Hazardous Materials Management Plan

at

Australian Institute of Police Management
Collins Beach Road, Manly NSW

for

Broad Construction Services (NSW) Pty Ltd
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Prepared by

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ABBREVIATIONS

ACM	Asbestos Containing Material
ESP	Environmental and Safety Professionals
HASP	Health and Safety Plan
HMMP	Hazardous Materials Management Plan
NATA	National Association of Testing Authorities
NOHSC	National Occupational Health and Safety Commission
mg/kg	Milligram per kilogram
mg/m^3	Milligram per metre cubed
MSDS	Material Safety Data Sheet
OH&S	Occupational Health and Safety
PPE	Personal Protective Equipment
STEL	Short Term Exposure Level
TRH	Total Recoverable Hydrocarbon
TWA_8	Time Weighed Average – 8 hour
%w/w	Percentage Weight by Weight

1.0 KEY DEFINITIONS

Asbestos: means the fibrous form of the mineral silicates belonging to the serpentine and amphibole groups of rock-forming minerals and includes actinolite, amosite (brown asbestos), anthophyllite, crocidolite (blue asbestos), chrysotile (white asbestos), tremolite, or any material containing one or more of the mineral silicates belonging to the serpentine and amphibole groups.

Asbestos containing material: (ACM) means any material or object that contains asbestos.

Atmospheric Monitoring: means the measurement of the concentration of hazardous substances in the air of the workplace over a specified period of time.

Class AS1 licence: means a licence issued by NSW WorkCover which allows the holder to remove friable asbestos-containing material and non-friable asbestos-containing material as specified in the licence**.**

Class AS2 licence: means a licence issued by NSW WorkCover which allows the holder to remove non-friable asbestos-containing material as specified in the licence;

Consultation: means the sharing of information and exchange of views between managers, workers and/or their representative(s) on health and safety issues. It includes the opportunity to contribute to decision making in a timely fashion to resolve hazardous substance risks.

Dust and Debris: means visible particles, fragments or chunks of material, large and heavy enough to have settled in the work area, that are likely to have originated from ACM

Exposure: means contact that may occur between a hazardous substance and an individual. Exposure commonly occurs through 3 main routes – injection, inhalation and skin contact. Routes of entry may include through the eyes, ears or other body cavities and surfaces.

Exposure Standard: relates to the airborne concentration of individual chemical substances in a worker's breathing zone, which, according to current knowledge, should neither impair the health of nor cause undue discomfort to nearly all workers. National exposure standards are found in the document *Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment* [NOHSC:1003(1995)]. Refer to Safe Work Australia for amendments of this Standard for various substances between 1997 and 2005.

Friable: means, when dry, may be crumbled, pulverised or reduced to powder by hand pressure, or as a result of a work process becomes such that it may be crumbled, pulverised or reduced to powder by hand pressure.

Hazard: is anything that has the potential to result in harm to a person.

Hazardous Substance: is any substance that has been classified in accordance with the *Approved Criteria for Classifying Hazardous Substances* [NOHSC:1008(2004)] *3rd Edition* and/or have National Exposure Standards declared under the NOHSC *Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment* [NOHSC:1003(1995)]. Refer also to the Hazardous Substances Information System (HSIS) at Safe Work Australia http://hsis.ascc.gov.au/.

Material Safety Data Sheet (MSDS): is a document which a manufacturer or importer must prepare, amend, provide and review that describes the properties and uses of chemicals (which may be hazardous substances and/or dangerous goods). An MSDS must state the product name, identify ingredients, chemical and physical properties, health hazard information, precautions for safe use and handling, and the manufacturer's or importer's name and Australian contact details.

Risk: is the likelihood that harm will occur.

2.0 INTRODUCTION

ESP – Environmental and Safety Professionals (ESP) were retained by Broad Construction Services (NSW) Pty Ltd (herein referred to as the Contractor) to provide consultancy services in relation to the preparation of a Hazardous Materials Management Plan (HMMP) for redevelopment works at the Australian Institute of Police Management, Collins Beach Road, Manly NSW (herein referred to as the site).

ESP understands that the HMMP is required under the NSW Department of Planning Conditions of Approval and the Contractor's contractual and legislative obligations to help ensure injury, accidents, illness and environmental impacts related to hazardous substances/materials are minimised during the proposed works at the site.

The emphasis of the HMMP is on taking a proactive stance towards the identification and risk management of hazardous substances, to outline and address potential human health and environmental impacts, and the methodology by which the hazardous materials present on the site will be handled and managed.

ESP has also been commissioned by the Contractor to prepare a Remediation Action Plan for remediation of identified surface and sub-surface contaminants on the site.

3.0 SITE DETAILS

The Australian Institute of Police Management is situated at the south end of Collins Beach Road, Manly NSW, on the North Head of Sydney Harbour (herein referred to as the site).

The site is approximately 1.7 hectares, roughly rectangular in shape, and bordered on the north by Spring Cove, and to the east, south and west by native vegetation of Sydney Harbour National Park. Adjacent to the site on its southern side is the former North Head Quarantine Station.

The site was first developed circa 1916 as a Seamen's Isolation Hospital, and is currently used as the Australian Institute of Police Management, administered by the Australian Federal Police.

The site consists of cottages and buildings that include offices, halls, kitchen, dining, accommodation, workshops, garages and stores, 9 of which are subject to demolition under the redevelopment works.

4.0 PREVIOUS INVESTIGATIONS/REPORTS

Previous reports and environmental investigations at the site include:

- Contamination Report No. CL420 of November 1999 (by DASCEM Holdings Pty Ltd),
- Hazardous Materials Re-Audit Report No, CL847 in June 2005 (by DASCEM),
- Phase 2 Environmental Assessment Report No. CL879 in October 2005 (by DASCEM)
- Additional Environmental Site Assessment Works (AIPM) Report No. CL 897 in January 2006 (by DASCEM).

ESP – Environmental & Safety Professionals were commissioned by the Contractor to conduct a Pre-Demolition Hazardous Materials Survey of 9 buildings at the site in February 2010 to confirm identified hazards for removal in the redevelopment works and to inform this HMMP.

5.0 SCOPE OF WORKS

The objectives of this HMMP are to reduce the potential:

- risk of contamination of air, land and water arising from Dangerous Goods,
- health risks and contamination of water from contaminated soils on the site,
- health risks to site workers, and others from Dangerous Goods.

The goals of this HMMP are:

- no asbestos related incidents.
- no spills and or land contamination on-site or off-site,
- contaminated soils remain inert on-site or are removed from site if area is within building envelope (subject to future RAP),
- no adverse health affects for site workers and others.

The scope of works in preparing the HMMP comprised:

- attending a site meeting with the Contractor's representatives to discuss the redevelopment work practices and occupational hygiene health risk issues in general,
- site walk-over and observation of buildings and surrounds during Pre-Demolition Audit inspection,
- assessment of hazardous material analysis presented in the Pre-Demolition Audit,
- forming a protective framework for the known risks to human health and the environment that could arise from liberation of airborne contaminants during redevelopment works,
- stipulating interim and auditable actions, environmental and occupational health and safety performance objectives, indicators and management systems consistent with achieving the above objectives.

The proposed site redevelopment works include the demolition of 9 designated buildings which are the subject of the Pre-Demolition Audit/Hazardous Materials Survey conducted by ESP which has informed this HMMP.

This HMMP is for above ground hazards associated with the demolition works. Surface and sub-surface contaminants have been identified on the site. However remediation of surface and sub-surface contaminants does not form part of this HMMP and will be addressed in the future Remediation Action Plan (RAP).

