Asbestos Register

Blue Mountains City Council maintains asbestos registers ("registers") and asbestos management plans ("plans") relating to each of the buildings owned or occupied by the Council. The registers and plans record information about the existence and location of any known or presumed asbestos containing materials ("ACM") within those buildings.

The Council's governing body has adopted the Council's corporate [/asbestos-registers]Asbestos Policy, which is available on our website.

The registers and plans are in two forms. First, the Council maintains a corporate asbestos register and a corporate asbestos management plan. Second, the Council has prepared individual registers and individual plans for each building that contains or may contain ACM. Hardcopies of those individual registers and plans are held in the building concerned.

Whenever work is carried out on a Council building the hardcopy register and the hardcopy plan are each amended by hand, as required. This action ensures that Council employees or contractors who work from time to time within that building have access to accurate information about the ACM that it contains or may contain.

The electronic versions of each of the corporate plans and registers, and of the plans and registers for individual buildings, are periodically updated. However, the key documents are the hardcopy registers and the hardcopy plans for each building which must be inspected before any work is carried out on that building.

NOTES:

(1) The Council's electronic registers and plans are valid as dated, and ARE NOT to be relied upon as definitive records and ARE NOT to be used for reference purposes for any construction, demolition, maintenance or any other onsite works. IN ALL CASES, the onsite hardcopy building specific asbestos register and building specific asbestos management plan MUST BE CONSULTED prior to the commencement of physical works on the building concerned. While the electronic versions of the Council's registers and plans provide guidance concerning the presence or possible presence of ACM it is the onsite hardcopy registers and plans which will remain up to date.

(2) The Council's electronic registers and plans relate to Council owned or managed buildings. The electronic registers and plans do not relate to structures (such as picnic shelters, bus shelters and other freestanding structures). Before any work is carried out on such structures the Council's Hazardous Materials Team ("HMT") MUST BE CONSULTED. The HMT may be contacted at **council@bmcc.nsw.gov.au**. The HMT will provide information concerning any ACM that may be present in the structure concerned.

Further information: Further information on safe asbestos management may be obtained by contacting Councils Hazardous Materials Management Team at **council@bmcc.nsw.gov.au**.

Regional
EnviroScience
Hazardous Materials Laboratory and Consultancy

Work Health and Safety Regulation 2017 R427 requires a copy of the asbestos register and management plan to be available and readily accessible to all workers intending to carry out works at the workplace. The intent of this legislation is to minimise accidental disturbance of asbestos based products. If asbestos based products are to be disturbed reference to the asbestos management plan must be consulted first for guidance.

Work Health and Safety Regulation 2017 R428 requires that the management plan must be controlled by a person who is in control of the workplace.

The Nominated Controller of the Asbestos Management Plan for this workplace is

Prepared for:
Blue Mountains City Council,
2-6, Civic Place,
Katoomba,
NSW, 2780

This hard copy is for the;

Managing Agent ☐
Property Owner ☐
Property On-Site ☐

Work Health and Safety Regulation 2017 R425 and R429 requires workplaces to have an Asbestos Register and Management Plan, Reviews must be undertaken when changes occur in the Workplace or when asbestos is removed or more asbestos is identified, otherwise a review every 5 years is sufficient. Date of Register: 8th March 2018 Revision Due: 8th March 2022 Version 1.

Regional EnviroScience
Hazardous Materials Laboratory and Consultancy

CONTENTS

1.1 SCOPE OF REPORT

Regional EnviroScience Pty Ltd was requested by Mr. Jason Adams of Blue Mountain City Council to undertake a Hazardous Building Materials Register and to prepare a Hazardous Materials Management Plan of the Mt Wilson Hall and Amenities Block, located at 34 The Avenue, Mount Wilson, NSW, 2783. The purpose of the audit was to locate and identify asbestos based building materials and product within the building in accordance with the *NSW Work Health and Safety Act and Regulation 2017* and the *Code of Practice; How to Manage and Control Asbestos in the Workplace* [Safe Work Australia: 2016] and the *Code of Practice; How to Safely Remove Asbestos* [Safe Work Australia: 2016].

Sampling of the various suspect materials and subsequent laboratory analysis was required to confirm the presence or absence of hazardous materials including asbestos. Details of the results for the samples collected are contained in Appendices I, 2 and 3 and 4. Samples taken were considered to be representative where visual inspection indicated materials to be similar in nature and of similar age.

The purpose of this assessment was to also identify potentially hazardous building materials, including Lead (Pb) Based Paints, Synthetic Mineral Fibres (SMF), Polychlorinated Biphenyls (PCBs), and Phenols. The identification of SMFs, PCBs and Phenols is by visual assessment only.

Where materials could not be sampled and are of a particular age they have been assumed to contain asbestos, of note electrical “Bakelite” baking boards.

1.2 LIMITATIONS

The inspection of the building was limited to areas that are outlined in this report, the inspector could not generally access entire ceiling spaces or foundation areas, also areas that could not be readily accessed areas including wall cavities and underground services were not able to be inspected in full. If these areas require major works a detailed inspection, which may include partial demolition for access would be required if major works are scheduled.

1 To the extent permitted by law, Regional EnviroScience Pty Ltd will not be responsible in tort, contract or otherwise for any loss or damage, including for any personal injuries or death, or any consequential loss, loss of markets and pure economic loss, suffered by the Customer, whether or not the loss or damage occurs in the course of performance by Regional EnviroScience of this contract or in events which are in the contemplation of Regional EnviroScience and/or the Customer or in events which are foreseeable by Regional EnviroScience and/or the Customer.

2.2 To the extent that liability has not been effectively excluded by the proceeding clause, then Regional EnviroScience limits its liability to: -

(a) The supply of services again; or

(b) The payment of the cost of supplying the services again, at the election of Regional EnviroScience Pty Ltd.

1.3 ASBESTOS MATERIALS REGISTER

The following tabulated summary details the findings of Asbestos Building Materials and Products.

Nearmap Satellite Image of the Premises:

The following Risk Action Table is used in each table of this register to assign a risk score that translates into five different actions (1-5). The table should assist the person/s responsible for maintaining the Hazardous Building Materials Register with a tool to determine the course of action and develop an action schedule for the particular hazardous building material that will assist Council in budgeting for remediation / abatement works.

Risk Action Table

Descriptor	Item	Action
A1	Action 1	**RESTRICT ACCESS & REMOVE** As a guide, the material conforms to one, or more, of the following: • Friable or poorly bonded to substrate, located in accessible areas; • Severely water damaged, or unstable; • Further damage or deterioration likely; • Asbestos debris and stored asbestos in reasonably accessible areas; and • Significant peeling and flaking in lead paint in areas that pose immediate risk to children / resident. Removal considered lead risk work
A2	Action 2	**ENCLOSE, ENCAPSULATE OR SEAL BY LICENCED CONTRACTORS - REINSPECT PERIODICALLY** As a guide, the material conforms to one, or more, of the following: • Damaged material; • In reasonably accessible area; • Friable material or poorly bonded to substrate, with bonding achievable; • Possibility of disturbance through contact; • Possibility of deterioration caused by weathering; and • Large areas of peeling and flaking
A3	Action 3	**REMOVE DURING REFURBISHMENT OR MAINTENANCE. ENCLOSE, ENCAPSULATE OR SEAL BY GENERAL MAINTENANCE CONTRACTORS. REINSPECT PERIODICALLY** As a guide, the material conforms to one, or more, of the following; • Asbestos debris or stored material in rarely accessed areas; • Further disturbance or damage unlikely other than during maintenance or service; • Asbestos friction materials, gaskets and brake linings; and • Small / moderate areas of peeling and flaking lead paint in an area that posed low risk. Remedial works suitable by a general maintenance contractor
A4	Action 4	**NO REMEDIAL ACTION – REINSPECT PERIODICALLY** As a guide, the material conforms to one, or more, of the following: • Firmly bonded to substrate and readily visible for inspection; • Inaccessible and fully contained; and • Stable and damage unlikely
A5	Action 5	**NO ACTION REQUIRED – NO HAZARDOUS BUILDING MATERIALS IDENTIFIED**

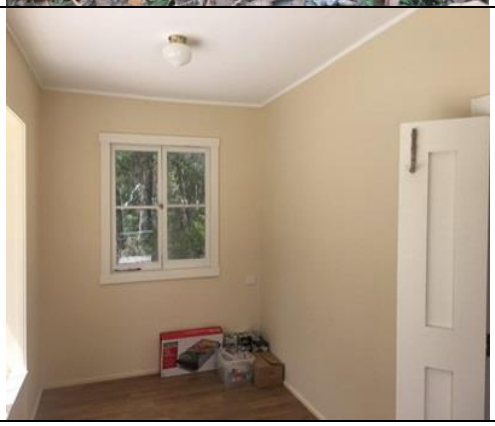
1.4: Asbestos

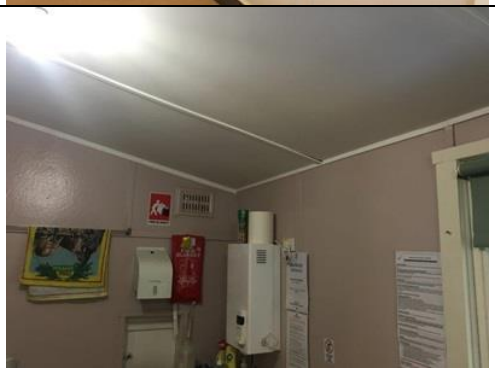
On the 8th March 2018, an Asbestos Audit was conducted at the Mount Wilson Hall and asbestos containing materials were not found to be present at the premises. Please refer Appendix I for results of products that were considered and consequently analysed.

