August 13, 2010

Mrs. Cathy Johnson
Secretary to the Commission
Manitoba Clean Environment Commission
Winnipeg, MB

RE: TetrES report on Louisiana-Pacific Canada Ltd. proposal to decommission RTOs.

Dear Mrs Johnson:

We have examined the TetrES report in its entirety, and have also reviewed some of the Appendix material, particularly the Stantec report. We offer the following.

The TetrES report clearly is a summary report that was not written by experts of the subject matter. The report attempts to spin information and/or ignores important information because the authors are not informed. The following examples come to mind.

- TetrES notes that the two monitoring stations have not picked up high amounts of chemicals in the air since the RTOs were shut down. However, TetrES does not mention that the stations are located outside the plumes (hence their use for baseline) and that the plant has been operated at a lower temperature since the RTOs were shut down to reduce the amount of VOC etc. emissions.
- TetrES discusses LP's accomplishments respecting forestry obligations but do not mention that LP has been operating in the absence of a long-term Forest Management Plan and new Environmental License since 2005. TetrES further ignores the fact that LP's 1995 Environmental Impact Statement, for which TetrES was responsible, was fatally flawed by virtue of invalid growth and yield estimates.
- Respecting Recommendation #3 (Page 16-1) of the report, TetrES's circuitous discourse to gently suggest that LP might consider monitoring within the plume strongly suggests the text of a consultant that does not want to indicate that its client has had a deficient monitoring program, or to 'impose' on its client. Any knowledgeable human being involved with this exercise will have now recognized the failure of, and need for, LP to monitor within the plume. This is only part of what would be expected in any Operational Environmental Monitoring Program for any development (i.e., to determine if model predictions actually hold, and to manage adaptively based on findings). To provide a 'real world' example, Dr. Charles Simon recently indicated to us that "In Ontario the MOE used sorbent tubes with subsequent analysis of the sorbate to show concentrations of formaldehyde greater than allowed by provincial law across the fence line. Ultimately this was the strongest piece of evidence as it tied in the predicted concentrations with measured ones.". TetrES did not provide the direct and clear recommendation called for under the circumstances.

TetrES had some problems with the basic math respecting annual emissions. Table 8-1 provides emissions on a grams per hour basis, and those numbers appear to be consistent with the information earlier supplied by Manitoba Conservation. Table 8-2, however, suggests massive increases in annual emissions that are inconsistent with Table 8-1 and earlier estimates. For example, for formaldehyde, using the data in Table 8-1 and assuming 24 hour operations 365 days per year results in an estimate of 161 tonnes per year. The TetrES number in Table 8-2 is 6,723 tonnes per year. We note that Best Available Control Technology is required in the USA if formaldehyde exceeds 4.5 tonnes per year (10 tons per year). We

have not examined the Olsson report but assume that these specialists have not made the same mistake as TetrES.

A critical observation of ours from the TetrES report is the citation of the disclaimer and other information cited from the Olsson report. For example,

- Use site-specific stack testing data or "other accepted emissions approximation techniques are acceptable" when stack testing data are not available.
- “Emission rates for the modelling were provided to Olsson Associates for use in the modelling by LPC.".

The disclaimer is likely not uncommon in this kind of assessment; however, it would be particularly important for a specialist to indicate so when the provided data are subject to uncertainty, as is indicated to be the case within the TetrES report (i.e., that some uncertainty exists with the data supplied by LP). Reading between the lines suggests that the specialist in question may have been a bit uncomfortable with the data as presented and/or have some questions about it. Concerned Citizens of the Valley and Boreal Forest Network continue to be very concerned respecting the stack testing data being supplied by LP, including the following.

- Why was some stack testing data used and other data ignored (e.g., ignoring the stack testing data with the high acrolein values)? We continue to believe that it looks like the data were ‘cherry picked’.
- Under what conditions were the stack testing data collected?
- The similarity in process (LP supplying the stack testing data) to the failed growth and yield estimates from the environmental assessment on the forestry development (LP supplying the growth and yield data).

We pose the following question to the Commission. How can decomissioning even be contemplated when there is uncertainty respecting the amount of material coming out of the stacks? This uncertainty needs to be resolved, and independent and critical examination of the stack testing data is needed in our view.

