



REPORT TO
HEALTH INFRASTRUCTURE

ON
HAZARDOUS BUILDING MATERIALS SURVEY

FOR
PROPOSED AMBULANCE INFRASTRUCTURE
PROGRAM

AT
2-4 KAYUGA CLOSE, CAVES BEACH, NSW

Date: 30 May 2023
Ref: E35912PTcpt2-HAZ

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Abbreviations

Asbestos Containing Material
Chain of Custody
JK Environments
National Association of Testing Authorities
Personal Protective Equipment
Polychlorinated Biphenyls
Practical Quantitation Limit
Synthetic Mineral Fibre

ACM
COC
JKE
NATA
PPE
PCB
PQL
SMF

Units

Linear metres
Metres

Lm
m

1 INTRODUCTION

Health Infrastructure ('the client') commissioned JK Environments (JKE) to undertake a hazardous building materials survey for the proposed ambulance infrastructure program pre-purchase due diligence at 2-4 Kayuga Close, Caves Beach, NSW ('the site'). The site location is shown on Figure 1 and the survey was confined to the site boundaries as shown on Figure 2.

This document was prepared specifically for the proposed site development works and should not be considered a hazardous building materials management plan or removal control plan.

The document does not contain information regarding an assessment of risk, safe work procedures or control measures associated with hazardous building materials. In the event that hazardous building materials remain within the buildings/structures at the site a hazardous building materials management plan must be prepared.

1.1 Proposed Development Details

Limited details have been provided at this stage, however, it is understood that the site is proposed to be redeveloped for use as an ambulance station under the Ambulance Infrastructure Program.

It is assumed that the overall development would include removal/demolition of the existing buildings/structures and construction of an ambulance station with areas not occupied by buildings to be occupied by footpaths, driveways and landscaping. Excavation details are not available at this preliminary stage and we therefore assume that the proposed development would be on-grade.

1.2 Scope of Work

The survey was undertaken generally in accordance with a JKE proposal (Ref: EP58458PT) of 29 March 2023 and a Consultancy Agreement between the client and JKE dated 29 March 2023 (Contract No. HI23153). The scope of work included the following:

- A detailed inspection of the existing buildings/structures shown on Figure 2;
- Sampling of representative materials in accordance with the assessment criteria and inspection procedure outlined in Section 4;
- Documentation of inspection finds including sample location, material type, condition, friability, photographic evidence and site location;
- Laboratory analysis of selected representative materials; and
- Preparation of a report presenting the results of the hazardous building materials survey.

2 SITE DESCRIPTION

Field work for this survey was undertaken on 17 April 2023. The site description at the time of the field work is outlined below. The site location is shown on Figure 1 and the site layout and site features plan is shown on Figure 2.

The site is located to the east Kayuga Street, Caves Beach, NSW. The site generally consists of two large warehouse type structures. The northern building (Building 1), was vacant at the time of the inspection and the southern building (Building 2), was being utilised for the storage of solar panels and steel formwork.

Building 1 was positioned on 4 Kayuga Close (northern half), and was a single storey metal clad (walls and roof) structure, on concrete slab, with brick and fibre cement clad internal wet areas including a single toilet at the eastern end of the building and a male and female toilet and washroom along the south-west wall of the building.

Building 2 was positioned on 2 Kayuga Close (southern half), and was a double height metal clad (walls and roof) structure with a single storey brick section at the western end, all on concrete slab. The warehouse section of the building included a large open space with internal crane, and brick, plasterboard and fibre cement clad toilets and wet areas positioned along the southern wall. The western end of the building was a former office area and comprised timber panelling to the walls, plasterboard ceilings and carpet tiles across the concrete floor.