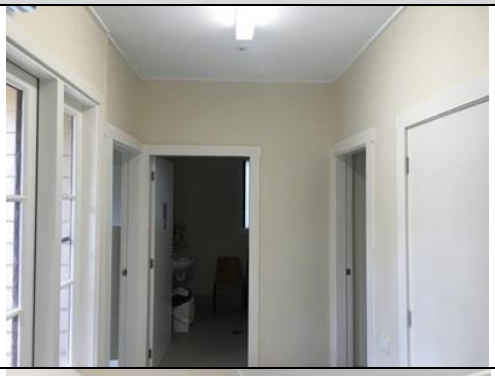
ASBESTOS MATERIALS REGISTER		**ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783**			
DATE OF IDENTIFICATION	**IMAGES**	**SPECIFIC LOCATION OF ASBESTOS/ APPROX M²**	**TYPE OF ASBESTOS/ FRIABLE OR NON-FRIABLE**	**RISK ACTION RATING**	**CONDITION & ACCESSIBILITY OF ASBESTOS**
8th March 2018		Mt Wilson Hall. North Aspect. Timber Bearers and Joists, Timber Weatherboards, Sheet Metal Roof, Fibre Cement Soffits and Ceiling Panels, Canite and Masonite Walls in Original Hall, 2010 Additions Include New Entry Foyer and New Toilet Block	N/A		N/A
8th March 2018		Mt Wilson Hall. Southwest Aspect. Timber Bearers and Joists, Timber Weatherboards, Sheet Metal Roof, Fibre Cement Soffits	No Asbestos Materials Observed. 1917	A5	N/A

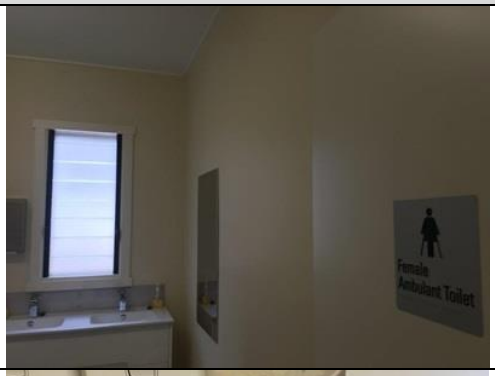
ASBESTOS MATERIALS REGISTER		**ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783**			
DATE OF IDENTIFICATION	**IMAGES**	**SPECIFIC LOCATION OF ASBESTOS/ APPROX M²**	**TYPE OF ASBESTOS/ FRIABLE OR NON-FRIABLE**	**RISK ACTION RATING**	**CONDITION & ACCESSIBILITY OF ASBESTOS**
8th March 2018		Mt Wilson Hall. Southeast Aspect. Timber Bearers and Joists, Timber Weatherboards, Sheet Metal Roof, Fibre Cement Soffits	No Asbestos Materials Observed. **1918**	A5	N/A
8th March 2018		Mt Wilson Hall. Northeast Aspect. Timber Bearers and Joists, Timber Weatherboards, Sheet Metal Roof, Fibre Cement Soffits	No Asbestos Materials Observed. **1919**	A5	N/A
8th March 2018		Soffit Lining to Eaves if 2010 Amenities Section Fibre Cement Sheet	Sample B17956-S1 No Asbestos Detected **1920**	A5	N/A

ASBESTOS MATERIALS REGISTER		**ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783**			
DATE OF IDENTIFICATION	**IMAGES**	**SPECIFIC LOCATION OF ASBESTOS/ APPROX M²**	**TYPE OF ASBESTOS/ FRIABLE OR NON-FRIABLE**	**RISK ACTION RATING**	**CONDITION & ACCESSIBILITY OF ASBESTOS**
8th March 2018		Soffit Lining to Eaves of 2010 Entry Foyer Fibre Cement Sheet **1921**	Similar to Sample B17956-S1 No Sample Taken	A5	N/A
8th March 2018		Soffit Lining to Eaves of Original Main Hall Fibre Cement Sheet **1922**	Sample B17956-S2 No Asbestos Detected	A5	N/A
8th March 2018		Soffit Lining to Eaves on Kitchen Skillion Roof Fibre Cement Sheet **1923**	Sample B17956-S3 No Asbestos Detected	A5	N/A

ASBESTOS MATERIALS REGISTER		**ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783**			
DATE OF IDENTIFICATION	**IMAGES**	**SPECIFIC LOCATION OF ASBESTOS/ APPROX M²**	**TYPE OF ASBESTOS/ FRIABLE OR NON-FRIABLE**	**RISK ACTION RATING**	**CONDITION & ACCESSIBILITY OF ASBESTOS**
8th March 2018		Infill Strip Running Under Bottom Plate on Top of Brick Piers – All Around Main Hall and Kitchen. External Wall – No Sub Floor Access due to Fire Mesh Infill Fibre Cement Sheet 1924	Sample B17956-S4 No Asbestos Detected	A5	N/A
8th March 2018		Entry Foyer – Plasterboard Ceiling and Walls 1925	No Sample Taken No Asbestos Observed	A5	N/A

ASBESTOS MATERIALS REGISTER		**ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783**			
DATE OF IDENTIFICATION	**IMAGES**	**SPECIFIC LOCATION OF ASBESTOS/ APPROX M²**	**TYPE OF ASBESTOS/ FRIABLE OR NON-FRIABLE**	**RISK ACTION RATING**	**CONDITION & ACCESSIBILITY OF ASBESTOS**
8th March 2018		Ceiling Lining to Main Hall – Horizontal Middle Section Covered with Canite Tiles Fibre Cement Sheet 1926	Sample B17956-S5 No Asbestos Detected	A5	N/A
8th March 2018		Plywood and Canite Walls to Main Hall 1927	No Sample Taken No Asbestos Observed	A5	N/A
8th March 2018		Wall and Ceiling Linings to Kitchen – Some Walls are Canite Fibre Cement Sheet 1928	Sample B17956-S6 No Asbestos Detected	A5	N/A

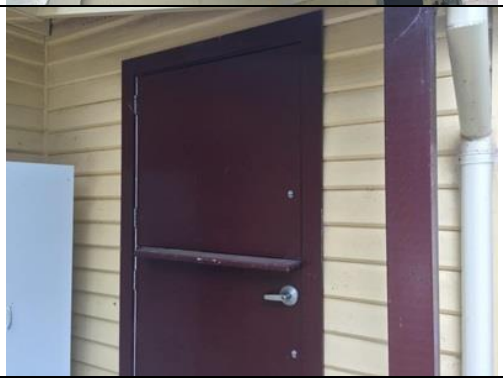
ASBESTOS MATERIALS REGISTER		**ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783**			
DATE OF IDENTIFICATION	**IMAGES**	**SPECIFIC LOCATION OF ASBESTOS/ APPROX M²**	**TYPE OF ASBESTOS/ FRIABLE OR NON-FRIABLE**	**RISK ACTION RATING**	**CONDITION & ACCESSIBILITY OF ASBESTOS**
8th March 2018		Plasterboard Ceiling and Walls to Amenities Section **1929**	No Sample Taken No Asbestos Observed	A5	N/A
8th March 2018		Male Amenities. Plasterboard walls & ceiling, Timber Floor, Laminex/Timber Toilet Partitions. **1930**	No Asbestos Materials Observed.	A5	N/A
8th March 2018		Unisex Amenities. Plasterboard walls & ceiling, Timber Floor, Laminex/Timber Toilet Partitions. **1931**	No Asbestos Materials Observed.	A5	N/A

ASBESTOS MATERIALS REGISTER		**ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783**			
DATE OF IDENTIFICATION	**IMAGES**	**SPECIFIC LOCATION OF ASBESTOS/ APPROX M²**	**TYPE OF ASBESTOS/ FRIABLE OR NON-FRIABLE**	**RISK ACTION RATING**	**CONDITION & ACCESSIBILITY OF ASBESTOS**
8th March 2018		Female Amenities. Plasterboard walls & ceiling, Timber Floor, Laminex/Timber Toilet Partitions. 1932	No Asbestos Materials Observed.	A5	N/A
8th March 2018		Bakelite Switches at Main Hall Entry 1933	Assumed Asbestos Containing Material No Sample Taken	A4	Stable Good Condition No Remedial Action Needed

1.3.2: Lead-Based Paints

Three (3) paint sample was obtained in accordance with the AS 4361.2:2017 Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings and AS 4482.1-2005 Guide to the Investigation and Sampling of Sites with Potentially Lead Contaminated Soil.

