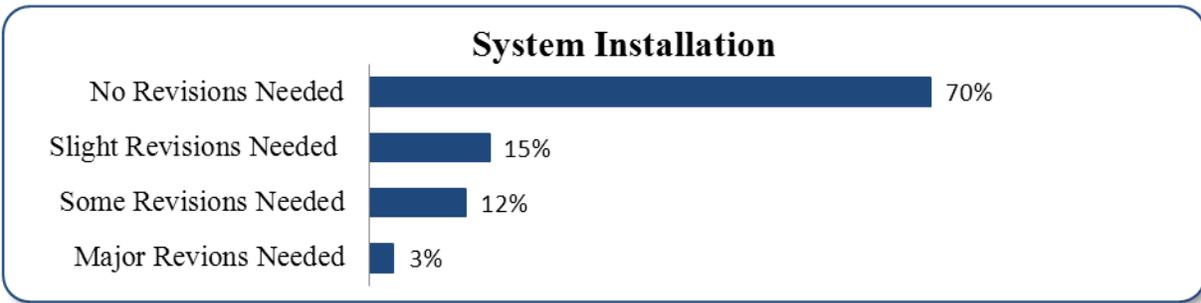
Updated RS&Gs are beneficial.

More discussion on designating a reserve area that requires a different design from the initial OSS. For example, if the reserve requires a waiver to something like a setback from a pressurized water line, or from a surface water setback, does the designer apply for the waiver at time of original design submittal/approval or do we just note that a waiver is required in the future?

Add-on disinfection devices should not be allowed to meet minimum treatment levels as they have a very poor in-situ performance history. Treatment Level C needs to be incorporated into Table VI in the soil types 3 - 6 column for the 18 - 24" vertical separation item. The 3-6 column jumps from Treatment Level B to E, whereas the soil type 1 and 2 columns allow TLC between TLB and TLE.

Section 280 Repair of failures, Table IX: Some of the specified treatment levels in Table IX are inconsistent with the waiver guidelines requirements and WAC 246-272A-210 (4)(b) which basically says if you reduce separation you provide an enhanced level of treatment. An example from Table IX is >24" to 25' to <50' feet Horizontal Separation requires treatment level "C" in soil types #2-#6. Whereas, the waiver guidelines specify treatment level "B" down to 50' feet Horizontal Separation and 24" inches Vertical Separation. So in this instance, if you're designing a system for less than 50' feet Horizontal separation, why not require at least treatment level "B"?

Question: Do the rules effectively regulate the system installation?



See comment above (#3).

Clearly indicate that it is installer responsibility to follow approved design and that during final inspection, it is done to ensure compliance with the design parameters to the extent possible.

Is there somewhere other than in a guideline that talks about barrier material between the drainrock and soil cover? Seems like there should be.

Additional information needed

Homeowner installations should not be allowed any longer. Current OSS are significantly different than they were when dad and grandpa installed the last one 30 years ago. If not completely outlawed, then there should at least be significant restrictions. Often they are attempting installations that many professionals would have a difficult time with.

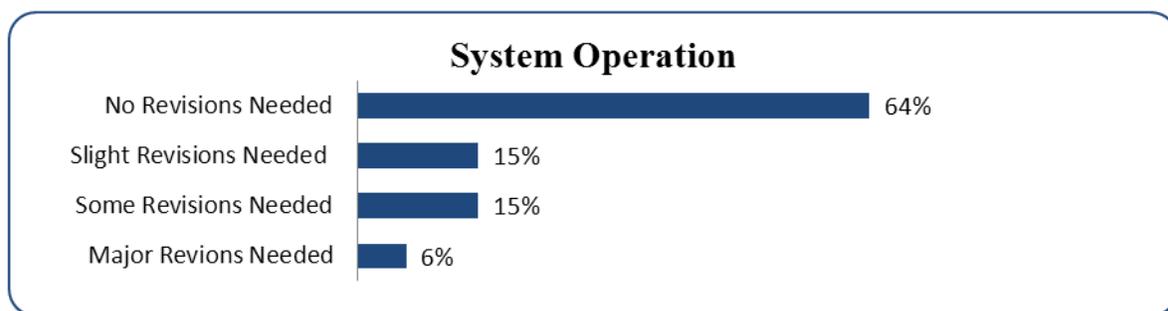
The RS&G's are required to adequately install a system. Need to keep the RS&G's updated as much as possible. Would it be possible to include some of the items noted in the RS&G's in the code for clarity and to make it a requirement vs. a recommendation?

