



CERTIFICATE OF ANALYSIS

Work Order	: ES2320630	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	: [REDACTED]
Project	: 20230216	Date Samples Received	: 21-Jun-2023 16:00
Order number	: 4500806025	Date Analysis Commenced	: 22-Jun-2023
C-O-C number	: ----	Issue Date	: 27-Jun-2023 14:59
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 12		
No. of samples analysed	: 12		



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
- Surrogate Control Limits

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
[REDACTED]	LCMS Coordinator	Sydney Organics, 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 Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	235390	235391	235392	235399	235400
Sampling date / time				15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00	
Compound	CAS Number	LOR	Unit	ES2320630-001	ES2320630-002	ES2320630-003	ES2320630-004	ES2320630-005	
				Result	Result	Result	Result	Result	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	----	----	----	0.07	0.04	
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L	----	----	----	0.03	0.02	
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L	----	----	----	0.19	0.43	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	----	0.22	0.45	
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	----	----	2.0	1.7	
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L	----	----	----	2.2	2.2	
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L	----	----	----	0.33	0.32	
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	<10	<10	----	----	
2,4-DB	94-82-6	10	µg/L	<10	<10	<10	----	----	
Dicamba	1918-00-9	10	µg/L	<10	<10	<10	----	----	
Mecoprop	93-65-2	10	µg/L	<10	<10	<10	----	----	
MCPA	94-74-6	10	µg/L	<10	<10	<10	----	----	
2,4-DP	120-36-5	10	µg/L	<10	<10	<10	----	----	
2,4-D	94-75-7	10	µg/L	<10	<10	<10	----	----	
Triclopyr	55335-06-3	10	µg/L	<10	<10	<10	----	----	
Silvex (2,4,5-TP/Fenoprop)	93-72-1	10	µg/L	<10	<10	<10	----	----	
2,4,5-T	93-76-5	10	µg/L	<10	<10	<10	----	----	
MCPB	94-81-5	10	µg/L	<10	<10	<10	----	----	
Picloram	1918-02-1	10	µg/L	<10	<10	<10	----	----	
Clopyralid	1702-17-6	10	µg/L	<10	<10	<10	----	----	
Fluroxypyr	69377-81-7	10	µg/L	<10	<10	<10	----	----	
2,6-D	575-90-6	10	µg/L	<10	<10	<10	----	----	
2,4,6-T	575-89-3	10	µg/L	<10	<10	<10	----	----	
EP204: Glyphosate and AMPA									
Glyphosate	1071-83-6	10	µg/L	<10	<10	<10	----	----	
AMPA	1066-51-9	10	µg/L	<10	<10	<10	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	235390	235391	235392	235399	235400
Sampling date / time					15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2320630-001	ES2320630-002	ES2320630-003	ES2320630-004	ES2320630-005
					Result	Result	Result	Result	Result
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2,4-Dichlorophenyl Acetic Acid	19719-28-9	10	%		118	117	114	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	235401	235402	235403	235404	235405
Sampling date / time			15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00	15-Jun-2023 00:00
Compound	CAS Number	LOR	Unit	ES2320630-006	ES2320630-007	ES2320630-008	ES2320630-009	ES2320630-010
				Result	Result	Result	Result	Result
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.06	0.07	0.03	0.05	0.06
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.03	0.03	0.02	0.03	0.04
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.53	0.20	0.43	0.53	0.19
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.56	0.23	0.45	0.56	0.23
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.7	1.1	0.9	1.0	1.0
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	2.3	1.3	1.4	1.6	1.2
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.26	0.14	0.15	0.15	0.14



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	235406	235407	----	----	----
Sampling date / time			15-Jun-2023 00:00	15-Jun-2023 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2320630-011	ES2320630-012	-----	-----	-----
				Result	Result	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.06	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.03	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	0.43	0.53	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.45	0.56	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.0	1.1	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	1.4	1.7	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.16	0.16	----	----	----



Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2,4-Dichlorophenyl Acetic Acid	19719-28-9	64	140