Appendix N

Hazardous Materials Assessment

Transpacific Industries Pty Ltd
ABN 40 010 745 383

HAZARDOUS MATERIALS AUDIT REPORT

Transpacific Industries Pty Ltd

Lot 223 Kyle Street, Rutherford

AUGUST 2005

Introduction

This report represents the results of an hazardous materials audit conducted by Transpacific Industrial Solutions at the site located at Kyle Street, Rutherford and described as Lot 223 of DP 990651, Parish of Gosforth.

Transpacific Industries Pty Ltd owns the site which occupies an area of 10.2 hectares and is located approximately 125 metres south of the New England Highway within the Rutherford Industrial Estate. A plan of the site is shown in Figure 1.

The site was used by the Commonwealth of Australia for the production of munitions between 1943 and 1945. Between 1945 and 1997, the site was used for textile production.

The audit was undertaken to assess potential sources and areas of significant health and environmental liability to assist with the future use of the site as a resource recovery and recycling facility.

Scope of Work

The objectives of the audit are to:

- review past and present activities undertaken at the site and the potential locations of hazardous materials;
- identify by assessment of past and present uses the chemicals and areas of potential concern;
- report on the site conditions; and,
- provide recommendations for the removal, remediation or works (if required) such that it can be used for commercial/industrial land use.

The hazardous materials audit involved a desktop review of historical information followed by a visual and physical assessment of the site, the facilities and the infrastructure taking into account the former activities associated with munitions and textile manufacturing.

Hazardous materials associated with munitions and textile manufacturing which may potentially be expected include:

- asbestos (lagging, insulation, fire protection and sheeting);
- transformer oils containing PCBs;
- hazardous chemicals and chemical wastes;
- process wastes;
- poisons and toxic chemicals
- buried ordnance and drums;
- contents of underground storage tanks;
- fuels;
- CFC and halon fire extinguishers;
- gas;
- bituminous wastes such as tar;
- fill and contaminated soils; and,
- ash waste from boilers and furnaces.

