



CERTIFICATE OF ANALYSIS

| | | |
|--|---|--|
| Work Order : EW2203826 Client : KIAMA COUNCIL Contact : MS JULIE MILEVSKI Address : 11 MANNING STREET KIAMA NSW, AUSTRALIA 2533 Telephone : +61 02 4232 0557 Project : Gerroa Landfill Order number : PO14414 C-O-C number : ---- Sampler : Robert DaLio Site : Gerroa Landfill Quote number : WO/010/2021 No. of samples received : 21 No. of samples analysed : 21 | Page : 1 of 11 Laboratory : Environmental Division NSW South Coast Contact : Aneta Prosaroski Address : 1/19 Ralph Black Dr, North Wollongong 2500 NSW Australia Telephone : +61 2 4225 3125 Date Samples Received : 22-Aug-2022 16:10 Date Analysis Commenced : 22-Aug-2022 Issue Date : 30-Aug-2022 14:38 |   <small>Accreditation No. 825 Accredited for compliance with ISO/IEC 17025 - Testing</small> |
|--|---|--|

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.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--------------------|-----------------------------|------------------------------------|
| Ankit Joshi | Senior Chemist - Inorganics | Sydney Inorganics, Smithfield, NSW |
| Robert DaLio | Sampler | Laboratory - Wollongong, NSW |
| 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.

- **Analytical work for this work order will be conducted at ALS Sydney.**
- ED041G: LOR raised for Sulfate due to sample matrix
- EK057G: LOR raised for Nitrite due to sample matrix.
- ED045G: LOR raised for Chloride due to sample matrix.
- ED045G: LOR raised for Chloride due to sample matrix.
- EK059G: LOR raised for NOx due to sample matrix.
- TDS by method EA-015 may bias high for various samples due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- It has been noted that NH is greater than TKN for sample 6, however this difference is within the limits of experimental variation.
- pH performed by ALS Wollongong via in-house method EA005FD and EN67 PK.
- Electrical conductivity performed by ALS Wollongong via in-house method EA010FD and EN67 PK.
- ORP (Oxidation Reduction Potential) performed by ALS Wollongong via in-house method EA075FD and EN67 PK.
- Sampling and groundwater depth measurements completed by ALS Wollongong via inhouse sampling method EN/67.11 Groundwater Sampling Via High Flow Method.
- Sampling completed by ALS Wollongong in accordance with in-house sampling method EN/67.6 Rivers and Streams.
- Dissolved oxygen (DO) performed by ALS Wollongong via in-house method EA025FD and EN67 PK.
- All field analysis performed by ALS Wollongong were completed at the time of sampling.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | MW1D | MW1S | MW3 | MW4 | MW5 |
|--|-------------|-------|---------|-------------------|-------------------|-------------------|-------------------|-------------------|-----|
| Sampling date / time | | | | 22-Aug-2022 11:10 | 22-Aug-2022 11:30 | 22-Aug-2022 10:50 | 22-Aug-2022 08:45 | 22-Aug-2022 10:35 | |
| Compound | CAS Number | LOR | Unit | EW2203826-001 | EW2203826-002 | EW2203826-003 | EW2203826-004 | EW2203826-005 | |
| | | | | Result | Result | Result | Result | Result | |
| EA005FD: Field pH | | | | | | | | | |
| pH | ---- | 0.1 | pH Unit | 7.4 | 6.2 | 7.5 | 6.7 | 7.7 | |
| EA010FD: Field Conductivity | | | | | | | | | |
| Electrical Conductivity (Non Compensated) | ---- | 1 | µS/cm | 406 | 117 | 409 | 389 | 337 | |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C | | | | | | | | | |
| Total Dissolved Solids @180°C | ---- | 10 | mg/L | 254 | 108 | 261 | 219 | 198 | |
| EA075FD: Field Redox Potential | | | | | | | | | |
| Redox Potential | ---- | 0.1 | mV | -175 | -57.8 | -198 | -80.8 | -132 | |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | <1 | <1 | <1 | |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | <1 | <1 | <1 | |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 202 | 26 | 196 | 163 | 150 | |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 202 | 26 | 196 | 163 | 150 | |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | <1 | <10 | 2 | 5 | <1 | |
