

Asbestos in soil Risk Assessment and Remediation Report

Site:

Kingston Wharf
East Cowes
Isle of Wight
PO32 6JS

Client:

Cowes Harbour Commission
Harbour Office
Town Quay
Cowes
Isle of Wight
PO31 7AS

Authorised by:



Natalie O'Rourke

Project No. 15658

Report 1

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1.0 INTRODUCTION

ABP Associates Limited have been requested by Jeremy Firth of Vail Williams LLP to prepare an asbestos in soil risk assessment and remediation report based on recent site investigation sampling works carried out by Soils Limited.

Asbestos contamination within the soil was located during site investigation works at the Kingston Wharf site, East Cowes. Small quantities of loose chrysotile fibre have been detected within the made ground within one area of the site. This report details an asbestos risk assessment and remediation strategy incorporating suitable safe working practices in line with the requirements of Control of Asbestos Regulations 2012 (CAR 2012) and CAR-SOIL 2016, during disturbance of the soils.

2.0 BACKGROUND INFORMATION

The following documents have been made available to and reviewed by ABP Associates Ltd in the production of this report:

- Ground Investigation Report at Kingston Wharf, Soils Limited; Ref: 21091/GIR/Rev103, March 2024.
- Proposed Boatyard External Works Drawing Ref: 23-4162-4101, Version T1.

Soils Limited initially carried out a ground investigation across the proposed redevelopment area in November 2023. Of six sample location points, one location tested positive for asbestos, in the form of loose chrysotile fibres. Additional targeted sampling was carried out in February 2024 to expand around the positive sample location. A further two out of ten sample points tested were positive for asbestos. The extent of known asbestos contamination is detailed in section 3.0 below.

3.0 EXTENT OF ASBESTOS CONTAMINATION

Asbestos has been located within the made ground in one area to the east of the site. The asbestos was detected during laboratory analysis. It is understood that no asbestos containing materials (ACMs) were visually identified during the site investigation works and as such the source of the asbestos contamination is unknown. The results from the Soils Limited Ground Investigation Report (GIR) are summarised in the table below:

Location	Depth	Asbestos type	Asbestos form	Quantity (% w/w)
TPSK1	0.5m	Chrysotile	Loose fibre	0.005
WSS3	0-0.6m	Chrysotile	Loose fibre	0.001
WSNW3	0-0.1m	Chrysotile	Loose fibre	0.001

Data extracted from Soils Limited GIR, Ref: 21091/GIR Rev103, March 2024

4.0 SOIL RISK ASSESSMENT

It is understood the site will be redeveloped to comprise a vessel washdown facility and an area of hardstanding for boat storage.

Loose chrysotile fibres at low levels have been detected in the made ground to the east of the site. It is understood that made ground will require removal to level the site during redevelopment, and as such the asbestos impacted soils will likely be disturbed. Loose asbestos fibres in dry soil have the potential to release airborne asbestos fibres and create a potential health hazard. At particular risk would be the groundworkers during the construction phase.

Once the redevelopment works are complete, the presence of hardstanding across the site will break the pollutant linkages and remove the risk should any made ground remain below.

A JIWG Decision Support Tool for the Categorisation of Work Activities Involving Asbestos in Soil or Construction & Demolition Materials in accordance with CAR 2012 was run for the disturbance of asbestos contaminated soils, using loose chrysotile fibres at 0.005% w/w as a 'worst case scenario'. The current hazard and exposure ranking is classified as a medium risk and the disturbance of the soils would be non-licensable work (NLW) for the work with asbestos containing soils (refer to Appendix 2).

We recommend that NLW asbestos trained operatives undertake a watching brief and implement control measures during excavation of the soils around TPSK1. The operatives can react if any visible asbestos is discovered, as well as implement dust suppression techniques (i.e. dampening down of soils during dry periods).

5.0 REMEDIATION STRATEGY

It is understood that the ground level will be reduced by approximately 800mm during the redevelopment of the site. This will likely mean that the majority, if not all, of the asbestos impacted soils will be removed during groundworks. Due to the low levels of asbestos contamination, it is recommended that any asbestos contaminated soils that do remain following excavation works are left in-situ and capped below areas of hardstanding.

Soils in the area around TPSK1 that require disposal offsite would likely be classified as non-hazardous waste in relation to asbestos content. Technical guidance WM3 classifies waste as non-hazardous, with respect to asbestos, where the content of asbestos is <0.1% w/w asbestos and there are no visible ACMs. It is understood that Soils Limited have classified the soil as potentially suitable for disposal as inert non-hazardous waste based on their sampling. The presence of the low levels of loose fibre, below the threshold of 0.1% w/w, should not affect this classification. It is, however, advisable to seek approval from waste carrier prior to the works should they have any site-specific specifications.

