Appendix E

Lovett, Crystal

From: biogardinc@gmail.com on behalf of Kyle Shern [kshern@bio-gard.com]
Sent: Thursday, September 08, 2011 9:23 PM
To: Lovett, Crystal
Subject: Considerations for constructed wetlands

Ms. Lovett,
I didn't bring it up during the second stake holders meeting today but I feel there should be the same latitude given to allowing constructed wetlands to surface discharge in the same manner that a lagoon is allowed to. There is no denying that the quality of discharge from a wetlands is far superior to that of a lagoon however with the currnet regulations a wetland is not allowed to open discharge. I am not an advocate of any discharging on-site system but to allow a lagoon to discharge and not a wetland just is not logical.

P.S. I have never seen a 'non-discharging' lagoon in Missouri.

Thank you for all your time and effort.
--
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Citizens for the Preservation of Lake of the Ozarks

September 7, 2011

Ms. Crystal G. Lovett
Planning Coordinator
Director's Office
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Re: On-Site Wastewater Stakeholder Process

Dear Ms. Lovett:

On behalf of the Citizens for the Preservation of the Lake of the Ozarks (Citizens) I wish to express our appreciation of the Missouri Department of Health and Senior Services and the Missouri Department of Revenue for their efforts in researching cost-effective solutions to identifiable wastewater problems. Our Citizens group also appreciates being invited to the stakeholder meetings being conducted pursuant to HB89.

Our Citizens group has worked closely with the Camden County Commission in developing new county ordinances that strengthen controls over onsite wastewater systems in Camden County and provide more effective remedial tools for county wastewater officials and the county prosecutor in addressing failing onsite wastewater systems. Our Citizens group is proud of the efforts of the Camden County Commission and wishes to submit the new ordinances, a copy of which accompanies this letter, as an effective model for other counties to follow in addressing their particular onsite wastewater challenges. We believe that the most cost-effective measures to address onsite wastewater issues are those measures implemented at the local county level where local county officials and public health employees most familiar with the issues can address practical solutions to identified problems.

There are several effective provisions in the accompanying ordinances, but I would like to call your attention to three provisions in particular. The ordinances require that all advanced systems installed after January 1, 2011, must have an operating permit. Additionally, the county wastewater department no longer needs to wait for a complaint from a third party before inspecting an onsite wastewater system. Thirdly, controls over land application of effluent have been strengthened.

Please accept the accompanying wastewater ordinance of Camden County into the records of the stakeholder process as an example of local solutions to the issues of onsite wastewater management.

Very truly yours,

Greg Gagnon
Chairman

PROPOSED REVISIONS TO THE CAMDEN COUNTY ON-SITE SEWAGE DISPOSAL SYSTEM ORDINANCE

An ordinance governing the construction, modification, installation and operation of on-site sewage disposal systems within Camden County, requiring certain permits and qualifications and providing penalties for violation thereof.

It is hereby ordered by the Camden County Commission as follows:

COPY

SECTION 1. [*Authority*] *Authority and Scope of Coverage*

This Ordinance is enacted pursuant to:

1.1 Section 701.025 et seq. of the Revised Statutes of Missouri which provides, in part, that political subdivisions may establish a system for the regulation and inspection of on-site sewage disposal contractors and a minimum code of standards for design, construction, materials, operation and maintenance of on-site sewage disposal systems, for the transportation and disposal of wastes there from and for on-site sewage disposal systems servicing equipment, provided such ordinances, rules and regulations establish a system at least equal to those laws, rules and regulations established pursuant to the laws of the State of Missouri; **and**

1.2 Section 192.300 of the Revised Statutes of Missouri which provides, in part, that the county commissions and the county health center boards of the several counties may make and promulgate orders, ordinances, rules or regulations, respectively as will tend to enhance the public health and prevent the entrance of infectious, contagious, communicable or dangerous diseases into such county, but any orders, ordinances, rules or regulations shall not be in conflict with any rules or regulations authorized and made by the department of health and senior services in accordance with chapter 192 of the Revised Statutes of Missouri or by the department of social services under chapter 198 of the Revised Statutes of Missouri.

The provisions of this Ordinance apply to all property within Camden County except [as specifically provided herein.]:

[3.1] **1.3** [Four Seasons Property Owners Association: The provisions of this Ordinance shall not apply to residents and other]properties located within Camden County, and outside the jurisdictional boundaries of the Village of Four Season that are subject to the control and supervision of the Four Seasons Property Owners Association.

[3.2] **1.4** [Certain R]residential [P]property consisting of 3 acres or more[- exceptions: The provisions of this Ordinance relating to the construction, operation, major modification and major repair of on-site **sewage** disposal systems shall not apply to property] used for a single-family residence [consisting of more than three acres, subject to the following exceptions] **except that the provisions of this Ordinance shall apply to such property if:**

1.4.1 [The provisions of this Ordinance, shall apply to such property if] such property is adjacent to a lake operated by the Corps of Engineers or by a public utility[.]; **or**

1.4.2 [The provisions of this Ordinance, shall apply to such property if] effluent from a sewage disposal system on such property enters adjoining property, contaminates surface waters or groundwater or creates a nuisance[.]; **or**

1.4.3 [The provisions of this Ordinance, shall apply to such property if] any point of an **on-site** sewage disposal system is located within ten feet of *any* adjoining property line.

[3.3] **1.5** [The provisions of this Ordinance relating to the construction, operation, major modification and major repair of on-site disposal systems shall not apply when] **property within any city, town or village, whether organized under the general law or by constitutional or special charter, any sewer district organized under chapter 204 or chapter 249, any public water supply district organized under chapter 247, or any other municipality, political subdivision or district which owns or operates a sewer system that provides for the collection and treatment of sewage and sewage and waste from such property is disposed of by discharging into a sewer system.**

1.6 property on which sewage and waste is disposed of by discharging into a sewer system regulated under Chapter 644[, RSMo] **of the Revised Statutes of Missouri**.

SECTION 2. Definitions

As used in this Ordinance, the following words and phrases shall have the following meaning:

2.1 "Advanced System", an alternative or engineered on-site sewage disposal system incorporating modifications or additions to the system that include but are not limited to a sand filter, media bio-filter, fixed film filter, advanced aerobic treatment unit, constructed wetland, sand mound, low pressure pipe, drip irrigation or modified shallow placed gravity lateral trenches or other system using fill material;

2.2 "Bedroom", any room within a residential dwelling used as a sleeping room;

2.[1]3"Department of Health", the Department of Health of the State of Missouri;

2.4 "Emergency Repair", an act or work verbally authorized by the Wastewater Department and performed to correct an on-site sewage disposal system causing or creating an immediate health hazard or the threat of an immediate health hazard,.

2.[2]5"Existing System", an on-site sewage disposal system in operation prior to January I, 1996;

2.[3]6"Human excreta", undigested food and by-products of metabolism which are passed out of the human body;

2.[4]7"Imminent health hazard", a condition which is likely to cause an immediate threat to life of a serious risk to the health, safety, and welfare of the public if immediate action is not taken;

"Maintenance", an act or work undertaken to keep an on-site sewage disposal system properly functioning, including, but not limited to: adjusting flow, repairing baffles, replacing pumps, cleaning or replacing an effluent screen or pumping accumulated solids out of a tank;

2.[5]8"Major modification" or "major repair", the redesigning and alteration of an on-site sewage system by relocation of the system or a part of the system, replacement of the septic tank or construction of a new absorption field;

"Malfunctioning or failing on-site wastewater system", any on-site sewage disposal system in which sewage or effluent overflows from any of the component parts and ponds or surfaces; or in which sewage or effluent backs-up into any system component, the plumbing system or building; or with failed structural components; or an on-site sewage disposal system that contaminates surface waters or groundwater or presents a nuisance or imminent health hazard.

"Manhole", a hole or structural component on an on-site sewage disposal system with a removable cover through with a person may enter or access an on-site sewage disposal system or tank.

2.[6]9"Nuisance", sewage, human excreta or other human organic waste discharged or exposed on the owner's land or any other land from an on-site sewage disposal system in a manner that makes it a potential instrument or medium for the breeding of flies and mosquitoes, the production of odors, or the transmission of disease to or between a person or persons, or which contaminates surface waters or groundwater.

2.[7]10 "On-site sewage disposal system", any system handling or treatment facility receiving domestic sewage which discharges into a subsurface soil absorption system and discharges less than three thousand gallons per day;

2.[8]11 "On-site sewage disposal system contractor", any person who constructs, alters, repairs, or extends an on-site sewage disposal system on behalf of, or under contract with, the property owner;

2.12 "Operating Permit", a permit issued by the Camden County Wastewater Department authorizing the operation and use of an advanced system and which sets forth the proper operation and maintenance functions for the advanced system;

2.[9]13 "Person", any individual, group of individuals, association, trust, partnership, corporation, person doing business under an assumed name, the state of Missouri or any department thereof, or any political subdivision of this state;

2.1[0]4 "Property owner", the person in whose name legal title to the real estate is recorded;

2.15 "Registered Service Tech", a repair or service technician trained, authorized and registered as an "advanced installer" with the Department of Health and the Camden County Wastewater Department.

2.16 "Repair", an act or work on an on-site wastewater system required to restore the proper functioning of the system that does not result in a change to or modification of the size or location of the system;

2.1[1]**7** "Sewage" or "domestic sewage", human excreta and wastewater, including bath and toilet waste, residential laundry waste, residential kitchen waste and other similar waste from household or establishment appurtenances. Sewage and domestic sewage waste are further categorized as:

2.1[2]**8** "Blackwater", waste carried off by toilets, urinals and kitchen drains;

2.1[3]**9** "Graywater", all domestic waste not covered in paragraph (a) of this subdivision, including bath, lavatory, laundry and sink waste;

2.20 "Site Visit or Site Inspection", a mandatory investigation of a proposed on-site wastewater system installation site performed by the Camden County Wastewater Department prior to approval of the issuance of a permit;

2.21 "Soil Morphology Test", a report of the suitability and soil characteristics for a proposed soil absorption type of on-site wastewater system installation site which includes texture, structure, porosity, consistency, color and other physical, mineral and biological properties of various horizons, and the thickness and arrangement of the horizons in the soil profile;

2.22 "Stop Order", a written order issued by the Camden County Wastewater Department to stop all construction, installation, modification or operation of an on-site wastewater system.