This HMMP aims to assist site management in assessing hazardous substance risks and implementing effective control strategies, and to help ensure that employee training and consultation are adequately conducted.

ESP understands the primary focus of this HMM is for works associated with the demolition of 9 buildings. i.e. Building No. 7 – Accommodation (East), No. 9 – Accommodation (West), No. 14 – Laundry & Toilets, No. 15 – Senior Common Room, No. 18 – Garage, No. 20 – Staff Room, No. 22 – Administration, No. 23 – Toilets, No. 25 – Store.

6.0 LEGISLATION

6.1 Occupational Health and Safety Act 2000

The Occupational Health and Safety Act 2000 (the Act) prescribes general duties and legal obligations on occupational health and safety matters. It covers employer, supplier and employee responsibilities in relation to hazardous substances. The Act requires employers to ensure the health, safety and welfare of employees at their place of work by providing:

- a safe work environment,
- a safe system of work in relation to plant and substances (for example toxic chemicals, dusts and fibres),
- safe and proper plant and substances for use at work,
- maintenance of plant, and equipment (including personal protective equipment),
- adequate information, training and instruction on safe work methods; and supervision.

The Act requires employers to ensure the health, safety and welfare of persons other than employees at the workplace, such as contractors and visitors. The Act also requires an employer to as far as practicable:

- monitor the health of employees of the employer,
- keep information and records relating to the health and safety of the employees of the employer,
- employ or engage persons who being suitably qualified in relation to occupational health and safety are able to provide advice to the employer in relation to the health and safety of the employees of the employer.

Failure to comply with regulations made under the Act is an offence.

6.2 Occupational Health and Safety Regulation 2001

The Occupational Health and Safety Regulation (the Regulations) details how employers, suppliers and employees meet their obligations under the OH&S Act, for hazardous substances. The specific requirements in relation to Hazardous Substances are detailed in Chapter 6 of the Regulations which are based on the *National Model Regulations for the Control of Workplace Hazardous Substances* [NOHSC:1005(1994)] and adopt a risk management approach, i.e. hazard identification, assessment and control.

Asbestos

The Regulations stipulate the requirements for working with asbestos and the removal of asbestos, whereby an employer must identify and implement measures to prevent the uncontrolled disturbance of asbestos containing material while construction work is carried out.

Where asbestos is present or has the potential to be present, asbestos monitoring must be undertaken by a qualified occupational hygienist and follow the procedures under the *Membrane Filter Method for Estimating Airborne Asbestos Dust* [NOHSC:3003(1988)]. Testing for the number of fibres in a sample must be done by a laboratory accredited by *NATA (National Association Testing Authority*) for asbestos counting.

6.3 Australian Standard AS 2601-2001 – The Demolition of Structures

The Australian Standard AS 2601-2001 (the Standard) requires an employer to determine the presence of hazardous substances or conditions in the structure, and all parts of an applicable site, which may be hazardous to the health of the site personnel or the public. The nature and location of each hazard shall be recorded and both and proposed method on controlling the hazards shall be recorded in a Hazardous Substance Management Plan and included in the contract documentation.

The HMMP should include, but not be limited to, location and quantity of each substance, the method in which that is to be controlled or removed, the methods for monitoring exposure limits, and the handling storage and disposal procedures to an approved landfill or approved storage area.

A review of hazardous substances needs to be carried out to identify the locations, extent, accessibility, type and condition of hazardous substances such as asbestos, PCBs, lead, paint, underground storage tanks, chemical and other hazardous containing materials in relation to the proposed demolition or stripping work, and to assess the risk to employees and other persons. The Standard requires that the review be supported by laboratory analysis of suspected or potential hazardous substances.

The Standard places some emphasis on the potential for noxious dusts to be produced by the cutting or breaking up of materials containing asbestos or other fibres.

6.4 Associated Codes of Practice

The following Codes, Regulations and Standards shall be the minimum applicable to the work. Where a Code of Practice applies to the work, its recommendations shall be mandatory unless stated otherwise in this specification.

Protection of the Environment Operations Act and Regulations
Protection of the Environment Administration Act and Regulations
Environmentally Hazardous Chemicals Act 1985
Occupational Health and Safety Act 2000 and relevant codes of practice and Standards
Occupational Health and Safety Regulation 2001 and relevant codes of practice and Standards
Australian Standard 2601-2001: Demolition of Structures
Code of Practice for the Safe Removal of Asbestos [NOHSC:2002 (1998)]
Guide to the Control of Asbestos Hazards in Buildings and Structures [NOHSC:3002 (1998)]
National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC:2007(1994)]
National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]
National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC:2011(1994)]
National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006(1990)]
Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust [NOHSC:3003(1988)]
Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres [NOHSC:3006(1989)]
WorkCover NSW Guidance Note For Ceiling Dusts Containing Lead
Resource and Recovery Act 2001
Environmental Planning and Assessment Act 1979
Heritage Act 1997
Local Government Act 1993
Occupational Health and Safety Act 1983
Soil Conservation Act 1983

7.0 HAZARD IDENTIFICATION, RISK ASSESSMENT AND CONTROL

The Act, Regulation, Codes of Practice and Australian Standard noted in Section 6.0 stipulate employee duties in relation to hazard identification and risk assessment and include the following requirements:

Hazard Identification

- All hazardous substances in the workplace must be identified, and listed;
- MSDS's must be obtained for all hazardous substances in the workplace;
- Appropriate labels must be affixed to containers holding hazardous substances, including those substances that have been decanted from their original container;
- A register must be kept containing as a minimum a list of hazardous substances and their corresponding MSDS.

Risk Assessment

- A risk assessment must be performed for hazardous substances in use at the workplace;
- The risk assessment must include a review of relevant MSDS's labels and any other information available (e.g. site use, existing control measures);
- A decision must be formed on whether a risk to health is posed by the use of hazardous substances at the workplace;
- If a risk to health exists, an employer must implement control measures, and may need to undertake health surveillance and environmental monitoring;
- Persons who may be exposed to hazardous substances at work must be consulted during the risk assessment process, and be advised of the outcome(s);
- Records outlining the risk assessment process, and any results from health surveillance, environmental monitoring, and training must be kept for the designated period.

Risk Control

- An employer must control exposure to hazardous substances in the workplace to minimise risks to health;
- Means other than personal protective equipment (PPE) must be used for control where feasible, specified in the hierarchy of controls 1) elimination, 2) substitution, 3) isolation, 4) engineering controls, 5) administrative controls, 6) personal protective equipment.
- Where identified, health surveillance and monitoring must be utilised, including consultation with employees/contractors/on-site users involved in the applicable processes.
- Records must be kept for allocated time periods relating to any monitoring and health surveillance performed.

7.1 In-ground Hazards and Contaminants

This HMMP is for hazards associated with the demolition works and relates to above ground works, with the exception of associated footing removal works.

Surface and sub-surface contaminants have been identified on the site.

Refer to other items in this section for identification and assessment of hazards/contaminants associated with in-ground works and for appropriate control and protection measures.

Remediation of surface and sub-surface contaminants do not form part of this HMMP and will be addressed in a future Remediation Action Plan (RAP).

7.2 Occupational Hygiene Risks

A number of potential health and safety hazards were identified which may be encountered from hazardous substance exposure during hazard removal and demolition works. There can be risks associated with airborne exposures to asbestos, particulate matter containing heavy metals, silica and general risks associated with dusts.

Where works are not appropriately managed, the potential health effects associated with these exposures can include irritation to a range of chronic effects such as pulmonary health effects.