The table below depicts where the sample was obtained, together with the sample results. The guide above defines a lead based paint as a paint film or component coat of paint system containing lead or lead compounds, in which the lead content is more than 0.1% by weight of the dry film as determined by laboratory testing. Laboratory results are located in Appendix III.

LEAD BASED PAINTS REGISTER Date Sampled 8th March 2018		**ASSET: Mount Wilson Hall, 34 The Avenue, Mount Wilson, NSW, 2786**			
SAMPLE REFERENCE	**IMAGE**	**LOCATION**	**LABORATORY RESULT (% w/w Lead in Paint)**	**RISK ACTION RATING**	**CONCLUSION**
Sample 07 (187145-1)		Cream/Yellow Paint to Weatherboards, Facia, Rafters	**1.5 w/w**	A4	**Paint is classified as lead based as greater than 0.1% w/w**
Sample 08 (187145-2)		Burgundy Paint to External Windows, Doors, Posts and Trim	**0.66 w/w**	A4	**Paint is classified as lead based as greater than 0.1% w/w**

LEAD BASED PAINTS REGISTER **Date Sampled 8th March 2018**		**ASSET: Mount Wilson Hall, 34 The Avenue, Mount Wilson, NSW, 2786**			
Sample 09 (187145-3)		White Paint to Internal Windows, Doors and Trim in Main Hall and Kitchen	**1.2 w/w**	A4	**Paint is classified as lead based as greater than 0.1% w/w**

All painted surfaces tested have returned an analysis indicating they are lead based paints at Mount Wilson Hall, however are in good condition. Remediation is advised and can be scheduled when routine maintenance or during a planned refurbishment.

Good practice would dictate that existing paint, even though it may below the recognised standard, should not be sanded and that dust minimisation techniques should be adopted, when undertaking renovation / repair works particularly in heritage period buildings. It would be good practice to wear a P1 dust mask during any paint removal even though it does not contain lead but small particles of paint can still be inhaled or ingested.

1.3.2: Synthetic Mineral Fibres (SMFs)

SMF materials are identified visually, and no SMF materials were identified.

SYNTHETIC MINERAL FIBRE REGISTER		ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783			
DATE OF INSPECTION	IMAGES	SPECIFIC LOCATION OF SMF	SAMPLE RESULTS	RISK ACTION RATING	CONDITION & ACCESSIBILITY OF PRODUCT
8th March 2018		Insulation to Main Hall Ceiling Cavity.	Visual Inspection	A5	N/A

1.3.4: Polychlorinated Biphenyls (PCBs)

Polychlorinated biphenyls (PCB) are identified by visual observation in fluorescent light fittings with guidance from the Australian and New Zealand Environment and Conservation Council (ANZECC) Checklists.

POLYCHLORINATED BIPHENYLS REGISTER		ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783			
DATE OF INSPECTION	IMAGES	SPECIFIC LOCATION OF PCB	SAMPLE RESULTS	RISK RANKING	CONDITION & ACCESSIBILITY OF PRODUCT

POLYCHLORINATED BIPHENYLS REGISTER		ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783			
DATE OF INSPECTION	IMAGES	SPECIFIC LOCATION OF PCB	SAMPLE RESULTS	RISK RANKING	CONDITION & ACCESSIBILITY OF PRODUCT
8th March 2018	No Image Available	No Polychlorinated Biphenyl, Fluorescent Light Products Were Identified	Visual Inspection	A5	N/A

1.3.5: Phenols

Phenols are an early form of plastic formed between Phenol and Formaldehyde and quite often bound together with the use of a fibrous material, they may sometimes even contain asbestos. The main source of Phenols within buildings is Bakelite products such as electrical switches or light fittings.

PHENOLS REGISTER		ASSET: Lawson Oval Amenities, Ferris Lane, Lawson, NSW, 2783			
DATE OF INSPECTION	IMAGES	SPECIFIC LOCATION OF PHENOL-CONTAINING MATERIAL	SAMPLE RESULTS	Risk Action Rating	CONDITION & ACCESSIBILITY OF PRODUCT
8th March 2018		Bakelite Switches at Main Hall Entry	Assumed Asbestos Containing Material No Sample Taken	A4	Good Condition Accessible to Tradespeople Refer to Asbestos Management Plan

1.4 CONCLUSIONS

Asbestos Building Materials were **Not** found to be present in the Mount Wilson Hall, with the exception of the Bakelite switches at the main hall entry (assumed asbestos containing material), and other potential hazardous building materials were identified as being present.

The following recommendations will assist the asset owner and building occupants to meet the requirements of the *NSW Work Health and Safety Act and Regulation 2017* in the case of unexpected find of hazardous building material/s.

If an unexpected asbestos find eventuates, depending on the type and quantity of the material, it should be scheduled to be removed under controlled conditions utilising a licensed asbestos removal contractor (Class B – Bonded removalist) or (Class A – Friable removalist). It is recommended that a Scope of Works be drawn up prior to engaging an asbestos removalist to ensure that the appropriate legislative requirements are adhered to, these legislative and guidance requirements are detailed below.

Legislation also recommends that it is good occupational hygiene practice to undertake airborne asbestos air monitoring, using a competent laboratory during the asbestos removal and that an independent Occupational Hygienist undertake a visual clearance inspection, coupled with air monitoring and site contamination assessment at the end of the removal process. For guidance on exposure standards and recommended procedures please refer to codes of practice and standards provided in Appendix XX References for guidance;

It is recommended that the licensed contractor prepare a safe method of work statement including wet removal methods for the asbestos removal works, utilising Type P1 or P2 half face particulate respirators, appropriate personnel decontamination procedures and appropriate disposal methods, refer to the following legislative codes of practice and standards for guidance;

If the material is to remain in situ, and unlikely to be disturbed it should be noted on the premises' asbestos register. If the asbestos material is removed the register should be updated to reflect this change in the management plan. All the asbestos materials should be managed according to the asbestos management plan.

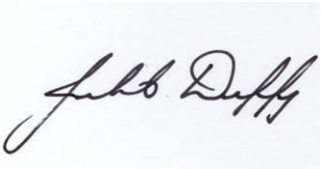
If additional asbestos based products are identified on-site the asbestos register should be updated to include these products. If products are disturbed airborne asbestos air monitoring coupled with an independent assessment should be undertaken to assess the risk.

Background airborne asbestos monitoring was conducted at the premises with samples taken indicating normal background levels of airborne asbestos fibres (<0.01 fibres/millilitre of air). These results confirm the safe working environment within the area.

The fibres were counted in accordance with the National Occupational Health and Safety Commission's "Asbestos: Code of Practice and Guidance Notes - Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust" [NOHSC:3003 (2005)] The air monitoring results can be seen in Appendix II of this report.

Air monitoring results taken only indicate the background levels, if asbestos based products are disturbed or removed additional air monitoring should be undertaken to ensure that these normal background levels are maintained.

Reported By



Juliet Duffy MSM *Syd Uni*

Occupational Hygienist
Regional EnviroScience Pty Ltd
Ph 0417238571
www.EnviroScience.com.au
+61 2 6885 5361
ABN 121 579 182 62

SECTION 2 - ASBESTOS MANAGEMENT PLAN

"No Asbestos Materials have been identified on-site during the property audit. The following recommendations apply in the event that asbestos containing materials are uncovered."

The materials identified in this report were in good or fair condition and can be managed effectively according to the Asbestos Management Plan.

- Provided the ACM remains in good condition and is not disturbed they pose minimal risk if left in situ.
- If the ACM is in fair condition it should be removed under controlled conditions and replaced, during routine maintenance works.
- If the ACM is in poor condition it should be removed under controlled conditions as soon as practicable.
- If renovation or demolition works are to occur the asbestos based materials which are likely to be disturbed should be removed prior to works commencing.

If asbestos based products are disturbed, the area should be isolated and an independent assessment by an Occupational Hygienist should be undertaken coupled with airborne asbestos air monitoring.

2.1 MANAGEMENT RESPONSIBILITY

Work Health and Safety Regulation 2017 R428 R429 requires that the management plan must be controlled by a person who is in control of the workplace. The person is responsible to ensure that the management plan is kept up to date, including documenting asbestos removal works, subsequent damage and if new asbestos products are identified on-site.

If the nominated person is no longer responsible for the Asbestos Register and Management Plan the person must as far as reasonably practicable transfer the ownership and the actual documents to the new nominated person.

2.2 IDENTIFICATION AND SIGNAGE

Work Health and Safety Regulation 2017 R422, R424, R427 and R429 requires that the person with the management control of the workplace to identify asbestos containing materials and the asbestos material that has been identified to date should be labelled and ensured that it complies with the *Australian Standard 1319: Safety Signs for the Occupational Environment*; signage should be similar to the label detailed below.

Signage should also be placed at the entry points to the building/plant similar to the one detailed below

2.3 CONTROLLING THE RISK

As all asbestos types are known carcinogens, and it is when the asbestos fibres are released and become airborne that they pose a potentially deadly occupational health hazard. The main route of entry into the body is through inhalation, and they deposit directly into various sections of the respiratory tract depending on their fibre size. The three main diseases associated with asbestos exposure are Asbestosis, Lung Cancer and Mesothelioma.

