

## Research Review and Advisory Committee for the Bureau of Onsite Sewage Programs

Approved Minutes of the Meeting held at the Betty Easley Conference Center, Tallahassee, FL  
September 10, 2009

Approved by RRAC March 23, 2010

### In attendance:

- **Committee Membership and Alternates:**
  - **In person:** Anthony Gaudio (vice chairman, member, Septic Tank Industry); Bill Melton (member, Consumer); Jim Oskowis (member, Local Government)
  - **Via teleconference:** David Carter (chairman, member, Home Building Industry); Kim Dove (member, Division of Environmental Health); Tom Higginbotham (alternate, Division of Environmental Health); Jim Peters (alternate, Professional Engineer), Patti Sanzone (member, Environmental Interest Group); John Schert (member, State University System); and Pam Tucker (member, Real Estate Profession)
- **Not represented:** Restaurant Industry
- **Visitors:**
  - In person: Larry Danek (Environmental Consulting & Technology, Inc.); Justin Hubbard (Infiltrator Systems); Leland Smith (Environmental Consulting & Technology, Inc.)
  - Via teleconference: Josefin Edeback (Hazen and Sawyer);
- **Department of Health (DOH), Bureau of Onsite Sewage Programs:**
  - Paul Booher; Kara Loewe; Debra Roberts; Eberhard Roeder; and Elke Ursin

1. **Introductions:** Nine out of ten groups were present, representing a quorum. Chairman Carter called the meeting to order at 1:10 p.m. Introductions were made and some housekeeping issues were discussed.

### 2. Review of Previous Meeting Minutes:

**Motion by Anthony Gaudio and seconded by Bill Melton to approve the minutes as submitted. All were in favor with none opposed and the motion passed unanimously.**

### 3. Updates on projects

- a. **Town of Suwannee Study** – The sampling has been completed, which included source tracking to detect the human DNA component. The final draft report is in, and comments are due to Elke by noon on Tuesday September 15<sup>th</sup>. The RRAC voted at the July 1<sup>st</sup> meeting to renew the contract to conduct sampling again during November/December 2009 and the paperwork is now routing.

Larry Danek with Environmental Consulting & Technology, Inc. (ECT) presented on the results of the study. He outlined the project team, the project goals and objectives, the project history, the sampling plan, the 2009 results, the comparison of those results to the 1996 results, conclusions, and recommendations. The goal of the project was to evaluate the impacts of closing 850 OSTDS in the Town of Suwannee. The objectives were to identify and obtain supplemental data, repeat the 1996 sampling protocol, modify the sample parameter list as necessary, add DNA source tracking, compare river stations with canal stations, and compare the 2009 results with the 1996 results. ECT was the original

contract provider in 1996. The before and after results of the studies done in 1996 and 1997 were confounded by much more rainfall stemming from an El Niño event in 1997. One interesting result that was found during the sampling was that the total Kjeldahl nitrogen seemed to follow the same pattern as the river discharge, and nitrate-nitrite-nitrogen behaved in the opposite manner. As the river flow increased, the nitrate-nitrite-nitrogen decreased.

Some of the conclusions were that Salmonella was found more often in the river than in the canals of the town. Nitrate + nitrite concentrations exhibited a strong negative correlation with river flow. There was consistently more nitrate + nitrite in the river samples than in the canals. The source tracking results of enterococci indicated a human source was present approximately 42 percent of the time and approximately equally present in the canals and the river. The total and fecal coliforms were much higher in the canals than in the river. The fecal coliforms decreased from 1996 to 2009, whereas the total coliforms increased. Simple statistical comparisons of the 2009 results with the 1996 results were complicated by large changes in the river (control) stations. There was a significant reduction in fecal coliforms in the canals as compared to the river stations from 1996 to 2009. There was no large improvement in water quality in the canals between 1996 and 2009 that could be attributed to closing the OSTDS.

One recommendation was to repeat the study in November/December to decrease the environmental variables (seasonal and river flow variability). This additional study would provide a comparison of 1996 preconstruction data under similar environmental conditions, and will also allow for a comparison of winter conditions with the 2009 summer conditions.