A review of potential asbestos containing materials was also undertaken and the results of the review presented in Appendix B.

7.2.1 Chemical Hazards

Chemical compounds or substances that may be present on site include, but not limited to:

- Heavy Metals
- PAHs; TPHs; OCPs; PCBs; VOCs.
- Ingestion of contaminated soil or water;
- Dermal contact with contaminated soil or water;
- Inhalation of dusts or aerosols containing contaminants.

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7.2.2 Asbestos

The possible risks to site personnel associated with asbestos include, but not limited to:

- Asbestos (Bonded and Friable)
- Respiratory tract disease

Asbestos materials have been associated with various human respiratory diseases. The risk of contracting these diseases from contact with asbestos depends on fibres becoming airborne. It is important during asbestos removal works that the potential for generating airborne asbestos fibres should be minimised. Moreover, levels of airborne asbestos fibres immediately outside the works area should be maintained to within the acceptable background level (<0.01 fibre/ml).

7.2.3 Physical Hazards

Potential hazards associated with the redevelopment works may include but not limited to the following:

- Heat exposure,
- Working at heights, falling objects,
- Heavy lifting,
- Excavations, buried services,

- Noise, dust,
- Electrical equipment,
- Heavy equipment and truck operation.

7.2.4 Discussion of Analysis Results for Non-Asbestos Samples and Risk Appraisal

ESP has conducted a site inspection for Pre-Demolition Audit and also reviewed previous reports and investigations at the site as noted in Section 4.0 and provide the following analysis for non – asbestos contaminants. The subsequent NATA Certificates of Analysis and results are tabulated in Appendix B.

Synthetic Mineral Fibres (SMF)

Synthetic Mineral Fibres (SMF) is a general term used to describe a number of fibrous materials made from glass, rock, alumina and silica.

Short-term exposure to SMF can produce skin, eye and upper respiratory tract irritation. Long-term exposure increases the risk of lung cancer and fibres such as rockwool, ceramic and glass fibres have been classified as Class 2B carcinogens

Synthetic Mineral Fibres (SMFs) have been visually identified in ceiling insulation in some buildings on the site. All works involving SMF should comply with the *National Occupational Health and Safety Commission (1990) Synthetic Mineral Fibres, National Standard for SMF* and *National Code of Practice for the Safe Use of SMFs.*

Some of the older SMF in ceiling insulation is degraded and could be considered to contain respirable/countable glass fibre defined as particles having the following dimensions:

- Length greater than 5 micron (µm)
- Width less than 3 micron (µm)
- Length to width (aspect) ratio greater than 3.1

ESP recommends removal of SMF on the site be undertaken using the same work procedures and controls as for asbestos materials.

Lead in Paint

Lead is a known to be cumulative poison, which when inhaled, ingested or absorbed through the skin is toxic to virtually every human organ.

Lead paint as defined in Australian Standard 4361.2 - 1998 Guide to Lead Paint Management Part 2: Residential and Commercial Buildings and NOHSC guidelines is that in which the lead content (calculated as lead metal) is in excess of 1.0 % by weight of the dry film as determined by laboratory testing.

ESP conducted sampling of paint flakes at buildings on the site during the Pre-Demolition Audit and found samples at Buildings 9, 15, 18, 22 and 23 returned results of less than 1%. Refer to Appendix B for results.

ESP has reviewed previous hazardous materials reports at the site which found levels of lead in paint exceeding 1% only at Building 4 (exterior wall of Kitchen) and Building 13 (exterior windows). As neither Building 4 nor 13 are designated for demolition, ESP concludes that, based on available analysis, lead in paint would not appear to be a major health hazard during demolition works.

However, procedures to control the generation of paint flakes and associated dust during demolition works should be enacted to minimise potential contamination of the surrounding soil. Refer also to Section 8.0 and 9.0 re Dust Control.

ESP notes that DECCW Waste Classification Guidelines (April 2008) allow pre-classification of waste contaminated with lead (including lead based paint) from residential premises or educational or childcare institutions. ESP recommends clarification of the classification for painted demolition materials prior to removal from the site and that lead paint materials are not impacted upon by sanding or abrasion during removal works.

All changes in the condition of lead painted surfaces on buildings not subject to demolition should be recorded in the current Lead Register for Hazardous Material at the site.

Lead in Dust

Lead is a known to be cumulative poison, which when inhaled, ingested or absorbed through the skin is toxic to virtually every human organ.

Any material containing more than 1% lead is a 'designated hazardous substance' in NSW.

ESP conducted sampling of lead in dust during the Pre-Demolition Audit inspection on the site. Samples taken from ceilings in Building 22 and 7 returned results of 520 mg/Kg. This level of lead in dust may be considered a moderate bio-hazard. Refer to Appendix B for results.

WorkCover NSW *Guidance Note for Ceiling Dusts Containing Lead* advises that ceiling voids must be cleaned of accumulated dust before commencing any work involving partial or complete removal of the ceiling.

The ceiling areas sampled were not original ceilings and were part of recent refurbishments Ceilings in the older buildings on site, and wall cavities where access was not available could be expected to have more historic dust and debris and higher concentrations of lead in dust and other respirable hazards.

ESP recommends that demolition of all ceiling and timber framed structures proceeds in a work sequence whereby historic dust is removed prior to impacts that would cause the dust to become airborne or to contaminate surrounding soil/ground. Work methods should use HEPA filter vacuums which comply with *AS/NZS 3544 Industrial vacuum cleaners for particulates hazardous to health*, to prevent the release of lead containing dust while it is being removed.

To minimise contamination of surrounding areas during demolition of structures following dust removal, airless spraying with PVA to seal the cleaned surfaces is recommended.

Use of appropriate PPE is recommended as per Section 8.0.

Polychlorinated Biphenyls (PCB)

Polychlorinated Biphenyls (PCBs) belong to a group of toxic organochlorines and were used extensively as fluids in electrical equipment such as transformers and capacitors and is a toxic hazard and toxic environmental contaminant.

PCBs exist in capacitors in older fluorescent lights in buildings built or renovated before 1980 and have been identified on the site.

ESP has reviewed previous hazardous materials reports at the site (See Section 4.0), and notes that PCBs were identified in Building 1 - Spring Cove Cottage, Building 4 - Kitchen Store, Building 13 - Store/Workshop and Building 21 - Library, Ground Floor, none of which are included in the demolition scope of the redevelopment works.

PCBs in fluorescent light fittings in existing buildings on the site, which are not subject to demolition or removal/replacement, should be maintained and managed in accordance with the Polychlorinated Biphenyls Management Plan November [(ANZECC) 2003] and be included on a Hazardous Substances Register to be maintained by the Contractor.

Documentation for the site reviewed by ESP does not identify PCBs in the buildings designated for demolition. However, any fluorescent light fittings of old appearance found in buildings to be demolished on site should be handled and disposed of in accordance with NSW EPA requirements for PCB's.

Liquefied Petroleum Gas (LPG)

Liquefied Petroleum Gas (LPG) is a flammable gas which is a fire and explosive hazard and can have an anaesthetic effect and subsequently become an asphyxiant.

ESP understands the demolition works include the removal of a LPG storage tank and associated pipework at the south west of the site.

As a Dangerous Good the LPG tank must be cleaned when decommissioned and before it is disposed of. All removal and disposal works shall be in accordance with Australian Standards and industry codes for underground tanks – see section 10.8.3 of the WorkCover Storage and Handling of Dangerous Goods Code of Practice 2005. See also section 10.21 for decommissioning, abandonment and disposal.

