



WA Country Health Service and Department of Finance
(Building Management and Works)

Removal Management Plan – Asbestos Containing Materials, Busselton Health Campus

June 2014

Natural Area Holdings Pty Ltd
99C Lord Street, Whiteman, WA, 6076
Ph: (08) 9209 2767
Fax: (08) 9209 2768
info@naturalarea.com.au
www.naturalarea.com.au



Disclaimer

Natural Area Holdings Pty Ltd, trading as Natural Area Consulting (NAC), has prepared this report for the sole use of the Client and for the purposes as stated in the agreement between the Client and NAC under which this work was completed. This report may not be relied upon by any other party without the express written agreement of NAC.

NAC has exercised due and customary care in the preparation of this document and has not, unless specifically stated, independently verified information provided by others. No other warranty, express or implied is made in relation to the contents of this report. Therefore, NAC assumes no liability for any loss resulting from errors, omission or misrepresentations made by others. This document has been made at the request of the Client. The use of this document by unauthorised third parties without written permission from NAC shall be at their own risk, and we accept no duty of care to any such third party.

Any recommendations, opinions or findings stated in this report are based on circumstances and facts as they existed at the time NAC performed the work. Any changes in such circumstances and facts upon which this document is based may adversely affect any recommendations, opinions or findings contained in this document.

No part of this document may be copied, duplicated or disclosed without the express written permission of the Client and NAC.

Confidentiality

This document contains valuable and commercially sensitive information. This document is intended for Client’s sole use and the information contained herein is not to be used for any purpose other than that intended. Improper use of the information in this document may result in an action for damages arising from the misuse.

Document Control

Version	Date	Prepared by	Reviewed by	Approved by
Draft 1	23 May 2014	Sue Brand	Luke Summers	Luke Summers

Distribution

Version	Name	Organisation	Copies
1	Sue Brand	Natural Area	1 electronic
	Rory Stemp	Busselton Health Campus	1 electronic, 1 printed
	Caesar D'Adamo	Department of Finance (WA)	1 electronic, 1 printed
	John Thompson	Department of Finance (WA)	1 electronic
	George Georgiu	Department of Finance (WA)	1 electronic
	Matthew Blunt	Tranen	1 electronic, 2 printed
	Andre Fourie	City of Busselton EHO	1 electronic
	Glen Alexander	Aurora Environmental	1 electronic, 1 printed

Executive Summary

Asbestos containing material in the form of fragments and fines has been found within a portion of the conservation zone of the Busselton Health Campus. The decision has been made to remove the contaminated soil to a depth of approximately 40 cm (400 mm) and dispose it at the Stanley Street landfill facility in Australind. The excavated area will be backfilled using clean fill and revegetated in accordance with the Busselton Health Campus Revegetation Management Plan.

Management of the asbestos removal process will include the following:

- monitoring of visible dust
- dust suppression during excavation and truck loading using a water cart
- monitoring and subsequent analysis of asbestos fibres at two locations during excavation activities
- validation testing of site cleanup activities.

Prior to commencement of the cleanup activities, local residents in the vicinity of the site will be informed of the closure of the dual-use path and the projected works a minimum of two weeks in advance. A notice will be placed at either end of the dual-use path advising of its closure and alternative access routes.

Contents

Executive Summary	i
1.0 Introduction.....	1
1.1 Site Location	1
1.2 Asbestos Containing Material Location.....	1
2.0 Asbestos.....	3
2.1 Characteristics	3
2.2 Health Risks	3
2.3 Asbestos at Busselton Health Campus	3
3.0 Site Cleanup.....	4
3.1 Hand-picking (Emu-Bob).....	4
3.2 Removal of Contaminated Soil	4
3.3 Removal Contractor.....	4
4.0 Traffic Management	5
4.1 Letter Drop	5
4.2 Notification of Alternative Routes.....	5
5.0 Dust Management and Fibre Monitoring.....	8
5.1 Dust Management.....	8
5.1.1 Contact	8
5.2 Airborne Fibre Monitoring	8
6.0 Validation Testing.....	9
7.0 Minor Asbestos Contamination.....	9
8.0 References.....	10
Appendix 1: Silverbay Enterprises Pty Ltd Restricted Asbestos Licence.....	11
Appendix 2: Example Dual-use Path Closure and Cleanup Letter	17
Appendix 3: Example Alternative Route Notice	19

1.0 Introduction

During site assessment activities associated with the preparation of the Conservation Zone Revegetation Management Plan for the Busselton Health Campus, an area with fibre cement was observed in the northeast portion of the site in the vicinity of the dual use path (Figure 1). Subsequent investigation of the material confirmed that it contained asbestos fibres at levels that indicate that site is considered to be contaminated under the *Contaminated Sites Act 2003* (WA), and that clean up is required. This management plan documents the clean up process and associated monitoring requirements, particularly those with the implementation of dust monitoring.

