Loose Fill Asbestos Site Soil Validation Report

67 Buvelot Street, Weston ACT

Prepared by: Hazmat Plus

For

ACT Asbestos Response Taskforce

Introduction

This report contains the results of an investigation and remediation of asbestos fibres in soil of the demolition work area of a property which is a registered loose fill asbestos affected property.

The Australian Capital Territory ('Territory') has acquired a number of properties affected with loose fill asbestos insulation (comprising mainly amosite and some crocidolite asbestos) and is carrying out remediation of the demolition work area of the properties to ensure that the land is suitable for future residential reuse.

We were engaged by the Territory to provide sampling to validate the remediation of asbestos fibres in soil within the demolition work area for the sole purpose of assisting the Territory with its pre-development investigations in land identified for release for future residential reuse following completion of preliminary works by others, namely:

. demolition of the house by a principal contractor, including a scrape of affected soil;

. clearance of the site as free of visible asbestos by a licensed asbestos assessor; and

. definition of the demolition work area by a licensed asbestos assessor.

The demolition work area is the area to which the asbestos removal clearance certificate applies and is defined by the licensed asbestos assessor. It generally comprises the original pre-demolition structure footprint of the affected premises, the decontamination unit and asbestos waste skip handling area, and the soil disturbance work area of the demolition contractor. It excludes the remainder of the property including earthworks outside of the demolition work area where other non-affected structures have been removed or landscaping work carried out. The licensed asbestos assessor prepared a simple plan of the demolition work area for later sampling of soil by the Hazmat Plus soil validator.

Prior to sampling of soil in the demolition work area (refer to the methodology used for the sampling of soils described below), Hazmat Plus met on the site with the principal contractor Iqon Pty Ltd, who identified the extent of the demolition work area (as defined by the licensed asbestos assessor). The confirmed demolition work area for soil sampling is illustrated in Attachment 2.

The scope of work was performed solely for the Territory and specifically targeted loose fill asbestos insulation (comprising mainly amosite and some crocidolite fibres). Any other forms of contaminants

on site (e.g. lead, bonded asbestos) were not assessed. This report (including the conclusions and recommendations it contains) is prepared solely for use by the Territory and may not be used or replied upon by any other party. Any other party must make its own inquiries and obtain independent advice.

We have assumed the accuracy and completeness of all information provided to it by the principal contractor and licensed asbestos assessor, and the integrity of the clearance certificate provided as Attachment 4.

The asbestos fibre in soil investigation was done in accordance with the Asbestos Response Taskforce Information sheet - Soil Validation Process (dated 10 November 2015), the ACT Government-endorsed *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* (the NEPM ASC) and the 'Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia (May 2009)' (the WA Guidelines).

The investigation was undertaken after all visible loose fill asbestos and any other visible asbestos containing materials had been removed from the demolition work area, including a scrape of affected soil from the demolition work area, and a post demolition asbestos removal clearance certificate was issued by licensed asbestos assessor [redacted] of Hazmat Plus.

Site Identification and Soil Condition of Demolition Work Area

The site is situated on the eastern side of Buvelot Street north of the intersection with Rubbo Crescent Street in Weston. The demolition work area was approx. 16m x 16m in dimension. The concrete driveway and concrete path to the clothesline was retained. The small metal garden shed, gardens, brick and stone retaining walls were retained. The soil was a brown loamy-clay with areas of orange clay which appeared recently wetted at the time of inspection. Refer to Attachment 3 for photographs of the site.

Site Demolition Work Area and Sampling Plan

Please refer to Attachment 2 for the Site Plan showing locations of soil validation samples. Permission from Safe Work and Environments was granted for the use of their site plan.

Soil Sampling Methodology At Demolition Work Area

We attended the site on 21 November 2016 after the principal contractor confirmed the completion of demolition work and site clearance by the licensed asbestos assessor.

A total of ten (10) soil validation samples were collected across the site. Refer to Attachment 1 for the Laboratory Certificate of Analysis.

Location	Sample Rate	Analysis
Demolition work area	Twice the minimum density as per table in Appendix A of WA Guidelines#	Amosite, crocidolite, chrysotile fibres

Soil Validation Results

The following soil validation sample results were returned from the NATA accredited laboratory, with the laboratory certificate provided at Attachment 1.

Sample No./Grid location	Result/asbestos fibre type	Comments
H16094/4/SV01 01	No asbestos detected	No action required
H16094/4/SV02 02	No asbestos detected	No action required
H16094/4/SV03 03	No asbestos detected	No action required
H16094/4/SV04 04	No asbestos detected	No action required
H16094/4/SV05 05	No asbestos detected	No action required
H16094/4/SV06 06	No asbestos detected	No action required
H16094/4/SV07 07	No asbestos detected	No action required
H16094/4/SV08 08	No asbestos detected	No action required
H16094/4/SV09 09	No asbestos detected	No action required
H16094/4/SV10 10	No asbestos detected	No action required

Analytical Procedures

Asbestos in soil analysis was carried out in accordance with the WA Guidelines and the 'Australian Standard for the Qualitative Identification of Asbestos in Bulk Samples' (AS4964-2004).

Hot Spot Treatment

No hotspots were identified by the testing, as such no hotspot treatment was required.

Recommendation for Residential Reuse

The asbestos in soil investigation and remediation work to address potential impact of asbestos fibres in the demolition work area of a former house affected by loose fill asbestos at 67 Buvelot Street, Weston has been completed as detailed in this report, in accordance with the NEPM ASC and the WA Guidelines. On that basis, I recommend to the Territory that the demolition work area of this property is suitable for residential reuse with respect to asbestos fibres.

For and on behalf of Hazmat Plus:

BEnvSc(Mgt) AFOH CPSS

Licensed Asbestos Assessor Licence Number:

Date 28/11/16

Attachments

1) **Laboratory Certificate of Analysis**
2) **Demolition work area and sample plan**
3) **Photographs**
4) **Final Clearance Certificate**

Attachment 1 - Laboratory Certificate of Analysis

CHAIN OF CUSTODY FORM

SAFE WORK & ENVIRONMENTS

Client Details	
Client: Hazmat Plus	**Sample Date:** 21.11.2016
Client Project ID: **H16094/4** **67 Buvelot St WESTON**	**Number of Samples:** **10**
Sampled By:	**Phone/mobile Number:**
Requested Turn Around Time (Standard/24hour/48hours): 3 days	**Return Results via Email:** **to:** **cc:** **cc:**
Comments/Special Instructions: Be aware of potential for loose Amosite fibres	

Sample Details			
SWE Sample ID	**Client Sample No./Id**	**Sample Description**	**Requested Analysis**
	H16094/4-SV01	Soil	Asbestos
	H16094/4-SV02	Soil	Asbestos
	H16094/4-SV03	Soil	Asbestos
	H16094/4-SV04	Soil	Asbestos
	H16094/4-SV05	Soil	Asbestos
	H16094/4-SV06	Soil	Asbestos
	H16094/4-SV07	Soil	Asbestos
	H16094/4-SV08	Soil	Asbestos
	H16094/4-SV09	Soil	Asbestos
	H16094/4-SV10	Soil	Asbestos

Notes:

- A copy of this Chain of Custody will be returned to sender's nominated email upon receipt of samples.
- Each sample is to be in a sealed plastic bag marked with sample number/id, client name/company and date of sample.
- The samples and two copies of the chain of custody will be sealed in a second plastic bag for delivery to the SWE laboratory, Suite 7/103 Majors Bay Road, Concord NSW 2137 (02 8757 3611).

SWE Laboratory Use Only

Lab Job No. 516094/78 Date Received 25/11/16 Received By

Report Due Date 25/11/16 Date Report 25/11/16 Issued By

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35/103 Majors Bay Road, Concord, NSW 2137
Phone: 02 8757 3611 Fax: 02 8757 3611
Email: enquiries@swe.com.au

SAFE WORK & ENVIRONMENTS

25/11/2016

Attention: [redacted]
Company: Hazmat Plus
Fax/email: [redacted]
Address: PO Box 5931 Manly QLD 4179

SWE Reference: S105904.1026
Client Reference: H16094/4
Date of Receipt: 23 November 2016
NATA Accreditation No: **17092**

Asbestos Identification
This report presents the results of 3 samples, received at SWE Concord office on 23 November 2016 for analysis for asbestos.

1. Introduction: Three samples collected by client were examined and analysed as received for the presence of asbestos.

2. Methods: The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized light Microscopy in conjunction with Dispersion Staining.

3. Results:

SWE Ref.	DATE ANALYSED	SAMPLE REFERENCE AND DESCRIPTION	DIMENSIONS (g)	ASBESTOS DETECTED
S105904.1026-1	25/11/2016	H16094/4-SV01 - Soil	765 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected. Organic Fibres Detected.
S105904.1026-2	25/11/2016	H16094/4-SV02 - Soil	611 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected. Organic Fibres Detected.
S105904.1026-3	25/11/2016	H16094/4-SV03 - Soil	725 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected. Organic Fibres Detected.
S105904.1026-4	25/11/2016	H16094/4-SV04 - Soil	568 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected. Organic Fibres Detected.
S105904.1026-5	25/11/2016	H16094/4-SV05 - Soil	623 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected. Organic Fibres Detected.
S105904.1026-6	25/11/2016	H16094/4-SV06 - Soil	565 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected.

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SAFE WORK & ENVIRONMENTS

SWE Ref.	DATE ANALYSED	SAMPLE REFERENCE AND DESCRIPTION	DIMENSIONS (g)	ASBESTOS DETECTED
				Organic Fibres Detected.
S105904.1026-7	25/11/2016	H16094/4-SV07 - Soil	585 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected. Organic Fibres Detected.
S105904.1026-8	25/11/2016	H16094/4-SV08 - Soil	573 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected. Organic Fibres Detected.
S105904.1026-9	25/11/2016	H16094/4-SV09 - Soil	644 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected. Organic Fibres Detected.
S105904.1026-10	25/11/2016	H16094/4-SV10 - Soil	669 g	No Asbestos Detected at the reporting limit of 0.1g/kg. No Trace Asbestos Detected. Organic Fibres Detected.

Methodology: Qualitative identification of asbestos type fibres in bulk using Polarised Light Microscope carried out in accordance with AS4964-2004 and SWE's *In-House Method 3 – Fibre Identification*. The collection of the sampling is not covered under the below NATA Accreditation Scope.

NATA Accreditation Number: 17092
NATA Accreditation Scope: 7.82.31 – Asbestos Fibre Identification
7.84.31 – Asbestos

Approved Issuer of Reports

Approved Issuer of Reports

NATA
WORLD RECOGNISED ACCREDITATION

The results of the tests, calibrations and/or measurements in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025.

