

Project Information Sheet

Management of Hazardous Materials

Management Principles

The management of hazardous materials is governed by environmental regulation and legislation and occupational health and safety legislation. The project owners have extensive local and international experience successfully managing remediation works at contaminated sites. Their projects include:

- The New Economy Business Park in Ambridge, Beaver County, near Pittsburgh, Pennsylvania, spans 60 acres. The project involved the phased demolition of 36 structures. Due to high contamination levels, the site underwent remediation to become ready for development. The aim was to repurpose the site for industrial, commercial, and residential mixed-use. Currently, 70% of the site has been developed, resulting in the creation of 160 jobs.
- Remediation of an 8.2-hectare brownfield site on Midland Road was completed. In Stage 1, nine lots have been approved for development, while six lots are awaiting rezoning approval for Stage 2.
- A 4.6-hectare brownfield site in Bibra Lake was remediated and developed into a WA Limestone facility.
- A total of 100 acres in Geelong was acquired through aggregate ownership. The site was rezoned, the cement works were demolished, and the area was remediated and master-planned to be development-ready. Currently, 60% of the site has been developed by the new owners.
- Overseas demolition and remediation projects have been successfully undertaken in Kuala Lumpur, Malaysia, and Pittsburgh, Pennsylvania, USA.

A Remediation Action Plan (RAP) is being prepared by an independent Environmental Consultant. The RAP will detail the identification, removal and management of hazardous materials consistent with the standards for managing and remediating contaminated sites. For more information on the RAP please see **Project Information Sheet – Remediation Methodology**.

As with all successful previous remediation projects conducted by the Project Team, best practices and strict health and safety measures will be enforced. The management of hazardous materials follows a process similar to safety management, which includes:

- Assessing the risk
- Controlling the risk of exposure
- Removing the hazardous material
- Validating the area post hazardous material removal
- Safely transporting and disposing of hazardous materials.

The risk from exposure to hazardous materials is usually from chronic exposure (i.e., repeated exposure over a prolonged period). To protect workers and the community, the Project will manage the risk of exposure to hazardous materials at the source. This means the focus is to contain the management of hazardous materials within the site.

Dust

The ground disturbance activities during site remediation will generate dust. To address this, an Environment Management Plan will detail strategies for managing dust across the site. This plan is a critical component of the overall strategy to minimise dust generation on site and ensure dust levels are kept within safe and acceptable limits.

The Project will proactively prioritise air quality through several pre-emptive dust suppression techniques. These measures include:

- An earthworks plan that employs a cut to fill methodology, which involves removing the topsoil or unwanted earth material from certain parts of the site and using it to fill in low-lying areas or create embankments, slopes, and other features.
- A three-metre-high solid temporary fence along the Adelaide Street boundary to help contain dust within the construction site.
- Restricting the movement of fill within dedicated areas to minimise dust being carried away by the wind.
- Regularly applying water to earthwork areas to keep dust from rising.
- Application of specifically formulated dust suppression products to manage dust on clean sand stockpiles.

To monitor compliance, real-time dust monitoring will occur throughout the project allowing for quick detection of elevated dust concentrations and implementation of controls or work stoppage when dust levels are not adequately controlled. Real-time monitoring will be supplemented with daily airborne fibre monitoring at the site boundary and across the site. For more information on managing dust please see **Project Information Sheet - Air Quality**.

Asbestos

Asbestos was commonly used in construction throughout Australia until the late 1980s. On this site, asbestos is present in pockets of landfill material rather than being evenly spread across the area. While it is not feasible to remove all asbestos, medium to large pieces of asbestos, when discovered, will be relocated to a designated deep burial location on the northern side of the site to minimise the release of airborne asbestos fibres.

Excavated areas within the proposed Commercial Business Park will be filled with blended engineered fill that includes these asbestos-impacted materials, generally placed more than 1 metre below the finished ground level. This will be covered with a 500 mm barrier layer of coarse brick and sand mix, and subsequently capped with a minimum of 0.5 to 1.0 metre layer of clean fill sand, depending on the location, to minimise future contact.

Silica

Silica is a mineral component of sand and clay that is widely used in construction materials like bricks and concrete. Exposure to silica, or more specifically, respirable crystalline silica is a workplace occupational issue and is not considered a contaminant of potential concern for the project. Silica is not considered a risk on this project.