2.[14]**23** "Subdivision", land divided or proposed to be divided for predominantly residential purposes into such parcels as required by local ordinances, or in the absence of local ordinances, 'subdivision" means any land which is divided or proposed to be divided by a common owner or owners into three or more lots or parcels, any of which contains less than three acres, or into platted or unplatted units, any of which contains less than three acres, as a part of a uniform plan of development.

2.[15]**24** "Subsurface soil absorption system", a system for the final renovation of the sewage tank effluent and return of the renovated wastewater to the hydrologic cycle, including the lateral lines, the perforated pipes, the rock material and the absorption trenches. Included within the scope of this definition are: sewage tank absorption systems, privies, chemical toilets, single-family lagoons and other similar systems; except that a subsurface sewage disposal system does not include a sewage system regulated pursuant to chapter 644, RSMo.

2.[16]**25** "Variance Board", a board consisting of five (5) full-time members, with one(1) alternate member being the Camden County presiding commissioner or an appointee by the Camden County Commission, with members serving two (2) year terms, a chairman to be elected by the board members.

2.[17]**26** "Waste", sewage, human excreta or domestic sewage.

[*SECTION 3. Scope of Coverage*

The provisions of this Ordinance apply to all property within Camden County except as specifically provided herein.

3.1 Four Seasons Property Owners Association: The provisions of this Ordinance shall not apply to residents and other properties located within Camden County, and outside the jurisdictional boundaries of the Village of Four Season that are subject to the control and supervision of the Four Seasons Property Owners Association.

3.2 Certain Residential Property consisting of 3 acres or more[- exceptions]: The provisions of this Ordinance relating to the construction, operation, major modification and major repair of on-site **sewage** disposal systems shall not apply to property used for a single-family residence consisting of more than three acres, [subject to the following exceptions] **except that the provisions of this Ordinance shall apply to such property if**:

1 [The provisions of this Ordinance, shall apply to such property if] such property is adjacent to a lake operated by the Corps of Engineers or by a public utility[.]; **or**

2 [The provisions of this Ordinance, shall apply to such property if] effluent from a sewage disposal system on such property enters adjoining property, contaminates surface waters or groundwater or creates a nuisance[.]; **or**

3 [The provisions of this Ordinance, shall apply to such property if] any point of **an on-site** sewage

disposal system is located within ten feet of *any* adjoining property line.

3.3 The provisions of this Ordinance relating to the construction, operation, major modification and major repair of on-site disposal systems shall not apply when sewage and waste is disposed of by discharging into a sewer system regulated under Chapter 644[, RSMo] **of the Revised Statutes of Missouri.]**

SECTION [4]3. Disposal of domestic sewage - requirements

[4]3.1 [Except as provided in Section 3, p]**Property owners of all buildings where people live, work or assemble shall provide for the sanitary disposal of all domestic sewage. Sewage and waste from such buildings shall be disposed of by discharging into an on-site sewage disposal system [, or shall be] unless** disposed of by discharging in to a sewer system **within any city, town or village, whether organized under the general law or by constitutional or special charter, any sewer district organized under chapter 204 or chapter 249 of the Revised Statutes of Missouri, any public water supply district organized under chapter 247 of the Revised Statutes of Missouri, or owned or operated by any other municipality, political subdivision or district, or** regulated under chapter 644, of the Revised Statutes of Missouri.

[4]3.2 Any construction, **installation,** [operation,] modification, [or] repair **or operation** of an on-site sewage disposal system shall be in accordance with rules promulgated under this ordinance, regardless of when the **on-site sewage disposal** system was originally constructed.

SECTION [5]4. Disposal of domestic sewage -prohibitions and restrictions

[5]4.1 [No] **A** person or property owner **commits the Ordinance violation of improper disposal of sewage or waste if he or she knowingly permits sewage or waste to contaminate** [shall operate an on-site sewage disposal system or transport and dispose of waste removed there from in such a manner that may result in the contamination of] surface water[s] or groundwater or [present] **to cause** a nuisance or imminent health hazard to any other person or property owner. **Improper disposal of sewage or waste is a class B misdemeanor. The range of punishment for a class B misdemeanor is imprisonment in the county jail or other authorized penal institution for a term not to exceed six (6) months; by a fine not to exceed five hundred dollars ($500); or by both imprisonment and a fine.**

[5.2 No person or property owner shall operate an on-site sewage disposal system that does not comply with the requirements of the on-site sewage disposal rules and regulations promulgated in this ordinance.]

[5.3]**4.2** [No] **A** person or property owner **commits the Ordinance violation of** [shall] constructing, installing, [or] modifying, **repairing or operating** an[y] on-site sewage disposal system without [the required] a permit [or permits as set forth in this Ordinance] **if he or she constructs, installs, modifies, repairs or operates an on-site sewage disposal system without obtaining the required permit or permits for such construction, installation, modification, repair or operation or after such permit has expired or been suspended or revoked. Constructing, installing, modifying, repairing or operating an on-site sewage disposal system without a permit is a class C misdemeanor. The range of punishment for a class C misdemeanor is imprisonment in the county jail or other authorized penal institution for a term not to exceed fifteen (15) days; by a fine not to exceed three hundred dollars ($300); or by both imprisonment and a fine and shall further be subject to a penalty in an amount double the amount of the permit required but not obtained.**

[5.4]**4.3** [No] **A** person or property owner **commits the Ordinance violation of** [shall] improper construction, installation, [or] modif[y]ication, **repair or operation of** an[y] on-site sewage disposal system in a manner that does not comply with the state standard established under sections 701.025 to 701.059 of the revised Statutes of Missouri as adopted in this Ordinance **or in the rules, regulations and standards governing the construction, installation, modification, repair or operation of on-site sewage disposal systems as set forth in this Ordinance. Improper construction, installation, modification, repair or operation an on-site sewage disposal system is a class C misdemeanor. The range of punishment for a class C misdemeanor is imprisonment in the county jail or other authorized penal institution for a term not to exceed fifteen (15) days; by a fine not to exceed three hundred dollars ($300); or by both imprisonment and a fine.**

[5.5 No person or property owner shall construct, install modify any on-site sewage disposal system when the permit has expired or has been suspended or revoked.]

4.4 A person commits the Ordinance violation of spraying, dumping or otherwise applying effluent or other waste if he or she sprays, dumps or otherwise applies effluent or other waste from any component of an on-site sewage disposal system to any land location within Camden County without specific approval granted by the Missouri Department of Natural Resources pursuant to a site specific land application permit. Spraying, dumping or otherwise applying effluent or other waste is a class B misdemeanor. The range of punishment for a class B misdemeanor is imprisonment in the county jail or other authorized penal institution for a term not to exceed six (6) months; by a fine not to exceed five hundred dollars ($500); or by both imprisonment and a fine.

[5.6]**4.5** [No] **A** person or property owner **commits the Ordinance violation** of [shall] **failure** to comply with a Stop Order [issued pursuant to this Ordinance] **if he or she fails to obey or comply with the provisions of a stop order issued by the Camden County Wastewater Department. Failure to obey or comply with a stop order is a class B misdemeanor. The range of punishment for a class B misdemeanor is imprisonment in the county jail or other authorized penal institution for a term not to exceed six (6) months; by a fine not to exceed five hundred dollars ($500); or by both imprisonment and a fine.**

SECTION [6]*5. Creation and authority - Camden County Wastewater Department.*

There is created a Wastewater Department which shall be under the direction and authority of the County Commission. The Camden County Wastewater Department shall have the power and duty to:

5.1 Receive and consider applications for permits and issue permits for the construction, installation, modification, repair and operation of on-site sewage disposal systems as set forth in this Ordinance.

5.2 Authorize emergency repairs as provided for in this Ordinance.

[6.1]**5.3** Cause investigations to be made when a violation of any provision of this Ordinance or of sections 701.025 to 701.059 of the Revised Statutes of Missouri or the on-site sewage disposal rules contained in the Code of State Regulations;

[6.2]**5.4** Enter **private or public property** at reasonable times, **and in compliance with the provisions of the Constitutions of the United States and the State of Missouri and with the provisions of the Revised Statutes of Missouri** [after receiving a complaint and determining] **based upon** probable cause that a violation exists, [upon private or public property] for the purpose of inspecting and investigating conditions relating to the administration and enforcement of this Ordinance or of sections 701.025 to 701.059 of the Revised Statutes of Missouri or the on-site sewage disposal rules contained in the Code of State Regulations.

[6.3]**5.5** Authorize the trial or experimental use of innovative systems for on-site sewage disposal, after consultation with the staff of the Missouri clean water commission, and upon such conditions as the Missouri Department of Health may set.

SECTION [7]*6.* [*Minimum standards for the c*]*Construction, Installation and Modification and Inspection of On-Site Sewage Disposal Systems*

6.1 All on-site sewage disposal systems subject to the provisions of the ordinances of Camden County shall be constructed, installed, **modified, repaired and operated** [and maintained] in accordance with **the rules, regulations and provisions of this ordinance,** [minimum construction standards for on-site disposal systems as promulgated and established by the Missouri State Department of Health in] the **Missouri** Code of State Regulations, and [as established by state law in] the Revised Statutes of Missouri, which are by this reference incorporated into this Ordinance.

6.2 Specifically, on-site sewage disposal systems installed, constructed or modified in Camden County shall

6.2.1 use only poly, fiberglass or concrete tanks. No metal tanks shall be used in any such construction, installation or repair;

6.2.2 allow access to both the inlet & outlet devices of each tank and to each separate

compartment of each tank by means of a manhole. Manhole risers shall be required when the top of the septic tank is more than six (6) inches below the final grade.

6.2.3 provide for a watertight seal around any pipe, conduit, wiring or manhole entering or exiting a septic tank.

