Attendance:

Tom Widera – Chair ERA (Provider)	Committee member	**present**
Vacant – Vice Chair		
Andrew Chew EPA (Federal Government)	Committee member	absent
Bob O'Brien Sigma-Aldrich (Provider)	Committee member	absent
Ed MacKinnon – TRC Environmental Corp (Stationary Source Tester)	Committee member	absent
Gregg O'Neal North Carolina DAQ (State Gov.)	Committee member	absent
Katie Strickland Element One, Inc. (Laboratory)	Committee member	**present**
Michael Klein New Jersey DEP (State Government)	Committee member	**present**
Mike Hayes Linde (Provider)	Committee member	absent
Nishant Bhatambrekar - GE Power and Water (Stationary Source Tester)	Committee member	absent
Paul Meeter, Weston Solutions (Stationary Source Tester)	Committee member	absent
Jim Serne - TRC Environmental Corp (Stationary Source Tester)	Associate member	**present**
Maria Friedman – Test America (Laboratory)	Associate member	absent
Michael Schapira Enthalpy (Laboratory)	Associate member	**present**
Stanley Tong EPA Region 9 (Federal Government)	Associate member	**present**

Call to Order

Tom Widera began the meeting at 14:05 EST. A quorum was not present.

Membership

Mike Schapira submitted his application and got a confirmation receipt on 12/12/16.
Tom will email Mike's application to the voting members to vote him back into the committee.
Tom will check with Ilona Taunton on the status of Mike's and Katie Shonk's applications.

Monthly Meetings

Tom posted the 2017 meeting minute assignments. Let him know if you need to switch with someone else. Changes: Tom will take the minutes for May; Katie will take June. Tom will move our September 11, 2017 meeting to avoid potential conflict with EPA's monthly meeting.

We are behind on writing up the meeting minutes for several months because the designated note taker was not on the call. There will be several meeting minutes to review and approve for the next call.

Meeting minutes have not been posted on the SSAS website since January 2016. Tom will check with William Daystrom since most of the minutes (through August/September) were submitted to William.

2017 Officers

We need to re-elect the SSAS officers. We no longer have a Vice-Chair since Charles Simon left. Let Tom know if you or someone you know is interested in the Chair or Vice Chair positions. TNI would like to get this information by the February meeting.

Tom will email voting members about the Chair/Vice Chair openings.

Setting Lower Concentrations and Acceptance Ranges for EPA Method 26/26A halides and Method 29 metals in impinger solution

Tom reviewed the drinking water proficiency testing (PT) studies and found many cases where the analyte concentration ranges were at or below the limits being considered for new lower concentration audits. (e.g., see the highlighted cells on Tom's spreadsheet) He looked at the limits and failure rates at those limits.

For the un-highlighted cells (analyte concentrations were higher than our proposed lower concentration audit samples), Tom looked for ERA studies in the last 1-2 years where the analyte concentration is at or below the proposed lower concertation range. This would help support a new low concentration limit/acceptance range to present to EPA for the new ranges.

To target a ≥ 95% pass rate, Tom looked at 4 studies (e.g., PT quarterly studies which generally involve ~100 labs), and what the failure rate would be compared to the proposed limits. He found data for 60-70% of the analytes, but not for Zn, Mn, Cu, Ba because the historical PT concentration ranges were too high to get useful information, and for Co, which is not a WS analyte.

Using 10x the Provider's repeatability limit as an initial acceptance limit and comparing this to the WS acceptance limits and the failure rates, it looks like the WS analyte concentrations and acceptance limits are a good starting point for a 95% passing rate. The Method 29 impinger analysis methods are pretty comparable to the WS studies, most of the analysis will be run by ICP or ICP-MS. <2-3% of the data points were by graphite furnace or flame. We believe there is good historical data to show what the failure rates would be based on the proposed acceptance limits.

For HCl and HF, none of the analytes in the WS or other studies are low enough to give reasonable failure rates and acceptance limits. Also, there wasn't enough data from past custom SSAS samples to set acceptance ranges e.g., What would be the acceptance range and standard deviation for a 1 mg/L HCl sample? There were < 5 data points for HCl and HF in this range.

Tom stated we have a good starting point for what we want to set for low concentration and acceptance limits. He has ERA's and other lab's calibration ranges, so we know labs can quantitate to that level and can provide ERA repeatability info.

Stan suggested picking a path forward such here's what a lab is calibrating (HCl) at, assign 10x the repeatability limit and get EPA headquarters feedback about the approach.

Katie's lab calibrates for HCl and HF down to 0.1 ppm and up to 10 ppm. Mike Schapira's lab calibrates at 15 – 30 ppm because they get samples in that range. He will need to get management agreement to change parameters to calibrate down to 1 ppm if the audit samples will be going to that concentration.