Nickel/Cadmium Batteries

NiCad batteries contain nickel and cadmium. Cadmium is a toxic heavy metal and carcinogen which can cause substantial pollution in landfill or when incinerated. A common location/use of NiCad batteries is in emergency lighting and exit signs.

From inspection of the site and review of previous hazardous materials reports at the site, ESP notes that NiCad batteries are found in Building 21, Library, which is not included in the demolition scope of the redevelopment works.

ESP recommends that management of NiCad batteries on the site be included on a Hazardous Substances Register to be maintained by the Contractor.

Chlorofluorocarbon (CFC)

Chlorofluorocarbons (CFC) are non-flammable and non-toxic refrigerants that were widely used until it was discovered in the 1980s that they were the main source of harm to the ozone layer.

The import or manufacture of CFC has been banned in Australia since 1 January 1996.

ESP recommends that the date of manufacture and/or import of any existing refrigerant or air conditioning equipment on site be identified and CFC labelling status be confirmed where applicable.

Prior to maintenance or disposal any/all refrigerants should be recovered and either recycled, reclaimed or held for disposal as approved by the DECC (EPA).

Soil Contamination

This HMMP addresses hazards associated with the demolition works and relates to above ground works, with the exception of associated footing removal works.

Surface and sub-surface contaminants have been identified on the site.

ESP has reviewed the Phase 2 Environmental Assessment Report No. CL879, October 2005 by DASCEM. The report considered that surface soils on the site (to a depth of 0.2mBGL) represent a minimal health risk to occupiers and visitors and a minimal environmental risk in terms of sediment load input into water run off at the site.

The Zinc concentration within a deeper sample in the western fill material area reported above the relevant ecological assessment criteria. The Lead and Benzo(a)pyrene concentration within a deeper sample in the western fill material area reported above the relevant health assessment criteria.

The DASCEM report therefore considered that *fill material adjacent to the western building infrastructure on the site* represents a significant health risk to occupiers and visitors and a significant ecological risk upon excavation activities to a depth of greater than 0.2mBGL.

ESP recommends all works involving impacts on existing ground in fill areas should proceed with caution. Refer to Section 8 for appropriate PPE control and protection measures.

Remediation of surface and sub-surface contaminants do not form part of this HMMP and will be addressed in a future Remediation Action Plan (RAP).

TABLE 1 – HAZARDOUS SUBSTANCES / POTENTIAL CONTAMINANTS

Physical/Chemical Entity	Source of Potential Exposure
Asbestos	Haz-Mat Register indicates presence of bonded asbestos in/around buildings and on/in ground at fill areas
Synthetic Mineral Fibre	Ceiling insulation
TPH/ Benzo(a)pyrene	Imported uncontrolled fill material at north and west of site
Heavy metals (including Lead)	Deposition as general dusts over time, particularly in ceiling and wall cavities
Lead in paint	Degrading painted surfaces on buildings
Crystalline Silica	Processes involving disturbance of silica-containing products such as concrete and masonry.
Nuisance Dust	In addition to any specific physiological effect related to the unique properties of an individual particle, nuisance dusts can, if present in large concentrations (>10 mg/m^3), pose a human health risk.

MSDS were not reviewed for any existing chemicals/wastes on the site. ESP understands that all such chemicals/waste will be removed from the workplace prior to commencement of the

redevelopment works or will be included on a Hazardous Substances Register to be maintained by the Contractor. See Section 8.4

Reportedly, electrical transformers do not contain polychlorinated biphenyls (PCBs). Electrical switchboard, fuses and lighting capacitors were not inspected for the presence of PCBs. A note should be made under the Contractor's site safety management plan that these items of equipment can contain PCB's and if encountered reviewed against the appropriate information booklets such as the ANZECC 1997 "*Identification of PCB-Containing Capacitors*".

Other site-specific hazardous materials may include Synthetic Mineral Fibres used as insulation; stored chemical compounds, ozone-depleting substances (HCFC R22), possible microbial contaminants (e.g. animal droppings etc).

Other hazardous substances for review include silica from concrete grinding, drilling or cutting. Practical procedures and management of health and safety and environmental safety can be implemented after an appropriate risk assessment is made.

7.2.5 Discussion of Analysis Results for Asbestos Samples and Risk Appraisal

Samples containing asbestos were collected and analysed during the preparation of a Pre-Demolition Audit and hazardous substance review by ESP. The subsequent NATA Asbestos Identification Certificates and results are tabulated in Appendix A.

Asbestos in buildings

Asbestos fibres are known carcinogens and if inhaled, can produce adverse health effects leading to mesothelioma, asbestosis and lung cancer. Asbestos is a respirable hazard.

ESP's site inspection and sample analysis has identified bonded asbestos to be removed from the following buildings as part of the demolition works:

7 – Accommodation
9 – Accommodation
15 – Senior Common Room
20 – Staff Room
22 – Administration

Refer to Section 8.1.2 – Removal of Asbestos for methods of control, monitoring and management during removal works.

Refer also to Pre-Demolition Audit for locations of ACM and risk potential/condition.

Asbestos in soil

The DASCEM Report no. CL879 (refer to Section 4.0) found no asbestos fibres in analysed soil samples.

However, the site inspection by ESP during preparation of the Pre-Demolition Audit identified many fragments of fibrous cement sheet that, by their appearance and historic nature, can be expected to contain asbestos. They were located in areas across the site, but generally associated with fill areas and around/under existing timber or fibrous cement clad buildings.

This initial appraisal may confirm such findings as "bonded ACM fragments" in/on soil and fill, which will require at least an AS2 (bonded asbestos) WorkCover licensed removal contractor for associated remediation works.

However, further site investigation and soil sampling for confirmation of site characterisation to satisfy the appointed DECCW accredited Site Auditor may reveal asbestos fibres in soil which would indicate that all remediation works in soil would need to be conducted by an AS1 (friable asbestos) WorkCover licensed contractor.

ESP recommends all works involving impacts on existing ground in fill areas should proceed with caution. Refer to Section 8 for appropriate PPE control and protection measures.

Remediation of surface and sub-surface contaminants do not form part of this HMMP and will be addressed in a future Remediation Action Plan (RAP).

8.0 HAZARD CONTROL MEASURES

8.1 Site Establishment

ESP suggests the Contractor establish a defined risk mitigation/control measure for the:

- placement of hazardous material waste bins on site and supply/location of all necessary fencing and signage,
- facilities for toilets, lunch rooms and responsibility for their suitable cleaning,
- facilities for the provision of special needs e.g. power requirements, potable water, electrical isolations etc,
- facilities for the provision of defined work site exclusion zones and building access arrangements for staff and visitors to the site.

8.2 Services Disconnection

The Contractor shall ensure that all services such as wastewater, water, electricity, stormwater, telecommunications, fuel and gas have been isolated and that the work area is rendered safe prior to commencement of hazard removal and demolition works.

8.3 General Precaution or Control Strategies

The Contractor shall manage human exposure risks to the range of contaminants identified in the HMMP through one or more of the following control strategies to be selected at the discretion of the Contractor:

- Employment of appropriate materials handling, transfer and unloading equipment,
- Respiratory protection, protective clothing, gloves and other PPE,
- Work practices to reduce airborne particulates, including wet methods where appropriate,
- Good housekeeping practices, HEPA vacuuming, wet clean-up,
- Personal hygiene, segregated laundering of contaminated work clothes,
- Monitoring effectiveness of practices through occupational exposure air assessments,

All site segregation; demolition, earthworks, stabilisation, excavation, handling, stockpiling, transport etc of materials containing known contaminants should be undertaken in a controlled and safe manner with due regard to potential hazards, training and safe work practices. The practices should comply with the OH&S policies specified by the relevant Authorities and the Code of Practice and Guidelines in Section 6.0.