6.2.4 be constructed, installed or repaired in such a manner that all septic tanks are embedded in sand or gravel not more than one inch (1") in size unless otherwise specifically recommended in a tank manufacturer's installation guidelines.

6.2.5 not be constructed, installed, modified or repaired using composting toilets on property adjoining the Lake of the Ozarks.

6.3 All conventional and advanced on-site sewage disposal systems shall be constructed, installed modified or repaired by an on-site sewage disposal system contractor authorized by and registered with the State of Missouri and Camden County except that the installation or replacement of a septic tank may be performed by a property owner. The installation or replacement of any septic tank whether by a property owner or an on-site sewage disposal system contractor shall not be performed without a permit issued by the Camden County Wastewater Department approving such installation or replacement.

6.4 All on-site sewage disposal systems shall be inspected by a state registered inspector as a prerequisite for the issuance of building permits issued by Camden County Planning and Zoning related to the remodeling or rebuilding of, or additions to, all buildings where people live, work or assemble except where such on-site sewage disposal systems is being operated pursuant to valid operating permit.

SECTION [8]7. Permit applications and permits for the construction, installation, modification or repair of on-site sewage disposal systems

[8]7.1 Any person desiring to construct, install [or] modify, **or repair** [a wastewater treatment system] **an on-site sewage disposal system** must first obtain a valid permit[. The following procedures and regulations will be followed in applying for a permit. Permits are] issued by the Camden County Wastewater Department.

[8]7.2 Any person who proposes to construct, install, [or] modify, **or repair** [a wastewater treatment system] **an on-site sewage disposal system** shall submit to the Wastewater Department a written application **certified by a State Registered Engineer or** on a form supplied by the Wastewater Department [or a certification by a State Registered Engineer]

7.3 Proposed [wastewater treatment system] **on-site sewage disposal systems** shall be designed in accordance with th[e]**is** Camden County On-site Sewage Disposal Ordinance, [Missouri Department of Health Laws and Rules] **the Missouri Code of State Regulations, and the Revised Statutes of Missouri** governing on-site sewage **disposal** systems [minimum requirements and the Camden County On-site Sewage Disposal Ordinance].

7.4 All **applications for the construction, installation, modification or repair of** on-site wastewater sewage [treatment] **disposal** systems shall [be designed from] **include a report detailing the results** of a [detailed] soil evaluation **of the site of the proposed or existing system** conducted by a professional soil scientist, engineer, sanitarian or registered geologist with special training in determining soil morphological characteristics in the field. [No] **A soil evaluation report shall not be based upon** percolation tests [will be accepted].

[8.3]7.5 [A p]Permits **for the construction, installation, modification or repair of on-site wastewater sewage disposal systems issued by the Camden County Wastewater Department shall** [will] be posted on the property **during the time of construction and shall include the name of the person or entity** [stating who is] constructing, **installing, modifying or repairing** the wastewater treatment system [during the time of construction].

SECTION 8. Permit applications and permits for the repair of on-site sewage disposal systems

8.1 Any person desiring to repair an on-site sewage disposal system must first obtain a valid repair permit. Repairs must meet or exceed the requirements of this ordinance and the current

Missouri Department of Health regulations relating to on-site wastewater systems.

8.[4]2Emergency [major modification or major] repairs of [the] on-site sewage disposal systems made to relieve an imminent health hazard may be **performed** [made without a permit] **before the issuance of a repair permit provided the property owner or person or entity repairing the system obtains prior verbal consent from the Camden County Wastewater Department and submits the required permit application and fee within five (5) working days after beginning the emergency repair. No emergency repair shall be backfilled without the approval of the Camden County Wastewater Department.** [but the Wastewater Department shall be notified not later than the fifth working day after the date on which the repair is made and a corresponding application for a Permit or Permits for such emergency condition must be submitted.] **Emergency repairs shall meet or exceed the requirements of this ordinance and the current Missouri Department of Health regulations relating to on-site wastewater systems.**

SECTION 9. Permit applications and permits for the operation of certain on-site sewage disposal systems

9.1 On-site sewage disposal systems installed after on or after January 1, 2011 incorporating an advanced system as defined in section 2.1 as a component of the on-site wastewater system shall not be operated without the issuance of a valid operating permit. Permits required for the operation of Advanced Systems shall be issued by the Wastewater department after granting final approval for the construction, installation, modification or repair of an Advanced System.

9.2 A valid operating permit shall also be required for any on-site sewage disposal system the use of which has been determined to have caused contamination of surface water or groundwater or a nuisance or imminent health hazard to any other person or property owner. Permits required for the operation of such on-site sewage disposal system shall be issued by the Wastewater department after the termination of proceedings initiated to address such contamination, nuisance or health hazard.

9.3 Application for renewal of Operation Permits shall be made upon a form approved by the Wastewater Department and shall include proof of a current maintenance agreement and any service reports along with the applicable operating permit fee.

9.4 A site visit may be required by the Wastewater Department before approving an application for renewal of an operating permit and issuing a new Operating Permit.

SECTION [9]10. Permit application processing procedures

[9 All permit applications received will be processed in the following manner:]

10.1 The Camden County Wastewater Department shall review all permit applications for completeness including permit fees. Incomplete applications shall be returned to the applicant, but may be resubmitted to the Camden County Wastewater Department for reconsideration.

10.2 Pre-site visits by the Camden County Wastewater Department shall be conducted to evaluate and to determine the suitability of the property for the construction, installation, modification, or repair of the proposed on-site wastewater system prior to the issuance of a permit or prior to submission of the application to the Variance Board.

10.3 Applicants shall mark by field markings such as paint, flags or other identifying objects or materials the location of the on-site wastewater system components, the location of the proposed soil absorption system including the location and length of any lateral trenches and the location of property boundaries together with applicable setback restriction locations prior to the application submission to or the pre-site visit by the Camden County Wastewater Department.

[9.1]**10.4** Each application shall be approved or disapproved as soon as reasonably possible, but in no event to exceed thirty (30) business days from the date the application is received.

[9.2 All permits, plans and specifications must meet or exceed the requirements of this Ordinance, unless otherwise determined satisfactory by the Wastewater Department or the Variance Committee.]

[9.3] **10.5. If the permit application is approved,** [T]the Wastewater Department will notify the applicant

in writing, by mail or in person, of the approval of the application for the permit or permits **and issue the permit or permits to the applicant**.

10.6 The Camden County Wastewater Department may deny any permit application for reasons that include but are not limited to: inadequate design or construction methods or materials; incomplete application; inconsistencies or design or implementation defects discovered during site visits; location of the proposed site within 100 feet of a sewer system that provides for the collection and treatment of sewage and sewage and waste operated by any city, town or village, whether organized under the general law or by constitutional or special charter, any sewer district organized under chapter 204 or chapter 249, any public water supply district organized under chapter 247, or any other municipality, political subdivision or district which owns or operates such a system provided a connection is allowed or permitted by the authority for such system. If the Wastewater Department denies any permit application, the applicant shall be notified in writing, by mail or in person, of all the reasons for said denial and of all changes required for the permit or permits to be issued.

[9.4] **10.7** Any applicant aggrieved by the requirements of the Wastewater Department, or who have been denied a permit by the Wastewater Department may request and shall receive a hearing in accordance with the provisions of Section 16.

SECTION 1[0]1. Compliance with issued permits

11.1 Any person constructing, installing, modifying or repairing an on-site sewage disposal system shall report any conditions not in accordance with the system permit to the Camden County Wastewater Department without delay and shall cease all construction, installation, modification or repair until approval to proceed is granted.

[10.1]**11.2** [The permittee shall conduct all construction, installation or modification of any wastewater treatment system] **Any person constructing, installing, modifying or repairing an on-site sewage disposal system shall perform such construction, installation, modification or repair** in accordance with the terms and conditions of the permit. A new application or amended application must be filed with the Wastewater Department if the permittee desires to modify a permit. No modification shall be implemented until a new or modified permit has been issued or a variance [given pursuant to subsection 13.1 (c)] **is approved**.

[10.2 The issuance of a permit to construct a wastewater treatment system does not relieve the permittee of the responsibility to property operate and maintain the wastewater treatment system described in the application, in full compliance with the conditions of the permit and all provisions of this Ordinance.]

[10.3]**11.3** [No] **Any** person required to provide notice and apply to the Wastewater Department as provided herein [may] **shall not** complete the construction, [major modification or major repair] **installation, modification or repair** of an on-site sewage disposal system without **first** providing notice and an opportunity for inspection by the Wastewater Department as provided in this section. [The person]**Such notification** shall **be made to** [notify] the Wastewater Department prior to 9:00 a.m. on the day proceeding completion.

[10]**11.4** The **on-site sewage disposal** system shall be maintained in a condition which allows for a complete inspection until 3:00 p.m. on the day of completion, unless the Wastewater Department provide[d]**s** confirmation that the system has been inspected and, approved prior to that time.

[10]**11.5** The **on-site sewage disposal** system shall not be closed or completed if the city, county or department determines upon inspection that the system does not meet the standards set forth in this ordinance, and the Wastewater Department shall provide, at the time of inspection, a conspicuous marker or other form of notice indicating that the system does not meet the standards. The Wastewater Department shall provide written confirmation of the results of the inspection or confirmation that the department did not inspect the system to the property owner within three working days of the day of completion.

SECTION 1[1]2. Permit duration and extensions

[11.1 The permit duration for construction, installation or modification will be variable and reasonably sufficient to allow the permittee to perform the proposed work, and the expiration date must be recorded on each permit issued, but in no event shall it exceed one (1) year from date of issuance.]

12.1 All permits issued for the construction, installation or modification of an on-site sewage disposal system shall be valid for one year after the date of issuance, unless for good cause shown, the Wastewater Department determines that a permit duration of a shorter period of time is appropriate under the circumstance, but in no event shall the duration of such a permit be less than 60 days. If such construction, installation or modification is not completed within the time permitted, the permit will no longer be valid and a new permit must be applied for and obtained before commencing or continuing the construction, installation, modification or repair of the system.

12.2 All permits issued for the operation of an on-site sewage disposal system shall be valid for a period of two (2) years.

