Update on Onsite Wastewater Treatment Systems Expert Review Panel

July 10, 2012

Overall

- Continuing with monthly calls
  - Occasional sub panel calls
    - Exsitu, Soils, Concentration
- Completed panel interviews and summary
- Making progress towards the end goal of developing reduction recommendations

Exsitu Subpanel

- Looking at 3 focus topics: Attached Growth, Suspended Growth, and Other
- Tt sent out exsitu white paper
- Subpanel will review state alternative system approval process programs and provide comments and ultimately integrate into panel recommendations, if necessary

Soils Subpanel

- Soil-site subpanel integration
- Looking at 5 focus topics: Dispersal Configuration, Soil Type/Series, Groundwater Interaction, Vegetation/ET, PRB
- Tt sent out combined soil/siting white paper
- Discussion regarding reducing the number of soil types in Bay watershed to something more manageable for the model.
- Discuss developing the PRB recommendation paper

Concentrations Subpanel

- At May 2012 call there was a desire to review concentrations coming from septics
- Panel looking at where the baseline concentration for septics in model was derived and potential recommendation for updating the information.
- Ning has provided model documentation
- Tetra Tech developing white paper to assist panel

Proposed BMP Evaluation Spreadsheet

- Two approaches
  - *Scoring Approach* framework is based on semi-quantitative assessment of variables that are expected to contribute to TN removal in onsite systems.
  - *Matrix Approach* framework is based on assigning percentage TN removals to various system characteristics.
  - Panelists review BMP evaluation spreadsheet and provide feedback on which approach (matrix vs. scoring) is preferred
    - Matrix is preferred based on full group discussion
  - Panelists provide feedback on the structure of the matrix and the categories of treatment systems in matrix

Matrix Approach–DRAFT Example

	A	B	C	D	E	F	G	H
1	**Exsitu (pre) Treatment Type**							
2		% reduction	mg/l					
3	**Septic tank effluent TN**		40					
4								
5	Submerged constructed wetlands	15%	34					
6	**Single pass filters**	**30%**	**28**					
7	Suspended growth ATU	30%	28					
8	Recirculating media filter (RMF)	50%	20					
9	RMF with denite design	70%	12					
10	Pretreatment with denitrification-driving compound addition	90%	4					
11								
12								
13	**Soil Treatment Unit Characteristics**							
14	**For Pre-Nitrified Effluent**	**Coarse Textured Soils**		**Medium Textured Soils**		**Fine Textured Soils**		
15		% reduction	mg/l	% reduction	mg/l	% reduction	mg/l	
16	**Exsitu effluent TN**		28		28		28	
17								
18	Gravity distribution	15%	23.8	30%	19.6	40%	16.8	
19	Pressurized distribution (e.g., low pressure pipe)	20%	22.4	**40%**	**16.8**	60%	11.2	
20	Full coverage pressurized distribution (e.g., spray, drip)	25%	21	50%	14	80%	5.6	
21								
22	**Un-Nitrified Effluent**	**Coarse Textured Soils**		**Medium Textured Soils**		**Fine Textured Soils**		
23		% reduction	mg/l	% reduction	mg/l	% reduction	mg/l	
24	**Exsitu effluent TN**		40		40		40	
25								
26	Gravity Distribution	10%	25.2	20%	22.4	30%	19.6	
27	Pressurized Distribution (e.g., low pressure pipe)	15%	23.8	30%	19.6	50%	14	
28	Full coverage pressurized distribution (e.g., spray, drip)	20%	22.4	40%	16.8	70%	8.4	
29								
30	* **Assumes sufficient soil organic matter; decrease removal percentages by half for insufficient organic matter**							
31	* **Assumes that sufficient anoxic conditions exist in the STU; decrease removal percentages by half for insufficient anoxic conditions**							
32	* **For systems with shallow placed dispersal and managed vegetation, multiply removal percentages by 1.5**							
33								
34								
35								
36								

Matrix approach | **Matrix approach (example)** | Scoring approach | Scoring appro