Totally enclosed containment will be provided for all hazardous waste prior to removal from the site.

Hazardous waste, including any contaminated soils and stormwater, must be disposed of to an EPA licensed waste disposal facility as soon as possible. The Contractor will ensure that hazardous/contaminated wastes will only be transported and disposed of by disposal contractors holding appropriate EPA licences, and copies of appropriate disposal documentation must be provided to the Contractor.

The Contractor shall keep records of the appropriate disposal of any hazardous/contaminated wastes or materials.

8.4 Hazardous Substances Register

The Contractor will maintain a Hazardous Substances Register listing all hazardous/dangerous materials occurring on-site or brought onto the site, along with MSDS and emergency response procedures.

8.5 Unexpected Finds

Workers will be vigilant for hazardous materials that may be uncovered during excavations. Any suspect materials will be reported to the Contractor's on-site manager immediately.

If hazardous materials are uncovered/discovered during excavations the Contractor shall cease all work in that vicinity (and fence the area if appropriate), investigate the nature of the risk of the materials, determine the appropriate response and document the actions in accordance with contractual obligations.

8.6 Incident Response

Asbestos incidents, spills or other non-conformances involving hazardous/dangerous materials will be dealt with immediately by the Contractor, including remediation directed by an appropriate agency (if warranted). Incident management will involve stop work around the affected area or across the entire site if necessary to protect human health/safety and the environment.

The Contractor will notify the DECCW (EPA) immediately in the event of a “pollution incident” which could cause harm to the environment or personnel.

In the event of an emergency, the site emergency procedures take precedent and environmental implications will be assessed and managed only when the emergency has been contained and it is safe to access the site.

Incident Report Forms will be completed by the Contractor for any unplanned events/incidents involving hazardous/dangerous materials, in accordance with contractual obligations.

Operating procedures will be reviewed following any serious spills or hazardous materials incidents.

8.7 Dust Control

Dust control is needed to ensure there is no health risk or sediment/contamination of environmentally sensitive areas on the site. The envisaged onsite activities may generate airborne dust from a range of activities associated with the redevelopment works and the following should be implemented:

- Visually monitor dust levels during site work, and log observations.
- Install wind/dust screening material along the work perimeter.
- Apply wet dust suppression techniques (e.g. fine water mist spray) to dusty work areas.

When watering is used to suppress dust, care must be taken to ensure that it does not create contaminated run-off that will drain and potentially run into the stormwater system.
Refer also to Environmental Management Plan – Section 9.0

8.8 Occupational Exposure Monitoring

An important element of the overall risk assessment process when working on contaminant impacted works sites is to have knowledge on the level of airborne risks to on-site workers/contractors during invasive works. Dusts containing contaminants identified in the current review have the potential to be generated during demolition and construction activities.

For occupational monitoring, dust and contaminant levels should be below 50% of the short term exposure level (STEL) and Time Weighed Average (8 hour) (TWA_8) exposure standard stipulated in the NOHSC Exposure Standards for Atmospheric Contaminants in the Occupational Environment. Where concentrations greater than 50% of the respective criteria are detected the on-site work practices should be revised and appropriate notification practices employed.

8.9 Personal Protective Equipment

Appropriate personal protective equipment (PPE) will be worn by all personnel with direct or indirect contact with contaminated waste or dangerous chemicals and materials, particularly when dusts are likely to be generated. The PPE should comprise:

- Respiratory Protective Equipment as specified in AS1715 – Particle Filter 210/310 Filter class P2, P3 personal filters may be appropriate for most materials likely to be encountered, however details of appropriate PPE should be gleaned for a comprehensive review of MSDS.
- Protective disposable clothing with the following characteristics:
    - The ability to resist penetration by the contaminants identified,
    - Designed so that it is close fitting at the neck and arms with no pockets that may trap any dust,
    - Impervious gloves and safety glasses should be worn.

Other PPE requirements will be identified in the Contractors site Health and Safety Plan including but not limited to:.

- Safety Boots
- Hard Hat
- High-vis safety vests

Employees should be trained on the correct PPE requirements.
The PPE should be easily accessible, clean, functional and maintained by appropriate staff.

8.10 Cleaning, Decontamination and General Housekeeping

Overalls should be removed and hands washed prior to eating, drinking or smoking. Changing and general face/hand washing facilities should be made available to on-site workers.

Should occupational exposure monitoring reveal unacceptable concentrations of contaminants in the air, general washing and decontamination procedures may need to be revised. Adequate washing and changing facilities aim to:

- Minimise secondary exposure from contaminated clothing,
- Minimise ingestion of contaminants,
- Avoid the spread of contamination.

8.11 Occupational Health and Safety Plan

ESP understands that a site Health and Safety Plan (HASP) will be prepared by the Contractor. This HMMP should be viewed as being an addendum to the site HASP. It is understood that all site work will be undertaken safely and in a controlled manner having regard to potential hazards, site worker training and safe work practices.

The HASP will be applicable to all field personnel and subcontractors performing on-site works. All personnel involved will be required to read, understand and "sign off" on the HASP prior to conducting any onsite activities. Sub-contractors are responsible for implementing their own health and safety management plans and are responsible for ensuring that their employees are aware of, and comply with, the requirements of the HASP. The formulation of the HASP will be consistent with the requirements of the NSW OH&S Act.

An essential component of the HASP will be an Emergency Response Plan for all aspects of site works. Any emergency should be reported immediately to the *site* office and/or the Site Safety Officer. Additional source of appropriate emergency assistance should be sought by telephoning 000.. The Contractor will be responsible for ensuring that site personnel are aware of the emergency services available and appropriate contact details. A Site Officer must be available on-site during site works.

This HMMP suggests the Contractor comply with the provision of first aid facilities for their workforce in accordance with:

- The relevant industrial award and the Occupational Health and Safety Code of Practice pertaining to First Aid in the Workplace,
- First aid facilities and trained first aiders to be on the site at all times,
- Be aware of nearest medical centre, and nearest Hospital for emergencies.

8.12 Removal of Asbestos Waste

8.12.1 Methodology

Sub-contractors working with asbestos, or in asbestos affected areas of the site, will be required to prepare and lodge a safe work method statement for the Contractor's approval before starting work.

All asbestos waste and debris should be progressively removed from the site and directly transported and disposed to an appropriately licensed landfill immediately following removal, in

such a manner to prevent any build-up of debris that could affect access within the site or become a workplace hazard.

All removal works will be in accordance with the codes, guidelines and Standards referenced in Section 6.0.

8.12.2 Stockpiling

If stockpiling of asbestos waste is required, the affected material should be placed on-site in a specified asbestos waste bin prepared in accordance with referenced codes including:

- Locate bin on-site, away as practicable from adjacent land uses and other contaminated stockpiles, ideally over a concrete or bitumen paved area.
- Bin shall be lined with minimum thickness of 200micron heavy duty plastic sheet, formed and sealed to ensure leachate from asbestos contaminated material does not escape from the bin.
- Exposed asbestos waste within the bin shall be lightly wetted regularly to reduce dust generation while loading and prior to plastic encapsulation.
- Asbestos waste within the waste bin shall be double wrapped in minimum thickness of 200 micron heavy duty plastic sheet or bagged in specific asbestos bags to code requirements.
- Sandbag or otherwise block any drainage around the waste bin.
- Barricade the perimeter of the stockpiled/waste bin material.

