# Waste Classification Certificate
Prepared for
# EBH Environmental North Wyong Pty Ltd

## Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014

### The "Recovered Aggregate Order 2014" Characterisation: Sampling & Testing

Project number: Recovered Aggregates June - Lot 61

13 June 2025

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## DOCUMENT CONTROL & AUTHORISATION

60 Donaldson Street, Wyong Facility
The "Recovered Aggregate Order 2014"
Project Number: Recovered Aggregates June - Lot 61

| Rev | Date | Revision Details | Author | Reviewer | Signature |
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| 1 | 13/jun/2025 | Final Issue | Ryan O'Leary | Dr. ILIA Rostami | Ilia Rostami |
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# OBJECTIVE AND SCOPE OF WORKS

## 1.1 Introduction

This report presents the results of characterisation sampling and testing of recovered aggregate processed at the EBH Environmental Services Pty Ltd (EBH) facility, located at 60 Donaldson Street, Wyong. David Burgun of EBH commissioned this assessment. The sampling and testing were undertaken with respect to 'The Recovered Aggregate Order 2014' developed under the Protection of the Environment Operations (Waste) Regulation 2014 (EPA, 2014a).

It is understood that materials are processed on a "Routine/Continuous" basis and that characterisation and testing are required. It is further understood that EBH is processing multiple waste streams; however, this routine report pertains to generally rock, concrete and brick input materials that are crushed and screened to produce a <20 mm product.

## 1.2 Sampling Regime

Routine sampling and testing are required every three months or every 4,000 tonnes of recovered aggregate processed (whichever is the lesser). This report does not cover any other materials that may be removed for disposal or recycling.

## 1.3 General Information

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of "Routine/Continual" recovered aggregate to which 'the "Routine/Continual" recovered aggregate exemption 2014' applies. The requirements in this order apply in relation to the supply of "Routine/Continuous" recovered aggregate for application to land for the purpose of construction or landscaping.

## 1.4 Waste To Which This Order Applies

This order applies to the "Routine/Continuous process" of recovered aggregate. In this order, "Routine/Continual process" recovered aggregate means a soil or sand substitute with a typical maximum particle size of <20 mm that is derived from the Routine/Continual processing of mixed construction and demolition concrete brick waste.

## 1.5 Persons To Whom This Order Applies

The requirements in this order apply, as relevant, to any person who supplies "Routine/Continual process" recovered aggregate that has been generated, processed or recovered.

This order does not apply to the supply of "Routine/Continual process" recovered aggregate to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

## 1.6 Objective and Scope of the Work

The project objective was to sample and test material. The following scope of work was carried out:

Sampling was conducted with respect to Sections 4.1 and 4.2 of "The Recovered Aggregate Order 2014" (EPA, 2014a) and to Australian Standard 1141.3.1-2012 "Methods for Sampling and Testing Aggregates – Sampling – Aggregates" (SA, 2012). The scope of the characterisation sampling and testing comprised:

- Inspection of processed Stockpile and excavation of exploratory test pits into the Stockpile to facilitate the collection of representative samples;
- Sampling in accordance with Section 4.2 of "The Recovered Aggregate Order 2014" (EPA, 2014a);

- Testing of the recovered samples for the chemicals and other attributes as specified in Table 1 of "The Recovered Aggregate Order 2014" (EPA, 2014a) and
- Provision of this characterisation sampling and testing assessment report classifying the identified materials in accordance with "The Recovered Aggregate Order 2014" (EPA, 2014a).

Asbestos testing was not completed for this characterisation sampling as it is not required by EPA (2014)

This report must be read in conjunction with the attached critical information about your Environmental Report at the end of this document. Attention is drawn to the limitations inherent in site investigations and the importance of verifying the subsurface conditions inferred herein. IROS accepts no responsibility for the accuracy, correctness, precision, and truthfulness of the data presented in this report.

## 1.1 Site Inspection

EBH Environmental Services (EBH) facility is located at 60 Donaldson Street, Wyong (refer to Figure 1).

**Figure 1 – Site Locality (sourced from Metro Maps Photomaps, dated 2024)**

At the time of the characterisation sampling (06 June 2025), the processed (crushed and screened) materials were placed into a single stockpile designated as *DGB20 Lot 61*. The Stockpile comprised a general < 20 mm product, as advised by the Client (EBH).

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## 1.2 Materials Description

During the assessment, no major foreign materials were observed within/on/around the stockpile soils. The material consisted of grey sandy gravel (concrete and brick gravel) with minor inclusions of quantities of foreign materials observed. No olfactory evidence of significant chemical contamination was observed, such as the staining or discolouration of the soil or any odours. No suspected asbestos-containing materials were observed during the investigation at all. For more information, please refer to section 2.3.

**Table 2 – Material Description Summary**

| # | SAMPLE ID | Sample | Photograph | Size / Weight | Material Type / Description | Inclusion |
|---|---|---|---|---|---|---|
| 1 | 6101-6105 | 5 | NA | 4000t | Grey sandy gravel (concrete and brick gravel) | Very minor inclusions of metal, plastic and wood |

No USTs or ASTs were visible, and no staining or odours were visible during the inspection. There was no evidence of localised oil or chemical spills on any SPs, and this issue does not warrant any concern. Trees, birds, ponds and shrubs surrounding the stockpiles appeared generally healthy and stress-free.

No visible fibro cement pieces were observed on the surfaces of the Site that were inspected, and some foreign materials/inclusions were observed on/in/around the 4000-tonne stockpile tested. During sampling, hand excavation was applied to scratch the surface materials for representative and accurate sampling. It should be noted that foreign materials may also be present buried within the deep soil materials that could not be accessed as part of the inspection or are too deep to reach.

The chemical analysis is presented in **Table 4**. Copies of laboratory transcripts are provided in the **Appendix**.

