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List of Abbreviations

Lists of the common abbreviations used in this report are provided below.

- ▶ ANZECC – Australian and New Zealand Environment and Conservation Council
- ▶ ASS – Acid Sulfate Soil
- ▶ B(a)P – Benzo (a) pyrene
- ▶ BTEX – Benzene, Toluene, Ethyl-benzene and Xylene
- ▶ DEC – NSW Department of Environment & Conservation
- ▶ DIPNR – NSW Department of Infrastructure Planning and Natural Resources
- ▶ DLWC – NSW Department of Land and Water Conservation, now incorporated into the Department of Infrastructure Planning and Natural Resources DIPNR
- ▶ DPWS – NSW Department of Public Works and Services
- ▶ DQOs – Data Quality Objectives
- ▶ EPA – NSW Environment Protection Authority, now incorporated into the Department of Environment and Conservation (DEC)
- ▶ HIL – Health Based Soil Investigation Level
- ▶ NSW EPA – New South Wales Environmental Protection Agency
- ▶ OCP – Organochlorine Pesticide
- ▶ PAH – Polycyclic Aromatic Hydrocarbon
- ▶ PBIL – (Provisional) Phytotoxicity-Based Investigation Levels
- ▶ PCB – Polychlorinated Biphenyl
- ▶ PQL – Practical Quantitation Limit
- ▶ QA/QC – Quality Assurance/Quality Control
- ▶ RPD – Relative Percentage Difference
- ▶ TCLP – Toxicity Characteristic Leaching Procedure
- ▶ TPH – Total Petroleum Hydrocarbons



Executive Summary

Introduction & Objectives

GHD was commissioned by RailCorp in August 2005 to undertake further environmental (contamination) investigations over part of the RailCorp property known as the 'Macdonaldtown Triangle', located on Burren Street, Macdonaldtown.

The Macdonaldtown Triangle is separated into two areas as defined by their historical uses; 1) former Cleaning Shed area, and 2) former Gasworks area. These two areas are currently separated by a chain wire fence that runs approximately south west to north east across the site.

It is understood that RailCorp wish to redevelop the Cleaning Shed area for rail related purposes. Previous environmental investigations have identified elevated hydrocarbon concentrations in soils, which RailCorp propose to remediate by excavation and offsite disposal. Prior to this, additional sampling works were required to delineate the vertical and lateral extent of the contamination and to classify the soils for offsite disposal.

Scope of Work

The current commission comprised the following key elements:

- ▶ Excavation of eleven (11) test pits in the vicinity of a former CH2M-Hill Test Location (TP44), at which substantial contamination had been reported;
- ▶ Laboratory analysis of selected soil samples for a range of organic contaminants, metals and asbestos;
- ▶ Toxicity Characteristic Leachate Procedure (TCLP) tests on a number of soil samples; and
- ▶ Determination of a waste classification for soils in the subject area (in accordance with NSW EPA guidelines).

Results & Conclusions

Surveying of the location of the former CH2M Hill test pit TP44 indicated that the pit was located on the former Gasworks area and not in the Cleaning Sheds area. Hence, most (8) of the pits completed as part of the current study were excavated north of TP44 (on the Cleaning Sheds area). The remaining 3 pits were excavated east and west of TP44 (on the Gasworks area). The 'site' as described in the report therefore relates to the delineation area, including part of the Cleaning Sheds area and the Gasworks area, north and south of the dividing fenceline.

Concentrations of contaminants of concern (chiefly BTEX) were not detected at significant concentrations in pits excavated by GHD on the former Cleaning Sheds area. BTEX was detected in samples collected from one test pit (TP4), with concentrations of BTEX in the remaining test pit samples below the level of reporting of the laboratory. The subsurface conditions observed at the Cleaning Sheds area did not indicate a large degree of filling from ash or other by-products of the gasworks.



Filling at the Cleaning Sheds area comprised rail ballast, back fill clay and some ash / coal.

Based on the results of the current study, ashy fill material from the Cleaning Sheds area would nominally classify as **solid waste** for off-site (landfill) disposal purposes.

However, contaminants of concern including BTEX, PAH and TPH were reported at high concentrations in ashy material in two of the three test pits excavated east and west of CH2M Hill Pit TP44 (i.e., on the former Gasworks area). This material would nominally classify as hazardous waste for off-site disposal purposes due to high PAH concentrations. However, the high PAH concentrations appear to be associated with ash, and therefore the *NSW EPA General Approval of the Immobilisation of Contaminants in Waste (1999/05)* can be applied. The nominal classification of the ashy material in the Gasworks area of the site (south of the fenceline) would then revert to **industrial waste** (due to TPH concentrations). Large amounts of fill comprising ash, slag, coal and coke were detected in the pits east and west of TP44. Observations of the filling in the test pits also indicated that the use of ashy fill material increased towards the south, abutting against the brick retaining wall.

It is considered likely that a different type of fill (or fill from a different origin) was used on the Gasworks area to fill up against the brick retaining wall. On the Cleaning Sheds area, clay, rail ballast and some ash / coal was used to backfill in and around former site infrastructure including building footings and walls.

Given that contaminants of concern were only detected at elevated concentrations on the Gasworks site, it appears likely that 'gross' contamination is restricted to the southern side of the chain wire fence (in the strip of land between the fence and the brick retaining wall).

GHD consider that whilst ash was detected north of the fenceline (within the Cleaning Sheds area), concentrations of contaminants, including BTEX, were not at a level that would warrant further investigation or remediation given the nature of the proposed rail landuse for the site. In addition, given the minor concentration of BTEX at TP4 and that BTEX was not detected in the other test pits at the cleaning sheds site, the likelihood of potential vapours being generated from low levels of BTEX in ash is considered to be low.

Several fragments of fibre cement sheeting containing chrysotile asbestos were detected in TP11 on the Cleaning Sheds area. As this material was found at depth and based on GHD's understanding that the Cleaning Sheds area will receive up to 2m of imported fill material as part of the site redevelopment, the presence of fibre cement sheeting at depth is not considered an issue that would affect the redevelopment of the cleaning sheds site into rail infrastructure. Depending on construction that is proposed for that part of the Cleaning Sheds area, caution should be exercised when excavating into soils. Given the random filling history of the area, further detections of asbestos fibre cement cannot be precluded.

As such, general caution should be maintained by the construction contractor for construction works at the site. The construction contractor should make contingencies for 'unexpected occurrences' in their project safety plan.