See #2

One of two things would improve the protection of the public health in my opinion. Either a state installer licensing program or required designer inspections of installations as a state rule. There are no specific issues that I can cite from Wahkiakum County. However, monitoring of systems that aren't food establishments or under operating permits is not happening at this time.

I feel the installation section code is sufficient to protect the public health.

Question: Do the rules effectively regulate the system operation?



At the sake of make more lots "approvable", it seems that we've let technology rule without considering the ultimate clients of these systems.

The rules drive an over regulation of operation. Systems should be approved that aren't subject to costly operation and maintenance needs. Simplification for owner usage is more important than unnecessary reliance on unreliable treatment devices.

My real answer is "Some revisions MAY be needed in this area." While the rules provide sufficient guidance so that LHJs can create and implement O&M programs that provide reasonable assurance that OSS are properly monitored and maintained, there are significant differences in LHJ programs. The Board of Health needs to determine whether the programs adopted and implemented across the state are sufficient to meet the intent of the rules and protect public health.

O&M requirements are difficult to implement and enforce

Hard to regulate property owners actions. Simple is better in this section.

0270 (1) (d) what about septic tank only to community non-gravity drainfield or septic tank and pump chamber to community non-gravity system. Every year seems onerous and unnecessary. Could there be some discussion of these conditions other than just applying for a waiver to address it?

0275 consider - Annual inspection including verification that system is meeting waste strength. Or maybe annual inspection with verification of waste strength a minimum of every 3 years? Could this be worded to be clearer that this includes all establishments processing, preparing, serving or selling food. People associate the term food service establishment with the permit that the local health officer issues, not the facilities that the WSDA or USDA permits.

Clarifications needed

Persons shall not introduce heavy metals into an OSS.

Better stipulations on non-allowable wastes being introduced into the system. Specific responsibility to the OSS owner for proper operation including repercussions for tampering with pump settings and other portions of the system. Specific exclusions of livestock that can cause physical damage from the OSS.

Staffing at the local level biggest obstacle to implementation of program

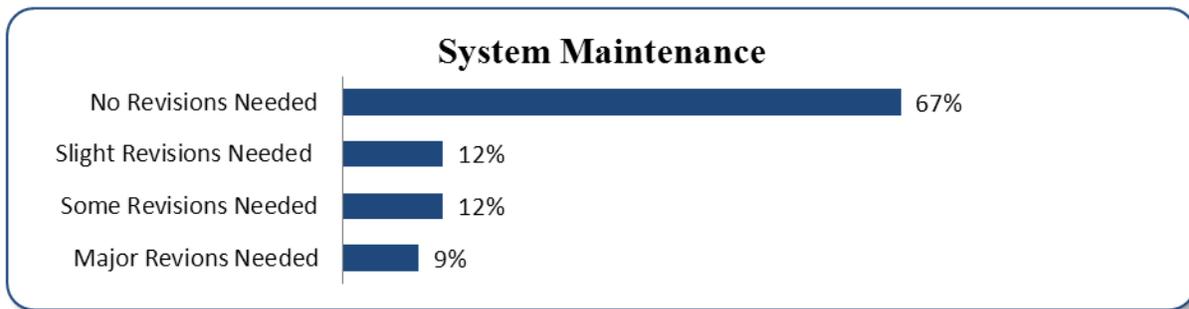
Malfunctions, operating costs and initial installation costs are much greater for ATU's, pressure systems, mounds, sand filters, etc.

Also, from a regulatory standpoint, I think the requirement for yearly maintenance on alternative systems and every three years for gravity systems should be changed to once every three years for alternative and once every five years for gravity. With dwindling resources for departments and a tough economy for much of the population, Change is needed.