8.12.3 Decontamination

Adequate decontamination facilities are to be installed onsite in accordance with the guidelines specified in the Code of Practice for the Safe Removal of Asbestos [NOHSC2002 (2005)] and the NSW Occupational Health and Safety (Asbestos) Regulations 2003 and amendments.

8.12.4 Respiratory Protection

All persons engaged in asbestos removal work or accessing a contaminated area wear an approved respirator conforming to the requirements of Australian/New Zealand Standard 1715 and 1716.

8.12.5 Warning Notices

Suitable warning signs shall be placed around the area of the works. These signs shall comply with all relevant acts, regulations, standards and codes of practice, including but not limited to:
AS1319-1983, Dangerous Goods Act 1985
Dangerous Goods (Storage and Handling) Regulations 2000
Dangerous Goods (Placarding of Workplaces) Regulations 1985.

8.12.6 Loading & Transport of Asbestos Contaminated Materials

All hazardous waste is to be removed and disposed of in accordance with all relevant acts, regulations, standards and codes of practice. Refer to Section 6.0.

Removal of waste materials from the site shall only be carried out by a licensed contractor holding appropriate licenses, consents and approvals from NSW DECCW; WorkCover and/or other Authorities to transport and dispose of the asbestos waste materials according to the classification guidelines.

Asbestos waste must be transported in a covered leak-proof vehicle as to prevent any spillage or dispersal of waste. Bonded asbestos that is not stored in a bag must be wetted before it is

transported. Asbestos fibres and dust waste are classified as friable and must be covered in a manner to prevent the emission of any dust.

Details of all contaminated materials removal from the site shall be documented with copies of weighbridge slips, trip tickets and consignment disposal confirmation (where appropriate). Such information should be provided to ESP for reporting purposes. A site log shall be maintained by the licensed removal contractor for all waste stockpiles (numbered locations), to enable the tracking of disposed loads against on-site origin and location of the materials and the process for removal of contaminated waste is to be noted in the Waste Management Plan.

Measures shall be implemented to ensure no asbestos contaminated material is spilled onto public roadways or tracked off-site on vehicle wheels. Such measures could include the deployment of a vehicle washing / cleaning facility, which should be placed at a location before the egress point on the site. The facility shall be able to handle all vehicles and plant operating on site. Residue from the cleaning facility will be deemed contaminated unless show by validation to be below Reportable Acceptance Criteria.

The proposed waste transport route will be as per the Traffic Management Plan and trucks logged and recorded with each load leaving the site.

Any vehicle used for the transport of contaminated waste must be cleaned before leaving the site to ensure that all residual waste is removed from the vehicle.

8.12.7 Asbestos Fibre Air Monitoring

A consultant Hygienist, shall carry out appropriate air monitoring of the workplace and surrounding areas during asbestos removal works in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust [NOHSC:3003(1988)] including but not limited to:

- air monitoring at the commencement of asbestos removal activity on the site,
- air monitoring continuously in areas related to hazard removal works.
- air monitoring for clearance following removal of friable asbestos.

Air-monitoring results are to remain below control levels in designated areas and monitored by a consultant Hygienist. These control levels are occupational hygiene best practice and are not health based standards (they are below the concentration set in NES for asbestos). The control levels shall be as follows:

Air Monitoring Control Levels and Required Actions	
Control level (airborne asbestos fibres/ml)	**Control/Action**
< 0.01	Continue with control measures
≥ 0.01	Review control measures
≥ 0.02	Stop removal work and find the cause

8.12.8 Clearance Inspections

Following the removal of ACM inspections are to be carried out with the licensed removal contractor in order to establish areas which may require further cleaning. All asbestos waste material must be removed from the work area prior to a clearance inspection.

The consulting Hygienist may terminate the inspection if the work area is deemed to be significantly unclean and the inspection will be reconvened when the Hygienist determines that the area has been re-cleaned to a satisfactory standard.

9.0 ENVIRONMENTAL MANAGEMENT PLAN

9.1 Introduction

ESP understands that the Contractor will be required to provide a comprehensive Environmental Management Plan (EMP) that will meet all the statutory and specific contractual requirements for the site including relevant legislation nominated in Section 6.0.

The following elements of environmental management and protection relate to the hazard removal and demolition works and related hazardous materials in this HMMP and may be superseded by the Contractor's EMP.

9.2 Traffic Management

It is proposed that heavy vehicles entering and exiting the site will use existing major regional roads and local roads in compliance with local Council and other statutory requirements. Due to the location of the site, all heavy vehicles accessing the site will enter from Collins Beach Rd.

Each vehicle exiting the site shall be inspected for before being logged out as clean (wheels and chassis), or hosed down into a wheel wash or wash down bay until designated as clean. Wheel wash silt residues should be collected periodically and either returned to the excavation area or included in the remediation stockpile. Such material will be treated as contaminated unless analysis proves otherwise.

It is anticipated that bogie tippers, semi-tippers and truck- trailer type heavy vehicles would be used in undertaking the works. All trucks will be loaded to their prescribed weight limits, within the site boundary and shall be tarpaulin covered and lightly wetted prior to exiting the site.

The existing hardstand area and driveway will remain in place until the end of the project to ensure all trucks do not take spoil out onto the road.

9.3 Construction Entry/Exit

All works traffic will enter and exit the site through the existing entry gate at the end of Collins Beach Road. It is noted that the existing public parking spaces will be maintained outside the site entry and that congestion/conflict of public and site vehicular traffic may occur. The Contractor will provide qualified traffic supervisors at the times of vehicular access and egress to the site as required to maintain the existing public parking access.

9.4 Pedestrian Protection

It is recognised that Collins Beach and Collins Beach Road is the main generator of public pedestrian traffic in the area adjacent to the site. The Contractor will be responsible for providing suitable separation barriers to allow safe pedestrian access on Collins Beach Road, while also facilitating site access for heavy vehicles.

9.5 Excavations

Records of all excavations and stockpile locations shall be maintained. A site diary will also be maintained to record daily progress, abnormal occurrences, incidents, and truck movements. All excavations shall be made with due regard to the stability of adjacent footings and structures. It will be the contractor’s responsibility to provide adequate battering, shoring and / or underpinning to protect adjacent structures. No person shall be permitted to enter an unsupported excavation where it is more than 1.5 m deep.

9.6 Stormwater Management and Control

The existing drainage system on the site will be cleaned out to remove sediments, prior to commencing works on site.

Drainage of surface run-off will flow along existing contours (down slope) with the existing drainage system on-site of kerbs, gutters, gully pits, pipes and stormwater runoff passing through installed filtration systems prior to being discharged off-site. Discharge of any waters should be the responsibility of the Contractor and meet the consent conditions for the appropriate authority.

The Contractor will design and implement a system of stormwater control to prevent a discharge of sediment and/or potentially contaminated water off-site and/or onto the identified environmentally sensitive areas of the site e.g. the Bandicoot foraging area and/or the Little Penguin nesting area including but not limited to:

- sediment controls in the form of hay bales or sedimentation/geotextile socks to stormwater kerbs and drainage lines,
- geotextile fabric covers to stormwater grate inlets surrounding the demolition areas to allow water to enter into drains whilst retaining sediments,
- continual cleaning of rubble to minimise possible sediment flow during rainfall periods,
- appropriate construction of the stockpile areas, with regular checks for integrity and repairs if/when required,
- construction of diversion bunds to divert stormwater from areas of demolition and excavation work/contaminated areas and stockpiles.