This plan documents the following:

- site location, including approximate location of asbestos containing materials
- form of asbestos found
- risks associated with exposure to asbestos
- cleanup methods
- personal protective equipment requirements
- monitoring during cleanup, including dust monitoring
- notification of cleanup to the community and other stakeholders
- cleanup validation
- removal of random pieces of asbestos after formal cleanup.

1.1 Site Location

The Busselton Health Campus is located approximately 2.5 km west of the Busselton town centre at 189 Bussell Highway. It is bounded by Bussell Highway to the south, Craig Street to the west, Geographe Bay and the Indian Ocean to the north, and Mill Road to the east (Figure 1).

1.2 Asbestos Containing Material Location

The asbestos containing material (ACM) is confined to the north-eastern portion of the site in the vicinity of the dual use path (Figure 1). The majority of the ACM is fragments lying on the surface to an estimated maximum depth of 30 cm (300 mm). Testing carried out by Aurora Environmental in February 2014 indicated that fine materials were also present in some locations.

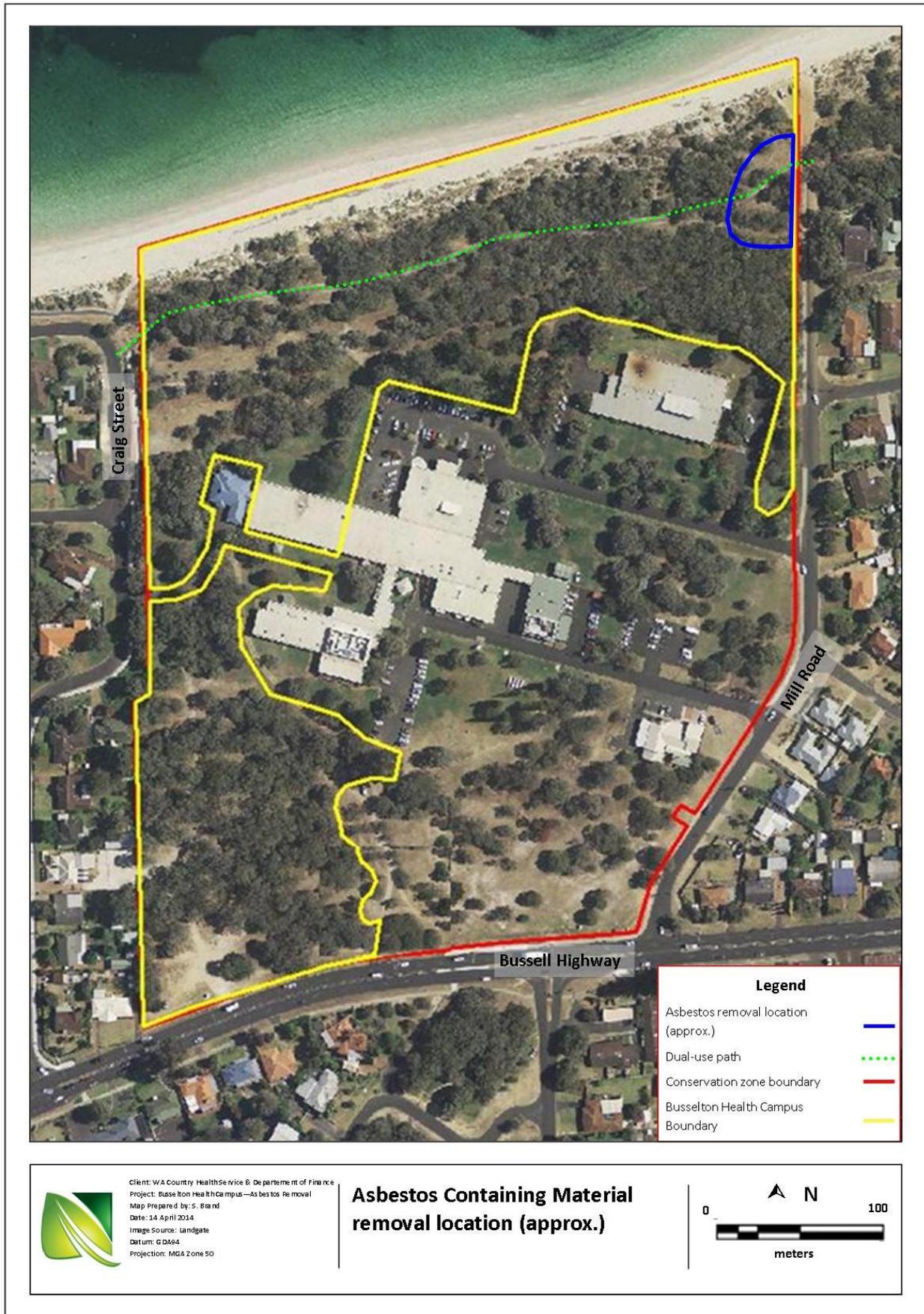


Figure 1: Asbestos Containing Material removal location

2.0 Asbestos

This Section describes key characteristics of asbestos and health risks associated with exposure.

2.1 Characteristics

Asbestos is a naturally occurring silicate material, the fibres of which were used as an additive in cement sheeting used for buildings and fences because of its physical properties, particularly its tensile strength and resistance to fire and heat. In Western Australia, the most common form of asbestos encountered is crocidolite, or blue asbestos. It was mined at Wittenoom for many years until the mine was closed in the mid-1960's amid increasing concerns of the health effects of exposure to asbestos.

According to the Department of Health (2009), there are three groups of asbestos contamination recognised in Western Australia, namely:

- asbestos containing material (ACM), where the asbestos is usually bound in a matrix, but may be broken and fragmented and can be detected visually
- fibrous asbestos (FA), which includes friable asbestos material in the form of loose fibres that can occur as a result of weathering and degradation, and can often be detected visually
- asbestos fines (AF), which includes free asbestos fibres and small asbestos bundles that can pass through a 7 mm x 7 mm sieve, posing an inhalation risk if they become airborne.

