Meeting Participants

<table>
<thead>
<tr>
<th>Company</th>
<th>Name</th>
<th>Interest Category</th>
<th>Role</th>
</tr>
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<tbody>
<tr>
<td>Bio-Microbics, Inc.</td>
<td>Jim Bell</td>
<td>Industry</td>
<td>Group Chair</td>
</tr>
<tr>
<td>North Carolina Division of Environmental Health</td>
<td>Steven Berkowitz</td>
<td>Public Health/Regulatory</td>
<td>Member</td>
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<tr>
<td>Anua</td>
<td>Colin Bishop</td>
<td>Industry</td>
<td>Member</td>
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<tr>
<td>Pro Flo Aerobic Systems</td>
<td>David Jumper</td>
<td>Industry</td>
<td>Member</td>
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<tr>
<td>Eliminite</td>
<td>Tom Kallenbach</td>
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<td>Guest</td>
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<tr>
<td>Eliminite</td>
<td>Amanda Knuteson</td>
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<td>Guest</td>
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<tr>
<td>NSF International</td>
<td>Lauren Panoff</td>
<td>Other</td>
<td>Secretariat</td>
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<tr>
<td>Geomatrix, LLC</td>
<td>Dave Potts</td>
<td>General Interest</td>
<td>Member</td>
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Discussion

J. Bell called the meeting to order. L. Panoff took attendance, gave a brief introduction, and read the antitrust statement. Last task group meeting was January 13, 2015.

J. Bell opened the meeting by reviewing the documents that were sent out following January’s meeting to the group, outlined below:

1. S. Berkowitz sent spreadsheet of data collected from a county in North Carolina on restaurant wastewater in respect to quaternary ammonia compounds. Test data obtained was included in the ETV test protocol that we reviewed.

2. ETV protocol was based on work by Sarah Heger from University of Minn. Document was sent out of her literature review that lead to her work assisting in this area.

3. Meeting minutes posted in NOW from January.

Questions/comments on the documents above were requested from the group.

A reference was made to a NOWRA paper in the last meeting minutes, but this was not sent out to the task group as indicated. There was uncertainty regarding what paper this was.

J. Bell noted that there was a question remaining from the January meeting that should be discussed this afternoon, related to looking at the ETV protocol that was developed separate from this. At the last Joint Committee meeting in September 2014, there was a motion made to take this ETV protocol and work on creating a standard for testing. As this protocol was reviewed, there was a significant amount of
pushback with concern that the ETV protocol could develop a consistent influent challenge, though it would be artificial, for high strength wastewater generated from a restaurant waste and whether this was being represented. Meeting was opened for discussion on this topic and what the task group participants want the NSF standard to look like, the end result being an ideal standard to test high strength wastewater.

To help facilitate discussion, J. Bell rephrased the question at hand. Does the task group feel comfortable with selecting a restaurant wastewater as a surrogate in developing a standard around high strength wastewater? Noted that this has FOG and high BOD.

D. Potts asked if this standard would be for all wastewater regardless of strength or characteristic. J. Bell suggested that the intention is for it to be a standard that would help regulators and states look at technology and know that it can treat high strength wastewater. There was some debate regarding whether this would be able to treat all wastewater; it was concluded that it would specifically treat wastewater with high BOD.

There was a question regarding whether it was accurate to say that if a state is set at 4000 BOD, this standard could be suitable for anything 4000 BOD or under, and anything above 4000 BOD would not be covered by this standard. J. Bell noted that states approach this high strength wastewater in various ways and asked S. Berkowitz to address how his state addresses it as an example.

S. Berkowitz noted that they may call it high strength wastewater if it is over 500 COD or 350 BOD in North Carolina. It would be differentiated from domestic wastewater. Because there is currently no standard for this, they would require product/project-specific approvals on a case by case basis. To address the initial question, perhaps anything over 4000 BOD would then require the product-specific approval approach if the standard only covered up to that specific level.

Standard 40 addresses residential waste water, and many states have had issues with not having a standard that addresses high strength wastewater. States are looking at whether a technology is designed to treat high strength wastewater or not and are not typically concerned about the exact BOD.

There was a 10 minute discussion regarding some background about where the line is drawn for this (i.e. Standard 40 has a 100 minimum, 300 maximum) and whether or not a standard must have a pass/fail criteria. It is highly uncommon for a standard to lack these criteria; however, Standard 360 does not have pass/fail criteria. This approach could be an option, i.e. setting it up as more of a field test vs. lab test to establish protocol for evaluation of treatment systems that handle high strength wastewater. Cross between an ETV and a standard?

After some debate, J. Bell then brought the meeting back to his original question. Is restaurant wastewater of high BOD and FOG, a good surrogate representation of high strength wastewater to
develop a standard test protocol for NSF? If not, what is the appropriate surrogate for high strength wastewater?

T. Kallenbach from Eliminite joined the call and suggested that just because a surrogate has high BOD does not mean it is representative of all high strength wastewater, so it is important to evaluate what type of facility is being used as a surrogate. Regulatory agencies might see this as a blanket approval for all high strength waste when it is not necessarily appropriate. These systems are typically installed in commercial operations with higher flows where it is more critical that they operate. Someone may blindly go ahead with the standard assuming it covers all high strength wastewater systems, which has the potential to pose a large issue.

The suggestion for developing such a standard came from the Joint Committee involving industry, regulators, and users. It was suggested that the task group takes a step back to better understand what we are attempting to measure, before moving forward with something that would benefit from more definition.

C. Bishop agreed that if a standard is made for a foodservice establishment, like a restaurant, we cannot necessarily say this would work on an RV part. This needs to be more narrowly defined, or it would need to be a standard that states we have only tested high BOD with this particular system, without looking at other factors that might affect overall performance of the system. Standard 40 has been misapplied in the US (i.e. as it applies to residential, but not commercial wastewater). This history of misapplication could present an exponentially bigger issue now.

The basis of the ETV was to show potential benefits of high strength related to foodservice establishments. Could consider narrowing this standard to foodservice only at this time, if that is the facility in which work will be done to collect data. S. Berkowitz noted the wastewater constituent differences seen between foodservice facilities and schools, for example, namely the variant levels of ammonia versus nitrates seen depending on the facility.

J. Bell asked if it is the consensus of the task group that, based on the discussion thus far, it would be impossible to develop a standard for high strength wastewater at this time because it is too variable, and that we need to ask the Joint Committee for their additional guidance on this.

Several individuals responded that it is not impossible, but further guidance would be necessary to make this possible. A question was asked that when developing a restaurant standard, what restaurant do we have data from in order to mimic the standard? Information to support this was sent in February in Sarah Heger’s literature review.
It was noted that from a regulatory standpoint, just because there is a need for a standard doesn’t mean having one will serve every situation. There is a sense that standards sometimes get misapplied when in use, hence the actual systems being covered should be approximated more closely.

The meeting concluded with the agreement that this issue will be taken back to the Joint Committee for further direction. J. Bell reminded task group members can contact Secretariat for agenda and call-in information to the JC meeting to act as an observer. Meeting was adjourned.

Note: Ron Suchecki, Tom Stevens, Eberhard Roeder, James Meyer, and Mark Miller were unable to get into the call due to having the incorrect log-in information. L. Panoff will ensure this new information is passed on to task group for use at all future meetings.

Action Items

1. J. Bell will take this back to the Joint Committee as discussed, for further guidance.
2. This task group plans to reconvene after the Joint Committee meeting on September 23-24, 2015.