TNI Stationary Source Audit Sample Expert Committee Teleconference
September 4, 2012, 2:00 PM, EDT

Attendance:

Maria Friedman – Chair TestAmerica (Laboratory)	Committee member	present
Mike Hayes Linde (Provider)	Committee member	absent
Michael Klein New Jersey DEP (State government)	Committee member	present
Theresa Lowe CCI Environmental	Committee member	present
Paul Meeter Weston Solutions (Stationary Source Tester)	Committee member	absent
Gregg O'Neal, North Carolina DAQ (State government)	Committee member	Present
Michael Schapira Enthalpy (Laboratory)	Committee member	Present
Jim Serne TRC Solutions (Stationary Source Tester)	Committee member	Present
Richard Swartz, Vice-chair Missouri DNR (State government)	Committee member	present
Stanley Tong EPA Region 9 (Federal government)	Committee member	present
Ken Jackson TNI (Program Administrator)	Program Administrator	absent
Ty Garber Wibby (Provider)	Associate member	absent
Shawn Kassner ERA (Provider)	Associate member	present
Mike Miller (Member at large)	Associate member	present
Wayne Stollings (Triangle Env. Services)	Guest	present
William Daystrom TNI (Webmaster)	Guest	present
Charles Simon (VOC Reporting)	Guest	present
Rob Knake (A2LA)	Guest	present

1) Double-check receipt of documents to be referenced in this teleconference

All present confirmed receipt of the documents e-mailed August 31 and September 4, 2012.

2) Review and approve minutes from teleconference on August 9, 2012 (at the NEMC Forum)

Stan Tong suggested the acronym CRA should be written out in parenthesis. It was moved by Gregg O'Neal and seconded by Stan to approve the minutes as amended. The minutes were approved by vote with two abstentions from Michael Klein and Theresa Lowe due to the fact that they were not present at the August 9, 2012, meeting.

As a note, the minutes from the August 20, 2012, teleconference have not yet been compiled.

3) Chair update

Enough votes were received to approve the SSAS table management SOP so it is now in effect. William will post the SOP by the end of the week. It still must go through the policy committee of TNI and it needs endorsement by the TNI board. We are however free to use the SOP at this time regardless.

ACLASS has no new providers. Sigma-Aldrich is completing their renewal application. ACLASS indicates Sigma-Aldrich may include a request to become an SSAS sample accredited provider in their renewal application.

4) Review M25 Subcommittee recommendations

Charles and Wayne indicate the subcommittee recommendations are complete except for possible typos.

Category #1, item 3 – Charles indicates this was discussed in committee. Vendors would have to meet the same record keeping requirements. Maria indicates TNI cannot recommend this as the final rule does not allow this. As this recommendation has already been sent directly to EPA by Charles independent of TNI, it will not be considered by the committee.

Category #1, item 1 – Maria suggests taking this to the SSAS table subcommittee due to the many questions that must be answered regarding this recommendation. The addition of methane would make this a new blend. Shawn Kassner asks if this is another analyte that providers have to track and provide a response to; also, do we need to develop criteria, or will the labs be reporting a percent recovery. Charles indicates it would need to be tracked; the purpose of the methane is for determination of sample integrity. No criteria for methane would need to be developed. It was agreed this recommendation should be sent to the SSAS table subcommittee for their consideration.

Category #1, item 2 – It was reiterated that the processes used during the pilot study are identical to what would be used during an actual compliance stack test. Charles indicates they used CO_2 in the audits, however, they did not use methane. It was agreed this recommendation should be sent to the SSAS table subcommittee for their consideration.

Maria formally chartered items 1 & 2 of category 1 to the SSAS table subcommittee.

EPA's Method 25 guidance document – Stan Tong has been trying to find out who is the correct EPA contact for the Method 25 guidance document. It's probably someone in the office of enforcement and compliance. Stan is unsure at this time whether there would be adequate staff time to update the document. In addition, since the document covers Methods 18 and 25A in addition to Method 25, EPA might be obligated to update information regarding those two methods as well, which would take more time.

Category #2, item 1 – It was indicated the reason for 200 psi is if a tester starts off with less than that they will risk running out of gas during the sample period. In addition, protocol one gases are invalid under 200 psi. There was some discussion of requiring higher pressure. It was agreed this recommendation should be sent to the SSAS table subcommittee for their consideration.