Therefore, when we are managing asbestos in the workplace we want to minimise potential exposures to asbestos fibres, particularly when they become airborne. Many asbestos containing materials that are in the workplace are in good condition, and if left undisturbed is it unlikely that asbestos fibres will become airborne and the risk is extremely low. However, if the material is in a poor condition, or is likely to be disturbed (i.e. maintenance activities, renovation or demolition works) the asbestos containing materials should be removed.

To reduce to likelihood of asbestos materials being disturbed in the workplace, the asbestos material should be identified (i.e. the Asbestos Register), and managed to minimise the risk of disturbance through signage and administration controls, such as permit to work systems. The management plan should be followed with vigour to ensure exposures do not occur.

2.4 SAFE WORK METHODS

The methods need to be adopted for all asbestos works undertaken on-site, when works are undertaken the management records contained within this report need to appropriately, documented, as evidence. The following methods have been extracted from the *Code of Practice; How to Manage and Control Asbestos in the Workplace* [Safe Work Australia: 2011] under the Creative Commons copyright licence.

Asbestos removal works need to be undertaken by a registered asbestos removalist, who will notify Workcover of works and provide a satisfactory and safe asbestos removal method, prior to works commencing on-site.

2.4.1. Drilling of asbestos containing material

SAFE WORK PRACTICE 1 – DRILLING OF ACM	
The drilling of asbestos cement sheeting can release asbestos fibres into the atmosphere, so precautions must be taken to protect the drill operator and other persons from exposure to these fibres. A hand drill is preferred to a battery-powered drill, because the quantity of fibres is drastically reduced if a hand drill is used.	
Equipment that may be required prior to starting work (in addition to what is needed for the task)	• A non-powered hand drill or a low-speed battery-powered drill or drilling equipment. Battery-powered drills should be fitted with a local exhaust ventilation (LEV) dust control hood wherever possible. If an LEV dust control hood cannot be attached and other dust control methods such as pastes and gels are unsuitable then shadow vacuuming techniques should be used • Disposable cleaning rags • A bucket of water, or more as appropriate, and/or a misting spray bottle • Duct tape • Sealant • Spare PPE • A thickened substance such as wallpaper paste, shaving cream or hair gel • 200 µm plastic sheeting • A suitable asbestos waste container (e.g. 200 µm plastic bags or a drum, bin or skip lined with 200 µm plastic sheeting) • Warning signs and/or barrier tape • An asbestos vacuum cleaner • A sturdy paper, foam or thin metal cup, or similar (for work on overhead surfaces only).
PPE	• Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed.
Preparing the asbestos work area	• If the work is to be carried out at a height, appropriate precautions must be taken to prevent falls. • Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. close door and/ or use warning signs and/or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment. • If drilling a roof from outside, segregate the area below. • If access is available to the rear of the asbestos cement,

SAFE WORK PRACTICE 1 – DRILLING OF ACM	
	segregate this area as well as above. • If possible, use plastic sheeting, secured with duct tape, to cover any surface within the asbestos work area that could become contaminated. • Ensure there is adequate lighting. • Avoid working in windy environments where asbestos fibres can be redistributed. • If using a bucket of water, do not resoak used rags in the bucket, as this will contaminate the water. Instead, either fold the rag so a clean surface is exposed or use another rag.
Drilling vertical surfaces	• Tape both the point to be drilled and the exit point, if accessible, with a strong adhesive tape such as duct tape to prevent the edges crumbling. • Cover the drill entry and exit points (if accessible) on the asbestos with a generous amount of thickened substance. Drill through the paste. • Use damp rags to clean off the paste and debris from the wall and drill bit. • Dispose of the rags as asbestos waste as they will contain asbestos dust and fibres. • Seal the cut edges with sealant. • If a cable is to be passed through, insert a sleeve to protect the inner edge of the hole.
Drilling overhead horizontal surfaces	• Mark the point to be drilled. • Drill a hole through the bottom of the cup. • Fill or line the inside of the cup with shaving cream, gel or a similar thickened substance. • Put the drill bit through the hole in the cup so that the cup encloses the drill bit, and make sure the drill bit extends beyond the lip of the cup. • Align the drill bit with the marked point. • Ensure the cup is firmly held against the surface to be drilled. • Drill through the surface. • Remove the drill bit from the cup, ensuring that the cup remains firmly against the surface. • Remove the cup from the surface. • Use damp rags to clean off the paste and debris from the drill bit. • Dispose of the rags as asbestos waste, as they will contain asbestos dust and fibres. • Seal the cut edges with sealant. • If a cable is to be passed through, insert a sleeve to protect the inner edge of the hole.

SAFE WORK PRACTICE 1 – DRILLING OF ACM	
Decontaminating the asbestos work area and equipment	• Use damp rags to clean the equipment. • Carefully roll or fold any plastic sheeting used to cover any surface within the asbestos work area, so as not to spill any dust or debris that has been collected. • If necessary, use damp rags and/or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area. • Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container. • Wet wipe the external surfaces of the asbestos waste bags/ container to remove any adhering dust before they are removed from the asbestos work area.
Personal decontamination should be carried out in a designated area	• If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth. • While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag. • Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.
Clearance procedure	• Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.

2.4.2. Sealing, painting, coating and cleaning of asbestos-cement (bonded) products

SAFE WORK PRACTICE 2 – SEALING, PAINTING, COATING AND CLEANING OF ASBESTOS-CEMENT PRODUCTS	
These tasks should only to be carried out on asbestos that are in good condition. For this reason, the ACM should be thoroughly inspected before starting the work. There is a risk to health if the surface of asbestos cement sheeting is disturbed (e.g. from hail storms and cyclones) or if it has deteriorated as a result of aggressive environmental factors such as pollution. If it is so weathered that its surface is cracked or broken, the asbestos cement matrix may be eroded, increasing the likelihood that asbestos fibres will be released. If treatment is considered essential, a method that does not disturb the matrix should be used. Under no circumstances should asbestos cement products be water blasted or dry sanded in preparation for painting, coating or sealing.	
Equipment that may be required prior to starting work (in addition to what is needed for the task)	• Disposable cleaning rags • A bucket of water, or more as appropriate, and/or a misting spray bottle • Sealant • Spare PPE • A suitable asbestos waste container • Warning signs and/or barrier tape.
PPE	• Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed. Where paint is to be applied, appropriate respiratory protection to control the paint vapours/mist must also be considered.

SAFE WORK PRACTICE 2 – SEALING, PAINTING, COATING AND CLEANING OF ASBESTOS-CEMENT PRODUCTS	
Preparing the asbestos work area	• If work is being carried out at heights, precautions must be taken to prevent falls. • Before starting, assess the asbestos cement for damage. • Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. close door and/ or use warning signs and/or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment. • If working at a height, segregate the area below. • If possible, use plastic sheeting secured with duct tape to cover any floor surface within the asbestos work area which could become contaminated. This will help to contain any runoff from wet sanding methods. • Ensure there is adequate lighting. • If using a bucket of water, do not resoak used rags in the bucket, as this will contaminate the water. Instead, either fold the rag so a clean surface is exposed or use another rag. • Never use high-pressure water cleaning methods. • Never prepare surfaces using dry sanding methods. Where sanding is required, you should consider removing the asbestos and replacing it with a non-asbestos product. • Wet sanding methods may be used to prepare the asbestos, provided precautions are taken to ensure all the runoff is captured and filtered, where possible. • Wipe dusty surfaces with a damp cloth.
Painting and sealing	• When using a spray brush, never use a high-pressure spray to apply the paint. • When using a roller, use it lightly to avoid abrasion or other damage.
Decontaminating the asbestos work area and equipment	• Use damp rags to clean the equipment. • If required, use damp rags and/or an asbestos vacuum cleaner to clean the asbestos work area. • Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container. • Wet wipe the external surfaces of the asbestos waste bags/ container to remove any adhering dust before they are removed from the asbestos work area.

SAFE WORK PRACTICE 2 – SEALING, PAINTING, COATING AND CLEANING OF ASBESTOS-CEMENT PRODUCTS	
Personal decontamination should be carried out in a designated area	• If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth. • While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag. • Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.
Clearance procedure	• Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.

2.4.3. Cleaning leaf litter from gutters of asbestos cement roofs

SAFE WORK PRACTICE 3 – CLEANING LEAF LITTER FROM GUTTERS OF ASBESTOS CEMENT ROOFS	
Equipment that may be required prior to starting work (in addition to what is needed for the task)	• A bucket of water, or more as appropriate, and detergent • A watering can or garden spray • A hand trowel or scoop • Disposable cleaning rags • A suitable asbestos waste container • Warning signs and/or barrier tape • An asbestos vacuum cleaner.
PPE	• Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed.
Preparing the asbestos work area	• Since the work is to be carried out at a height, appropriate precautions must be taken to prevent the risk of falls. • Ensure appropriately marked asbestos waste disposal containers are available. • Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. use warning signs and/ or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment. • Segregate the area below. • Avoid working in windy environments where asbestos fibres can be redistributed. • If using a bucket of water, do not resoak used rags in the bucket as this will contaminate the water. Instead, either fold the rag so a clean surface is exposed or use another rag.
Gutter cleaning	• Disconnect or re-route the downpipes to prevent any entry of contaminated water into the waste water system and ensure there is a suitable container to collect contaminated runoff. Contaminated water must be disposed of as asbestos waste. • Mix the water and detergent. • Using the watering can or garden spray, pour the water and detergent mixture into the gutter but avoid over-wetting as this will create a slurry. • Remove the debris using a scoop or trowel. Do not allow debris or slurry to enter the water system. • Wet the debris again if dry material is uncovered. • Place the removed debris straight into the asbestos waste container.