| ED045G: Chloride by Discrete Analyser | | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | 9 | <10 | 16 | 18 | 7 | |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | 50 | 6 | 49 | 59 | 48 | |
| Magnesium | 7439-95-4 | 1 | mg/L | 13 | 3 | 11 | 3 | 4 | |
| Sodium | 7440-23-5 | 1 | mg/L | 7 | 5 | 17 | 6 | 12 | |
| Potassium | 7440-09-7 | 1 | mg/L | 4 | <1 | 2 | 3 | 2 | |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Manganese | 7439-96-5 | 0.001 | mg/L | 0.012 | 0.018 | 0.053 | 0.050 | 0.002 | |
| Iron | 7439-89-6 | 0.05 | mg/L | 1.54 | 11.8 | 3.65 | 1.86 | 0.09 | |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | 0.65 | 0.04 | 0.15 | 0.06 | 0.03 | |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.10 | <0.01 | <0.01 | <0.01 | |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | <0.01 | <0.10 | 0.02 | <0.01 | <0.01 | |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | MW1D | MW1S | MW3 | MW4 | MW5 |
|---|------------|------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|-----|
| Sampling date / time | | | | 22-Aug-2022 11:10 | 22-Aug-2022 11:30 | 22-Aug-2022 10:50 | 22-Aug-2022 08:45 | 22-Aug-2022 10:35 | |
| Compound | CAS Number | LOR | Unit | EW2203826-001 | EW2203826-002 | EW2203826-003 | EW2203826-004 | EW2203826-005 | |
| | | | | Result | Result | Result | Result | Result | |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | <0.01 | <0.10 | 0.02 | <0.01 | <0.01 | |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 0.9 | 0.6 | 1.4 | 0.4 | 0.7 | |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | 0.9 | 0.6 | 1.4 | 0.4 | 0.7 | |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | 0.13 | 0.18 | 0.38 | 0.63 | 0.07 | |
| EN055: Ionic Balance | | | | | | | | | |
| ∅ Total Anions | ---- | 0.01 | meq/L | 4.29 | 0.52 | 4.41 | 3.87 | 3.19 | |
| ∅ Total Cations | ---- | 0.01 | meq/L | 3.97 | 0.76 | 4.14 | 3.53 | 3.30 | |
| ∅ Ionic Balance | ---- | 0.01 | % | 3.85 | ---- | 3.13 | 4.59 | 1.59 | |
| EP002: Dissolved Organic Carbon (DOC) | | | | | | | | | |
| Dissolved Organic Carbon | ---- | 1 | mg/L | 5 | 17 | 10 | 7 | 5 | |
| EP025FD: Field Dissolved Oxygen | | | | | | | | | |
| Dissolved Oxygen | ---- | 0.01 | mg/L | 0.25 | 0.18 | 0.30 | 0.38 | 0.34 | |
| QWI-EN 67.11 Sampling of Groundwaters | | | | | | | | | |
| Depth | ---- | 0.01 | m | 2.15 | 2.21 | 2.49 | 2.85 | 3.12 | |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | MW6D | MW6S | MW7D | MW7S | MW9 |
|--|-------------|-------|---------|-------------------|-------------------|-------------------|-------------------|-------------------|-----|
| Sampling date / time | | | | 22-Aug-2022 09:30 | 22-Aug-2022 09:10 | 22-Aug-2022 10:15 | 22-Aug-2022 10:00 | 22-Aug-2022 14:00 | |
| Compound | CAS Number | LOR | Unit | EW2203826-006 | EW2203826-007 | EW2203826-008 | EW2203826-009 | EW2203826-010 | |
| | | | | Result | Result | Result | Result | Result | |
| EA005FD: Field pH | | | | | | | | | |
| pH | ---- | 0.1 | pH Unit | 6.8 | 6.1 | 7.0 | 6.4 | 7.2 | |
| EA010FD: Field Conductivity | | | | | | | | | |
| Electrical Conductivity (Non Compensated) | ---- | 1 | µS/cm | 1560 | 445 | 925 | 345 | 1320 | |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C | | | | | | | | | |
| Total Dissolved Solids @180°C | ---- | 10 | mg/L | 730 | 326 | 538 | 242 | 810 | |
| EA075FD: Field Redox Potential | | | | | | | | | |
| Redox Potential | ---- | 0.1 | mV | -184 | -137 | -163 | 21.5 | 83.3 | |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | <1 | <1 | <1 | |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | <1 | <1 | <1 | |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 666 | 142 | 292 | 102 | 192 | |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 666 | 142 | 292 | 102 | 192 | |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 33 | 28 | 28 | 18 | <10 | |