Category #2, item 2 – Charles e-mailed a copy of the data sheet to everyone. Charles indicates If you have an absolute pressure gauge the barometric pressure reading is not needed. Charles updated the sheet adding instructions stating such. Richard Swartz motioned to approve the recommendation with the instructions added, Gregg seconded the motion. Voice vote: Stan – yes, Jim – yes, Michael Klein – yes, Theresa – yes, Mike Schapira – yes, Maria – yes. Motion passed.

The instructions Charles added are as follows: "It is not necessary to record the barometric pressure when using an absolute pressure sensor."

Category #2, item 3 – It was discussed that there are always two audit samples needed for destruction efficiency testing. There was discussion about making the language stronger. It was suggested to remove from the recommendation "When at all possible,". Richard motioned to approve the amended recommendation, Stan seconded the motion. Voice vote: Jim – yes, Michael Klein – yes, Gregg – yes, Theresa – yes, Mike Schapira – yes, Maria – yes. Motion passed.

Category #3 will be considered in our next call. The next call will be September 18, 2012, 2:00 PM EDT.

TNI Stationary Source Audit Sample Expert Committee Teleconference Agenda for September 4, 2012:

1) Double-check receipt of documents to be referenced in this teleconference

2) Review and approve minutes from teleconference on August 9, 2012 (at the NEMC Forum)

3) Chair update

4) Review M25 Subcommittee recommendations

VRi

VOC Reporting, Inc.
14260 West Newberry Road, No. 136
Newberry, Florida 32669 Phone: (352) 472-2899

for 9-4-2018
& 9-18-2012
pm

September 4, 2012

M25 improvement subcommittee submital of approved reccommendationsto the full TNI-SSAS committee

Charles Simon (chair)	VOC Reporting Inc., lab analyst & field tester	cgsimon@gowebway.com
Wayne Stollings	Triangle Environmental Services, lab analyst	Wstollings@aol.com
Diana Lundelius	USEPA, Region VI, enforcement	Lundelius.Diana@epamail.epa.gov
Mike Klein	NJDEP, Regulator	Michael.Klein@dep.state.nj.us
Fred Ballay	NJDEP, Regulator (backup for Mike Klein)	fred.ballay@dep.state.nj.us
Shawn Kassner	ERA, SSAS accredited provider, vendor	skassner@eraqc.com
Mike Hayes	Spectra Gases, vendor	MikeH@spectragases.com
Rob Adams	Liquid Technology Corporation, vendor	radams@liquidtechcorp.com
Brian Kaufman	Arcadis USA, Inc., field tester	Brian.Kaufman@arcadis-us.com
George Wagner	Avogadro Environmental Co, field tester	gwagner@avogadro.net
Chuck Giffels	Air Compliance Testing, Inc., field tester	charles@aircomp.com
Andrew McNeel	Arrow Environmental Consulting, LLC, field tester	andrewmcneel@rcn.com
Tom Mattei	Air Test Auditors, field testing consultant	tmattei@airtestauditors.com

Our recommendations are presented in three different category formats. The first category addresses audit issues and is directed to the TNI-SSAS committee only. The second category can be described as "guideline procedures", which are helpful tips that don't require changes to M25 procedures. The third category requires changes in Method-25 CFR language.

Please consider them carefully. We will continue discussion of 10 remaining topics and submit our final approved recommendations in a few weeks.

-Charles Simon

Category 1 – M25 audit procedures

1. **Designate methane as the "tracer gas" for the Method 25 audits.** Place a footnote in the SSAS table that says "There shall be 100-1000 ppm of methane, and 4-8% carbon dioxide in each Method 25 audit sample gas mixture. A record of the methane, carbon dioxide and non-methane organic (NMO) concentrations shall be maintained by the audit provider. The methane and NMO concentrations shall be measured and reported by the laboratory."

2. **Use results from the pilot study of the new Method 25 audit gas blend to calculate initial acceptance criteria.** Use the SSAS Table management SOP to affect this change.

3. **Allow EPA protocol gas vendors to produce and supply directly to users Method 25 audit gases according to established and approved procedures.** Send this recommendation directly to Candace if approved by the full committee.