[11.2]**12**.2 Permits will be issued only to the person who applied for the permit or such person's authorized representative, and such authorization must be in writing from the person who applied for the permit.

[11.3]**12**.3 A permit may be extended by the Wastewater Department. Such extension request shall be in writing to the office of the Wastewater Department and shall be approved or disapproved within ten (10) business days after the request is received.

SECTION 1[2]3. Permit suspension or revocation

[12]**13**.1 The Wastewater Department may suspend or revoke a permit for a wastewater treatment system for any of the following reasons:

a. Substantial noncompliance with the terms of the permit;
b. Modifications in design or construction which are not authorized by the Wastewater Department;
c. Intentional falsification of information submitted; or
d. Substantial non-compliance with the terms of this Ordinance as determined by the Wastewater Department.

[12]**13**.2 Before **the suspension or revocation of** a permit [will be suspended or revoked] **by the Wastewater Department**, the permittee will be given a reasonable opportunity of not less than twenty (20) business days after receipt of written notice of non-compliance to perform the corrections in order to come into compliance with the permit.

SECTION 1[3]4. Stop Orders

[13]**14**.1 A Stop Order may be issued by the Wastewater Department [for the following reasons:]

a. For new construction or installation, if the materials and/or manner of installation fails to meet the requirements contained in the permit.
b. For existing systems which are being operated in violation of this Ordinance, if the property owner fails to submit a plan of compliance within thirty (30) days, or fails to fully comply within ninety (90) days after receipt of written notice of the violation. If the property owner or occupant refuses to permit an inspection as provided by section 12 herein, the Wastewater Department may assume the system is being operated in violation of this Ordinance.
c. If there exists a condition of such extreme nature which presents an immediate danger in public health requiring immediate corrective action. Examples of such an immediate danger include direct contamination of a potable water source.

[13]**14**.2 No stop order shall be enforced while an appeal is in process, unless [13.1(c) is applicable] **there exists a condition of such extreme nature which presents an immediate danger to public health**.

SECTION 1[4]5. Special provisions for prior violators

[14]**15**.1 A person who has, within the preceding twenty-four months, been found guilty or pleaded guilty to a violation of section 701.046, 701.047, 701.048 or 701.050 of the Revised Statutes of Missouri, **or a violation of Section 4 of this Ordinance,** may not begin construction, [major modification or major repair] **installation, modification or repair** of an on-site sewage disposal system that is owned by another person unless the person constructing, **installing,** modifying or repairing the system has provided to the Wastewater Department a performance bond or letter of credit as provided under this section.

[14]15.2 [The bond or letter] **Any such performance bond or letter of credit** shall be conditioned upon faithful compliance with the standards for on-site sewage disposal systems as established in this ordinance.

[14]15.3 Such performance bond, placed on file with the Wastewater Department, shall be in [one of] the [following] form[s:] **of a** [1. A] performance bond, payable to the department and issued by an institution authorized to issue such bonds in this state; or [2. A] **an** irrevocable letter of credit issued in favor of and payable to the department from a commercial bank or savings and loan having an office in the state of Missouri.

[14]15.4 Upon a determination by the Wastewater Department that a person has failed to construct, **install,** modify or repair an on-site sewage disposal system in compliance with the provisions of this ordinance, the department shall notify the person that the bond or letter of credit shall be forfeited and the moneys shall be used for remedial action, if that person does not bring the system up to the standards for on-site sewage disposal systems as established in this ordinance within thirty days after notice of such determination has been given.

[14]15.5 If the system is not brought into compliance with the provisions of this ordinance within thirty days, the Wastewater Department shall, within thirty days of the expiration of the notice period, expend whatever portion of the bond or letter of credit is necessary to hire a registered on-site sewage disposal system contractor to bring the system into compliance.

[14]15.6 The requirement for a person to provide a performance bond or a letter of credit under this section shall cease for that person after two consecutive years in which the person has not been found guilty or pleaded guilty to a violation of section 701.046, 701.047 701.048 or 701.050 of the Revised Statutes of Missouri **or a violation of Section 4 of this Ordinance**.

SECTION 1[5]6. [Permit fees]Fees and Costs

[Wastewater treatment system permit fees are non-refundable. These fees are as follows:]

[15]16.1 The [permit] fee for **a permit to construct, install or modify** an on-site [wastewater treatment] **sewage disposal** system [permit] is [$125.00]**$150.00 and is non-refundable**.

16.2 The fee for a permit to repair an on-site sewage disposal system is $150.00 and is non-refundable.

16.3 The fee for a permit to operate an on-site sewage disposal system is $100 bi-annually and is non-refundable.

16.4 The cost of dye tracing liquids is $5.00 per 8 ounces.

16.5 The registration fee for an Installer is $100.00 bi-annually.

16.6 The registration fee for a Tank Cleaner is $100.00 per truck, bi-annually.

16.7 The registration fee for a Registered Service/Repair Tech is $100 bi-annually.

SECTION 1[6]7. Appeals process

[16]17.1 Any person aggrieved by the Wastewater Department may appeal by filing a written application with the [office of the] **Camden County** Wastewater Department.

[16]17.2 All appeal applications shall be accompanied by a $50.00 deposit. Such deposit shall be refunded to the applicant upon the completion of the appeal process provided the applicant attends all appeal meetings and performs all requirements for appeal applicants. Appeals may be withdrawn and the deposit refunded by the applicant delivering written notice to the Wastewater Department no less than three (3) business days prior to meeting scheduled to hear the appeal as provided herein.

[16]17.3 Appeals from the Wastewater Department shall be heard by the Variance Board within fourteen (14) business days after the appeal is filed (unless a later date is requested by the applicant) and the applicant shall be given a reasonable opportunity to be heard. The Variance Board shall render a decision as soon as practical but in no event later than fourteen (14) business days after the meeting in which the appeal is heard.

[16]17.4 Appeal Hearings to the Variance Board shall be conducted in accordance with [the Variance Board's adopted] rules and procedures [as per Variance Procedures Dept. of Health rules governing

on-site septic] **adopted by the Variance Board.**

[16]**17**.5 Variance Board decisions can be appealed to circuit court of Camden County, Missouri, in accordance with Chapter 536 of the Revised Statutes of Missouri.

[*SECTION 17. Owner's right to install, modify or repair -when no permit is required*

17.1 Nothing in sections 701 .053 to 701.055 of the Revised Statutes of Missouri shall preclude property owners from installing, modifying or repairing their own on-site sewage disposal system as long as they comply with the provisions of sections 701.025 to 701 .059 of the Revised Statutes of Missouri and the provisions of this Ordinance.

17.2 Nothing in sections 701.025 to 701 .059 of the Revised Statutes of Missouri or in the provisions of this ordinance shall be construed so as to require a property owner to obtain a permit or to obtain registration as an on-site sewage disposal system contractor in order to clean that property owner's on-site sewage disposal system.]

SECTION 18. Violations, notice of, contents, prosecuting attorney to institute proceedings, when

18.1 Whenever the Camden County Wastewater Department determines after an inspection, or after receipt of a complaint, that there are reasonable grounds to believe that there has been violation of any provision of this Ordinance, notice shall be given of such alleged violation to the person responsible, as herein provided. The notice shall:

a. Be in writing;
b. Include a statement of the reasons for the issuance of the notice;
c. Allow reasonable time as determined by the Camden County Wastewater Department for the performance of any act it requires;
d. Be served upon the resident, owner, operator or contractor, as the case may require, provided that such notice or order shall be deemed to have been property served upon such person when a copy thereof has been sent by registered or certified mail to the person's last known address, as listed in the local property tax records concerning such property, or when such person has been served with such notice by any other method authorized by the laws of this state;
e. Contain an outline of remedial action which is required to effect compliance with the provisions of this Ordinance and with the laws and regulations of the State of Missouri.

[18.2 Existing systems, as defined in this Ordinance, shall not be inspected, unless the Camden County Wastewater Department determines, upon receipt of a complaint, that there are reasonable grounds to believe that there has been a violation of any provision of this Ordinance or of the provisions of State Law.]

18.[3]**2** If an aggrieved person files a written request for a hearing within ten days of the date of receipt of a notice, a hearing shall be held within fourteen (14) days from the date of the receipt of the notice, before the Variance Board, to review the appropriateness of the remedial action. The Variance Board shall issue a written decision within thirty calendar days of the date of the hearing. Any final decision of the Variance Board may be appealed to the Circuit Court of Camden County wherein the offense is alleged to have occurred for a trial de novo on the merits.

18.[4]**3** The Camden County Wastewater Department, may require a property owner to abate a nuisance or repair a malfunctioning on-site sewage disposal system on the owner's property not later than the thirtieth day from which the owner receives notification from the department of the malfunctioning system or a final written order, if a hearing or hearings were held pursuant to this section. If weather conditions prevent the abatement of the nuisance or repair of the system within the thirty-day period or if the owner is unable, after reasonable effort, to obtain the services of a contractor or repair service within the thirty-day period, the abatement of the nuisance or repair of the system shall be made, weather permitting, no later than sixty days after notification. Such extension for abatement or repair shall be subject to approval by the Camden County Wastewater Department.

18.[5]**4** The prosecuting attorney shall, at the request of Camden County Wastewater Department, institute appropriate proceedings for correction in cases of noncompliance with or violation of the provisions of this ordinance or of the provisions of sections 701.025 to 701.059 RSMo.

18.[6]**5** When it is determined by the Camden County Wastewater Department, after receipt of a complaint,

where an emergency exists which requires immediate action to protect the health and welfare of the public, the department is authorized to seek a temporary restraining order and injunction. Such action shall be brought at the request of the Camden County Wastewater Department by the prosecuting attorney. When such conditions are corrected and the health of the people of Camden County is no longer threatened, the department shall request that such temporary restraining order and injunction be dissolved. For the purposes of this subsection, and "emergency" means any set of circumstances that constitute an imminent health hazard or the threat of an imminent health hazard.

