Whole Effluent Toxicity Testing Expert Committee Meeting Summary

June 17, 2015 1 pm Eastern

1. Welcome, Roll Call, Approval of Minutes and Announcements

Rami Naddy welcomed everyone to the meeting, and asked that the new Associate Members introduce themselves. He also noted that the meeting will be only 30 minutes, just for this day. Minutes of the May 20, 2015, meeting were approved, after noting that extraneous numbers seem to be randomly inserted into the text – these will be removed prior to posting. Attendance is recorded in Attachment 1, below.

2. Goals and Priorities for Expert Committee

Rami asked if anyone wished to introduce additional goals beyond those captured in the minutes from the May meeting. None were offered. The Goals as identified at the May meeting are included in Attachment 2 for reference.

The former subcommittee's major focus was the PT/DMRQA studies, and Rami offered that refining the PT goal is his preferred first priority, to standardize both test conditions and test endpoints. He noted that several factors are combining to support that choice, and he hopes to achieve a consensus recommendation from the committee, going forward, in order to fulfill the subcommittee's goal and plan as adopted previously.

First, the PT Program Executive Committee (PTPEC) will not take up the WET FoPT table again until early August, so there is a window of time to make and implement an Expert Committee decision and second, the EPA's DMRQA coordinator, Brian Krausz, has asked for a written recommendation from this committee to support standardizing both test conditions and reporting of test results (endpoint) for the PT/DMRQA studies, so that the PT data can be considered comparable and used as a metric for laboratory capability and competency. The thinking is that, if the laboratory can perform the PT study as directed, it should be able to perform its WET studies according to the NPDES requirements as well.

While the DMRQA State Coordinators prefer that the PT studies be conducted using the techniques specified in the NPDES permits, this may be due to a lack of understanding about the need to compare results of PT studies across multiple labs.

One participant noted that the DMRQA instructions state that WET tests should follow the program and not the permit, and also that the DMRQA instructions direct how the lab should adapt the method for PT data comparability (p. 5 of the current EPA data package.) For the TNI PT program, the issue of how and where to transmit the instructions remains to be settled, but the NELAP Accreditation Council has been clear that the FoPT table is not an acceptable mechanism, by rejecting the most recent FoPT tables recommended, because neither the laboratory nor the AB's assessors will look to those tables.

ACTION ITEM: Rami will draft a committee recommendation about standardizing test protocols and reporting, to include language explaining (for the state coordinators) how the PT data are utilized and why this data comparability is vitally important. This will be circulated for review and comment via email, prior to the July committee meeting.

3. Next Meeting

The WET Expert Committee will meet again on Wednesday, July 15, 2015, at 1 pm Eastern. Teleconference information and an agenda will be circulated in advance of the meeting. In addition to considering the draft recommendation (above), additional committee goals still need to be discussed.

Attachment 1

Committee Membership

Member	Affiliation	Email	Phone	Category	Term Expiration	Present
Rami Naddy (Chair)	TRE Env. Strat. LLC	naddyrb.tre@gmail.com	970-416-0916	Lab	Feb. 2018	Yes
Ginger Briggs	Bio-Analytical Laboratories	bioanalytical@wildblue.net	318-745-2772	Lab	Feb. 2018	No
Pete De Lisle	Coastal Bioanalysts Inc	pfd@coastalbio.com	804-694-8285	Lab	Feb. 2018	Yes
Steven Rewa	Environmental Resources Management	steven.rewa@erm.com	616-738-7324	Lab	Feb. 2018	Yes
Chris Burbage	Hampton Roads Sanitation District	cburbage@hrsd.com	757-355-5013	Lab	Feb. 2018	No
Chris Pasch	Alan Plummer Associates, Inc.	cpasch@apaienv.com	512-687-2162	Other	Feb. 2018	Yes
Teresa Norberg-King	USEPA	norberg-king.teresa@epa.gov	218-529-5163	Other	Feb. 2018	Yes
Elizabeth West	LA DEQ LELAP	elizabeth.west@la.gov	318-676-7457	AB	Feb. 2018	No
Amy Hackman	Penn. Dept. Environ. Protection	ahackman@pa.gov	717-346-8209	AB	Feb. 2018	Yes
Michele Potter	New Jersey Dept of Environ Protect.	Michele.Potter@dep.nj.gov	609 984-3870	AB	Feb. 2018	No
Michael Pfeil	Texas Comm. Environ. Quality	Michael.pfeil@tceq.texas.gov	512-239-4592	AB	Feb. 2018	Yes
Affiliate Member						
Kari Fleming	WI DNR	kari.fleming@wisconsin.gov	608-267-7663	AB	Dec. 2015	Yes
Associate Members						
Joe Pardue	Pro2Serve	Parduegjjr@oro.doe.gov	423-404-4117	Other	---	Yes
Brian Krausz	USEPA	krausz.brian@epa.gov	202-564-3069	Other (EPA)	--	No