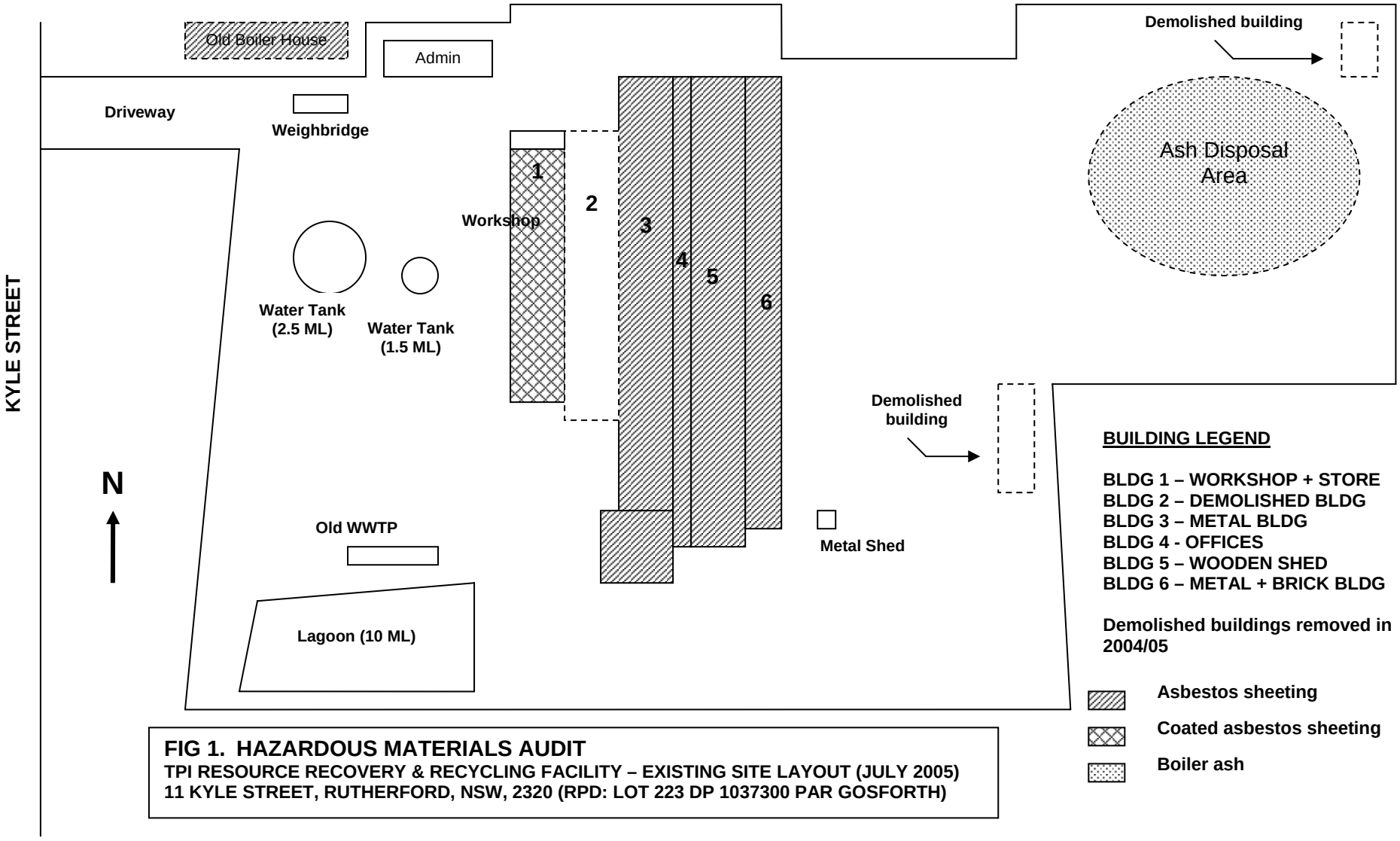

FIG 1. HAZARDOUS MATERIALS AUDIT
TPI RESOURCE RECOVERY & RECYCLING FACILITY – EXISTING SITE LAYOUT (JULY 2005)
11 KYLE STREET, RUTHERFORD, NSW, 2320 (RPD: LOT 223 DP 1037300 PAR GOSFORTH)

Reports assessed included the ERM Phase I and II Environmental Assessment Reports (2001).

Transpacific Industries purchased the site at Lot 223 Kyle Street, Rutherford in 2003. Up until 1997, the site operated as a textile manufacturing and processing facility. The site has a number of large buildings which, since operations have ceased at the site, are vacant and in various states of dereliction. There are also remains of infrastructure (tanks, sheds, pipework, wastewater treatment plant, etc) which have been decommissioned and partially dismantled. Service utilities at the site have been disconnected including natural gas, water, electricity, sewerage and trade waste.

Works to Date

Four smaller buildings and one warehouse which all had asbestos sheeting in very poor condition have been completely demolished and removed from Lot 223 during 2004/05 by licensed contractors. Asbestos-based sheeting in poor or damaged condition was also removed from the remaining buildings.

Two of the demolished buildings were located on the eastern boundary of the property. One was identified from original site plans as the former Munitions' Factory laboratory and storeroom (Figure 2) and the other as the Tea Rooms (Figure 3). Another two buildings were located on the western side of the allotment (identified as National Textile's New Boiler House and pump station) adjacent to where the weighbridge is now located. A fifth building which formed part of the former National Textiles Dye House (Building 2 in Figure 1) has been demolished to establish an access road and provide the required fire separation distance between the new workshop and the remaining buildings.

Figure 2. Derelict building 1 (now demolished)

Figure 3. Derelict building 2 (now demolished)

The contents of the underground pits, filter tanks, storage tanks and effluent pond have been assessed and do not contain any hazardous substances. Equipment which may have contained potentially hazardous materials such as boilers (containing asbestos) and transformers (containing PCBs) have been removed from the site.

Hazardous Materials Assessment

Asbestos

Asbestos was commonly used during the period of construction of the site buildings (ca 1940s) and significant quantities have been identified at the site.

