

CERTIFICATE OF ANALYSIS

Work Order : EM2119079

Dept for Environment & Water

Contact : Mr FRANK MANGERUCA

Address : GPO BOX 2834

ADELAIDE SA, AUSTRALIA 5001

Telephone : HCHB **Project**

Order number C-O-C number

Client

Sampler : RB Site

Quote number : AD/052/20 V2

No. of samples received : 22 No. of samples analysed : 22 Page : 1 of 12

> Laboratory : Environmental Division Melbourne

Contact : Kieren Burns

Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +61881625130 **Date Samples Received** : 27-Sep-2021 11:05 **Date Analysis Commenced** : 27-Sep-2021

Issue Date : 06-Oct-2021 16:25



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 Ankit Joshi Inorganic Chemist Sydney Inorganics, Smithfield, NSW

Dilani Fernando Senior Inorganic Chemist Melbourne Inorganics, Springvale, VIC Jarwis Nheu Non-Metals Team Leader Melbourne Inorganics, Springvale, VIC Samantha Smith Assistant Laboratory Manager WRG Subcontracting, Springvale, VIC

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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 Contact 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

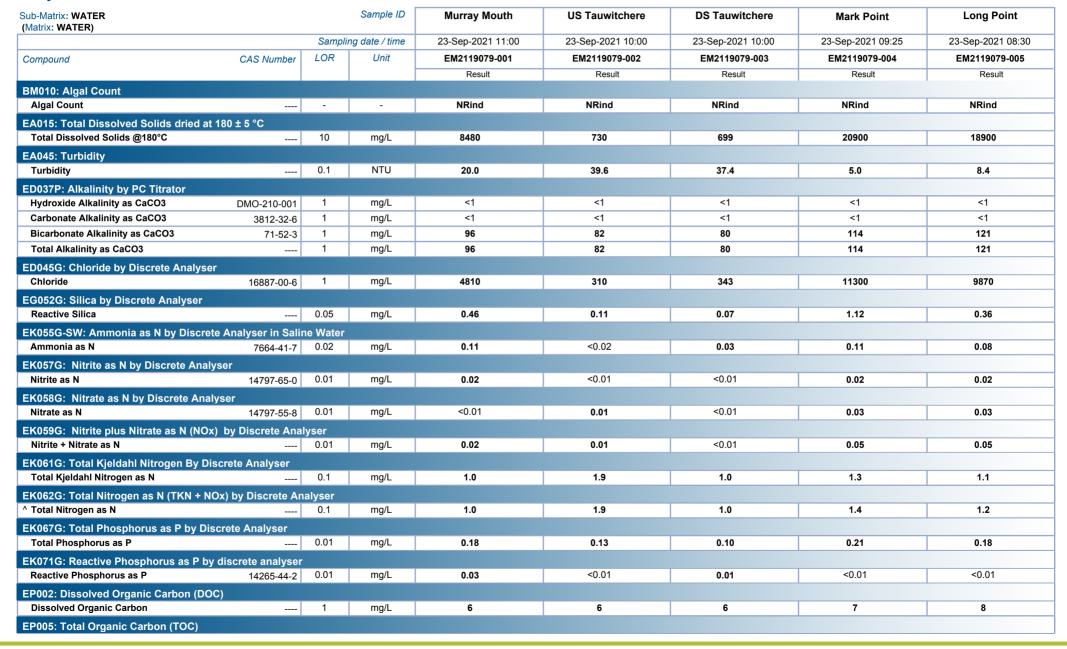
- ^ = This result is computed from individual analyte detections at or above the level of reporting
- ø = ALS is not NATA accredited for these tests.
- ~ = Indicates an estimated value.
- EP002/EP005: It is recognised that total organic carbon is less than dissolved organic carbon for samples EM2119079 #21-22. However, the difference is within experimental variation of the methods.
- EP008, Chlorophyll-a standard does not contained Pheophytin-a standard.
- EK067G: EM2118984 #3, poor duplicate precision for total phosphorus due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Algal Count (BM010) has been performed by ALS Water Resources Group, NATA Accreditation no. 992, Site no. 989.



