TO: Mark Patronsky-WI Legislative Council

FR: Ken Neu, Concerned Citizen, Business Owner

RE: Special Committee on Septage Disposal—Comments to the committee regarding Treatment of Septage waste On-Site, at the septage haulers location.

DT: 9/2/2004

Dear Mr. Patronsky,

Thank You for inviting me to comment to you and the special committee on septage disposal. I first learned of this committee from a pumper in Wisconsin. He had been searching for alternative disposal methods for his septage business—alternatives other than farm field spreading and hauling to municipal treatment systems. He and I have been talking about designing and installing a Septage Treatment system. The professional septic pumper asked me to provide a brief summary of the treatment system. I also listened to one of the committee members trials of trying to develop a plan to store septage liquid wastes from a hauling business.

The Department of Commerce rewrite a few years ago regarding the plumbing code and stricter Department of Natural Resources guidelines on septage transport and disposal have created an expensive and confusing mix regarding septage transport and disposal. Did anyone ever consider how much time and money the public could save (septage pumpers included) if septage and holding tank waste could **be processed on-site, at a pumper onsite treatment location??**

In Wisconsin, this concept has not been done before, that we are aware of. I have approached both the lead DNR Biosolids Engineer (Mr. Greg Kester) and two senior officials of the Safety and Buildings Div of DOC (Mr. Mike Beckwith and Mr. Roman Kaminski) regarding the concept of on-site treatment of septage. All of them could see the point of on-site treatment as a viable option, provided it was done correctly. On-site treatment would compliment the two usual methods of septage disposal, namely field spreading, which can only be done at very limited times due to farmers harvest schedules, etc, and municipal treatment plant disposal, which is becoming more costly to the septage haulers—which they pass on to the homeowner/taxpayer.

Both traditional options are becoming more expensive and less acceptable in some peoples views. Consequently, homeowners and haulers are increasingly finding less dumping facilities and are paying much more for the septage and holding tank waste than in the past. Something must be done to assist the homeowner, the small rural business owner and the septage hauler.

There has been a HUGE financial burden on rural business owners, home-owners and pumpers:

- LONG hauling distances –creating huge cost---which is due in part to increasing cost of trucks and tanks, fuel and maintenance, licensing, insurance, and labor,
- Prices to homeowners, increasing USER and DUMPING fees at the municipal WWTP's
- Harder to find suitable application areas
- Increased awareness from the public regarding spreading—complaints of spreading, public health issues regarding spreading, etc.

I am working with a pumper to design and install his own on-site treatment system. The components are tested, tried and acceptable, and the projected cost is reasonable. The on-site system could be installed legally within Department of Commerce and Department of Natural Resources regulations. ALL parties would be winners. The following project summary includes **FOR THE PUBLIC GOOD** comments:

Description Summary:

Project Intro:

Septage pumpers spend a lot of time and money traveling to municipal wastewater treatment plants where they pay to dump their loads. A small quantity of biological sludge may combined with municipal plant sludge and used in some beneficial way, or landfilled. The large material (plastic and rubber material, etc) from this septage has to be land filled. Typically, a lower cost alternative is land spreading on farm fields, but this is seasonally restricted. Landfill use would be reduced if septage pumpers had their own private septage treatment plant.

Description:
FOR THE PUBLIC GOOD--What is proposed is a 7,500 gal/day private septage receiving/treatment system, with cleaned water subsurface discharge--capable of recharging groundwater and keeping the neighbors happy, and the environment clean. Private septage plants are used in other parts of the country, but not in Wisconsin, yet.

Potential Public Good:

- Less use of taxpayer funded municipal treatment plants, thus municipalities would not have to have as large a facility, would not have to expand their facility to accommodate this waste stream == tax savings.
- Less landfill space used
- Less farmer complaints from land spreading at the wrong time of year
- Less public nuisance complaints from odors due to spreading
- Increased recharging of groundwater
- For septage haulers, less overall economic cost due to savings on fuel, trucks, labor, etc
  A more environmentally friendly way of handling and disposal of human waste from rural communities, that would be more beneficial to public health.

