Drainfield to Surface Water Setback Distance Subcommittee
Teleconference Meeting Minutes
Thursday, 08/12/2010, 10:00 am

Teleconference
Date: 2010-08-12
Start: 10:00 am

Attendance: Athol: George Miles, PE
Boise: AJ Maupin, PE; Joe Canning, PE
Coeur d'Alene: Allen Worst
Hayden: Dick Martindale
Idaho Falls: Nathan Taylor
Kimberley: Dr. Jim Ippolito, Ph.D. USDA
Rapid City, SD: Bill Holder, PE
Missing: John Corcoran (Realtor Association Representative); Brett Skidmore (Building Contractors Association Representative);

Meeting called to order at 10:13 am.

Past Meeting minutes:

11 June 2010 Minutes: Question was raised concerning apparent discrepancy between Modeling section's second sentence in the first paragraph and the definition of breakthrough in this section's sixth paragraph. It was explained that the first paragraph reflected how the modeling was performed and the sixth paragraph reflects the request to have the modeling rerun to see how the breakthrough definition impacts the modeled lifetime of a drainfield. Motion made to approve the minutes as presented, the motion was seconded and the minutes passed unanimously.

Vadose Zone Modeling:

New modeling was presented and discussed. Dr. Ippolito modeled various vadose zone thicknesses using a 9 mg-P/L input. The duration that the drainfield soils provided before an outflow of various phosphorus concentrations were determined. The various concentrations exiting the vadose zone were 1, 2, 3, 4 and 9 mg-P/L. The various vadose zone thicknesses were 1, 2, 3, 4 and 12 feet. The durations were reported in years. The durations differed for the various Idaho soils evaluated. The Declo Soil of southern Idaho providing the quickest response below the vadose zone at 2.2 years for 9 mg-P/L input to transect 1 foot of soil and output 1 mg-P/L. The Threebear Soil of northern Idaho provided the longest duration response time exceeding 1,600 years for 9 mg-P/L input to transect 12 feet of vadose zone soil and output 9 mg-P/L. These various output concentrations are the input concentrations to the saturated flow modeling performed by Bill Holder, P.E.

It was pointed out that the initial phosphorus sorbtion in the soil is in an amorphous state with Aluminum (Al), Iron (Fe) and Calcium (Ca) oxides. These materials convert from an amorphous state to a crystalline state over a period of years, resulting in sorption sites being liberated to sorb additional phosphorus. Eventually though the Al, Fe and Ca are consumed in the soil column. A request was made for the soil mineral concentrations (Al, Fe & Ca) so that a table could be started that might help the Health Districts evaluate the phosphorus sequestering ability of a site's soils.

A question was raised concerning adjusting setbacks. It was pointed out that soil types and household phosphorus discharge concentrations are not the only variables to impact the longevity of drainfields. There are also technological solutions and impacts. We must consider all aspects before we start discussing altering the setbacks established in Rule. A point was presented that because the amount of sorption sites is dependant upon how much soil exists above the aquifer, if a drainfield's size is increased it will effectively increase the mass of soil available to sorb phosphorus. This is a valid point and pertinent since the subcommittee also agreed that drainfields designed for phosphorus reduction should be pressurized. A question was raised concerning the a maximum distance beyond which drainfield pressurization would not be required, say 500 feet. This would help state-wide implementation, but probably should not exceed current Rule specified distances. Alternatively, requiring drainfield pressurization for those systems proposed to be closer to surface water than the Rule currently allows could be addressed through the TGC and documented for state-wide implementation in the TGM.

Concerns were voiced concerning the Phosphorus sequestering technologies. Given that these technologies all use a consumable media that must be replaced periodically, would these systems be required to obtain an Operations & Maintenance (O&M) Entity and secure a qualified service provider? Some subcommittee members voiced their support for these as minimum requirements while a few mentioned that it might be best addressed through an Operating Permit. A brief statement was made referencing the US EPA's five (5) levels for distributed wastewater

systems management structures. If these systems were to be owned by a public entity and rented to the homeowners then they would qualify as a Level 5 management structure (as long as they are permitted under an operating permit which is required under EPA's Level 3 management structure).

A request was made of Dr. Ippolito to document his efforts in layman's terms so that the general public will understand.

Antidegradation of Surface Water

Bill Holder has been participating in DEQ's Surface Water Program's negotiated rule making effort to address antidegradation. He voiced a concern about proposed terms. Specifically, "contributions can not cause a measurable increase". Is it influenced by the type of water body? Bill indicated that his modeling shows that surface water mixing has a greater impact on the resulting phosphorus concentrations that does ground water mixing. AJ agreed to discuss this with the Surface Water Program.

White Paper

Focus group for the Pathogen evaluation have submitted their summary of their literature research. The Nitrogen, Phosphorus and PPCP/EDC focus groups still need to complete their summary. A request was made to have this white paper prepared for the next TGC meeting on November 3, 2010.

Next Meeting Schedule:

The next meeting is scheduled for Thursday, 9 September 2010, from 10:00 am MDT (9:00 am PDT) to 12:00 pm MDT (11:00 am PDT).

Meeting adjourned at 11:47 am.

Next Meeting Topic: