

From: Andrew Cohen <[REDACTED]>
Subject: **SAB Report**
Date: October 29, 2014 10:20:25 PM PDT
To: Mario Tamburri <[REDACTED]>
Cc: Fred Dobbs <[REDACTED]>

Dear Mario,

Thank you for taking the time to discuss this issue with Fred, and for your willingness to continue the conversation with me involved.

From what Fred told me of your conversation, I understand that your view is that Subgroup 1 reported that no treatment systems met the 10x IMO D-2 standard even though for some treatment systems the reported test results were below the 10x limits, and in some cases below the 100x limits, in every trial for either or both the >50 and 10-50 μm classes, because Subgroup 1 determined that these tests did not provide sufficient resolution to determine that a treatment system met even the 10x IMO D-2 limit. (Fred cautioned me that he may not have been fully successful in understanding and communicating your views to me, so if this isn't accurate, please correct me.)

The question of resolution, as described in the statistics section of the SAB report and elsewhere, is the question of whether a particular viable organism count (corresponding to a sample concentration that is less than the concentration limit in the standard) provides sufficient confidence that the average concentration in the entire discharge is also less than the concentration limit in the standard. Lower organism counts, or analysis of larger volumes, provide greater confidence. Subgroup 1's conclusion that the tests did not provide sufficient resolution to determine compliance with 10x IMO D-2 means that the organism counts reported and the volumes analyzed in these tests did not provide the minimum required level of confidence that the discharge concentration met the 10x IMO D-2 limit (or more categorically, that even with an organism count of zero, the volumes analyzed were too small to provide the required level of confidence that the discharge concentration met the 10x limit).

Assuming that I've understood your view correctly, my question is: what minimum required confidence level did Subgroup 1 use in its analyses?

Regards,

Andy

From: Mario Tamburri <[REDACTED]>
Subject: **Re: SAB Report**

Date: October 30, 2014 5:35:51 AM PDT
To: Andrew Cohen [REDACTED] >
Cc: Fred Dobbs <[REDACTED]>, Judy Meyer [REDACTED] >

Hi Andy,

I've walked through this in detail with both Fred and Judy and although I am not interested in reliving yet again the SAB discussions from 2010, you can call me next week if needed. However, before sending any more time on this, I would very much like to know what the objective is for revisiting of very old, very limited data. Perhaps a better way to spend time would be to review new and better data on BWMS performance.

Thanks, Mario

From: Andrew Cohen <[REDACTED]>
Subject: **Re: SAB Report**
Date: October 31, 2014 9:49:09 AM PDT
To: Mario Tamburri <[REDACTED]>
Cc: Fred Dobbs [REDACTED] >

Dear Mario,

The reason we contacted you is that it looks to us like the major conclusion from the SAB report, a conclusion that Subgroup 1 developed, appears to be inconsistent with the data. As far as we can tell, the method of assessment described in the report, when applied to these data, should not have resulted in the conclusion given in the report. If we're wrong, then we certainly don't want to make a fuss about this. But if we're right—that is if the report's conclusion is wrong—then we should admit the error and correct it.

Fred's understanding is that you're saying that we're wrong, because we failed to take into account how Subgroup 1 assessed whether the test results provided sufficient resolution to determine if a treatment system met one or another standard. So we're trying to understand specifically how Subgroup 1 did that assessment, and our immediate question is: what required confidence level did the subgroup apply to distinguish between results with sufficient resolution and results with insufficient resolution?

-Andy

**Public Comment Submitted by Dr. Andrew Cohen
8/10/2016**

Note: Dr. Tamburri did not respond to Dr. Cohens's 10/31/14 email, and never revealed the required confidence level used by Subgroup 1 in the analysis that Dr. Tamburri said Subgroup 1 had conducted.