The TetrES report indicates that fugitive emissions were ignored and we cannot understand why Olsson would have done so, other than that LP may not have been prepared to fund the collection of data on fugitive emissions. We would expect fugitive emissions to exist as, for example, particulate matter from machinery and VOCs coming off the logs, which often sit in the yard for extended periods of time.

Irrespective of the cited EPA methodology, it would have been far better to examine emissions under conditions of several years of meteorological data. Conditions vary between years, and requiring simulations based on only one year of data opens the door to the selection of a year that minimizes potential contaminant levels. When threshold concentrations are important for health purposes, ignoring annual variation in weather conditions ignores annual variation in exposures and health risks.

We note that TetrES reported data as averages. Averages do not adequately portray effects when a threshold is relevant. For example, a threshold could be exceeded 20% of the time where its corresponding average was far below the threshold. Perhaps the data are reported in a more meaningful way in the Stantec report.

Although we have not looked at the Olsson report, it is interesting to note that TetrES indicate that some of the baseline data were thrown out because of some kind of effect on the data (thereby lowering baseline numbers). One must always be cautious when throwing out data and provide a good explanation for doing so … perhaps this is contained in the Olsson report. It

is interesting to consider that the stations are used for baseline except when the consultant thinks that they are not baseline.

The argument in TetrES to the effect that the Ontario acrolein threshold can be ignored is interesting, and causes one to wonder why one would have thesholds in the first place if they can be so easily dismissed. The TetrES report provides an argument for not using the threshold but ignores the basis for the threshold (certainly Ontario had some basis). We suspect that Ontario takes a conservative approach to address uncertainty (or perhaps considers the potential for synergistic effects with other contaminants … see below). It is also perhaps telling that LP's view is that Manitoba citizens who live in the vicinity of the mill should accept lower air quality standards than the citizens of other provinces. We hope that the Clean Environment Commission will refute that view.

The Stantec report (Appendix G. Louisiana Pacific Canada Ltd. - Swan Valley OSB Plant Human Health Risk Assessment.)

- Acrolein.
  - The Stantec report states **"**The current MOE (2009) 24-hour standard of 0.4 µg/m3 used in this assessment, is derived from a chronic study by Dorman et al. (2008) where a no observed adverse effect level (NOAEL) of 458 µg/m3 was established for olfactory epithelial pathology in rats.". This is reiterated in Table 5-1 on Page 20 (Summary of TRVs and Inhalation Benchmarks Selected for acrolein).
  - In the report submitted on behalf of Concerned Citizens of the Valley and Boreal Forest Network, Dr. Brown of Intrinsik indicated that the appropriate IRIS RfC for acrolein is .02 µg/m3. This was confirmed in a letter to the CEC on August 14, 2009 from NCASI's Dr. Vickie Tatum, who agreed that the correct IRIS RfC for acrolein was .02 µg/m3, and that she had made an error in her earlier report submitted on behalf of LP. This value is 1/20th of that now being used by LP and its new consultants.
  - The Stantec report states that the "Max GLC of acrolein was predicted at the southwest fenceline of the Project property (0.83 µg/m3) resulted in a CR greater than 1.0 …". This concentration is approximately twice the new threshold used by Stantec, and 40 times the earlier .02 µg/m3 threshold considered to be safe. The high concentration at this location is dismissed in the Stantec report despite the fact that LP workers and contractors spend significant amounts of time within the property, and that farmers and others could spend significant amounts of time in the vicinity of the property line.
  - The Stantec report, on page v, states "The maximum 24-hour concentration of acrolein predicted at each of the 43 receptor locations was modeled to be at receptor location 40, a residence. At this location, the 24-hour modeled acrolein concentration was 0.232 µg/m3.". This is >11 times the earlier .02 µg/m3 threshold considered to be safe.
  - The Stantec report attempts to justify the high acrolein levels by comparing them to levels reported in major Canadian cities between 2001 and 2006 (Table 6-5. Ambient Concentrations of Acrolein at Ten Environment Canada Monitoring Stations). We wonder why more current data were not reported (i.e., from 2007 on). Furthermore, the analysis is inappropriate because the rural Minitonas area is being compared to cities across Canada whereas Table 6-5 indicates that acrolein levels in these cities are declining in this period, and that few would have levels as high as the Minitonas area. The community of the Minitonas area will experience a huge increase in the levels of acrolein without pollution controls.
  - Synergistic effects.
    - The Stantec report, within Section 7.3.1 Chemical Interactions, states "In this risk assessment, the COPC-specific CRs, ILCRs and LCRs for a receptor have been

characterized for single COPC only.". Stantec did not assess additive or synergistic effects of the pollutants.