Asbestos cement sheeting has been used for roofing on all of the buildings at the site with the exception of the newly constructed Administration Building in which no asbestos-based materials have been used. It appears likely that asbestos cement sheeting has been used as wall cladding and for ceilings in the offices (Building 4) and spinning rooms and laboratory (Building 6). The asbestos cement sheeting is painted, in good condition and is not in a friable condition.

Potential asbestos cement sheeting was observed on the southern side of the dye house (Building 3). The cladding is painted, in good condition and not friable.

The roof of the new Workshop (Building 1 in Figure 1) comprises asbestos cement sheeting. Broken or damaged sheets have been replaced with non-asbestos sheeting and the remaining sheets sprayed with a PVA sealant to prevent the risk of dispersion of air-borne fibres. Figure 4 shows the Workshop after application of the PVA sealant and new external cladding which will also be used to replace the exterior walls of all existing buildings at the site.

Figure 4. Workshop After New Cladding and PVA-coated Asbestos Cement Sheets

The roofs of the remaining buildings have asbestos cement sheeting which is not friable and in fair condition. These roofs have not been coated with PVA sealant.

Asbestos cement sheeting and lagging has been removed from the Workshop (Building 1) in accordance with Worksafe Australia's *Code of Practice for the Safe Removal of Asbestos* (NOHSC:2002, 1988). The asbestos removal and demolition works were undertaken by licensed contractors. The asbestos material was packaged and disposed at an appropriately licensed landfill.

Exposed sections of pipe work and ducting in Buildings 3, 4, 5 and 6 contain insulation which appears to contain asbestos (Figure 5). Pipes are located throughout the buildings and were used to supply steam to drying, pressing and dyeing equipment. The risk of exposure to air borne asbestos products and synthetic mineral fibres is high within these buildings due to the large amount of pipework present. Residual asbestos lagging and insulation has been observed throughout the other buildings. It is also highly probable that further asbestos materials will be encountered, in particular between walls, in ceilings and as pipe lagging.

Figure 5. Exposed insulation from lagged pipes (northern end of Building 5)

There appears to be a significant asbestos risk from the building identified from earlier plans as the Old Boiler House (Figures 6 & 7) which forms part of the boundary immediately adjacent to the TPI property. The Old Boiler House is located on the adjacent property that abuts the driveway and comes within metres of TPI's Administration Building, car park and weighbridge.

A number of pipes are visible in the derelict building. The pipes are lagged with a fibrous material which is believed to be asbestos based on the age of the building, their purpose and visual assessment. The asbestos removalists who performed the previous removal on the TPI buildings have advised that this building be cleared of asbestos, as it is in very poor condition.

There are also damaged asbestos cement sheets in very poor condition. Much of the material is deteriorating and the risk of exposure to air borne asbestos and synthetic mineral fibres is considered high both within and around the vicinity of this building.

Figure 6. Old Boiler House Adjacent to TPI's Car Park

Figure 7. Old Boiler House Adjacent to TPI's Weighbridge (Foreground)

A new office block has recently been built which is asbestos-free. It is proposed to occupy this area only at this stage.

The boilers formerly used at the site, including those in the Old Boiler House, have been decommissioned and removed.