3 REGULATORY BACKGROUND INFORMATION

All work associated with the inspection and reporting of hazardous building materials is generally undertaken in accordance with the following legislation, guidelines and standards:

Table 3-1: Guidelines / Documents

GUIDELINES / REGULATIONS / DOCUMENTS
Asbestos
<i>Code of Practice How to Manage and Control Asbestos in the Workplace, Safe Work NSW, August 2019</i>
<i>Code of Practice How to Safely Remove Asbestos, Safe Work NSW, August 2019</i>
SMF
<i>National Standard for the Safe Use of Synthetic Mineral Fibres [National Occupational Health and Safety Commission:1004 (1990)]</i>
<i>National Code of Practice for the Safe Use of Synthetic Mineral Fibres [National Occupational Health and Safety Commission:2006 (1990)]</i>
<i>Code of Practice for the Safe Use of Synthetic Mineral Fibres, WorkCover: 1993.</i>
Lead
<i>Guide to Lead Paint Management - Part 2: Residential and Commercial Buildings, Australian Standard AS4361.2, 1998</i>
<i>Guide to Hazardous Paint Management, Part 2: Lead Paint in Residential, Public and Commercial Buildings, Australian Standard AS4361.2, 2017</i>
PCBs
<i>Identification of PCB-Containing Capacitors, Australian and New Zealand Environment and Conservation Council (ANZECC), 1997</i>
General
<i>Work Health and Safety Act 2011 (NSW)</i>
<i>Work Health and Safety Regulation 2017 (NSW)</i>
<i>The Demolition of Structures, Australian Standard AS2601 (2001)</i>

4 ASSESSMENT CRITERIA AND INSPECTION PROCEDURE

The survey included a visual inspection of the buildings/structures, sampling and laboratory analysis as described in the following sections.

4.1 Asbestos Fibre Containing Materials

Representative samples of construction materials identified as potentially containing asbestos were obtained using hand tools by personnel wearing suitable personal protective equipment (PPE). The samples were placed in sealed plastic bags and labelled with a unique job number, sampling location and date. All samples were recorded on the chain of custody (COC) record presented in Appendix C.

Following the completion of the field inspection, the samples were forwarded to a National Association of Testing Authorities (NATA) registered laboratory, Envirolab Services Pty Ltd (NATA Accreditation No. 2901), for analysis. The asbestos samples were analysed using stereo and polarising light microscopy methods with dispersion staining techniques.

4.2 Lead Containing Materials

Representative samples of deteriorated paint films and accumulated dust that potentially contain elevated lead concentrations were obtained using hand tools by personnel wearing suitable PPE.

Only significantly deteriorated paint systems that are considered likely to impact on demolition/refurbishment practices or that are considered a health or environmental hazard were sampled and recorded.

The paint flakes obtained included all layers of paint on a particular surface and so are considered to be composites of the materials at each location. The paint flake samples were placed in sealed plastic bags and labelled with a unique job number, sampling location and date. All samples were recorded on the COC record presented in Appendix C.

In accordance with the Australian Standard AS4361.2, 2017 *“Guide to Hazardous Paint Management, Part 2: Lead Paint in Residential, Public and Commercial Buildings*, a lead in paint concentration greater than 0.1% w/w is considered to be lead based paint.

Settled dust sampling involved the collection of settled dust from a known surface area by wet wipe. The area should preferably be 0.09m² (which corresponds to an area 30 cm × 30cm) and in any event not less than 0.01m², depending on the amount of dust present. A non-alcoholic moistened wipe is folded to form a firm swab. The swab is placed flat onto the surface in one corner of the area to be sampled and rubbed across the entire area in an ‘S’ pattern. The wipe is re-folded so that the collected dust is on the inside and is again rubbed across the area at 90° to the first ‘S’. The wipe is again folded with the dust inside and placed in the sterile sample container.

The lead concentration per m² is calculated using the equation (µg/swab ÷ 0.09) ÷ 1000.

Following the completion of the field inspection, the samples were forwarded to a NATA registered laboratory for analysis. Analysis for lead content is performed using a nitric and hydrochloric acid digest followed by ICP-AES (Inductively Coupled Plasma – Atomic Emission Spectroscopy) quantification methods.