The forms of asbestos found at the Busselton health Campus include asbestos containing material (ACM) and asbestos fines (AF). As material containing the asbestos weathers, its small fibres can separate from the other materials it was mixed with and can be readily inhaled if they become airborne.

2.2 Health Risks

Asbestos fibres are often invisible to the naked eye as they can be smaller in size than the width of human hair. They are associated with two main forms of cancer, asbestosis and the rarer mesothelioma, along with lung cancer and pleural plaques. All are the result of inhalation of fine fibres that result in inflammation and mechanical damage to affected areas. The human health risks associated with asbestos-contaminated soil varies, and is dependent on its form, the situation where exposure can occur and the quantity of material an individual is exposed to. Free fibrous asbestos will pose a greater risk than asbestos containing materials.

2.3 Asbestos at Busselton Health Campus

Testing undertaken by Aurora Environmental in February 2014 indicated that the majority of the asbestos at the Busselton Health Campus is in the form of larger pieces of asbestos containing material and is concentrated within the top 30 cm (300 mm) of the land surface. However, two of the test pits also revealed the presence of asbestos fines associated with weathering over time at concentrations greater than Department of Health guideline values of 0.02% w/w for parks and public open space areas. The asbestos materials are confined to an area of approximately 1100 m² in the north-east portion of the site around the dual-use path (Figure 1). The amount of material present means the risk of exposure is low – medium, and will be cleaned up.

3.0 Site Cleanup

The cleanup of the asbestos materials at the Busselton Health Campus will involve two main methods, namely hand-picking and removal. The overall aim of the cleanup process is to reduce the risk of asbestos exposure to the public such that it is low as reasonably practicable, thus minimising the potential for future exposure through changes to site conditions that might occur from an eroding coastline, or other processes.

3.1 Hand-picking (Emu-Bob)

This method involves the visual inspection of the soil surface in the known area of contamination, and manually collecting all pieces of asbestos containing material (ACM) that are observed. A rake with teeth spaced ≤ 7 mm apart and > 10 cm long can be used to maximise the amount of ACM that is collected. Two passes of picking and raking will be carried out, with a 90° direction changes between each pass, in a general grid pattern. Care will need to be taken around vegetation, with damage to the root zone of plants avoided where possible.

