**Comments – Fast Track Regs to Move GMP 147 into SHDR**

**Commenters are identified as to agency (VDH or DEQ) or as profession (OSE, engineer, manufacturer, soil scientist or consulant).**

***General:***

OSE 12/15/2020

 I have no contention with VDH working to coalesce a body of agreement in drafting regulations or policy; however reading the proposed fast track regulation I fear you have considerably misunderstood our industry which integrate 12VAC5-610, 613 and 630 to design and construct onsite septic and water systems for the citizenry of Virginia.

In the absence of research or reports identifying problems with the existing regulations I will likely join the majority of OSE in vigorously opposing any language increasing minimum depth of installation (12”), minimum depth of cover (4”), or attempts to alter sidewall depth restrictions. Since ten (10) objections stifle an exempt regulation, VDH will not pass go; please reconsider your goals prior to finalizing this proposal.

Is it possible that we could obtain from OEHS a general statement of goals, rather than interpreting VDH motivation based upon the language provided? In the absence of a publicly available database of system function or malfunction, such as was envisioned through successive GA bills, most of us would be reluctant to see any changes in Regulation, or Policy absent substantial explanation. At this juncture we can only assume the agency is interested in perpetuating a myth based regulation, tinkering with standoffs, while continuing to provide direct design services to the public under state subsidy, absent public accountability, which- as we have discussed requires judgement. Such services are outside the boundaries of sovereign immunity, and much as Dr. Richard Otis predicted increase potential for unmanageable conflicts of interest, especially within the public service.

In our experience depth of cover is a design function, along with analysis of infiltrative conditions, which is the responsibility of the OSE or PE; and rely upon the owner’s compliance with conditions a designer establishes through design & permitting, or O&M documentation. We have all experienced homeowners or contractors attempting to increase depth of cover over failing systems in false hope of extending function. That is simply unfeasible; as would be solutions reliant on increasing depth of cover, or installation in hopes of making a bad site good. Rather than investing staff resources in misguided concerns over “freeze protection” or other vague concerns, I will encourage you to simplify regulations and concentrate focus on regulatory oversight with the goal of standardizing the design review process. Too often we experience misguided attempts by the reviewing staff to consult, either with our clients, or in second guessing our assessment of site conditions. This is neither warranted, nor productive, and we expect VDH to reign in staff which continue to delay and advocate alteration of proposals under review based on their opinion, rather than compliance issues. While the industry relies on regulatory oversight, and consumer protection functions to level the playing field, we do not benefit from open competition with the regulatory agency, or favoritism toward one OSE over another.

Any suggestion that currently implemented OSE design practices are problematic should be backed by example, and comprehensive failure analysis made available to the public for debate or consideration prior to establishing achievable goals, and drafting of final revisions to the regulation. Public comment requires a full suite of information made available prior to posting on either Townhall or regulatory review. The housing industry reliance on onsite systems has fallen from a peak of 40,000 applications to barely 4,000/year. Yet VDH seems most focused on preserving staffing. Perhaps the committee could reflect on whether the cost of design, construction and operation have been optimized for the consumer,  and whether delays in review process, and requirements for duplication in forms which originated during the heydays, and staff’s fixation on a statutorily mandated 3 week review period for septic, or 60 day review for well permits actually is merited by a protection of public health. Allow me to remind staff, that while the QA/QC expectation is for 95% of applications to be reviewed and issued w/in 5 days most applications linger in bureaucratic limbo far too long.

In my opinion weakness of existent regulations is in failing to keep up with design practices, technology, and changes in climate & environment. For example restricting septic system design to open center pumps, prescriptions for enhanced flow, or residential & accessory structure wastewater characterizations; all of which are understood to be under the purview of the designer. Nor should new regulations restrict sidewall, or depth of installation of final treatment media  (gravel) to a greater extent than currently defined. Granting a product manufacturer special reduced sidewall regulations seems anticompetitive, with no demonstrable public benefit. If research or statistical modeling indicated a reduced side wall could be implemented then it would follow regulation might permit laying the perc piping on trench bottom with 6” of gravel to assure distribution of air and septic tank effluent. Indeed there is a case to be made under experience of Voluntary Upgrades that OSE are currently vested with authority to alter installation requirements (12VAC5-610 Section IV) to the same extent as PE on sites which are arguably the most risk laden. Please remind us of the process for offering “gravelless” systems an area reduction, and whether a reduction in sidewall depth shouldn’t follow a similar administrative process. The public concern merits a full regulatory review for such a controversial alteration.