## ASSESSMENT CRITERIA

### 1.3 NSW

The following guideline was used as comparative criteria to assess the environmental quality of the samples collected from the stockpiled materials:

"The Recovered Aggregate Order 2014" (EPA, 2014a). This order sets out the requirements for sampling and testing of Recovered Aggregate materials. The "Maximum Average Concentration for Routine Testing" and "Absolute Maximum Concentration" of chemical and other material property results of the stockpiled materials need to comply with the threshold levels for the material to be classified as Recovered Aggregate.

**Table 3 –Criteria**

| # | Column 1 | Column 2 | Column 3 | Column 4 |
|---|---|---|---|---|
| | **Chemicals and Other Attributes** | **Maximum Average Concentration for Characterisation** *(mg/kg 'dry weight' unless otherwise specified)* | **Maximum Average Concentration for Routine Testing** *(mg/kg 'dry weight' unless otherwise specified)* | **Absolute Maximum Concentration** *(mg/kg 'dry weight' unless otherwise specified)* |
| 1 | Mercury | 0.5 | Not required | 1 |
| 2 | Cadmium | 0.5 | 0.5 | 1.5 |
| 3 | Lead | 75 | 75 | 150 |
| 4 | Arsenic | 20 | Not required | 40 |
| 5 | Chromium total | 60 | 60 | 120 |
| 6 | Copper | 60 | 60 | 150 |
| 7 | Nickel | 40 | Not required | 80 |
| 8 | Zinc | 200 | 200 | 350 |
| 9 | EC | 1.5 dS/m | 1.5dS/m | 3 dS/m |
| 10 | Metal | 1% | 1% | 2% |
| 11 | Plaster | 0.25% | 0.25% | 0.5% |
| 12 | Rubber, plastic, paper, cloth, paint, wood and other vegetable matter | 0.2% | 0.2% | 0.3% |
| 13 | Asbestos | NA | NA | NA |

Adapted from NSW EPA (2014)

# 2. METHODOLOGY

## 2.1 Field Work Method

Exploratory test pits were excavated into the stockpile. An experienced technician completed the test pits to facilitate a visual inspection and sampling of the materials.

As part of the investigation, five composited samples (i.e. each composited sample comprised five discrete sub-samples combined into a single sample in the field) were collected from each of the processed concrete materials and analysed in a NATA-accredited laboratory. The samples were stored on ice during transportation to the laboratory.

The number of samples collected met the frequency specified in Section 4.2.1 of "The Recovered Aggregate Order 2014" (EPA, 2014a) for characterisation sampling.

Environmental sampling was performed with reference to standard operating procedures outlined in the IROS Field Procedures Manual based on standard procedures. All sampling data was recorded on the Chain-of-Custody sheets, and the general sampling procedure comprised:

- Changing disposable gloves between each sampling event to minimise the risk of cross-contamination;
- Decontaminating sampling equipment using a 3% solution of phosphate-free detergent (Liquinox) and tap water before collecting each sample;
- Transferring samples into laboratory-prepared glass jars and bulk sampling bags;
- Labelling sample containers with individual and unique identification, including project number, sample location and sample depth, and
- While on-site, place the glass jars into a cooled, insulated, and sealed container.

## 2.2 Field Work Observations

The stockpiled materials were assessed on 06 June 2025. Each exploratory test pit encountered consistent stockpile conditions comprising grey sandy gravel (concrete and brick gravel) with minor inclusions of quantities of foreign materials.

Only very minor quantities of foreign materials were observed within the stockpiled materials, estimated to be less than the threshold levels specified in Table 1 of "The Recovered Aggregate Order 2014" (EPA, 2014a). The foreign materials observed comprised metal, plastic and wood.

## 2.3 Sampling Process/Overview

Stockpile sampling was completed on 06 June 2025. The sampling for the Stockpile was undertaken in accordance with the information below. The sampling event was undertaken by suitably qualified and experienced environmental scientists, consultants, and engineers for the client. Soil samples were collected with new nitrile gloves for each sample from approximately 500 cm beneath the stockpile surface due to the size of the Stockpile. The samples were placed into chilled laboratory-prepared glass sample jars.

During soil sampling, EBH logged each sample location in general accordance with the Unified Soil Classification System (USCS). All samples were placed into chilled eskies before being transported under the chain of custody to the laboratory for analysis. A Chain of Custody (CoC) form was filled in with the sample names, sampling dates, and required analyses. This documentation and the samples were sent to the laboratories for analysis within analyte holding times. No noticeable odours or staining was observed during sample collection, and no other apparent signs of contamination were noted. Hence, in summary:

- Sampling for chemical suite analysis was also carried out using 250-300 gr of soil jars for 5 locations.
- Laboratory identification for foreign materials and an exclusion assessment/ analysis were also carried out.

## 2.4 Sampling Pattern

In order to classify stockpiled material, laboratory analysis of representative soil samples is required. To assess the material, a total/minimum of (5) primary soil samples was required for chemical analysis. Under the conditions of the order, each soil sample must consist of a discrete sample minimum. A sampling pattern was chosen to provide an even spread across the stockpiled material and an unbiased assessment of the materials due to the potentially unknown nature of contamination levels.

## 2.5 Sample Recovery and Preparation

Each sample was recovered from the material, not in direct contact with the excavation equipment, using a pair of nitrile gloves to transfer a portion of the material into a laboratory-supplied 250mL glass jar with a Teflon seal lid, as advised by the client.

The soil sample was immediately transferred into a laboratory-supplied 250 ml glass jar, which was sealed with a Teflon-coated lid to maintain the sample's integrity. Each recovered sample was labelled with the project code and sample ID. The samples for chemical analysis were transferred into a chilled container to begin the cool-down process. Once the soil samples had been recovered, the location was re-filled in accordance with Work Health and Safety (WHS) requirements.

