



CERTIFICATE OF ANALYSIS

Work Order	: ES2419070	Page	: 1 of 4
Client	: Department of Climate Change, Energy, the Environment and Water	Laboratory	: Environmental Division Sydney
Contact	: [REDACTED]	Contact	: Customer Services ES
Address	: [REDACTED]	Address	: [REDACTED]
Telephone	: ----	Telephone	: [REDACTED]
Project	: Darling Baaka River Health Program	Date Samples Received	: 11-Jun-2024 14:30
Order number	: ----	Date Analysis Commenced	: 11-Jun-2024
C-O-C number	: ----	Issue Date	: 19-Jun-2024 14:52
Sampler	: ----		
Site	: ----		
Quote number	: ES24DEPENWAT0001		
No. of samples received	: 7		
No. of samples analysed	: 7		



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
[REDACTED]	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

Page : 2 of 4
Work Order : ES2419070
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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
∅ = 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.
- EK061G/EK262PA-CM: It has been noted that TKN is greater than Total Nitrogen on sample 2, however this difference is within the limits of experimental variation.

Page : 3 of 4
 Work Order : ES2419070
 Client : Department of Climate Change, Energy, the Environment and Water
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	DBRH-Z-B1	DBRH-Z-B3	DBRH-Z-02	DBRH-Z-06	DBRH-Z-07
Sampling date / time				05-Jun-2024 00:00	05-Jun-2024 00:00	04-Jun-2024 00:00	06-Jun-2024 00:00	06-Jun-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2419070-001	ES2419070-002	ES2419070-003	ES2419070-004	ES2419070-005	
				Result	Result	Result	Result	Result	
ED040F: Dissolved Major Anions									
Sulfate as SO4 2-	14808-79-8	1	mg/L	10	19	18	7	9	
Sulfur as S	63705-05-5	1	mg/L	3	6	6	2	3	
Silicon as SiO2	14464-46-1	0.1	mg/L	17.5	8.6	16.5	19.2	19.6	
Silicon	7440-21-3	0.05	mg/L	8.18	4.04	7.70	8.96	9.14	
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	4.1	3.8	1.4	2.0	1.3	
EK255A: Ammonia									
Ammonia as N	7664-41-7	0.005	mg/L	0.012	0.520	0.019	0.024	0.020	
EK259A: Nitrite and Nitrate (NOx)									
Nitrite + Nitrate as N	----	0.002	mg/L	0.650	0.025	0.513	0.533	0.567	
EK262A: Total Nitrogen									
Dissolved Total Nitrogen as N	----	0.01	mg/L	1.48	1.85	1.36	1.20	1.28	
Total Nitrogen as N	----	0.01	mg/L	3.00	3.32	1.76	1.67	1.64	
EK267A: Total Phosphorus (Persulfate Digestion)									
Dissolved Total Phosphorus as P	----	0.005	mg/L	0.126	0.081	0.180	0.193	0.179	
Total Phosphorus as P	----	0.005	mg/L	0.684	0.335	0.458	0.501	0.416	
EK271A: Reactive Phosphorus									
Reactive Phosphate	14625-44-2	0.001	mg/L	0.317	0.172	0.448	0.541	0.493	

Page : 4 of 4
 Work Order : ES2419070
 Client : Department of Climate Change, Energy, the Environment and Water
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	DBRH-Z-08	DBRH-Z-09	---	---	---
Sampling date / time				05-Jun-2024 00:00	05-Jun-2024 00:00	---	---	---	
Compound	CAS Number	LOR	Unit	ES2419070-006	ES2419070-007	-----	-----	-----	
				Result	Result	---	---	---	
ED040F: Dissolved Major Anions									
Sulfate as SO4 2-	14808-79-8	1	mg/L	9	9	---	---	---	
Sulfur as S	63705-05-5	1	mg/L	3	3	---	---	---	
Silicon as SiO2	14464-46-1	0.1	mg/L	19.9	18.0	---	---	---	
Silicon	7440-21-3	0.05	mg/L	9.28	8.38	---	---	---	
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	---	0.1	mg/L	1.6	1.6	---	---	---	
EK255A: Ammonia									
Ammonia as N	7664-41-7	0.005	mg/L	0.024	0.024	---	---	---	
EK259A: Nitrite and Nitrate (NOx)									
Nitrite + Nitrate as N	---	0.002	mg/L	0.657	0.686	---	---	---	
EK262A: Total Nitrogen									
Dissolved Total Nitrogen as N	---	0.01	mg/L	1.34	1.37	---	---	---	
Total Nitrogen as N	---	0.01	mg/L	1.82	1.84	---	---	---	
EK267A: Total Phosphorus (Persulfate Digestion)									
Dissolved Total Phosphorus as P	---	0.005	mg/L	0.167	0.166	---	---	---	
Total Phosphorus as P	---	0.005	mg/L	0.440	0.434	---	---	---	
EK271A: Reactive Phosphorus									
Reactive Phosphate	14625-44-2	0.001	mg/L	0.486	0.493	---	---	---	