SAFE WORK PRACTICE 3 – CLEANING LEAF LITTER FROM GUTTERS OF ASBESTOS CEMENT ROOFS	
Decontaminating the asbestos work area and equipment	• Use damp rags to wipe down all equipment used. • Use damp rags to wipe down the guttering. • Where practicable, and if necessary, use an asbestos vacuum cleaner to vacuum the area below. • Place debris, used rags and other waste in the asbestos waste container. • Wet wipe the external surfaces of the asbestos waste container to remove any adhering dust before it is removed from the asbestos work area.
Personal decontamination should be carried out in a designated area	• If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth. • While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag. • Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.
Clearance procedure	• Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.

2.4.4. Replace cabling in asbestos cement (bonded) conduits or boxes

SAFE WORK PRACTICE 4 – REPLACE CABLING IN ASBESTOS CEMENT CONDUITS OR BOXES	
Equipment that may be required prior to starting work (in addition to what is needed for the task)	• Disposable cleaning rags • A bucket of water, or more as appropriate, and/or a misting spray bottle • 200 µm thick plastic sheeting • Cable slipping compound • Appropriately marked asbestos waste disposal bags • Spare PPE • Duct tape • Warning signs and/or barrier tape • An asbestos vacuum cleaner.
PPE	• Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed.
Preparing the asbestos work area	• If the work will be carried out in a confined space, appropriate precautions must be taken to prevent the risk of asphyxiation. • Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. use warning signs and/ or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment. • Use plastic sheeting secured with duct tape to cover any surface within the asbestos work area which could become contaminated. • Place plastic sheeting below any conduits before pulling any cables through. • Ensure there is adequate lighting. • Avoid working in windy environments where asbestos fibres can be redistributed. • If using a bucket of water, do not resoak used rags in the bucket as this will contaminate the water. Instead, either fold the rag so a clean surface is exposed or use another rag.

SAFE WORK PRACTICE 4 – REPLACE CABLING IN ASBESTOS CEMENT CONDUITS OR BOXES	
Replacement or installation of cables	• Wet down the equipment and apply adequate cable slipping compound to the conduits/ducts throughout the process. • Clean all ropes, rods or snakes used to pull cables after use. Cleaning should be undertaken close to the point(s) where the cables exit from the conduits/ducts. • Ropes used for cable pulling should have a smooth surface that can easily be cleaned. • Do not use metal stockings when pulling cables through asbestos cement conduits. • Do not use compressed air darts to pull cables through asbestos cement conduits/ducts.
Decontaminating the asbestos work area and equipment	• Use damp rags to clean the equipment. • Wet wipe around the end of the conduit, sections of exposed cable and the pulling eye at the completion of the cable pulling operation. • If the rope or cable passes through any rollers, these must also be wet wiped after use. • Wet wipe the external surface of excess cable pulled through the conduit/duct, as close as possible to the exit point from the conduit, before it is removed from the work site. • Carefully roll or fold any plastic sheeting used to cover any surface within the asbestos work area, so as not to spill any dust or debris that has been collected. • If required, use damp rags or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area. • Place all debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container. • Wet wipe the external surfaces of the asbestos waste bags/ container to remove any adhering dust before they are removed from the asbestos work area.
Personal decontamination should be carried out in a designated area	• If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth. • While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag. • Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.

SAFE WORK PRACTICE 4 – REPLACE CABLING IN ASBESTOS CEMENT CONDUITS OR BOXES	
Clearance procedure	• Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.

2.4.5. Working on asbestos containing electrical switchboards

SAFE WORK PRACTICE 5 – WORKING ON ELECTRICAL MOUNTING BOARDS CONTAINING ASBESTOS	
If the asbestos-containing electrical mounting panel has to be removed for work behind the board, the procedures outlined in the *Code of Practice: How to Safely Remove Asbestos* must be followed. If drilling is required, the control process should be consistent with the measures in Safe Work Practice 1.	
Equipment that may be required prior to starting work (in addition to what is needed for the task)	• A non-powered hand drill or a low-speed battery-powered drill or drilling equipment. Battery-powered drills should be fitted with a LEV dust control hood wherever possible. If a LEV dust control hood cannot be attached and other dust control methods, such as pastes and gels, are unsuitable then shadow vacuuming techniques should be used • Duct tape • Warning signs and/or barrier tape • Disposable cleaning rags • A plastic bucket of water and/or a misting spray bottle • Spare PPE • A suitable asbestos waste container • 200 µm plastic sheeting • An asbestos vacuum cleaner.
PPE	• Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed.

SAFE WORK PRACTICE 5 – WORKING ON ELECTRICAL MOUNTING BOARDS CONTAINING ASBESTOS	
Preparing the asbestos work area	• As the work area will involve electrical hazards, precautions must be taken to prevent electrocution. • Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • Segregate the asbestos work area to ensure unauthorised personnel are restricted from entry (e.g. use warning signs and/ or barrier tape at all entry points). The distance for segregation should be determined by a risk assessment. • Use plastic sheeting secured with duct tape to cover any surface within the asbestos work area which could become contaminated. • Ensure there is adequate lighting. • Avoid working in windy environments where asbestos fibres can be redistributed. • If using a bucket of water, do not resoak used rags in the bucket as this will contaminate the water. Instead, either fold the rag so a clean surface is exposed or use another rag.
Work on electrical mounting panels	Providing the panel is not friable, maintenance and service work may include: • replacing asbestos containing equipment on the electrical panel with non-asbestos equipment • operate main switches and individual circuit devices • pull/insert service and circuit fuses • bridge supplies at meter bases • use testing equipment • access the neutral link • Install new components/equipment.
Decontaminating the asbestos work area and equipment	• Use damp rags to clean the equipment. • Carefully roll or fold any plastic sheeting used to cover any surface within the asbestos work area so as not to spill any dust or debris that has been collected. • If there is an electrical hazard, use an asbestos vacuum cleaner to remove any dust from the mounting panel and other visibly contaminated sections of the asbestos work area. • If there is no electrical hazard, wet wipe with a damp rag to remove minor amounts of dust. • Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags/container. • Wet wipe the external surfaces of the asbestos waste bags/ container to remove any adhering dust before they are removed from the asbestos work area.

SAFE WORK PRACTICE 5 – WORKING ON ELECTRICAL MOUNTING BOARDS CONTAINING ASBESTOS	
Personal decontamination should be carried out in a designated area	• If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth. • While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag. • Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.
Clearance procedure	• Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.

2.4.6. Inspection of asbestos friction materials

SAFE WORK PRACTICE 6 – INSPECTION OF ASBESTOS FRICTION MATERIALS	
This guide may be used when friction ACM (e.g. brake assemblies or clutch housings) need to be inspected or housings need to be cleaned. Compressed air must not be used to clean dust from a brake assembly.	
Equipment that may be required prior to starting work (in addition to what is needed for the task)	• A misting spray bottle • Duct tape • Warning signs and/or barrier tape • Disposable cleaning rags • A bucket of water and detergent • Spare PPE • A suitable asbestos waste container • A catch tray or similar container • An asbestos vacuum cleaner.
PPE	• Protective clothing and RPE (see AS1715, AS 1716). It is likely that a class P1 or P2 half face respirator will be adequate for this task, provided the recommended safe work procedure is followed.
Preparing the asbestos work area	• Ensure appropriately marked asbestos waste disposal bags are available. • Carry out the work with as few people present as possible. • Determine whether to segregate the asbestos work area • Ensure unauthorised personnel are restricted from entry by using barrier tape and/or warning signs. • Use a suitable collection device below where the work will be carried out to collect any debris/ runoff. • Ensure there is adequate lighting. • Avoid working in windy environments where asbestos fibres can be redistributed. • If using a bucket of water, do not resoak used rags in the bucket as this will contaminate the water. Instead, either fold the rag so a clean surface is exposed or use another rag.

SAFE WORK PRACTICE 6 – INSPECTION OF ASBESTOS FRICTION MATERIALS	
Inspection of asbestos friction materials	• A misting spray bottle should be used to wet down any dust. If spray equipment disturbs asbestos, use alternative wetting agents e.g. a water-miscible degreaser or a water/detergent mixture. • Use the wet method, but if this is not possible the dry method may then be used. <u>Wet method:</u> • Use the misting spray bottle to wet down any visible dust. • Use a damp rag to wipe down the wheel or automobile part before removal. Ensure the dust is kept wet to prevent atmospheric contamination. • Use hand tools rather than power tools to reduce the generation of airborne fibres. • Partially open the housing and softly spray the inside with water using the misting spray bottle. Any spillage of dust, debris or water must be controlled (e.g. capturing any runoff in a container) and either filtered or disposed of as asbestos waste. • Open the housing and clean all asbestos parts using a damp rag, ensuring all runoff water is caught in an asbestos waste container. <u>Dry method:</u> • Place a tray under the components to catch dust or debris spilling from the housing or components during the inspection and dispose of any material as asbestos waste. • Use an asbestos vacuum cleaner to remove asbestos from the brakes and rims or other materials before carrying out the inspection.
Decontaminating the asbestos work area and equipment	• Use damp rags to clean the equipment, including the dust collection tray. • If necessary, use damp rags or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area. • Place debris, used rags and other waste in the asbestos waste bags/container. • Wet wipe the external surfaces of the asbestos waste bags/ container to remove any adhering dust before removing them from the asbestos work area.