## 2.6 Sample Handling and Transfer

Once all of the samples had been recovered, the chilled container was sealed and transported by courier to the primary lab, i.e. SGS Pty Ltd, the NNATA-accredited laboratory. This was under stringent chain of custody (CoC) procedures in accordance with the NATA accreditation. Upon receipt of all of the samples, a technician from both labs checked the samples' condition to confirm the integrity of the sample jar seals and that the samples were received in the appropriate condition. When satisfied, the samples were recovered in an appropriate condition. SGS returned a sample receipt to IROS AUSTRALIA, verifying the samples' integrity and confirming that the samples had been received in a chilled state as required under current Australian Standards.

## 2.7 Laboratory Analysis

Five (5) composited samples collected from stockpiled processed waste stream (i.e. five samples from the Stockpile) were analysed for the following suite of contaminants nominated in "The Recovered Aggregate Order 2014" (EPA, 2014a). The analysis was undertaken by SGS AUSTRALIA Services Pty Ltd (a NATA-accredited laboratory):

- As per table 3
- Metals (Cd, Cr, Cu, Pb and Zn); and
- Electrical conductivity (EC).

Visual observation/testing for the specified Foreign Materials Content (viz. metal, plaster, rubber, plastic, paper, cloth, paint, wood and other vegetable matter) was undertaken by the client in accordance with the NSW Roads and Maritime Services (RMS) test method T276 on composite bulk samples (not applicable in this case).

The results of the laboratory testing are summarised in Table 4.

A review of laboratory quality control test results was undertaken and, in summary, indicated that the accuracy and precision of the soil testing procedures, as inferred by the QA/QC data, is considered to be of sufficient standard to allow the data reported to be then used to interpret contamination conditions.

# 3. QUALITY ASSURANCE AND QUALITY CONTROL

The precision, accuracy, representativeness, completeness and comparability of field and laboratory data are considered acceptable. The dataset presented as part of this assessment is considered suitably reliable and representative of the sampled material and potential CoC.

## 3.1 Laboratory QA/QC Assessment

### 3.1.1 Quality Assurance

NATA accredits SGS for chemical testing services. Both labs have a quality system that is compliant with ISO/IEC 17025 and works to document procedures according to this standard. This includes but is not limited to participation in proficiency testing, use of certified reference materials and statistical analysis of quality control data.

### 3.1.2 Quality Control

Quality control samples are included in the laboratory's testing schedules at or above frequencies stipulated within the National Environment Protection (Assessment of Site Contamination) Measure 1999 (Amended 2013) and in accordance with their NATA accreditation. These include the use of calibration standards, calibration verification standards, method blanks, matrix spikes and duplicates, laboratory control samples, surrogates and internal standards.

## 3.2 Quality Assurance and Control Evaluation

IROS AUSTRALIA has assessed the QA/QC procedures undertaken. The field QA/QC measures were considered adequate for completing the assessment, and the recovered samples provide a reliable representation of encountered conditions.

The laboratory QA/QC measures undertaken are considered adequate for the analyses performed and conform to the recommendations provided in the NEPM 2013 "Guideline on Laboratory Analysis of Potentially Contaminated Soils" and ANZECC 1996 "Guidelines for the Laboratory Analysis of Contaminated Soils". Overall, the QA/QC measures implemented were considered adequate to provide reliable and useable data for this assessment.

Calculated RPDs, Esdat exceedance tables (if applicable) and laboratory QA/QC are presented in **Appendix**.

## 4. RESULTS

The concentrations of chemical analytes and other attribute parameters reported in Table 4 were less than the maximum average allowable and absolute maximum concentrations specified in Table 4 of “The Recovered Aggregate Order 2014” (EPA, 2014a).

Based on the sampling and laboratory results, it complies with “The Recovered Aggregate Order 2014” (EPA, 2014a).

Please note that the current classification does not apply to materials beyond the limit of the assessment, to materials different from the material types described above, or to materials exhibiting signs of contamination (e.g. anthropogenic inclusions greater than 0.1%, fibro fragments, staining or odours). These materials, if encountered, should be stockpiled separately to be further assessed. Handling, transport and disposal of material must be conducted in accordance with the Protection of the Environment Operations (POEO) Act 1997.

Technicians from SGS undertook the chemical analysis of the recovered samples in accordance with relevant Australian Standards and the conditions of their NATA Accreditation. Please refer to the ESdat exceedance tables in **Appendix.**

**Table 4: Results**

RESOURCE RECOVERY ORDER
Recovered Aggregate Results
Characterisation Sample
Summary Sheet

IROS AUSTRALIA - NATIONAL ENVIRONMENTAL ENGINEERING CONSULTANTS

**Client: EBH Environmental NW** — **SAMPLE NO: 6101 - 6105**
**CONTACT: Mr Adam Gibbs** — **SAMPLING DATE: 04.06.25**
**LOCATION: Lot 60 Donaldson st** — **EBH JOB NO: RECOVERED AGGREGATES JUNE - LOT 61**
**STOCKPILE NO: DGB20 Lot 61** — **TEST TYPE: RECOVERED AGGREGATE ORDER 2014**
**SAMPLED BY: EBH Staff member** — **CHECKED BY: IROS AUSTRALIA**