The result, when received from the laboratory, is converted to milligrams, and then divided by the area sampled (in square metres) to give a lead loading expressed in mg/m².

4.2.1 Lead Materials Assessment Criteria

As stated above, a lead in paint concentration greater than 0.1% w/w is considered to be lead based paint.

In the absence of current published lead levels in dust, the acceptance level of 8 mg/m² for exterior surfaces as published in *Australian Standard AS4361.2, 1998 Guide to Lead Paint Management - Part 2: Residential and Commercial Buildings*, is considered the most appropriate guideline for comparison for lead in ceiling dust, and has been adopted for the survey.

4.3 Polychlorinated Biphenyls (PCBs) Containing Electrical Equipment

The major use of PCBs in the electrical industry has been inside transformers and capacitors. Transformers may include relatively small transformers inside electrical mains/fuse cabinets. Capacitors containing PCBs were installed in numerous types of fluorescent light fittings during the 1950's, 60's and 70's.

Representative samples of each type of electrical equipment identified within the existing structure were visually examined to assess whether the equipment is insulated with PCBs. Details on the make, type, capacitance, dimensions, date and power were recorded and checked with the ANZECC database of known PCB containing electrical equipment and the results of the review were noted.

4.4 Synthetic Mineral Fibre Containing Materials

Construction materials identified as potentially containing synthetic mineral fibre (SMF) were examined by site personnel and their location was noted. In the event that the materials were suspected to contain asbestos fibres, representative samples were obtained using hand tools by personnel wearing suitable PPE. The material samples were placed in sealed plastic bags and labelled with a unique job number, sampling location and date. All samples were recorded on the COC record presented in Appendix C.

Following the completion of the field inspection, the samples were forwarded to a NATA registered laboratory for asbestos fibre analysis. The samples were analysed using stereo and polarising light microscopy methods with dispersion staining techniques.

5 RESULTS OF THE INSPECTION

The results of the inspection and subsequent laboratory analysis are summarised in the following sections. For specific locations and details of materials identified during the inspection, please refer to the Hazardous Building Materials Register in Appendix B and the laboratory analysis report in Appendix C.

5.1 Asbestos

Asbestos containing materials were identified within the interior and the exterior of the existing buildings at the site at the time of the inspection. Asbestos containing materials were only encountered in the non-friable (bonded) form at the site.

Refer to Section 6.1 of this report for recommendations on asbestos and the Hazardous Building Materials Register for details of material sampled and inspected for asbestos.

5.2 Lead in Paint

Deteriorated lead containing paint systems were identified on the timber door frames and steel framework in Building 1 and on steel framework, gantries and the compressor in building 2. Refer to Section 6.2 of this report for recommendations on lead paint systems.

5.3 Lead in Accumulated Dust

Not identified within the scope and limitations of the report.

5.4 Polychlorinated Biphenyls (PCBs)

Fluorescent light fittings potentially housing PCB containing capacitors were identified in the workshop area of Building 2. The fittings were visually inspected at the time of the inspection. Refer to Section 6.4 of this report for recommendations on PCBs.

5.5 Synthetic Mineral Fibre (SMF)

Materials containing SMF were identified in the form of internal insulation (air conditioning units and hot water systems), and insulation batts at the site. With the exception of the insulation batt debris in the front office area of Building 2, all materials were in good condition at the time of the inspection. Refer to Section 6.5 of this report for recommendations on SMF containing materials.

5.6 Site Access Limitations

Full access was not possible to the higher sections of Building 2 due to height restrictions associated with the height of the warehouse section of the building.

All electrical switchboards and cabinets were live and access was limited due to electrical hazard.

6 COMMENTS AND RECOMMENDATIONS

6.1 Asbestos Materials

Asbestos fibre containing construction materials have been identified within the interior and the exterior of the existing building and structures at the site. All asbestos materials were considered to be non-friable.

Any materials presumed to contain asbestos must be treated as such.