SAFE WORK PRACTICE 6 – INSPECTION OF ASBESTOS FRICTION MATERIALS	
Personal decontamination should be carried out in a designated area	• If disposable coveralls are worn, clean the coveralls while still wearing RPE using a HEPA vacuum, damp rag or fine-water spray. RPE can be cleaned with a wet rag or cloth. • While still wearing RPE, remove coveralls, turning them inside-out to entrap any remaining contamination and then place them into a labelled asbestos waste bag. • Remove RPE. If non-disposable, inspect it to ensure it is free from contamination, clean it with a wet rag and store in a clean container. If disposable, cleaning is not required but RPE should be placed in a labelled asbestos waste bag or waste container. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.
Clearance procedure	• Visually inspect the asbestos work area to make sure it has been properly cleaned. • Clearance air monitoring is not normally required for this task. • Dispose of all waste as asbestos waste. Refer to the *Code of Practice: How to Safely Remove Asbestos* for more information.

2.4.7 Sampling of asbestos materials

If additional suspected asbestos based products are identified on-site, especially in difficult to access areas or during the course of demolition and/or refurbishment activities a representative sample should be obtained and sent for laboratory analysis. Until results are obtained the product should be assumed to contain asbestos and treated accordingly, until laboratory analysis indicates otherwise.

2.4.7.1. Laboratory Sampling guidelines are as follows:

- The sample should be representative of the larger bulk material.
- The sample should include a full cross-section. For example, a sample of insulation material should include material from the outer cool face of armouring cement, if present, through to the inner hot face of the main insulating layer.
- Material from any repaired and repatched areas should be treated as separate sub-samples.
- The quantity of the sample collected should preferably be 5-100 grams, except floor tiles that are required to be a minimum of approximately 100 square centimetres.
- The sample should be transported in a labelled sealed container and preferably protected from undue vibration and disturbance
- As complete a sample history as possible should be recorded. This includes the exact location of the sample, chemical and physical conditions affecting the sample, and a factual description of the sample and sub-samples.

2.4.7.1. To Obtain a Sample the Process is as follows:

- Send sealed sample (preferably double bagged, plastic clip lock bags are sufficient) to;

  Regional EnviroScience, PO Box 1645, Dubbo, NSW, 2830

A competent person should take the following steps to carry out sampling:

2.4.7.1 (A) – PREPARATION

- Make sure no one else is in the vicinity when sampling is done.
- Shut down any heating or cooling systems to minimize the spread of any released fibres.
- Turn off any fans if you're inside. If outside, then sample on a non-windy day.
- Do not disturb the material any more than is needed to take a small sample.
- Collect the equipment you will need for sampling, including: pliers, resealable plastic bags, disposable coveralls, waterproof sealant, plastic drop sheet, water spray bottle
- P2 respirator, rubber gloves.

2.4.7.1 (B) – TAKING THE SAMPLE

- Wear disposable gloves.
- Put on respiratory protective equipment (RPE).
- Wear a pair of disposable coveralls.
- Lay down a plastic drop sheet to catch any loose material that may fall off while sampling.
- Wet the material using a fine mist of water containing a few drops of detergent before taking the sample. The water/detergent mist will reduce the release of asbestos fibres.
- Carefully cut a thumb nail piece from the entire depth of the material using the pliers.
- For fibre cement sheeting, take the sample from a corner edge or along an existing hole or crack.
- Place the small piece into the resealable plastic bag.
- Double bag the sample, include the date and location and an asbestos caution warning.
- Tightly seal the container after the sample is in it.
- Carefully dispose of the plastic sheet.
- Use a damp paper towel or rag to clean up any material on the outside of the container or around the area sampled.
- Dispose of asbestos materials according to state or territory and local procedures.
- Patch the sampled area with the smallest possible piece of duct tape to prevent fibre release.
- Send the sample to a NATA-accredited laboratory or one that is either approved or operated by the relevant regulator.

2.4.7.1 (c) – CLEANING UP

- Seal the edges with waterproof sealant where the sample was taken.
- Carefully wrap up the plastic drop sheet with tape and then put this into another plastic rubbish bag.
- Wipe down the tools and equipment with a dampened rag.
- Place disposable gloves and coveralls into a rubbish bag, along with the damp rag and drop sheet.
- Seal plastic bag.
- Wash hands.
- Keep RPE on until clean-up is completed.
- Follow a decontamination procedure (personal washing) upon completion of the task.

2.5 PERMIT TO WORK

2.5.1 Asbestos Removal Works

Before works commence ensure that the following minimal considerations have been addressed. Please photocopy and complete the permit to work documentation to ensure that a record of the asbestos removal works is evidenced. A record of these works should be kept with the Management Plan and the Asbestos Register should be updated.

PERMIT TO WORK - ASBESTOS REMOVAL SITE CHECKLIST		
Site address:		
Item	**Checked by**	**Date checked**
1. Barriers and signs erected		
2. Remediation Area inspection:		
• Emergency exits established and identified • Fire extinguishers appropriately placed • Site water runoff contained • Bag disposal area/enclosure inspected • Asbestos disposal bags in remediation area • Bag ties in remediation area • Electric equipment or cabling protected against water • Air handling systems isolated and sealed off in adjacent buildings, including windows closed		
3. Decontamination unit inspection:		
• Hot and cold water connected and operating • Change room/decontamination lighting operating • Decontamination drainage system checked • Contaminated clothes container provided		
4. Change Room		
• Protective clothing and spares in change room • Safety gumboots available • Towels/soap/shampoo/nail cleaners in the change room • Respirator storage and cleaning facilities provided		
5. All personnel trained in use and maintenance of PPE and emergency procedures		
6. Air monitoring in place		
7. Asbestos waste facilities available		
8. Appropriate waste transportation vehicles		

PERMIT TO WORK - ASBESTOS REMOVAL SITE CHECKLIST		
• Wash bay area • Drivers trained, including cabins set on re-circulating air, windows up. • Automatic tarps to cover wet soil loads • Plastic lined if possible friable asbestos. • Decontamination procedures		
9. Documentation required to be onsite:		
• Training records • Asbestos removal control plan • Asbestos removal licence		
Name of Nominated Asbestos Controller and Signature: **Name of Asbestos Removalist and Signature:** **Name of Occupational Hygienist and Signature:** **DATE WORKS UNDERTAKEN:**		

2.5.2 Asbestos Disturbance/Maintenance Works

Please photocopy and complete the permit to work documentation to ensure that asbestos works are undertaken correctly. A record of these works should be kept with the Asbestos Register and Management Plan.

PERMIT TO WORK - ASBESTOS DISTURBANCE/MAINTENANCE CHECKLIST		
Site address:		
Item	**Checked by**	**Date checked**
1. Has a Safe Work Method been utilised? If so is the operator familiar and understands what is required?		
2. Work Area Established including barriers and signs erected and area isolated: • Emergency exits established and identified • Bag disposal area/enclosure inspected • Electric equipment or cabling protected against water • Air handling systems isolated and sealed off in adjacent buildings, including windows closed		
3. Personal Protection • All personnel trained in use and maintenance of PPE, including respirators and personal decontamination procedures. • All personnel trained in the health hazards of asbestos		
4. Air monitoring in place and locations		
5. Asbestos waste facilities available • Asbestos disposal bags in remediation area • Bag ties in remediation area		
Name and Signature of Nominated Asbestos Controller: **Name and Signature of Contractor or Employee undertaking the works:** **DATE WORKS UNDERTAKEN:**		

2.6 RECORDS OF CHANGES & ACTIVITIES

Date	Location	Asbestos Product	Activity	Signature*
Example	Female Toilet, Eastern Wall	Bonded Asbestos Cement Sheet	Drilled to affix paper dispenser	

* The person identified with the responsibility of the management and control of the Asbestos Register and Management Plan must sign and insure that the permit to work system had been implemented, and works have been undertaken in the prescribed manner.

3.0 Lead Based Paints

Lead based paints were found to be present at the Mount Wilson Hall during the hazardous building materials inspection.

As per AS4361.2:2017 Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings; defines a lead based paint as a paint film or component coat of paint system containing lead or lead compounds, in which the lead content is in excess of 0.1% by weight of the dry film as determined by laboratory testing.

It is also recommended that during removal of painted surfaces appropriate safety precautions to reduce the risk of dust generation and ingestion, be adopted by the demolition contractor and disposal of lead based painted objects should be deposited at a licensed landfill. It is also recommended that during any refurbishment works undertaken remediation of any lead contaminated dust be carried out prior to the commencement of works.

