



State of Idaho
Department Of Environmental Quality
Technical Guidance Committee

Technical Guidance Committee

Minutes

March 13, 2012

**Department of Environmental Quality
Conference Room "B"
1410 N. Hilton
Boise, Idaho**

TGC ATTENDEES:

Barry Burnell, Water Quality Division Administrator, DEQ
Bob Erickson, Senior Environmental Health Specialist, South Central Health District
Mike Reno, Environmental Health Supervisor, Central District Health Department
George Miles, P.C., Advanced Wastewater Engineering (phone)
David Loper, Environmental Health Director, Southwest District Health Department

ABSENT:

David Hatt, Onsite Wastewater Coordinator, DEQ
Joe Canning, P.E., B&A Engineers

GUESTS:

Ryan Spiers, Alternative Wastewater Systems, LLC
AJ Maupin, P.E., Wastewater Program Lead Engineer, DEQ
Chas Ariss, P.E., Wastewater Program Manager, DEQ
Allen Worst, R.C. Worst & Company
Justin Vanleave, R.C. Worst & Company
Mike Cook, Soil Scientist, DEQ
Dale Peck, Environmental Health Director, Idaho Panhandle Health District (phone)
Dick Martindale, Environmental Health Specialist, Panhandle Health District (phone)
Kellye Eager, Environmental Health Director, Eastern Idaho Public Health District (phone)
Matt Gibbs, Infiltrator Systems (phone)
Brent Gee, Northern Septic Systems (phone)
Rick Robison (phone), Southeast Idaho Environmental Treatment Services, Inc.
Ray Keating, Eastern Idaho Public Health District (phone)
Kim Walker (phone), Northern Extended Treatment Systems, Inc.
Lindsey Stanton, Administrative Assistant, DEQ



CALL TO ORDER/ROLL CALL:

The meeting was called to order at 9:15 a.m.
Committee members and guests introduced themselves.

MEETING MINUTES:

October 27, 2011 meeting minutes

Motion: Mike Reno moved to accept the minutes as presented.

Second: Bob Erickson.

Voice Vote: Motion carried unanimously.

Minutes will post as final.

SUBCOMMITEE UPDATE:

Drainfield to Surface Water Setback

AJ Maupin introduced the topic and provided support to Mike Cook who presented the *Onsite Setback Distance Determination: Modeling Phosphorus in the Environment as the Critical Constituent* draft report and draft model. The report describes a model that is a technical and scientific means to determine setback distances for domestic subsurface sewage disposal systems from surface water. Several PowerPoint slides were presented to the committee based on content of the draft report. The presentation went through two setback scenarios: one for streams and rivers and a second for lakes and reservoirs.

The general model schematic overview includes six input parameters (soil parameters, soil sorption batch data parameters, soil profile data parameters <depth, % gravel, and bulk density>, drainfield parameters, aquifer/ground water parameters, and surface water parameters.) The model develops phosphorus isotherms and calculates soil sorption properties; calculates soil horizon phosphorus sorption capacities and drainfield life; calculates ground water phosphorus concentration down gradient of installation; and calculates in-stream mixing of phosphorus concentrations and phosphorus mass loading to the waterbody.

The input parameters and the model outputs was described and presented to the committee and the committee asked questions during the presentation. The input and modeling for both scenarios involved the use of the drip distribution alternative. The model is complex and it is anticipated that use of the model would be by DEQ state office staff for specific project reviews.

There are additional system design components that have not been addressed; these are pressure distribution system design as opposed to drip distribution; and whether or not the phosphorus concentration calculations should be based on maximum values near the surface



of ground water or some level of depth weighted phosphorus concentrations. Minimum setback was also discussed similar to the existing 100 foot setback for losing waterbodies to prevent overland flow of failed systems from reaching surface waters. Rule vs. Guidance was also discussed with guidance as the preferred alternative similar to the existing TGM guidance for reduction of setback distances to surface waters (TGM page 2-8). A question on field verification was asked and to date some work has been done to confirm model outputs with existing installations.