| Specified chemical or other attribute | Method | Units | 6101 | 6102 | 6103 | 6104 | 6105 | Maximum Average Concentration – characterisation | Maximum Average Concentration – routine | Absolute Maximum Concentration | Average | RESULTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 12.1 | mg/kg | <LOR | <LOR | <LOR | <LOR | <LOR | 0.5 | Not required | 1 | <LOR | ND |
| Cadmium | 12.1 | mg/kg | <LOR | <LOR | <LOR | <LOR | <LOR | 0.5 | 0.5 | 1.5 | <LOR | ND |
| Lead | 12.2 | mg/kg | 9.00 | 8.00 | 8.00 | 7.00 | 8.00 | 75 | 75 | 150 | 8.00 | PASS |
| Arsenic | 12.2 | mg/kg | 4.00 | 4.00 | 4.00 | 4.00 | 3.00 | 20 | Not required | 40 | 3.80 | PASS |
| Chromium | | mg/kg | 18.00 | 18.00 | 20.00 | 16.00 | 14.00 | 60 | 60 | 120 | 17.20 | PASS |
| Copper | 12.2 | mg/kg | 17.00 | 25.00 | 17.00 | 20.00 | 17.00 | 60 | 60 | 150 | 19.20 | PASS |
| Nickle | 12.2 | mg/kg | 16.00 | 20.00 | 16.00 | 14.00 | 13.00 | 40 | Not required | 80 | 15.80 | PASS |
| Zinc | 12.2 | mg/kg | 47.00 | 45.00 | 45.00 | 41.00 | 42.00 | 200 | 200 | 350 | 44.00 | PASS |
| Electrical Conductivity (1:5) | 12.3 | dS/m | 1.7 | 1.8 | 1.6 | 1.7 | 1.6 | Not Required | Not required | 3 dS/m | 1.68 | PASS |
| Metal | 12.4 | % | <LOR | <LOR | <LOR | <LOR | <LOR | 1% | 1% | 2% | <LOR | ND |
| Plaster | 12.5 | % | <LOR | <LOR | <LOR | <LOR | <LOR | 0.25% | 0.25% | 0.5% | <LOR | ND |
| Rubber, plastic, paper, cloth, paint, wood and other vegetable matter | | % | <LOR | <LOR | <LOR | <LOR | <LOR | 0.2% | 0.2% | 0.3% | <LOR | PASS |
| Proportion (by weight) retained on a 0.425-mm sieve | 12.11 | % W/W | TBA | TBA | TBA | TBA | TBA | TBA | 80 | 90 | TBA | TBA |

Notes: # Sum of detected Analytes — ND - Not Detected — ^ Test result based on additional test of duplicate sample
* Total Petroleum Hydrocarbons — TBA= To be analysed

## 5. DISCUSSION AND CONCLUSION

5 Samples were sent to the NATA-accredited laboratory for analysis in accordance with the “Routine/Continual process” recovered aggregate order 2014 (NSW EPA). Based on the results of the chemical and physical data (as shown in the attached table), all parameters in routine samples 6101-6105 were found to be below the absolute maximum criteria, as outlined in the Table above of the NSW EPA Exemption known as the “Routine/Continual Process” Recovered Aggregate Order 2014. Therefore, STOCKPILE (DGB20 Lot 61) meet the criteria of the Exemption guidelines, i.e. passed.

Based on the sampling and laboratory results, it complies with “The Recovered Aggregate Order 2014” (EPA, 2014a).

- **PASSED**

Inappropriate disposal of this material is an offence as detailed within the NSW Protection of the Environment Operations (POEO) Act 1997 and can carry significant penalties or result in prosecution

Waste generators (Client) must chemically assess their waste in accordance with Step 5 of the Waste Classification Guidelines to determine the classification of the wastes where it has not been classified under Steps 1- 4 of the Waste Classification Guidelines. Any materials proposed to be excavated and disposed of off-site during proposed remediation/development works must be classified in accordance with the ACT/NSW EPA (2017) Waste Classification Guidelines (including PFAS) prior to off-site disposal to an appropriately licenced waste management/landfill facility. If the waste generator does not undertake a chemical assessment of the waste, it must be classified as hazardous waste. Waste classified as hazardous waste cannot be disposed of in ACT/NSW and must be treated prior to disposal.

Please note that Part 5.6, Section 143 of the Protection of the Environment Operations (POEO) Act 1997 states that it is an offence for waste to be transported to a place that cannot lawfully be used as a facility to accept that waste. The owner and transporter of the waste have to ensure that the waste is disposed of appropriately.

IROS AUSTRALIA accepts no liability for the unlawful disposal of waste materials from any site. IROS AUSTRALIA accepts no responsibility for the material tracking, loading, management, process, recycling, transport or disposal of waste from the Site. Before disposal of the material to a licensed landfill is undertaken, the waste producer must obtain prior consent from the landfill. The receiving Site should check to ensure that the material received matches the description provided in the report.

## 6. GENERAL RECOMMENDATIONS

- The movement of any un-investigated material on-site MUST be avoided to eliminate the risk of cross-contamination on Site.
- The placement of un-investigated material near any surface water or stormwater/drainage/pond/creek system MUST be prevented.
- Stored/stockpiles of excavated materials MUST NOT be mixed with other soils unless a supervising environmental consultant agrees in consultation with the NSW EPA.
- Due to the potential leachate of the other stockpiles (if applicable), the excavated materials MUST be placed on a thick plastic barrier.
- The excavation/placement of materials MUST be tracked/monitored, and the volume and origin of these materials MUST be recorded.
- Materials from the earthworks on-site MUST be segregated and stockpiled separately.
- Un-investigated materials MUST NOT be mixed with other soils unless the supervising environmental consultant confirms agreement.
- As advised by the Client, the estimated volume of the tested Stockpile is mentioned at the beginning of the document. The client subcontractors conducted this, and it is pending EPA approval.
- All stockpiles of soil or other materials shall be placed away from drainage lines, gutters, stormwater pits, or inlets.
- All stockpiles of soil or other materials likely to generate dust or odours shall be covered.
- No stockpiles of soil or other materials shall be placed on footpaths or nature strips unless prior EPA/ Council approval has been obtained.
- All stockpiles of soil or other materials likely to contain any form of potential ACM shall be covered and labelled as “Danger/asbestos”.
- All contaminated soil stockpiles shall be stored in a secure area and covered if remaining for more than 24 hours.
- All stockpiles are placed on a level area as a low, elongated mound.
- No stockpiled materials are to be disposed of off-site without the Authorities’ approval, as per NSW EPA's request.

