

### **Map 1. 1-Hour Maximum Formaldehyde Simulation.**

The base map comes from the simulation modeling conducted for LP, from the Company's report submitted on November 18, 2008 ('Request to Amend Manitoba Environment Act License 1900 S4 Emission Limits for Pressing and Drying Operations').

Respecting its ambient air quality monitoring program, on page 5 in its November 18 submission, LP stated "A comprehensive ambient air quality monitoring network has been in place in the vicinity of the plant since 1995." and "It is LP's contention that the existing ambient air quality monitoring programs will continue to ensure protection of human health and the environment following the decommissioning of the RTOs."

At the Public Meeting in Swan River, myself and others noted that LP's ambient air quality monitoring was grossly flawed, including the locations of the monitoring stations (LP1 and LP2 on the map) and the frequency of monitoring (i.e., per the email from Mr. Dave Bezak of Conservation). The evidence clearly demonstrated that LP's statements in its November submission were false, and that the stations had been wrongly located despite the availability of local knowledge and available wind data at the time of the 1994 assessment.

The attached map shows, for LP's 2008 simulation of 1-Hour Maximum Formaldehyde concentrations, locations of residences within the various areas of relatively high concentration (residences are indicated by yellow dots; the approximate location of the LP stacks by the red dot). If one assumes that LP's 2008 simulation modeling for formaldehyde is reasonably accurate, then the map demonstrates that there are far better locations to sample for this parameter than the present locations of the ambient air quality monitoring stations. This further suggests that the stations were located in areas where people would be exposed to relatively low dosages of the toxins, as opposed to where residents would be exposed to relatively high levels.

I recognize that this is only one toxin and one parameter, and that a robust ambient air quality monitoring program would have to look at all the relevant toxin/parameter concentrations.

Please note that I do not accept the simulation to be accurate as I am uncertain at this point in time. I do expect the simulation to be somewhat inaccurate on a number of counts, but am unsure as to the magnitude of the biases involved. For example, only one year of data were used to develop the simulations. How representative is the data of all years? I expect that in some years the simulation could look quite different.

The location of residences are approximate. Locations were based building locations shown on a ReproMap (RM of Minitonas: Revised November 2008), data from the local telephone book, and local knowledge (Mr. Archie Kichuk, personal communication). The appended map does not include all residences within the blue-colored polygons.

### **Map 2. 1:250,000 scale map.**

The red dot indicates the approximate location of the LP stacks. The yellow dots represent the residences of those known to have passed away from ALS (there may have been others that we do not know about). Note the locations ... 2 of the 3 residences are in relatively close proximity to the Duck Mountain (the third being close to the mill). This suggests the possibility of a spatial effect ... perhaps the nearby Duck Mountain has some bearing on the movement of the toxins away from the mill. The potential for this to occur may bear exploring, and perhaps particularly so in the winter when cold ambient air temperatures may significantly influence the movement and deposition of the toxins coming from the stacks.

I have roughly sketched known and potential blueberry patches on the map, in purple. These are based on personal experience in the area and communications with Wuskwi Sipiik First Nation elder Mr. Buddy Brass and others. The large area is of particular significance to First Nation and Metis people, and other local people from the area. When the berries are abundant, people will move out to these areas and camp out on the land for weeks at a time (e.g., people from Wuskwi Sipiik First Nation and other people). The main blueberry area is not contiguous in blueberries, as it also incorporates significant areas of, e.g., organics and silt-rich till. It is a mix of eolian, glaciofluvial - ice contact, glaciolacustrine - littoral, till - silt rich, and organic. Further to this, there are areas that do have blueberries and are used that are not shown on the map (e.g., berries are found under aspen some 3 miles or so west of the western edge of the northern area). Some people may also pick to the north and east of the indicated area.

People from Briggs Spur and Cowan pick from the south, people from Camperville, Duck Bay, and Pine Creek also pick.

There are three small potential patches west of the main area. These are hypothetical on the basis of surficial geology (found at <http://www.gov.mb.ca/stem/mrd/geo/gis/sgcmsref.html> ... click on the map and from there one can select the zoom-in symbol, click on map, and continually decrease scale ... map is 63C and area is south of Swan Lake). Potential areas are based primarily on eolian surficial geology ... these are typically sandy uplands with some internal topographical variation. My experience in the general area is that the blueberries can be found in the more mesic areas ... the topmost areas (perhaps the majority of the areas that are sandy) are quite dry supporting some lichen and other drought-tolerant species, and significant bare ground. Blueberries may be found on the slopes and towards the bottom of the slopes where the soils may transition to organics (peat) ... more mesic environments ... often where stunted overstorey aspen may be found. And also found in better aspen sites (still low productive for aspen) growing on sandy soils, as a fairly dominant shrub in spots.

Thank you for considering this information in your deliberations.

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