Equipment needs are:
1) Septage receiving/screening (potentially in an enclosed area, to shield from weather and to be "neighbor-friendly")
2) Solids settling & removal to storage for concentration
3) Storage/flow equalization
4) Aerobic treatment-to reduce the pollution load of the water, which will allow a
5) Smaller drainfield --Soil absorption area

There is an up-front investment cost for the hauler. However, the payback for these costs could be 3 years or less:

Potential Cost Payback Sources:
1) Reduction in sludge going to the landfill from the municipal wastewater treatment plant
2) Savings on labor, fuel and O & M truck costs associated with Ag field or sewage treatment plant travel
3) Dumping fees that treatment plants and farmers charge to allow septage haulers to dump their loads.

Estimated Potential Payback: less than 3 years to less than 5 years

The on-site septage receiving/treatment system I am referring to would provide reduced bacteria levels with UV light disinfection—equipment tested and approved in Wisconsin, and would provide reduced nitrate cleaned water for subsurface discharge. This system is capable of keeping the haulers in business with overall reduced costs of septage disposal, recharging groundwater, keeping the neighbors happy, and the environment clean.

For the committees information, the State of Indiana (rural development) has been looking at treatment systems for a while now, and septage treatment systems have been used in other parts of the US. A few places to contact on a national level might be the National Onsite Wastewater Clearinghouse in Morgantown, West Virginia, and the National Association of Wastewater Transporters.

The SMART-Treat complete treatment system for septage

I have designed a compact modular aerobic treatment system that can be sized for virtually any size pumper operation. The components are in successful use worldwide, many on high-strength waste applications, for over 15 years or more, so it is by no means "experimental" in nature. Large and small systems that discharge to subsurface or to surface waters can use this process. This SMART-Treat system could be designed for virtually any flow—smaller or larger —with costs proportionally more or less, dependent on sizing.

Public health concerns are #1, and cost savings is a close 2nd. **PAYBACK may be as little as 3 years—and then the rural Wisconsin population and the pumpers could realize real savings while recharging the groundwater, saving treatment plant capacity for city folk, and caring for the environment by treating the waste prior to discharge to the soil.** Maintenance and operation (both manpower and electrical power costs) are very low.

To calculate a potential payback period,

I. *Calculate yearly current and PROJECTED fuel, operation labor, maintenance costs to haul to treatment plants versus your back yard (or wherever the treatment plant would be installed).*

II. *Calculate current and projected ANNUAL savings in dumping fees by taking one (1) truck load PER WEEK of concentrated sludge to the treatment plant, instead of multiple trips per day with multiple trucks.*

III. *Add the two items above together to see what you would save per year.*

IV. *Estimate Screening, aerobic treatment and soil dispersal installed cost, then divide by item III total to calculate a payback period, in years.*

Most returns on investment would be less than 3 years! Four (4) main treatment components are listed below. Soil dispersal of highly pretreated effluent is unique to the site due to design of those systems closely linked with on-site soil characteristics at the dispersal area.

I. Large particle screening
II. Solids settling & removal to storage for concentration
III. Surge protection/Flow Equalization (EQ)
IV. SMART-Treat Moving Media Aerobic Biological treatment
V. Subsurface dispersal of highly pretreated water in a drainfield

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NOTE: —drainfield cost must be based on soil ability to absorb cleaned water

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I will not elaborate on the specific wastewater treatment process because I feel this is not the place to do that. Much more information is available on the treatment process if requested. However, I will state that this moving media treatment process was specifically designed for high-strength waste, it is a fixed film process, with very high biological surface area in a small space. Municipal and industrial treatment applications use this process worldwide, it is capable of nitrate reduction—to accommodate lower nitrate levels—to conform with WI groundwater regulations, and most of all—it would be a good economic alternative for all concerned.

Feel free to contact me regarding specifics on the **SMART-Treat Moving Media Aerobic Biological treatment process.** Feel free to contact me regarding presentation at future Septage Disposal committee meetings, or for comment on any of the above content of this testimony.

Sincerely,

Ken Neu

ENVIRONMENTAL / HEALTH PRODUCTS & SERVICE

PO BOX 21, Richfield, WI 53076
Phone: (262) 628-1300, Fax: (262) 628-1367
E-Mail: ken-ehs@juno.com