## 7. REFERENCES


- NSW EPA 2014a, “The Recovered Aggregate Order 2014” Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014, 24 November 2014.
- NSW EPA 2014b, “The Recovered Aggregate Exemption 2014” Resource Recovery Exemption under Part 9, Clause 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014, 24 November 2014.
- NSW EPA 2014c, “Waste Classification Guidelines, Part 1: Classifying Waste, NSW Environmental Protection Authority (EPA), November 2014.
- SA 2012 “Australian Standard 1141.3.1-2012 “Methods for Sampling and Testing Aggregates – Sampling – Aggregates”, 2012.
- NSW EPA 2016, “The EBH Recovered Aggregate Order 2016” Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014.
- ENVIRONMENTAL STANDARDS: ASSESSMENT AND CLASSIFICATION OF LIQUID AND NON-LIQUID WASTES - July 2021- ACT Government
- NSW Office of Environment and Heritage (2011) Guidelines for Consultants Reporting on Contaminated Sites
- The National Environmental Protection (Assessment of Site Contamination) Measure (1999, as amended 2013) (the ASC NEPM)
- Western Australia Department of Health (2009) Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia
- Standards Australia (2005). Australian Standard AS4482.1-2005: Guide to investigating and sampling sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds. SA, November 2005
- Standards Australia, 1999. Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances. Australian Standard AS4482.2-1999
- Standards Australia, 2005. Guide to the investigation and sampling of sites with potentially contaminated soils. Part 1: Non-volatile and Semi-volatile Compounds. November 2005. Australian Standard AS4482.1-2005

## 8. LIMITATIONS

This report, including associated documents such as Appendices, Attachments, etc., was based on the Scope of Work outlined at the beginning of this document. EBH prepared this report consistently with the level of care and expertise practised by members of the environmental profession.

This report relates only to the objectives stated and does not relate to any other work undertaken for the Client. Site conditions upon which inferences in this report are drawn may change with time and space.

The absence of any identified hazardous or toxic materials/chemicals on the subject property (the Site) must not be interpreted to guarantee that such materials/chemicals do not exist on the Site or neighbouring environment. The results of this site investigation only apply to sampling locations/Stockpiles for all media, including soil, water and air; hence, the potential chemical extent of the remainder of the Site is unknown.

All conclusions and recommendations regarding the Site are the professional opinions and are subject to the details in this report. IROS accepts no liability where our recommendations are not followed or are only partially followed. While assessments of data reliability have been made, IROS assumes no responsibility or liability for errors in any data obtained from regulatory agencies, governing bodies, statements from sources outside of IROS, or developments resulting from situations outside the scope of this project. The Client acknowledges that this report is for the exclusive use of (EBH ENVIRONMENTAL SERVICES PTY LTD) only.

Moreover, this report has been prepared by IROS AUSTRALIA in response to and subject to the following limitations:

- The specific instructions received from EBH ENVIRONMENTAL SERVICES PTY LTD.
- The original Proposal documents (IROS AUSTRALIA ref: IRP-02310), including the Terms of Agreement for Professional Services, are contained within.
- The report has been prepared for a specific scope of work as set out earlier in this report.
- It may not be relied upon by any third party not named in this report for any purpose except with the prior written consent of IROS AUSTRALIA (which may or may not be given at the discretion of IROS AUSTRALIA).
- This report comprises the formal report, documentation sections, tables, figures, and appendices referred to in the index to this report and must not be released to any third party or copied in part without all the material included in this report reason.
- The report only relates to the Site referred to at the beginning of this report at the site address as 60 Donaldson Street, Wyong, which was the subject of this investigation (“the site”) and further described in **Figure 1**.
- The report relates to the Site as the specified date of investigation, as conditions may change after natural processes and/or site activities.
- No warranty or guarantee is made in regard to any other use than as specified in the scope of works and the Proposal document.
- IROS AUSTRALIA’s permission needs to be granted before any potential release of this report, and details for the proposed development are required to be sent to the relevant regulatory authorities that have an interest in the property or are responsible for services that may be within or adjacent to the Site for their review.

- IROS AUSTRALIA accepts no liability where our recommendations are not followed or are only partially followed. The document “Terms and Conditions” provides additional information about the uses and limitations of this report.

- The survey undertaken was limited to those areas available for access at the inspection time. Only the areas accessible to the surveyor at the time of the inspection are included in this report.

- Samples were not taken where the act of sampling would endanger the surveyor/inspector's safety or affect the item's structural integrity.

- The Friability of asbestos-containing materials is a subjective assessment. ‘Material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos’ NEPM Schedule B1 p27-28. The ‘Description' reported under AS4964 is intended to give context to the form or condition of any asbestos found in the sample. The form is described in objective terms, with the term ‘friable’ only used when the Asbestos is assessed by crushing, as described by Safe Work Australia. The National Association of Testing Authorities (NATA) prevents laboratories from reporting on the friability status of the materials.

- IROS AUSTRALIA Pty Ltd (IROS) has prepared this report for this project at 60 Donaldson Street, Wyong, and acceptance was received from David Burgun of EBH. The work was carried out under IROS’s Conditions of Engagement. This report is provided for the exclusive use of EBH Environmental Services for this project only and the purposes described in the report.

- It should not be used by or relied upon for other projects or purposes on the same or other Site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of IROS, does so entirely at its own risk and without recourse to IROS for any loss or damage. In preparing this report, IROS relied upon information provided by the Client and/or their agents. Further, the report is valid (for the purposes of disposal of material) for a period of three months only from the date of issue.

- Please note that the current classification does not apply to materials beyond the limit of the sampled and tested Stockpile, to materials different from the material types described above, or to materials exhibiting signs of contamination (e.g. total anthropogenic inclusions greater than 0.2%, fibro fragments, staining or odours). These materials, if encountered, should be stockpiled separately to be further assessed. Handling, transport and disposal of material must be conducted in accordance with the Protection of the Environment Operations (POEO) Act 1997.