There was a discussion on whether the nitrate/nitrite levels could be controlled or influenced by the spring flow. There was also a discussion on the wastewater treatment plant (WWTP) that was installed: where it is located (northeast of the town), what type of treatment does it do, how the waste is disposed (spray irrigation), whether the lines are gravity or pressure dosed, the cost for the conversion to sewer, etc. Some of these details are to be researched and possibly added to the report. A discussion was had on about pharmaceuticals in the wastewater and Larry Danek stated that this was looked at in the original study but nothing was found and that these tests can be very expensive. There was a question on whether there are any other septic tanks along the river outside of the town, and there probably are but they are sparse. There was a discussion on whether resampling again in November/December will yield better results. Jim Oskowis stated that there are lots of good reasons why septic tanks are not preferable to sewer and that it was common sense for this development, with its proximity to surface water and small lots, that sewer would be the preference anyway. He suggested looking at some other location where septic systems could be justified based on lot size, groundwater conditions, and proximity to surface waters. Anthony Gaudio stated that community resources have been devoted to take the town off septic, and many locations in similar situations are looking for a rationale for expending their resources. The purpose of the conversion for the Town of Suwannee was due to the Salmonella contaminating the oyster beds offshore. Eberhard Roeder said that if the purpose of converting from septic to sewer is to improve water quality, it is important to measure that improvement. For this study, there was preliminary data and the post conversion data in 1997 was confounded by the amount of rain. This

sampling effort may have been confounded by the seasons. Another sampling event in November/December may close the loop.

**Anthony Gaudio made a motion, seconded by John Schert, to continue with the renewal process to replicate the sampling effort during November and December of 2009 and allow department staff to decide if the sampling will not commence based on factors such as river discharge levels (if greater than 10,000 cubic feet per second the sampling shall not take place), water temperature values, or impending significant weather events. In the case the department decides not to commence sampling the RRAC has the opportunity to reverse the decision and advise the department to move forward with sampling. All were in favor and the motion passed.**

- b. **Florida Onsite Sewage Nitrogen Reduction Strategies Study** – An overview was given outlining what has happened since the last meeting. Numerous reports have been submitted and reviewed by RRAC and DOH:
- Passive nitrogen removal study phase II quality assurance project plan
  - Literature review on onsite nitrogen reducing technologies
  - Classification, ranking, and prioritization of technologies
  - Prioritization of nitrogen reduction technologies
  - Literature review of nitrogen reduction by soils and shallow groundwater
  - Literature review on nitrogen fate and transport modeling
  - Report on selection of existing data sets for model calibration

Dr. Smith and Josefin Edeback presented to the TRAP on the project. Pam Tucker provided a brief summary of what happened at the TRAP. She stated that Chairman Harper wanted a summary letter to be presented to the TRAP next time that shows where the project is and a simple summary that the lay person can understand. There was a suggestion to amend the contract to include this information with the progress reports. The contract amendment, as recommended at last meeting, is currently being discussed with the provider. There was a discussion on the existing septic tanks at the proposed test facility site and how the issue of groundwater infiltration into the tanks through the risers should be fixed. Anthony Gaudio mentioned a manufacturer in Massachusetts that makes a liner to go into the tank and that this might be a cheaper repair option. Josefin Edeback stated that once the construction costs have been estimated, within the next month, an amendment will be done. Once the construction costs have been finalized there may be another amendment later. Elke Ursin will post the final reports once they have been approved. There was also a discussion on the Task C facility design having mound geometries that are different from the code and the general thought was to keep within the code. Anthony Gaudio stated that the focus of the study for this phase is on continuing the passive nitrogen work that Dr. Smith did. Paul Booher stated that this project was originally scoped out for several millions of dollars over several years and that this first phase is less than one million dollars over about 18 months. Having an understanding of what the passive systems can do early on will help the rest of the study when there will be a focus on the field work. The first progress report to the legislature on this project is due in February and the draft report will need to be submitted to the RRAC for review in December. A phone conference to discuss this report is planned for sometime early to mid December.

- c. **Manatee Springs, Performance of Onsite Systems Phase II Karst Study** – The original contracted sampling work has been completed. The draft report from FSU was submitted at the July 1st meeting and comments were sent back to the provider. The final report has been received and is being reviewed by staff to ensure previous comments have been addressed. Chapter 2 of the report, which includes the history of the system upgrades and pre-modification sampling, was submitted with the meeting material for this meeting. Comments on this report are due to Elke Ursin by September 15<sup>th</sup>. The final report on the entire project, which combines FSU's report and Chapter 2, is to be submitted to EPA and the RRAC by the end of September. An additional sampling event occurred on September 10th during non-flood conditions. Once the sample event results have been analyzed, the final report that was sent to EPA will be amended with the new information and a draft of this report will be sent to the RRAC for review and comment.
- d. **Monroe County Performance Based Treatment System Performance Assessment** – Quality control of existing data is ongoing. All sampling has been completed. A report summarizing this project is being written.
- e. **319 Project on Performance and Management of Advanced Onsite Systems** – For the database task, data has been gathered from the state database, any county specific databases, and from Carmody. The data fields and database structure have been discussed and sketched. There are approximately 15,000 advanced systems in the state. There was a discussion on the review of data from operating permits that has been gathered from the various sources and how there is limited overlap of the data. The Florida State University Survey Research Laboratory was selected to perform the user-group perceptions survey task, and they are currently in the process of developing the surveys with the homeowner and regulator surveys nearing completion. Once the surveys have been finalized they will be sent to the RRAC. A draft of the Quality Assurance Project Plan has been submitted to the RRAC, and comments are due by September 22<sup>nd</sup>. Bill Melton stated that the sampling schedule is very ambitious. Some of the next steps for this project are to finalize the Quality Assurance Project Plan for the sampling, and selection of home sites to sample. There was a discussion on what criteria should be used to select systems for sampling. Should there be a purely random sample taken or should the criteria be stratified? If it is stratified, what criteria should be used (i.e. age of system, commercial vs. residential, maintenance history, system manufacturer, ATU vs. PBTS)? Bill Melton stated that ATU's have performance data from NSF, so it might be better to focus on PBTS. Jim Oskowis suggested looking at food service facilities. Anthony Gaudio suggested excluding older systems (>15 years old) because the newer systems may outperform the older systems. Jim Oskowis stated that maintenance history is one important criteria to look at. Eberhard Roeder stated that the database may not have some of the more detailed criteria available, so a stratified sampling by some criteria may not be possible. Paul Booher suggested that if a system is selected and turns out not to be operational when you go out to sample, that the system condition should be noted but not sampled. Elke Ursin suggested first running some statistics on the overall sample population and then running a random sample and evaluating the results to eliminate some of the over or under represented systems. The RRAC will provide thoughts on what criteria to use to select systems and comments on the QAPP to department staff by September 22<sup>nd</sup>.

- f. **Optical Wastewater Tracers Study:** The final report on this project is due at the end of October.

#### 4. Upcoming Projects

- a. **Statewide Inventory of Onsite Sewage Treatment and Disposal Systems in Florida Study:** RRAC voted the continuation of this project as a priority at the May 27th meeting. Initial internal discussions have begun on how to proceed with this. The RRAC is still on board with the department coming back with different proposals at a future meeting on how to move forward with this project. Several counties, people involved in the BMAP process, and DEP personnel have expressed interested in obtaining and utilizing the data and the process of sharing the data is being streamlined.
- b. **Columbia County Nitrogen Well Sampling Study:** The first step for this project is to obtain a purchase order with a lab that is able to do the sample analysis. The department has been inquiring with the DOH lab in Jacksonville to see if they would be able to do the analysis and it is looking increasingly as if this would not be possible. Private labs will be contacted to see if they might be able to do the analysis. The Columbia County Health Department staff is interested in collecting the samples.

- 5. **Other Business** – Bill Melton brought up the Alternative Drainfield Product Study idea again, and there was a discussion on how to approach this as a future project. He suggested do a failure study looking at what was installed, how many failed, and in what timeframe the systems failed. Anthony Gaudio suggested doing this as a physical analysis rather than a data analysis. Bill Melton suggested that someone come to the next RRAC meeting to discuss what the capability is to design something that could capture the failure rate. Eberhard Roeder stated that someone could come to the next meeting to talk about what the department's current efforts are on premature failure rates and see if that is a good starting point. Elke Ursin mentioned a publication on the NSF 240 Alternative Drainfield Media Systems task group that is looking at minimum standards for these types of systems.

Anthony Gaudio mentioned that another possible future project would be looking at bacterial and viral pollution from OSTDS to ground waters and surface waters. He stated that bacterial and viral pollution is more in DOH's jurisdiction than the nitrogen issue is. Nitrogen is not a public health issue until it gets to pretty high levels.

- 6. **Public Comment** - The public were allowed to comment throughout the meeting. There was no public comment.
- 7. **Next Meeting** – The next meeting will be scheduled for the beginning of December. The meeting location has not been determined, but the option of having a live meeting via teleconference and/or via a web conference was discussed and staff will research this further. The focus of the next meeting will be to discuss the progress report on the Nitrogen Reduction Strategies Study as well as discuss current and proposed research projects.

**Jim Oskowis made a motion to adjourn, seconded by Bill Melton, and the meeting adjourned at 4:42 p.m.**