See my comments below.

We recognize the need for O&M service requirements and an OSS management program used to ensure inspections are completed but are not able to implement a management program because of political resistance.

Question: Do the rules effectively regulate the system maintenance?



Again, the complexity of the newer systems must take into account the long-term usage.

The rules drive an over regulation of maintenance. Systems should be approved that aren't subject to costly operation and maintenance needs. Simplification for owner usage is more important than unnecessary reliance on unreliable treatment devices.

See comment under # 6.

Same as comments in 6 above

See #6 above

Additional information needed

Strike any endorsement sewage system additives.

The rules should be tightened for all westside counties concerning required O&M programs. Most westside counties have major water paths through them that need to be protected equally to the Puget Sound. With rural politicians, the only way to adequately protect the environment from OSS failure is through state mandates.

The requirements for what it means to have a tank pumped need to be more clearly defined. The pumper should be trying to remove the solids and scum, but some are not.

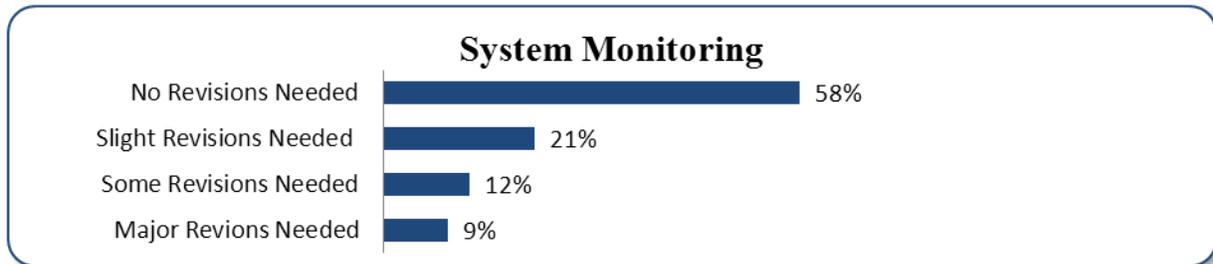
Staffing at the local level biggest obstacle to implementation of effective program

See 2 and 6

Add some language into the code allowing for proprietary remediation technologies and processes prior to a repair or replacement of a failing OSS.

I like the idea of owners being responsible. We can be more stringent than state regulations so it works for us. Lack of local funding will not let us continue to manage systems if state fund stops.

Question: Do the rules effectively regulate the system monitoring?



Because of our geography, population and location, additional monitoring requirements are not needed.

The rules drive an over regulation of monitoring particularly if system operation and maintenance were simplified and user friendly.

See comment under # 6.

See #6 above

Additional information needed

Require every three year evaluation requirement for "pressure to gravity SSAS".

Also, it would be good to simplify the evaluation requirements to improve messaging and LHM capacity to track and enforce.

Requiring different timing is confusing for property owners and makes messaging difficult. It might be a better approach to, for example, require inspections every three years for all system types. This would make it easier to track for LHM's. Right now, data is sporadic at best and tracking systems at different time intervals drastically increases the complexity of database function and reporting. If the intervals were the same, it would improve LHM tracking capacity and improve overall state wide data quality. From this base data, future decisions could be made on a state wide basis - not just based on the data from a few counties large enough to track the data. In addition, outreach materials would be simpler to formulate and disperse on a state wide and regional basis. Having to explain the nuances as to why the requirements to property owners only confuses and infuriates them. The program would have improved support by the public if requirements were more straight forward. In addition, our more complex systems are able to notify property owners of problems through alarms and component function.

Monitoring aspects are almost completely undefined in the code. What items need to be accounted for and reported in an OSS inspection? What is the responsibility of an inspector when issues are discovered? How can an O&M inspection possibly be accomplished on an active drainfield that does not have monitoring ports?

Staffing at the local level biggest obstacle to implementation of effective program

The required evaluation / monitoring of the OSS is stated in the code and the frequency was determined by some criteria. Can the information obtained through years of evaluations allow for a different frequency than what was originally stated (more or less frequent)? This could reassure the homeowners that we are not wasting their money but still meeting the intent of the monitoring requirements.