It was asked if the labs have the option to concentrate the samples or dilute the samples less. Mike S. noted one lab for Method 8 did a 1/10 volume (10 times the concentration) and made it easier to analyze. But he added that the lab is supposed to prepare the audit sample to the concentration being tested.

Michael K asked if a lab is not calibrating down to 1 ppm, are they not getting stack samples that low, and why are we looking for audits that low? Mike S. suspects some labs are getting low concentration field samples while other clients might be requesting low concentration audit samples.

Tom stated that a large number of audit sample requests include the audit calculation tool and asks for concentrations well below 5 mg/L (between 0.1 – 5 mg/L).

Mike S asked what is the regulatory limit? If the samples are only a few micrograms - it's below the level of concern. What is the state's real requirement for the low end?

Stan summarized that this goes back to the policy question about whether audit samples should reflect stack emissions or the regulatory limit. Tom indicated there does not appear to be consistency between the states on this. Michael K asked if Mike S. is not seeing stack emissions that low, where are low audit sample concentrations coming from? Is it due to people not properly using the calculation tool, or entering incorrect numbers? Mike S. stated they also send in a lot of results with a "J flag" – that they are under the curve. Katie stated they definitely see HCl samples down at 1 mg/L.

Tom stated there are three labs that do a large portion of the HCl samples. ERA, Katie's lab and a third lab all calibrate well below the 1 ppm range. ~70-80% of the Method 26/26A samples that ERA sends out is analyzed by Katie's, Mike's labs and a third lab.

Stan discussed a possible next step: draft something saying, 3 labs get 70-80% of the Mtd 26/26A, 2 labs calibrate to below 1, and the 3rd lab calibrates at 1 ppm; here is the repeatability criteria from those labs, we don't have enough data points to come up with a good acceptance range, but if we were to propose to go from 5 mg/L to 1 mg/L does it sound reasonable to Candace and Ray to use 10x the Provider's repeatability limit as a temporary, initial acceptance limit? The 10x temporary acceptance limit was discussed with Ray in 2014 and our impression was, at that time, they may consider it a potentially valid approach.

Mike S. clarified that his lab calibrates to 1 ppm, but does not calibrate below 1 ppm. Stan asked if ERA and Sigma Aldrich set an acceptance limit will Mike S. and Katie's labs be able to pass? It was generally believed their labs could pass at 1 mg/L, but unclear below 1 mg/L.

The next step is to get Sigma's repeatability information. To set a true repeatability limit, we have to say at this concentration, this is how well we can repeat this number. Tom said 10x ERA's repeatability values for HCl at 1 ppm would give an acceptance limit of ± 16% and for HF its ± 10%. ERA's repeatability is a snap-shot in time and may depend on instrument conditions.

Once we get Sigma's repeatability values, we will talk with Candace and Ray about this approach. Stan and Michael K. will talk with Candace and Ray about this concept next week at a stack testing workshop.

Ordering Audit Samples near the Stack Concentration or near the Regulatory Limit

Jim stated he orders a lot of low concentration audits because he tries to order what's close to the stack concentration, but none of the sources he's tested had a regulatory limit anywhere 5 mg/L; much of the time its much, much higher. e.g., the stack concentration is at least 10 and may be 100 times lower than the regulatory limit. It would be helpful if EPA had guidance on whether the audits should be near the regulatory limit or at the stack concentration.

Katie's lab has seen audits close to the stack concentration and audits that are much higher. She mentioned it makes more sense, from the standpoint of auditing a lab, to have audits near the stack concentration (e.g., We're not treating the audit / field samples the same if you're doing a 2X dilution on the field sample and a 500X dilution on the audit sample to get them into the calibration range).

Tom stated that EPA hasn't set guidelines for audit samples, that there is no consensus on this issue, and has left the decision to the individual states. Michael K. and Stan both believe EPA will not set guidance on this and it will be left to the individual regulator. Tom concluded that the audit samples will need to cover both scenarios (low concentration audits and audits near the regulatory limit).

Method 29 Metals in Impingers

A year's worth of data from drinking water studies is available for 2/3 of the analytes. It shows we can accurately analyze to a lower concentration than what we're proposing.

For the remaining 1/3 analytes, there is not enough data to set acceptance limits. Similar to what's being proposed for HCl and HF we need based the acceptance limits on the Provider's repeatability data. If EPA is open to accepting the HCl and HF repeatability data, they should be willing to use it here where there isn't enough historical data.

Tom asked Stan to get some initial feedback from Candace and Ray on this data and possibly invite them to February's call to get their thoughts on what might be acceptable.