- Asbestos has not been detected by observation, either on the surface of the Stockpile or in fill materials at the test locations sampled. Building demolition materials, such as concrete, brick, and tile, were, however, located in the Stockpile, and these are considered indicative of the possible presence of hazardous building materials (HBM), including Asbestos. Hence, no warranty can be given that Asbestos is not present. It is understood that the Client completes their own quality control procedures to ensure that asbestos-contaminated materials are not received at the Site and are not processed into the stockpiled aggregate.

- The sampling and testing completed have been undertaken with reference to the requirements and methods set out in the EPA 2014a. IROS is not responsible for the quality assurance and quality control requirements of the processor/supplier of the recovered aggregate. The results provided in the report are indicative of the stockpile conditions on the Site only at the specific sampling and/or testing locations and then only at the time the work was carried out. Stockpile conditions can change abruptly due to variable waste streams and processing methods and also as a result of human influences. Such changes may occur after IROS’s sampling and testing has been completed.

- IROS’s advice is based on the conditions encountered during this investigation. The accuracy of the advice provided by IROS in this report may be affected by undetected variations in stockpile conditions between and beyond the

sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

- This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. IROS cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

- This report, or sections from this report, should not be used as part of a specification for a project without review and agreement by IROS. This is because this report has been written as advice and opinion rather than instructions for construction.
- Please note that Part 5.6, Section 143 of the POEO Act 1997 states that it is an offence for waste to be transported to a place that cannot lawfully be used as a facility to accept that waste. The owner and transporter of the waste must ensure that the waste is disposed of appropriately and that suitable records are obtained and kept. IROS accepts no liability for the unlawful disposal of waste materials from any site. IROS accepts no responsibility for the material tracking, loading, management, transport or disposal of waste from the Site. The owner and transporter of the waste must ensure that the waste is disposed of appropriately

## 9. CRITICAL INFORMATION

- The environmental report ("the report") has been prepared in accordance with the scope of services as set out in the contract, or as otherwise agreed, between the Client (EBH ENVIRONMENTAL SERVICES PTY LTD) and IROS AUSTRALIA ("IROS"), for the specific Site investigated. The scope of work may have been limited by a range of factors such as time, budget, access and/or Site disturbance constraints. The report should not be used if there have been changes to the project without first consulting with IROS to assess if the report's recommendations are still valid. IROS does not accept responsibility for problems that occur due to project changes if they are not consulted.

- IROS relies on the data of the Client and other individuals and organisations to prepare the report. Such data may include surveys, analyses, designs, maps and plans. IROS has not verified the accuracy or completeness of the data except as stated in the report. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations ("conclusions") are based in whole or part on the data, IROS will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented, or otherwise not fully disclosed to IROS.

- The investigation program undertaken is a professional estimate of the scope of investigation required to provide a general profile of subsurface conditions. The data derived from the site investigation program and subsequent laboratory testing are extrapolated across the Site to form an inferred geological model, and an engineering opinion is rendered about overall subsurface conditions and their likely behaviour with regard to the proposed development. Despite the investigation, the Site's actual conditions might differ from those inferred to exist since no subsurface exploration program can reveal all subsurface details and anomalies, no matter how comprehensive. The engineering/environmental logs are the subjective interpretation of subsurface conditions at a particular location and time made by trained personnel. The actual interface between materials may be more gradual or abrupt than a report indicates. Therefore, the recommendations in the report can only be regarded as preliminary. IROS should be retained during the project implementation to assess if the report's recommendations are valid and whether or not changes should be considered as the project proceeds.

- Subsurface conditions and Stockpiles can be modified by changing natural forces or human-made influences. The report is based on conditions that existed during subsurface exploration. Construction operations adjacent to the Site and natural events, such as floods or groundwater fluctuations, may also affect subsurface conditions and the continuing adequacy of a report. IROS should be kept appraised of any such events and should be consulted to determine if any additional tests are necessary.

- Where ground conditions encountered at the Site differ significantly from those anticipated in the report, either due to natural variability of subsurface conditions or construction activities, it is a condition of the report that IROS be notified of any variations and be provided with an opportunity to review the recommendations of this report. Recognition of changes in soil and rock conditions requires experience, and it is recommended that a suitably experienced environmental engineer be engaged to visit the Site with sufficient frequency to detect if conditions have changed significantly.

- The report has been prepared for the benefit of the Client and no other party. IROS assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of IROS or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own inquiries and obtain independent advice in relation to such matters.

- The report as a whole presents the site assessment and must not be copied in part or altered in any way. Professionals develop logs, figures, drawings, test results, etc., which are included in our reports based on their interpretation of field logs (assembled by field personnel) and laboratory evaluation of field samples. These data should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

- Where the report's recommendations are only partially followed, there may be significant implications for the project, which could lead to problems. Consult IROS if you do not intend to follow all of the report recommendations to assess the implications. IROS does not accept responsibility for problems that develop where the report recommendations have only been partially followed if they have not been consulted.

- IROS will not be liable to update or revise the report to take into account any events, emergent circumstances, or facts occurring or becoming apparent after the report's date.

- The IROS AUSTRALIA assessment is based on limited site investigations and sample testing results. Neither IROS AUSTRALIA nor any other consultant can provide unqualified warranties, nor does IROS AUSTRALIA assume any liability for site conditions not observed or accessible during the time of the investigations.

- Despite all reasonable care and diligence, the materials encountered and measured contaminant concentrations may not represent conditions between the locations sampled and investigated. In addition, site characteristics (STOCKPILE NATURE/VOLUME) may change at any time in response to variations in natural conditions, chemical reactions and other events, e.g. groundwater movement and or spillages of contaminating substances or movement of uncontrolled fill materials on-site. These changes may occur subsequent to IROS AUSTRALIA investigations and assessments.