All materials collected will be bagged and disposed of at a landfill site that accepts asbestos wastes. Copies of documents confirming disposal will be provided to Natural Area Consulting for recording keeping and reporting purposes.

3.2 Removal of Contaminated Soil

The nature and location of the site where the asbestos contamination is found at the Busselton Health Campus site means that there is a risk of future exposure through an eroding coastline and continued human traffic along the dual-use path. In order to remove this risk, the decision has been made to manually remove the affected soil to a depth of 40 cm (400 mm). A loader will be used to remove affected material and load it into a truck with roll-back tarpaulins for transport to the Stanley Road landfill facility at Australind. Dust suppression at the site will be via water cart and will include loading activities, with a final wet-down after loading is complete. After the removal of the asbestos material, the site will be rehabilitated in accordance with the Rehabilitation Management Plan prepared for the Conservation Zone of the Busselton Health Campus.

3.3 Removal Contractor

The Contractor that will undertake removal of the asbestos materials will be:

Silverbay Enterprises Pty Ltd
1062 Geographe Bay Road
Busselton WA 6280
Ph: 9752 1000

Silverbay Enterprises hold a Restricted Asbestos Licence valid to 10 February 2015 to carry out asbestos removal activities in accordance with the Occupational Safety and Health Act 1984 (WA) and Health Regulations 1996 (WA). A copy of the licence is provided in Appendix 1.

4.0 Traffic Management

The dual use path that extends along the Busselton foreshore bisects the area in which the asbestos containing materials occur. The path is used extensively by pedestrians and cyclists throughout the day, and will thus require a traffic management plan to be implemented that will enable cleanup without creating unnecessary exposure risks to the community.

4.1 Letter Drop

A letter drop advising nearby residents of the planned closure of the dual-use path and planned cleanup activities will be provided to all residents in Mill Road, Lockimlar Place and Winton Street to the east, and Craig Street, Jensen Way, and Manson Street to the west in advance of works commencing. Residents in Gunn Street and Geographe Bay Road between Craig Street down to approximately the level of the western portion of Gunn Street will also be advised of the closure in writing. The locations of residents that will receive written notification are provided in Figure 2. An example letter is provided in Appendix 2.

4.2 Notification of Alternative Routes

During the cleanup process, the dual-use path will be closed to all pedestrian and cyclist access. Alternative access will be via either Craig St or Mill Road and Bussell Hwy or via unpaved beach access along the foreshore. Signage will be installed at either end of the path two weeks prior to works commencing, advising users of alternative routes. Figure 3 shows the alternative routing information and an example notice is provided in Appendix 3.



Figure 2: Letter-drop zone advising of asbestos cleanup and dual-use path closure



Figure 3: Alternate access during asbestos cleanup and dual-use path closure

5.0 Dust Management and Fibre Monitoring

Dust management will be a key component of the asbestos removal process due to the risks posed by airborne fibres. The presence of visible airborne dust will be used as a surrogate measure to evaluate the potential of generating and distribution of airborne fibres. This will also allow for immediate response to dust generating activities rather than waiting for the analysis of collected samples for the presence/absence of asbestos fibres.

5.1 Dust Management

Dust management will be undertaken at the site to minimise the potential for asbestos fibres to become airborne and pose a potential health risk to the community. The soils at the site are sandy in nature, with particles having the potential to become airborne when disturbed. Dust suppression in the form of a water spray will be applied on an as required basis (i.e. whenever the soil being worked is sufficiently dry and capable of generating dust when disturbed or moved) to the areas where removal is being carried out.

Water suppression will be carried out on any occasion member(s) of the public express a concern about dust generation during removal works. It will also be carried out during the loading of the excavated material into the truck and prior to departure to the Stanley Street Landfill site in Australind.

5.1.1 Contact

The contact person members of the community can call in relation to dust and other concerns relating to the asbestos removal and process will be:

Mr Matthew Blunt
Tranen Revegetation Systems
9754 2643
0400 165 729
Matt.blunt@tranen.com.au

Any complaints/concerns received by Tranen will be documented, and details forwarded to Sue Brand at Natural Area Consulting (0439 435 110, sue.brand@naturalarea.com.au) who will be responsible for advising client representatives and regulatory agencies as required.