Category 2 – M25 guideline procedures

These topics could be published privately and made available to users on the web. They are not requirements, and they are not prohibited by Method 25. Individual permitting authorities have the right to require any or all of these procedures to be followed by testers.

approved on 9-4-2012 – send to subcomm Shawn

1. The audit cylinder pre and post audit pressures should be recorded on the Field Data Sheet. An audit sample should not be used of the starting pressure is below 200 psi.

2. Record the clock time (pre and post if applicable) of all significant/key steps of the sampling on the Field Data Sheet to ensure they are properly performed, especially in cases of unobserved tests. These steps include: (a) leak checks (b) temperature/pressure readings (c) heat-up (d) purge start/stop (e) time dry ice is applied to traps, (f) sample start/stop times and 5-minute interval readings of the sample tank pressure, the sample train flow rate, and the filter and probe temperatures. An example Method-25 Field Data Sheet is attached.

3. When at all possible, trains should be dedicated as Inlet (high VOC loading) and Outlet (low VOC loading) trains across test programs.

Category 3 – Method 25 CFR procedures

1. The CFR will need minor changes to incorporate reporting of methane and carbon dioxide in the audit samples.

11.2.3 Analysis of Sample Tank. Perform the analysis as described in Section 11.2.2, but record only the value measured for NMO (C_{tm}) unless other constituents are to be reported.

2. A description of the recommended Method 25 audit collection system and procedures should be incorporated in the CFR.

6.4 Audit Collection. The audit sampling system consists of a mechanism to connect a high pressure audit cylinder to a sampling system as described in Section 6.1(see Figure 25-1). The following equipment is required for each audit performed:

6.4.1 Gas Regulator. A clean high pressure gas regulator with a CGA 350 connection and the ability to regulate outlet pressure between 20 and 50 psig.

6.4.2 Flow Controller. A flow controller capable of maintaining a flow of at least twice the desired sample rate. A metering valve or critical orifice are acceptable options.

6.4.3 Flow Measurement. Two identical flow measurement devices to simultaneously monitor flow from the regulator and to the waste vent. A minimum scale of 0 to 200 cc/min is required. A glass-tube rotameter and metering valve assembly is acceptable.

6.4.4 Flow Valve. A suitable stainless steel valve capable of stopping the flow from the cylinder through the sampling system.

6.4.5 Waste Bypass. A stainless steel tee which is connected to the two flow measurement devices (see Section 6.1.3) and the sampling system (see Figure 25-1)

8.5 Audit Collection

8.5.1 Sampling System. Assemble the sampling system per the instructions in Section 8.2

8.5.2 Audit Sampling System.

8.5.2.1 Attach the gas regulator to the high pressure audit cylinder to be collected and flush with audit gas before proceeding.

8.5.2.2 Connect the regulator to the flow valve.

8.5.2.3 Connect the waste bypass (see Section 6.1.5) to the inlet flow measurement/flow controller, the outlet flow measurement and the sampling system.

8.5.3 With the sample valve in the sampling system (see Figure 25.1) in the off position, open the valve on the audit gas cylinder and adjust the pressure regulator to the desired outlet pressure in the 20-50 psig range.

8.5.4 Open the audit collection flow valve and adjust the flow to approximately twice the desired sample rate.

8.5.5 Confirm that the inlet and outlet flow rates are identical.

8.5.6 Purge the sampling system as required in Section 8.2.2 and proceed with collection of the audit gas as a field sample.

3. Specify the subtraction of a blank analysis, with upper limits, from all samples based on the audit study. The upper limits shall be in mgC/m3 so sample volumes will not be a factor. We ask the TNI-SSAS committee to consider two types of blanks and decide on one, both, or none.

7.5.3 It is required that a blank audit sample be analyzed in conjunction with the field samples. The blank audit sample shall be a clean gas (<1 ppm THC), such as zero air, which is sampled according to the procedures for sampling a performance audit. Alternately, a trip blank, which is an unopened condensate trap and sample tank, shall be sent to the lab along with the samples and analyzed at the same time. The actual results of the blank analysis shall be subtracted from all sample and audit results. An upper limit of 15 mg/m3 shall be allowed for an audit blank. An upper limit of 10 mg/m3 shall be allowed for a blank

4. Specify equipment cleaning procedures in the method.

8.1.1 Condensate Trap Cleaning. Before its initial use and after each use, a condensate trap should be thoroughly cleaned and checked to ensure that it is not contaminated. Both cleaning and checking can be accomplished by installing the trap in the condensate recovery system and treating it as if it were a sample. The trap should be heated at least 50 °C (122° F) hotter than the recovery temperature as described in Section 11.1.3. A trap may be considered clean when the CO_2 concentration in its effluent gas drops below 10 ppm at a flow rate of 100 ml/min or less. Note:—Subjecting some forms of stainless steel to temperatures in excess of 425°C (800°F) can have long term impacts on structural stability, which should be considered. Low carbon 304 and 316 stainless steels in Method 25 condensate trap applications have demonstrated retention of structural integrity for >200 cycles of heating to 600°C.