- This report and associated documentation and the information herein have been prepared solely for the use of the Client at the time and are valid (for the eventual purpose of transporting material) for a period of one month only from the date of issue. Any other reliance assumed by third parties on this report shall be at such parties' own risk. Any ensuing liability resulting from the use of the report by third parties cannot be transferred to IROS AUSTRALIA.

- Please note that Part 5.6, Section 143 of the Protection of the Environment Operations (POEO) Act 1997 states that it is an offence for waste to be transported to a place that cannot lawfully be used as a facility to accept that waste. The owner and transporter of the waste must ensure that the waste is disposed of appropriately. IROS AUSTRALIA accepts no liability for the unlawful disposal of waste materials from any site. IROS AUSTRALIA does not accept any responsibility for the material tracking, loading, management, transport or disposal of waste from the Site. Before disposal of the material to a licensed landfill is undertaken, the waste producer must obtain prior consent from the landfill. The receiving Site should check to ensure that the material received matches the description provided in the report.

- Opinions are judgements that are based on our understanding and interpretation of current regulatory standards and should not be construed as legal opinions.

- This report is provided pursuant to a Consultancy Agreement between IROS AUSTRALIA ("IROS") and (EBH Environmental Services Pty Ltd) under which IROS undertook to perform a specific and limited task for (EBH Environmental Services Pty Ltd). This report is strictly limited to the matters stated in it and subject to the various assumptions, qualifications, and limitations in it and does NOT apply by implication to other matters. IROS makes no representation that the scope, assumptions, qualifications, recommendations and exclusions set out in this report will be suitable or sufficient for other purposes nor that the content of the report covers all matters that you may regard as material for your purposes. This report must be read as a whole, including associated documentation such as Appendices, Attachments, Figures, etc. The executive summary is not a substitute for this. Any subsequent report must be read in conjunction with this report.

- The report supersedes all previous draft or interim reports, whether written or presented verbally, before the date of this report. This report has not and will not be updated for events or transactions occurring after the issue date of the report or any other matters that might have a material effect on its contents or that will be revealed after the date of the report.

- IROS is not obliged to inform anyone, including you, of any such event, transaction or matter nor to update the report for anything that occurs or of which IROS becomes aware after the date of this report. Unless expressly agreed otherwise in writing, IROS does not accept a duty of care or any other legal responsibility whatsoever in relation to this report, including associated documentation or any related enquiries, advice or other work, nor does IROS make any representation in connection with this report, to any person other than (EBH Environmental Services Pty Ltd).Any other person who receives a draft or a copy of this report (or any part of it) or discusses it (or any part of it) or any related matter with IROS does so on the basis that this person (he/she) acknowledges and accepts that he/she may not rely on this report nor any related information or advice given by IROS for any purpose whatsoever.

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SGS

# CHAIN OF CUSTODY & ANALYSIS REQUEST

Page ____ of ____

**SGS Environmental Services**
**Unit 16, 33 Maddox Street**
**Alexandria NSW 2015**
**Telephone No: (02) 85940400**
**Facsimile No: (02) 85940499**
**Email:** au.samplereceipt.sydney@sgs.com

| | | | |
|---|---|---|---|
| Company Name: | EBH North Wyong | Project Name/No: | Recovered Aggregates June – Lot 61 |
| Address: | Lot 60 Donaldson ST North Wyong 2259 | Purchase Order No: | |
| | | Results Required By: | Standard turnaround |
| | | Telephone: | 0427025072 |
| Contact Name: | Adam Gibbs | Facsimile: | |
| | | Email Results: | Office@ebhnorthwyong.com.au |

| Client Sample ID | Date Sampled | Lab Sample ID | WATER | SOIL | PRESERVATIVE | NO OF CONTAINERS | Recovered Aggregate Order 2014 |
|---|---|---|---|---|---|---|---|
| 6101 | 04/06/25 | 1 | | x | | | X |
| 6102 | 04/06/25 | 2 | | x | | | x |
| 6103 | 04/06/25 | 3 | | x | | | x |
| 6104 | 04/06/25 | 4 | | x | | | x |
| 6105 | 04/06/25 | 5 | | x | | | x |

SGS EHS Sydney COC
**SE284109**

| | | | |
|---|---|---|---|
| Relinquished By: Adam Gibbs | Date/Time: 04/06/25 | Received By: B. Subaracy | Date/Time 05/06/25 @ 10:20 |
| Relinquished By: Adam Gibbs | Date/Time: 04/06/25 | Received By: | Date/Time |
| Samples Intact: Yes/ No | Temperature: Ambient / Chilled | Sample Cooler Sealed: Yes/ No | Laboratory Quotation No: |
| | Comments: | | |

# ANALYTICAL REPORT

Accreditation No. 2562

## CLIENT DETAILS

| | |
|---|---|
| Contact | Adam Gibbs |
| Client | EBH ENVIRONMENTAL NORTH WYONG PTY LIMITED |
| Address | PO BOX 3561<br>TUGGERAH NSW 2259 |
| Telephone | 0427 025 072 |
| Facsimile | (Not specified) |
| Email | Office@ebhnorthwyong.com.au |
| Project | **Recovered Aggregates June - Lot 61** |
| Order Number | (Not specified) |
| Samples | 5 |

## LABORATORY DETAILS

| | |
|---|---|
| Manager | Shane McDermott |
| Laboratory | SGS Alexandria Environmental |
| Address | Unit 16, 33 Maddox St<br>Alexandria NSW 2015 |
| Telephone | +61 2 8594 0400 |
| Facsimile | +61 2 8594 0499 |
| Email | au.environmental.sydney@sgs.com |
| SGS Reference | **SE284109 R0** |
| Date Received | 5/6/2025 |
| Date Reported | 13/6/2025 |

## COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

Sample #1,4-5: A portion of the sample supplied has been sub-sampled for Foreign Material Analysis according to SGS In-house procedures.
Foreign Material Content of sample supplied analysed by Jackson Miller.