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Attachment 2 - Demolition Work Area and Sample Plan

Figure 1: Post-demolition site outline; 67 Buvelot Street, Weston ACT

Author: [redacted] - Hazmat Plus with permission from [redacted] – Safe Work & Environments on 28/11/2016

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For the purposes of this plan, the demolition area is defined as the area deemed by the assigned asbestos assessor to have been impacted by the demolition process.

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Attachment 3 - Photographs

Photograph 1: 67 Buvelot Street, Weston showing site view to the east.

Photograph 2: Closer view of 67 Buvelot Street showing soil scrap area.

Photograph 3: View of 67 Buvelot Street looking south from the western boundary. Note the retained metal shed and retaining walls and gardens.

Photograph 4: Close-up view of 67 Buvelot Street showing sample SV09 location.

Attachment 4 – Final Clearance Certificate

NON-FRIABLE ASBESTOS CLEARANCE REPORT
C101097Z/CLR3.v1

11 November 2016

Attention:
Company:
Email:

SWE Reference: C101097Z/CLR3.v1
Site Address: 67 Buvelot Street, Weston ACT
Date of Works: 11th November 2016

Dear ,

RE: C101097Z/CLR3 – Clearance Certificate for Non-Friable Asbestos Removal Works: 67 Buvelot Street, Weston ACT

Introduction

Safe Work and Environments Pty Ltd (SWE) was engaged by to undertake an asbestos clearance inspection & report following the removal of the remaining non-friable asbestos containing materials (ACM) from the residential building located at 67 Buvelot Street, Weston ACT. , a Licensed Asbestos Assessor ( ) undertook a clearance inspection upon completion of the works on the 11th of November, 2016.

The scope of work involved the following:

- Completion of an SHE&SWMS prior to undertaking works,
- Control air monitoring for airborne asbestos fibres during the asbestos removal works,
- Analysis of air monitoring samples by a NATA Accredited Laboratory;
- Visual Inspection of the subject areas following the asbestos removal works as per the scope of removal,
- Preparation of an Asbestos Clearance Report outlining the site information, conclusions and recommendations (if necessary).

Background

The residential property is one which has been affected by the installation of loose-fill asbestos (Mr. Fluffy). As such, the house is undergoing asbestos removal and demolition as a part of the Mr. Fluffy homes buy-back and demolition scheme. This asbestos clearance report follows the Hazmat Plus *"Mr Fluffy" Pre-Demolition Asbestos Survey Report* dated May 2016. The Scope of Removal has been derived from the asbestos containing materials identified within the Hazmat Plus report. This report is also preceded by the SWE Asbestos Clearance Report C101097Z-CLR2.v1 (friable asbestos clearance report) and this report should be read in conjunction this document henceforth.

This asbestos clearance report pertains to the non-friable asbestos removal works which requires all remaining non-friable asbestos materials to the exterior of the house to be removed following the completion and validation of the friable asbestos removal process. At the completion of these works and satisfaction of the visual clearance inspection, it is considered that all visible and accessible asbestos containing materials will have been removed from the site and the structure is ready for demolition.

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Scope of Removal

The following lists the scope of asbestos removal undertaken by the licensed asbestos removalist (Empire Contracting Pty Ltd) prior to the clearance inspection carried out on the 11th of October, 2016:

- Removal of the asbestos cement eaves to all sides of the house exterior;
- Removal of the asbestos cement wall sheeting to the main bathroom;
- Removal of the asbestos cement wall sheeting to the laundry;
- Removal of the asbestos cement debris from ground surface adjacent to garage door;
- Removal of 1 x presumed asbestos containing electrical backing board; and
- Application of paint / pigmented PVA solution to all the surfaces of non-asbestos building materials which remain at the locations of the non-friable asbestos removal.

Inspection Details

The inspection included the exterior of the house building and the remaining aluminium, meter board box. The visual clearance inspection confirmed that the asbestos containing materials listed in the scope of removal (above) have been appropriately removed from the subject areas. At the completion of the visual clearance inspection, the assessor observed surfaces of the remaining building materials to be coated in paint.

It must be noted that this asbestos clearance inspection was undertaken in consultation with the Hazmat Plus Asbestos Assessment report, and all asbestos materials identified in the report have been addressed. The aforementioned report presumed the presence of asbestos cement packers to the sub-floor area of the house; these were not removed as a part of this scope, however, will be removed at an appropriate time during demolition.

Conclusions & Recommendations

Based on the data presented in this report, it is the opinion of Safe Work & Environments Pty Ltd that:

- The visual clearance inspection confirmed that the asbestos materials have been satisfactorily removed from the subject areas as per the scope of removal,
- All surfaces and voids associated with the non-friable asbestos removal have been appropriately coated in paint / pigmented PVA solution, and
- The asbestos removal works are considered to be complete and the next stage of works may now occur (demolition of building).

Limitations

This report and the associated services performed by SWE are in accordance with the scope of services set out in the agreement between SWE and the Client. The scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the Subject Site. This Asbestos Clearance Report inspected the remaining building materials and does not take into account soil subsurface conditions.

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SWE derived the data in this report primarily from limited sample collection and analysis made on the dates indicated. In preparing this report, SWE has relied upon, and presumed accurate, certain information provided by government authorities, the Client and others identified herein. Except as otherwise stated in the report, SWE has not attempted to verify the accuracy or completeness of any such information.

No warranty, undertaking, or guarantee, whether expressed or implied, is made with respect to the data reported or to the findings, observation, conclusions and recommendations expressed in this report. Furthermore, such data, findings, observations, conclusions and recommendations are based solely upon the existence at the time of the investigation. The passage of time, manifestation of latent conditions or impacts of future events (e.g. changes in legislation, scientific knowledge, land uses, etc.) may require further investigation at the site with subsequent data analysis and re-evaluation of the findings, observation, conclusions and recommendations expressed in this report.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between SWE and the Client. SWE accepts no liability or responsibility whatsoever and expressly disclaims any responsibility for or in respect of any use of or reliance upon this report by any third party or parties.

Should you have any queries regarding this certificated, please do not hesitate to contact me on the undersigned.

Sincerely,

Senior Environmental and Hazmat Consultant

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POST DEMOLITION ASBESTOS CLEARANCE REPORT
C101097Z-CLR4.v1

18 November 2016

Attention:
Company:
Email:

SWE Reference: C101097Z/CLR4.v1
Site Address: 67 Buvelot Street, Weston ACT
Date of Works: 18th November 2016

Dear Michael,

RE: C101097Z/CLR4 – Clearance Certificate for Demolition (Asbestos Impacted Waste) Removal Works: 67 Buvelot Street, Weston ACT

Introduction

Safe Work and Environments Pty Ltd (SWE) was engaged by to undertake an asbestos clearance inspection & report following the demolition and removal of the residential building structure located at 67 Buvelot Street, Weston ACT. a Licensed Asbestos Assessor ( ) undertook a clearance inspection upon completion of the works on the 18th of November, 2016.

The scope of work involved the following:

- Completion of an SHE&SWMS prior to undertaking works,
- Visual Inspection of the site and the plant used following the demolition (asbestos impacted waste) removal works as per the scope of removal,
- Preparation of an Asbestos Clearance Report outlining the site information, site plan, conclusions and recommendations (if necessary).

Background

The residential property had been affected by the installation of loose-fill asbestos (Mr. Fluffy) insulation. As such, the house has undergone asbestos remediation and demolition as a part of the ACT Government Mr. Fluffy homes buy-back and demolition scheme. This asbestos clearance report follows the Hazmat Plus *Pre-Demolition Asbestos Survey* report (The report) dated May 2016. The Scope of Removal has been derived from the asbestos containing materials identified within the report. This report is also preceded by the SWE Asbestos Clearance Report C101097Z-CLR2.v1 (friable asbestos clearance report) and SWE Asbestos Clearance Report C101097Z-CLR3.v1 (non-friable asbestos clearance report). The three aforementioned reports should be read in conjunction this document henceforth.

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Scope of Removal

This asbestos clearance report pertains to the entire house structure and soil beneath and adjacent to the building footprint (refer to **Appendix A – Site Plan**). The following lists the scope of removal undertaken by the licensed asbestos removalist (Empire Contracting) in conjunction with the demolition contractor, ACT Demolition, prior to the clearance inspection carried out on the 18th of November 2016:

- Removal of the entire house structure (including footings) as asbestos impacted demolition waste,
- Removal of the topsoil across the entire footprint of the former house building location, and
- Removal of asbestos impacted demolition waste, soil and dust from the excavator used during demolition and load out process.

Inspection Details

Site

The inspection included the entire footprint of the house and areas adjacent to the former location of the house exterior walls. As such, the ground surface was inspected at these locations; the visual inspection confirmed that all building materials / demolition waste had been removed from the site, including the building footings. Additionally, it was observed that the topsoil had been removed from the house footprint area to facilitate the removal of any potentially asbestos contaminated soil.

Plant

The excavator was able to track to an immediately adjacent site (69 Buvelot Street, Weston) and as such no decontamination of this piece of plant was necessary. All waste transport vehicles used on the site were to remain on the Mr. Fluffy project.

It must be noted that this asbestos clearance relies on visual assessment of the subject areas / items and validation soil or dust sampling was not within the scope of works. SWE has been advised that an independent environmental consultant will undertake soil validation testing of the site at a later date.

Conclusions & Recommendations

Based on the data presented in this report, it is the opinion of Safe Work & Environments Pty Ltd that:

- The visual clearance inspection confirmed that the asbestos impacted demolition waste has been satisfactorily removed from the subject areas as per the scope of removal,
- The visual clearance inspection confirmed that the topsoil from beneath and adjacent to the house footprint had been removed,
- The nominated plant used in the load-out process has been cleaned to remove any asbestos impacted waste prior to moving onto other sites / works, and
- The removal of asbestos impacted demolition waste and soil is considered to be complete and the next stage of works (soil validation) may now occur.

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Limitations

This report and the associated services performed by SWE are in accordance with the scope of services set out in the agreement between SWE and the Client. The scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the Subject Site. This Asbestos Clearance Report inspected the ground surface of the subject site and does not take into account sub-surface conditions.

SWE derived the data in this report primarily from limited sample collection and analysis made on the dates indicated. In preparing this report, SWE has relied upon, and presumed accurate, certain information provided by government authorities, the Client and others identified herein. Except as otherwise stated in the report, SWE has not attempted to verify the accuracy or completeness of any such information.