All drainage control devices will be regularly checked particularly during heavy rainfall periods.

9.7 Control of Dust

Control of dust during the redevelopment works shall be maintained by the Contractor and may include but not necessarily be limited to:

- the use of a water cart, as and when appropriate, to eliminate wind blown dust,
- use of sprays / sprinklers to prevent dust blow from stockpiles,
- covering of stockpiles with plastic sheeting or geotextile membranes,
- restriction of stockpile heights to 2 m above surrounding site level,
- ceasing works during periods of high winds or heavy rain,
- regular checking of the fugitive dust issues and undertake immediate remedial measures to rectify cases of excessive dust,
- silt mesh attached to workplace protection fencing.

To control dust generation and where necessary, water will be sprayed at the source of origin, over demolition materials during demolition and loading activities to prevent airborne dust particles migrating into the surrounding environment.

Ground coverings including existing sealed areas of bitumen and concrete should remain as the final item for demolition to act as a manageable hardstand for vehicular traffic and will also provide a seal to the underlying material to assist in minimising erosion and sediment run off.

Additional precautions that will be implemented during the works include the covering of all haulage trucks with tarpaulins and the use of mobile water points during the hammering, processing and loading of concrete.

9.8 Noise Control

Noise and vibrations from works on the site shall not exceed the limits set out in the Contractors specification for the redevelopment works. No work will occur outside the permitted working hours set out in the Contractor's EMP.

As part of the noise mitigation treatment for the project, all trucks and machinery involved in the works will be checked for defective exhaust systems and general servicing.

9.9 Odour Control

In terms of demolition activity for the site, odour problems are expected to be minimal. All plant and machinery involved in the works should be regularly serviced and checked for exhaust emissions. Stormwater gully pits will preferably be hand cleaned with shovels and collected debris bagged to minimise odour, and disposed of prior to pipes being cleaned.

9.10 Storage of Dangerous Goods and Hazardous Substances

No bulk (in excess of 20 litre containers) fuels, lubricants and chemicals will be stored on-site. Any limited quantities of fuels, lubricants and chemicals on-site will be held in a centralised lockable compound, vented in accordance with relevant codes of practice and Standards, with suitable bunding on an impervious base, with other containment/safety measures as well as appropriate spill kits or incident response kits provided.

Fuels, chemicals, solvents and other hazardous liquids will not be decanted or handled in the vicinity of the central drainage line and other major stormwater inlet points (that now discharge across the Bandicoot foraging area and/or over the Little Penguin nesting area.

Material Safety Data Sheets (MSDS) will be located at the site office for all hazardous and dangerous goods used during the redevelopment works. The Contractor will ensure that all materials are handled, used and disposed of in accordance with their MSDS.

Spill containment and treatment equipment and materials will be made available near storage areas of hazardous materials. Spill kits and other suitable incident response equipment will also be located at other key points around the site and maintained ready for use. Spills of hazardous materials will be contained and collected for treatment at a licensed waste disposal facility.

9.11 Refuelling and Maintenance

Plant, equipment and vehicle refuelling on-site will be limited to essential requirements only where it is not practical to refuel off-site. No vehicle maintenance, and non-operational/routine plant or equipment maintenance, will be conducted on-site.

9.12 Waste Management/Recycling

The Contractor will be committed to achieving compliance with the DECCW/EPA guidelines. Prior to structural demolition activities being undertaken all hazardous materials will be removed and disposed of at licensed waste facilities. As part of the contractual requirements for the works, the Contractor will be required to provide all trucking and disposal documentation for all waste materials.

The key to maximising recycling and minimising waste going to landfills is to effectively separate the individual materials during the demolition phase. This typically incorporates striping of roofing materials, stripping out all pipe and duct work, removing suspended ceiling tiles and all soft materials that form the internal strip out phase of demolition.

All material generated from the works will be recycled apart from selected soft demolition materials and hazardous materials such as asbestos, SMF, PCB'S and the like.

9.13 Construction Scheduling and Hours

ESP understands that construction hours be limited from 7 am or sunrise (whichever is later) to 6 pm or sunset (whichever is earlier), Monday to Friday and consistent with the Conditions of Approval, construction hours will be from 8.00am to 2.00pm on Saturday, and that no work be undertaken on Sundays or Public Holidays.

10.0 STATEMENT OF LIMITATIONS

This report has been prepared for Broad Construction Services (NSW) Pty Ltd for the purpose set out herein. The services performed by ESP – Environmental and Safety Professionals have been conducted with the level of quality and expertise generally associated with activities of this nature by an environmental consulting practice.

Responsibility is disclaimed for any loss or damage other than to Broad Construction Services (NSW) Pty Ltd. ESP – Environmental and Safety Professionals does not accept any responsibility suffered by any other party whatsoever including, but not limited to, negligence on the part of ESP – Environmental and Safety Professionals.

This report is for the use of Broad Construction Services (NSW) Pty Ltd and its agents. ESP – Environmental and Safety Professionals does not intend that any other person accept or rely upon it. This report shall only be presented in full, except where written approvals with comments are provided by ESP - Environmental and Safety Professionals.

ESP - Environmental and Safety Professionals cannot provide warranties or assurances that the contents of this report will be applicable in the future due to potential changes in the condition of the site, other knowledge acquired, applicable legislation or other factors making void any aspect of the report.

The information contained in this report is considered to be accurate on the date of issue in accordance with the current conditions of the site. Whilst the report is accurate to the best of our knowledge and belief, ESP – Environmental and Safety Professionals cannot guarantee completeness or accuracy of any descriptions or conclusions based on supplied information, including but not limited to, information provided by previous site assessors and data arising from investigations by any other third party.

APPENDIX A

NATA ASBESTOS IDENTIFICATION CERTIFICATES

esp
Environmental &
Safety Professionals

A division of Enviro-Net Australia Pty. Ltd.
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Unit 2-2B Parker Street, Footscray, Victoria 3011
Ph: (03) 9688 8000 Fax: (03) 9689 6470
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Melbourne
Sydney
Newcastle

ASBESTOS IDENTIFICATION REPORT

DATE:	03RD FEBRUARY 2010
ESP JOB NUMBER:	14745A
NAME:	BROAD CONSTRUCTION SERVICES (NSW) PTY LTD
ADDRESS:	P. O. BOX 497 CHATSWOOD, NSW 2057
ATTENTION:	PAUL CAUCHI
SAMPLED FROM:	AUSTRALIAN INSTITUTE OF POLICE MANAGEMENT COLLINS BEACH ROAD, MANLY NSW
SAMPLED BY:	ESP – ENVIRONMENTAL & SAFETY PROFESSIONALS
DATE SAMPLED:	01ST FEBRUARY 2010
TEST METHOD:	Qualitative identification of asbestos types in bulk samples by polarised light microscopy, including dispersion staining, using ESP in-house Method No. 2 and methodology in accordance with AS4964.