Recommendations

- Qualified auditors to undertake a detailed assessment, identification and inventory of all asbestos materials and residues at the site (planned for August 2005).
- Develop an asbestos and synthetic mineral fibre register in accordance with Section 44 of the O*ccupational Health and Safety Regulation 2001* (NSW) which requires that a register identifying the type, condition and location of all asbestos and asbestos-containing materials be prepared and maintained.
- Arrange for specialist asbestos contractors to remove and clean each building of asbestos and synthetic mineral fibres before any construction or demolition work commences.
- Handling and removal only by licensed contractors in accordance with Worksafe Australia's requirements. Disposal to licensed landfills in accordance with legislative requirements.
- Contractors required to complete Job Safety and Environmental Analysis forms (JSEAs) and Work Permits in accordance with legislative requirements and TPI policies before handling, removing and disposing of asbestos. This will ensure that the asbestos register is consulted prior to any work being conducted on any of the buildings.
- Remove all damaged asbestos cement sheeting.
- Implement control measures to minimise the risk of air-borne asbestos, e.g., by applying a sealant such as PVA.
- Monitor the condition of asbestos-cement sheeting and remove and replace as required. Where PVA coating is applied to asbestos, regular integrity checks to be conducted on the sealant by qualified personnel.
- The risk of asbestos fibres from the PVA-coated sheeting is considered minimal unless disturbed or broken. In such cases, TPI will remove and replace the damaged sheets in accordance with asbestos handling and disposal requirements.
- Implement an asbestos management programme
- Induction training to include an asbestos awareness programme for presentation to all personnel and relevant contractors. This will cover types of asbestos and typical locations such as floor tiles, pipe lagging (including around pipes set in concrete), bathroom walls and ceilings.
- Implement procedures to quarantine areas when materials suspected of containing asbestos or synthetic mineral fibres are found.
- Emergency procedures developed and presented in training for all staff and relevant contractors where asbestos may be encountered unexpectedly.
- The owner of the land on which the Old Boiler House is situated needs to be contacted and requested to undertake immediate steps to remove and dispose of all asbestos-based material. Workcover NSW should also be advised.

<u>Transformer Oils Containing PCBs</u>

During operation of the textile mills, the site had a number of transformer substations and transformer component storage areas. According to records and inspection (ERM 2001), the transformers contained PCBs. Following shutdown and closure of the mills, all transformers and transformer components were removed from the site.

PCB analyses were conducted by ERM on core soil samples taken from areas adjacent to the former transformer substation, from the transformer component storage areas and from a number of random grid locations across the site. PCB levels were determined to be below detection limits for all the sample locations.

Hazardous Chemicals and Chemical Wastes

The site was examined for bulk, containerised and packaged goods. No drums or containers remain at the site and all hazardous chemicals have been removed, including drum storage areas around the former Dye House (Buildings 1 – 6).

Tests were conducted on the contents of all tanks and pits and no hazardous chemicals were detected.

Traces of crystalline sodium hydroxide (caustic soda) were found in the drain at the wall within the former Caustic Storage Bund adjacent to the new Workshop Building. A coating of sodium hydroxide crystals were also observed within the drain and pipe.

No other hazardous chemicals or chemical wastes were detected at the site. Assessment included a review of the textile plant layout and examination of former hazardous, dangerous goods and chemical storage areas, processing areas and bunds.

Recommendations

The pipe outfall point or nearest manway should be identified and blocked to allow the line to be flushed with water to dissolve and remove the sodium hydroxide residues. The wash waters should be collected and removed for appropriate treatment at a licensed facility. The bund surface areas should also be cleaned and the liquids collected and removed for appropriate treatment.

The drum storage areas identified in the plans should be cleaned before construction and demolition work commences to remove any chemical residues and the washings disposed. The washings will be disposed at an appropriate treatment facility

Ash Fill

Ash has been used as fill across much of the site to a depth of approximately 0.4 metres. The ash is predominantly covered by grass and vegetation and appears to be stabilised where compacted and undisturbed.

The potential hazards from the ash include silica, total petroleum hydrocarbons (TPHs), monocyclic and polycyclic aromatic hydrocarbons (MAHs and PAHs) including BTEX compounds (Benzene, Toluene, Ethyl Benzene and Xylene), and heavy metals.

Analysis from the ERM site assessment report show low levels of TPHs were detected in many of the samples. However, all except three samples were below sensitive land use values and only one sample exceeded the Environmental Investigation Levels for industrial/commercial land. Whilst many samples exhibited PAH contamination, the concentrations were well below the Environmental Investigation Levels. Most of the contaminated ash fill is localised within the Ash Disposal Area (as defined in the ERM Phase I and II Environmental Site Assessment report) located along the eastern boundary of the site. However, the ERM report notes that a low permeability, clay horizon exists below the ash fill and that vertical migration of contaminants is unlikely.