[*SECTION 19. Penalties for violations of the provisions of this ordinance.*

19.1 Any violation of section 14.1 of this ordinance shall be a class A misdemeanor.

19.2 Any violation of section 5.3, 5.4, 5.5, 5.6 or 10.3 of this ordinance shall be a class C misdemeanor.

19.3 Any violation of section 4.1, 5.1 or 5.2 of this ordinance is an infraction, except that a persistent violation of any of these sections, after notification by the state or county is a class C misdemeanor.

19.4 Any person or property owner who creates a nuisance or imminent health hazard as defined in section 701.025 on any single-family residence lot of three acres or more is guilty of an infraction.

19.5 The statute of limitations begins to run when an owner knows or should have known that an on-site sewage disposal system contractor had installed a defective system, a system which was inappropriate for the site or had installed a system incorrectly.]

SECTION [20]19. Private rights of action not preempted.

Nothing contained in this Ordinance shall be interpreted so as to preempt any private right of action or prevent any person from pursuing remedies which might otherwise exist for matters involving the disposal of domestic sewage.

SECTION [21]20. Investigation by the Camden County Wastewater Department -right to inspect adjoining property.

The Camden County Wastewater Department or any of its agents may enter any adjoining property if necessary when they are making an inspection pursuant to this section. The necessity for entering such adjoining property shall be stated in writing and the owner of such property shall be notified before the department or any of its agents may enter, except that, if an imminent health hazard exists, such notification shall be attempted but is not required.

SECTION 2[2]1. Notices

[22]**21**.1 Any notice required herein or any Stop Order shall be provided to the property owner, of record, and the permittee and to all other appropriate parties and shall be as follows:

[22]**21**.2 by personal delivery; or

[22]**21**.3 by depositing said notice of Stop Order in first class mail, postage prepaid.

[22]**21**.4 All Stop Orders shall be posted at the wastewater treatment system site in a conspicuous place.

SECTION 2[3]2. Severability

If any portion of this Ordinance is for any reason held invalid or unconstitutional by a court of competent jurisdiction, that portion shall be deemed a separate, distinct and independent provision and that holding shall not affect the validity of the remaining portion of this ordinance.

SECTION 2[4]3. Amendments

This Ordinance may be amended by a resolution passed by the Camden County Commission in accordance with 701.025 et seq. of the Revised Statutes of Missouri.

SECTION 2[5]4. Effective date and approval

This Ordinance shall be effective upon its approval by a properly passed resolution of the Camden County Commissioners.

SECTION 2[6]7. Registration of persons and businesses engaged in wastewater Treatment and/or on-site septic systems.

[26]**27**.1 Every person engaged in the design, construction, [or] installation, modification **or repair** of **an** on-site [septic] **sewage disposal** system[s] and [/or] **persons engaged in the business of** [septic tank] cleaning **on-site sewage disposal systems** within Camden County must register with the Camden County Wastewater Department. Any person **constructing,** installing or **modifying** on-site sewage disposal systems shall **also** be **required to** register[ed to do so by] **with** the Missouri Department of Health and Senior Services as per amended section of 701.031 under House Bill 1433 (HB1433) before registering with the Camden County Wastewater Department. Proof of State registration must be on file with the County Wastewater Department.

[26]**27**.2 The Camden County Wastewater Department may adopt rules and regulations, establishing qualifications and minimum standards for persons desiring to register under this Ordinance.

[26]**27**.3 Any person whose application for registration under this section has been denied will be notified in writing as to the reasons for denial, and said person may appeal **such denial** pursuant to [Section 16 of] **the appeal provisions in** this Ordinance.

[26]**27**.4 Whenever the Camden County Wastewater Department determines that a holder of a valid registration under this section, has violated any provisions of this Ordinance, or the rules and regulations adopted by the County, or the Missouri Department of Health. The Camden County Wastewater Department may suspend or revoke said registration and shall set the term of revocation and/or suspension within fourteen (14) days after a violation is determined. The said person under violation may appeal pursuant to Section 16 of this Ordinance within ten (10) days of notification from the Camden County Wastewater Department.

SECTION 2[7]8 Septic Tank Cleaning Standards

[27]**28**.1 The Camden County Wastewater Department may inspect the equipment and land application/storage site of the Registered Tank Cleaner for the purpose of determining if his equipment and land application are in good operating condition, and are being operated and maintained in a healthful manner and are in compliance with this Ordinance and the rules and regulations of the Missouri Department of Natural Resources.

[27]**28**.2 The Registered Tank Cleaner must use one of the following methods for disposal: a) Discharge in a municipal wastewater treatment plant b) Land application with approval from Missouri Department of Natural Resources

[27]**28**.3 The Registered Tank Cleaner and the property owner of the land application/storage site must have an agreement on file with the Camden County Wastewater Department; said land application/storage site must be approved by the Missouri Department of Natural Resources and the Camden County Wastewater Department.

[27]**28**.4 The Registered Tank Cleaner must keep on file for up to two (2) years, all records of said application times and amounts of sewage dumped or land applied. The Camden County Wastewater Department has the right to inspect said files periodically if deemed necessary.

28.5 No wastewater effluent or other waste component of any on-site sewage disposal system shall be sprayed, dumped or otherwise applied to any land location within Camden County unless otherwise specified and approved pursuant to a site specific land application permit issued through the Missouri Department of Natural Resources.

[SECTION 28Registration Fees for Installers and Tank Cleaners

28.1 Registration fee for Installer $50.00 Annual Renewal $25.00. Registration fee for Tank Cleaner **is** $50.00 Annual Renewal $25.00.]

Carolyn A. Loraine
Presiding Commissioner

Beverly Thomas
1st District Commissioner

Thom Gumm
2nd District Commissioner

Rowland Todd, Clerk

Dec. 22 ,2010
Signed

ROWLAND A. TODD
SEAL
CLERK
COUNTY
COMMISSION
CAMDEN COUNTY, MISSOURI

Lovett, Crystal

From: David Ray [ees.ozarks@charter.net]
Sent: Tuesday, August 02, 2011 9:09 PM
To: Lovett, Crystal
Subject: Re: Comments to be addressed per stakeholders meeting

Crystal G. Lovett

I attended the meeting on behalf on Dennis Meinert, Soil Scientist. He took a well needed vacation and could not attend. His business is Home and Farm Soil Consulting (HFSC). The comments submitted reflect concerns that both of us feel strongly about. My business is Earthworks Environmental Services (EES). My degree is in Environmental Geography and Natural Resources. I was employed by the state DOH and was superviser for a Multi County Health Dept.program from 1984 -1996. Dennis and I were both on the committee that worked on the creation and implementation of 19 CSR 20-3.060. After leaving the gov't I formed my business. I have been a state lic. installer and have consulted with and trained numerous contractors on interpretation of code and installing alternative systems. I joined up with an Engineer and began designing LPP's, Drip Irrigation, Wetlands, and Recirculatiing Sand Filters for a following of ~20 installers and developers. I average 50-75 system designs a year and have worked in over 20 counties. I have submitted designs to DOHSS, DNR and local counties where applicable. The comments submitted reflect true documented scenarios that have fustrated us since 1996. So the comments are on behalf of two privately owned companies or individuals.
Please feel free to keep me advised of future meetings.

Thank you
David Ray

----- Original Message -----

From: Lovett, Crystal
To: 'David Ray'
Sent: Tuesday, August 02, 2011 1:30 PM
Subject: RE: Comments to be addressed per stakeholders meeting

Thank you David. I see you signed in as HFSC. Could you tell me what that stands for? Also, are you submitting these comments on behalf of an organization or individually? Thanks.

*****PLEASE NOTE CHANGE OF E-MAIL ADDRESS*****

Crystal G. Lovett
Planning Coordinator
Director's Office
Missouri Department of Natural Resources
crystal.lovett@dnr.mo.gov

From: David Ray [mailto:ees.ozarks@charter.net]
Sent: Tuesday, August 02, 2011 9:52 AM
To: Lovett, Crystal
Subject: Comments to be addressed per stakeholders meeting

Thank you!

David Ray
Earthworks Environmetal Services
ees.ozarks@charter.net

Comments from September 8, 2011 DHSS/DNR meeting.

1). Opportunities for moving forward:

a). The portal is a good idea, but many of the people who install septic systems do not own, or if they do, use a computer or the internet. I believe that it is really a good idea to keep people in the loop. If there can be other methods of keeping people informed it would be appreciated. This would need to occur at both the state and county levels, because many of the changes come at the county level. This could include mailings or how about a phone call. Mailings would cost, but a phone call would be less. Both would include paying someone to do the work.

b). There is much in the present rule that is good. There are some items that are confusing to the reader and need to be reworded or explained in a manner that all can understand. The worst part about any rule is the ability for many different interpretations. There are also some portions that need to be changed, but these are in the minority. More important than rewriting the rule is insuring that people follow the rule. From my experience the rule works very well and has improved the functioning of on-site waste disposal systems. Problems come in when people either choose to ignore certain portions of the law and either the state or the county to not enforce them or people choose to give false data on their reports so as to insure that they will continue to work.

c). I am assuming that updating the residential housing rule pertains to subdivisions of 7 or more houses. This should be lowered to two homes. This would catch all subdivisions and the single home being built on family property would come under the counties regulations. I understand the soil mapping process and how that is used to determine the size of the lots for a specific subdivision, but it seems that the lowest acreage for any subdivision should be three acres. This will allow for the use of any of the systems that are now available and give a reasonable area for one or two replacement sites. Counties are still allowing the subdivision of land, when not under the subdivision rules, down to acre. With a well, house and shed there is little room for a system, much less a replacement system.