See 2 and 6

Requirement of O&M inspections as a state rule for residential systems would greatly improve the safety of the public. As an owner responsibility instead of a requirement it is difficult in small jurisdictions to get political backing to go beyond the scope of the state rules. There are no specific issues that I can cite from Wahkiakum County. However, monitoring of systems that aren't food establishments or under operating permits is not happening at this time.

There has been a lot of discussion about implementing O&M programs and some County's do have successful programs. As a small rural county we have limited time and staff so any rule changes that would require additional staff time needs to consider the impacts on small offices. That being said, I support enhanced or mandatory O&M programs, especially in highly sensitive areas, like adjacent to lakes and rivers where there is a greater public health risk.

OSS evaluation requirement of once/3 years is too frequent for standard septic tank and gravity SSAS systems unless they are located in a critical or threatened area. The minimum frequency should be changed for non-critical gravity OSS to once/5 years.

Question: Are there areas in the rule that need to be improved during the next rule revision process?

Note: this question was not ranked; we requested written feedback only.

Less heavy handed in monitoring and maintenance, more simplification of system designs ~ less reliance on technology for public health protection. Soil and site conditions can and have done a good job of public health protections even prior to the heightened treatment requirements. Soil

does a great job of treating sewage provided systems are properly sized, sited, and installed. An couple of inches of vertical separation shouldn't result in such drastic changes in system requirements.

There's more to it than just these magic depth of soil numbers and technology is not the only solution.

The only area that our jurisdiction has added language to has been the development, subdivisions, and minimum land area requirements section.

See comment above (#3).

There is a need to have regulations that better address nitrogen contributions from OSS both for surface and ground water protection. WAC 246-272A-0320 METHOD II (3) states "The department shall develop guidelines for the application of Method II by (insert date one year from the effective date)." I don't believe this has been done.

Yes- examples noted above

Yes. Regulations need to expanded on O&M requirements and on design criteria.

Yes in the Definitions section 1- add definition of bedroom/sleeping room. Maybe refer to IBC International Building Code?

We really struggle with this. Look at some way to add flows for rooms not labeled as bedrooms? 2- add examples to definition of expansion such as going from temporary or seasonal occupancy to full time. 3- add definition of Residence.

Our definition of accessory dwelling unit includes what makes it a residence = Use as a complete, independent living facility with provisions within the dwelling unit for cooking, eating, sanitation, and sleeping. Maybe a start?

Better correlation between DOH rules and other State Agency rules. I.E. DOE and L&I.

No.

Clarification and additional information required throughout.

0340 - OSS Installers, Maintenance Service Providers and Pumpers must obtain approval

Basically officially establish the MSP state wide. :-)

Simply include cesspools and seepage pits as failures without the qualifier of whether or not there is "evidence of ground water or surface water quality degradation".

Why aren't the greywater rules integrated with the regular OSS rules? Stop treating the Puget Sound differently than the rest of the westside counties.

1. Define what a bedroom is. If it looks like a bedroom but is called something else is it still a bedroom for minimum design flow determination?
 2. What is the required lateral spacing?
-

Not improved, just modified.

The old rules are better as they used the wording, "when feasible". The current Table nine may be more restrictive than necessary. We need more scientific evidence to know what type of repair is required.

Minimum lot size language in -0320 needs to be clarified with respect to minimum lot size for parcels connected to an offsite community OSS.

Table IX is unnecessarily complicated. If a conforming OSS cannot be installed due to vertical or horizontal setback deficiencies, then TLB or TLA should be required regardless of soil type.

The Code clearly defines expansion, and requires that an expansion has a conforming sewage system. Where the regulations get a bit vague to me are: 1) significant remodeling proposals that fall short of the expansion definition 2) replacement of a mobile home with a like structure and 3) what remodeling restrictions should apply to those with a nonconforming, Table IX repair.

We pushed ourselves into a corner where we think the treatment products are a good answer.