Health Hazards from Lead Exposure

- Lead interferes with many body processes and is poisonous to most organs and tissues, including the bones, intestines, kidneys, nervous system, and reproductive organs.
- Acute lead poisoning (high exposure over a short period of time) can cause fatigue, anaemia, constipation, and damage to the nervous system.
- Chronic lead poisoning (exposure over a longer period of time) can cause fatigue, joint pain, and weakness.
- Lead poisoning can damage the foetus in pregnant female workers, and impair fertility in male workers.
- Workers are exposed to lead when they inhale lead-containing dust or ingest lead residue from their hands (for example, when eating, chewing gum, or smoking).
- Lead is a suspected human carcinogen and has been shown to cause cancer in laboratory animals.

Lead Dust Controls

The Regulation requires employers to select lead dust controls based on the following hierarchy:

1. Engineering controls (for example, barriers, enclosures, general ventilation, local exhaust ventilation).
2. Administrative controls (for example, wash stations, separate eating and changing areas, and limiting the time workers are exposed to lead).
3. Personal protective equipment (such as respirators and disposable coveralls)

- Respirators will be used in conjunction with other controls to reduce worker exposure to lead, unless air monitoring information suggests otherwise.
- A HEPA vacuum will be used for clean-up and decontamination.

Acceptable control methods for removing lead-containing paint

- The work methods in the following table are acceptable, provided that the respirator selection, dust suppression, and other controls are adhered to.
- The following control options will be used to eliminate or reduce the risk to workers from the hazards of lead dust exposure, unless air monitoring information suggests otherwise.

Work activity	Dust suppression	Other controls	Respirator type
Manual (hand) sanding or scraping	• Peeling paint will be misted with water before scraping. • Debris will be misted before sweeping or vacuuming. • A HEPA vacuum will be used to remove debris.	• Disposable drop sheets will be placed below the work area. • Barriers (for example, a tape barrier) will be installed to restrict access to the work area. • Signs will be posted at every entrance to the work area. • Workers will use disposable coveralls.	• NIOSH-approved single-use N95, N99, or P100 respirator • Half-face respirator with HEPA P100 series filters
Manual scraping using heat guns	• The heat gun temperature must be kept as low as practicable. • Debris will be misted before sweeping or	• Disposable drop sheets will be placed below the work area. • Barriers (for example, a tape barrier) will be installed to restrict access to the work area. • Partial or full enclosures will be	• Half-face respirator with HEPA P100 series filters

Work activity	Dust suppression	Other controls	Respirator type
	vacuuming. • A HEPA vacuum will be used to remove debris.	constructed around work areas where significant removal will take place. • Where full enclosures are required, they will be equipped with HEPA-filtered mechanical ventilation. • Signs will be posted at every entrance to the work area. • Workers will use disposable coveralls.	
Manual scraping using a chemical stripper	• Debris will be misted before sweeping or vacuuming. • A HEPA vacuum will be used to remove debris.	• Disposable drop sheets will be placed below the work area. • Barriers (for example, a tape barrier) will be installed to restrict access to the work area. • Signs will be posted at every entrance to the work area. • The work area will be ventilated with a continuous supply of fresh air for the workers. • Partial or full enclosures will be constructed around work areas where significant removal will take place. • Where full enclosures are required, they will be equipped with HEPA-filtered mechanical ventilation. • Workers will use disposable coveralls. • Methylene chloride products will not be used. • Additional PPE (for example, gloves and goggles) may be required as recommended by the MSDS for the chemical stripper.	• Half-face respirator with HEPA P100 series/organic vapour cartridges • Additional respiratory protection may be required as recommended by the MSDS for the chemical stripper
Removing paint using powered hand tools	• Tools equipped with a HEPA-filtered dust collection system will be used. • Debris will be misted before sweeping or vacuuming.	• Disposable drop sheets will be placed below the work area. • Barriers (for example, a tape barrier) will be installed to restrict access to the work area. • Signs will be posted at every entrance to the work area.	• NIOSH-approved single-use N95, N99, or P100 respirator • Half-face respirator with HEPA P100 series filters

Work activity	Dust suppression	Other controls	Respirator type
	• A HEPA vacuum will be used to remove debris.	• Workers will use disposable coveralls.	
	• Tools without a dust suppression system will be used. • Debris will be misted before sweeping or vacuuming. • A HEPA vacuum will be used to remove debris.	• Disposable drop sheets will be placed below the work area. • Partial or full enclosures should be constructed around work areas where removal will take place. • Where full enclosures are required, they should be equipped with HEPA-filtered mechanical ventilation. • Workers will use disposable coveralls.	• Full-face elastomeric respirator equipped with P100 HEPA cartridges, or • Powered air-purifying respirator (PAPR) equipped with P100 HEPA cartridges

Lead Air Monitoring during Removal Works, Visual Clearances and Clearance Air Monitoring

The Hygienist will throughout works undertake "real time" air monitoring to ensure that on-site processes and procedures adopted are satisfactory. During the lead management works Lead air monitoring, clearance air monitoring and monitoring during enclosure dismantling will be undertaken. At the completion of works a visual clearance inspection will also be undertaken.
The static air sampling will indicate if the removal work methods employed on-site by the certified contractor are proving to be effective work techniques.

Surface dust sampling will be taken at the completion of each section of works, and sent away for analysis as evidence of satisfactory lead management procedures.

The following table indicates the required control levels and required actions.

Table 1 – Lead Control levels and required actions

Control Level	Control / Action
Surface Dust Samples interior floors if >1 mg/m^2 Surface Dust Samples of Exterior Surfaces > 8mg/m^2	Vacuum, wet wipe and decontaminate area again
Real Time Static Air Monitoring* ≥0.02 mg/m^3	Review control measures
Real Time Static Air Monitoring* ≥0.05 mg/m^3	Stop Lead Management Works and find cause
Real Time Static Air Monitoring* ≥0.1 mg/m^3	Stop Lead Management Works and Decontaminate Area
*Current Occupational Exposure Limit (OEL) 0.15mg/m^3, AIOH recommended OEL 0.1 mg/m^3 Clearance Air Monitoring must be below 0.075mg/m^3 as per SLR specification	

LEAD (Pb) MANAGEMENT SPECIFICATIONS

The bulk of the lead management will be preparing lead based paint surfaces ready for the application of new paint.

- **Interim Site Security and Safety**

  It is recommended that signage be placed around the perimeter of the site, together with barriers constructed of barrier tape and or trestles. Signage should be similar to the ones detailed below.

Lead (Pb) Removal and Site Remediation:

As per legislation, the Lead (Pb) paint preparation works need to be undertaken by an experienced lead abatement contractor. It is also a requirement of legislation that the Contractor provide a Safe Work Method Statement as well as documentary evidence of personnel involved and their Lead (Pb) Biological Blood Level Monitoring program as per Part 7.6 of the NSW OH&S Regulation 2001, if regular lead works are to be undertaken.

As discussed, the experienced contractor will need to prepare a Safe Method of Work Statement including;

- A minimum 200µm thick plastic sheeting to create an "enclosure" prior to preparation works including on the floor to collect paint debris and to prevent other surfaces, this "enclosure" then needs to undergo a visual inspection by the Hygienist prior to Lead (Pb) works commencing.

- A "decontamination" facility for personnel and equipment needs to be adopted, with consideration for the reclaiming of contaminated water, coveralls, personal protective equipment and cloths used for cleaning etc. Work zones need to be considered and agreed to prior to works commencing this will ensure that clean areas are not contaminated and that contractor personnel adopt correct personal hygiene procedures. The work zones need to be separated by suitable airlocks or buffer zones.

- Adoption of wet removal methods during Lead (Pb) works to suppress and contain dust are to be utilised. To remove flaked and peeling paint and to prepare surfaces prior to painting wet scraping or wet sanding as detailed in the AS 4361 are to be adopted.

- Decontamination requirements for personnel, tools and equipment, the Lead (Pb) work area and any other areas that could become contaminated need to be considered and addressed in the plan. At the end of works all plant and equipment within the Lead (Pb) work area including any remaining non-movable items, should be vacuumed and/or wet wiped to remove any residual dust if evidenced. After a satisfactory clearance, visual inspection coupled with "real time" clearance air monitoring both undertaken by the Hygienist the "enclosure" maybe sprayed with an adhesive (PVA) to contain any dust and then dismantled prior to demobilization.

- Appropriate personal protection procedures including coveralls, and gloves, eye protection and Type P2 particulate respirators with particulate filter cartridges are to be used as a minimum requirement during painting works.

All possible Lead (Pb) contaminated materials, including paint debris, personnel protective equipment, plastic drop sheets etc must be documented in the Safe Work Method Statement describing the arrangements for storage, transport and disposal. Compliance with current environmental protection laws must be evidenced, as well as contingency plans for accidental spills.

4.0 Synthetic Mineral Fibre Products (SMFs)

Synthetic Mineral Fibre building materials were found to be present at the Mount Wilson Hall.