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This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between SWE and the Client. SWE accepts no liability or responsibility whatsoever and expressly disclaims any responsibility for or in respect of any use of or reliance upon this report by any third party or parties.

Should you have any queries regarding this certificated, please do not hesitate to contact me on the undersigned.

Sincerely,

Senior Environmental and Hazmat Consultant

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APPENDIX A – SITE PLAN

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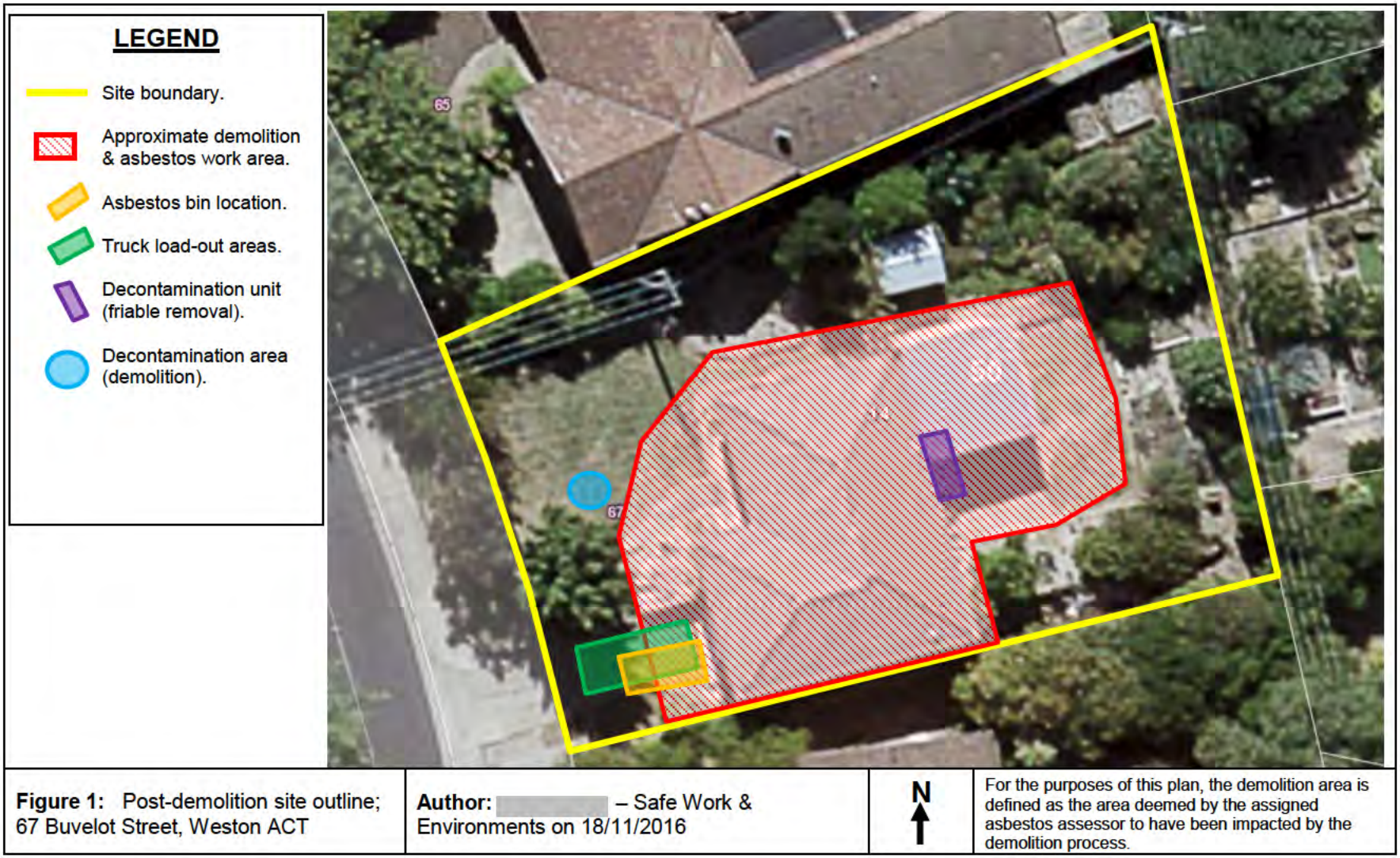

Figure 1: Post-demolition site outline; 67 Buvelot Street, Weston ACT

Author: [redacted] – Safe Work & Environments on 18/11/2016

For the purposes of this plan, the demolition area is defined as the area deemed by the assigned asbestos assessor to have been impacted by the demolition process.

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APPENDIX B – PHOTOGRAPHS

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Photograph 1: The demolition area from the front side of the block, facing east -north-east.

Photograph 2: The demolition area from the rear side of the block, facing west.

Photograph 3: The demolition area from the northern side of the block, facing south.

Photograph 4: The demolition area from the north-western side of the block.

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Loose Fill Asbestos Site Soil Validation Report

Block 1, Section 16, TORRENS

1 Hawker St, Torrens

(Package AF1)

Prepared by: Lancaster & Dickenson Consulting Pty Ltd

For

ACT Asbestos Response Taskforce

Introduction

This report contains the results of an investigation and remediation of asbestos fibres in soil of the demolition work area of a property which is a registered loose fill asbestos affected property.

The Australian Capital Territory (Territory) has acquired a number of properties affected with loose fill asbestos insulation (comprising mainly Amosite and some Crocidolite asbestos) and is carrying out remediation of the demolition work area of the properties to ensure that the land is suitable for future residential reuse.

Lancaster & Dickenson Consulting (L & D) were engaged by the Territory to provide sampling to validate the remediation of asbestos fibres in soil within the demolition work area for the sole purpose of assisting the Territory with its pre-development investigations in land identified for release for future residential reuse following completion of preliminary works by others, namely:

- demolition of the house by a principal contractor, including a scrape of affected soil;
- clearance of the site as free of visible asbestos by a licensed asbestos assessor (LAA); and
- definition of the demolition work area by a LAA.

The demolition work area is the area to which the asbestos removal clearance certificate applies and is defined by the LAA. It generally comprises the original pre-demolition structure footprint of the affected premises, the decontamination unit and asbestos waste skip handling area, and the soil disturbance work area of the demolition contractor. It excludes the remainder of the property including earthworks outside of the demolition

work area where other non-affected structures have been removed or landscaping work carried out. The LAA prepared a simple plan of the demolition work area for later sampling of soil by the L&D soil validator.

Prior to sampling of soil in the demolition work area (refer to the methodology used for the sampling of soils described below), [redacted] of L&D met on the site with a representative of the principal contractor (Capcorp Group), who identified the extent of the demolition work area (as defined by the LAA). The confirmed demolition work area for soil sampling is illustrated in Attachment A.

The scope of work was performed solely for the Territory and specifically targeted loose fill asbestos insulation (comprising mainly Amosite and some Crocidolite fibres). Any other forms of contaminants on site (e.g. lead, non-friable asbestos) were not assessed. This report (including the conclusions and recommendations it contains) is prepared solely for use by the Territory and may not be used or replied upon by any other party. Any other party must make its own inquiries and obtain independent advice.

L&D has assumed that all information provided to it by the principal contractor and LAA, including the clearance certificate as presented in Attachment D, is accurate and complete.

The asbestos fibre in soil investigation was done in accordance with the Asbestos Response Taskforce Information sheet - Soil Validation Process (dated 10 November 2015), the ACT Government-endorsed *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* (the NEPM ASC) and the 'Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia (May 2009)' (the WA Guidelines).

The investigation was undertaken after all visible loose fill asbestos and any other visible asbestos containing materials had been removed from the demolition work area, including a scrape of affected soil from the demolition work area, and a post demolition asbestos removal clearance certificate was issued by LAA [redacted] of WSP (Licence number [redacted]).

Site Identification and Soil Condition of Demolition Work Area

Block and Section:	Block 1, Section 16, TORRENS
Block Size:	1051 m²
Size of Demolition Area:	Approx. 600 m²
Remaining Site Structures:	-
Soil Conditions	The soil was moist at the time of sampling

Site Demolition Work Area and Sampling Plan

A plan showing the demolition works area and sample locations is presented in Attachment A.

Soil Sampling Methodology At Demolition Work Area

[redacted] of L&D Consulting (ACT Asbestos Assessors Licence no. [redacted]) attended the site on Saturday, 23 September 2017 after the principal contractor confirmed the completion of demolition work and site clearance by the LAA.

The sampling density required to assess the soil within the demolition area was based on the WA DOH (2009) 'Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia' (WA Guideline). This guideline has been endorsed by the ACT environment and Sustainable Development Directorate (ESDD) for use on site within the ACT.

When determining the sample density required for the demolition area, reference is made to Table 1 of the WA Guideline. It is considered that the likelihood of asbestos being present within the demolition area as 'likely'. Therefore the sample density recommended in Attachment A of the WA Guideline was applied. For the demolition area which was estimated to be between 500 m² and 1000 m², at least twelve (12) sampling points were required.

Representative samples were collected by hand using a clean stainless-steel shovel at locations set out using a systematic grid pattern. Samples were collected in general accordance with the procedures outlined in Section 4.1 of the WA Guideline.

The sampling methodology detailed in the WA Guideline was considered appropriate as the purpose of the sampling was to assess for the presence of asbestos fibres within the demolition area.

Soil Validation Results

The following soil validation sample results were returned from the NATA accredited laboratory, with the laboratory certificate provided at Attachment B.

Table 1: Post Demolition Soil Validation Sample Results

Sample No.	Asbestos Fibre Content	Comments
1	**Amosite asbestos detected**	**Loose fibre bundles**
2	No asbestos detected	-
3	No asbestos detected	-
4	No asbestos detected	-
5	No asbestos detected	-
6	No asbestos detected	-
7	No asbestos detected	-
8	No asbestos detected	-
9	No asbestos detected	-
10	No asbestos detected	-
11	No asbestos detected	-
12	No asbestos detected	-

Analytical Procedures

Asbestos in soil analysis was carried out in accordance with the WA Guidelines and the 'Australian Standard for the Qualitative Identification of Asbestos in Bulk Samples' (AS4964-2004).

Hot Spot Treatment

L&D issued the laboratory results and a plan outlining the location of the sample that contained Amosite asbestos (Sample 1). The plan also included the recommended extent of the 'Hot Spot Treatment Area'. Capcorp advised L&D on 10 October 2017 that the hotspot treatment works had been undertaken. Kyle Lancaster of L&D Consulting (ACT Asbestos Assessors Licence no. AA00004) returned to the site on 11 October 2017 and collected one (1) sample (Sample 1-2) from within the 'Hot Spot Treatment Area'. The result of this sample is presented in Table 2 below. The NATA laboratory certificate for the sample is also presented in Attachment B.