Peter M Paulos	Atkins Environmental Toxicology Lab	Peter.Paulos@atkinsglobal.com	713-292-9023	Lab (Assoc.)	---	No
Robert Kelley	ETT Environmental Inc	bobkelley@ettenvironmental.com	864-877-6942	Lab (Assoc.)	---	No
Jamie Mitchell	Hampton Roads Sanitation District	jmitchell@hrsd.com	757-460-4220	Lab (Assoc.)	---	No
Mark O'Neil	Environmental Enterprises USA, Inc.	moneil@eeusa.com	800-966-2788	Lab (Assoc.)	---	No
Kevin Dischler	Element Materials Technology	Kevin.dischler@element.com	337-443-4010	Lab (Assoc.)	---	Yes
Jennifer Loudon	Raritan Township Municipal Utilities Authority	JLoudon@rtmua.com	908-787-7453 x 19	Lab (Assoc.)	---	No
Vel Rey Lozano	USEPA Region 8	Lozano.VelRey@epa.gov	303-312-6128	Other (EPA)	--	No
Barbara Escobar	Pima County RWRD, CRAO Laboratory	Barbara.escobar@pima.gov		Lab (Assoc.)	---	Yes
Melinda Hooper	Englewood Water District, Florida	hoopermelinda@gmail.com		Lab (Assoc.)		No
Robert Martino	QC Laboratories	rmartino@qclaboratories.com	267-699-0103	Lab (Assoc.)	---	No
Katie Payne	Nautilus Environmental	katie@ nautilusenvironmental.com	858-587-7333 ext. 212	Lab (Assoc.)		Yes
Marilyn O'Neill	Nautilus Environmental	Marilyn@ nautilusenvironmental.com)	858-587-7333	Lab (Assoc.)		Yes
Program Administrator						
Lynn Bradley	TNI	Lynn.Bradley@nelac-institute.org	540-885-5736			Yes

Attachment 2

	First Cut at WET Expert Committee Goals and Priorities	Short/Long Term & Priority	Suggested Timeline	Comments
PT Goals Two broad categories—standardizing test conditions and standardizing test endpoints				
PT1	Standardize test conditions			
	Standardize test conditions required for PT/DMRQA WET studies. Current practice of conducting multiple tests using different NPDES permit test conditions creates ambiguity in assessing any participating laboratory's performance with a WET method.			
	Review the PT/DMRQA data to determine whether DMW should be combined with MHSF data	Short term	Get data by summer 2015	
	Clearly define the data objectives and purposes for WET PT/DMRQA studies for all stakeholders involved.	High priority		
PT2	Standardize test endpoints			
	Choose one statistical method to calculate the test endpoint, such as IC25 point estimate, for Whole Effluent Toxicity (WET) PT/DMRQA studies	Short term		
	Improve the statistical assessment and evaluation of WET data sets and results in PT/DMRQA studies.	Long term		
	Complete the work started by the WETT PT group by improving the testing and reporting requirements of the PT/DMRQA study.			
	Increase the competition among PT/DMRQA Providers for WET laboratories so that small statistical data sets and the current associated problems assessing WET statistical results in PT/DMRQA studies can be improved			
Education and Outreach				
EO1	To offer expert assistance to TNI on WETT testing methods, quality control and data interpretation.			
EO2	To offer expert assistance to TNI, auditors and laboratories on interpretation of the Standard as it pertains to WETT.			
EO3	Educate assessors on IC25 vs. NOEC for PT/DMRQA endpoints	Short term	EOY 2015	
EO4	Compile, unify, clarify, and improve the guidance on the acceptable and unacceptable corrective actions for laboratories	Long term		

