

Radiochemistry Expert Committee (REC) Meeting Summary

June 28, 2023

1. Roll Call and Minutes:

Terry Romanko, Chair, called the meeting to order at 1pm Eastern on June 28, 2023 by teleconference. Attendance is recorded in Attachment A – there were 7 voting members present. Associate members in attendance: Joe Pardue, Abby Africa, and Carl Kircher (1:20pm Eastern).

2. Updates

Technology Workgroup

Jim has not heard anything regarding the startup of this group. Paul Junio is leading this group.

Complaint

Terry provided an update regarding the concern about the PTRL value for Radium-226. Ann Marie Beach from PA received a complaint from a lab that noticed an updated FoPT table. They are challenging the PTRL level on the table. They will have to increase their count level significantly to run the PT and this is not what they do with normal client samples. This discussion involved Bob Shannon, Terry and members of the PTP Executive Committee (PTPEC). It lead to a discussion at last Friday's PTPEC meeting. The group confirmed that the calculation was done correctly and the SOP procedure was followed.

June 28, 2023 – Email from Stacie Crandal – Chair, PTPEC

Terry, et al.

Thank you all for the discussion on the PTRL for Ra-226 being set at 0.1 pCi/L. This issue was added to the PTPEC 06/24/23 meeting agenda as a discussion point. In addition to the review for correctness of the calculations, the PTPEC discussed all of the items mentioned in the previous email thread, and determined that this PTRL would remain the same based on the following:

- The PTRL can be achieved within method requirements*
- The Chemistry FoPT Subcommittee determined this PTRL using TNI approved SOPs*

I really appreciate you all bringing this issue to us, and even though we are not planning to make a change, having discussions on issues like this ensures the PT Program

continues to change as needed. Please do not hesitate to bring up any more concerns or questions regarding the TNI PT program.

Thank you

June 21, 2023 – Email from Carl Kircher:

Dear Ilona,

*I have checked my records, and the PTRL is correct as presented and tabulated for Ra-226. The Radiochemistry Committee was the one that wanted to revise the FoPT acceptance limits to the US EPA SDWA Cert Manual Section VI quality objectives, so that is the result of applying the statistics. There were no recommendations to change the activity range for Ra-226 from 1-20 pCi/L to a different range. So, applying the lowest possible Assigned Value at 1.0 pCi/L and plugging it into $(a*AV + b) - 2 * (c * AV + d)$ results in a really low value such that we had to apply the 10% rule. Thus, the PTRL is now 0.1 pCi/L.*

I suppose any “fix” to this would be for Annmarie to submit a ARA to change the Ra-226 “concentration” (activity) range. Given the environmental relevance of Ra-226, I am not sure how US EPA (or FL-DOH or FL-DEP) would feel about that change. Rather, I would ask, what is the probability that in any given Radiochemistry PT round that Ra-226 would be randomly spiked at a selected Assigned Value of 1-2 pCi/L? I would recommend that the lab run its PT the same as it would routine samples, and if the lab does not get a measureable count on the PT after its SOP routine count times, then see about making any changes to analytical procedures under the hopefully uncommon circumstances.

I apologize if I say that 50-100 minutes is not too long to take for gamma ray spectrometer count time in order to achieve the desired minimum detectable activity. Section 10.4.2 of the Georgia Tech Method says that the lab must do the Detector Background Characterization (monthly, according to Section 10.4.5) and that a minimum count time of 36000 seconds (600 minutes) is recommended.

Please feel free to e-mail or phone me if you have any questions. Otherwise, presently, I stand by the FoPT Table that we voted on and approved.

Original Concern: Ann Marie Beach – 6-20-23

Good morning,

I am following up on a concern that has been submitted to the PA Laboratory Accreditation Program. Accredited laboratories within our program are concerned with the upcoming update in November 2023 for the PTRLs for Radiochemistry.

Achieving the Ra-226 PRTL could be an issue. In using the current GA DNR process, which is the most limiting method, the lab can pretty much guarantee a 0.25 pCi/L. But to get to 0.1 pCi/L, about the only thing the lab can do is push the count time to >100 minutes, and that is way outside of the routine 10 minutes to achieve the 1.0 pCi/L

MDC. If the lab increases the sample count time, it will have to increase the background count time to at least 50 minutes, and even then, the background on the cell has to be pretty low.

The labs would be treating PT samples very differently than client samples if these modifications are implemented to meet the PRTL of 0.1 pCi/L.

Can you please provide the reason why the committee wants to require the lower PRTLs and whether they took into consideration actual laboratory testing to achieve these lower limits? I would also appreciate any recommendations that you can provide so that labs can remain compliant with PT testing.

Thank you.

3. Training Needs

The table the Committee worked on in May did not save properly. Amanda will work on re-creating the information from the meeting recording. This information will be added to the comments being added today and will be included in Attachment D.

Terry shared examples of training he has done through Eurofins/TestAmerica – Ask the Experts Webinar Series. There are 3 trainings in a series that are each 90 minutes with questions. He walked the group through the material because he thinks some it will be helpful to use when developing the training material. Amanda commented that it expands what was talked about at the previous meeting.