In reviewing Dr. Degen’s comments, I am puzzled how SCAT regulations interface with SHDR. Is a 48 hour retention time in any way related to a 12 hour settling time? Please explain why an OSE would contemplate a grinder pump prior to a treatment unit, rather than isolating solids and conveying STE. I don’t think any of us contemplate carrying solids forward.

VDH should be more focused on inconsistencies in the Regulations or with Statute. For example 12VAC5-610-250A while a Type 1 system is limited to a single residence, that is not status quo. OSE often connect several sources to one system,   (recall, Statute (32.1-164.1:1) Voluntary Upgrade permits up to 4 homes (clustered) to be connected to single system). Would such a system serving sites with accessory or multi-family structures, conceivably with greater than 1200 linear feet, not qualify for gravity conveyance? Thus is the Type 1 gravity system meant to be limited to a single residence?

At some point the regulatory review might reconsider what are “Formal Plans” and when such should be required. If so is certification by an OSE or PE? Upon expiration of 12VAC5- 615 Regulations, and coincidentally implementation of OSE licensure through DPOR acknowledging engineering license exemptions, all plans became formal. Relic regulations, using conditions which no longer exist today should be eliminated. Rather than piecemealing the regulations hasn’t the agency been obligated to promulgate a new Regulation? Whether the basis is the long anticipated Performance Regulations, or a cleaned up SHDR, VDH should convene a process of review and comprehensive drafting. This has typically been a 2-year process, including soliciting input from us, the public and scholars. The footprint regulations were withdrawn, comments were made to the townhall on conflicts such as I mention, but seeing none of this incorporated we wonder when can we expect resolution?

I for one, miss people like Duke Price, or Cal Sawyer, who understood the coherent basis of regulatory review. Duke would notice that the transition from the 1982 regulations to 2000 Regs is inconsistent with the current process. If prior revisions (implementing a 6” increase in SHWT standoff), were followed by what we presume VDH is now trying to achieve by hoisting a 4” change in depth of cover; maybe you should stop playing with the regulations.

Regarding any future Exempt Action, revisions should be based upon thorough review of language with internal conflicts. Please consider who benefits by Code requirement for a citizen hiring a second professional to support OSE designs of wastewater flows of less than 1000 gpd. These expectations conflict with regulation under DPOR giving authority within certain limitations (pressure distribution, or >50’ of head) these conflicts with Code should be identified and struck, e.g.:

*The separation distance to an impervious strata may be reduced from 18 inches to a distance not less than 12 inches below the trench bottom when a professional ~~engineer~~ certifies in writing that he has evaluated the hydraulic capacity of the site to disperse wastewater and in his professional opinion, water mounding will not encroach on the separation distance required in Table 3.*

While I appreciate your making these proposals available for professional comment, and hope we can agree on improvements which will clearly serve the public interest in reliable construction of improvements to real property. I hope you recognize how unprofessional it is for VDH to release proposed language for regulatory revisions, especially through an Exempt Action a mere 3 days prior to the SHAC meeting, and a month prior to the General Assembly. We should hope for greater access and transparency of discussion when opening the regulations. During my tenure serving on SHAC we spoke outside of committee informally and attempted to advise staff of concerns prior to convening process. Short lead times hinder that advocacy.

At what point in time will the public notice that VDH staff has been negligent in performing it’s duties? Routine business of the staff advising any committee, but especially the SHADAC, should culminate with regulations finding substantial agreement; rather than significant controversy. If everything were fine in the onsite industry regulations, it would give us opportunity to address other pressing environmental health needs in our communities.

OSE 12/16/2020:

….”the business model and the prescriptive regulatory principles in place prior to 1972 never changed” -Dwayne Roadcap, Program Manager; Division of Onsite Sewage and Water Services, New Deliverables for Virginia’s Onsite Sewage & Water Supply Programs: A Roadmap for Changing Services 2005-2006

Dear Mr. Gregory,

Please accept my comments of the proposed SHADAC meeting agenda provided by your office on Monday, December 14, 2020.