Table nine has more of sliding scale. Table six needs some help. At 18-24 inches, time dosed-pressure treatment is sufficient when used in appropriate site conditions. We talk about O&M and the need for it. Maybe what we need is for systems that are more robust?

Need a balanced representative during rule development. Singular voices were outnumbered by a large group of folks. We need a stronger voice from homeowners and development community. Need to be cautious of how the committee is made up.

Need to protect the water table that is impacted by OSS. By requiring high treatment for sites with a water table that is mostly at a depth of more than 24 inches and increases to shallow levels only during monsoon conditions, we end up placing the aquifer at risk because treatment systems break and are not repaired. If we permitted more robust systems, public health will be better protected.

List of desired WAC 246-272A changes, RS&G ideas, and/or clarifications:

1. Define “special conditions” in 0234 (3) (a). On repairs with deep soils, the stubout/septic tank outlet may be deeper than 30” below grade. This sets up for the bottom of the trench/bed to be >36” below grade. I’ve see up to 60” deep trenches. Owners just don’t want to pay for a pressure drainfield to keep the drainfield shallower so they dig a 9’ test hole to validate a very deep gravity drainfield. This puts the regulator in a tight spot to approve a really deep drainfield. I’ve always assumed “shall not exceed ten feet from the finished grade” to imply the bottom of an ASTM C-33 sand layer and NOT a gravel/soil interface...but designers argue that they can place a gravel trench/bed to 10’ below grade per code!
2. Require tanks with no history or obviously over 40 years old to be replaced with a “conforming component” when the drainfield is replaced/repared. Is a single compartment, poured-in-place, 900 gallon, concrete tank OK to use for a repair of a drainfield even if it appears to hold water?
3. At least recommend a high level alarm on septic tank effluent filters under 0238 (1) (a). In my opinion if you have a filter in a tank, you need a high level alarm in that tank.
4. Definition of a “management program” in light of waivers to the WAC. See the mitigation measures for granting waivers. CDHD requires a Notice to Title when granting Class A waivers...that’s our “management plan” to ensure the system performs as designed.
5. Change 0260 (1) (a) to “...site evaluation *or* construction *and* final construction inspection”. Basically require LH to conduct two inspections. One to verify soils/site conditions and that the system is staked **or** another during the construction process **and** at final cover inspection to ensure it was installed per design. FYI: CDHD does not conduct site evaluations (or even verify soil types in the soil test pits) but routinely issues new construction and repair permits based solely upon the paper copy of the design.
6. Require site staking of the system (tanks and drainfield) in 0200. The design may look fine on paper but sometimes you wonder if the designer ever visited the site! If the drainfield is staked at time of design submittal, the LH can *verify* the site constraints and system location and ensure the onsite system can be installed per design. What if there is no reserve area on a new construction project when you show up for the final cover inspection? Are you really going to deny occupancy to a \$500K home???
7. Somehow incorporate the Dept. of licensing’s “Guidelines for the Professional Onsite Wastewater Treatment System Designs”...think of subsection 7.5. Or at the very least *require* the design standards found in the pressure RS&G subsection 2.9. This would include requiring a benchmark to set horizontal and vertical controls at a minimum. Maybe somewhere in section 0230?
8. Actually develop guidelines for Method II as required in 0320 (3)...or scrap Method II all together. I believe Chelan-Douglas is nearly the only LHJ that allows Method II subdivisions. We have several Method II subdivisions that are ticking time bombs for repairs.