Table 2: Post Hotspot Treatment Soil Validation Sample Results

Sample No.	Asbestos Fibre Content	Comments
1-2	No asbestos detected	-

Recommendation for Residential Reuse

The asbestos in soil investigation and remediation work to address potential impact of asbestos fibres in the demolition work area of a former house affected by loose fill asbestos at Block 1, Section 16, TORRENS (1 Hawker St, Torrens) has been completed in accordance with the NEPM ASC and the WA Guidelines as detailed in this report. On that basis, I recommend to the Territory that the demolition work area of this property is suitable for residential reuse with respect to asbestos fibres.

For and on behalf of Lancaster & Dickenson Consulting Pty Ltd,

Licensed ACT Asbestos Assessor Licence Number:

Date: 08 November 2017

Attachments

Attachment A: Site Sample Plan

Attachment B: Certificate of Analysis

Attachment C: Photographs

Attachment D: Clearance Certificate

ATTACHMENT A

Site Sample Plan

L&D CONSULTING
LANCASTER & DICKENSON

SITE DETAILS
Block 1, Section 16
1 Hawker St
Torrens, ACT

KEY
- DEMOLITION WORK AREA
- SAMPLE LOCATION (ASBESTOS DETECTED)
- SAMPLE LOCATION (NO ASBESTOS DETECTED)
- SITE OUTLINE

The demolition work area is defined as the area comprising the original structure footprint of the affected premises the decontamination unit and asbestos waste skip and truck handling area and the soil disturbance work area of the demolition contractor.

LANCASTER AND DICKENSON CONSULTING
UNIT 1 6 DACRE ST
MITCHELL ACT 2911
PHONE: (02) 6280 0203
Web: www.landd.com.au
Email: admin@landd.com.au

CLIENT
Procurement and Capital Works

N

DRAWING TITLE
SOIL VALIDATION SAMPLING PLAN

Revision: 1
Drawn by:
Date created: 11/10/2017
Checked by:

ATTACHMENT B

Certificate Of Analysis

L&D CONSULTING
LANCASTER & DICKENSON

Lancaster & Dickenson Consulting Pty Ltd
1/6 Dacre Street
Mitchell ACT 2911
W: www.landd.com.au

ASBESTOS FIBRE IDENTIFICATION TEST REPORT

CLIENT DETAILS		LABORATORY DETAILS	
Client Name:	Procurement and Capital Works	**Address:**	1/6 Dacre Street Mitchell ACT 2911
Client Contact:	Ben McDuff		
Email:	Ben.mcduff@act.gov.au	**Lab Manager:**	
Site Name/Reference:	1 Hawker St, Torrens	**Email:**	

REPORT DETAILS			
Certificate Reference:	LD2963ID28/09/2017	**Samples Received:**	23/09/2017
No. of Samples:	12	**Report Issue Date:**	03/10/2017

Test Specifications: Qualitative identification of Chrysotile, Amosite and Crocidolite asbestos fibre in bulk samples using Polarised Light Microscopy (PLM) and Dispersion Staining Techniques including Synthetic Mineral Fibre (SMF) and Organic Fibre as per Australian Standard 4964-2004 and methods identified in Section C of the Lancaster & Dickenson Consulting (L & D) Laboratory Manual.

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Description	Sample Mass	Non-Asbestos Fibres Detected	Asbestos Fibres Detected
LD2963ID28/09/2017-1	1	28/09/2017	Brown sandy soil	607.8g	Organic Fibres Detected	**Amosite Asbestos Detected**
LD2963ID28/09/2017-2	2	28/09/2017	Brown sandy soil	682.4g	Organic Fibres Detected	**No Asbestos Detected**
LD2963ID28/09/2017-3	3	28/09/2017	Dark brown soil	584.8g	Organic Fibres Detected	**No Asbestos Detected**
LD2963ID28/09/2017-4	4	28/09/2017	Brown sandy soil	686.1g	Organic Fibres Detected	**No Asbestos Detected**
LD2963ID28/09/2017-5	5	28/09/2017	Light brown sandy soil	796.9g	Organic Fibres Detected	**No Asbestos Detected**
LD2963ID28/09/2017-6	6	28/09/2017	Light brown sandy soil	680.7g	Organic Fibres Detected	**No Asbestos Detected**
LD2963ID28/09/2017-7	7	28/09/2017	Light brown sandy soil	743.8g	SMF and Organic Fibres Detected	**No Asbestos Detected**
LD2963ID28/09/2017-8	8	03/10/2017	Brown sandy soil	608.5g	Organic Fibres Detected	**No Asbestos Detected**
LD2963ID28/09/2017-9	9	03/10/2017	Beige sandy soil	677.5g	Organic Fibres Detected	**No Asbestos Detected**
LD2963ID28/09/2017-10	10	03/10/2017	Brown sandy soil	742.1g	Organic Fibres Detected	**No Asbestos Detected**

L&D APPROVED IDENTIFIER		L&D APPROVED SIGNATORY
	NATA WORLD RECOGNISED ACCREDITATION **Accreditation no: 19512** Accredited for compliance with ISO/IEC 17025.	

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L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Description	Sample Mass	Non-Asbestos Fibres Detected	Asbestos Fibres Detected
LD2963ID28/09/2017-11	11	03/10/2017	Brown sandy soil	582.5g	Organic Fibres Detected	**No Asbestos Detected**
LD2963ID28/09/2017-12	12	03/10/2017	Brown sandy soil	609.5g	Organic Fibres Detected	**No Asbestos Detected**

Notes:

1. Asbestos in bulk materials requiring disintegration such as vinyl, resins, mastic and caulking can be difficult to detect using PLM and dispersion staining due to the low grade or small length or diameter of the asbestos fibres present in the material, or due to the fact that very fine fibres have been distributed intimately throughout the materials. Where no asbestos is detected in such a sample, another, independent analytical technique should be considered.
2. Where a sample is delivered to the laboratory by a third party, L & D accepts no responsibility for the quality of sample submitted, including whether the sample is representative of the source material.
3. All L & D reports must not be reproduced except in full.
4. The practical detection limit for identification of asbestos fibre using PLM and dispersion staining techniques is 0.01-0.1%, equivalent to 0.1-1g/kg.
5. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

L&D APPROVED IDENTIFIER		L&D APPROVED SIGNATORY
	NATA WORLD RECOGNISED ACCREDITATION Accreditation no: 19512 Accredited for compliance with ISO/IEC 17025.	

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ASBESTOS FIBRE IDENTIFICATION TEST REPORT

CLIENT DETAILS		LABORATORY DETAILS	
Client Name:	Procurement and Capital Works	**Address:**	1/6 Dacre Street Mitchell ACT 2911
Client Contact:	Ben McDuff		
Email:	Ben.mcduff@act.gov.au	**Lab Manager:**	
Site Name/Reference:	1 Hawker St, Torrens	**Email:**	

REPORT DETAILS			
Certificate Reference:	LD2963ID28/09/2017	**Samples Received:**	23/09/2017
No. of Samples:	12	**Report Issue Date:**	03/10/2017

Test Specifications: Qualitative identification of Chrysotile, Amosite and Crocidolite asbestos fibre in bulk samples using Polarised Light Microscopy (PLM) and Dispersion Staining Techniques including Synthetic Mineral Fibre (SMF) and Organic Fibre as per Australian Standard 4964-2004 and methods identified in Section C of the Lancaster & Dickenson Consulting (L & D) Laboratory Manual.

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Mass	Weight of FA and/or AFs in 2mm-7mm fraction	Mass of <2mm fraction Sub-sample	Weight of FA and/or AFs in <2mm sub sample	Percentage w/w of asbestos (FA and AF) in sub-sample	Asbestos Fibres Detected
LD2963ID28/09/2017-1	1	28/09/2017	607.8g	0.0g	49.4g	>0.0g	**>0.001**	**Amosite Asbestos Detected**
LD2963ID28/09/2017-2	2	28/09/2017	682.4g	0.0g	42.3g	0.0g	**<0.001**	**No Asbestos Detected**
LD2963ID28/09/2017-3	3	28/09/2017	584.8g	0.0g	51.0g	0.0g	**<0.001**	**No Asbestos Detected**
LD2963ID28/09/2017-4	4	28/09/2017	686.1g	0.0g	55.5g	0.0g	**<0.001**	**No Asbestos Detected**
LD2963ID28/09/2017-5	5	28/09/2017	796.9g	0.0g	58.9g	0.0g	**<0.001**	**No Asbestos Detected**
LD2963ID28/09/2017-6	6	28/09/2017	680.7g	0.0g	54.9g	0.0g	**<0.001**	**No Asbestos Detected**
LD2963ID28/09/2017-7	7	28/09/2017	743.8g	0.0g	43.2g	0.0g	**<0.001**	**No Asbestos Detected**
LD2963ID28/09/2017-8	8	03/10/2017	608.5g	0.0g	45.2g	0.0g	**<0.001**	**No Asbestos Detected**
LD2963ID28/09/2017-9	9	03/10/2017	677.5g	0.0g	41.0g	0.0g	**<0.001**	**No Asbestos Detected**
LD2963ID28/09/2017-10	10	03/10/2017	742.1g	0.0g	52.6g	0.0g	**<0.001**	**No Asbestos Detected**

L&D APPROVED IDENTIFIER		L&D APPROVED SIGNATORY

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1/6 Dacre Street
Mitchell ACT 2911
W: www.landd.com.au

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Mass	Weight of FA and/or AFs in 2mm-7mm fraction	Mass of <2mm fraction Sub-sample	Weight of FA and/or AFs in <2mm sub sample	Percentage w/w of asbestos (FA and AF) in sub-sample	Asbestos Fibres Detected
LD2963ID28/09/2017-11	11	03/10/2017	582.5g	0.0g	45.2g	0.0g	**<0.001**	**No Asbestos Detected**
LD2963ID28/09/2017-12	12	03/10/2017	609.5g	0.0g	52.3g	0.0g	**<0.001**	**No Asbestos Detected**

Notes:

1. Where a sample is delivered to the laboratory by a third party, L & D accepts no responsibility for the quality of sample submitted, including whether the sample is representative of the source material.
2. All L & D reports must not be reproduced except in full.
3. The practical detection limit for identification of asbestos fibre using PLM and dispersion staining techniques is 0.01-0.1%, equivalent to 0.1-1g/kg.
4. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia - May 2009*
5. FA = fibrous asbestos, AF = asbestos fines

* = As per WA Government Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated sites - May 2009. Recommended Procedures for Laboratory Analysis of Asbestos in Soil (June 2011); A positive result is typically considered to exceed the 0.001% w/w investigation criteria applied to fine (<7 mm) asbestos material.