| ED045G: Chloride by Discrete Analyser | | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | 72 | 25 | 93 | 34 | 350 | |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | 144 | 19 | 102 | 27 | 19 | |
| Magnesium | 7439-95-4 | 1 | mg/L | 22 | 29 | 10 | 5 | 24 | |
| Sodium | 7440-23-5 | 1 | mg/L | 55 | 26 | 46 | 36 | 204 | |
| Potassium | 7440-09-7 | 1 | mg/L | 46 | 1 | 9 | <1 | 10 | |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Manganese | 7439-96-5 | 0.001 | mg/L | 0.119 | 0.193 | 0.064 | 0.006 | 0.002 | |
| Iron | 7439-89-6 | 0.05 | mg/L | 11.4 | 5.17 | 9.10 | 0.42 | 1.43 | |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | 0.5 | 0.2 | 0.2 | <0.1 | 0.4 | |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | 41.8 | 0.01 | 5.20 | 0.01 | <0.01 | |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.10 | |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | 0.01 | 0.03 | <0.01 | 0.02 | <0.10 | |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | MW6D | MW6S | MW7D | MW7S | MW9 |
|---|------------|------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|-----|
| Sampling date / time | | | | 22-Aug-2022 09:30 | 22-Aug-2022 09:10 | 22-Aug-2022 10:15 | 22-Aug-2022 10:00 | 22-Aug-2022 14:00 | |
| Compound | CAS Number | LOR | Unit | EW2203826-006 | EW2203826-007 | EW2203826-008 | EW2203826-009 | EW2203826-010 | |
| | | | | Result | Result | Result | Result | Result | |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | 0.01 | 0.03 | <0.01 | 0.02 | <0.10 | |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 39.3 | 2.1 | 5.4 | 0.8 | 4.6 | |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | 39.3 | 2.1 | 5.4 | 0.8 | 4.6 | |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | 3.13 | 0.07 | 0.77 | 0.10 | 0.42 | |
| EN055: Ionic Balance | | | | | | | | | |
| ∅ Total Anions | ---- | 0.01 | meq/L | 16.0 | 4.12 | 9.04 | 3.37 | 13.7 | |
| ∅ Total Cations | ---- | 0.01 | meq/L | 15.6 | ---- | 8.52 | ---- | ---- | |
| ∅ Total Cations | ---- | 0.01 | meq/L | ---- | 4.49 | ---- | 3.32 | 12.0 | |
| ∅ Ionic Balance | ---- | 0.01 | % | 1.35 | ---- | 3.02 | ---- | ---- | |
| ∅ Ionic Balance | ---- | 0.01 | % | ---- | 4.25 | ---- | 0.70 | 6.43 | |
| EP002: Dissolved Organic Carbon (DOC) | | | | | | | | | |
| Dissolved Organic Carbon | ---- | 1 | mg/L | 24 | 40 | 7 | 24 | 62 | |
| EP025FD: Field Dissolved Oxygen | | | | | | | | | |
| Dissolved Oxygen | ---- | 0.01 | mg/L | 0.33 | 0.93 | 0.35 | 1.71 | 5.27 | |
| QWI-EN 67.11 Sampling of Groundwaters | | | | | | | | | |
| Depth | ---- | 0.01 | m | 3.93 | 3.68 | 3.68 | 3.50 | 1.60 | |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | MW10 | MW11 | MW12 | MW13 | MW14 |
|--|-------------|-------|---------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| Sampling date / time | | | | 22-Aug-2022 13:50 | 22-Aug-2022 14:10 | 22-Aug-2022 12:25 | 22-Aug-2022 12:05 | 22-Aug-2022 11:45 | |
| Compound | CAS Number | LOR | Unit | EW2203826-011 | EW2203826-012 | EW2203826-013 | EW2203826-014 | EW2203826-015 | |
| | | | | Result | Result | Result | Result | Result | |
| EA005FD: Field pH | | | | | | | | | |
| pH | ---- | 0.1 | pH Unit | 6.5 | 6.6 | 7.5 | 7.5 | 7.1 | |
| EA010FD: Field Conductivity | | | | | | | | | |
| Electrical Conductivity (Non Compensated) | ---- | 1 | µS/cm | 199 | 190 | 1270 | 783 | 2200 | |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C | | | | | | | | | |
| Total Dissolved Solids @180°C | ---- | 10 | mg/L | 175 | 198 | 632 | 386 | 1040 | |
| EA075FD: Field Redox Potential | | | | | | | | | |
| Redox Potential | ---- | 0.1 | mV | 121 | 28.7 | -151 | 170 | -136 | |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | <1 | <1 | <1 | |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | <1 | <1 | <1 | |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 38 | 63 | 379 | 311 | 450 | |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 38 | 63 | 379 | 311 | 450 | |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | <10 | <10 | 22 | 21 | 35 | |
