

Ad paragraphs 98 and 99:

103. The allegations herein are denied. EnviroServ has never propounded an "own version" as is suggested.

Ad paragraph 106:

104. I reiterate that EnviroServ views these complaints in a most serious light. At the time when this specific issue was first raised in the Everitt matter approximately 3 (three) months ago none of the detail of the affected children was provided, notwithstanding that an NPC member, Dr Karla Lott filed an affidavit of some 120 (one hundred and twenty) pages in support of Everitt's opposition.

105. The additional details which have now been provided can only be construed to impute that EnviroServ is entitled to verify these details. However, the NPC has failed to submit any evidence that directly link the affected children to the Shongweni site. The NPC states as fact that the children's condition is exclusively attributable to the Shongweni site notwithstanding that other H₂S and SO₂ generators either operate within the vicinity of the Shongweni site or otherwise impact the Site.

106. The INFOTOX Health Impact study concludes as follows:

106.1. INFOTOX characterised all significant emission sources at the Shongweni site and covered Hydrogen Sulfide and other odorous compounds, formaldehyde and a wide range of VOCs. Direct

LC
\$

readings, canister sampling, and chemical analyses were comprehensive and INFOTOX is confident that the data are sufficiently complete for conducting a credible human health risk assessment;

- 106.2. Airshed Planning Professionals collated the source data and conducted mathematical dispersion modelling for all of the substances that were quantified. Modelling was conducted for acute, sub chronic and chronic exposures. This is based on a large dataset consisting of more than 50 (fifty) substances;
- 106.3. except for H₂S, the risk of potential non-carcinogenic health effects at the ambient air concentrations modelled at all of the receptor locations is insignificant;
- 106.4. cumulative cancer risks associated with carcinogenic substances were below the target **cancer risk** of 1 (one) in a million for community exposure that is normally **regarded as insignificant** (de minimis);
- 106.5. although it cannot be concluded that health effects would not occur at the modelled H₂S concentrations attributed to the landfill site, the concentrations are not particularly high when considered in relation to health effects documented from case studies. However, should some adverse health effects be reported, these are not expected to be widespread and not all persons are expected to be susceptible at

64
#

the exposure concentrations. **According to the available health information, upper respiratory tract bleeding, cardiovascular effects and bronchial constriction in asthmatics are not associated with exposure to H₂S in the concentration range of interest.** The risk of adverse health effects is not high in general, but, compared to other areas, the risk of potential health effects is expected to be relatively lower at certain receptor locations in Assagay, KwaNdengezi and Hillcrest;

106.6. tentatively reported background H₂S concentrations in the study area affect the health risk interpretations. **In fact, the contribution by the landfill site to health risks in the residential areas due to H₂S is relatively small in comparison with the risks caused by the background H₂S levels. Therefore, based on the available information, it is incorrect to attribute reported health complaints in the study area entirely to the Shongweni landfill site;**

106.7. the Odour Impact Assessment indicated a potential for odour annoyance for limited periods, except in the case of H₂S. Odour annoyance due to H₂S might occur over longer periods. The odorants contributing most to the potential for odour annoyance are H₂S and the mercaptans. The mercaptans do not contribute to any health risks;

90
#

Community Health Risk Assessment for Emissions from the Shongweni Waste Site

Dr Willie van Niekerk

7 June 2017

INFOTOX Guideline Range

- 50 – 150 $\mu\text{g}/\text{m}^3$ is the range in which health effects may occur in sensitive individuals (hourly averages)
- It is not expected that adverse health effects will be widespread in a community in this exposure range
- However, should health effects be reported, it cannot be dismissed as invalid observations

Health Risk Assessment

- Cancer risks all added together (cumulative cancer risk) insignificant
- Cancer and noncancer risks associated with formaldehyde exposure are insignificant
- All noncancer health risks for volatile organic compounds are insignificant
- Hydrogen sulfide in the modelled concentration range has the potential to cause adverse health effects – headaches and nausea most consistently reported. Effects are reversible
- Odour levels, primarily due to hydrogen sulfide, are well above the odour threshold and it is likely that odour annoyance will be experienced by affected communities