

Patenaude, Lindsey

From: Patenaude, Lindsey
Sent: Tuesday, April 6, 2021 10:13 AM
To: Patenaude, Lindsey
Subject: FW: FYI -Durham staff report March 26, 2021 INFO 35 Durham York Energy Centre Source Test Update (Nov. 2020)

From: Linda Gasser <gasserlinda@gmail.com>
Sent: April 6, 2021 9:01 AM
To: Mayor Shared Mailbox <mayor@clarington.net>; Neal, Joe <JNeal@clarington.net>; Anderson, Granville <GAnderson@clarington.net>; Zwart, Margaret <MZwart@clarington.net>; Jones, Janice <JJones@clarington.net>; Hooper, Ron <rhooper@clarington.net>; Traill, Corinna <CTraill@clarington.net>
Cc: Burke, Amy <ABurke@clarington.net>; Langmaid, Faye <flangmaid@clarington.net>; ClerksExternalEmail <clerks@clarington.net>; Wendy Bracken <wendy-ron@Sympatico.Ca>; Kerry Meydam <ksam2@rogers.com>
Subject: FYI -Durham staff report March 26, 2021 INFO 35 Durham York Energy Centre Source Test Update (Nov. 2020)

EXTERNAL

Good morning:

We learned last week that Durham released the attached staff report found in the March 26th CIP, about the November 2020 Source Test results.

Note this report comes more than four months after the source test, which took place from November 9-12, 2020.

The [INFO 35 report](#) is relevant to the delegations Wendy, Kerry and I will make tonight further to our letter dated March 17th, on your agenda tonight, on the topic of Dioxins and Furans Monitoring and Long Term sampling.

Source Test results reflect results on those testing dates ONLY - one should not interpret or suggest that even a series of source test results are a reflection of emissions **between** those test dates. **Source tests are a snapshot of emissions on the testing dates.**

As we described on page 5 of our March 17 letter: Durham's consultant at the time, John Chandler, wrote further to the fall 2016 source test, on page 4 of his memo to Mr. Anello dated Nov.22-December 1, **2016**:

"Preliminary Results of Fall Regulatory Tests"

The author has reviewed the preliminary results of the test series. The numbers are well below the required levels of the Approval.

It is my opinion there should be no attempt to interpret the data either as it relates to between tests on either unit, or between the units.

It needs to be stated that Environment Canada have stated that the level of quantification, 32 pg TEQ/Rm³ represents the lowest level that can reasonably be reported with conventional sampling and analytical methods.

Moreover, the ASME ReMAP study has suggested that there is considerable statistical variation in sample results at this level. "

I attach the above referenced Chandler memo fyi as well.

Note, from the limited documents Durham did release in response to Wendy's Freedom of Information request to Durham in May 2019, it appears there have been several changes to both AMESA and Source testing procedures over the last several years at the DYEC

However, NO monthly (28 day) AMESA sampling results were released and Wendy has appealed Durham's decisions to not release several requested documents.

If possible, it would be useful for councillors to review the attached Durham's INFO 35 Nov. 2020 Stack Test report and consider this in conjunction with our March 17th letter and our delegations to council tonight.

Thank you for your attention.

Linda Gasser

905-665-5789

MEMORANDUM

22 November 1 December 2016

TO: Gioseph Anello, Region of Durham

SUBJECT: Fall 2016 Testing at DYEC

Observations from Sampling October 28, 2016

Attended at DYEC site in the morning to discuss testing that had been done this week and observations re the AMESA. Talked to Covanta's Environmental Rep on site this week and Mr. Dunbar from HDR re their observations.

Things appear to have been running very well this week. Even though they switched the targeted unit for this week, #2 has not had any glitches after the ID fan trips last weekend.

Looking at the velocity in the stack the ΔP on the PCDD/F train was very steady through the 1st 2 hours of today's run. Reviewed the control room screens and the steam output was relatively steady so the unit was operating with feed being uniform. The feeder responds to furnace temperature and steam output to maintain the output. When the steam and temperature set points are satisfied the feed is reduced – ie. goes to zero and then comes back on – although there was a period where the steam was down and #1 was being fed continuously. Likely wetter waste or waste with lower calorific value.