## SIGNATORIES

| | | | |
|---|---|---|---|
| **Dong LIANG** | **Kamrul AHSAN** | **Ravee SIVASUBRAMANIAM** | **Ying Ying ZHANG** |
| Metals/Inorganics Team Leader | Senior Chemist | Hygiene Team Leader | Laboratory Technician |

## Conductivity and TDS by Calculation - Soil [AN106] Tested: 12/6/2025

| PARAMETER | UOM | LOR | 6101<br>SOIL<br>-<br>4/6/2025<br>SE284109.001 | 6102<br>SOIL<br>-<br>4/6/2025<br>SE284109.002 | 6103<br>SOIL<br>-<br>4/6/2025<br>SE284109.003 | 6104<br>SOIL<br>-<br>4/6/2025<br>SE284109.004 | 6105<br>SOIL<br>-<br>4/6/2025<br>SE284109.005 |
|---|---|---|---|---|---|---|---|
| Conductivity of Extract (1:5 as received) | µS/cm | 2 | 1700 | 1800 | 1600 | 1700 | 1600 |

## Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 11/6/2025

| PARAMETER | UOM | LOR | 6101<br>SOIL<br>-<br>4/6/2025<br>SE284109.001 | 6102<br>SOIL<br>-<br>4/6/2025<br>SE284109.002 | 6103<br>SOIL<br>-<br>4/6/2025<br>SE284109.003 | 6104<br>SOIL<br>-<br>4/6/2025<br>SE284109.004 | 6105<br>SOIL<br>-<br>4/6/2025<br>SE284109.005 |
|---|---|---|---|---|---|---|---|
| Arsenic, As | mg/kg | 1 | 4 | 4 | 4 | 4 | 3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | <0.3 | <0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.5 | 18 | 18 | 20 | 16 | 14 |
| Copper, Cu | mg/kg | 0.5 | 17 | 25 | 17 | 20 | 17 |
| Lead, Pb | mg/kg | 1 | 9 | 8 | 8 | 7 | 8 |
| Nickel, Ni | mg/kg | 0.5 | 16 | 20 | 16 | 14 | 13 |
| Zinc, Zn | mg/kg | 2 | 47 | 45 | 45 | 41 | 42 |

Mercury in Soil [AN312] Tested: 11/6/2025

| PARAMETER | UOM | LOR | 6101<br>SOIL<br>-<br>4/6/2025<br>SE284109.001 | 6102<br>SOIL<br>-<br>4/6/2025<br>SE284109.002 | 6103<br>SOIL<br>-<br>4/6/2025<br>SE284109.003 | 6104<br>SOIL<br>-<br>4/6/2025<br>SE284109.004 | 6105<br>SOIL<br>-<br>4/6/2025<br>SE284109.005 |
|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

## Foreign Materials Content of Recycled Crushed Concrete [AN030] Tested: 11/6/2025

| PARAMETER | UOM | LOR | 6101<br>SOIL<br>-<br>4/6/2025<br>SE284109.001 | 6102<br>SOIL<br>-<br>4/6/2025<br>SE284109.002 | 6103<br>SOIL<br>-<br>4/6/2025<br>SE284109.003 | 6104<br>SOIL<br>-<br>4/6/2025<br>SE284109.004 | 6105<br>SOIL<br>-<br>4/6/2025<br>SE284109.005 |
|---|---|---|---|---|---|---|---|
| Total Dry Sample Weight* | g | 1 | 6360 | 6480 | 6940 | 6080 | 5660 |
| Metal Weight (%)* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Plaster Weight (%)* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Rubber Weight (%)* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Plastic Weight (%)* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Paper Weight (%)* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Cloth Weight (%)* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Paint Weight (%)* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Wood and Other Vegetable Matter Weight (%)* | %w/w | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

Moisture Content [AN002] Tested: 11/6/2025

| PARAMETER | UOM | LOR | 6101<br>SOIL<br>-<br>4/6/2025<br>SE284109.001 | 6102<br>SOIL<br>-<br>4/6/2025<br>SE284109.002 | 6103<br>SOIL<br>-<br>4/6/2025<br>SE284109.003 | 6104<br>SOIL<br>-<br>4/6/2025<br>SE284109.004 | 6105<br>SOIL<br>-<br>4/6/2025<br>SE284109.005 |
|---|---|---|---|---|---|---|---|
| % Moisture | %w/w | 1 | 12.0 | 11.9 | 10.2 | 11.1 | 10.8 |

| METHOD | METHODOLOGY SUMMARY |
|---|---|
| AN002 | The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water. |
| AN030 | A sample is dried at 50 - 60°C, sieved and separated into lots. The three types of foreign material are determined. The weights of each type are calculated as a percentage of the entire dry sample weight (including material passing 4.75mm/2.36.mm sieve). Based on RTA test method T276.<br><br>Type I: Metal, Glass, Asphalt, Stone, Ceramics and Slag (other than blast furnace slag)<br><br>Type II: Plaster, Clay lumps and other Friable Material<br><br>Type III: Rubber, Plastic, Bitumen, Paper, Cloth, Paint, Wood and other Vegetable Matter |
| AN040/AN320 | A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C. |
| AN040 | A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8. |
| AN106 | Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract of as received sample with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2510 B. |
| AN312 | Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500 |

FOOTNOTES

| | | | | | |
|---|---|---|---|---|---|
| * | NATA accreditation does not cover the performance of this service. | - | Not analysed. | UOM | Unit of Measure. |
| ** | Indicative data, theoretical holding time exceeded. | NVL | Not validated. | LOR | Limit of Reporting. |
| *** | Indicates that both * and ** apply. | IS | Insufficient sample for analysis. | ↑↓ | Raised/lowered Limit of Reporting. |
| | | LNR | Sample listed, but not received. | | |

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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