2). Permitting Wastewater Treatment Systems:

a). Wastewater treatment systems for small lots is a big issue (see statements above). There are many areas within our state where there are older subdivisions that are on lots less than 1/2 acre or newer subdivisions of less than 7 homes that are on lots less than 1 acre. These homes may be on poor soils are the life expectancy of the system is past. These homes have no alternatives if they are forced to fix their failing system besides going over the top of the system that is already failing. Jefferson Co. is having the installer remove all of the old system and affected soil and bring in new soil. We will need to see how this works. It is based on knowing what soil is there and working with it. But even this will not work forever and it very expensive. We need to look at some alternatives such as the recirculating sand filters and place five to six homes on each one. These would discharge of course and will need to be regulated and inspected. Maybe if there is ground adjacent to these homes it could be used for an in-ground system. Holding tanks may be our only other option and they should be given a closer look. There is a place for their use. Yes they are expensive over time and it does just move the waste from one place to another.

b). High clay soils make for a poor site for a home and even worse for an onsite system. A lagoon is a good option, if there is the space and the discharge can stay on the property. At least they work as designed. The combination of small lots and high shrink-swell clays present another issue. What do you do? Even with a drip the size is large (7200 sq. ft at .05). Will it fit and meet all setbacks or will there need to be variances…. And will it even work if installed for long? Putting these systems in small areas increases the potential for damage to the field by the landowners or even worse, renters.

c). The above scenarios leads right into the next point about limited prescriptive options. If you look at it we have 9 options, if you count the holding tank, and some of them aren't that good. For example, here in my county we allow the use of the elevated sand mounds. They are sized 30 x 30 feet. Most if not all fail within a short period of time with water coming out of the toe of the mound. They were not designed to work on the majority of soils we have in this state, but they keep going in. Wetlands seem like a good option. If they were allowed to discharge and maintained on the property they would be better than lagoons or maybe a reduction in the field area or a smaller lagoon than normal. This would give us an option for small lots and high clay. We should also be looking at the use of wetland plants together with in-ground systems. It would allow for the removal of a portion of the water at least in the growing season and take some of the pressure off of the soils. In house systems that use heat to evaporate the water and dry the solids should be given a greater role and how can we use the sun to evaporate a portion of the water. What other systems are used in other states? They have to be doing something. Also the use of so-called experimental systems should be addressed. Maybe the only way we come up with solutions is for people to experiment. Here in Franklin County we use the shallow placement system (4" sock pipe) in the woods with an aerated tank. It has been over 15 years and we still consider it experimental. We cannot use it is other counties. It works as good as any other system out there and better than some. Are there other situations like this? Can't we look at the data and from the last 15 years, maybe tweak it and come up with another alternative? Also the use of adjacent land under a different ownership with an easement should be looked at. Some counties do not allow this and it takes away another potential solution.

d). The three acre exemption was a mistake when it was passed as part of the law. I'm sure it had to be in there to make it politically acceptable. It is time to take it out of the law. It just allows subdivisions to be designed on 3.1 acres. This doesn't mean the soils are any more suited to a standard system than a small lot. I've done lots that are larger than this with soils that are all less than 20 inches to bedrock. The size of the lot makes no difference. And people can argue that the law is misinterpreted but the fact is, systems with surface discharge still go in because there is no permit and no will complain because their systems are failing also.

e). When it comes to oversight of engineers and soil evaluators, lets just say that there is none. We should also include perc testers here. (The ones around here just turn in the paperwork with a passing perc and never even dig the holes.) I have never had anyone review my soil description on site. I sometimes wonder if they read my report before issuing the permit. I've been on many jobs as the second soil scientist and found discrepancies in what was described and what was found. Pits dug in areas not suitable for the placement of a system. Fragipans not described. High shrink-swell clays listed as IVa . Bedrock not recognized. The use of probe trucks for pulling cores that don't exceed 24 inches in depth. Auger or probe refusal. There is not a single site that I have been on in 16 years that a backhoe could not and did not do the work. The use of cores and hand tools should be done away with.

Engineers can be even worse. They design the system from their office without going to the field. It appears that the administrative authority does not review their work because it has a stamp on it. There are many engineers that do not know the first thing about designing septic systems and even I catch their mistakes and items that are not to code. How do we address this? Jefferson Co. is requiring that the backhoe pits stay open until after the initial inspection because soil evaluators are not correctly listing the properties of the soils. An idea, but then the inspectors would need to know what they are looking for. The administrative authority could do random checks on several onsites per person per year. They could excavate the pits again and see how they match up. Randomly done this would keep soil evaluators honest. There must be the threat of losing your certification or other repercussions. Systems that fail in short periods could be reexamined by a soil scientist not in the consulting business This would help to see if soil properties are being missed, misinterpreted or ignored. What repercussions here? Engineers should have to go to the field and lay the field out to insure that it will fit in the space evaluated. This should actually be the second check of this, the first being by the soil evaluator. Their work should be checked by engineers to insure that the pumps are sized correctly and the field is sized correctly. To many systems fail because the field area is not sized correctly to the soils. To many times the highest application rate is chosen for the soil group and the site. Other soil properties such as porosity, slope and aspect etc. should be used to determine the size of the field area.

f). The issue with inconsistent regulations is that it is very difficult for the soil evaluator, engineer and installer to remember all of the nuances between counties that are many times side by side. This may be where the need for cooperation came come in. If a county has a good idea and can show the benefits of using this idea why doesn't the state implicate it state wide? Probably because we would have to go to the legislature every year then. We could do this on a two or three year rotation and present all of the good ideas at that time. This would give time for the ideas to be tested and proved. We would also need to be flexible with the regulations though. There may be some counties due to their soils, landscapes etc where a change in the law wouldn't work. Can some counties receive exemptions from some rules if they do not work there? These types of rules hardly ever work in every situation.

3). Malfunctioning OWTS

a). This is a tough one. Can we force landowners to maintain their systems even though we think it is a good idea and believe they should also? From my experience most landowners do not want to have anything to do with maintenance or much less want to pay someone to do it. Also who is responsible if it fails? Again, experience shows me that the soil evaluator is not held responsible in enough cases and they may be the part of the system that is at fault. The engineer is basically immune to repercussions from this type of failure. And we seldom look at the landowner, the water usage or the occurrence of leaks in the home. It seems to fall on the installer even though they installed it to the soil evaluators or soil evaluators and engineers design. Maintenance is essential in my mind. Twice a year should be the minimum. Filters should be cleaned (and every system should have one) and checked that they are in place. Leaks from the home should be looked for and d-boxes should be cleaned and reset (every standard system should have one). Curtain drains, if present, should be checked for clogging of the discharge. It is amazing how they get buried. Aerators functioning, splitter etc.

b). Most of the homes sold in my area do this already. Most lenders want to know if the system is working and to code, more now than ever. If this was a requirement for them, I doubt that there would be much discussion.

4). Funding Assistance

a). One idea that may work here is the Habitat for Humanity approach or maybe something as simple as getting a group of installers and soil evaluators who are willing to do the work for free. Of course people would be required to meet certain assistance requirements. There probably are not that many per year and we have done this in the past. Someone would need to pay for the materials.

5). Simplification/Clarification of Jurisdiction

a). It seems when it comes to the regulation of subdivisions that there is a lot of misinformation and abuse of the system. We need to start at the point of increasing the minimum size of the lots, no matter who is regulating the subdivision. There should never be a septic system placed on a lot that is .9 of an acre I size. The minimum should be more like 2.5 to 3 acres. DNR should get stop relying on soil/landscape mapping for the determination of the size of the lots. There is just not enough expertise out there to do a sufficient report to make these types of determinations. Placing systems on small lots is just making problems for the future. It seems more practical to just let the Health Department take care of all single family and multi-family dwellings and businesses with less than 3,000 gallons and only domestic waste. DNR can regulate business over 3, 000 gallons per day and those that have industrial waste. DNR should also be in charge of regulating surface discharging systems except lagoons for single family dwellings.

6). No discharge lagoons

a). I would agree with the comments from the stakeholders meeting. They need to be designed correctly, maintained and permitted. For single family dwellings and businesses less than 3,000 gallon these should be regulated by DHSS

Lovett, Crystal

From: Dennis Meimert [dennismm@fidnet.com]

Sent: Sunday, September 04, 2011 2:30 PM

To: Lovett, Crystal

Subject: Comments

Crystal,

Here is a point that came up recently. How much of a separtation from the bottom of the trench should there be when overlying highly permeable bedrock (Roubidoux sandstone, St. Peter sandstone, Mississippian limestone etc)? The code states that when there is highly permeable cherty clays there should be 4 feet of separation between the trench base and the water table or bedrock. Does this mean that you could have a sandy loam texture with 45 percent gravel and need only a 2 foot separation or for that matter any other texture with high permeability?
It seems that this would have the potential of groundwater contamination just as much as the clayey soils. This needs to be clarified.

Dennis

August 2, 2011

The following items are issues commonly encountered concerning the permitting of On-site Wastewater Systems.

1. Soil morphology evaluations and information derived are a critical component of permitting process. There is a lack of uniformity among soil scientist and evaluators in performing on-site evaluations.

    - Discrepancies include inability either by ignorance or by choice to accurately identify soil properties and structure, most common include fragipans and to differentiate between IVa and IVb clays. Resultant application rates and descriptions allow improperly designed and inadequate sized treatment systems. Soil pits are occasionally hand dug or bored. These methods are shallow excavations less than 48" and do not allow determination of depth to bedrock or water tables.

    - Pits are excavated at random, commonly according to the contractor wishes and field areas are not laid out according to the described landform. Majority of sites are not laid out period.

    - Evaluations fail to provide a detailed, accurate site map showing lot size, lot lines, pit locations, cultural features, easements, wells and setbacks. Pits are found to be excavated on adjoining property.

    - Continuing to allow percolation tests in lieu of soil morphology creates additional misinformation. Property owners will have a percolation test done when the soil morphology results are unfavorable.

    Soil Scientists and Evaluators are licensed with the regulatory authority similar to licensed installers yet seem to conduct business with impunity and lack of oversight. Their work should be inspected and required to meet the standards required by the code.

2. System plan review and the permitting process varies from county to county and from county to state. There is no uniformity of interpretation.

    - Many county inspection programs lack the expertise or motivation to properly evaluate plans, specifications and conduct site inspections prior to the installation. Site inspections range from none to extreme overkill due to lack of construction experience or common sense in the field.

