



CERTIFICATE OF ANALYSIS

| | | | |
|-------------------------|---|-------------------------|---------------------------------|
| Work Order | : ES2320686 | Page | : 1 of 6 |
| Client | : DEPARTMENT OF PLANNING AND ENVIRONMENT (NSW-DPE) | Laboratory | : Environmental Division Sydney |
| Contact | : OEH | Contact | : Customer Services ES |
| Address | : [REDACTED] Lidcombe 2141 | Address | : [REDACTED] |
| Telephone | : ---- | Telephone | : [REDACTED] |
| Project | : 20230194 | Date Samples Received | : 21-Jun-2023 16:00 |
| Order number | : 4500806025 | Date Analysis Commenced | : 23-Jun-2023 |
| C-O-C number | : ---- | Issue Date | : 28-Jun-2023 16:49 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : EN/222 | | |
| No. of samples received | : 20 | | |
| No. of samples analysed | : 20 | | |



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

[REDACTED]

Senior Chemist - Inorganics

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.

- EK271A-CM: Samples for Ultra-Trace Reactive Phosphorus by FIA should be frozen upon sampling. If not, low-level results (below 0.01 mg/L) may bias low.



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | B4 Filtered 1 235321 | B4 Unfiltered 235322 | E6 Filtered 1 235323 | E6 Filtered 2 235324 | E6 Unfiltered 235325 |
|--|------------|-------|------|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Sampling date / time | | | | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 |
| Compound | CAS Number | LOR | Unit | ES2320686-001 | ES2320686-002 | ES2320686-003 | ES2320686-004 | ES2320686-005 | Result |
| | | | | Result | Result | Result | Result | Result | Result |
| EK255A: Ammonia | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.005 | mg/L | 0.008 | ---- | 0.007 | ---- | ---- | ---- |
| EK259A: Nitrite and Nitrate (NOx) | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.002 | mg/L | 0.006 | 0.004 | 0.005 | 0.002 | 0.003 | |
| EK261A: Total Kjeldahl Nitrogen | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.01 | mg/L | ---- | 0.69 | ---- | 0.91 | 1.72 | |
| EK262A: Total Nitrogen | | | | | | | | | |
| Total Nitrogen as N | ---- | 0.01 | mg/L | ---- | 0.69 | ---- | 0.91 | 1.72 | |
| EK267A: Total Phosphorus (Persulfate Digestion) | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.005 | mg/L | ---- | 0.308 | ---- | 0.040 | 0.134 | |
| EK271A: Reactive Phosphorus | | | | | | | | | |
| Reactive Phosphate | 14625-44-2 | 0.001 | mg/L | 0.601 | ---- | 0.020 | ---- | ---- | ---- |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | E6.5 Filtered 1 235326 | E6.5 Filtered 2 235327 | E6.5 Unfiltered 235328 | E7 Filtered 1 235329 | E7 Filtered 2 235330 |
|--|------------|-------|------|-------------------|---------------------------|---------------------------|---------------------------|-------------------------|-------------------------|
| Sampling date / time | | | | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 |
| Compound | CAS Number | LOR | Unit | ES2320686-006 | ES2320686-007 | ES2320686-008 | ES2320686-009 | ES2320686-010 | Result |
| | | | | Result | Result | Result | Result | Result | Result |
| EK255A: Ammonia | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.005 | mg/L | 0.013 | ---- | ---- | 0.274 | ---- | ---- |
| EK259A: Nitrite and Nitrate (NOx) | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.002 | mg/L | 0.008 | 0.007 | 0.004 | 0.020 | 0.017 | |
| EK261A: Total Kjeldahl Nitrogen | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.01 | mg/L | ---- | 0.79 | 1.18 | ---- | 1.07 | |
| EK262A: Total Nitrogen | | | | | | | | | |
| Total Nitrogen as N | ---- | 0.01 | mg/L | ---- | 0.80 | 1.18 | ---- | 1.09 | |
| EK267A: Total Phosphorus (Persulfate Digestion) | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.005 | mg/L | ---- | 0.277 | 0.322 | ---- | 0.280 | |
| EK271A: Reactive Phosphorus | | | | | | | | | |
| Reactive Phosphate | 14625-44-2 | 0.001 | mg/L | 0.532 | ---- | ---- | 0.577 | ---- | |



Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | | | Sample ID | E7 Unfiltered 235331 | E8 Filtered 1 235332 | E8 Filtered 2 235333 | E8 Unfiltered 235334 | E9 Filtered 1 235335 |
|--|------------|-------|------|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Sampling date / time | | | | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 |
| Compound | CAS Number | LOR | Unit | ES2320686-011 | ES2320686-012 | ES2320686-013 | ES2320686-014 | ES2320686-015 | |
| | | | | Result | Result | Result | Result | Result | |
| EK255A: Ammonia | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.005 | mg/L | ---- | 0.072 | ---- | ---- | 0.074 | |
| EK259A: Nitrite and Nitrate (NOx) | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.002 | mg/L | 0.019 | 0.042 | 0.038 | 0.040 | 0.051 | |
| EK261A: Total Kjeldahl Nitrogen | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.01 | mg/L | 1.41 | ---- | 0.77 | 1.08 | ---- | |
| EK262A: Total Nitrogen | | | | | | | | | |
| Total Nitrogen as N | ---- | 0.01 | mg/L | 1.43 | ---- | 0.81 | 1.12 | ---- | |
| EK267A: Total Phosphorus (Persulfate Digestion) | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.005 | mg/L | 0.362 | ---- | 0.144 | 0.322 | ---- | |
| EK271A: Reactive Phosphorus | | | | | | | | | |
| Reactive Phosphate | 14625-44-2 | 0.001 | mg/L | ---- | 0.381 | ---- | ---- | 0.383 | |



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

| | | | | E9 Filtered 2 235336 | E9 Unfiltered 235337 | E10 Filtered 1 235338 | E10 Filtered 2 235339 | E10 Unfiltered 235340 |
|--|------------|-------|------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
| Sampling date / time | | | | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 | 31-May-2023 00:00 |
| Compound | CAS Number | LOR | Unit | ES2320686-016 | ES2320686-017 | ES2320686-018 | ES2320686-019 | ES2320686-020 |
| | | | | Result | Result | Result | Result | Result |
| EK255A: Ammonia | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.005 | mg/L | ---- | ---- | 0.079 | ---- | ---- |
| EK259A: Nitrite and Nitrate (NOx) | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.002 | mg/L | 0.047 | 0.050 | 0.071 | 0.067 | 0.062 |
| EK261A: Total Kjeldahl Nitrogen | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.01 | mg/L | 0.77 | 1.12 | ---- | 0.94 | 1.44 |
| EK262A: Total Nitrogen | | | | | | | | |
| Total Nitrogen as N | ---- | 0.01 | mg/L | 0.82 | 1.17 | ---- | 1.01 | 1.50 |
| EK267A: Total Phosphorus (Persulfate Digestion) | | | | | | | | |
| Total Phosphorus as P | ---- | 0.005 | mg/L | 0.142 | 0.353 | ---- | 0.166 | 0.317 |
| EK271A: Reactive Phosphorus | | | | | | | | |
| Reactive Phosphate | 14625-44-2 | 0.001 | mg/L | ---- | ---- | 0.279 | ---- | ---- |