Prior to demolition or refurbishment work, this document must be provided as a register to the demolition/building contractor.

All works associated with the disturbance and removal of asbestos containing materials must be undertaken by a Licenced *Class B* Asbestos Removalist.

The asbestos removalist must prepare an Asbestos Removal Control Plan for the proposed works. The control plan should include an allowance for asbestos air fibre monitoring during the removal and thorough clean up works upon completion of the removal works.

An asbestos management plan must be prepared for the proposed works in areas containing asbestos.

A clearance inspection must be undertaken on completion of works and prior to any other construction activities being undertaken.

If previously unidentified materials (suspected of containing asbestos) are identified during the demolition phase, works should cease and the material should be inspected and classified by an experienced consultant. The area should be isolated and barricaded until the material has been classified as non-hazardous or removed and the area cleared.

All asbestos containing materials (and materials presumed to contain asbestos) must be removed in accordance with the regulations and codes outlined in Section 3 and by an experienced asbestos removal contractor.

6.2 Lead in Paint

Deteriorated paint films containing elevated lead levels were identified during the survey. All identified lead containing paint films must be removed / treated in accordance with the regulations and codes outlined in Section 5.2 and by an experienced hazardous materials removal contractor.

6.3 Lead in Accumulated Dust

Not identified within the scope and limitations of the report.

6.4 PCB Containing Electrical Equipment

Representative samples of each major type of fluorescent light fitting were visually inspected to determine which lights are fitted with PCB containing ballast capacitors.

Light fittings potentially housing a PCB containing metal capacitor were identified in the workshop area of Building 2. PCBs are a scheduled waste with strict guidelines regarding transport and handling. PCB work is to be conducted in accordance with the Environmental Protection & Heritage Council's *Polychlorinated Biphenyls Management Plan*, Revised Edition April 2003. This briefly includes:

- Prior to demolition when the power is disconnected, inspect the light fittings;
- Metal PCB containing capacitors are to be removed, placed in plastic lined 200 litre drums and disposed of as PCB Scheduled Waste. Any light fitting that shows signs of oil staining from capacitors is to be disposed of as PCB contaminated;
- Protective clothing including eye protection, PCB resistant gloves and overalls are to be worn;
- Contaminated gloves and disposable coveralls are to be disposed of as PCB contaminated waste; and
- Contractors licenced to transport and handle PCBs must be used for transport and disposal.

If any metal cased capacitors are found during demolition works that were previously unidentified, they should be treated as containing PCBs. Details on storing, conveying and disposing of PCB material or PCB wastes can be found in *Polychlorinated Biphenyls Management Plan*, Environmental Protection & Heritage Council, Revised Edition April 2003.

6.5 SMF Materials

Sources of SMF containing materials are present in both Building 1 and Building 2 as internal insulation material and insulation batts and debris. All SMF containing materials must be removed in accordance with the national Standard and code outlined in Section 3 and by an experienced hazardous materials removal contractor.

7 LIMITATIONS

The conclusions developed in this report are based on site conditions which existed at the time of the site survey. They are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, and visual observations of the site and vicinity, together with the interpretation of available documents reviewed as described in this report.

Surveys are conducted in a conscientious and professional manner. The nature of the task however, and the likely disproportion between any damage or loss which might arise from the work or reports prepared as a result, and the cost of our services, is such that JKE cannot guarantee that all hazardous building materials have been identified and/or addressed.

Due to the possibility of renovations and additions to the building structures over time, hazardous building materials may have been hidden behind new walls and ceilings. Such areas were inaccessible during the inspection. If any suspect materials are found during further renovation of the buildings, the material should be sent for identification and expert advice sought.

Therefore, while we carry out the work to the best of our ability, we totally exclude any loss or damages which may arise from services we have provided to our client and/or any other associated parties.