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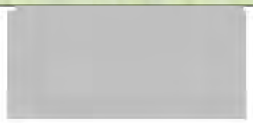		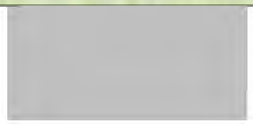

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ASBESTOS FIBRE IDENTIFICATION TEST REPORT

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Client Contact:	Ben McDuff		
Email:	Ben.mcduff@act.gov.au	**Lab Manager:**	
Site Name/Reference:	1 Hawker St, Torrens	**Email:**	

REPORT DETAILS			
Certificate Reference:	LD2963ID11/10/2017	**Samples Received:**	11/10/2017
No. of Samples:	1	**Report Issue Date:**	11/10/2017

Test Specifications: Qualitative identification of Chrysotile, Amosite and Crocidolite asbestos fibre in bulk samples using Polarised Light Microscopy (PLM) and Dispersion Staining Techniques including Synthetic Mineral Fibre (SMF) and Organic Fibre as per Australian Standard 4964-2004 and methods identified in Section C of the Lancaster & Dickenson Consulting (L & D) Laboratory Manual.

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Mass	Weight of FA and/or AFs in 2mm-7mm fraction	Mass of <2mm fraction Sub-sample	Weight of FA and/or AFs in <2mm sub sample	Percentage w/w of asbestos (FA and AF) in sub-sample	Asbestos Fibres Detected
LD2963ID11/10/2017-1	1-2	11/10/2017	668.2g	0.0g	54.4g	<0.0g	**<0.001**	**No Asbestos Detected**

Notes:

1. Where a sample is delivered to the laboratory by a third party, L & D accepts no responsibility for the quality of sample submitted, including whether the sample is representative of the source material.
2. All L & D reports must not be reproduced except in full.
3. The practical detection limit for identification of asbestos fibre using PLM and dispersion staining techniques is 0.01-0.1%, equivalent to 0.1-1g/kg.
4. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia - May 2009*
5. FA = fibrous asbestos, AF = asbestos fines

* = As per WA Government Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated sites - May 2009. Recommended Procedures for Laboratory Analysis of Asbestos in Soil (June 2011); A positive result is typically considered to exceed the 0.001% w/w investigation criteria applied to fine (<7 mm) asbestos material.

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REPORT DETAILS			
Certificate Reference:	LD2963ID11/10/2017	**Samples Received:**	11/10/2017
No. of Samples:	1	**Report Issue Date:**	11/10/2017

Test Specifications: Qualitative identification of Chrysotile, Amosite and Crocidolite asbestos fibre in bulk samples using Polarised Light Microscopy (PLM) and Dispersion Staining Techniques including Synthetic Mineral Fibre (SMF) and Organic Fibre as per Australian Standard 4964-2004 and methods identified in Section C of the Lancaster & Dickenson Consulting (L & D) Laboratory Manual.

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Description	Sample Mass	Non-Asbestos Fibres Detected	Asbestos Fibres Detected
LD2963ID11/10/2017-1	1-2	11/10/2017	Brown sandy soil	668.2g	Organic Fibres Detected	**No Asbestos Detected**

Notes:

1. Asbestos in bulk materials requiring disintegration such as vinyl, resins, mastic and caulking can be difficult to detect using PLM and dispersion staining due to the low grade or small length or diameter of the asbestos fibres present in the material, or due to the fact that very fine fibres have been distributed intimately throughout the materials. Where no asbestos is detected in such a sample, another, independent analytical technique should be considered.
2. Where a sample is delivered to the laboratory by a third party, L & D accepts no responsibility for the quality of sample submitted, including whether the sample is representative of the source material.
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5. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

L&D APPROVED IDENTIFIER		L&D APPROVED SIGNATORY
	NATA WORLD RECOGNISED ACCREDITATION **Accreditation no: 19512** Accredited for compliance with ISO/IEC 17025.	

ATTACHMENT C

Site Photographs

Photographs

Photograph 1
Site

Photograph 2
Site

ATTACHMENT D

Clearance Certificate

CAPCORP GROUP

1 HAWKER STREET, TORRENS ACT 2607

ASBESTOS CLEARANCE CERTIFICATE

SEPTEMBER 2017

CONFIDENTIAL

1 HAWKER STREET, TORRENS ACT 2607

ASBESTOS CLEARANCE CERTIFICATE

CAPCORP GROUP

CONFIDENTIAL

PROJECT NO 2259211C
DATE: SEPTEMBER 2017

WSP
LEVEL 1, 121 MARCUS CLARKE STREET
CANBERRA ACT 2601
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CANBERRA ACT 2600

TEL: +61 2 6201 9600
FAX: +61 2 6201 9666
WSP.COM

REV	DATE	DETAILS
0	21/09/2017	Original

	NAME	DATE	SIGNATURE
Prepared by:		21/09/2017	
Reviewed by:		21/09/2017	

CLEARANCE CERTIFICATE – ASBESTOS REMOVAL

COMPLIANT WITH PART 3.10 OF SAFE WORK AUSTRALIA DOCUMENT: HOW TO SAFELY REMOVE ASBESTOS, CODE OF PRACTICE 2014

AS ENFORCED BY WORKSAFE ACT.

SECTION A- GENERAL DETAILS

Client details	
Name of client:	Capcorp Group Pty Ltd
Client contact details:	
Asbestos removal work details	
Site address where asbestos removal was carried out:	1 Hawker Street, Torrens ACT 2607
Date(s) asbestos removal work carried out:	Approx.: 11th September - 21st September, 2017
Scope of work (as advised by client/contractor):	Removal of the top 150mm of soil from the residential dwelling footprint to remove potentially asbestos impacted waste which is derived from the demolition of the residential dwelling at 1 Hawker Street, Torrens ACT 2607.
Details of the specific asbestos removal work area(s):	Ground surfaces of the residential dwelling footprint.
Type of asbestos containing material removed:	☐ Friable ☐ Non-Friable ☒ Asbestos impacted waste
Name of Demolition Contractor:	Paraco Projects
Licence Details:	N/A

SECTION B – ASBESTOS IMPACTED WASTE REMOVAL

Date of clearance inspection:	Thursday 21st September, 2017
Evidence of PVA/sealant application:	Yes ☐ No ☐ NA ☒
The transit route and waste routes are free from any visible asbestos	Yes ☒ No ☐ NA ☐
Limitation of Clearance	WSP Australia visually inspected the demolition works area ground surfaces and determined that the asbestos impacted waste has been removed and the areas cleaned to a satisfactory level. This inspection and clearance certificate is valid for areas which were visually accessible at the time of inspection.
Areas not accessed:	Areas below the ground surface, ground surfaces outside of the demolition works area and site boundary retaining structures.
Visual inspection satisfactory:	Yes ☒ No ☐
Clearance and/or Control air monitoring conducted:	Yes ☒ No ☐ undertaken by others.
Results of air monitoring satisfactory:	Yes ☐ No ☐ NA ☐ not available

SECTION C - CLEARANCE DECLARATION

I declare that:

Based on the above findings the ground surfaces of the demolition work area is considered visually clear of asbestos impacted waste.

SECTION D - ASSESSORS SIGNATURE

Prepared by:		Date: 21/09/2017	Signature:	
Assessor Number				

- ATTACHMENT TICK LIST

Certificate of analysis	Yes ☐ No ☒ NA ☐
Photographs	Yes ☒ No ☐ NA ☐
Site maps/plans/sketches	Yes ☒ No ☐ NA ☐

- STANDARD LIMITATIONS OF CLEARANCE INSPECTIONS (NSW/ACT)

In accordance with WHS regulation 2016, Chapter 8, Part 8.7, Clause 473: "A clearance inspection is an inspection of an asbestos removal area after asbestos removal work has been completed to verify that the area is safe for normal use, that: (a) includes a visual inspection, and (b) may include air monitoring".

The surface area and immediate vicinity has been visually determined to be clear of visible asbestos residue as specified for remediation. This clearance certificate is valid for areas which were visually accessible at the time of inspection as detailed in the scope of works.

Inspections are only carried out to the areas detailed to be removed and are conducted where access is available. Specifically no inspection has been carried out to areas that may require further remediation to verify the presence of asbestos. Please note that the visual clearance is limited to the surface of material(s) and/or soil(s) which were safely accessible at the time of inspection.

It should be noted that no inspection can be regarded as absolute and that additional asbestos may be encountered or uncovered upon further inspection, building works, or in particular excavations. The inspection was carried out at the time of the completion of the remediation works and was dependent upon site conditions at that time. WSP Australia accepts no responsibility or liability for the completeness of the removal. Comments above regarding the aspects of the inspection also form limitations. The contractor's responsibilities included:

- Ensuring that work methods and procedures comply with the relevant legislation, codes of practice and industry standards, and undertake work in accordance with technical specifications.
- Employing suitably trained, skilled and competent staff.
- Ensuring that contractors are inducted in safe work procedures for asbestos materials/products.
- Obtaining the necessary approvals from regulatory authorities prior to starting any asbestos removal or maintenance activities.
- Ensuring that all work is conducted in a safe and competent manner.

APPENDIX A

PHOTOGRAPHS

A1 PHOTOGRAPHS

Photograph 1 – Dwelling footprint ground surfaces, taken from Western side of the site.

Photograph 2 – Dwelling footprint ground surfaces, taken from Northern side of the site.

Photograph 3 – Dwelling footprint ground surfaces, taken from Eastern side of the site.

Photograph 4 – Dwelling footprint ground surfaces, taken from Southern side of the site.

APPENDIX B

SITE PLAN

SITE PLAN

1 HAWKER STREET, TORRENS ACT 2607

Waste Bin Location

Demolition Work Area

Designated Truck Loading Area

Decontamination Unit

House Footprint

Plant Decontamination Area

Loose Fill Asbestos – Site Soil Validation Report

TORRENS, Block 9, Section 33:

18 Darke Street, Torrens, ACT 2607, Australia

Prepared by: WSP Australia Pty Limited

For

ACT Asbestos Response Taskforce

Introduction

This report contains the results of an investigation and remediation of asbestos fibres in soil of the demolition work area of a property which is a registered loose fill asbestos affected property.