- Per Ontario Air Standards for Acrolein – June 2005, acrolein together with aldehydes, such as acetaldehyde and formaldehyde, has been shown to have synergistic effects. Mixtures of the three pollutants were found to be more severe and more extensive in inducing respiratory olfactory problems in rats, compared with the individual chemicals. See http://www.ene.gov.on.ca/envision/env_reg/er/documents/2005/airstandards/PA02E0013.pdf
- In recent correspondence to us, Dr. Charles Simon stated "Generally organic compound toxicity is synergistic with respect to exposure to multiple compounds simultaneously. In particular, I'm aware of the synergistic toxicity effects of the acrolein, formaldehyde and acetaldehyde referenced in other cases.".
- We understood that the EPA considered acrolein to be a possible carcinogen. Is this correct? The Stantec report indicates otherwise.

- Formaldehyde. Stantec indicates maximum predicted formaldehye emissions of 56.8 µg/m3 which exceeds the maximum predicted 1-hour air concentration for acute health risk of other accepted guidelines.
- Benzene. Why does Stantec establish tolerance levels for benzene when benzene is classified as a non-threshold toxicant? How does this relate to the 2007 letter from Director Tracy Braun of Manitoba Conservation wherein she indicated that LP should be reducing and eliminating benzene emissions?

Finally, we recognize LP for being transparent and clear about the substantive errors that existed in earlier submitted dispersion modelling. That is, ignoring emissions from one of the dryers for acrolein and acetaldehyde, some 50% and 45% of total emissions for acrolein and acetaldehyde respectively per Table 8-1. The text suggests that this error may have been ongoing since LP began doing this work in 2002 or so (i.e., "previous assessments were inadvertently based on only one pair of dryers"). We offer several comments respecting this gross error.

- First and foremost, this admission does not cause us to be confident in past process for regulating emissions from the LP mill, or for that matter, emissions from other developments. It does not cause us to be confident in the technical capability of Manitoba Conservation when Conservation was completely unaware of a major modelling error from a number of different submissions that may have been since 2002 or so. Even if modelling is not checked via some independent means, often there are simple rules of thumb that point to obvious problems with a model. For example, one might check the output of a Habitat Suitability Index model to determine if it predicts the obvious. Similarly, even in the absence of models, many local people clearly understood that LP's estimates of growth and yield and 'sustainable' Annual Allowable Cut were clearly 'not on'. What is apparent from the admission by LP is that Manitoba Conservation, when it comes to detecting obvious errors in modelling assumptions, lacked the capability to do so.
- There is a pattern here with this Company, and it is clear that we were correct to suggest that, based on previous experience respecting the veracity of conclusions on forest sustainabilty, problems were likely to exist with analyses conducted by LP and its consultants respecting the mill and its emissions. We reiterate the need for independent critical examination of the stack data being provided by LP, given that those data are the foundation for the entire assessment of emissions and health risks.
- The merit of the work by Boreal Forest Network, Concerned Citizens of the Valley and the Public Interest Law Centre, and of Dr.'s Brown and Simon and Mr. Chadder, is now well established. If we had not intervened, the gross error would likely continued to have gone

undetected. This has also demonstrated that Minister Struthers decision not to provide intervenor funding was wrong. We are still left wondering about the information in the new studies, and wishing that we might have had the means to conduct more rigorous independent assessment. We hope that the Commission has had the budget to be able to contract expertise to support its critical examination of the new reports.

Sincerely,

Iris Jonsson, Concerned Citizens of the Valley
Susanne McCrea, Boreal Forest Network

cc. Byron Williams, Manitoba Public Interest Law Centre