    - There appears to be several code requirements that are enforced by counties that have adopted the state code yet do not appear in the "Green Book" 19 CSR 20-3.060. The requirements are based on opinions and recommendations from the Regulating Authority. This practice puts these counties at risk for not following the adopted construction standards. It is a burden to the installer to have a permit rejected when in actuality the application meets the minimum requirements based on the adopted written code.

    - State licensed engineers engaged in the design of alternative systems seem to operate with impunity and lack of oversight. County officials assume by virtue of being an engineer that the system is of proper design. There are several instances where the engineered system was designed to fail, designed without any field work to determine elevations or proper layout and/or simply drawn from the engineer's imagination at his desk yet approved by the local administrative authority.

There continues to be a lot of misinformation dealt to the public concerning system maintenance, performance, cost and preference. This information comes from all aspects of the on-site industry including state and county officials. Lack of education and enforcement is allowing improperly designed systems to fail. The cost burden falls to the homeowner to fix the problem who assumed that individuals licensed by the county/state are providing a regulated service and standard of performance. Updating, clarification and actual enforcement of 19 CSR 20-3.060 is badly needed.

Missouri Smallflows Organization

August 5, 2011

Ms. Crystal Lovett
Planning Coordinator
Director's Office
Missouri Department of Natural Resources
PO Box 176
Jefferson City, MO 65102

Dear Ms. Lovett:

On behalf of the Board of Directors of Missouri Smallflows Organization I would like to thank you for including me in the Stakeholders Meeting held on August 1, 2011. I believe that this has the potential to be a very productive group that can have a positive influence on wastewater treatment within the State of Missouri. Missouri Smallflows is an organization that is dedicated to educating wastewater professionals to that same end, and with the requirement for mandatory education of wastewater installers, soil evaluators, system inspectors, etc., MSO has educated thousands within the State. In the process of doing so we have seen a number of good changes within the industry, as well as some areas that need to be addressed. I believe that the Stakeholders Committee can report to the legislators those positive changes and address those areas that may need some changes.

On the positive side of the arena the following are a few of the changes that have been noted:

- Increased education of Installers has resulted in the installation of properly installed on-site wastewater systems for individual residences and small businesses over the last 10 years.
- Regulators have benefitted from additional education, resulting in understanding of new technology and where it can best be applied rather than relying on the traditional methods which may not give the best treatment to wastewater.
- Realtors are increasingly aware that onsite wastewater treatment systems need to be evaluated prior to sale of properties.
- Homeowners contacting Health Departments asking for advise on existing systems and new systems.
- County Commissions passing county ordinances requiring more stringent requirements on wastewater systems.

At the meeting on Monday there were many issues discussed. The following are the ones that we feel are crucial. I have included some examples in some cases of situations that I have encountered in this field:

- 3-Acre Exemption-this issue is a legislative issue, and will need to be addressed with the Farm Bureau to enlist their support to raise or eliminate this exemption. The exemption is misunderstood by most people; including many installers who believe that if a person has more than 3 acres that they are exempt from **properly constructing** an on-site wastewater system. Homeowners believe that they must purchase at least 3 acres of land in order to install a wastewater treatment system. Some regulators even tell people to buy more than 3 acres so they can "do whatever they want". The 3-acre exemption only exempts the homeowner or installer from purchasing a permit.
- Less than 3000 Gallon-No Discharge Lagoons: At the current time DNR has jurisdiction over these. However, unless there is a complaint or request for inspection (such as a sale of property), DNR does not inspect them when they are constructed. It seems reasonable that these be turned over to local county health departments for permitting and inspection, using DNR requirements. At least they will be assured of being properly installed. I have had several cases in Randolph County where I have been called in by the property owner to help them interpret what they needed to do to satisfy DNR. It has taken quite a bit of time to assist with this, with no compensation. Boone County has an even larger problem.
- Regulation of On-Site Septic Pumpers-As in most areas, there are the good ones, and there are the bad ones and the bad ones give everyone a black eye. Example. A company located here in Moberly has a 500 gallon pumper truck and was hired to pump out a 1000 gallon septic tank and a 500 gallon pump tank. The homeowner was leaving when they arrived. The site is 15 miles from a wastewater treatment plant where they are approved to dump the load. After 45 minutes they call the homeowner and tell her they are done "pumping" the tanks, and oh, by the way, the pump for the pump tank has gone missing. They charged her $600.00. Does something smell here??? I have gotten scores of complaints about these boys, but with no regulations they have to be caught with the stolen pump or committing some other crime.
- Maintenance of Systems-As a regulator, when a person puts in a system, no matter what type, I make it my business to talk to the homeowner about how to maintain the system. I then send them a maintenance package that includes information on all of the equipment that went into their system; how it works; and what if anything the homeowner needs to do, along with my business card. With advanced systems such as drip irrigation if the homeowner does not renew his maintenance contract after the first two years the installer generally lets me know and I send the homeowner a letter stressing the necessity of keeping the maintenance contract current and the cost of replacing that system should it fail. Despite these measures, some people do not keep up the maintenance; or the home sells and the information is not passed on to the new owner.

In cases such as these it is like flushing anywhere from $15K-$20K down the toilet. Mandatory maintenance and the administrative authority to enforce it must to be included. This is one that may take time, but it is critical.

- Lastly, I feel that continuation of this committee is essential. Too many times committees have been formed and meet for awhile; then suddenly interest wanes and all of the progress that has been made is lost. On-site wastewater systems are here to stay. There will always be issues between the agencies administering them, whether they are federal, state, or local. There will also always be issues over new technology. The only way to resolve any issue is to sit at the table and discuss it.

I greatly appreciate the time that you are taking not only to facilitate this committee but to read this letter. I believe that we can make improvements to the great State of Missouri which will in turn improve our natural resources and bring increased tourism to our beautiful state.

Sincerely,

Janet Murray, R.E.H.S.
President, Missouri Smallflows Organization
Environmental Health Supervisor
Randolph County Health Department

ON-SITE SOILS, Inc.

Toll Free 1-888-878-1461

September 23, 2011

Ms Crystal Levett
DNR-Planning Coordinator/ Facilitator
P.O. Box 176
Jefferson City, MO 65102-0176

Ms Mary Glassburner
DHSS-Section Administrator, Environmental Public Health
P.O. Box 570
Jefferson City, MO 65102-0570

RE: Stakeholder comments pursuant to House Bill 89 (2011)

Please thank the General Assembly for providing us the opportunity to help your departments with concerns with the current permits and inspections for on-site sewage disposal systems in the State of Missouri. We believe that the following actions would improve our State's water quality.

1) Require all new homes or re-placement homes, regardless of acres owned, to have a permitted on-site disposal system that meets STATE CODE requirements. Many of the new homes constructed on large acreage tracts are built without a septic system. The cost of a septic system that meets State Code requirements can be included in the home loan at the time of construction. This practice, over time, will help improve the water quality of our streams in the State of Missouri.

2) For those homes with on-site disposal systems that currently do not meet STATE CODE requirements, a long-term low interest loan program would be helpful. This would allow homeowners to finance a system without incurring closing costs on their mortgage or possibly losing some beneficial terms on their existing loans to bring their septic systems into compliance with current STATE CODE requirements. This measure will also greatly improve water quality and reduce the financial burden to the current home owner.

3) Implement oversight and non-compliance penalties for local administrative authorities. The DHSS should have the authority to oversee the local regulatory practices. Many of our administrative authorities have openly defied the STATE CODE with no oversight or penalties from DHSS or DNR. This practice makes the entire program meaningless and costly for the residents of those counties. Homeowners are investing hard earned money into septic systems that do not meet STATE CODE. They face additional costs, in the future, to upgrade a system that is inadequate and does not meet code requirements when they re-finance a loan or sell the home. This is a major problem that needs to be addressed by the General Assembly.

4) Require alternative systems to be engineered by a professional engineer who has some training in septic systems. This training would require them to take the "Basic Installer" and "Advanced Installer" training courses offered by DHSS so that they have some idea of the requirements and accepted practices. Many installers have expressed concerns about engineered systems that clearly do not meet the STATE CODE, yet they have been approved by the local authorities. This action would greatly improve the quality of the designed systems installed, save the homeowner money and improve water quality in the state of Missouri.

Sincerely,

John H. Bauer

4077 N. Saint Peters Pkwy.
Saint Peters, MO 63304-7396

Onsite Wastewater Stakeholders Meeting
August 1, 2011
Jefferson City, MO

Our group would like to express our appreciation for the opportunity to meet with representatives of the Department of Health and Senior Services and the Department of Natural Resources to discuss the issues pertaining to Onsite Wastewater in the state of Missouri in preparation for the report that will be submitted to the Missouri Legislature by December 31, 2011 as required by House Bill 89.

There are onsite wastewater topics that we feel should be addressed and we request, at a minimum, they be included in the Legislative report but hopefully be expounded upon and endorsed by both regulatory agencies.

1. **Inspection of Onsite Wastewater Systems at time of property transfer**: Although the ideal solution would be to inspect every onsite system, the reality is funding and support are not there. A good long-term solution would be to mandate onsite inspections at the time of property transfer. Systems would not be required to conform to current code if no malfunction was found. Systems which are deemed as malfunctioning would then be required to be either repaired or replaced. Presently the results of the inspection may be used in price negotiations between the buyer and seller without repair or replacement of the system. The Stone County Health Department is an example of implementing a successful ordinance and inspection program.
2. **Required maintenance of Advanced Systems:** While all onsite systems require some level of maintenance, advanced onsite systems (defined as a system with any mechanical device) require a high level of skilled maintenance on a set schedule. We suggest requiring statewide ongoing maintenance of advanced onsite systems by a state registered maintenance provider. The registered maintenance provider should be required to attend classes and pass a test to receive his/her license and should also then be required to have continuing education to renew the license in the same fashion as onsite installers, advanced onsite installers, inspectors and soil evaluators. The private industry service provider should be required to report to the permitting authority monthly all services done and all service contracts expired without renewal. A large part of the financial burden of tracking these service contracts should fall on private industry.
3. **Regulation and tracking of onsite pumpers:** There needs to be increased regulation of the onsite pumping industry. Pumpers need to be trained and registered the same as other onsite professionals. There needs to be an audit trail of every load pumped that includes how the septage was disposed. Land application of septage needs to be documented via a nutrient plan much like CAFO wastes with appropriate soil nutrient tests and the area inspected regularly by a regulator.
4. **Non-discharging multi-family/commercial lagoons that are less than 3000 gallons:** While these lagoons are currently under DNR jurisdiction, DNR does not approve the design nor do they inspect them. A solution needs to be found that at a minimum, will at least make certain these lagoons are properly designed, installed and maintained.