The Australian Capital Territory ('Territory') has acquired a number of properties affected with loose fill asbestos insulation (comprising mainly amosite and some crocidolite asbestos) and is carrying out remediation of the demolition work area of the properties to ensure that the land is suitable for future residential reuse.

We were engaged by the Territory to provide sampling to validate the remediation of asbestos fibres in soil within the demolition work area for the sole purpose of assisting the Territory with its pre-development investigations in land identified for release for future residential reuse following completion of preliminary works by others, namely:

- demolition of the house by a principal contractor, including a scrape of affected soil;
- clearance of the site as free of visible asbestos by a licensed asbestos assessor; and
- definition of the demolition work area by a licensed asbestos assessor.

The demolition work area is the area to which the asbestos removal clearance certificate applies and is defined by the licensed asbestos assessor. It generally comprises the original pre-demolition structure footprint of the affected premises, the decontamination unit and asbestos waste skip handling area, and the soil disturbance work area of the demolition contractor. It excludes the remainder of the property including any earthworks outside of the demolition work area and where other non-affected structures have been removed or landscaping work carried out. The licensed asbestos assessor prepared a simple plan of the demolition work area for later sampling of soil by the soil validator (WSP Australia Pty Limited).

Prior to sampling of soil in the demolition work area (refer to the methodology used for the sampling of soils described below), WSP Australia Pty Limited met on the site with the principal contractor (Capcorp Constructions Pty Ltd), who identified the extent of the demolition work area (as defined by the licensed asbestos assessor). The confirmed demolition work area for soil sampling is illustrated in Figure 1, **Attachment A.**

The scope of work was performed solely for the Territory and specifically targeted loose fill asbestos insulation (comprising mainly amosite and some crocidolite fibres). Any other forms of contaminants on site (e.g. lead, bonded asbestos) were not assessed. This report (including the conclusions and recommendations it contains) is prepared solely for use by the Territory and may not be used or replied upon by any other party. Any other party must make its own inquiries and obtain independent advice.

WSP Australia Pty Limited has assumed (i) the accuracy and completeness of all information provided to it by the principal contractor and licensed asbestos assessor, and (ii) the integrity of the clearance certificate provided as **Attachment B.**

The asbestos fibre in soil investigation was done in accordance with the Asbestos Response Taskforce Information sheet - Soil Validation Process (dated 10 November 2015), the ACT Government-endorsed National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (the NEPM ASC) and the 'Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (May 2009)' (the WA Guidelines).

The investigation was undertaken after all visible loose fill asbestos and any other visible asbestos containing materials had been removed from the demolition work area, including a scrape of affected soil from the demolition work area, and a post demolition asbestos removal clearance certificate was issued by licensed asbestos assessor [redacted] of Robson Environmental [redacted].

Site Identification and Soil Condition of Demolition Work Area

The site may be identified according to the following parameters:

Parameter	Details	Parameter	Details
Division	TORRENS	**Block Size / Area**	1105 m^2
Block	9	**Demolition Work Area**	786 m^2
Section Number	33	**Original Site Features**	Single storey dwelling

The post-demolition and post-remediation surface site conditions were observed by WSP Australia Pty Limited to feature occasional rocks, pockets of gravel, plant matter, and broken glass; however, no suspected friable asbestos containing materials (ACM) were observed either at the surface or during sampling.

After the 100mm remedial soil 'scrape' had been completed within the demolition work area, underlying exposed soils were observed during WSP Australia Pty Limited's sampling to typically comprise brown to yellow clay sand with traces of gravel.

Site Demolition Work Area and Sampling Plan

A site drawing showing the site property boundary, demolition work area (as identified by the licenced asbestos assessor) and validation sample points is provided as Figure 1 in Attachment A.

Soil Sampling Methodology At Demolition Work Area

WSP Australia Pty Limited attended the site on 15 November 2017 after the Principal Contractor (Capcorp Constructions Pty Ltd) confirmed the completion of demolition works and site clearance.

A description of the sampling methodology is detailed below and a summary of the sampling works including locations and rates is provided in the subsequent table:

- Samples were obtained from the demolition work area. The samples were collected at a density which is twice that recommended in the adopted guidelines.
- Soil samples (approximately 500g) were collected in a soil sample bag that were then submitted to a NATA accredited laboratory for sieving and gravimetric determination of asbestos (<7 mm).

Location	Sample Rate	No. Samples	Analysis
Demolition Work Area	Twice the density as per table in Appendix A of WA Guidelines[1] (2 samples every 100m²)	11	Amosite and crocidolite and chrysotile fibres[2]

Note:

-the NEPM screening level of 0.001% w/w asbestos in soil for fibrous asbestos (FA) and asbestos fines (AF) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. As per page 34 of the Guidelines, soil contamination by free fibres should be determined according to the presence or absence of fibres.

[1]: There are no clean vertical excavation faces on the demolition work area perimeter, so perimeter samples may be omitted]

[2]: Chrysotile fibres are not in loose fill asbestos insulation. However, they may be present as a contaminant in the residential soil or as a result of demolition. Whilst this report validates the remediation of the demolition works area primarily with respect to amosite or crocidolite loose fill asbestos, this report also contains information on any action taken with respect to chrysotile asbestos fibres.

Samples were collected by an experienced environmental consultant.

The assessment was limited to the demolition work area (**Attachment A**) as defined by the licenced asbestos assessor (Simon Saville – AA00016).

Sampling locations are shown on the figure in **Attachment A**.

A photographic record of the validation sampling exercise is provided as **Attachment C.**

Validation Results

The following validation soil sample analytical results were returned from the laboratory; laboratory certificates are provided **Attachment D:**

Sample No.	Grid Location (Easting, Northing)		Result / Asbestos Type
S1	689539	6083257	Non-Detect / Not Applicable
S2	689540	6083270	Non-Detect / Not Applicable
S3	689541	6083279	Non-Detect / Not Applicable
S4	689533	6083280	Non-Detect / Not Applicable
S5	689527	6083285	Non-Detect / Not Applicable
S6	689522	6083285	Non-Detect / Not Applicable
S7	689524	6083276	Non-Detect / Not Applicable
S8	689519	6083266	Non-Detect / Not Applicable
S9	689526	6083265	Non-Detect / Not Applicable
S10	689533	6083271	Non-Detect / Not Applicable
S11	689534	6083285	Non-Detect / Not Applicable

Analytical Procedures

Asbestos in soil analysis was carried out in accordance with the WA Guidelines and the 'Australian Standard for the Qualitative Identification of Asbestos in Bulk Samples' (AS4964-2004).

Hot Spot Treatment

Not Applicable due to no sample failures.

Recommendation for Residential Reuse

The asbestos in soil investigation and remediation work to address potential impact of asbestos fibres in the demolition work area of a former house affected by loose fill asbestos at TORRENS, Block 9, Section 33, 18 Darke Street, has been completed as detailed in this report, in accordance with the NEPM ASC and the WA Guidelines. On that basis, I recommend to the Territory that the demolition work area of this property is suitable for residential reuse with respect to asbestos fibres.

For and on behalf WSP Australia Pty Limited

Associate Director

Date: 20 November 2017

Attachments

This Site Soil Validation Report should be read in conjunction with the following attachments:

- **Attachment A:** Figure 1
- **Attachment B:** Asbestos Clearance Certificate
- **Attachment C:** Photographic Record of Site Soil Validation
- **Attachment D:** Validation Sample Laboratory Certificate(s)

Attachment A: Figure 1

689495 689500 689505 689510 689515 689520 689525 689530 689535 689540 689545 689550 689555 689560 689565 689570 689575 689580 689585

6083305 6083300 6083295 6083290 6083285 6083280 6083275 6083270 6083265 6083260 6083255 6083250

ID	Comments
S1	No Friable Asbestos Detected
S2	No Friable Asbestos Detected
S3	No Friable Asbestos Detected
S4	No Friable Asbestos Detected
S5	No Friable Asbestos Detected
S6	No Friable Asbestos Detected
S7	No Friable Asbestos Detected
S8	No Friable Asbestos Detected
S9	No Friable Asbestos Detected
S10	No Friable Asbestos Detected
S11	No Friable Asbestos Detected

Legend

Asbestos Detection Result

No Friable Asbestos Detected

Demolition Work Area

Map: 2270476B_GIS_124_A	Author:
Date: 20/11/2017	Approved by:

Data source: © NSW Land and property Information, ESRI DigitalGlobe

0 5 10 m

1:250

Coordinate system: GDA 1994 MGA Zone 55
Scale ratio correct when printed at A3

\\apsydfil03\PROJS\SHARED_SERVICES_PROCUREME\2270476B_ROUND_6_MR_FLUFFY_SOIL\10_GIS\Projects\Maps\2270476B_GIS_124_A.mxd

Loose Fill Asbestos Affected Property - Site Soil Validation
Figure 1
18 Darke Street, Torrens, ACT

ACT Government

www.wsp.com

Attachment B: Robson Environmental Asbestos Clearance Certificate

Attachment C: Photographic Record of Site Soil Validation

	PHOTOGRAPHIC REGISTER Site Soil Validation	
Client Name ACT Government	**Site Location** TORRENS, Block 9, Section 33: 18 Darke Street, Torrens, ACT 2607, Australia	**Project No.** 2270476B-98

Photo No.	**Date**
1	15/11/2017

Description

Sample site location.

Photo No.	**Date**
2	15/11/2017

Description

Post demolition and scrape, facing north.

	PHOTOGRAPHIC REGISTER Site Soil Validation	
Client Name ACT Government	**Site Location** TORRENS, Block 9, Section 33: 18 Darke Street, Torrens, ACT 2607, Australia	**Project No.** 2270476B-98

Photo No.	**Date**
3	15/11/2017

Description

Post demolition and scrape, facing north-east.

Photo No.	**Date**
4	15/11/2017

Description

Post demolition and scrape, facing north.

	PHOTOGRAPHIC REGISTER Site Soil Validation	
Client Name ACT Government	**Site Location** TORRENS, Block 9, Section 33: 18 Darke Street, Torrens, ACT 2607, Australia	**Project No.** 2270476B-98

Photo No.	**Date**
5	15/11/2017

Description

Post demolition and scrape, facing east.

Photo No.	**Date**
6	15/11/2017

Description

Post demolition and scrape, soil detail.

