# Certificate of Analysis

eurofins | Environment Testing

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.

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

| | |
|---|---|
| **Attention:** | Mark Hunter |
| **Report** | 894933-AFC |
| **Project Name** | HEFFRON PARK |
| **Project ID** | 61733 |
| **Received Date** | Jun 06, 2022 |
| **Date Reported** | Jun 06, 2022 |

**METHODOLOGY:**

| | |
|---|---|
| Asbestos Sampling | Sampling as per the National Occupational Health & Safety Commission – Guidance Note on The Membrane Filter Method For Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003(2005)] and the NATA Specific Accreditation Criteria, ISO/IEC 17025 Application Document Life Sciences – Annex, Asbestos sampling and testing, Issued: March 2021. |
| Pump Calibration | Air sampling pump performance has been assessed in accordance with Australian Institute of Occupational Hygiene (AIOH) Technical Paper Air Sampling Pumps: Equipment Calibration Requirements. Pump flow rate measurement equipment (e.g. Field Rotameter) has been calibrated in accordance with AIOH Technical Paper Flow Measurement Equipment: Calibration Requirements. |
| Asbestos Counting | Fibre counting is conducted in accordance with the National Occupational Health & Safety Commission Guidance Note on the Membrane Filter Method For Estimating Airborne Asbestos Fibres 2nd Edition , [NOHSC:3003(2005)] (MFM) and supplementary work instruction in-house LTM-ASB-8010. Unless specifically noted, analysis is undertaken by approved analysts at the base facility. Fibre counts (Fibres/fields) are covered by the facility's NATA scope of accreditation. The requirements of the NATA Specific Accreditation Criteria, ISO/IEC 17025 Application Document Life Sciences – Annex, Asbestos sampling and testing, Issued: March 2021 are realised. |

**Project Name** HEFFRON PARK
**Project ID** 61733
**Date Sampled** Jun 04, 2022
**Report** 894933-AFC

| Eurofins Sample No. | Client Sample ID | Pump ID | Location | Start (time) | End (time) | Start Flow Rate (L/min) | End Flow Rate (L/min) | Result (Fibres/Fields) | Result (Fibres/mL) |
|---|---|---|---|---|---|---|---|---|---|
| 22-Jn0011188 | CY547464 | AC029 | NORTH WEST BOUNDARY-PUBLIC CAR PARK | 6:30 | 12:00 | 1.5 | 1.5 | 0/100 | < 0.01 |
| 22-Jn0011189 | CY550330 | AC127 | NORTH EAST BOUNDARY-PUBLIC CAR PARK | 6:35 | 12:05 | 1.5 | 1.5 | 0/100 | < 0.01 |
| 22-Jn0011190 | CY550334 | AC176 | NORTH EAST BOUNDARY-TENNIS COURTS | 6:40 | 12:10 | 1.5 | 1.5 | 0/100 | < 0.01 |
| 22-Jn0011191 | CY550144 | AC193 | EAST BOUNDARY-EXCAVATION AREA | 6:45 | 12:15 | 1.5 | 1.5 | 0/100 | < 0.01 |
| 22-Jn0011192 | CY549671 | -- | BLANK | -- | -- | -- | -- | 0/100 | -- |

## 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.

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Asbestos - LTM-ASB-8010 | Sydney | Jun 06, 2022 | Indefinite |

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

**Sydney**
179 Magowar Road
Girraween NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

**Eurofins ARL Pty Ltd**
ABN: 91 05 0159 898

**Perth**
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

**Eurofins Environment Testing NZ Limited**
NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

| | | | |
|---|---|---|---|
| **Company Name:** | JBS & G Australia (NSW) P/L | **Order No.:** | |
| **Address:** | Level 1, 50 Margaret St<br>Sydney<br>NSW 2000 | **Report #:** | 894933 |
| | | **Phone:** | 02 8245 0300 |
| | | **Fax:** | |
| **Project Name:** | HEFFRON PARK | | |
| **Project ID:** | 61733 | | |

| | |
|---|---|
| **Received:** | Jun 6, 2022 2:46 PM |
| **Due:** | Jun 6, 2022 |
| **Priority:** | Same day |
| **Contact Name:** | Mark Hunter |