Amanda shared the table the Committee worked on at the last meeting so Terry could see the sorts of things they looked at. The additional updates were not there, but it gives an idea of what is there.

Amanda continued to update the document – see Attachment D.

Need to also look at what an AB might need. Terry wants this to help anyone that interfaces with the Radiochemistry community.

4. New Business

None.

5. Action Items

A summary of action items can be found in Attachment B.

6. Next Meeting and Close

The next meeting will be July 26, 2023 at 1pm Eastern.

A summary of action items and backburner/reminder items can be found in Attachment B and C.

Terry adjourned the meeting at 2:22pm Eastern.

**Attachment A
Participants
Radiochemistry Expert Committee**

Members	Affiliation		Contact InAffirmativemation
Terry Romanko Chair (2024) Present	TestAmerica Laboratories, Inc.	Lab	Terry.romanko@testamericainc.com
Sherry Faye (2025) Present	Wadsworth Center, NY State DOH Albany, NY	Lab	sherry.faye@health.ny.gov
Velinda Herbert (2024) Absent	National Analytical Environmental Laboratory	Lab	Herbert.velinda@epa.gov
Brian Miller (2024) Present	ERA	Other	bmiller@eraqc.com
Stan Stevens (2026) Absent	Perma-Fix Environmental Services	Other	stanws@aol.com
Amanda Fehr (2026) Present	GEL	Lab	amanda.fehr@gel.com
Jim Chambers (2026) Present	Fluor-BWXT Portsmouth LLC	Other	jim.chambers@ports.pppo.gov
Patrick Garrity (2026*) Absent	Kentucky	AB	patrick.garrity@ky.gov
Greg Raspanti (2025) Present	New Jersey Department of Environmental Protection	AB	Greg.Raspanti@dep.nj.gov
Chrystal Sheaff (2024*) Absent	Energy Laboratories, Inc.	Lab	csheaff@energylab.com
Mary Beth Gustafson (2024*) Present	Virginia	AB	mary.gustafson@dgs.virginia.gov
Ilona Taunton (Program Administrator) Present	The NELAC Institute	n/a	Ilona.taunton@nelac-institute.org

Attachment B**Action Items – REC**

	Action Item	Who	Target Completion	Completed
90	Send note about method codes and concerns to the PT Expert Committee. Is there a way to limit the codes a lab can use to report PT data?	Bob	TBD	
116	Place comments into Comments Response Form/Table to prepare for final voting on comments. (SOP-2-100-Rev3.4-CSDP-StandardsDevelopment-ResponsetoCommentsForm)	Terry	9/20/22	
117	Send SIR 441 Response to LASEC.	Terry	10/25/22	X
118	Prepare SIR Review notification to the LASEC to confirm SIRs were reviewed in preparation for the Standard update.	Terry	TBD	
119	Establish a list of questions for the Radiochemistry training.	All	Ongoing	
120	Terry Contact Lem Walker clean water MQOs. Joe Pardue will provide Terry with DoD limits.	Terry Joe Pardue	April 2022	

Attachment C – Back Burner / Reminders

	Item	Meeting Reference	Comments
5	Affirmativem subcommittee of experts in MS and other atom counting techniques to see that these techniques are adequately addressed in the radiochemistry module.	9/24/14	
6	From Action Item # 75: Prepare copy of Standard annotated with summary document language.		This is a project Carolyn was working on, but the committee decided it may duplicate the Small Lab Handbook. This project has been put on Hold.

Radiochemistry Training Topics (as related to Module 6)

- Reporting, usability, and interpreting results
 - Preservation requirements
 - Acid preservation
 - Redox preservation
 - 5 day rule (program dependent)
 - Preserving at the lab, if not preserved in the field
 - Field filtering vs filtering at the laboratory
 - Bias of filtering at the laboratory
 - Frozen samples
 - Samples > 6°
 - Hold times
 - Related to half-life
 - Uncertainty
 - Counting
 - TPU
 - 1 sigma/2 sigma
 - MDC, critical level, decision level
 - Units
 - What does U qualifier mean (critical level)
 - additional qualifiers
 - Negative values
 - MDC Compliance limits
 - Explain MDC being sample specific
 - Why the need for U by metals
 - QC criteria
 - What is required
 - What should be on report
 - RPD vs RER
 - Precision/Accuracy
 - Data Quality Objectives
 - Limitations on applicability
- Methodology
 - Volume
 - Decay and ingrowth
 - Count time
 - TAT
 - Method Specificities

- Combined Ra226/228
 - Adjusted Gross Alpha
 - Gross Beta-K40
 - Instrumentation
- Matrix and their challenges
 - TDS on Gross Alpha/Beta
 - Mass Attenuation Calibration (MAC)
 - Mass limits
 - Attenuation/self-absorption of Alpha emitters
 - TDS impact to other methods
 - Soils
 - Sediment
- How does the sample get processed through the lab (drinking waters)
 - Gross alpha/beta
 - Ra226 (gamma, GF, Lucas)
 - Ra228