In addition, our group strongly recommends that a permanent stakeholders committee be instated to better serve the decentralized and onsite wastewater needs and issues of Missouri at various scales. Since the Missouri Department of Health and Senior Services (MDHSS) typically serves wastewater flows of less than 3,000 gallons per day while the Missouri Department of Natural Resources (MDNR) serves flows greater than 3,000 gallons per day plus most commercial decentralized flows, a structured flow of communications between the two agencies as well as a permanent decentralized wastewater stakeholders group will foster greater understanding, education, and standardization across the various scales of the decentralized wastewater profession. This inception could be instrumental in providing greater accessibility of land-based treatment technologies and systems as standards for discharge based systems, especially for small rural communities, become more stringent, technical, and costly. We recommend that the stakeholders committee be comprised of representatives of the appropriate agencies, professional decentralized wastewater organizations, water quality organizations, academic professionals involved in research and teaching within the wastewater professional as well as at least one representative from each of the following decentralized wastewater areas: treatment technology, dispersal technology, inspection personnel, and an operations and maintenance provider.

Respectfully submitted by:

Upper White River Basin Foundation, d/b/a Ozarks Water Watch (OWW)

Ozarks Clean Water Company (OCWC)

Missouri Smallflows Organization (MSO)

National Onsite Wastewater and Recycling Association (NOWRA)

White River Valley Environmental Services (WRVES)

Table Rock Lake Water Quality (TRLWQ)

Elk River Watershed Improvement Association (ERWIA)

Shoal Creek Watershed Improvement Group (SCWIG)

Watershed Committee of the Ozarks (WCO)

James River Basin Partnership (JRBP)

Lovett, Crystal

From: Glassburner, Mary
Sent: Thursday, August 04, 2011 4:35 PM
To: Lovett, Crystal
Subject: FW: Onsite Wastewater Stakeholder Meeting--additional comment

Below is a comment from Chris Stiens that came directly to us.

Mary Glassburner, Section Administrator
Missouri Department of Health and Senior Services
Section for Environmental Public Health
mary.glassburner@health.mo.gov
573-751-6111
Please note that my e mail address has changed to mary.glassburner@health.mo.gov

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From: Gaughan, Jim
Sent: Tuesday, August 02, 2011 1:31 PM
To: Glassburner, Mary; Jenkerson, Mark; Johnson, Percy
Subject: FW: Onsite Wastewater Stakeholder Meeting

FYI an additional comment from Chris, who was at the stakeholder meeting.

Jim

Please note: on March 14, 2011, my email address changed to jim.gaughan@health.mo.gov

James Gaughan, P.E., Environmental Engineer
Onsite Wastewater Treatment Program
Bureau of Environmental Health Services
Division of Community and Public Health
Missouri Department of Health and Senior Services
930 Wildwood Dr.
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From: Chris Stiens [mailto:stienc@lpha.mopublic.org]
Sent: Tuesday, August 02, 2011 9:58 AM
To: Gaughan, Jim
Subject: Onsite Wastewater Stakeholder Meeting

Hi Jim:

One "idea" I would like you to pass along for comment: What about the possibility of the local jurisdiction/Health permitting everything under 3000 gallons per day regardless of surface or subsurface discharge and DNR handling flows over 3000 gallons? I realize this would take some adjustments on when and if we should surface discharge; however, I think this is something to consider.

Just a thought. Thanks.

Chris Stiens, EPHS
Tri-County Health Dept.
302 N. Park St.
Stanberry, MO 64489

(660) 783-2707

On-site Wastewater Stakeholder Process

The comments and suggestions are based on the presentations and discussion held on August 1, 2011 at the stakeholder meeting and the experience with jurisdictional issues.

VI Stakeholder Discussion of Current Standards and Jurisdictions

Challenges:

A common issue identified was the situation of a small lot, not appropriate for an on-site wastewater treatment system, and the options available to the homeowner, development or community. Many times this is an older housing development or unsewered community established prior to existing regulations. One commenter identified that this situation is not restricted to older installations but to new home construction.

Simplify the determination of the jurisdiction. Mentioned was that DHSS have jurisdiction over all residential systems <3,000 gpd using soil based treatment and utilization systems.

Barriers:

The patchwork of county regulations that exist in the state. The counties should be able to have ability to have regulations, ordinances, etc. but the discussion indicated that some county regulators want more regulations and more requirements.

The attitude of regulators to have more restrictions limits the options for solving the issue. The regulations and ordinances should allow flexibility when it is necessary to solve an issue. Over regulation, over certification and burdensome requirements stifle ideas to solve problems. The regulator attitude ”put them out of business” or “not allowed in my jurisdiction” is not productive to solving the issues.

The Department of Natural Resources (DNR) is a major barrier. The organization of the department is constantly changing. The Water Pollution Control Branch and the Regional Office are not consistent with regulation interpretations or procedures. Most of the alternative wastewater issues currently go to DNR and the procedure they are using is not appropriate for small wastewater flows. They treat every request for a discharge as if it is a major discharge (1,000,000 gallons per day). This procedure was instituted within the last 10 years.

Possible Solutions: I would like to suggest a solution for the two topics listed in challenges and to remove the existing barrier.

If the DNR procedure for discharging systems is streamlined many of the barriers and challenges disappear. Consider the following scenario:

All Residential wastewater systems using soil as the treatment and utilization is jurisdiction of DHSS. Notice there is no flow criteria. So if it is a soil absorption or drip irrigation system, regardless of size, it would be DHSS.

All other wastewater systems are the jurisdiction of DNR. DNR would establish small flow categories and perform all of the antidegredation determination, discharge limit with monitoring requirements and prescriptive design criteria. The DNR regulations already contain criteria to prepare the small flow categories. The categories would be covered by a general permit.

The starting point for the categories is to use the existing regulations to identify what CAN be done instead of the current DNR position of what cannot be done.

10CSR20-8.020 Design of Small Sewage Works is a prescriptive regulation. This should be the starting point for determining the categories of wastewater treatment systems that would be developed into a general permit.

10CSR20-7.015 Effluent Regulations determines the discharge limits. DNR can utilize the categories identified in section (1) A For the purpose of this rule the waters of the state are divided into the following categories:

1. Missouri and Mississippi River
2. Lakes and Reservoirs
3. Losing Streams
4. Metropolitan no-discharge streams
5. Special streams
6. Subsurface waters in aquifers
7. All other waters

The locations discussed at the stakeholder meeting would be categories 2, 3, and 7. This could be the starting point for the development of a prescriptive technical requirement to qualify for a general permit. The current DNR procedure is to evaluate each wastewater system individually, this scenario would identify systems that have already been evaluated and determined to qualify for a discharge general permit.

My vision of the process DNR would use to develop the technical requirements and general discharge permit for category 7 All Other Waters:

A. The wastewater treatment facility will be capable of producing effluent quality of 30 mg/l BOD5 and TSS (this is considered secondary treatment) and will include effluent filtration. The engineers in DNR and DHSS will identify wastewater treatment systems that will meet this effluent limit. For example a septic tank with recirculating intermittent sand filter meeting DNR design guidance would qualify.
B. The flow of the system will be evaluated to comply with discharge effluent limit criteria. Starting with a flow of 3,000 gpd and increasing by 3,000 gpd increments until reaching a

flow that would not comply with a detailed technical evaluation for discharge limits up to a maximum of 22,500 gpd. This must be a technical evaluation, not a bureaucratic determination.

C. The chapter 7 regulations contain distances to classified waters. The presentation on water quality indicated that the miles of classified streams will increase from 25,000 to 85,000 miles of classified streams. This is a significant change. Therefore for determining the effluent quality actual distance in the watercourse should be used for the evaluation. One criteria to evaluate is less than ½ mile from a classified water or of a typically dry watercourse since it is listed in the chapter 7 regulations. The discharge would have to reach the classified water during the recreation season to be subject to DNR site specific effluent limits. The effluent evaluation would start at a distance of 2,500 feet (1/2 mile) and 3,000 gallon per day discharge with average weather conditions in each season (Spring, Summer, Fall and Winter). A simple calculation to determine if a discharge could be detected 2,500 feet away - estimating that 10 cubic feet of soil per linear foot distance would require that enough water be provided to saturate 25,000 cubic feet of soil and satisfy all the evapotranspiration of the vegetation. Using Menfro soil (the state soil) as an example. Parameter for Menfro soil is 0.5 inch per hour saturated hydraulic conductivity and the maximum evapotransporation of vegetation is 0.3 inch per day. Therefore a dry ditch with no baseflow, the discharge needed to provide saturated conditions in 25,000 square feet of soil 1 foot deep to establish discharge: 0.5 inch per hour*10% per EPA land application safe application rate * 24 hours*25,000sqft/12 inch/ft = 2500 cubic feet of water (*7.48 gallon /cubic ft= 18,700 gallons per day) This does not include evapotranspiration losses. This simplified calculation illustrates that there are discharge values that would have no affect on waters of the state.

D. Coordinate with the DHSS with the prepared DNR general permits for discharge in order to make a joint technical determination that the DNR discharge general permit is the most socioeconomic solution to the situation.

E. The DNR general permit development can also be extended to include the commercial / industrial no-discharge situations, such as veterinary clinics, cheese making, winery, and other non-domestic wastes. This has been done already for meat processing facilities MOG 822.

These comments are submitted for consideration in order to address existing issues and provide viable alternatives that can give DNR and DHSS technical consistency and allow each agency to refer to the other as a resource for options when dealing with the citizens of the state.

Troy Chockley, P.E.

Environmental Engineer

Natural Resources Conservation Service