The information provided below is provided in the case of an unexpected find of SMF occurs.

If works do need to be undertaken which will disturb this material, safety goggles, disposable coveralls, gloves and a class P2 respirator should be adopted. This will avoid any skin irritation and inhalation of airborne fibres.

Air monitoring should also be undertaken to ensure that levels are less than the current workplace exposure standard of 0.5 fibres/ml. Measurement of airborne levels of respirable SMF fibres is undertaken in accordance with the SMF Membrane Filter Method (NOHSC, 1989b) and if necessary the gravimetric inhalable dust method (AS 3640-2004). Using the MFM, respirable fibres are defined as being at least 5µm long, and no more than 3µm wide with a length to width ratio of at least 3 to1. The results are compared against the current NES for respirable SMF fibre (0.5 f/mL) or the complimentary gravimetric inhalable dust standard (2 mg/m3).

5.0 Polychlorinated Biphenyls (PCBs)

No Polychlorinated Biphenyl containing capacitors were found to be present in the fluorescent light fittings inspected at the Mount Wilson Hall.

The information provided below is provided in the case of an unexpected find of PCB's occurs.

PCB material within fluorescent light fittings present a negligible risk unless damaged or leaking.

PCB material may be inhaled, ingested or absorbed through the skin. The National Occupational Health and Safety Commission (NOHSC) has determined a maximum exposure standard for PCB's:

PCBs containing 42 % chloride

Time weighted average (TWA): 1 mg/m3

Short term exposure limit (STEL): 2 mg/m3

PCBs containing 54 % chloride

Time weighted average (TWA): 0.5 mg/m3

Short term exposure limit (STEL): 1mg/m3

All PCBs should be labelled;

"CAUTION

CONTAINS POLYCHLORINATED BIPHENYL (PCB)

A TOXIC HAZARD AND TOXIC ENVIRONMENTAL CONTAMINANT"

The preferred control option is to remove and replace all PCB capacitors. Temporary storage of PCB-containing equipment should be placed in a polythene bag and sealed inside a metal container that is clearly marked with the details of the contents. If some of the material is leaking then the container should be partially filled with an absorbent packing material.

All scheduled PCB waste must be treated by a licensed/approved operator. Solid and liquid scheduled waste must not go to landfill.

6.0 Phenols

Potential Phenols were found to be present at the Mount Wilson Hall during the hazardous building materials inspection.

The main source of Phenol products is Bakelite products, such electrical switches. The Phenol material identified on-site was in a bonded format, and in this structure and condition does not present a significant risk in its current condition and state.

If Bakelite materials are disturbed they should be handled similar to bonded (Non-friable) Asbestos. If works do need to be undertaken which will disturb this material, disposable coveralls, gloves and a class P2 respirator should be adopted. This will avoid any skin absorption or chemical inhalation.

References

1. *NSW Work Health and Safety Act 2011 [2011-674]*
2. *NSW Work Health and Safety Regulation 2017*
3. *Code of Practice; How to Manage and Control Asbestos in the Workplace [Safe Work Australia: 2016]*
4. *Code of Practice; How to Safely Remove Asbestos [safe Work Australia: 2016].*
5. *Code of Practice for the Safe Removal of Asbestos* 2nd Edition [NOHSC:2002(2005)]
6. Guidelines for Health Surveillance *[NOHSC: 7039 (1995)]*
7. National Exposure Standards for Atmospheric Contaminants in the Occupational Environment *3rd Edition [NOHSC: 1003(1995)]*
8. Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres *2nd Edition [NOHSC:3003(2005)].*
9. Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment 3rd Edition *[NOHSC: 3008 (1995)]*
10. Australia/New Zealand Standard 1716-2012 Respiratory Protective Device
11. Australian/New Zealand Standard 1715-2009 Selection, Use and Maintenance of Respiratory Protective Devices
12. AS/NZS 60335.2.69:2003, Household and Similar Electrical Appliances - Safety - - Vacuum Cleaners, Class H requirements
13. National Code of Practice for the Control of Workplace Hazardous Substances *[NOHSC:2007(1994)].*
14. *Code of Practice for the Safe Removal of Asbestos 2nd Edition [NOHSC:2002(2005)]*
15. *Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018 (2005)].*
16. Australia/New Zealand Standard 1716-2003 *Respiratory Protective Device*
17. Australian/New Zealand Standard 1715-1994 *Selection, Use and Maintenance of Respiratory Protective Devices*
18. Australian/New Zealand Standard 3544 *Industrial vacuum cleaners for particulates hazardous to health*

APPENDIX I:

SAMPLE ANALYSIS RESULTS

APPENDIX II:

BACKGROUND AIRBORNE ASBESTOS AIR MONITORING RESULTS

APPENDIX III:

LEAD (Pb) SAMPLE ANALYSIS RESULTS

Regional EnviroScience
Hazardous Materials Laboratory and Consultancy

LABORATORY ANALYSIS REPORT
Asbestos Identification Report

Report No: B17956-R1
Client: Blue Mountains City Council
Client Address: 2-6 Civic Place, Katoomba,NSW, 2780

Report Date: Monday, 12 March 2018
Analysed Date: Monday, 12 March 2018
Laboratory Receival Date: Monday, 12 March 2018
Sampled Date: Thursday, 8 March 2018

Attention: Jason Adams
Approved Identifier and Signatory: Jeffrey Sargent
Sampled From: 34 The Avenue, Mount Wilson NSW 2786.

Test Method: Polarised Light Microscopy (PLM) including Dispersion Staining (DS), Regional EnviroScience Pty Ltd in-house laboratory method, in accordance with Australian Standard AS4964-2004 'Method for the qualitative identification of asbestos in bulk samples'. Accredited for compliance with ISO/IEC:17025-Testing.

Sample Number	Sample Location	Sample Description	Sample Size	Asbestos Detected	Fibres Detected
B17956-S1	Amenities Eaves	Fibre cement	0.2 gm	No	Organic
B17956-S2	Main Hall Eaves	Fibre cement	0.3 gm	No	Organic
B17956-S3	Kitchen Skillion Eaves	Fibre cement	0.6 gm	No	Organic
B17956-S4	Bottom Plate - Pier Packers	Fibre cement	0.4 gm	No	Organic
B17956-S5	Main Hall Ceilings	Fibre cement	0.9 gm	No	Organic
B17956-S6	Main Hall Ceilings	Fibre cement	0.2 gm	No	Organic

Regional EnviroScience
Hazardous Materials Laboratory and Consultancy

LABORATORY ANALYSIS REPORT
Estimation of Airborne Asbestos Fibres

Report No: A17956-R1
Client: Blue Mountains City Council
Client Address: 2-6 Civic Place, Katoomba,NSW, 2780

Report Date: Monday, 12 March 2018
Analysed Date: Thursday, 8 March 2018
Laboratory Receival Date: Monday, 12 March 2018
Sampled Date: Thursday, 8 March 2018
Sampled By: Phill Abbott

Attention: Jason Adams
Approved Counter and Signatory: Kenneth Archer

Sampled From: 34 The Avenue, Mount Wilson, NSW, 2786
Type of Monitoring: Background Monitoring

Test Method: In accordance with the (NOHSC:3003 (2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Fibres (as outlined in the Laboratory Method Manual). Accredited for compliance with ISO/IEC:17025-Testing.

Sample Number	Sample Location	Time On	Time Off	Flow Rate L/ Min	Results Fibres / Field	Results Fibres / ml
A17956-S1	Front Entry	1500	1715	3.0	0 /100	< 0.01
		135 min				
A17956-S2	Quality Control Laboratory Blank			N.A.	0 /100	< 0.01
		0 min				

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

CERTIFICATE OF ANALYSIS 187145

Client Details

Client	Regional Enviroscience
Attention	Wayne Sibley
Address	PO Box 1645, Dubbo, NSW, 2830

Sample Details

Your Reference	**17956**
Number of Samples	3 PAINT
Date samples received	13/03/2018
Date completed instructions received	13/03/2018

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

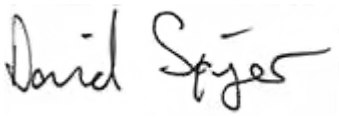
Date results requested by	20/03/2018
Date of Issue	19/03/2018

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 ***

Results Approved By
Long Pham, Team Leader, Metals

Authorised By



David Springer, General Manager

Lead in Paint				
Our Reference		187145-1	187145-2	187145-3
Your Reference	UNITS	S07	S08	S09
Type of sample		PAINT	PAINT	PAINT
Date prepared	-	14/03/2018	14/03/2018	14/03/2018
Date analysed	-	15/03/2018	15/03/2018	15/03/2018
Lead in paint	%w/w	1.5	0.66	1.2

Method ID	Methodology Summary
Metals-004	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.

QUALITY CONTROL: Lead in Paint						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			14/03/2018	1	14/03/2018	14/03/2018		14/03/2018	[NT]
Date analysed	-			15/03/2018	1	15/03/2018	15/03/2018		15/03/2018	[NT]
Lead in paint	%w/w	0.05	Metals-004	<0.05	1	1.5	1.8	18	117	[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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-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.

Measurement Uncertainty estimates are available for most tests upon request.