Talked to Mr. Dunbar about his observations, and those of Mr. Muller, the AMESA technician when the latter was cleaning the systems on Wednesday Oct. 26th. There was a noticeable red stain on the probe, nozzle and fitting that are inside the stack. It was more noticeable on #2 than on the system from #1. Mr. Muller wondered if during cleaning of the probe this sort of material might be dislodged from the nozzle and create elevated readings. He cleaned the connector and the nozzle thoroughly on the outside before cleaning the inside as well. He kept the rinses from the cleaning should there be an interest in analysing those samples. I think we should wait and see what we get with these tests. The glass liners have a thick wall. They were thoroughly cleaned before the system was assembled, and the liner is taken out and sealed after each run.

Ms. Huxter, DYEC's Environmental Specialist, said that the intent is to send the laboratory all the PCDD/F samples from Unit 1 after the testing on October 31st, so the samples and liners are being stored on-site.

The other thing that Mr. Muller commented upon was the amount of material in the tube that connects the probe to the sampling box. Apparently, a great deal of material was deposited in the sharp bend of the tube and this was cleaned as well.

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It might be worth considering having some extra connecting tubes on site so they can be swapped out during the monthly cartridge replacement. There would only need to be 2 spares because the dirty one could be cleaned before it was re-installed. The procedure for this cleaning should be defined – along with the need for any special equipment to accomplish the cleaning.

Talked to Mr. Dunbar about procedures for routine operation. In my opinion the glass liner should be used at least until we get a few month's experience. Depending upon what is found in the probe rinse during analysis the time line for pulling the liner and inserting a new one can be specified. I am not sure it needs to be done each month.

The MOECC stack sampling specialist arrived on site just before I left.

Observations from Sampling November 1, 2016

The author attended at site to observe sampling operations and to discuss the AMESA program with Mr. Juergen Reinmann, the Environnement S.A Deutschland Branch Manager, Mr. Leon Brasowski, Director, Environmental Engineering Covanta and Mr. Chuck Davis from Covanta.

Sampling was proceeding in the same manner as the previous week with no noticeable concerns raised by the sampling team or the Covanta representatives.

On both occasions that the author was on site Ortech personnel were conducting the sampling in their usual calm, controlled manner. Sufficient QA/QC measures were incorporated into their sampling plan to ensure that the results would truly represent the emissions from the facility and I did not observe anything that would make me concerned about the procedures.

Comments and Thoughts on AMESA Sampling Meeting

Mr. Reinmann stated that he had reviewed the system and its operation and everything was progressing as it should. The meeting included a wide ranging discussion about potential issues related to high levels from the AMESA system.

Based upon the observations reported on the 28th, the deposits on the exterior of the probe were discussed. It was explained that these had been cleaned off relatively easily with a 3M Scotch-brite heavy duty cleaning pads. The surfaces could be cleaned and polished with these pads. As to the deposit in the nozzle, it was noted that such deposits can give rise to a "memory-effect" leading to higher concentrations. Essentially material created during a potential upset of the system could remain in the nozzle and release PCDD/F at an elevated rate for some time. This phenomenon had been observed in APC systems in Europe where it took some time for the system emissions to return to lower levels after an upset. There is no way that the impact of such a deposit can be quantified. It suggests that back flushing the system when sampling is off-line is a good precaution. Furthermore, the nozzle should be cleaned at the end of each month and the rinsings retained.

The manufacturer recommended that all the probes from the AMESA system be sent to the lab for recovery of the samples. This was a precaution to limit the potential for contamination on site. The liners were capped and stored in their shipping box after use. Since all the liners had been cleaned and capped prior to testing, field contamination should not be a factor. It was stated that the tube should be brushed in the lab, but the brush should be proofed before the cleaning procedure to ensure no contamination from the cleaning. It was recommended that the liners be rinsed with toluene. AMESA to provide written guidance for future recovery. The probe rinses should be analysed separately from the other samples.

Mr. Reinmann cautioned that the anti-sieze compound used on the system can affect reported emission levels. Care must be taken to ensure that there are no touchdowns of the probe nozzle during installation or removal.

The discussion moved to comparison studies and requirements. Mr. Reinmann noted that there are 60 installations in Belgium with no legal requirement from the EU. In 2006 in Italy the local authorities started to require the units and there are 80 in operation. As of 2010 France started to require the units and there are 250 installations in that country. There are 60 installations in other European countries, 30 in Asia and 5 in Canada. These were supplied by three different manufacturers: Decora; AMESA; and DMS. The differences are related to how the sample is collected as each uses one of the EU standard methods: cooled probe, AMESA; filter condenser, DECORA; and dilution, DMS. Validation is typically done with paired AMESA trains and paired regulatory trains operating at single points in the same stack.