Tom will gather more information from the larger labs on their calibration ranges, what concentrations they're normally seeing, and take into consideration labs that are not calibrating below 1 ppm, and balancing between giving audits that can be reasonably attained vs are we getting useful data by going below a certain concentration of audit sample (e.g., how low is too low vs the regulatory limit). Ideally we would be able to set temporary acceptance limits until we collect enough data to set permanent limits.

Method 25 revisions

Michael K. asked about the status of the Method 25 changes that Charles Simon drafted and how it might be picked up again since Charles left.

Michael K. recalls Charles was looking into cylinder gas providers to make the audits which would then be distributed by accredited Providers. Tom added that Charles put together cost information to purchase a certain number of gas audits samples and then the Providers would distribute them. Tom stated the Provider's difficulty would be having to purchase a certain number of gas cylinder audits and not knowing if they are able to sell the ones they purchased and if they stay stable long enough for them to sell them all. The gas manufacturers would make and ship the audits in bulk since it was too expensive to ship them out one at a time. Tom concluded that this tied with Ray indicating they wouldn't get to Method 25 for a few years is why the committee hasn't continued with the Method 25 changes. Stan will on the status.

Separate from this issue, Michael K. recalls that the revisions were to get better results so we can tighten up the acceptance criteria because of the inconsistencies in how the method was being performed.

The meeting adjourned around 15:15pm EST

Next Notetakers

Feb 13 Ed MacKinnon
March 13 Mike Schapira

SSAS Table Concentration Ranges Changes

Method 26/26A	Current Limits	Current Low Conc (mg/L)	Proposed Low Conc (mg/L)				
HCL	10	5	1				
HF	10	5	1				
Method 29 Impinger							
	Current Limits	Current Low Conc (µg/L)	Proposed Low Conc. (µg/L)	WS Conc Range (µg/L)	WS Limits (%)	10x ERA RPT	4 study avg failure rate
Antimony	25	250	100	6-50	30	24.4	4.00
Arsenic	25	200	100	5-50	30	19.9	5.18
Barium	25	150	50	500-3000	15	16.4	
Beryllium	25	50	20	2-20	15	19.8	4.41
Cadmium	20	100	50	2-50	20	13.2	2.34
Chromium	20	200	100	10-200	15	20.3	4.63
Cobalt	25	100	50			16.5	
Copper	25	200	100	50-2000	10	13.2	
Lead	25	200	100	5-100	30	18.7	1.73
Manganese	25	100	50	40-900	15	12.2	
Nickel	20	150	50	10-500	15	14.8	5.34
Selenium	25	150	100	10-100	20	24.5	4.17
Silver	25	500	200	20-300	30	11.4	1.95
Thallium	25	150	100	2-10	30	13.7	2.98
Zinc	25	150	100	200-2000	15	19.3	

Method 26/26A		Current Limits	Current Low Conc (mg/L)	Proposed Low Conc (mg/L)							
HCL		10	5	1							
HF		10	5	1							
Method 29 Impinger											
	Proposed Low Conc (µg/L)										
		Study 1		Study 2		Study 3		Study 4			Avg Fail rate
		Conc (µg/L)	Fail Rate	Conc (µg/L)	Fail Rate	Conc (µg/L)	Fail Rate	Conc (µg/L)	Fail Rate		
Antimony	100	15.2	4.7	29.2	2.3	12.6	6.6	36.3	2.4		4.00
Arsenic	100	6.01	12	32.8	3.7	12.4	3.6	39.7	1.4		5.18
Barium	50										
Beryllium	20	8.64	5.15	11.3	4.7	17	2.3	14.4	5.5		4.41
Cadmium	50	14.4	1.77	17	4.5	32.8	1.9	37.2	1.2		2.34
Chromium	100	70.8	5.22	73.1	4.7	108	3.8	38.6	4.8		4.63
Cobalt	50										
Copper	100										
Lead	100	62.4	1.7	42.6	3.3	64.0	0	26	1.9		1.73
Manganese	50										
Nickel	50	75.0	5.56	128	4.2	60.9	8.2	127	3.4		5.34
Selenium	100	46.7	6.06	47.8	3.4	68.4	1.6	23.3	5.6		4.17
Silver	200	66.4	4.30	172	0	95.6	0.8	199	2.7		1.95
Thallium	100	5.99	1.3	8.34	5.8	8.07	3	9.22	1.8		2.98
Zinc	100										
Ba, Co, Cu, Mn, asnd Zn have concentrations in the WS either outside the proposed low concentration or not enough data to determine fail rates.											
For these analytes, I recommend we defer to the repeatability approach.											