9. Minimum distance between trenches/beds if reserve area is proposed to go between primary trenches/beds? In CDHD it is 7 ½' from side wall to side wall if reserve is placed between primary trenches. This should be put in 0234 (3).
10. Require verification (copy of dated sieve analysis from supplier) for all ASTM C-33 sand as part of the Record Drawing in 0265 for those systems that use sand. Installers are cutting corners and when the system is covered, I can't see what they used for ASTM C-33. Also require a "startup" report by those ATUs which require them prior to accepting the Record Drawing.
11. Conduct audits of the LHJ's onsite programs say once every 5 or so years? The state Dept. of Health's Food Safety Program does audits every couple of years. Also would be nice to have a "new inspector training" by DOH for the onsite program (the DOH's food and public water programs do this...why not onsite septic??). Kind of like calibrating new folks to what the state would like to see for regulators.
12. Require 0270 (1) (d) in areas of "special concern" (or just in marine counties) such as within 500' of a marine shoreline or fresh water body and require time-of-sale inspections prior to title transfer for everyone else. FYI: CDHD doesn't require any inspection of a system, we just remind folks of their responsibilities of 027 (1) (d) and leave it up to them to comply. Same thing with 0275.
13. Require non-metallic locator wire or the green "Sewer Line Below" tape six inches or so below grade on all transport piping from pressure tank to drainfield valve box/bed manifold.
14. Encourage LHJ to develop construction manuals. This helps level the playing field between installers so completion is fairer (fewer shortcuts). See Thurston counties.

RS&G Ideas:

1. Shared or community drainfields. User's agreements, easements, etc. maybe even some design recommendations. I pick and choose out of the LOSS program guidelines.
2. Add design recovery options/ideas to the Remediation RS&G.
3. Septic system design "best management practices" incorporating the Dept. of licensing's "Guidelines for the Professional Onsite Wastewater Treatment System Designs"...think of subsection 7.5. Also check out the Consortium of Institutes for Decentralized Wastewater Treatment's "Installation of Wastewater Treatment Systems" Chapter 6. This is more geared to installers rather than designers.

Appendix B – Technical Advisory Group

The On-site Sewage System Technical Advisory Group met for one day to evaluate the rules and make recommendations for rule revision to address identified technical issues with chapter 246-272A WAC.

2013 Technical Advisory Group Members

Facilitator – Leslie Turner, Department of Health

Eric Knopf, Designers, Installers, and O&M Providers – not present

Bill Christman, P.E., Public Sewer Utility – not present

Keith Grellner, Western WA Local Health Jurisdiction

David Jensen, P.E., Private Engineering Firm

Peter Lombardi, Proprietary Product Manufacturer

Bob Monetta, WA State Association of Realtors

Brent Stenson, Eastern WA Local Health Jurisdiction

Cindy Waite, Local Health Field Staff

Table 1: Summary of Technical Advisory Group Recommendations

OSS Rule Citation WAC 246-272A	Topic Category	Technical Issue Discussion and Recommendation
Proprietary treatment products - Certification and registration -0110, Design requirements – General - 0230(2)(g)(i), and Repair of failures -0280(4)(a).	Treatment Levels Application, Tables III, VI & IX	Address the ways the treatment levels are applied. Testing requirements are not working to address product performance issues in the field. On-going operation and maintenance issues with UV disinfection units present difficulty in relying on them to achieve bacteriological reduction in the field. Treatment levels requirements need to be better matched to some of the soil and site conditions encountered in the field.
Developments, subdivisions, and minimum land area requirements - 0320(2)(ii)(A).	Lot size (minimum land area)	The required minimum 12,500 square feet lot size per single-family residence needs to be clarified for drainfields located on and off lots.
Design requirements – General - 00230(2)(g)(i)	Table VI soil depth issues	Adjust soil depth requirements in Table VI and IX based on the minimum needed for adequately treating and dispersing wastewater. This issue is related to technical issue #1.

Appendix C – On-site Rule Review Panel

The panel met for one day with the purpose of gathering information on the need, clarity, effectiveness of the rule, and consistency with other agency rules. Panel members and recommendations are outlined in the tables below.

2013 On-site Rule Review Panel Members

Facilitator: Mark Soltman – Department of Health

Bob Monetta, WA Association of Realtors (not present)

John Thomas, Washington On-Site Sewage Association

Stephen Wecker, On-site Wastewater Designer

Dave Jensen, Private Engineering Firm

Peter Lombardi, Proprietary Products At-Large

Keith Grellner, Local Health Jurisdiction - (Westside-Urban)

John Wolpers, Local Health Jurisdiction - (Westside-Rural)

Rick Dawson, Local Health Jurisdiction - (Eastside-Urban)