**Eurofins Analytical Services Manager : Hannah Mawbey**

| Sample Detail | | | | | | Asbestos Fibre Count & Concentration |
|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | |
| **Mayfield Laboratory - NATA # 1261 Site # 25079** | | | | | | |
| **Perth Laboratory - NATA # 2377 Site # 2370** | | | | | | |
| **External Laboratory** | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | |
| 1 | CY547464 | Jun 04, 2022 | 12:00PM | Air | S22-Jn0011188 | X |
| 2 | CY550330 | Jun 04, 2022 | 12:05PM | Air | S22-Jn0011189 | X |
| 3 | CY550334 | Jun 04, 2022 | 12:10PM | Air | S22-Jn0011190 | X |
| 4 | CY550144 | Jun 04, 2022 | 12:15PM | Air | S22-Jn0011191 | X |
| 5 | CY549671 | Not Provided | | Air | S22-Jn0011192 | X |
| **Test Counts** | | | | | | 5 |

## 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. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. 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 (**% w/w**) |
| F/fld | Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**) |
| F/mL | Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**) |
| g, kg | Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**) |
| g/kg | Concentration in grams per kilogram |
| L, mL | Volume, e.g. of air as measured in AFM (**V = r x t**) |
| L/min | Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**) |
| min | Time (**t**), e.g. of air sample collection period |

## Calculations

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

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

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

## Terms

| | |
|---|---|
| **%asbestos** | Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**$P_A$**). |
| **ACM** | 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. |
| **AF** | 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". |
| **AFM** | Airborne Fibre Monitoring, e.g. by the MFM. |
| **Amosite** | Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004. |
| **AS** | Australian Standard. |
| **Asbestos Content (as asbestos)** | Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**). |
| **Chrysotile** | Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004. |
| **COC** | Chain of Custody. |
| **Crocidolite** | Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004. |
| **Dry** | Sample is dried by heating prior to analysis. |
| **DS** | Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM. |
| **FA** | 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. |
| **Fibre Count** | Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003 |
| **Fibre ID** | Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos. |
| **Friable** | 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. |
| **HSG248** | UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021). |
| **HSG264** | UK HSE HSG264, *Asbestos: The Survey Guide* (2012). |
| **ISO (also ISO/IEC)** | International Organization for Standardization / International Electrotechnical Commission. |
| **K Factor** | Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**). |
| **LOR** | Limit of Reporting. |
| **MFM (also NOHSC:3003)** | Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)]. |
| **NEPM (also ASC NEPM)** | National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended). |
| **Organic** | Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004. |
| **PCM** | Phase Contrast Microscopy. As used for Fibre Counting according to the MFM. |
| **PLM** | Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004. |
| **SMF** | Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004. |
| **SRA** | Sample Receipt Advice. |
| **Trace Analysis** | Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix. |
| **UK HSE HSG** | United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication. |
| **UMF** | 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. |
| **WA DOH** | Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis* |
| **Weighted Average** | Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**). |

## Comments

Volume Measurement : MARK HUNTER, JBS & G Australia (NSW) P/L, has been trained by Eurofins and they conducted the sampling in accordance with the National Occupational Health & Safety Commission - Guidance Note on The Membrane Filter Method For Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003(2005)]methodology. Sampling pumps used by JBS & G Australia (NSW) P/L were calibrated by Eurofins Environment Testing and therefore volume measurements contained in this report are traceable back to Eurofins Environment Testing. Eurofins Environment Testing are responsible for all data contained in this report.

## Sample Integrity

| | |
|---|---|
| Custody Seals Intact (if used) | N/A |
| Attempt to Chill was evident | N/A |
| 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:

| | |
|---|---|
| Bennel Jiri | 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.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.