Unless specifically noted, the survey did not cover:

- Hidden and/or inaccessible locations such as in or under concrete slabs, wall cavities, hidden storage areas and the like;
- Lift wells and inaccessible/unidentified shafts, cavities and the like;
- Air conditioning, heating, mechanical, electrical or other equipment;
- General exterior ground surfaces and subsurface areas e.g. asbestos in fill/soil;
- Materials dumped, hidden, or otherwise placed in locations which one could not reasonably anticipate;
- Materials other than normal building fabric, materials in laboratories or special purpose facilities and building materials that cannot be reasonably and safely assessed without assistance;
- Areas where access was limited during the time of the site inspection as outlined in Section 6; and
- Materials other than asbestos, lead, PCBs and SMF are generally outside the scope as identification can require specialised analysis/inspection techniques.

Where other potentially hazardous materials are identified these are normally reported on to the best of the consultant's ability. Analysis is not normally included and there is no guarantee that all such materials have been identified and/or addressed.

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If you have any questions concerning the contents of this report please do not hesitate to contact us.



Important Information About This Report

These notes have been prepared by JKE to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors

This report has been prepared in response to specific project requirements as stated in the JKE proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The defined subject site is increased or sub-divided; or
- Ownership of the site changes.

JKE will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the assessment. If the subject site is sold, ownership of the assessment report should be transferred by JKE to the new site owners who will be informed of the conditions and limitations under which the assessment was undertaken. No person should apply an assessment for any purpose other than that originally intended without first conferring with the consultant.

Misinterpretation of Site Assessments by Design Professionals

Costly problems can occur when other design professionals develop plans based on misinterpretation of an assessment report. To minimise problems associated with misinterpretations, the environmental consultant / asbestos assessor should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to hazardous building materials.

Read Responsibility Clauses Closely

Because an environmental site assessment is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site assessment, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.



Appendix A: Report Figures



AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

Title:

SITE LOCATION PLAN

Location:

2-4 KAYUGA CLOSE, CAVES BEACH, NSW

Project No:

E35912PT

Figure No:

1

This plan should be read in conjunction with the Environmental report.

JKEnvironments



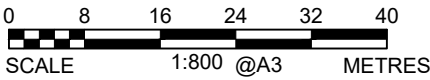
PLOT DATE: 22/03/2023 11:23:28 AM DWG FILE: K:\5C EIS JOBS\35000\SIE35912PT CAVES BEACH\CAD\E35912PT.DWG



LEGEND

--- APPROXIMATE SITE BOUNDARY

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM



This plan should be read in conjunction with the Environmental report.

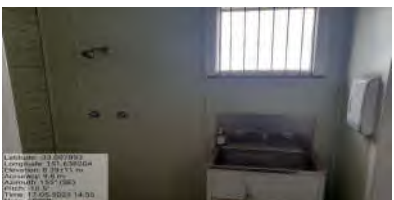
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Location: 2-4 KAYUGA CLOSE, CAVES BEACH, NSW	
Project No: E35912PT	Figure No: 2
JKEnvironments	

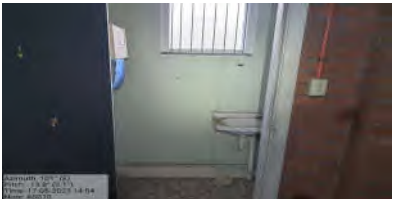
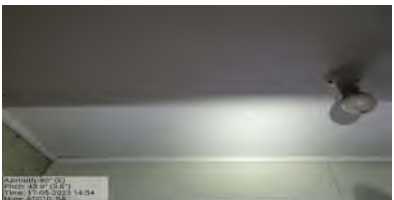




