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October 8, 2009

Allan Hambley
Plant Environmental Manager
Louisiana-Pacific Canada Ltd.
P.O. Box 189
Minitonas, MB R0L 1G0

Dear Mr. Hambley:

Following a review of the material that has been presented to it throughout its investigation, the Commission has concluded that it requires additional information from Louisiana-Pacific before it can formulate its recommendations and make its report to the minister. The Commission is of the view that *Guidelines for Air Dispersion Modelling in Manitoba* provide the guidance for the provision of the information that the Commission is seeking. By supplying the requested information in a manner in keeping with the guidance in this document, Louisiana-Pacific would be assisting the Commission in the completion of its investigation.

In its November 18, 2008 document, Louisiana-Pacific stated that it was following the *Guidelines for Air Dispersion Modelling in Manitoba*. However a number of the provisions of those guidelines were not addressed while in other cases Louisiana-Pacific departed from the *Guidelines*. The Commission recognizes that Louisiana-Pacific was guided by Manitoba Conservation in the decisions that were made regarding the extent to which the *Guidelines* were adhered to in the November 18 document. The Commission also recognizes that Manitoba Conservation provided this guidance in the context of its ongoing communication with Louisiana-Pacific.

Guidelines for Air Dispersion Modelling in Manitoba

The following is a section-by-section description of the Commission's concerns over the information provided to the Commission in relation to the *Guidelines for Air Dispersion Modelling in Manitoba*. At a number of points in what follows, the Commission makes specific requests for information. These requests are included to provide added clarity; overall the Commission is requesting that Louisiana-Pacific provide it with a report that conforms to the *Guidelines*.

Model selection

The *Guidelines* identify two different types of modelling levels: screening and refined. The Louisiana-Pacific application does not indicate which level has been undertaken in this case, or the rationale for modelling at that level. The selected model used was appropriate for refined modelling and the reasons that the province provided for its approval of Louisiana-Pacific's decision to use a single year's meteorological data made reference to a section of the *Guidelines* that apply to refined modelling. Louisiana-Pacific received provincial government approval to use ISC dispersion model, ISCST3 (Industrial Source Complex Short Term model version 3) in 2003. While the Modelling Guideline allows for the use of this model for refined assessments, no rationale was provided for the selection of the model. In addition, no discussion was provided regarding the selected model options incorporated in the modelling. In addressing this section, the Commission requests that Louisiana-Pacific make it clear which level of modelling is being undertaken and provide a rationale for the level of modelling and the selection of the model being used.

The *Guidelines* recommend that facility start-up, shutdown or upset conditions be taken into consideration in both the screening and refined models. However, there was no discussion regarding facility start-up, shutdown, or upset conditions in the November 18 document. The Commission is requesting that discussion of the effect of these conditions be provided.

Project overview

A project overview was provided in the Louisiana-Pacific documentation. However, the facility was not described as required in the *Guidelines*. For example, a topographic map, site plan including location, orientation and dimensions of buildings was not provided nor was the OSB process described in any detail.

The *Guidelines* state that the process description is intended to determine which air pollutants are released and therefore which are to be modelled. The application does not contain a discussion of released pollutants or a rationale for the pollutants to be modelled. The Commission is requesting that Louisiana-Pacific include such a discussion.

Air dispersion model inputs

EMISSION RATES

In terms of reporting the emissions rates, the *Guidelines* state:

The emissions from each source for each pollutant must be stated as annual emissions in tonnes/year and average and maximum hourly emissions in grams/hour. The preferred source of emission rate data is site-specific source sampling. Where measured emission rates are not available, emissions may be estimated using emission rate factors. The source of these factors

must be referenced, and the supporting quality and quality [sic] of data on which they have been based must be discussed. (Manitoba Conservation 2006b; 6)

The Louisiana-Pacific application provided no information in terms of emissions in tonnes per year or in terms of maximum hourly emissions. Most emission rates were based on the 1997 licence or the 1994 Environmental Impact Assessment rather than site-specific data. In the case of benzene from the dryer, formaldehyde, and hydrogen cyanide no referenced sources were presented. A description of potential fugitive emissions was not provided or included in the modelling.

The application does state that the benzene and formaldehyde limits in *Environment Act* Operating Licence 1900 S4:

were generated based on limited information available at the time of the original application.

Both Swan Valley OSB and the industry in general have improved their understanding of emissions and have invested in emissions characterization research over the past 13 years, and this application reflects the current state of knowledge for the industry. (Louisiana-Pacific 2008; 13)

In a supplementary submission, Louisiana-Pacific stated:

[T]he proposed new limits are based on both site-specific and industry-wide data collected over the past 15 years using the most current test methods developed specifically for the wood products industry. (Louisiana-Pacific 2009; 8-9)

However, Louisiana-Pacific has not provided sufficient rationale and documentation on the source data or the methodology it used.

In addition, the air dispersion modelling report on acetaldehyde, acrolein, methanol, PM₁₀, PM_{2.5} and propionaldehyde provided no information as to the source data for the emission rates of those substances.