Attachment D: Validation Sample Laboratory Certificates

WSP

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

18 DARKE STREET, TORRENS ACT 2607

NOVEMBER 2017

GRAVIMETRIC DETERMINATION AND QUANTIFICATION OF ASBESTOS IN SOIL

18 DARKE STREET, TORRENS ACT 2607

WSP

WSP
LEVEL 1, 121 MARCUS CLARKE STREET
CANBERRA ACT 2601
PO BOX 1551
CANBERRA ACT 2600

TEL: +61 2 6201 9600
FAX: +61 2 6201 9666
WSP.COM

REV	DATE	DETAILS
1	16/11/17	18 Darke Street Torrens ACT 2607_ACT-2270476B-0092-84956

	NAME	DATE	SIGNATURE
Prepared by:	[redacted]	16/11/17	[redacted]
Reviewed by:	[redacted]	16/11/17	[redacted]

ABBREVIATIONS

A	Amosite Asbestos Detected
ACM	Asbestos Containing Material
AF	Asbestos Fines
C	Crocidolite Asbestos Detected
CH	Chrysotile Asbestos Detected
FA	Fibrous Asbestos
NAD	No Asbestos Detected
NEPM	National Environment Protection Measures
OF	Organic Fibres Detected
PLM	Polarised Light Microscopy
SMF	Synthetic Mineral Fibres Detected
UMF	Unknown Mineral Fibres Detected

ANALYSIS METHODOLOGY

AS 4964-2004 - Soils: Samples received by the laboratory are analysed in accordance with section 8.2.3 *Soil Samples* of Australian Standard (AS 4964-2004). Trace analysis is conducted in accordance with section 8.4 *Trace analysis criteria* of the standard. Asbestos analysis is conducted in accordance with the standard section 8.3.3 *Analytical criteria*, and follows methodology outlined in Appendix D *Simplified flowchart for bulk asbestos identification.*

Quantification of Asbestos in Soils: There is no accepted valid analytical method in Australia for estimating the concentration of asbestos in soils. NATA does not accredit facilities for the estimation of the concentration of ACM or free asbestos fibres in soils. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation, and Management of Asbestos-Contaminated Sites in Western Australia – May 2009* and Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)].

Percentages for asbestos content in materials and reporting limits of percentage weight for weight asbestos in soil are based on values outlined in Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater [National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)]. Non-Friable (ACM) weight is calculated based on the assumption of 15% asbestos by weight in non-friable ACM products used in Australia. Friable asbestos weight, including Fibrous Asbestos (AF) and Asbestos Fines (AF), is calculated based on the assumption of 100% asbestos by weight.

The reporting limit of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This reporting limit is not applicable to free fibres (Respirable Fibres). Loose respirable fibres are detected under criteria set by Australian Standard (AS 4964-2004), section 8.4 *Trace analysis criteria*, with an implied detection and reporting limit of 0.1g/kg.

METHOD SPECIFIC DEFINITION

- Asbestos Containing Materials (ACM) - comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
- Fibrous Asbestos (FA) - comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded (non-friable) or was previously bonded and is now significantly degraded (crumbling).
- Asbestos Fines (AF) - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

All calculations of percentage Asbestos under this method are approximate and should be used as a guide only. Such results cannot be used in place of field evaluations.

These quantitative results are not covered by the scope of NATA accreditation.

ANALYSIS RESULTS

	UNIT	LIMIT OF REPORTING	SAMPLE: S1	SAMPLE: S2	SAMPLE: S3	SAMPLE: S4	SAMPLE: S5	SAMPLE: S6	SAMPLE: S7	SAMPLE: S8	SAMPLE: S9	SAMPLE: S10	SAMPLE: S11
Total Soil Weight	g	1	802	616	697	865	796	711	661	819	942	836	823
Asbestos Type Detected	N/A	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Free Fibres (Respirable Fibres) in <2mm Sample	g/kg	0.1	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
ACM in >7mm Sample	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
FA & AF	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ACM in >7mm Sample (as 15% Asbestos)	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FA & AF (as 100% asbestos)	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

These quantitative results are not covered by the scope of NATA accreditation.

LEGEND:

NAD	No Asbestos Detected
CH	Chrysotile Asbestos Detected
A	Amosite Asbestos Detected
C	Crocidolite Asbestos Detected
UMF	Unknown Mineral Fibres Detected

APPENDIX A

AS 4964 LABORATORY CERTIFICATES

WSP Australia Pty Limited

Level 1 121 Marcus Clarke Street
PO Box 1551 Canberra ACT 2600
Telephone +61 2 6201 9600
Facsimile +61 2 6201 9666
Email ANZLab@pbworld.com

ABN 80 078 004 798
NCSI Certified Quality System ISO 9001

Certificate of Analysis

LOCATION:	**18 Darke Street, Torrens ACT 2607**	**CERTIFICATE NO:**	**ACT-2270476B-0091-84955**
CLIENT:	ACT Procurement	DATE\S SAMPLED:	15/11/2017
CLIENT ADDRESS:	PO Box 818, Dickson ACT 2602	DATE RECEIVED:	15/11/2017
TELEPHONE:	62058636	DATE ANALYSED:	16/11/2017
EMAIL:	Grant.Johnston@act.gov.au	ORDER NUMBER:	98
CONTACT:	Grant Johnston	SAMPLED BY:	

TEST METHOD: Qualitative identification of Asbestos fibre in bulk and soil samples at WSP Corporate Laboratories, by polarised light microscopy, including dispersion staining techniques using AS4964 (2004) and supplementary in house laboratory procedure (LP3 - Identification of Asbestos Fibres). This document is issued in accordance with NATA's requirements under NATA accreditation No. 17199, accredited for compliance with ISO/IEC: 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standard.

Lab No	Sample ID	Sample Description	Sample Dimensions	Identification Type
001	S1	Soil	802 gm	OF, NAD
002	S2	Soil	616 gm	OF, NAD
003	S3	Soil	697 gm	OF, NAD
004	S4	Soil	865 gm	OF, NAD
005	S5	Soil	796 gm	OF, NAD
006	S6	Soil	711 gm	OF, NAD
007	S7	Soil	661 gm	OF, NAD
008	S8	Soil	819 gm	OF, NAD
009	S9	Soil	942 gm	OF, NAD
010	S10	Soil	836 gm	OF, NAD
011	S11	Soil	823 gm	OF, NAD

LEGEND:

NAD	-	No Asbestos Detected
CH	-	Chrysotile Asbestos Detected
A	-	Amosite Asbestos Detected
C	-	Crocidolite Asbestos Detected
UMF	-	Unknown Mineral Fibres Detected
SMF	-	Synthetic Mineral Fibres Detected
OF	-	Organic Fibres Detected

Hand picked refers to small discrete amounts of asbestos distributed unevenly in a large body of non asbestos material.

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

Approved Identifier

Name:

Approved Signatory

Name:

AUTHORISATION DATE

16/11/2017

Notes:
If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.
The results contained within this report relate only to the sample(s) submitted for testing. WSP accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.

Loose Fill Asbestos Site Soil Validation Report

Block 5, Section 18, TORRENS

4 Wyatt St, Torrens

(Package AF2)

Prepared by: Lancaster & Dickenson Consulting Pty Ltd

For

ACT Asbestos Response Taskforce

Introduction

This report contains the results of an investigation and remediation of asbestos fibres in soil of the demolition work area of a property which is a registered loose fill asbestos affected property.

The Australian Capital Territory (Territory) has acquired a number of properties affected with loose fill asbestos insulation (comprising mainly Amosite and some Crocidolite asbestos) and is carrying out remediation of the demolition work area of the properties to ensure that the land is suitable for future residential reuse.

Lancaster & Dickenson Consulting (L & D) were engaged by the Territory to provide sampling to validate the remediation of asbestos fibres in soil within the demolition work area for the sole purpose of assisting the Territory with its pre-development investigations in land identified for release for future residential reuse following completion of preliminary works by others, namely:

- demolition of the house by a principal contractor, including a scrape of affected soil;
- clearance of the site as free of visible asbestos by a licensed asbestos assessor (LAA); and
- definition of the demolition work area by a LAA.

The demolition work area is the area to which the asbestos removal clearance certificate applies and is defined by the LAA. It generally comprises the original pre-demolition structure footprint of the affected premises, the decontamination unit and asbestos waste skip handling area, and the soil disturbance work area of the demolition contractor. It excludes the remainder of the property including earthworks outside of the demolition

work area where other non-affected structures have been removed or landscaping work carried out. The LAA prepared a simple plan of the demolition work area for later sampling of soil by the L&D soil validator.

Prior to sampling of soil in the demolition work area (refer to the methodology used for the sampling of soils described below), [redacted] of L&D met on the site with a representative of the principal contractor (Capcorp), who identified the extent of the demolition work area (as defined by the LAA). The confirmed demolition work area for soil sampling is illustrated in Attachment A.

The scope of work was performed solely for the Territory and specifically targeted loose fill asbestos insulation (comprising mainly Amosite and some Crocidolite fibres). Any other forms of contaminants on site (e.g. lead, non-friable asbestos) were not assessed. This report (including the conclusions and recommendations it contains) is prepared solely for use by the Territory and may not be used or replied upon by any other party. Any other party must make its own inquiries and obtain independent advice.

L&D has assumed that all information provided to it by the principal contractor and LAA, including the clearance certificate as presented in Attachment D, is accurate and complete.

The asbestos fibre in soil investigation was done in accordance with the Asbestos Response Taskforce Information sheet - Soil Validation Process (dated 10 November 2015), the ACT Government-endorsed *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* (the NEPM ASC) and the 'Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia (May 2009)' (the WA Guidelines).

The investigation was undertaken after all visible loose fill asbestos and any other visible asbestos containing materials had been removed from the demolition work area, including a scrape of affected soil from the demolition work area, and a post demolition asbestos removal clearance certificate was issued by LAA [redacted] of Robson Environmental (Licence number [redacted]).

Site Identification and Soil Condition of Demolition Work Area

Block and Section:	Block 5, Section 18, TORRENS
Block Size:	932 m²
Size of Demolition Area:	Approx. 700 m²
Remaining Site Structures:	None
Soil Conditions	The soil was dry at the time of sampling

Site Demolition Work Area and Sampling Plan

A plan showing the demolition works area and sample locations is presented in Attachment A.

Soil Sampling Methodology At Demolition Work Area

[redacted] of L&D Consulting (ACT Asbestos Assessors Licence no. [redacted]) attended the site on Monday, 18 December 2017 after the principal contractor confirmed the completion of demolition work and site clearance by the LAA.

The sampling density required to assess the soil within the demolition area was based on the WA DOH (2009) 'Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia' (WA Guideline). This guideline has been endorsed by the ACT environment and Sustainable Development Directorate (ESDD) for use on site within the ACT.