Appendix B: Hazardous Building Materials Register

2-4 Kayuga Close, Caves Beach, NSW Hazardous Building Materials Register - May 2023									
Location	Material Type	Sample ID	Laboratory result	Condition	Friable / Non-Friable	Approximate extent	Recommendation	Is the area accessible	Photograph
Caves Beach HAZMAT Register									
ASBESTOS MATERIALS									
External, causeway between Buildings 1 and 2, ground surface, expansion joint	Bituminous Membrane	AS001	No asbestos detected: Organic fibres detected	Generally Intact	Non-Friable	>20lm	-	-	-
External, Building 2, office, north, south and western walls, eaves	Fibre Cement Sheeting	AS002	Chrysotile asbestos detected: Organic fibres detected	Generally Intact	Non-Friable	15m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 2, workshop, toilets, sink cabinet, ground surface	Fibre Cement Debris	AS003	Chrysotile asbestos detected: Organic fibres detected	Poor	Non-Friable	<1m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal Building 2, beneath metal walls surrounding, skirting board	Fibre Cement Sheeting	AS004	Chrysotile asbestos detected: Amosite asbestos detected	Poor	Non-Friable	40m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
External, Building 2, office, south west corner, ground surface adjacent drain	Moulded Fibre Cement Debris	AS005	Chrysotile asbestos detected	Poor	Non-Friable	<1m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	

2-4 Kayuga Close, Caves Beach, NSW Hazardous Building Materials Register - May 2023									
Location	Material Type	Sample ID	Laboratory result	Condition	Friable / Non-Friable	Approximate extent	Recommendation	Is the area accessible	Photograph
Caves Beach HAZMAT Register									
ASBESTOS MATERIALS									
External, Building 2, north western entrance to workshop, ground surface	Fibre Cement Debris	Same as AS004	Chrysotile asbestos detected: Amosite asbestos detected	Poor	Non-Friable	<1m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 2, workshop, sink to west of toilet block, backing board	Fibre Cement Sheeting	AS006	Chrysotile asbestos detected: Organic fibres detected	Generally Intact	Non-Friable	2m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 2, workshop, western wall, main switchboard	Electrical Backing Board	NA - Electrical Hazard	Assumed to contain asbestos	Generally Intact	Non-Friable	1 Unit	Confirm presence of asbestos through laboratory testing OR assume to contain asbestos and remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 1, western toilet block, walls surrounding	Fibre Cement Sheeting	AS007	Chrysotile asbestos detected: Organic fibres detected	Generally Intact	Non-Friable	20m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 1, western toilet block, ceilings throughout	Fibre Cement Sheeting	Same as AS007	Chrysotile asbestos detected: Organic fibres detected	Generally Intact	Non-Friable	8m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	

2-4 Kayuga Close, Caves Beach, NSW Hazardous Building Materials Register - May 2023									
Location	Material Type	Sample ID	Laboratory result	Condition	Friable / Non-Friable	Approximate extent	Recommendation	Is the area accessible	Photograph
Caves Beach HAZMAT Register									
ASBESTOS MATERIALS									
Internal, Building 1, eastern toilet block, walls surrounding	Fibre Cement Sheeting	AS008	Chrysotile asbestos detected: Organic fibres detected	Generally Intact	Non-Friable	15m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 1, eastern toilet block, ceilings throughout	Fibre Cement Sheeting	Same as AS008	Chrysotile asbestos detected: Organic fibres detected	Generally Intact	Non-Friable	4m ²	Remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
External, Building 1, south western corner, electrical distribution boards	Electrical Backing Board	NA - Electrical Hazard	Assumed to contain asbestos	Generally Intact	Non-Friable	2 Units	Confirm presence of asbestos through laboratory testing OR assume to contain asbestos and remove prior to refurbishment / demolition by appropriately licensed asbestos removal contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
SYNTHETIC MINERAL FIBRE (SMF)									
Internal, Building 1, southern side above internal toilets/shower rooms, hot water system	Internal Insulation	-	NA - Assumed to contain SMF	Generally Intact	Non-Friable	1 unit	Remove prior to refurbishment / demolition by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 2, offices, southern wall, air conditioning units	Internal Insulation	-	NA - Assumed to contain SMF	Generally Intact	Non-Friable	3 Units	Remove prior to refurbishment / demolition by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	

