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## **HUMAN HEALTH RISK ASSESSMENT, GASWORKS ARTS PARK AND SOUTHPORT COMMUNITY NURSING HOME**

Golder Associates Pty Ltd (Golder) was commissioned by the City of Port Phillip to undertake a Human Health Risk Assessment (HHRA) for the Gasworks Arts Park and Southport Community Nursing Home sites (both located on the former South Melbourne Gasworks property). The methodology and results of the HHRA have been presented as two technical reports:

- *Summary HHRA, Former South Melbourne Gasworks, Graham Street, Albert Park* (Golder Ref. 147613068-001-Rev1, dated August 2014)
- *Supporting HHRA, Former South Melbourne Gasworks, Graham Street, Albert Park* (Golder Ref. 147613068-003-Rev0, dated August 2014)

The primary objective of the HHRA was to provide City of Port Phillip with assessment of the potential for soil and groundwater contamination at the site to pose a risk to the health of site staff and users, and to support revision of the Interim Contamination Management Plans for the Gasworks Arts Park and the Southport Community Nursing Home sites ('the sites').

The *Summary HHRA* report presents the principal health risk assessment works, including review of previous data; details of the methodology and conclusions regarding potential human health risks, as well as management strategies that may be appropriate to reduce or maintain risks to acceptable levels. The *Supporting HHRA* report includes additional details regarding parameters and calculations used in the *Summary HHRA* report.

The HHRA was undertaken following Australian guidance for assessment of health risks due to environmental contaminants (*Guidelines for Assessing Human Health Risks from Environmental Hazards, enHealth 2012; and the National Environment Protection [Assessment of Site Contamination] Measure, NEPC 1999*). The level of 'acceptable' or 'unacceptable' health risk was adopted from guidance provided by Australian guidelines and EPA Victoria.

The HHRA process considered the potential for site staff and community users of the sites and for residents of Southport Community Nursing Home to be exposed to chemical contaminants in soil and groundwater. The HHRA considered the types of activities undertaken by people at the sites, the quantity of soil, dust, groundwater and vapour to which they may be exposed, and the health effects of the chemicals present in the soil and groundwater at the sites.

The potential methods by which people may be exposed to chemical contaminants include direct contact with soil or dusts; inhalation of vapour from chemicals in soil and inhalation of vapour from chemicals in groundwater. Due to the presence of contamination in groundwater at the sites, groundwater was considered to be unsuitable for use as drinking water, irrigation, stock watering or filling a swimming pool.



The HHRA was conducted under the assumption that no management of contamination or control of site activities was implemented. This was to allow assessment of the need for on-going management and to assess the suitability of current management strategies.

**The results of the HHRA indicated that without management, the concentrations of chemical contaminants in soil and groundwater at the sites may present unacceptable health risks to site staff, residents (Southport Nursing Home) and community users in comparison with Victorian and Australian guidance for health risk assessment.**

For both the Gasworks Arts Park site and Southport Community Nursing Home site, direct dermal (skin) contact with soil and ingestion of soil (such as from hands following contact with soil) are the primary mechanisms for health risks to occur.

Prevention or reduction of exposure to soil at both sites represents an appropriate means to manage potential health risks. The existing Interim Contamination Management Plans for the sites present a management strategy to reduce exposure to soil, by requiring maintenance of 'capping' or 'separation' layers over contaminated soil, and control of works involving excavation of soil or generation of dusts.

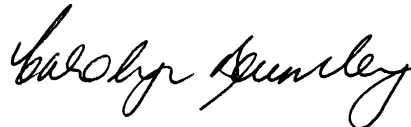
Based on the current configurations and land uses of the both Gasworks Arts Park and Southport Community Nursing Home, the requirements of the Interim Contamination Management Plans are considered appropriate for managing exposure to contaminated soil to an acceptable level. However, a longer term, more robust strategy for managing the contaminated soil and groundwater at the sites is recommended to satisfy likely requirements of the Section 53V audit currently being completed for the site, reduce potential exposure to site users, reduce the amount of monitoring, and reduce maintenance costs associated with the current interim management regime.

Regards

**GOLDER ASSOCIATES PTY LTD**



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