

Gladstone Health Risk Assessment - Step 3

On 5 November 2009 Queensland Health released an interim Health Risk Assessment (HRA) which broadly assessed the risks posed to the Gladstone community by emissions from industrial and other sources.

INDUSTRY UPDATE

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The HRA process used has four steps:

1. Identification of the contaminants of concern.
2. Identification of safe exposure levels for these contaminants.
- 3. Calculation of contaminant exposures.**
4. Assessment of health risks.

Today, I'll discuss the third step, which is to calculate the community exposure to the 160 contaminants of concern identified in Gladstone.

Information on the first two steps, the contaminants of concern and their safe exposure levels, can be found in www.gilg.com.au forum topics.

As part of the Clean and Healthy Air for Gladstone project, the Department of Environment and Resource Management (DERM) operates five fixed air monitoring sites in the Gladstone and Boyne / Tannum areas, plus one mobile station.

These stations collect real-time and six day periodic samples which are analyzed to give concentration levels for the 160 contaminants of concern. These samples have been taken over the past six to 18 months, dependent on the contaminant.

To calculate contaminant concentrations where monitoring stations are not located, DERM has set up a powerful mathematical air pollution model. Using up to two years of historical metrological data, a topographical model of Gladstone's landforms and detailed information about emission types, quantities and release points, this model can accurately estimate contaminant concentrations throughout the Gladstone area.

To ensure that the model is correctly configured, the results from the model are checked against actual data from monitoring stations. If necessary, the model is tuned so that modeling results are consistent with known monitoring data. Based upon Australian experience with similar models, their results are consistently within 10 to 20 per cent of real life measurements and conservative. That is, the models usually over estimate contaminant exposures.

As well as the concentration of contaminants of concern, these models also calculate how often and for how long these exposures take place. This information is needed to complete the next step of the HRA, the assessment of the risk. This step will be discussed in my column next Saturday.

If you would like to comment about the Health Risk Assessment approach, please go to our forum topic at www.gilg.com.au

I look forward to hearing from you soon, cheers, Kurt.



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