8.1.5 Sample Tank Cleaning. Before its initial use and after each use a sample tank should be thoroughly cleaned and checked to ensure that it is not contaminated. The cleaning may be a mass dilution consisting of several cycles of being evacuated and filled with clean gas with or without being heated. After the final evacuation the sample tank should be pressurized with a clean gas and analyzed for NMOC content. The sample tanks should be considered clean if there **is** <2 ppmC NMOC, and less than 20 ppmC combined CO, CO_2, and CH_4, in the sample tank gas.

8.1.6 ICV Cleaning. Before its initial use, and after each use, an ICV should be thoroughly cleaned and checked to ensure that it is not contaminated. The cleaning may be a mass dilution consisting of several cycles of being evacuated and filled with clean gas with or without being heated. After the final evacuation the ICV should be pressurized with a clean gas and analyzed for NMOC content. The ICV should be considered clean if there is <2 ppmC NMO, and less than 5 ppmC combined CO, CO_2, and CH_4, in the ICV gas.

8.1.7 Sample Console Cleaning. Before its initial use and after each use, a sample console should be thoroughly cleaned and checked to ensure that it is not contaminated. Cleaning can be accomplished by flushing the console with a clean gas while the probe and filter are heated to operating temperature. Checking can be accomplished by connecting the console to the condensate recovery system and treating it as if it were a sample. The console should be heated to the normal operating temperatures as described in Section 8.2.1. A console may be considered clean when the CO_2 concentration in its effluent gas drops below 10 ppm.

5. **Designate the use of dual traps ice water/dry ice, as recommended by EPA guidelines, for sources with high moisture (>40%) to prevent trap plugging and the need to warm the trap to recover flow during sampling.**

AND

6. **Require crushed dry ice be added to the sample trap 10 min (not 30 minutes) before the start of sampling.**

8.1.3 Sampling Train Assembly. Just before assembly, measure the tank vacuum using a mercury manometer. Record this vacuum, the ambient temperature, and the barometric pressure at this time. Close the sample tank valve and assemble the sampling system as shown in Figure 25-1. Immerse the condensate trap body in crushed dry ice at least 10 minutes before commencing sampling to improve collection efficiency. If the moisture content of the sample gas is >40% by volume, connect two Method 25 condensate traps in series. When this arrangement is used, immerse the first trap the sample gas will pass through in water-ice, and immerse the second trap in crushed dry ice.

7. Require that the calculation for allowable train leak rate include the volume of all connecting tubing/fittings to the manometer.

8.1.4 Pretest Leak-Check. A pretest leak-check is required. Calculate or measure the approximate volume of the sampling train from the probe tip to the sample tank valve, and the leak-check manifold and gauge volumes. After assembling the sampling train, plug the probe.

8. Report the sum of all carbonaceous compounds recovered from the analysis of the ICV.

11.2.2 Analysis of Recovered Condensate Sample. Purge the sample loop with sample, and then inject the sample. Under the specified operating conditions, the CO_2 in the sample will elute in approximately 100 seconds. As soon as the detector response returns to baseline following the CO_2 peak, switch the carrier gas flow to back flush, and raise the column oven temperature to 195°C (380°F) as rapidly as possible. A rate of 30°C/min (54°F) has been shown to be adequate. Record the value obtained for the condensable organic material (C_{cm}) measured as CO_2 and any measured NMO, CO and CH4 in the ICV. Return the column oven temperature to 85°C (185°F) in preparation for the next analysis. Analyze each sample in triplicate, and report the average C_{cm}.

9. Correct an error in the nomenclature section of the method.

12.1 Nomenclature.

N = Carbon number of the liquid compound injected
(N = ~~12~~ 10 for decane, N = 6 for hexane)