Motion: Mike Reno moved for the subcommittee to finish the draft and send it out for public comment.

Second: Bob Erickson seconded, with the amendment to include a caveat that would ask for a maintenance entity to be responsible for determining that the systems are working.

The group decided to peer-review the document before posting for public comment. They will need to discuss the use of phosphorus removal equipment and disinfection via UV light in the future.

Voice Vote: Amended motion carried unanimously.

OLD BUSINESS:

4.7 Drip Distribution System

The committee reviewed changes made at the last meeting to get final concurrence and a recommendation. In addition the committee made minor changes in the text during the meeting:

- The Drip Distribution System description was revised.
- Consistent use of the alternative system section title was proposed, rather than referring to “drip disposal fields” or “drip distribution disposal fields”.
- Previous agreed upon changes were accepted during the meeting.

Motion: David Loper moved to make a final recommendation to DEQ to adopt TGM section 4.7 Drip Distribution System as discussed today.

Second: Bob Erickson.

Voice Vote: Motion carried unanimously.

Section 4.7 Drip Distribution Systems was accepted by DEQ, See Appendix A and is posted to the DEQ website for use.

The committee decided to skip discussion on Old Business agenda item Extended Treatment Package Systems until after lunch and instead took up the Old Business Pressure Distribution System.



4.20 Pressure Distribution System

The committee reviewed changes made at the last meeting that clarified when pressure distribution is required to be included as part of a permit. The Rules in section 008.04 restricts gravity flow drainfields up to 1500 ft² in size. Application of section 4.20 Pressure Distribution System is included in permits when the calculated drainfield area is greater than 1500 ft² in size. A sentence to this effect is added to the conditions for approval.

Motion: Mike Reno moved to make a final recommendation to DEQ to adopt TGM section 4.20 Pressure Distribution System as written.

Second: George Miles.

Voice Vote: Motion carried unanimously.

Section 4.20 Pressure Distribution System was accepted by DEQ, See Appendix A and is posted to the DEQ website for use.

The meeting was adjourned for Lunch.

Lunch 12:00 p.m. – 1:00 p.m.

4.10 Extended Treatment Package System

The committee reviewed the ETPS alternative changes that were made at the last meeting and made further edits. The draft language for the Extended Treatment Package System section on Operation, Maintenance and Monitoring Conditions for Approval 3. C is below:

c. Subsurface discharge. If an 85% reduction or better in Carbonaceous Biological Oxygen Demand (CBOD5) and Total Suspended Solids (TSS) can be achieved, then effluent dispersed to a low pressure, time dosed capping fill drainfield, or drip dispersal field treated with a UV light may reduce be permitted using the vertical separation distances to those specified in the Recirculating Gravel Filter, or Intermittent Sand Filter sections, see Table 4-17. Vertical separation distance to ground water for effluent discharged without UV treatment must meet that the effective soil depths specified in the Sand Mound section, see Table 4-19. Then the effluent may be discharged to a drainfield satisfying the Sand Filter Intermittent or Recirculating Gravel Filter Gravity Disposal Trenches application rate criteria. Otherwise, the effluent must be discharged to a standard drain field, sized as directed in IDAPA 58.01.03.008. Additional drainfield reduction granted for use of Gravelless trench products is not allowed. The 85% reduction is a qualitative criterion. It will be accepted as being met if the effluent exhibits a quantitative value obtained from lab analysis not to exceed 40 mg/L (40 ppm) CBOD5, and 45 mg/L (45 ppm) TSS.



Mike Reno reported his findings from attending the Southwest On-site Wastewater conference in Nevada. A presentation was given by NSF on UV Disinfection. NSF does have a standard for testing UV disinfection. It is Standard 46. No UV manufacturers have gone through Standard 46 at this time. However, Salcor UV has been tested with 18 different ETPS manufactured products by NSF for Standard 40 and Standard 45 and has passed those tests. The majority of testing has been done in the State of Washington and Bio-Microbics has also had third party testing done in Rhode Island. Bacteria can survive up to a year in soils. The UV testing showed that UV is very effective in killing off bacteria when used in conjunction with an ETP System. NSF found that the UV must be between 240 and 260 nanometers (nm) and have a lamp temperature of at least 100 degrees F to achieve the maximum kill. UV systems must be installed with a control panel that incorporates failure sensing and signaling equipment. Maintenance to clean the tubes is needed at 6 months intervals. NSF does not recommend the use of UV on homes with water softeners as softeners will cause minerals to form on tubes rendering the UV light ineffective.

A short discussion was held on secondary wastewater transmittance. Questions were raised about TSS levels at 45 mg/L or higher and the effectiveness of a UV system under these conditions. Secondary effluent typically needs to be less than 5 NTUs for UV light to be effective in disinfecting wastewater.

Bob Erickson contacted the State of Washington to see how they deal with UV light. They only deal with Salcor 3G Wastewater Ultraviolet Disinfection Unit.

The committee next discussed the bacterial log removal from various alternative systems to address the purpose of UV disinfection with respect to extended treatment package systems. The committee is acting on the understanding that ETPS systems do not achieve the same level of bacterial removal as the ISF or sand mound systems.

Mike Reno requested for DEQ to obtain information from NSF on their standard 46 for reducing bacteria in treated wastewater. The committee further requested that DEQ develop a comparison of bacterial removal rates from the various alternative systems. Specific information was requested on ISF, RGF, and ETPS alternative systems. The committee requested that DEQ prepare the information for the next TGC meeting for continued discussion. Suggestions included developing a method to achieve similar bacteria reductions in ETPS systems as is achieved in ISF alternative systems.

NEW BUSINESS:

2.4 Evaluating Fill Material

Evaluating Placement of Fill Material at Septic System Sites. A handout of the fill material section was available at the meeting and had been sent out to TGC members. The committee asked DEQ to give this section some critical redevelopment. The committee suggested that



the redevelopment include a restriction for use of fill only in areas that have at least 12 inches of unsaturated soil above the seasonal high ground water elevation. This restriction was recommended to be placed in the a description of sites that are suitable for a fill project.

DEQ committed to revising the Fill Material section to include a stepwise progression of how to accelerate the fill material process using supplemental spray irrigation. DEQ will revise section 2.4 Evaluating Fill Material and will bring it back to the TCG for discussion.

Pump to Drop Box

The Pump to Drop Box section was not available for this meeting. The committee agreed that this subject needs to be included in the Technical Guidance Manual (TGM). The committee reminded DEQ of their decision during the November, 2010 TGC meeting. (See the November, 2010 Minutes). The health districts are permitting pump to drop boxes and are seeking specific recommendations from DEQ. Examples of pump to drop box use includes: deep systems that have failed; or for basement systems with deep septic tanks where a pump chamber is installed to lift septic tank effluent into a drop box. Discussion was held to identify topics to be included in a pump to drop box alternative system:

- Engineering design.
- Timed dosing/ index pumping or demand dosing.
- Require the use of low pressure distribution systems.
- New system installations versus replacement systems.
- System Cost.
- Safety issues for deep installations.
- Electrical code requirements for energizing pumps.
- Installer License Category.
- Flow splitters as an alternative to drop boxes.

At this time, most districts do not require an engineer for replacement systems. DEQ will need to determine whether or not that this design crosses the threshold of needing an engineer. The committee was asked to describe the current practices. Some districts allow pump to drop box as part of a new system design. Use of pressure distribution system was determined not to be mandatory for areas where a gravity system could be permitted.

Motion: David Loper moved for DEQ to develop and formulate the Pump to Drop Box section for the TGC's review and requested it be brought to the next TGC meeting.

Second: Mike Reno.

Voice Vote: Motion carried unanimously.



PUBLIC COMMENT:

O&M (Non-Profit Operation and Maintenance Entities) Suspensions

The floor was opened for public comment. Members of the public gathered at Eastern Idaho Public Health District and Idaho Panhandle Health District to participate via telephone. Two O&M providers attended in person. Several comments were provided by the public and each individual was given an opportunity to present their concerns to the committee. A summary of those comments are captured in these meeting minutes. It is not intended to be a transcript of the public comments.

The TGC heard from O&M entities regarding their concerns on how the ETPS O&M system is set up. There were requests regarding testing, averaging test results, financial issues, and discussions on other types of systems without maintenance programs, a dialog on the need for assistance on compliance and O&M meetings, and discussions on various types of systems and sampling methods the O&Ms are using. There was advocacy for testing and advocacy for no testing.

George Miles advocated for operation permits, with the health districts in charge of enforcement. He suggested that certified maintenance providers could be hired by homeowners to check the systems.

Mike Reno argued that it is not the health districts' responsibility to enforce compliance for units that aren't working. He suggested that the TGC could disapprove units that aren't working. He recommended that letters be sent to manufactures to inform them their units have been suspended and see what assistance they'll provide.

David Loper asked why title companies aren't aware of the non-profit O&Ms that are on record with the county. Also, he asked what should be done about O&Ms that have disbanded? He recommended a subcommittee be formed to establish a formal process and make a recommendation to the TGC.

Bob Erickson concurred that the non-profit O&M system needs modification.

The TGC agreed this is a big issue that needs improvement. A recommendation was made to form a subcommittee to look at short-term and long-term solutions. DEQ will chair the subcommittee. The TGC will look for people to self-nominate for subcommittee membership and notice will be provided for those who aren't present. The subcommittee will be comprised of a DEQ chair, two TGC members, industry representatives, Health Department members, industry/trade organization members, and a homeowner. There needs to be geographic distribution.

DEQ will publish a webpage announcement seeking membership on the subcommittee and will send that information to O&M entities and trade organizations. They will collect nominations and will present those nominations to the TGC for selection.



TGC COMMITTEE ACTION ITEMS:

- DEQ will prepare the Surface Water Setback document for public comment.
- DEQ will make the final changes to the 4.7 Drip Distribution System.
- DEQ will make the final changes to the 4.20 Pressure Distribution System.
- DEQ will develop information on ETPS vertical setback and provide additional information on UV light.
- DEQ will clean up the 2.4 Fill Material proposal.
- DEQ will develop a proposal to address the pump to drop box alternative.
- DEQ will set up an ETPS O&M Entity subcommittee.

The committee was asked to identify additional areas of the TGM that the committee and DEQ should work on. For the next meeting the committee asked DEQ to bring to the committee the following items:

- Sand Mound section that describes added an additional 12 inches of sand to a sand mound design that this “Extra” Sand Mound alternative would qualify for the effective soil depths of an ISF system. The committee recalls recommending to DEQ to adopt this alternative at a previous meeting, and that DEQ needs to complete the guidance development process.
- Sections in Chapter 7 and Chapter 4 need to be either linked or combined.
- The TGC needs to move forward on the Installers Test. The Health Districts are through the initial vetting process of the exams. David Loper will send out one final review to all of the health districts and then bring the new exams to the TGC. Questions will be vetted through the TGC and then a recommendation will be made for DEQ to revise the exams and prepare them for distribution. The TGC will review the Installers Test questions at the next meeting. The questions will be provided to committee members at least one month in advance.

For future meetings the committee identified the following alternative to be worked on:

- The Gravelless Trench section needs to be reworked. It was pointed out that this section has not changed since 1985, other than the note that was added.
- The Serial Distribution System section needs to be redone. Refer to EPA Design Manual.

NEXT MEETING

The next committee meeting was schedule to be on June 19th 2012 here at the DEQ State Office building starting at 9:00 a.m.

The meeting adjourned at 4:00 p.m.



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Appendix A. Final Recommendations to DEQ.

4.7 Drip Distribution System. Replace entire section.

4.20 Pressure Distribution System. Single page substitution.