	when a PT/DMRQA study result is outside of the acceptance limits.			
IDOC				
IDOC1	Improve the way initial demonstration of capability is handled for WET testing. Since the tests aren't usually run from start to finish by an individual, it makes more sense to demonstrate capability as a lab group. Also to have one new analyst run five 7-day chronic tests means 2 or 3 months before that individual can do any actual testing.	Long term		Requires updating the Standard. (Distributing Module 7 of the 2009 standard w/ minutes)

Attachment 3

Suggested Goals for WET Expert Committee – Working Draft, May 2015

	Suggested Goal	**Short or Long Term High or Low Priority**	**Suggested Timeline**	**Comments**
1	To complete the work started by the WETT PT group by improving the testing and reporting requirements of the DMRQA study.			
2	To offer expert assistance to TNI on WETT testing methods, quality control and data interpretation.			
3	To offer expert assistance to TNI, auditors and laboratories on interpretation of the Standard as it pertains to WETT.			
4	Educate assessors on IC25 vs. NOEC for PT endpoints	Short term	presentation by 9/15 to be presented by 12/15	Needs lots of input for this to be cohesive and coherent
5	review the PT data to determine whether DMW should be combined with MHSF data	Short term	Get data by summer 2015	The PT providers will resist; so getting the data from them will be a challenge.
6	for Whole Effluent Toxicity (WET) DMR-QA studies having one statistical method chosen to calculate the test endpoint such as the IC25 point estimate.	Short term		
7	Standardize test conditions required for DMR-QA WET studies. Having standardized test conditions increases confidence that "unacceptable" results are due to uncontrolled variability in performance of a WET method rather than due to variability of unstandardized test conditions among laboratories. Having laboratories conduct multiple tests using different NPDES permit test conditions creates ambiguity in assessing any participating laboratory's performance with a WET method.			
8	Clearly define the data objectives and purposes for DMR-QA WET studies/WET PT studies for all stakeholders involved. --Are the studies intended to measure & document the interlaboratory variability of WET methods (i.e. develop more reliable estimates of interlaboratory variability for each WET method). --Are the studies intended to assess and reduce interlaboratory variability? When estimates of interlaboratory variability are reliable, then when laboratories have variability that exceeds the expected interlaboratory variability limit, those laboratories should investigate potential sources of within laboratory variability. --Are the studies intended to determine whether laboratories are	High priority		