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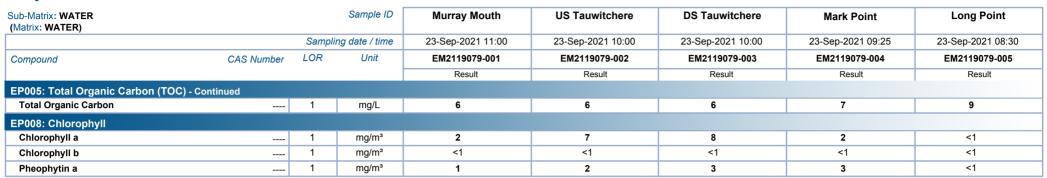




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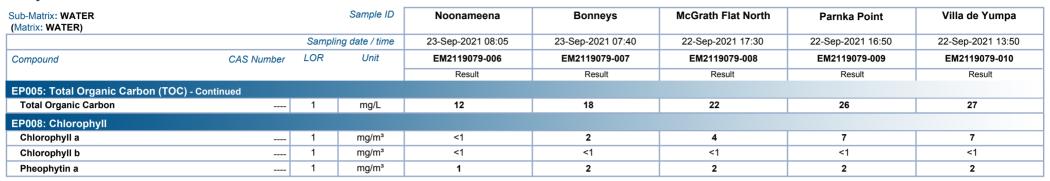




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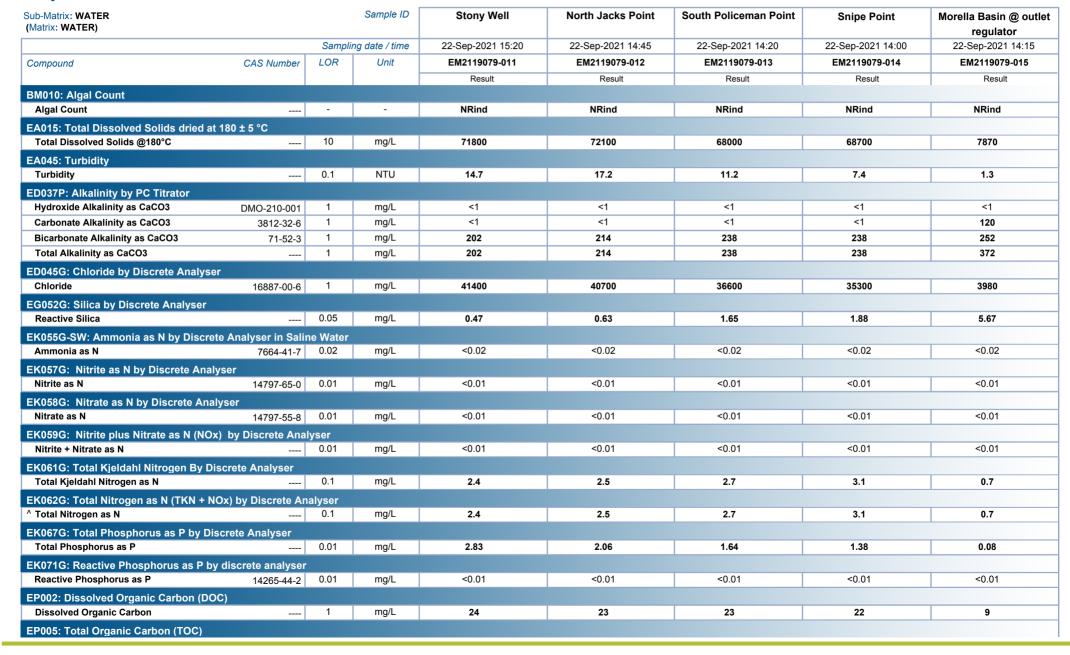




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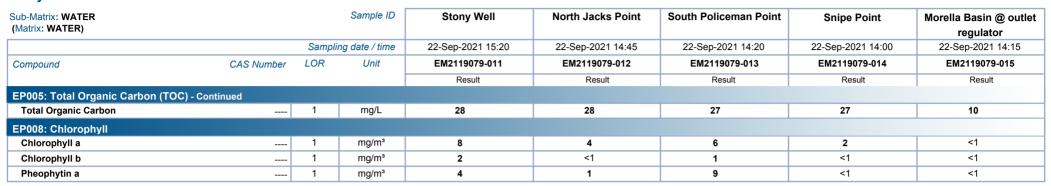




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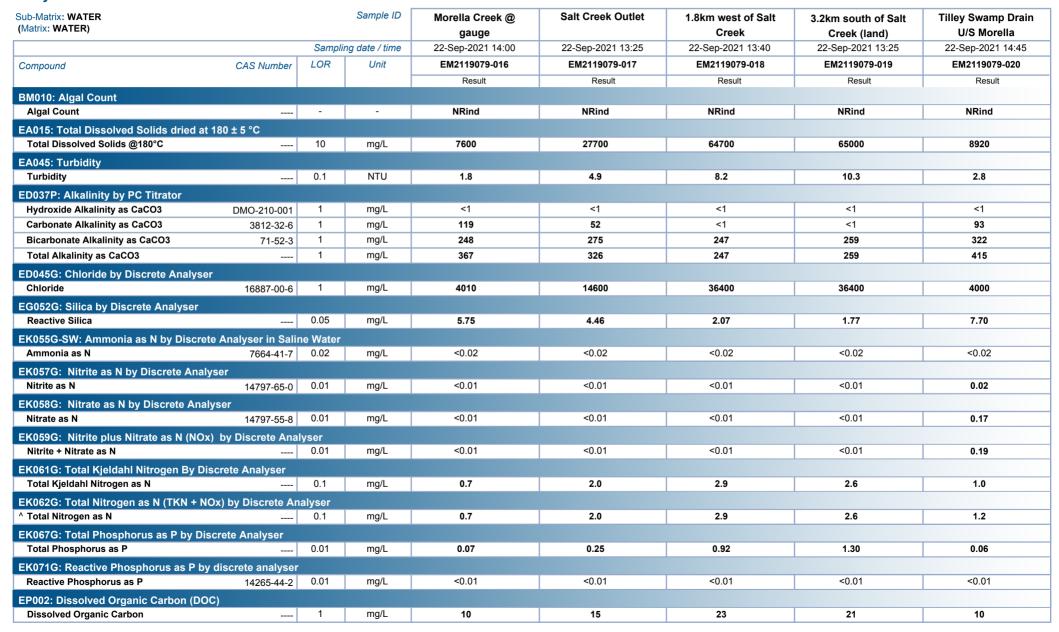




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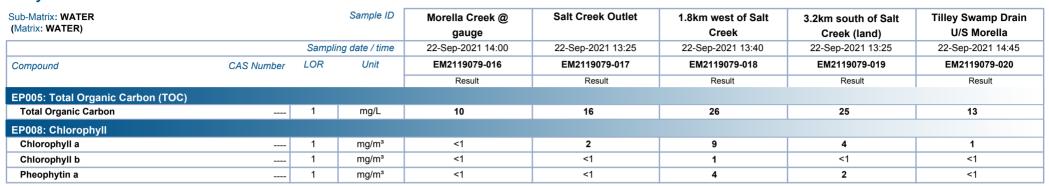




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| ub-Matrix: WATER Matrix: WATER) | Sample ID | | | Tilley Swamp Drain D/S Nth Outlet | Tilley Swamp Drain W/C Outlet | | |
|---|-----------------------|----------|----------------|--------------------------------------|----------------------------------|-------------|------|
| | | Sampli | ng date / time | 22-Sep-2021 15:15 | 22-Sep-2021 15:25 | | |
| Compound | CAS Number | LOR | Unit | EM2119079-021 | EM2119079-022 | | |
| | | | | Result | Result | | |
| 3M010: Algal Count | | | | | | | |
| Algal Count | | - | - | NRind | NRind | | |
| EA015: Total Dissolved Solids dried a | t 180 ± 5 °C | | | | | | |
| Total Dissolved Solids @180°C | | 10 | mg/L | 7200 | 7530 | | |
| A045: Turbidity | | | | | | | |
| Turbidity | | 0.1 | NTU | 5.9 | 2.9 | | |
| 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 | 86 | 96 | | |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 331 | 376 | | |
| Total Alkalinity as CaCO3 | | 1 | mg/L | 417 | 472 | | |
| D045G: Chloride by Discrete Analyse | er | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | 3890 | 4120 | | |
| G052G: Silica by Discrete Analyser | | | | | | | |
| Reactive Silica | | 0.05 | mg/L | 7.88 | 7.79 | | |
| :K055G-SW: Ammonia as N by Discre | ete Analyser in Salir | ne Water | | | | | |
| Ammonia as N | 7664-41-7 | 0.02 | mg/L | <0.02 | <0.02 | | |
| EK057G: Nitrite as N by Discrete Ana | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | 0.02 | 0.01 | | |
| EK058G: Nitrate as N by Discrete Ana | | | 3 | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | 0.17 | 0.16 | | |
| K059G: Nitrite plus Nitrate as N (NO | | | g | | | | |
| Nitrite + Nitrate as N | x) by Discrete Anal | 0.01 | mg/L | 0.19 | 0.17 | | |
| | | 0.01 | mg/L | 0.13 | 0.17 | | |
| K061G: Total Kjeldahl Nitrogen By D Total Kjeldahl Nitrogen as N | iscrete Analyser | 0.1 | mg/L | 1.1 | 1.1 | | |
| | | | IIIg/L | 1.1 | 1.1 | | |
| K062G: Total Nitrogen as N (TKN + N | IOx) by Discrete An | | | 4.0 | 4.0 | | I |
| Total Nitrogen as N | | 0.1 | mg/L | 1.3 | 1.3 | | |
| K067G: Total Phosphorus as P by Di | | | | | | | |
| Total Phosphorus as P | | 0.01 | mg/L | 0.07 | 0.05 | | |
| K071G: Reactive Phosphorus as P b | | | | | | | |
| Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | <0.01 | <0.01 | | |
| P002: Dissolved Organic Carbon (DC | DC) | | | | | | |
| Dissolved Organic Carbon | | 1 | mg/L | 12 | 13 | | |
| P005: Total Organic Carbon (TOC) | | | | | | | |

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Analytical Results



| Sub-Matrix: WATER (Matrix: WATER) | | | Sample ID | Tilley Swamp Drain D/S Nth Outlet | Tilley Swamp Drain W/C Outlet | | | | | | |
|---|------------|--------|----------------|--------------------------------------|----------------------------------|--|--|--|--|--|--|
| | | Sampli | ng date / time | 22-Sep-2021 15:15 | 22-Sep-2021 15:25 | | | | | | |
| Compound | CAS Number | LOR | Unit | EM2119079-021 | EM2119079-022 | | | | | | |
| | | | | Result | Result | | | | | | |
| EP005: Total Organic Carbon (TOC) - Continued | | | | | | | | | | | |
| Total Organic Carbon | | 1 | mg/L | 11 | 12 | | | | | | |
| EP008: Chlorophyll | | | | | | | | | | | |
| Chlorophyll a | | 1 | mg/m³ | <1 | <1 | | | | | | |
| Chlorophyll b | | 1 | mg/m³ | <1 | <1 | | | | | | |
| Pheophytin a | | 1 | mg/m³ | <1 | <1 | | | | | | |

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

(WATER) EP008: Chlorophyll