2-4 Kayuga Close, Caves Beach, NSW Hazardous Building Materials Register - May 2023									
Location	Material Type	Sample ID	Laboratory result	Condition	Friable / Non-Friable	Approximate extent	Recommendation	Is the area accessible	Photograph
Caves Beach HAZMAT Register									
SYNTHETIC MINERAL FIBRE (SMF)									
Internal, Building 2, Offices, ceiling space	Insulation batts	-	NA - Assumed to contain SMF	Generally Intact	Non-Friable	70m ²	Remove prior to refurbishment / demolition by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 2, Offices, south western office, ground surface	Insulation batt debris	-	NA - Assumed to contain SMF	Generally Intact	Non-Friable	<1m ²	Remove prior to refurbishment / demolition by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 2, workshop, toilet block, showers, hot water system	Internal insulation	-	NA - Assumed to contain SMF	Generally Intact	Non-Friable	1 Unit	Remove prior to refurbishment / demolition by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
LEAD IN PAINT									
External, Building 1, timber doorframes	Peeling Green Paint	LP01	5.56% (greater than the criteria of 0.1%)	Localised section of deterioration	NA	4m ²	Stabilisation / abatement by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	
Internal, Building 1, steel framework	Peeling Green Paint	LP02	22.22% (greater than the criteria of 0.1%)	Localised section of deterioration	NA	>100lm	Stabilisation / abatement by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	Yes	

2-4 Kayuga Close, Caves Beach, NSW Hazardous Building Materials Register - May 2023									
Location	Material Type	Sample ID	Laboratory result	Condition	Friable / Non-Friable	Approximate extent	Recommendation	Is the area accessible	Photograph
Caves Beach HAZMAT Register									
LEAD IN PAINT									
Internal, Building 2, crane area, steel framework	Peeling Green Paint	Same as LP02	22.22% (greater than the criteria of 0.1%)	Localised section of deterioration	NA	>100lm	Confirm thorough laboratory analysis or assume to be lead based paint and implement stabilisation / abatement by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	No (access via ladder only)	
Internal, Building 2, crane area, gantries	Yellow and Orange Paint	NA - Height Restricted	Assume to be >0.1%	Localised section of deterioration	NA	>20lm	Confirm thorough laboratory analysis or assume to be lead based paint and implement stabilisation / abatement by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	No (access via ladder only)	
Internal, Building 2, south eastern corner, compressor	Yellow Paint	NA - Height Restricted	Assume to be >0.1%	Localised section of deterioration	NA	1 Unit	Confirm thorough laboratory analysis or assume to be lead based paint and implement stabilisation / abatement by appropriately licensed hazardous materials contractor in accordance with the relevant standard/code of practice/guidelines.	No (access via ladder only)	
LEAD IN DUST									
Internal, Building 2, general surfaces throughout	Settled Dust	LD01	0.33mg/m ² (lower than the adopted criteria of 8mg/m ²)	-	-	-	-	-	-
Internal, Building 1, workshop, general surfaces throughout	Settled Dust	LD02	4.44mg/m ² (lower than the adopted criteria of 8mg/m ²)	-	-	-	-	-	-
POLYCHLORINATED BIPHENYLS									
Internal, Building 2, workshop, southern overhang	Twin tube fluorescent light fittings	NA - electrical hazard	Of an age indicative of housing PCB containing capacitors	Generally intact	NA	10 Units	Undertake detailed inspection following isolation of electricity supply, OR Handle in accordance with relevant standard/code of practice/guidelines.	No (access via ladder only)	



Appendix C: Laboratory Report & COC Documents

CERTIFICATE OF ANALYSIS 323506

Client Details

Client	JK Environments
Attention	Katrina Taylor
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	<u>E35912PT, Caves Beach</u>
Number of Samples	8 Material, 2 Paint, 2 Swab
Date samples received	18/05/2023
Date completed instructions received	18/05/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.
 Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	25/05/2023
Date of Issue	25/05/2023
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Lucy Zhu
 Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Loren Bardwell, Development Chemist
 Lucy Zhu, Asbestos Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Lead in Paint			
Our Reference		323506-9	323506-10
Your Reference	UNITS	LP01	LP02
Date Sampled		17/05/23	17/05/23
Type of sample		Paint	Paint
Date prepared	-	24/05/2023	24/05/2023
Date analysed	-	24/05/2023	24/05/2023
Lead in paint (mg/Kg)	mg/Kg	500	2,000