	accurately measuring the presence or absence of toxicity? Should blind toxicity blank samples or laboratory performance control samples consisting of dilution water capable of culturing test organisms be included within the studies as test samples? Since the accuracy of WET methods cannot be determined then having true/false tests with toxic and nontoxic samples should be an adequate means for determining whether WET laboratories are providing toxicity data that both NPDES permittees and regulatory authorities can have confidence in as reliably toxic rather than being excessively variable.			
9	Improve the statistical assessment and evaluation of WET data sets and results in DMR-QA studies. Some issues include: --How to adequately assess WET laboratory performance when there are small data sets (n<20). How reliable is the assessment of WET laboratory performance for DMR-QA studies that have means for WET data sets with n<20? --How to avoid penalizing laboratories when DMR-QA WET data sets have low variability. When the coefficient of variation (CV) for a DMR-QA data set is less than the EPA intralaboratory limit established for intralaboratory variability as listed in EPA 833-R-00-003 "*Understanding and Accounting for Method Variability in WET Applications Under the NPDES Program*", **Appendix B**, **Table B-1 Percentiles of Within-Laboratory Values of CV for EC25**, then laboratories that obtain a test result outside of the study's acceptance limit but have a test result within the EPA's intralaboratory CV limit for that particular WET method, those laboratories are unfairly penalized. Logically, interlaboratory CV cannot be less than intralaboratory CV. Interlaboratory CV must be equal to or greater than intralaboratory variability. If EPA's intralaboratory CVs as listed in EPA 833-R-00-003, are reliable estimates of intralaboratory CV, then laboratories that obtain results within the intralaboratory CV limit set for a WET method must logically have acceptable performance with that WET method. **For example:** The EPA Intralaboratory CV limit for EPA Method 1007 is 0.32. When a DMR-QA data set for EPA Method 1007 has a CV<0.32 the lower and upper acceptance limits for that study's data set will have interlaboratory limits more restrictive than the intralaboratory limit established by EPA in EPA 833-R-00-003. Currently, EPA requires that WET laboratories assess intralaboratory CV as part of regular Standard Reference Toxicant (SRT) testing and it is logical to make the same assessment of the interlaboratory CV with DMR-QA study data sets in order to avoid unfairly penalizing WET laboratories that obtain results within the expect intralaboratory variability for a particular WET method. **The fundamental assumption is how reliable are the intralaboratory CV estimates that EPA established in EPA 833-R-00-003. Some of the intralaboratory CV estimates for the WET methods listed in EPA 833-R-00-003 are calculated using a small number of laboratories (n<10) or even as few as one participating laboratory. When the estimate of interlaboratory CV is reliably established for a WET method, then small data sets (n<20) can be fairly evaluated based upon the historical variability limits for that particular WET method rather than upon the current study's small and probably highly variable data set. --Assess whether test results obtained by highly proficient	Long term		

	laboratories which exceed the variability acceptance limits of a DMR-QA study as currently calculated for DMR-QA studies are valid WET results and are valid estimates of the interlaboratory variability for a particular WET method. Highly proficient laboratories will have routine SRT control charts that have intralaboratory CVs below the 50th percentile as established in EPA 833-R-00-003, Appendix B. The probability that a highly proficient laboratory submitted an invalid result or a result due to a laboratory artifact rather than due to the inherent variability of the test organisms or the test method is low. The data submitted by highly proficient laboratories ought to have a greater weight of validity and reliability than data submitted by less proficient laboratories which have a result that exceeds a DMR-QA study's variability acceptance limits.			
10	Compile, unify, clarify, and improve the guidance on the acceptable and unacceptable corrective actions for laboratories when a DMR-QA result is outside of the acceptance limits in a DMR-QA study. For example, the EPA manuals do not encourage introducing and using test organisms obtained from the wild. Laboratories (especially highly proficient ones) that cannot determine the source of the variability of a DMR-QA study result should have clear and concise guidance that laboratories are not recommended by EPA to obtain test organisms from the wild in order to prevent or correct variability due to potential genetic sources of variability.	Long term		
11	Increase the competition among PT Providers for WET laboratories. Small statistical data sets and the current associated problems assessing WET statistical results in DMR-QA studies creates an economic advantage for a PT Provider that may have a large market share which results in reduced competition and increased costs for WET laboratories and NPDES Permittees.			
12	One of the things that I'd like to see some changes to is the way initial demonstration of capability is handled for WET testing. I was really unclear about it when I was first working on getting our lab certified and in fact I got differing responses to my enquiries when I was looking for clarification. My personal feeling is that these tests aren't usually run from start to finish by an individual and it makes more sense to demonstrate capability as a lab group. Maybe I'm alone in that but to have one analyst run five 7-day chronic tests, if I hire a new person I know it's going to be 2 or 3 months before I can let them do any testing.			