LAB. NO.	SAMPLE DESCRIPTION	RESULT
E06871	7-2: BUILDING 7, EXTERNAL WEST, WALL – FIBRO CEMENT SHEETING (40 x 30 x 5mm)	NO ASBESTOS DETECTED
E06872	7-4: BUILDING 7, EXTERNAL EAST, WALL – FIBRO CEMENT SHEETING (100 x 40 x 5mm)	CHRYSOTILE ASBESTOS DETECTED CROCIDOLITE ASBESTOS DETECTED
E06873	9-5: BUILDING 9, EXTERNAL EAST, WALL – FIBRO CEMENT SHEETING (100 x 30 x 5mm)	CHRYSOTILE ASBESTOS DETECTED AMOSITE ASBESTOS DETECTED
E06874	9-6: BUILDING 9, BATHROOM WEST, WALL – FIBRO CEMENT SHEETING (100 x 90 x 5mm)	NO ASBESTOS DETECTED
E06875	14-1: BUILDING 14, LAUNDRY, WALL – FIBRO CEMENT SHEETING (60 x 60 x 3mm)	NO ASBESTOS DETECTED

LAB. NO.	SAMPLE DESCRIPTION	RESULT
E06876	14-3: BUILDING 14, EXTERNAL EAVES – FIBRO CEMENT SHEETING (70 x 50 x 3mm)	NO ASBESTOS DETECTED
E06877	15-2: BUILDING 15, EXTERNAL, EAVES – FIBRO CEMENT SHEETING (15 x 10 x 3mm)	CHRYSOTILE ASBESTOS DETECTED AMOSITE ASBESTOS DETECTED
E06878	18-1: BUILDING 18, EXTERNAL EAVES – FIBRO CEMENT SHEETING (50 x 40 x 5mm)	NO ASBESTOS DETECTED
E06879	20-1: BUILDING 20, FLOOR – VINYL FLOOR MATERIAL (120 x 40 x 3mm)	NO ASBESTOS DETECTED*
E06880	20-2: BUILDING 20, CEILING – FIBRO CEMENT SHEETING (30 x 30 x 5mm)	CHRYSOTILE ASBESTOS DETECTED AMOSITE ASBESTOS DETECTED
E06881	22-1: BUILDING 22, FLOOR – VINYL FLOOR MATERIAL (90 x 40 x 3mm)	NO ASBESTOS DETECTED*
E06882	22-2: BUILDING 22, EXTERNAL VERANDAH, WALL – FIBRO CEMENT SHEETING (80 x 50 x 5mm)	CHRYSOTILE ASBESTOS DETECTED AMOSITE ASBESTOS DETECTED CROCIDOLITE ASBESTOS DETECTED
E06883	23-3: BUILDING 23, TOILET, FLOOR – FIBRO CEMENT SHEETING (30 x 20 x 5mm)	NO ASBESTOS DETECTED
E06884	25-2: BUILDING 25, EXTERNAL EAVES – FIBRO CEMENT SHEETING (130 x 80 x 5mm)	NO ASBESTOS DETECTED

The results contained in this report relate only to the sample(s) submitted for testing.
***As noted in AS 4964, asbestos may be difficult to detect in materials of this type and therefore confirmation by another analytical technique is advised.**

Tanmay Kshatriya
Approved Identifier

Tanmay Kshatriya
Approved Signatory

APPENDIX B

NATA LEAD ANALYSIS CERTIFICATES

mgt Environmental

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CERTIFICATE OF ANALYSIS

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Site: AUSTRALIAN INSTITUTE OF POLICE MANAGEMENT, MANLY NSW 14745

Report Number: 258710-V1 Page 1 of 5
Order Number:
Date Received: Feb 03, 2010
Date Sampled: Feb 1, 2010
Date Reported: Feb 4, 2010
Contact: - John Deller

Methods

- USEPA 6020 Heavy Metals & USEPA 7470/71 Mercury

Comments

Notes

Authorised

Report Number: 258710-V1

Michael Wright
Senior Principal Chemist
NATA Signatory

Andrew Thexton
Client Manager
NATA Signatory

Andrew Cook
Chief Inorganic Chemist

NATA
WORLD RECOGNISED ACCREDITATION

NATA Corporate Accreditation Number 1261
The tests, calibrations or measurements covered by this document have been performed in accordance with NATA requirements which include the requirements of ISO/IEC 17025 and are traceable to national standards of measurement.
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Environmental Laboratories Industry Group

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GLOSSARY OF TERMS

UNITS

mg/kg	milligrams per Kilogram	**mg/l**	milligrams per litre
ug/l	micrograms per litre	**ppm**	Parts per million
ppb	Parts per billion	**%**	Percentage
org/100ml	Organisms per 100 millilitres	**NTU**	Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice

QC - ACCEPTANCE CRITERIA

RPD Duplicates	Results <10 times the LOR : No Limit Results between 10-20 times LOR : RPD must lie between 0-50% Results >20 times LOR : RPD must lie between 0-20%
LCS Recoveries	Recoveries must lie between 70-130% - Phenols 30-130%
CRM Recoveries	Recoveries must lie between 70-130% - Phenols 30-130%
Method Blanks	Not to exceed LOR
SPIKE Recoveries	Recoveries must lie between 70-130% - Phenols 30-130%
Surrogate Recoveries	Recoveries must lie between 50-150% - Phenols 20-130%

GENERAL COMMENTS

1. All results in this report supersede any previously corresponded results.
2. All soil results are reported on a dry basis.
3. Samples are analysed on an as received basis.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR this is due to either Matrix Interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Orgaonchlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
7. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
8. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
9. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two two sets of data below the LOR with a positive RPD - eg: LOR 0.1, Result A = <0.1 (raw data is 0.02) & Result B = <0.1 (raw data is 0.03) resulting in a RPD of 40% calculated from the raw data.

REPORT SPECIFIC NOTES

mgt Environmental

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Oakleigh VIC 3166
Phone : 03 9564 7055
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Sydney
1a Chilvers Rd
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Phone : 02 9484 3300
NATA Site # 18217

Adelaide
140 Richmond Rd
Marleston SA 5033
Phone : 08 8443 4430

Company Name:	ESP Laboratories	Order No.:		Received:	Feb 3, 2010 12:00
Address:	604a New Canterbury Rd	Report #:	258710	Due:	Feb 4, 2010 10:07
	Hurlestone Park	Phone:	02 9554 7011	Priority:	1 Day
	New South Wales 2193	Fax:	02 9554 7033	Contact name:	- John Deller
Client Job No.:	AUSTRALIAN INSTITUTE OF POLICE MANAGEMENT, MANLY NSW 14745			mgt Client Manager: Andrew Thexton	

Sample Detail					Lead
Laboratory where analysis is conducted					
Melbourne Laboratory - NATA Site #1254					X
Sydney Laboratory - NATA Site #18217					
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
9-3	Feb 01, 2010		Paint	M10-FE00841	X
15-3	Feb 01, 2010		Paint	M10-FE00842	X
18-2	Feb 01, 2010		Paint	M10-FE00843	X
22-3	Feb 01, 2010		Paint	M10-FE00844	X
23-2	Feb 01, 2010		Paint	M10-FE00845	X
7-51	Feb 02, 2010		Dust	M10-FE00846	X

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ESP Environmental	Client Sample ID		9-3	15-3	18-2	22-3
604a New Canterbury Rd	Lab Number		M10-FE00841	M10-FE00842	M10-FE00843	M10-FE00844
Hurlestone Park	Matrix		Paint	Paint	Paint	Paint
New South Wales 2193	Sample Date		Feb 1, 2010	Feb 1, 2010	Feb 1, 2010	Feb 1, 2010
Analysis Type	**LOR**	**Units**				
Heavy Metals						
Lead	0.01	mg/kg	84	2600	6400	9300

COMMENTS:

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ESP Environmental	Client Sample ID		23-2	7-51
604a New Canterbury Rd	Lab Number		M10-FE00845	M10-FE00846
Hurlestone Park	Matrix		Paint	Dust
New South Wales 2193	Sample Date		Feb 1, 2010	Feb 2, 2010
Analysis Type	**LOR**	**Units**		
Heavy Metals				
Lead	0.01	mg/kg	66	520

COMMENTS: