# CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Work Order** | : **EP2316733** | Page | : 1 of 4 |
| **Amendment** | : **1** | | |
| Client | : **RIVER ENGINEERING** | Laboratory | : Environmental Division Perth |
| Contact | : [redacted] | Contact | : Nick Courts |
| Address | : | Address | : 26 Rigali Way Wangara WA Australia 6065 |
| Telephone | : ---- | Telephone | : [redacted] |
| Project | : The Landing / Walkabout | Date Samples Received | : 27-Nov-2023 12:45 |
| Order number | : LWI | Date Analysis Commenced | : 27-Nov-2023 |
| C-O-C number | : ---- | Issue Date | : 05-Dec-2023 18:50 |
| Sampler | : [redacted] | | |
| Site | : ---- | | |
| Quote number | : ---- | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 2 | | |

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

## *Signatories*

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| *Signatories* | *Position* | *Accreditation Category* |
|---|---|---|
| Canhuang Ke | Inorganics Supervisor | Perth Inorganics, Wangara, WA |
| Chris Lemaitre | Laboratory Manager (Perth) | Perth Inorganics, Wangara, WA |
| Vinitha Kesavan | Analyst | Perth Microbiology, Wangara, WA |
| Wisam Marassa | Inorganics Coordinator | Sydney Inorganics, Smithfield, NSW |

## General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- MF = membrane filtration
- CFU = colony forming unit
- MW006 is ALS's internal code and is equivalent to AS4276.5.
- MW006:Analysis Commenced:Date:27/11/2023.Time:2:00PM.
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu.
- Amendment (05/12/2023): This report has been amended to alter the site sampling time for sample EP2316733_002. All analysis results are as per the previous report.

## Analytical Results

| Sub-Matrix: EFFLUENT (Matrix: WATER) | | | Sample ID | LWE 1 | LWE 2 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|
| | | | Sampling date / time | 26-Nov-2023 13:00 | 26-Nov-2023 18:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EP2316733-001 | EP2316733-002 | -------- | -------- | -------- |
| | | | | Result | Result | --- | --- | --- |
| **EA005P: pH by PC Titrator** | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | **6.86** | **7.61** | ---- | ---- | ---- |
| **EA015: Total Dissolved Solids dried at 180 ± 5 °C** | | | | | | | | |
| Total Dissolved Solids @180°C | ---- | 10 | mg/L | **810** | **822** | ---- | ---- | ---- |
| **EA025: Total Suspended Solids dried at 104 ± 2°C** | | | | | | | | |
| Suspended Solids (SS) | ---- | 5 | mg/L | **160** | **89** | ---- | ---- | ---- |
| **ED037P: Alkalinity by PC Titrator** | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | ---- | ---- | ---- |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | ---- | ---- | ---- |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | **322** | **402** | ---- | ---- | ---- |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | **322** | **402** | ---- | ---- | ---- |
| **EK055G: Ammonia as N by Discrete Analyser** | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | **36.6** | **29.4** | ---- | ---- | ---- |
| **EK057G: Nitrite as N by Discrete Analyser** | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | ---- | ---- | ---- |
| **EK058G: Nitrate as N by Discrete Analyser** | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | <0.01 | <0.01 | ---- | ---- | ---- |
| **EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser** | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | <0.01 | <0.01 | ---- | ---- | ---- |
| **EK061G: Total Kjeldahl Nitrogen By Discrete Analyser** | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | **40.2** | **47.2** | ---- | ---- | ---- |
| **EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser** | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | **40.2** | **47.2** | ---- | ---- | ---- |
| **EK067G: Total Phosphorus as P by Discrete Analyser** | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | **7.74** | **7.45** | ---- | ---- | ---- |
| **EK071G: Reactive Phosphorus as P by discrete analyser** | | | | | | | | |
| Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | **6.55** | **6.78** | ---- | ---- | ---- |
| **EP026SP: Chemical Oxygen Demand (Spectrophotometric)** | | | | | | | | |
| Chemical Oxygen Demand | ---- | 10 | mg/L | **883** | **525** | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: EFFLUENT (Matrix: WATER) | | | Sample ID | LWE 1 | LWE 2 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|
| | | | Sampling date / time | 26-Nov-2023 13:00 | 26-Nov-2023 18:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EP2316733-001 | EP2316733-002 | -------- | -------- | -------- |
| | | | | Result | Result | --- | --- | --- |
| **EP030: Biochemical Oxygen Demand (BOD)** | | | | | | | | |
| Biochemical Oxygen Demand | ---- | 2 | mg/L | **538** | **288** | **----** | **----** | **----** |
| **MW006: Thermotolerant Coliforms & E.coli by MF** | | | | | | | | |
| ***Escherichia coli*** | ---- | 1 | CFU/100mL | **170000000** | **15000000** | **----** | **----** | **----** |
| Faecal Coliforms | ---- | 1 | CFU/100mL | **~300000000** | **48000000** | **----** | **----** | **----** |

## Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP026SP: Chemical Oxygen Demand (Spectrophotometric)