Adoption of non-controversial regulations via a patch work quilt of regulatory amendments appears to be in-congruent with the administration of a public health program.  Further contradiction to the public interest persists when the Direct of Policy, Mr. Lance Gregory forwards both: a) Documents less than 48 hours prior to the public meeting, and b) incomplete dockets.  Whether known by the Director or not, these actions trumps dissent and serves to oppress discussion.  Members of SHADAC and the public do not have sufficient time to develop meaningful comments which considers both benefits or detriments of the proposed action.   All modern levels of governance understand we need both support and opposition for any action, in order to consider the spectrum of impacts. Any authority granted to SHADAC has rendered it effete while acquiescing to this business model.

As a learned group, we should not be attempting to advance the interest of a regulation adopted 20 years ago, that by design, was inconsistent with industry standards and statutory code upon its adoption.  History has shown that the practice of “opening the regulations” in part(s) has created more unintended consequences than it has brought stability to the onsite program.  The current regulatory framework has failed the public and the practitioners alike.  Procedural inconsistencies appear to be relics of the original product approvals granted under the Donald Alexander years.  Whether or not manufacturer claims of a pay to play scheme was in place at the time to obtain product approvals, a review of early agency approvals seems to indicate favor ability by the agency for specific manufacturer products.

Under the current regulatory framework, the Commonwealth is being held hostage by an agency who refuses to remove itself from apparent conflicts of interest under the “business as usual” mentality held by VDH staff.  The program will continue to be ineffective and inefficient until such conflicts are removed.  Inefficiencies in the program ultimately undermine market confidence, a result of decreasing septic applications during the greatest market boom since 2000 is further evidence of a stressed regulatory program.  In 2011, VOWRA offered a paper written by Dr. Richard Otis, PE, to address concerns in RD32 which predicted our outcome should the agency continue down a path with unfettered conflicts of interest.

“Regulator performance of activities that are the responsibility of non-regulatory professions was determined to be a significant conflict of interest to be *prohibited* in adopted codes”  - Dr. Richard Otis,    VDH Privatization of Onsite Sewage System Site Evaluation, Design and Installation Inspection, 2011.

As recent as 2006, VDH understood the necessity to alter its business model and move to the program to one of Performance Based Model.  A clearly articulated foundation is established in the 10 Essential Services Model.  Management effectively prioritized “business as usual” instead of establishing a program with obtainable and measurable results.  Such entrenched beliefs are misguided and undermine efforts to protect environmental resources.

Is there a solution?

We must abandon the prescriptive model and build a performance based system.  Performance Regulations will enable risk assessment and modeling as we begin to design to an adopted standard that is applicable to unique site conditions instead of a class of condition.  Both the public and the agency will have assurance that each system designed will function as designed for the life of the system.

Under a performance based model, all licensed designers (OSE or PE) will be on equal footing. This action in itself, will be the foundation for removing irregular and unaccepted conduct in the market place.  The public should not be burdened with “who can design what”, but rather how to achieve the goal of improving real property while protecting public and environmental health.  To illustrate my point, OSE’s and PE’s are currently authorized to design “outside” of the current regulatory framework when pursuing a construction permit for both repairs and voluntary upgrades.  This class of construction permit is the highest order of risk in the design business, as the public health threats are existing.  It is only upon new construction (lowest risk of a proposed threat) that OSE’s have been restrained from practicing on equal footing.  Anti-competitive practices between OSE’s and PE’s must be resolved as this affects both market pricing and market confidence.  Standards required by PE’s are not observed by OSE’s and this has plagued the industry for the past 20 years.  Public records clearly identify there is a vast difference between work product outcomes of a professional engineer and OSE (in most cases).  VDH participation in the market place continues to undermine market stability as licensed providers mimic VDH business tactics; which further delays professional growth and acceptance of the onsite industry as being reliable.

