



## CERTIFICATE OF ANALYSIS

Work Order	: ES2316250	Page	: 1 of 7
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	: +61-2-8784 8555
Project	: 20230150	Date Samples Received	: 16-May-2023 16:05
Order number	: 4500806025	Date Analysis Commenced	: 17-May-2023
C-O-C number	: ----	Issue Date	: 22-May-2023 13:02
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 21		
No. of samples analysed	: 21		



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



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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 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.

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## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	233536	233537	233538	233539	233540
Sampling date / time				07-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2316250-001	ES2316250-002	ES2316250-003	ES2316250-004	ES2316250-005	
				Result	Result	Result	Result	Result	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	----	----	0.03	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.04	0.04	<0.01	0.01	
<b>EK061G: Total Kjeldahl Nitrogen By Discrete Analyser</b>									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	0.6	0.8	----	0.9	
<b>EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser</b>									
^ Total Nitrogen as N	----	0.1	mg/L	----	0.6	0.8	----	0.9	
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>									
Total Phosphorus as P	----	0.01	mg/L	----	0.27	0.31	----	0.18	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.23	----	----	0.14	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	233541	233542	233543	233544	233545
Sampling date / time				07-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2316250-006	ES2316250-007	ES2316250-008	ES2316250-009	ES2316250-010	
				Result	Result	Result	Result	Result	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	----	<0.01	----	----	<b>0.08</b>	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<b>0.01</b>	<0.01	<b>0.01</b>	<b>0.02</b>	<b>0.01</b>	
<b>EK061G: Total Kjeldahl Nitrogen By Discrete Analyser</b>									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<b>1.4</b>	----	<b>0.6</b>	<b>0.9</b>	----	
<b>EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser</b>									
^ Total Nitrogen as N	----	0.1	mg/L	<b>1.4</b>	----	<b>0.6</b>	<b>0.9</b>	----	
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>									
Total Phosphorus as P	----	0.01	mg/L	<b>0.31</b>	----	<b>0.28</b>	<b>0.39</b>	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	<b>0.21</b>	----	----	<b>0.17</b>	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	233546	233547	233548	233549	233550
Sampling date / time				07-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2316250-011	ES2316250-012	ES2316250-013	ES2316250-014	ES2316250-015	
				Result	Result	Result	Result	Result	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	----	----	0.06	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.05	0.05	0.04	0.06	0.05	
<b>EK061G: Total Kjeldahl Nitrogen By Discrete Analyser</b>									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.8	1.8	----	0.8	1.3	
<b>EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser</b>									
^ Total Nitrogen as N	----	0.1	mg/L	0.8	1.8	----	0.9	1.4	
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>									
Total Phosphorus as P	----	0.01	mg/L	0.24	0.38	----	0.14	0.26	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	----	0.10	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	233551	233552	233553	233554	233555
Sampling date / time			07-May-2023 00:00					
Compound	CAS Number	LOR	Unit	ES2316250-016	ES2316250-017	ES2316250-018	ES2316250-019	ES2316250-020
				Result	Result	Result	Result	Result
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
Ammonia as N	7664-41-7	0.01	mg/L	0.05	----	----	0.04	----
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.05	0.05	0.05	0.05
<b>EK061G: Total Kjeldahl Nitrogen By Discrete Analyser</b>								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	0.9	1.4	----	0.9
<b>EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser</b>								
^ Total Nitrogen as N	----	0.1	mg/L	----	1.0	1.4	----	1.0
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>								
Total Phosphorus as P	----	0.01	mg/L	----	0.12	0.30	----	0.12
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.10	----	----	0.06	----



### Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	233556	----	----	----	----
Sampling date / time			07-May-2023 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	ES2316250-021	-----	-----	-----	-----
Result				----	----	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
Nitrite + Nitrate as N	----	0.01	mg/L	<b>0.06</b>	----	----	----	----
<b>EK061G: Total Kjeldahl Nitrogen By Discrete Analyser</b>								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<b>1.8</b>	----	----	----	----
<b>EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser</b>								
^ Total Nitrogen as N	----	0.1	mg/L	<b>1.9</b>	----	----	----	----
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>								
Total Phosphorus as P	----	0.01	mg/L	<b>0.30</b>	----	----	----	----