The area around TPSK1 should be excavated as non-licensed asbestos works. A large enough area around the additional sample points should be included to insure all the asbestos contaminated soils are removed under controlled conditions. Due to the low volumes of loose fibre found at the additional sampling points (0.001f/ml) it would not be deemed necessary to carry out further sampling prior to remediation works, instead it would be recommended that additional control measures such as keeping the soil damp are employed throughout all groundworks.

6.0 REMEDIATION METHODOLOGY

The following is suggested during excavation of the made ground in the area around TPSK1:

1. The contractor should provide a written risk assessment and method statement for approval before work commences.
2. Designate the area as asbestos removal works.
3. Set up the site, including area for NLW personal decontamination.
4. Removal of made ground to depth required.
5. Watching brief to be present during excavation works to ensure visible asbestos materials are not uncovered. And stop work and investigate if present.
6. Disposal off site of soils.
7. Implement fibre suppression with a water bowser, depending on weather conditions.
8. Test remaining soils in remediation areas to ensure contamination removed.

The proposed remediation works are outlined in detail below.

6.1 Site Set Up and Welfare

The work area should be suitably fenced preventing persons entering the site that are not involved with the works. Welfare facilities should be setup and provided by the client.

In line with good practice, an area should be designated to change into disposable type 5/6 coveralls, respirator fitted with P3 filter and work boots (cleanable boots with no laces i.e. wellington boots) to prevent any back tracking of soils into welfare facilities or vehicles.

6.2 Site personnel

All site personnel should have a suitable site induction highlighting the potential asbestos risk. Only operatives specifically trained (CAT B Non-Licensable Work, Reg 10 CAR 2012) for works with asbestos in soil should be employed to conduct the watching brief. It is recommended that all groundworkers have asbestos awareness training as a minimum, specifically for asbestos in soils.

Operatives conducting the watching brief or working directly with the contaminated soils will don disposable coveralls (Type 5/6), cleanable safety footwear (no laces) and gloves. The low levels of loose fibre present in the soil and the use of dust suppression would mean it is unlikely that significant airborne fibres will be released during the work. Operatives should, however, still have available for use a half face mask fitted with a P3 filter, which they will be face fit tested for.

A personal decontamination procedure should be in place for all operatives when leaving the work area. This will include washing and/or removal of work boots. It is not likely that a decontamination unit would be required.

6.3 Asbestos remediation methodology

A trained watching brief should attend all times during the excavation works to identify any areas of visible asbestos contamination – particularly any unexpected hotspots. Soil should be slowly graded to allow inspection by the watching brief. The area round TPSK1 should be excavated in a wide enough area to incorporate the additional two positive sampling locations.

A dust suppression system to prevent dust emissions should be available throughout soil movement works to ensure the soil is kept damp and potential fibre release kept to a minimum. This should include during excavation of the soils as well as during loading of waste disposal vehicles. Stockpiled soil should also be kept damp or covered prior to removal offsite.

Once any remaining made ground is capped under hardstanding it no longer poses a risk to site users.

7.0 DISCOVERY STRATEGY IF UNEXPECTED ACMs ARE UNCOVERED

If visible ACMs are uncovered during excavation of the made ground, the works should stop immediately in that area until a suitably qualified person is able to attend and evaluate the risk. Samples will be taken if necessary and barriers put around to identify and prevent access. Where possible any such occurrences will be removed as non-licenced work but in the unlikely event that visible high-risk products such as original form, clearly identifiable AIB or insulation are uncovered the works may require a licenced contractor and be notifiable to the HSE.

Appendix 1
Site location plans

Site location plan (extent of site highlighted in red)



Initial Ground Investigation sample locations (taken from Soils Limited GIR)

Soils Limited 21091/GIR/Rev102

Kingston Wharf

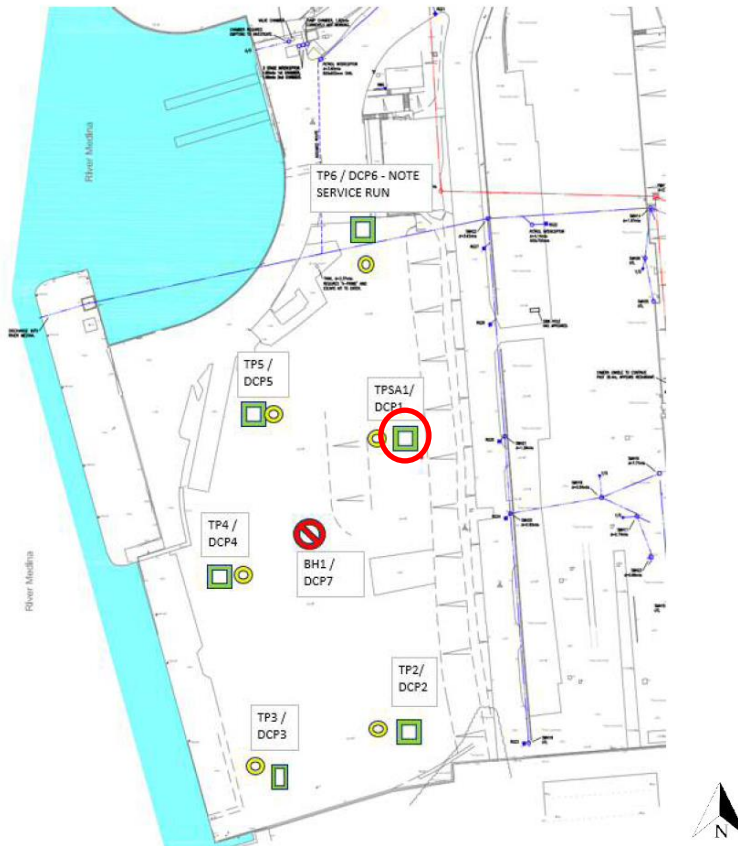


Figure 3 – Exploratory Hole Plan

Project
Kingston Wharf, East Cowes, Isle of Wight, PO32 6JS

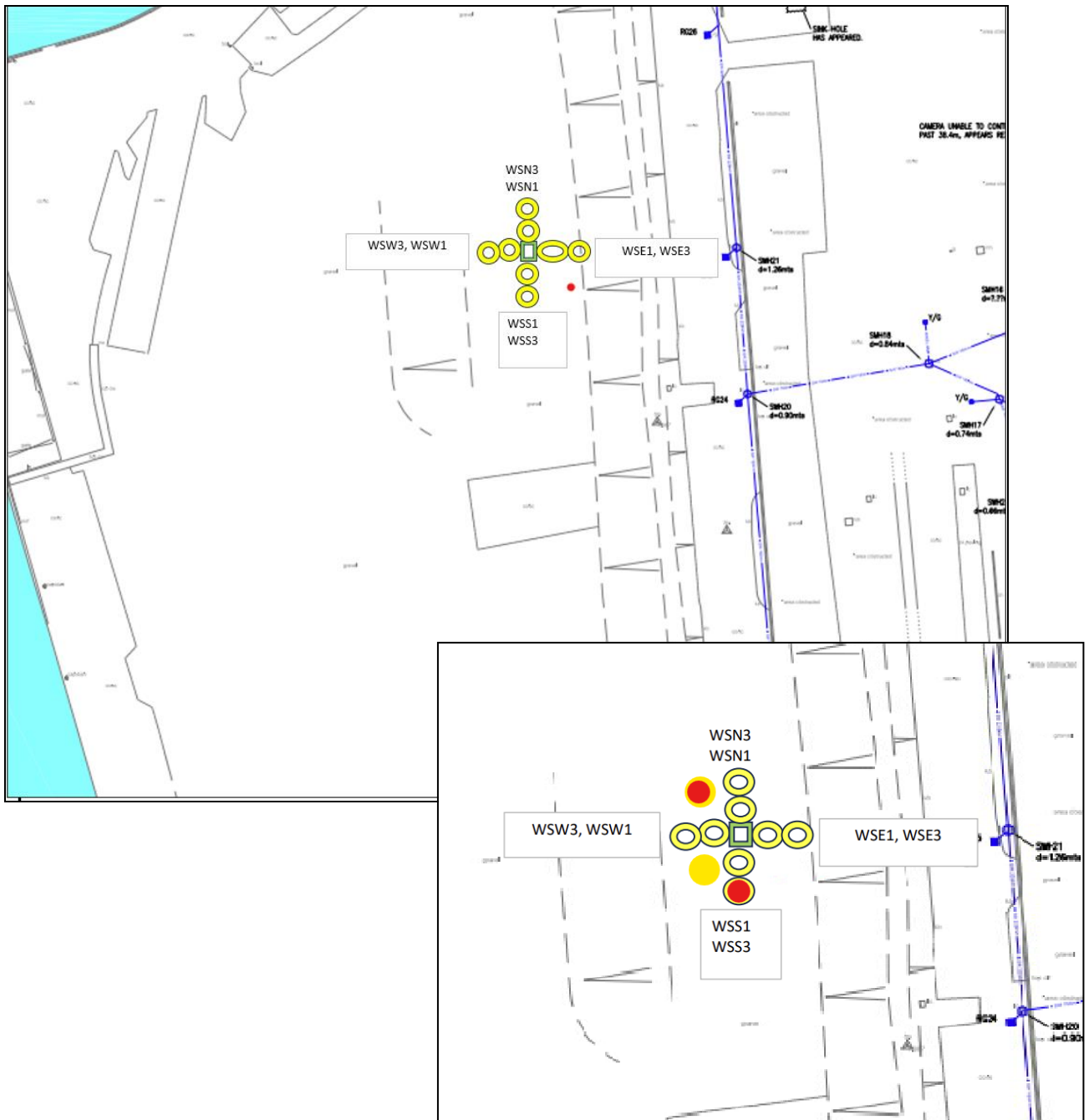
Client
Cowes Harbour Commission

Date
November 2023

Job Number
21091

○ - Positive asbestos location

Additional sample location Points around TPSK1



● - Positive asbestos location

Appendix 2

JIWG Decision Support Tools

The decision tool has been run to determine the work category for the disturbance of asbestos containing soils. It is based on the information in the Soils Limited analysis results from the ground investigation report and follow up sampling and testing.

Work categories DST (Worst case scenario - Loose chrysotile fibres 0.005 %w/w)

JIWG

Joint Industry Working Group
Asbestos in Soil and Construction & Demolition Materials

Project Reference	ABP 15658
Site Name	Kingston Wharf
Client	Cowes Harbour Commission
Run by	Natalie O'Rourke
Date	14-Mar-24
Scenario details	Disturbance of asbestos containing soils

Decision Support Tool for CAR2012 Work Categories

Stage 1
Hazard Factors

	Score
Select ACM type (run model for each type to generate 'Worst Case' output)	
Extent of degradation of ACMs at outset of work	2
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	4
Distribution of Visible Asbestos Across Affected Area	4
Amount of asbestos fibre in selected ACM/fibre type as % of host material	0
	1
Sub-total	11

Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs

Hazard ranking Medium

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool.
It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.



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Asbestos in Soil and Construction & Demolition Materials

Stage 2		Score
Exposure Factors		
Anticipated airborne fibre concentration - Control Limit or SALI?	<0.01 fibres/ml	1
Anticipated duration of exposure to asbestos	> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)	4
Activity type and effect on deterioration of ACMs during work	Sampling, manual or mechanical (significant deterioration expected)	2
Best description of primary host material matrix (soil/made ground)	Made Ground - Recycled Aggregate, Track Ballast	4
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3
Sub-total		14
Exposure ranking		Medium
Combined hazard and exposure ranking	25	Medium

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Asbestos in Soil and Construction & Demolition Materials

Stage 3

Risk Assessment Outputs

Probable Licensing Status	Non-Licensed Work
RPE*	EN140 with P3 filter half mask
Dust Suppression**	Localised mechanical dust suppression
Hygiene/Decontamination***	Localised and enhanced personal decontamination facilities

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.

**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)

***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

References

1. HSG 264 Asbestos: The survey guide second edition 2012
2. Addison, J, Davies, L, Robertson, A and Willey, R (1988) *The release of dispersed asbestos fibres from soils*, Research Report TM/88/14, Institute of Occupational Medicine, Edinburgh, UK
3. Standing Committee of Analysts (SCA) *The quantification of asbestos in soil* (2017), Methods for the Examination of Waters and Materials.
4. RIVM (2003) Assessment of the risks of soil contamination with asbestos, RIVM report 711701034, National Institute of Public Health and the Environment, RIVM, Bilthoven, The Netherlands
5. BS10175: Code of practice for investigation of potentially contaminated sites (2011)
6. Ciria: Asbestos in soil and made ground, a guide to understanding and managing risks (2014)
7. Technical Guidance WM3: Guidance on the classification and assessment of waste (2015)
8. HSG 248 Asbestos: The Analysts' Guide Second Edition 2021
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11. Managing and working with asbestos, Control of Asbestos Regulations 2012. Approved Code of Practice and guidance L143 (2013)