I sincerely hope we can agree that a performance based regulation will hold everyone accountable, a condition which most residents, practitioners and regulators can support.  In my closing note, I am both concerned and alarmed by the actions of your state engineer, Dr. Marcia Degen.  As an individual with a PhD and PE credential, Dr. Degen’s time would best be utilized in obtaining measurable goals instead of meddling in the market.  Proposing to expand a prescriptive regulation clearly shows the merits of an advanced degree and title have been squandered.

VSPE ( CFO) 1/14/21

Good afternoon Mr. Gregory! VSPE is in support of the proposed changes. Thank you and the SHADAC for your hard work. Hoping this message finds you well.

VDH 1/15/21

Item from the 12/16/20 SHADAC meeting minutes document states that since GMP 147 was rescinded, designers are being held to the 2 fps requirement contained in the SHDR’s for pump designs (page 7, item 8, comment from Mr. Madison). However, the successor to GMP 147, GMP 2016-03, specifically states that the design guidance contained in GMP 147 complies with the AOSS Regulations

***Section 120 - Definitions:***

DEQ 12/28/20

If the term ‘settled sewage’ is used in section 888, it must have a definition here.

VDH 1/15/21

Why not simply remove the definition for “secondary effluent” and update all references throughout the chapter to reflect TL-2? We don’t need two definitions for 30/30 effluent.

Where was the term “advanced secondary” ever defined? The only written reference I can find to it on a VDH document is the Abbreviated Design form from GMP 126.B (OSE Form E Revised 7/2/09). One of the Puraflo approval GMP’s gave reference to a BOD5 limit of 10 mg/l, but I can’t find a 10/10 BOD5/TSS parameter anywhere for “advanced secondary.” I know this term is what eventually became TL-3 in the E-AOSS Regs. I’m curious more than anything.

***Section 250 – Procedures for Obtaining a Construction Permit for a Sewage Disposal System***

Consultant 12/16/20 (SHADAC):

Please correct waiver from 'engineering license', not 'practice of engineering'

DEQ 12/28/20

Per the VDH Power Point Presentation on 12/18/20, it states “modify definition of Type III to eliminate >1000 gpd criteria”. Shouldn’t this language be deleted?[250.C]

VDH 1/15/21

.C. Paragraph 2 (after nos. 1-3) – 12VAC5-580-10 has been superseded.

***Section 880 – Pumping***

Manufacturer 12/16/20 (SHADAC):

How do new proposed velocities play into proprietary systems and drip system?

Engineer 12/16/20 (SHADAC):

[on force main velocities] The approach is laudable, concerned that being embedded into approach, is a request that designers parse this, are we implicitly assigning a judgement task. There are a lot of examples that are obvious, some are not obvious.

Consultants (OSE,Engineer, Operator, Intaller) 12/16/20 (SHADAC):

VDH is creating confusion by changing the minimum force main velocity.

OSE 12/16/20 (SHADAC):

Having 1 fps as the minimum velocity for conveyance pump stations would provide designers flexibility to use turbine pumps such as P20.

The ¾ day minimum storage for timed dosing may affect designs where TD is not required, but designer uses it as good practice, but the ¾ day storage is now an added cost. This is especially a problem with trying to use some standard pump tank sizing in combination treatment units.

Manufacturer 12/16/20 (SHADAC)

The ¾ day storage for timed dosing may end up forcing larger tanks on systems that are already generally approved.

Chat log 12/17/20 (EH Manager Mtg)

Would "transfer pumps" include air lift pumps like in the Clearstream DA unit?  Those do move effluent from one part of the treatment system to the other, but the 1/4 storage, positive suction head, etc. don't seem to fit...

But do we know that 3/4 day storage would actually cover all EQ situations - I doubt it.  I can see a min for timed dosing but not EQ

VDH 1/15/21

C. Velocity. Since settled sewage has a shorter retention time than STE (12 hrs. vs. 48 hrs.), how can it have a slower pumping velocity of 1 fps where STE is still required to have 2 fps? This seems backwards. Also mentioned in the comment box above .C. after the EPA statement.

New .D. Transfer Pumps. Continue consistent language. “Sewage or effluent” is used in New .C. and .E., but “wastewater” is used in New D.