Mr. Reinmann mentioned that they have seen leakage in the Method 23 impinger train that could change the results, and mentioned that because of this the European norm is to use a single large impinger in the train to limit the potential for leaks. The best alternative has been to run extended paired tests over 8 – 12 hours. Wallonia requires 2 reference method tests each year regardless of the AMESA.

Typically, the installations are installed in locations where the flow direction is vertically upwards, the opposite of the DYEC operation, but there are installations that are similar to DYEC. It was mentioned that condensation at the probe tip may be more pronounced in the downward flow direction resulting in more material in the probe.

Mr. Reinmann had prepared some slides with data from other facilities and the DYEC data that had been provided. The correlation between the reference methods and the AMESA have been good. There was a discussion about the link between the other parameters recorded by the DYEC control system and the AMESA. Question, what happens during outage situations and it was explained that this is covered in the approval. Essentially the unit is assumed to be off when the input is below 50% of full load and there is a 5 hour exclusion period in the approval for such circumstances.

It was suggested that some field blanks be run for the system. The procedure is outlined on page 22 of EN1984-5 and essentially involves installing the cartridge, completing a leak test, and then removing the cartridge and having it analysed.

Some of the results from the May testing and situations in the facility were discussed. It was noted that the fabric filter plugged after the outage in May. The operators were addressing the issue of fabric filter cleaning cycles and both the frequency and duration of the pulses used for this purpose.

The manufacturer asked whether there had been a dust profile completed in the stack. This would establish if there was any bias induced by particulates not being evenly distributed in the stack. Essentially a dust profile would require a separate filter/train be used to sample at each point on a traverse of the stack. With the low particulate level in the stack, and the limited sensitivity of Method 5 the results could be problematic unless long samples were taken. Alternatively, extractive Beta monitors could be used for this purpose should it be deemed necessary.

While the signature data were discussed it was also suggested that we compare the D/F ratios for the runs to see if there were any differences. There is literature data on the range that would be expected.

Should the AMESA results from the Fall 2016 test not correlate with the Regulatory method, additional comparisons will likely be necessary starting with fixed point comparisons of the two methods.

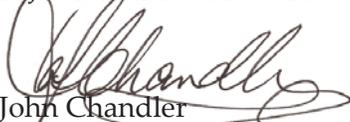
Given the use of the glass liner, the group agreed that at least for now, the probe should be cleaned monthly for the first 3 months, quarterly after that for the first year, and possibly then every 6 months. The period will depend upon the amount of material trapped in the liner versus the results from the cartridges.

Preliminary Results of Fall Regulatory Tests

The author has reviewed the preliminary results of the test series. The numbers are well below the required levels of the Approval. It is my opinion that there should be no attempt to interpret the data either as it relates to between tests on either unit, or between the units. It needs to be stated that Environment Canada have stated that the level of quantification, 32 pg TEQ/Rm³, represents the lowest level that can reasonably be reported with conventional sampling and analytical methods. Moreover the ASME ReMAP study has suggested that there is considerable statistical variation in sample results at this level.

I await the AMESA data.

Your truly,
A.J. Chandler & Associates Ltd.


John Chandler
Principal

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From: Patenaude, Lindsey
Sent: Tuesday, April 6, 2021 10:09 AM
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Subject: FW: Additional - 2020 DYEC Annual Report - FYI -Durham staff report March 26, 2021 INFO 35 Durham York Energy Centre Source Test Update (Nov. 2020)

From: Linda Gasser <gasserlinda@gmail.com>

Sent: April 6, 2021 9:47 AM

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Cc: Burke, Amy <ABurke@clarington.net>; Langmaid, Faye <flangmaid@clarington.net>; ClerksExternalEmail <clerks@clarington.net>; Wendy Bracken <wendy-ron@Sympatico.Ca>; Kerry Meydam <ksam2@rogers.com>

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EXTERNAL

Good morning: -

My apologies - I meant to also advise that last week, Durham released the 2020 DYEC Annual Report - see:

https://www.durhamyorkwaste.ca/en/operations-documents/resources/2020/20210330_RPT_2020_DYEC_ECA_Annual_ACC.pdf

and also attached. See pages 30-34 re LTSS and limited AMESA information.

Linda