Matt Schanz, Local Health Jurisdiction - (Eastside-Rural)

Duane Fagergren, Puget Sound Partnership

Bob Hager, Consumer (not present)

Ralph Svrjcek, Department of Ecology

Table 1: Summary of On-site Rule Review Panel Recommendations

Topic #	OSS Rule Citation WAC 246-272A	Topic Category	Topic Discussion	Recommended Priority Level ¹		
				High	Med	Low
1	-0015 (1)(d) and (e)	Purpose and Administration	Homeowner O&M responsibilities: does the rule adequately address compliance?	High	Med	Low
				0	8	2
2	-0015 (9) & (15)	Purpose and Administration	Provisions for local rules to exceed minimum state rules.	High	Med	Low
				0	10	0
3	-0025	General Requirements	Connection to public sewer.	High	Med	Low
				0	4	6

4	-0110	Sewage Products and Technologies	Treatment products; long-term field performance; verification and correction of sub-standard performance	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	10	0
5	-0110 (2) Table I	Sewage Products and Technologies	Testing requirements for Proprietary Treatment Products	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	10	0
6	-0110 (2) & Table III	Sewage Products and Technologies	Treatment Levels and their application	<i>High</i>	<i>Med</i>	<i>Low</i>
				8*	0	0
7	-0130	Sewage Products and Technologies	Disinfection products; performance and approval.	<i>High</i>	<i>Med</i>	<i>Low</i>
				8*	0	0
8	-0200 (1)(c)(v) -0220 (2)(a)(vii)(C)	Specific Requirements	Permit information requirements; may conflict with designer scope-of-work authority.	<i>High</i>	<i>Med</i>	<i>Low</i>
				8*	0	0
9	-0210	Specific Requirements	Minimum horizontal separations.	<i>High</i>	<i>Med</i>	<i>Low</i>
				8*	0	0
10	-0210 (1) Table IV	Specific Requirements	Setbacks between OSS elements and stormwater control devices.	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	10	0
12	-0230 (2)(e)(i)(D)	Specific Requirements	Nitrogen reduction; absence of standards to be met or methods to be used. ²	<i>High</i>	<i>Med</i>	<i>Low</i>
				-	-	-
13	-0230	Specific Requirements	Septic tank sizing	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	0	10
14	-0234 (3)(c)	Specific Requirements	SSAS limitation on bed width.	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	6	4
15	-0238 (1)(b)(vi)	Specific Requirements	Soil dispersal components; monitoring port requirements.	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	0	10

16a	-0270	Specific Requirements	Operation and Maintenance; Owner's Responsibilities	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	4	6
16b	-0270	Specific Requirements	Operation and Maintenance; Assure a complete evaluation of the system components and/or property – 1/3 Year	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	8	2
17	-0280 (3)	Specific Requirements	Repair of Failures; conforming vs. non-conforming systems.	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	10	0
18	-0320 (2)(d) Method I & II	Specific Requirements	Minimum lot size	<i>High</i>	<i>Med</i>	<i>Low</i>
				4	6	0
19	-0340	Specific Requirements	Training and certification of pumpers, installers and maintenance service providers.	<i>High</i>	<i>Med</i>	<i>Low</i>
				0	2	8

¹ **High:** Recommend revising the rule to address this topic as soon as possible.

Medium: When rules are being revised, this topic should be included.

Low: This topic does not need to be considered in future rule revision.

² On-site Rule Review Panel member absent and panel did not discuss topic to determine priority level. Comments provided by On-site Rule Review Panel member before meeting: *“This section requires the OSS designer to consider nitrogen contributions where it has been identified as a contaminant of concern and address it through lot size and or treatment. There are no criteria provided on level of nitrogen allowed, how to address lot size or treatment methods. It leaves the designer without the information to meet the requirement. Mason County has identified Hood Canal as a water body sensitive to nitrogen.”*

* Two members of the panel abstained from ranking.

Appendix D – Briefing Paper

The following is the State Board of Health briefing paper, published in November 2013.

If you have questions about this report or the survey, please contact Lynn Schneider, Wastewater Management Specialist, at Lynn.Schneider@doh.wa.gov or 360-236-3379.



Evaluating the Effectiveness of the On-Site Sewage System Rule Chapter 246-272A WAC

November 2013

Introduction

The mission of the Department of Health's (department) Wastewater Management Section is to protect public health by promoting the safe treatment and disposal of domestic and other non-industrial wastewater in areas of Washington not served by municipal sewage treatment plants.

Chapter 246-272A WAC, On-Site Sewage Systems, regulates the location, design, installation, operation, maintenance, and monitoring of on-site sewage systems. This rule protects public health by minimizing both the potential for exposure to sewage from on-site sewage systems, and the adverse effects of discharges from on-site sewage systems on ground and surface waters.

Local health jurisdictions (LHJs) have three options to enforce Chapter 246-272A WAC. They can incorporate the chapter into local code, adopt a reference to the state code into local code, or apply the state code without a local code. When LHJs choose to adopt the rules, the department reviews local rules to make sure they comply with the state rule. Today, 22 local boards of health have adopted their own local code, 2 have adopted the rule by reference, and 11 defer to Chapter 246-272A WAC.

2013 Evaluation

WAC 246-272A-0425 requires us to evaluate the effectiveness of the rule every four years and determine if revisions are needed. This is the second review of the rule since its adoption in 2005. The 2013 evaluation used three methods to gather feedback on the rules from our partners and stakeholders: we administered the same online survey used in 2009 to solicit feedback from LHJs; we convened a meeting with the department's on-site wastewater technical advisory group (TAG); and facilitated a one-day discussion with a review panel of key stakeholders to get additional feedback on the rule's effectiveness. In addition, the department conducted an internal review.

To help us understand changes over time, we compared responses from the 2013 survey to the one conducted in 2009. While there is growing interest in updating aspects of the rule, the majority of responses continue to indicate that "no" to "slight" revisions are needed at this time:

- The entire chapter of rules (from 94% in 2009 to 91% in 2013).
- Requirements pertaining to system
 - location (from 94% in 2009 to 91% in 2013);
 - design (from 97% in 2009 to 76% in 2013);
 - installation (from 97% in 2009 to 85% in 2013);
 - operation (from 91% in 2009 to 79% in 2013)
 - maintenance (from 83% in 2009 to 79% in 2013); and
 - monitoring (from 82% in 2009 to 79% in 2013).

Three key issues identified

Using the feedback we received from stakeholders together with our internal review, the department identified the following three key issues impacting the implementation of the rules.

Proprietary treatment product testing requirements

Respondents indicated that issues related to treatment products, long-term field performance, and verification and correction of sub-standard performance should be addressed in rule-making. Comments also identified concern with field performance of treatment products.

Application of treatment levels

The evaluation identified problems with the treatment levels and soil types and conditions established in the rules, and the need to reevaluate the effluent treatment requirements and corresponding soil treatment capabilities to ensure effective treatment.

Minimum land area requirements

The minimum land area requirements in WAC 246-272A-0320(2)(d)(ii)(A) and WAC 246-272A-0320(5)(e) are unclear in some situations. Local health officers identified this lack of clarity as a problem.

Conclusions

Our evaluation of chapter 246-272A WAC considered the responses to the LHJ survey, the TAG and rule review panel discussions, together with information gathered within the department. While a comparison of 2009 and 2013 survey results show growing interest in updating aspects of the rule, the majority of responses continue to indicate that revisions are not needed at this time. The evaluation resulted in identification of three key issues and a number of smaller issues that need to be addressed through rule-making. However, the feedback from this evaluation is not compelling enough to offset the cost of rule-making.

Recommendations

We recommend that the Board retain the existing rules and the department implement the following steps:

- Research and clarify technical aspects of the three areas identified in the rule that need revision, and provide guidance to clarify the intent and application of the rule requirements.
- Continue to provide technical assistance, monitor inquiries for new or recurring topics, and target our technical support activity as needed.
- Continue to develop and assist at the national level in preparing standards for evaluating new technologies.
- Continue to track rule issues and future need to revise the rules.

For additional information contact:

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