Lead in swab			
Our Reference		323506-11	323506-12
Your Reference	UNITS	LD01	LD02
Date Sampled		17/05/23	17/05/23
Type of sample		Swab	Swab
Date prepared	-	19/05/2023	19/05/2023
Date analysed	-	19/05/2023	19/05/2023
Lead in Swabs	µg/swab	30	400

Asbestos ID - materials						
Our Reference	UNITS	323506-1	323506-2	323506-3	323506-4	323506-5
Your Reference		AS001	AS002	AS003	AS004	AS005
Date Sampled		17/05/23	17/05/23	17/05/23	17/05/23	17/05/23
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023
Mass / Dimension of Sample	-	30x20x7mm	79x72x5mm	105x49x5mm	145x70x7mm	25x13x7mm
Sample Description	-	Black bituminous material	Beige fibre cement material	Beige fibre cement material	Grey fibre cement material	Grey fibre cement material
Asbestos ID in materials	-	No asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected
		Organic fibres detected	Organic fibres detected	Organic fibres detected	Amosite asbestos detected	
Trace Analysis	-	No asbestos detected	[NT]	[NT]	[NT]	[NT]

Asbestos ID - materials				
Our Reference	UNITS	323506-6	323506-7	323506-8
Your Reference		AS006	AS007	AS008
Date Sampled		17/05/23	17/05/23	17/05/23
Type of sample		Material	Material	Material
Date analysed	-	23/05/2023	23/05/2023	23/05/2023
Mass / Dimension of Sample	-	15x10x5mm	13x10x2mm	15x12x4mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected
		Organic fibres detected	Organic fibres detected	Organic fibres detected
Trace Analysis	-	[NT]	[NT]	[NT]

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Metals-020/021/022	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.
Metals-020/021/022	Digestion of Dust wipes/swabs and /or miscellaneous samples for Metals determination by ICP-AES/MS and/or CV-AAS

Client Reference: E35912PT, Caves Beach

QUALITY CONTROL: Lead in Paint						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			24/05/2023	[NT]	[NT]	[NT]	[NT]	24/05/2023	[NT]
Date analysed	-			24/05/2023	[NT]	[NT]	[NT]	[NT]	24/05/2023	[NT]
Lead in paint (mg/Kg)	mg/Kg	50	Metals-020/021/022	<50	[NT]	[NT]	[NT]	[NT]	93	[NT]

Client Reference: E35912PT, Caves Beach

QUALITY CONTROL: Lead in swab						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date prepared	-			19/05/2023	[NT]	[NT]	[NT]	[NT]	19/05/2023	[NT]
Date analysed	-			19/05/2023	[NT]	[NT]	[NT]	[NT]	19/05/2023	[NT]
Lead in Swabs	µg/swab	1	Metals-020/021/022	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Katrina Taylor

Sample Login Details

Your reference	E35912PT, Caves Beach
Envirolab Reference	323506
Date Sample Received	18/05/2023
Date Instructions Received	18/05/2023
Date Results Expected to be Reported	25/05/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	8 Material, 2 Paint, 2 Swab
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	5
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolab.com.au	Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Envirolab Services Pty Ltd

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	Lead in Paint	Lead in swab	Asbestos ID - materials
AS001			✓
AS002			✓
AS003			✓
AS004			✓
AS005			✓
AS006			✓
AS007			✓
AS008			✓
LP01	✓		
LP02	✓		
LD01		✓	
LD02		✓	

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

SAMPLE AND CHAIN OF CUSTODY FORM

[illegible]