It appears that the ash fill originated from off-site sources and was used to level the site prior to construction. Based on the core drilling sample descriptions, the ash is coarse and appears to originate from coal-fired processes such as power stations and boilers.

Recommendations

If left undisturbed, there is little health risk from the ash. However, where excavation and roadworks occur, the ash should be removed and appropriate surface materials applied to reduce the risk from quartz and silica dusts. The environmental risks may have stabilised and minimised due to the residence and exposure time. However, there is potential for hot spots of higher than normal contamination to be present.

Remnant ash (coarse grade) is also stored in the Ash Disposal Area (as defined in the ERM Phase I and II Environmental Site Assessment report) located along the eastern boundary of the site. Some of the ash is exposed in this area and should be removed for disposal to an appropriate facility. The ash may comprise silica which may become dust particles through mechanical action (traffic) or weathering. As airborne particles the silica can present a health risk.

Based on the ERM report, further investigation of the site contamination levels should be undertaken including groundwater monitoring. Testing should include, as a minimum, total petroleum hydrocarbons (TPHs), monocyclic and polycyclic aromatic hydrocarbons (MAHs and PAHs), and heavy metal concentrations. The health and environmental risks should then be assessed.

If the risks are considered unsatisfactory, a Site Management Plan should be developed and implemented. This should include contingency plans where the ash is to be disturbed.

The ash can be immobilised, stabilised or encapsulated *in situ*, or removed, treated and disposed at a licensed facility.

Process Wastes

All plant processes and associated infrastructure have been decommissioned, disconnected or removed. Assessments were conducted on the lagoon, tanks, pits, drains, sumps, bunds, drains and collection wells. No process wastes or hazardous wastes were detected.

All process tanks have been emptied and cleaned or removed.

Poisons and Toxic Chemicals

No poisons or toxic chemicals were detected at the site. All drums and containers have been removed.

Buried Ordnance and Drums

Cross-sectional sample pits excavated across the site by ERM failed to detect any buried ordnance or drums.

Recommendation

Prior to any excavation and roadworks, metal detectors should be used to clear the area. A site management plan should be developed and implemented to ensure areas are cleared for excavation.

Fuels

There are no flammable or combustible liquids stored at the site. All fuels have been removed. No underground or above ground fuel storage tanks remain.

CFCs and Halon Fire Extinguishers

There are no ozone-depleting, chlorofluoro carbon (CFC) or halon fire extinguishers stored at the site.

Natural or Town Gas (Bottled and Gas Line)

The natural gas line has been disconnected by the supplier and the meter and ancillary pipework removed.

Bituminous Products

There are no bituminous products or remnants of tar-based road materials stored at the site.

Imported Fill

Assessment of core drillings indicates that much of the site comprises imported fill, principally coarse ash and also some soil (silty material identified in the Ash Disposal area). Refer to the assessment and recommendations for Ash Fill.

Summary

- Detailed asbestos audit of the site facilities (planned for August 2005)
- Removal of asbestos from all buildings prior to commencement of construction and demolition
- Request to the owner of the neighbouring property to remove asbestos from the Old Boiler House
- Groundwater assessment of the site (planned for August 2005)
- Soil characterisation of the Ash Disposal Area to determine the extent of the ash horizon and any potential contamination issues. If the area is left undisturbed, it should not present any health or environmental risks.
- Removal of excess ash from the Ash Disposal Area and application of a suitable capping layer.

Aerial photograph of the Rutherford site

The buildings located at Lot 223 are shown in Figure 8 as at the time of purchase by TPI.

Note the two large effluent treatment tanks and lagoon in the foreground. The Dye House is the consolidated group of buildings in the centre of the photograph and the Old and New Boiler Houses are located to the lower left of the photograph. The old laboratory building is located at the top centre.

Figure 8. Aerial photograph of Lot 223 on DP990651 (2004)

Reference

Environmental Resource Management, 2001. Phase I and II Site Environmental Assessment Report of Lots 221 and 223 Kyle Street Rutherford.