

Technical Advisory Group Meeting

“Interactive Decision Support Tool for Leachate Management”

“Energized Processes for On-Site Management of Leachate”

By D.E. Meeroff and R. Teegavarapu (Florida Atlantic University)

Funded by the Bill Hinkley Center for Solid and Hazardous Waste Management (BHCSHWM)

DATE: Friday, January 22, 2010
TIME: 10:00 am
WHERE: Florida Atlantic University Boca Raton Campus
Computer Center Building
CM Building (22), Room 130 (Studio 1)
777 Glades Road, Boca Raton, Florida 33431

Participants

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MEETING AGENDA

Friday, January 22, 2010

10:00 AM – 12:00 PM

1. 10:15 AM: Opening address by Dr. Meeroff followed by introduction of the group members and participants

2. Introduction of Landfill Leachate Project by Dr. Meeroff
 - Objectives, overview, need for research, conventional/existing leachate management options, the future of leachate management, new web-based methodology.
 - Dr. Meeroff discussed the objectives of the project tasks including the evaluation of alternatives, evaluation of energized processes, compilation of the best management practices guide/database, and development of the ranking system.
 - Dr. Meeroff discussed the current state of the project and specifically the development of the decision tree matrix.
 - Dr Meeroff stated the need to conduct pilot testing and stated more information on this will project will become available in following TAG meetings.
 - Dr. Meeroff discussed opportunities to partner with FAU for the upcoming pilot studies planned to test the two new treatment technologies.
 - Dr. Meeroff reminded the TAG members about the project website and introduced opportunities for TAG member input for the ranking criteria, the technology matrix, the user-interface profile data collection tool, site-specific information (leachate quantities, issues, past experiences, etc.), and the web survey.

3. Discussion of Study Methodology by Dr. Teegavarapu
 - Dr. Teegavarapu stated his previous experience with data support systems (DSS) and discussed development of the decision support tool, previous decision support tools developed by his research group for other applications, and the framework established for this project.

- Dr. Teegavarapu stated he wanted to expand his rule base for DSS development to 500, but industry feedback today is vital. 15 to 20 days was stated as a goal to develop the primary link for DSS Development system.
- Dr. Teegavarapu discussed adding a confidence factor to be associated with each option within the system, and he mentioned that the rule-base is flexible for updates as more information arises.

4. Discussion of TAG Input Needs (Open Forum)

- Dr. Meeroff put the faculty members in groups with a student to record feedback discussion. Dr. Meeroff then paused the video recording for discussion among professionals and students, and he reactivated the video at 11:00 AM.
- The first item for discussion was the efficiency scoring for hauling offsite and natural attenuation (deepwell injection and constructed wetlands). Both hauling and deepwells are currently receiving a score of zero in this category. It was determined that these options should score higher, so it was proposed to double count the cost score, which should include the permitting process for deepwell options and the travel distance for the hauling options.
- Jeff Roccapriore (WM Inc.) commented that a landfill in Okeechobee hauled its leachate to Pompano Beach, FL (106 miles) at a cost of \$30,000 per month.
- Deepwell injection was determined to cost \$1 million per million gallon per day in capital costs for installation, but treatment requirements are currently minimal. Dr. Meeroff mentioned that FDEP is considering requiring reclaimed water guidelines to wastewater injected via deepwells. This would effectively eliminate deepwell injection as an option for landfills.
- Joe Lurix (FDEP) asked if we considered SBR, reverse osmosis, and constructed wetlands. Dr. Meeroff answered that they were included in: aerobic and anaerobic biological processes, membrane filtration, and natural attenuation, respectively. He also volunteered to set up landfill tours within his district for the student researchers to visit and meet the operators. This may help in gathering the missing data for the user interface.
- Bin mapping was discussed for transport distance, capacity, leachate age, and leachate quality. None of attendees had problem with classifications for above.
- Ravi Kadambala (CDM) mentioned that large landfills were on the order of 200 acres or bigger. He also mentioned that New River Landfill has a recirculation program with discharge to a Florida State prison facility, which operates a small wastewater treatment plant on-site.
- Tim Vinson (HCSHWM) suggested that we try to include pop ups that activate under each category to show the reasons why the scores were assigned. He also

suggested that membrane filtration with concentrate recirculation and with concentrate disposal be shown as separate categories. He also suggested that we contact the Heart of Florida Solid Waste.org and download the 15 counties report, which may have information that is still missing in our database.

- It was suggested by Dr. Meeroff that we include in the user profile a mechanism to hide or select certain options so that the user can restrict the number of options analyzed, if for example, it is not desired to do membrane filtration or off-site hauling.
 - Water quality parameters were discussed and a note was made that this was a better measure of leachate quality than classifying it as young, medium, or mature. Dr. Meeroff added that most facilities combine their leachate such that the leachate is generally regarded as mature, arbitrarily, so mapping on leachate quality should produce better results.
 - Art Torvela made a note that phosphorus is and may be an issue in the future. Dr. Meeroff responded by stating that there are currently no restrictions in effect for sewer disposal regarding phosphorus, but as nutrient removal becomes more prevalent, POTWs may start to employ restrictions.
5. Adjourn, thank you for participating (11:49 AM)