Hydrocarbons

Hydrocarbons are naturally occurring compounds containing hydrogen and carbon. They can be in the form of gas, liquid, solid or polymers. In construction and demolition environments, hydrocarbons are likely to take the form of fuel and paint thinners that have escaped storage facilities, have been



buried as waste, or have accidentally been spilt. Some hydrocarbons have a strong smell to alert people to their presence.

Exposure to hydrocarbons can cause significant health risks, especially for onsite workers undertaking remediation. However, any observed hydrocarbons will be managed promptly in accordance with the Contaminated Sites Guidelines to prevent health risks and ensure incidents are contained and do not affect the community. For example, buried drums will be removed from the fill, and their contents will be collected and removed offsite.

PFAS

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) are a group of man-made, persistent chemicals that can be found in various everyday items, including consumer products such as food packaging and stain protection applications for fabrics and carpets, discontinued firefighting foams, and industrial applications. Most people living in Australia will have detectable levels of PFAS in their blood. The most usual exposure pathway is via ingestion of PFAS impacted water or food grown with PFAS impacted water.

PFAS have been detected in shallow soil at some locations across the site. The observed concentrations are not considered to pose a risk to human health. The identified PFAS are believed to be related to application of PFAS-containing firefighting foams during a bushfire at the site in 2009. Any PFAS-impacted soil considered to pose risk to human health will be managed in accordance with the Contaminated Sites Guidelines and the Project's unexpected finds protocol.

Heavy Metals

Heavy metals are a group of metallic elements that have a relatively high density compared to water. The group also includes metalloids, which are elements that exhibit some metal and some nonmetal properties. Their widespread use has led to their extensive distribution in the environment, raising concerns over their potential effects on human health and the environment.

In landfill settings, such as on our site, there are often elevated concentrations of heavy metals which can come from disposed metal, products containing metals and alloys, and industrial wastes. Our site assessments have detected minor elevated concentrations of certain heavy metals across the site. When buried in landfill, these heavy metals can leach into the surrounding soil and groundwater, producing leachate and contributing to contamination. Typically, the risk to human health and the environment from heavy metals comes from exposure to leachates.

Leachate testing of on-site materials indicates leaching of heavy metals is unlikely to have occurred, as groundwater concentrations below the site are similar to regional concentrations. Ongoing assessment of heavy metal leaching is included in our Environmental Management Plan to assist in mitigating any potential risks of contamination from heavy metals, ensuring both environmental safety and public health are safeguarded.

Landfill Gas

Landfill Gas (LFG) refers to gases released during the decomposition of organic materials in landfills, primarily consisting of methane and carbon dioxide, along with other trace gases. The decomposition of green waste and building products, such as gyprock, is a common source of LFG.

Although the site was officially designated to receive only inert waste during its operation as a landfill site from 1987 to 1997, the presence of organic materials cannot be ruled out which suggests some potential for LFG production. LFG can pose a risk when concentrations build up beneath structures,

with the risk being heightened when the land is capped, as this can trap the gas and increase the danger.

To manage these risks, initial LFG assessments have been conducted, and continuous monitoring is planned throughout the project. This proactive approach ensures that any emerging LFG related risks are identified early and managed effectively, maintaining safety standards and mitigating potential impacts on the project and surrounding areas. Further assessments will adapt as necessary to respond to any changes in conditions, ensuring comprehensive management of LFG risks.

Long-term Management of Hazardous Materials

Once the site remediation is complete, an Ongoing Site Management Plan (OSMP) will be developed and implemented. This plan is designed to monitor and manage any contaminated materials safely and effectively, ensuring they do not pose a risk during everyday activities on the site. It's important to note that an OSMP is not required for the proposed residential area as this will be free from contaminated materials.

Most of the Commercial Business Park will be sealed with building floor slabs, roadways, and hardstands. As such, access to soil and sub-surface materials is significantly restricted. The OSMP will outline what actions to take if that material gets disturbed or requires disturbance for service maintenance purposes. It will also include how to manage any potential risks associated with LFG if it is present.

The areas where contaminated materials will be buried are designed to limit human exposure. These materials will typically be located beneath permanent structures, reducing the likelihood for accidental contact.

The entire Commercial Business Park will be held under a single multi-lease title. This approach helps maintain singular, consistent and effective management of land use and safety protocols across the entire park.

Further Information

If you have any questions or concerns or would like to register for email updates, please email info@hazelmerehub.com.au or call 0408 875 843.

More information is also available on the project webpage www.hazelmerehub.com.au and Facebook page www.facebook.com/HazelmereHub.

