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**Cover Report On**  
**Soil Contamination**

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**No 67 Carrington Street, Horseshoe Bend,**  
**NSW**

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**Prepared for**  
**Hoover Group Pty Ltd**

**Prepared by**  
**Salesh Prasad**

**Job No: 16271**  
**May 2023**

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## **Executive Summary**

Positive Fix Pty Ltd was engaged by Hoover Group Pty Ltd to conduct a preliminary soil / site investigation to determine the presence of fill on the subject lot.

A site visit was conducted on, Tuesday, 18<sup>th</sup> of April 2023 to carry out site investigation and to collect soil samples. The site is currently vacant. Fieldwork was undertaken to obtain soil samples for laboratory testing to determine if the material used as fill contained any asbestos.

Four samples were collected for the site, and the depth of the boreholes varied from 0.5mbgl to 1.5mbgl

The samples were tested by NATA Accredited Laboratory, Eurofins.

## **Findings of the Investigation and Conclusion**

Based on the visual inspection of the subject lot and adjoining lots it is concluded that the site does not contain any fill material and any excavation carried out will be classified as a Virgin Earth Natural Material, (VENM).

The soil analysis results indicated the following:

- No asbestos detected at the reporting limit of 0.001% w/w
- Organic fiber detected
- No trace asbestos detected

From the findings of the investigation, Positive Fix Pty Ltd is satisfied that the site does not contain any contaminated material and any excavation carried out from the site will be VENM.

Please feel free to contact the undersigned if you have any questions

Yours faithfully,



**Saleshe Prasad** (BEng, MIE Aust, CPEng #2272843, RPEQ # 17847, Civil/Mech)

Asset Engineer

**Positive Fix Pty Ltd**

## **Appendix**

**Positive Fix**  
**Unit 47-48, 8 Concord Street**  
**BOOLAROO**  
**NSW 2284**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 18217**

Accredited for compliance with ISO/IEC 17025—Testing  
 NATA is a signatory to the ILAC Mutual Recognition  
 Arrangement for the mutual recognition of the  
 equivalence of testing, medical testing, calibration,  
 inspection, proficiency testing scheme providers and  
 reference materials producers reports and certificates.

**Attention:** Salesh Prasad  
**Report** 981631-AID  
**Project Name** 67 CARRINGTON STREET HORSESHOE BENS NSW  
**Project ID** 16271  
**Received Date** Apr 18, 2023  
**Date Reported** Apr 27, 2023

**Methodology:**

Asbestos Fibre  
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*

Unknown Mineral  
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*

Subsampling Soil  
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*

Bonded asbestos-  
 containing material  
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

**Project Name** 67 CARRINGTON STREET HORSESHOE BENS NSW  
**Project ID** 16271  
**Date Sampled** Apr 17, 2023  
**Report** 981631-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
S01	23-Ap0035297	Apr 17, 2023	Approximate Sample 180g Sample consisted of: Brown fine-grained clayey soil, coal, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
S02	23-Ap0035298	Apr 17, 2023	Approximate Sample 201g Sample consisted of: Brown fine-grained clayey soil, brick, coal and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
S03	23-Ap0035299	Apr 17, 2023	Approximate Sample 360g Sample consisted of: Brown fine-grained clayey soil, coal, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
S04	23-Ap0035300	Apr 17, 2023	Approximate Sample 335g Sample consisted of: Brown fine-grained clayey soil, coal, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

<b>Description</b>	<b>Testing Site</b>	<b>Extracted</b>	<b>Holding Time</b>
Asbestos - LTM-ASB-8020	Sydney	Apr 18, 2023	Indefinite

**Company Name:** Positive Fix  
**Address:** Unit 47-48, 8 Concord Street  
BOOLAROO  
NSW 2284

**Project Name:** 67 CARRINGTON STREET HORSESHOE BENS NSW  
**Project ID:** 16271

**Order No.:** 16271  
**Report #:** 981631  
**Phone:** 02 4954 9033  
**Fax:** 02 4959 8802

**Received:** Apr 18, 2023 1:50 PM  
**Due:** Apr 26, 2023  
**Priority:** 5 Day  
**Contact Name:** Salesh Prasad

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Asbestos - AS4964
Sydney Laboratory - NATA # 1261 Site # 18217						X
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	S01	Apr 17, 2023		Soil	N23-Ap0035297	X
2	S02	Apr 17, 2023		Soil	N23-Ap0035298	X
3	S03	Apr 17, 2023		Soil	N23-Ap0035299	X
4	S04	Apr 17, 2023		Soil	N23-Ap0035300	X
<b>Test Counts</b>						4



## Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. This report replaces any interim results previously issued.

## Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

## Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples ( <b>% w/w</b> )
F/fld	Airborne fibre filter loading as Fibres ( <b>N</b> ) per Fields counted ( <b>n</b> )
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane ( <b>C</b> )
g, kg	Mass, e.g. of whole sample ( <b>M</b> ) or asbestos-containing find within the sample ( <b>m</b> )
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM ( <b>V = r x t</b> )
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane ( <b>r</b> )
min	Time ( <b>t</b> ), e.g. of air sample collection period

## Calculations

Airborne Fibre Concentration: 
$$C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right)$$

Asbestos Content (as asbestos): 
$$\% w/w = \frac{(m \times PA)}{M}$$

Weighted Average (of asbestos): 
$$\%_{WA} = \frac{\sum (m \times PA)_x}{x}$$

## Terms

<b>%asbestos</b>	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 <i>Appendix 2</i> , else assumed to be 15% in accordance with WA DOH <i>Appendix 2 (PA)</i> .
<b>ACM</b>	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
<b>AF</b>	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
<b>AFM</b>	Airborne Fibre Monitoring, e.g. by the MFM.
<b>Amosite</b>	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
<b>AS</b>	Australian Standard.
<b>Asbestos Content (as asbestos)</b>	Total % w/w asbestos content in asbestos-containing finds in a soil sample ( <b>% w/w</b> ).
<b>Chrysotile</b>	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
<b>COC</b>	Chain of Custody.
<b>Crocidolite</b>	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
<b>Dry</b>	Sample is dried by heating prior to analysis.
<b>DS</b>	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
<b>FA</b>	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
<b>Fibre Count</b>	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
<b>Fibre ID</b>	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
<b>Friable</b>	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
<b>HSG248</b>	UK HSE HSG248, <i>Asbestos: The Analysts Guide</i> , 2nd Edition (2021).
<b>HSG264</b>	UK HSE HSG264, <i>Asbestos: The Survey Guide</i> (2012).
<b>ISO (also ISO/IEC)</b>	International Organization for Standardization / International Electrotechnical Commission.
<b>K Factor</b>	Microscope constant ( <b>K</b> ) as derived from the effective filter area of the given AFM membrane used for collecting the sample ( <b>A</b> ) and the projected eyepiece graticule area of the specific microscope used for the analysis ( <b>a</b> ).
<b>LOR</b>	Limit of Reporting.
<b>MFM (also NOHSC:3003)</b>	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, <i>Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres</i> , 2nd Edition [NOHSC:3003(2005)].
<b>NEPM (also ASC NEPM)</b>	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
<b>Organic</b>	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
<b>PCM</b>	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
<b>PLM</b>	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
<b>Sampling</b>	Unless otherwise stated Eurofins are not responsible for sampling equipment or the sampling process.
<b>SMF</b>	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
<b>SRA</b>	Sample Receipt Advice.
<b>Trace Analysis</b>	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
<b>UK HSE HSG</b>	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
<b>UMF</b>	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
<b>WA DOH</b>	Reference document for the NEPM. Government of Western Australia, <i>Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia</i> (updated 2021), including Appendix Four: <i>Laboratory analysis</i>
<b>Weighted Average</b>	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample ( <b>%<sub>WA</sub></b> ).

**Comments****Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

**Asbestos Counter/Identifier:**

Chamath JHM Annakkage      Senior Analyst-Asbestos

**Authorised by:**

Sayeed Abu      Senior Analyst-Asbestos



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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