5.2 Airborne Fibre Monitoring

The monitoring of airborne fibres will be carried out using the membrane filter method to determine whether fibres have been generated during removal activities. Aurora Environmental will set out two filters on a daily basis, with the actual locations being chosen according to the works being carried out on a particular day and wind conditions. Filters will be forwarded to a NATA registered laboratory on a daily basis for analysis.

6.0 Validation Testing

A Senior Environmental Scientist with Aurora Environmental will carry out validation testing to confirm that the asbestos has been removed from the site. This will involve the collection of samples during the removal process and sending them to a NATA registered laboratory for analysis. The validation report will be provided to the Department of Health and the Department of Environment Regulation to confirm cleanup of the site has been successfully carried out.

7.0 Minor Asbestos Contamination

Site assessment activities have suggested that the contamination is confined to the area shown in Figure 1. However, the possibility will remain that fragments of asbestos may be found in the future. These will be manually collected and bagged prior to disposal at landfill on an as required basis. Removal and disposal will be in accordance with Department of Health asbestos guidelines (2009).

8.0 References

Contaminated Sites Act 2003 (WA)

Department of Health, (2009), *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*, Department of Health, Perth, Western Australia.

Landgate, (2014), *Aerial Imagery*, available

<https://www.landgate.wa.gov.au/bmvf/app/mapviewer/?shutterId=ap&dispatch=crossSell&productDetailsUrl=https%3A//www.landgate.wa.gov.au/corporate.nsf/web/Imagery>

Appendix 1: Silverbay Enterprises Pty Ltd Restricted Asbestos Licence



Government of **Western Australia**
Department of **Commerce**



Restricted Asbestos Licence

**SILVERBAY
ENTERPRISES
PTY LTD**

Licence Number WARA870

This Restricted Asbestos Licence is issued pursuant to Regulation 5.44(2) of the Occupational Safety and Health Regulations 1996 and authorises **SILVERBAY ENTERPRISES PTY LTD** to carry out Restricted asbestos work in accordance with the Occupational Safety and Health Act 1984, the Occupational Safety and Health Regulations 1996 and in accordance with the conditions endorsed on the reverse side of the Licence.

Robyn Parker
Director, Business Services
WORKSAFE DIVISION OF COMMERCE

Date of Expiry: 10 February 2015



Government of **Western Australia**
Department of **Commerce**



Class 2 Demolition Licence

**SILVERBAY
ENTERPRISES PTY LTD**

Licence Number **WAD 141**

This Class 2 Demolition Licence is issued pursuant to Regulation 3.116. of the *Occupational Safety and Health Regulations 1996* and authorises **Silverbay Enterprises Pty Ltd** to carry out demolition work in accordance with the conditions under which the Demolition Licence is issued.

Date of Expiry: 25 March 2016

Robyn Parker
Director, Business Service Centre
WORKSAFE

Appendix 2: Example Dual-use Path Closure and Cleanup Letter



19th July 2013

Re: Mill Rd to Craig St Footpath Closure

Dear Resident,

The new Busselton Health Campus construction is well underway now, and the early stages of the bushland conservation works are about to begin.

Part of these works involves the removal of a small amount of asbestos containing material, located alongside the coastal footpath running from Mill Rd to Craig St. These works will be carried out by a licensed contractor and as a means of mitigating health and safety risks the footpath will be closed for the duration of works. These dates are from:

CLOSED	Monday 5th August from 7am
REOPENED	Tuesday 6th August from 5pm

All efforts will be made to complete these works ahead of schedule as we understand this is a high traffic area.

If you have any concerns with these works please contact Matthew Blunt (Southwest Operations Manager) on 0400 165 729 or matt.blunt@tranen.com.au

We do apologise for any inconvenience caused.
Thank you.

Matthew Blunt
Southwest Operations Manager

revegetating rehabilitating restoring



Appendix 3: Example Alternative Route Notice

ALTERNATIVE ROUTES DURING CLOSURE

During the closure of this section of footpath, pedestrians can detour around the works using:

- 1) The beach and connect back up to the footpath at either Mill Rd or Craig St depending on the direction of travel; or
- 2) Go around the block via Mill Rd / Craig St and the Busselton Hwy. Please use all footpaths when available.

When using any of the above detours please take appropriate care to ensure the safety of yourself and others as we will not accept any liability for accidents/incidents that may occur.

If you have any questions regarding these detours please contact Matthew Blunt (Tranen Southwest Operations Manager) on 0400 165 729.

Regards,
Tranen Southwest, Department of Health and City of Busselton