New .E. Conveyance Pumps. If all 3 categories of pumps aren’t subject to B.1, B.6, and B.7, except as noted, why have those sections at all? Remove them from 880 as a whole and incorporate the noted exceptions in each category of pump.

OSE/Operator 1/19/21

Advocates for greater working volume for timed dosing

***Section 950 – Absorption Area Design***

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| OSE/Operator 12/14/20: I’m still working on the new regs sections, but one thing that strikes me is the part about minimum installation depth measured on the downslope side for alternative systems. |  |  |  |
|  |

I’ve attached an example of one of my GeoMat designs.  I’ve started including the SHWT depth on the drawing, along with a scale for depth, as shown here to demonstrate that the pad is the proper distance above the water table on the upslope side.  Also, I like to show that if I’m pushing the depth to water table, it’s only on the upslope side – the rest of the pad has plenty of separation.

I don’t think you can use the downslope side anymore if you want ANY separation between the bottom of the dispersal area and the SHWT or restriction.

Allen always had some strange objection to taking this part out and not even allowing VDH to ask for 2’ trenches on steep slopes or requiring people to go to drip.

If people are using the increased trench depth with slope for conventional systems, I guess that somewhat alleviates the problem for conventionals, but if you aren’t going to require increased depth for TL2 and TL3, you really need to go with minimum dispersal depth measured on the upslope side.  That’s why people need to slope the bottom of pads also, btw.  (I don’t like to do that, but I do it occasionally esp. for repairs like this one.)



*Installing under a restriction:*

OSE 12/16/20 (SHADAC)

No disinfection requirements? Water movement may be more important when it comes to dimensions, 2 feet may not be enough

Manufacturer 12/16/20 (SHADAC)

Suggests adding disinfection for TL2 and TL3 under a restriction.

Soil Scientist 12/21/20

 #a)  the use of the phrase "or restriction to water movement" is a bit confusing.  I am guessing you are saying the soil under the restriction cant' be a restriction?  It might be simpler to just say "... exhibit no characteristics that indicate wetness or a restriction".

     #b)  The next sentence is confusing.  Might it be reworded to say "There shall be at least 18 inches of suitable soil between the absorption trench bottom and any underlying seasonal water table or rock or restriction.  At least one foot ..."

DEQ 12/28/20

950.C. The more appropriate and encompassing term is “redoximorphic features” not “redoxymorphic coloration”. Redoximorphic features include more than colors – they include patterns of colors and concretions of manganese, etc.

[950C.3 and 4] This is redundant of paragraph C above.

*Minimum cover:*

Consultant 12/16/20 (SHADAC):

Many of the drip or shallow placed systems that we find are having issues are having them due to lack or loss of cover. The thicker the cover the better so that the site has a better chance of surviving traffic like lawn mowers and basic erosion and settlement.

Manufacturer 12/16/20 (SHADAC)

We have a spreadsheet for sloped sites. Slope, burial depth, and width self limit whether it works on slope or not

DEQ 12/28/20

Would be alright with allowing 320 sf minimum for TL2 and TL3 effluent systems. Would be alright with allowing this for other than residential systems that treat only sewage (no industrial inputs).

*Minimum area:*

Chat log – 12/16/20 (EH Manager Mtg)

The 320 sqft goes back to the minimum absorption area for Puraflo in GMP #69 for perc rates of 1-16 mpi for 1-4 BR dwellings.

Working in the Chesapeake Health District thats dominated by engineered systems, I would like to see a minimum.  This our opportunity to create a clear standard.

Think minimum is needed. 400 is good.

Minimum area for new construction is a valuable public health guard-rail for single-family residential, even though the reasoning behind any number may be un-scientific

Maintain the 400 sf currently in the regulations.

The 400 is traditional and goes back to the long historical requirement of 200 feet of drain tile.  What is the thought basis for the 320 as a number?

***Section 960 – Elevated Sand Mound***

Manufacturer 12/16/20 (SHADAC)

In-ground pad and mounded pad can be differentiated

Chat log 12/17/20 (EH Manager Mtg)

Consider how close side slope can be to property line. Elevated sand mounds say 5', but that does technically apply to other above grade installation that I know of.

DEQ 12/28/20

Could this paragraph [960A] be moved to the definitions section since it is not specifying any regulatory requirements here?