When determining the sample density required for the demolition area, reference is made to Table 1 of the WA Guideline. It is considered that the likelihood of asbestos being present within the demolition area as 'likely'. Therefore, the sample density recommended in Attachment A of the WA Guideline was applied. For the demolition area which was estimated to be between 500 m² and 1000 m² at least twelve (12) sampling points were required.

Representative samples were collected by hand using a clean stainless-steel shovel at locations set out using a systematic grid pattern. Samples were collected in general accordance with the procedures outlined in Section 4.1 of the WA Guideline.

The sampling methodology detailed in the WA Guideline was considered appropriate as the purpose of the sampling was to assess for the presence of asbestos fibres within the demolition area.

Soil Validation Results

The following soil validation sample results were returned from the NATA accredited laboratory, with the laboratory certificate provided at Attachment B.

Table 1: Post Demolition Soil Validation Sample Results

Sample No.	Asbestos Fibre Content	Comments
1	No asbestos detected	-
2	No asbestos detected	-
3	No asbestos detected	-
4	No asbestos detected	-
5	No asbestos detected	-
6	No asbestos detected	-
7	No asbestos detected	-
8	No asbestos detected	-
9	No asbestos detected	-
10	No asbestos detected	-
11	No asbestos detected	-
12	No asbestos detected	-

Analytical Procedures

Asbestos in soil analysis was carried out in accordance with the WA Guidelines and the 'Australian Standard for the Qualitative Identification of Asbestos in Bulk Samples' (AS4964-2004).

Hot Spot Treatment

No hotspot treatment was required.

Recommendation for Residential Reuse

The asbestos in soil investigation and remediation work to address potential impact of asbestos fibres in the demolition work area of a former house affected by loose fill asbestos at Block 5, Section 18, TORRENS (4 Wyatt St, Torrens) has been completed in accordance with the NEPM ASC and the WA Guidelines as detailed in this report. On that basis, I recommend to the Territory that the demolition work area of this property is suitable for residential reuse with respect to asbestos fibres.

For and on behalf of Lancaster & Dickenson Consulting Pty Ltd,

Licensed ACT Asbestos Assessor Licence Number:

Date: 19 December 2017

Attachments

Attachment A: Site Sample Plan

Attachment B: Certificate of Analysis

Attachment C: Photographs

Attachment D: Clearance Certificate

ATTACHMENT A

Site Sample Plan

L&D CONSULTING
LANCASTER & DICKENSON

SITE DETAILS
Block 5, Section 18
4 Wyatt St
Torrens, ACT

KEY
- DEMOLITION WORK AREA
- SAMPLE LOCATION (NO ASBESTOS DETECTED)
- SITE OUTLINE

The demolition work area is defined as the area comprising the original structure footprint of the affected premises the decontamination unit and asbestos waste skip and truck handling area and the soil disturbance work area of the demolition contractor.

LANCASTER AND DICKENSON CONSULTING
UNIT 1 6 DACRE ST
MITCHELL ACT 2911
PHONE: (02) 6241 2779
Web: www.landd.com.au
Email: admin@landd.com.au

CLIENT
Procurement and Capital Works

N

DRAWING TITLE
SOIL VALIDATION SAMPLING PLAN

Revision: 0
Drawn by:
Date created: 20/12/2017
Checked by:

ATTACHMENT B

Certificate Of Analysis

L&D CONSULTING
LANCASTER & DICKENSON

Lancaster & Dickenson Consulting Pty Ltd
1/6 Dacre Street
Mitchell ACT 2911
W: www.landd.com.au

ASBESTOS FIBRE IDENTIFICATION TEST REPORT

CLIENT DETAILS		LABORATORY DETAILS	
Client Name:	Procurement and Capital Works	**Address:**	1/6 Dacre Street Mitchell ACT 2911
Client Contact:	Ben McDuff		
Email:	Ben.mcduff@act.gov.au	**Lab Manager:**	
Site Name/Reference:	4 Wyatt St, Torrens	**Email:**	

REPORT DETAILS			
Certificate Reference:	LD3197ID19/12/2017	**Samples Received:**	18/12/2017
No. of Samples:	12	**Report Issue Date:**	19/12/2017

Test Specifications: Qualitative identification of Chrysotile, Amosite and Crocidolite asbestos fibre in bulk samples using Polarised Light Microscopy (PLM) and Dispersion Staining Techniques including Synthetic Mineral Fibre (SMF) and Organic Fibre as per Australian Standard 4964-2004 and methods identified in Section C of the Lancaster & Dickenson Consulting (L & D) Laboratory Manual.

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Mass	Weight of FA and/or AFs in 2mm-7mm fraction	Mass of <2mm fraction Sub-sample	Weight of FA and/or AFs in <2mm sub sample	Percentage w/w of asbestos (FA and AF) in sub-sample	Asbestos Fibres Detected
LD3197ID19/12/2017-1	1	19/12/2017	665.6g	0.0g	46.9g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-2	2	19/12/2017	683.7g	0.0g	48.8g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-3	3	19/12/2017	737.6g	0.0g	50.6g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-4	4	19/12/2017	574.5g	0.0g	54.0g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-5	5	19/12/2017	626.7g	0.0g	48.6g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-6	6	19/12/2017	781.3g	0.0g	49.9g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-7	7	19/12/2017	700.5g	0.0g	49.1g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-8	8	19/12/2017	722.6g	0.0g	60.4g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-9	9	19/12/2017	672.9g	0.0g	41.6g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-10	10	19/12/2017	541.3g	0.0g	44.6g	0.0g	**<0.001**	**No Asbestos Detected**

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Mitchell ACT 2911
W: www.landd.com.au

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Mass	Weight of FA and/or AFs in 2mm-7mm fraction	Mass of <2mm fraction Sub-sample	Weight of FA and/or AFs in <2mm sub sample	Percentage w/w of asbestos (FA and AF) in sub-sample	Asbestos Fibres Detected
LD3197ID19/12/2017-11	11	19/12/2017	705.9g	0.0g	44.3g	0.0g	**<0.001**	**No Asbestos Detected**
LD3197ID19/12/2017-12	12	19/12/2017	665.2g	0.0g	47.9g	0.0g	**<0.001**	**No Asbestos Detected**

Notes:

1. Where a sample is delivered to the laboratory by a third party, L & D accepts no responsibility for the quality of sample submitted, including whether the sample is representative of the source material.
2. All L & D reports must not be reproduced except in full.
3. The practical detection limit for identification of asbestos fibre using PLM and dispersion staining techniques is 0.01-0.1%, equivalent to 0.1-1g/kg.
4. This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia - May 2009*
5. FA = fibrous asbestos, AF = asbestos fines

* = As per WA Government Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated sites - May 2009. Recommended Procedures for Laboratory Analysis of Asbestos in Soil (June 2011); A positive result is typically considered to exceed the 0.001% w/w investigation criteria applied to fine (<7 mm) asbestos material. Asbestos cement sheet material is considered to contain 15% asbestos.

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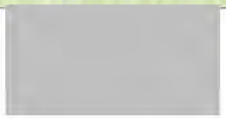		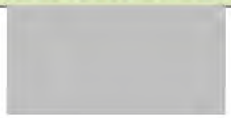

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ASBESTOS FIBRE IDENTIFICATION TEST REPORT

CLIENT DETAILS		LABORATORY DETAILS	
Client Name:	Procurement and Capital Works	**Address:**	1/6 Dacre Street Mitchell ACT 2911
Client Contact:	Ben McDuff		
Email:	Ben.mcduff@act.gov.au	**Lab Manager:**	
Site Name/Reference:	4 Wyatt St, Torrens	**Email:**	

REPORT DETAILS			
Certificate Reference:	LD3197ID19/12/2017	**Samples Received:**	18/12/2017
No. of Samples:	12	**Report Issue Date:**	19/12/2017

Test Specifications: Qualitative identification of Chrysotile, Amosite and Crocidolite asbestos fibre in bulk samples using Polarised Light Microscopy (PLM) and Dispersion Staining Techniques including Synthetic Mineral Fibre (SMF) and Organic Fibre as per Australian Standard 4964-2004 and methods identified in Section C of the Lancaster & Dickenson Consulting (L & D) Laboratory Manual.

L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Description	Sample Mass	Non-Asbestos Fibres Detected	Asbestos Fibres Detected
LD3197ID19/12/2017-1	1	19/12/2017	Grey clay	665.6g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-2	2	19/12/2017	Grey clay	683.7g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-3	3	19/12/2017	Grey clay	737.6g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-4	4	19/12/2017	Grey clay	574.5g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-5	5	19/12/2017	Grey clay	626.7g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-6	6	19/12/2017	Grey clay	781.3g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-7	7	19/12/2017	Grey clay	700.5g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-8	8	19/12/2017	Grey clay	722.6g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-9	9	19/12/2017	Grey clay	672.9g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-10	10	19/12/2017	Dark grey soil	541.3g	Organic Fibres Detected	**No Asbestos Detected**

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	NATA WORLD RECOGNISED ACCREDITATION **Accreditation no: 19512** Accredited for compliance with ISO/IEC 17025.	

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L&D ID Reference	Sample Reference	Sample Analysis Date	Sample Description	Sample Mass	Non-Asbestos Fibres Detected	Asbestos Fibres Detected
LD3197ID19/12/2017-11	11	19/12/2017	Dark grey soil	705.9g	Organic Fibres Detected	**No Asbestos Detected**
LD3197ID19/12/2017-12	12	19/12/2017	Dark grey soil	665.2g	Organic Fibres Detected	**No Asbestos Detected**

Notes:

1. Asbestos in bulk materials requiring disintegration such as vinyl, resins, mastic and caulking can be difficult to detect using PLM and dispersion staining due to the low grade or small length or diameter of the asbestos fibres present in the material, or due to the fact that very fine fibres have been distributed intimately throughout the materials. Where no asbestos is detected in such a sample, another, independent analytical technique should be considered.
2. Where a sample is delivered to the laboratory by a third party, L & D accepts no responsibility for the quality of sample submitted, including whether the sample is representative of the source material.
3. All L & D reports must not be reproduced except in full.
4. The practical detection limit for identification of asbestos fibre using PLM and dispersion staining techniques is 0.01-0.1%, equivalent to 0.1-1g/kg.
5. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

L&D APPROVED IDENTIFIER		L&D APPROVED SIGNATORY
	NATA WORLD RECOGNISED ACCREDITATION **Accreditation no: 19512** Accredited for compliance with ISO/IEC 17025.	

ATTACHMENT C

Site Photographs

Photographs

Photograph 1
Site photograph taken during sampling

Photograph 2
Site photograph taken during sampling

ATTACHMENT D

Clearance Certificate