| ED045G: Chloride by Discrete Analyser | | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | 35 | 16 | 158 | 48 | 363 | |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | 1 | 17 | 67 | 49 | 73 | |
| Magnesium | 7439-95-4 | 1 | mg/L | 2 | 4 | 30 | 27 | 56 | |
| Sodium | 7440-23-5 | 1 | mg/L | 37 | 22 | 96 | 38 | 205 | |
| Potassium | 7440-09-7 | 1 | mg/L | 3 | <1 | 33 | 22 | 47 | |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Manganese | 7439-96-5 | 0.001 | mg/L | 0.001 | 0.013 | 0.015 | 0.011 | 0.038 | |
| Iron | 7439-89-6 | 0.05 | mg/L | 0.52 | 0.24 | 4.07 | 2.06 | 3.61 | |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | 0.1 | <0.1 | 0.2 | 0.2 | 0.3 | |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | 0.01 | 0.04 | 19.9 | 12.2 | 31.9 | |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.10 | <0.01 | <0.01 | <0.01 | |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | <0.01 | <0.10 | 0.02 | <0.01 | <0.01 | |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | MW10 | MW11 | MW12 | MW13 | MW14 |
|---|------------|------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| Sampling date / time | | | | 22-Aug-2022 13:50 | 22-Aug-2022 14:10 | 22-Aug-2022 12:25 | 22-Aug-2022 12:05 | 22-Aug-2022 11:45 | |
| Compound | CAS Number | LOR | Unit | EW2203826-011 | EW2203826-012 | EW2203826-013 | EW2203826-014 | EW2203826-015 | |
| | | | | Result | Result | Result | Result | Result | |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | <0.01 | <0.10 | 0.02 | <0.01 | <0.01 | |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 26.8 | 1.8 | 21.4 | 13.9 | 32.3 | |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | 26.8 | 1.8 | 21.4 | 13.9 | 32.3 | |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | 2.60 | 1.12 | 0.14 | 0.21 | 0.17 | |
| EN055: Ionic Balance | | | | | | | | | |
| ∅ Total Anions | ---- | 0.01 | meq/L | ---- | 1.84 | ---- | ---- | ---- | |
| ∅ Total Anions | ---- | 0.01 | meq/L | 1.75 | ---- | 12.5 | 8.00 | 20.0 | |
| ∅ Total Cations | ---- | 0.01 | meq/L | ---- | ---- | ---- | 7.88 | ---- | |
| ∅ Total Cations | ---- | 0.01 | meq/L | 1.90 | 2.13 | 10.8 | ---- | 18.4 | |
| ∅ Ionic Balance | ---- | 0.01 | % | ---- | ---- | ---- | 0.85 | ---- | |
| ∅ Ionic Balance | ---- | 0.01 | % | ---- | ---- | 7.10 | ---- | 4.14 | |
| EP002: Dissolved Organic Carbon (DOC) | | | | | | | | | |
| Dissolved Organic Carbon | ---- | 1 | mg/L | 24 | 43 | 24 | 9 | 17 | |
| EP025FD: Field Dissolved Oxygen | | | | | | | | | |
| Dissolved Oxygen | ---- | 0.01 | mg/L | 6.80 | 4.56 | 0.31 | 0.33 | 0.19 | |
| QWI-EN 67.11 Sampling of Groundwaters | | | | | | | | | |
| Depth | ---- | 0.01 | m | 2.00 | 1.99 | 1.85 | 2.09 | 1.60 | |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | ML-1 | ML-2 | ML-3 | ML-4 | ML-5 |
|---|-------------|-------|---------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| Sampling date / time | | | | 22-Aug-2022 13:10 | 22-Aug-2022 14:20 | 22-Aug-2022 13:25 | 22-Aug-2022 13:20 | 22-Aug-2022 13:30 | |
| Compound | CAS Number | LOR | Unit | EW2203826-016 | EW2203826-017 | EW2203826-018 | EW2203826-019 | EW2203826-020 | |
| | | | | Result | Result | Result | Result | Result | |
| EA005FD: Field pH | | | | | | | | | |
| pH | ---- | 0.1 | pH Unit | 7.6 | 7.3 | 7.6 | 7.6 | 7.3 | |
| EA010FD: Field Conductivity | | | | | | | | | |
| Electrical Conductivity (Non Compensated) | ---- | 1 | µS/cm | 910 | 7180 | 880 | 870 | 1120 | |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C | | | | | | | | | |
| Total Dissolved Solids @180°C | ---- | 10 | mg/L | 533 | 4190 | 542 | 520 | 660 | |
| EA075FD: Field Redox Potential | | | | | | | | | |
| Redox Potential | ---- | 0.1 | mV | 51.4 | 95.4 | 54.1 | 54.1 | 76.6 | |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | <1 | <1 | <1 | |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | <1 | <1 | <1 | |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 105 | 135 | 116 | 116 | 154 | |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 105 | 135 | 116 | 116 | 154 | |
| ED093T: Total Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | 48 | 84 | 48 | 47 | 54 | |
| Magnesium | 7439-95-4 | 1 | mg/L | 18 | 136 | 17 | 17 | 21 | |
| Sodium | 7440-23-5 | 1 | mg/L | 99 | 1080 | 97 | 94 | 121 | |
| Potassium | 7440-09-7 | 1 | mg/L | 6 | 45 | 6 | 6 | 9 | |
| EG020T: Total Metals by ICP-MS | | | | | | | | | |
| Manganese | 7439-96-5 | 0.001 | mg/L | 0.057 | 0.036 | 0.061 | 0.099 | 0.054 | |
| Iron | 7439-89-6 | 0.05 | mg/L | 3.04 | 2.13 | 3.22 | 3.61 | 3.16 | |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | 0.31 | 1.48 | 0.29 | 0.35 | 2.18 | |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | 0.02 | <0.01 | <0.01 | <0.01 | |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | 0.02 | 0.05 | 0.01 | 0.01 | 0.03 | |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | 0.02 | 0.07 | 0.01 | 0.01 | 0.03 | |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 0.9 | 2.7 | 1.0 | 1.1 | 2.9 | |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | 0.9 | 2.8 | 1.0 | 1.1 | 2.9 | |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | ML-1 | ML-2 | ML-3 | ML-4 | ML-5 |
|---|------------|------|------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| Sampling date / time | | | | 22-Aug-2022 13:10 | 22-Aug-2022 14:20 | 22-Aug-2022 13:25 | 22-Aug-2022 13:20 | 22-Aug-2022 13:30 | |
| Compound | CAS Number | LOR | Unit | EW2203826-016 | EW2203826-017 | EW2203826-018 | EW2203826-019 | EW2203826-020 | |
| | | | | Result | Result | Result | Result | Result | |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | 0.04 | 0.12 | 0.05 | 0.06 | 0.06 | |
| EP025FD: Field Dissolved Oxygen | | | | | | | | | |
| Dissolved Oxygen | ---- | 0.01 | mg/L | 4.42 | 6.95 | 4.14 | 4.43 | 4.40 | |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | BLANK | ---- | ---- | ---- | ---- |
|---|------------|-------|------|-------------------|-------|-------|-------|-------|-------|
| Sampling date / time | | | | 22-Aug-2022 08:30 | ---- | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EW2203826-021 | ----- | ----- | ----- | ----- | ----- |
| | | | | Result | ---- | ---- | ---- | ---- | ---- |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | <1 | ---- | ---- | ---- | ---- | ---- |
| Magnesium | 7439-95-4 | 1 | mg/L | <1 | ---- | ---- | ---- | ---- | ---- |
| Sodium | 7440-23-5 | 1 | mg/L | <1 | ---- | ---- | ---- | ---- | ---- |
| Potassium | 7440-09-7 | 1 | mg/L | <1 | ---- | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Manganese | 7439-96-5 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | ---- | ---- | ---- | ---- | ---- |

Inter-Laboratory Testing

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

- (WATER) ED037P: Alkalinity by PC Titrator
- (WATER) EK040P: Fluoride by PC Titrator
- (WATER) ED041G: Sulfate (Turbidimetric) as SO4 2- by DA
- (WATER) EP002: Dissolved Organic Carbon (DOC)
- (WATER) EG020F: Dissolved Metals by ICP-MS
- (WATER) ED093F: Dissolved Major Cations
- (WATER) EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser
- (WATER) EK061G: Total Kjeldahl Nitrogen By Discrete Analyser
- (WATER) EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser
- (WATER) EK058G: Nitrate as N by Discrete Analyser
- (WATER) EK057G: Nitrite as N by Discrete Analyser
- (WATER) EK055G: Ammonia as N by Discrete Analyser
- (WATER) EK067G: Total Phosphorus as P by Discrete Analyser
- (WATER) EA015: Total Dissolved Solids dried at 180 ± 5 °C
- (WATER) EN055: Ionic Balance
- (WATER) ED045G: Chloride by Discrete Analyser
- (WATER) EG020T: Total Metals by ICP-MS
- (WATER) ED093T: Total Major Cations