VDH 1/15/21

Seems to include drip mounds, which are not Wisconsin Sand Mounds. Step 14., Page24 of the 2000 Wisconsin Mound Manual described an LPD-style system (though doesn’t say that specifically). Is it appropriate to require Wisconsin design criteria for drip mounds?

.D.1. This section should be removed.

.D.2. This section should be removed or amended to remove the word “shall” throughout the section.

.D.4. This section is impossible to enforce and should be removed. It’s difficult to require notification of installation for one type of system and not others.

.D.5. The 2000 Wisconsin Mound Manual doesn’t have the requirement that a non-wooded site be used unless not available (page 9 of the Mound Manual).

.D.6. Update “secondary” to TL-2.

New .E. I feel like PE’s will challenge the minimum 6” of sand where the SHWT is not <7” to the surface.

If the SHWT is at the surface, this language would seem to indicate that a sand mound can have TL-2 with only 6” of sand. The AOSS regs require 6” of *in situ* soil to get TL-2, which is not immediately obvious here. There are too many requirements in too many places. Perhaps incorporate Table 2 from the AOSS regs into this section to make things more straightforward.

***Section 966 – Pads (New)***

Manufacturer 12/16/20 (SHADAC)

In-ground pad and mounded pad can be differentiated

OSE 12/16 20 (SHADAC)

1200 sq ft [pad] max makes no sense. I have 1600 sq ft Pads. That max removes the Pad option once a 4 bedroom house has soils with greater than 65 mpi and 5 bedroom homes with soils greater than 50 mpi.

Soil Scientist 12/21/20

Under Section 610-966.I.

     It is not exactly clear what you mean by saying 'across contour'.  Do you mean to say " ... by the width of the pad perpendicular to the contour at the site'.

DEQ 12/28/20

[Re 1200 sf max] Can’t say without knowing why & how the 1200 sf max. area was derived in GMP 147.

VDH 1/15/21

New .A. Ensure consistent language – “Level absorption surface” vs. “infiltrative surface” used elsewhere.

New .B. What will the pushback be for STE pad proposals? Will deviations for repairs/VU’s be allowed where area may be limited and getting as much infiltrative surface as possible is critical?

Comment box after New .D. Do not delete the prohibition on trenches and pads in the same system. One that we saw with pad/trench combinations were “finger trenches.” Trenches were connected to the end of pads in the same drainfield geometry, not in separate “zones.” See below:

If the prohibition is removed, recommend adding requirement that trenches and pads must be in separate drainfield “zones” with a minimum separation of the required spacing of the trench width used (i.e., 3’ trenches, 6’ of separation between pad and sidewall of trench, see below).

6’

3’

9’

New .F. To promote more equal distribution within a pad, perhaps encourage (require?) central placement of distribution boxes when using gravity distribution. There would not be a square footage “penalty” for the area taken up by the distribution box(es) and header lines where the gravel would be less than 12-13” deep.

New .G. Redundant to 12VAC5-610-596.A.

New .I. I’m not sure I understand the need for this:

30’

30’

30’

New .K. Appears to conflict .G. You can’t allow a <12” installation depth in one section and then require a min. 12” install in another.

Comment box after ~~.J.~~  I truly don’t understand the confusion over gravel pad depths which are less than 12”. My understanding is that for pads with 12” of gravel which are placed at <12”, the installer will build up the site and then excavate to the required depth into or to original grade. Does this not happen elsewhere?

Example: 15” SHWT. TL-3 and disinfection are required per site conditions. If the minimum gravel depth is 12”, there’s only a 3” standoff per New .K. Is there an alternative that would not require a PE?

My understanding of the original PLR table from Bord na Mona for advanced secondary sizing, and the inclusion of pads as a dispersal method, was that the sidewall was not taken into account as an infiltrative surface, thus the much lower loading rates for pads (approx. 24-25%).

New .K. When reviewing a design spreadsheet I built, one comment I received was that VA may be the only state where pads/beds are used. Do we have Division-approved design manuals referencing pad designs?

New .L. See previous comment about comment after ~~.J.~~ I really do not understand the confusion about <12” installs for gravel systems – pads or trenches.