Given the fact that the plant has been in operation for over a decade, the Commission is requesting that site-specific data be incorporated into the development of all emission rates. Failing that, it is requesting rationales for the substitution of rates that were based on the previous licence and environmental impact assessments.

RECEPTOR GRIDS

The receptor spacing requirements outlined in the Guidelines were followed.

METEOROLOGICAL DATA

The *Guidelines* require the use of the five most recent, consecutive years of meteorological data with five concurrent years of mixing height data, including hourly

observations of wind direction and speed, temperature, cloud cover, and ceiling height for complex modelling. This requirement may be waived if one year of site-specific, hourly data that has undergone quality assurance/quality control is available. Manitoba Conservation chose to waive the requirement and use the 2006 meteorological data from the Louisiana-Pacific meteorological station. No rationale was provided for the decision to use only one year's data. Furthermore, no discussion is provided of the quality assurance/quality control process.

The Commission requests that unless an acceptable rationale is provided, that five-years of meteorological data be used to model emission rates based on site-specific data.

LAND ANALYSIS

A discussion of the surrounding land use was not provided, however, a review of the ISC-Prime output files suggest that rural dispersion coefficients were used.

TOPOGRAPHY

A description of the topography surrounding the LP Facility was not provided.

BACKGROUND AMBIENT AIR CONCENTRATIONS

In its November 18, 2008 Louisiana-Pacific document Louisiana-Pacific stated that the "model results are based on the dispersion of maximum emission rates from the facility's point source emissions only and do not account for background concentrations of any of the modeled parameters" (9). Background contaminant concentrations were discussed in the document and were suggested to not be significant. The *Guidelines* state that:

If a source has a potentially significant impact, background ambient air quality needs to be considered and included in air dispersion modelling results. These background concentrations must be considered in the assessment of both screening and refined models. (Manitoba Conservation 2006b; 9)

Since some of the substances may have a potentially significant impact, background concentrations should be considered. Monitoring data should be analyzed based on wind direction to develop background contaminant concentrations and as required in the Guidelines "be shown to meet the quality assurance criteria of representativeness, completeness, precision and accuracy" (Manitoba Conservation 2006b; 9). The Commission requests that where modelling indicates that the level of an emitted substance approaches ambient air quality criteria, background levels be included in air dispersion modelling.

GOOD ENGINEERING PRACTICE

Building heights and configurations were not provided nor was there a discussion of GEP Stack Heights.

Assessment of Air Quality Modelling Results

ENVIRONMENTAL ASSESSMENT

Manitoba lacks ambient air quality criteria for acetaldehyde, acrolein, benzene, methanol, and propionaldehyde, all VOCs whose emissions are associated with OSB production. Louisiana-Pacific used a wide range of criteria to assess the ground-level concentrations of these substances. However, it did not provide rationales for the selection of these criteria. The Commission is requesting that Louisiana-Pacific provide full rationales for the selection of such criteria.

HEALTH RISK ASSESSMENT

The health risk analysis provided was not a stand-alone report, but a communication from a research institute to Louisiana-Pacific that was then incorporated into the supporting documentation to the application. It lacked rationales and detailed references. The Commission is requesting that the health risk assessment include a description of the applicable pathways and rationale for the selection of the pathways and choice of standards by which the risks are assessed, and be fully referenced to allow peer review.

DOCUMENTATION

The *Guidelines* require sufficient detail to allow Manitoba Conservation to verify the results. Manitoba Conservation has concluded that the application provided it with sufficient detail to analyze the proposal. As noted above, this may reflect the ongoing level of discussion that took place between Louisiana-Pacific and Manitoba Conservation prior to the filing of the application. As the above comments indicate, the Commission is requesting greater detail and discussion. The Commission notes that since the Swan Valley OSB Plant had been in operation for over a decade at the time of the application, some topics set out in the *Guidelines* would have limited applicability. In such cases, the Commission is requesting is that a rationale be provided if certain issues are not going to be addressed.

Conclusion

To allow the Commission to complete its investigation and make recommendations with confidence, we are requesting Louisiana-Pacific to provide a stand-alone report on air dispersion modelling (including a health risk assessment) that contains all the relevant information, rationales, discussions of uncertainty, assumptions, models, and citations needed to assess the application and appropriately referenced be provided to the Commission.

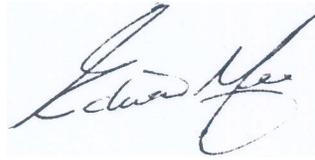
Louisiana-Pacific. 2008. *Request to Amend Manitoba Environment Act Licence 1900 S4 Emission Limits for Pressing and Drying Operations*. November 18. 2008.

Louisiana-Pacific to Edwin Yee, Manitoba Clean Environment Commission. September 1, 2009. Manitoba Conservation. 2006a. *Air Quality Management Strategy* (draft).

Manitoba Conservation. 2006b. *Guidelines for Air Dispersion Modelling in Manitoba* (draft).

We look forward to your forthcoming response.

Sincerely,

A handwritten signature in black ink, appearing to read "Edwin Yee", is centered on the page. The signature is fluid and cursive, with a large, sweeping initial 'E'.

Edwin Yee
Chair

cc: Ken Gibbons
Ken Wait
Patricia MacKay