

CERTIFICATE OF ANALYSIS

Work Order : **EM2021368**

Client : Dept for Environment & Water

Contact : Mr FRANK MANGERUCA

Address : GPO BOX 2834

ADELAIDE SA, AUSTRALIA 5001

Telephone : ---Project : HCHB
Order number : ----

C-O-C number : ---Sampler : JC
Site : ----

Quote number : AD/052/20 V2

No. of samples received : 19
No. of samples analysed : 19

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Laboratory : Environmental Division Melbourne

Contact : Kieren Burns

Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +61881625130

Date Samples Received : 02-Dec-2020 10:20

Date Analysis Commenced : 02-Dec-2020

Issue Date : 09-Dec-2020 14:16



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
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Samantha Smith	Laboratory Coordinator	WRG Subcontracting, Springvale, VIC

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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 Contact 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.

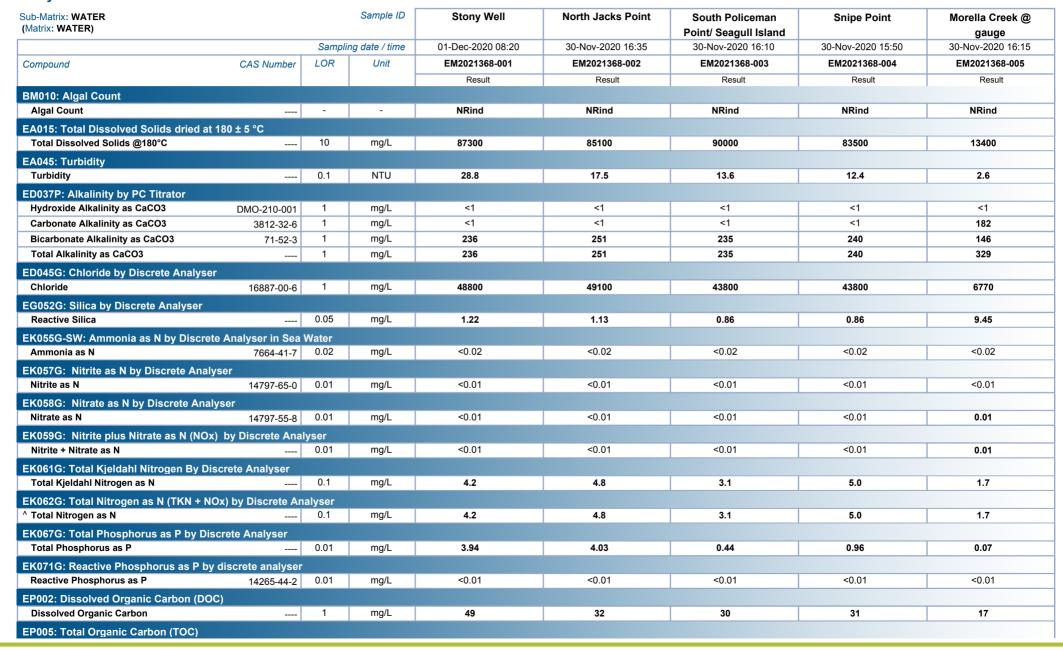
LOR = Limit of reporting

- ^ = 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.
- EP005/EP002: EM2021368 It is recognised that total organic carbon is less than dissolved organic carbon for samples #9,#12 and #13However, the difference is within experimental variation of the methods.
- EP008, Chlorophyll-a standard does not contained Pheophytin-a standard.
- EP008, LOR raised for Chlorophyll-a, b and Pheophytin-a due to sample matrix.
- EA015H: EM2021368 #11, #19: TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EP002:EP005: EM2021368 #15 sample results for total organic carbon and dissolved organic carbon confirmed by re-extraction and re-analysis.
- NRind Reported in separate COA
- Algal Count (BM010) has been performed by ALS Water Resources Group, NATA Accreditation no. 992, Site no. 989.

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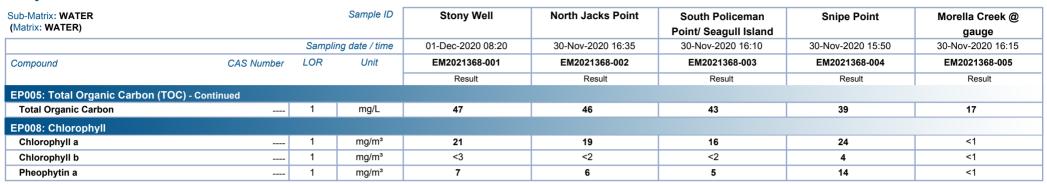




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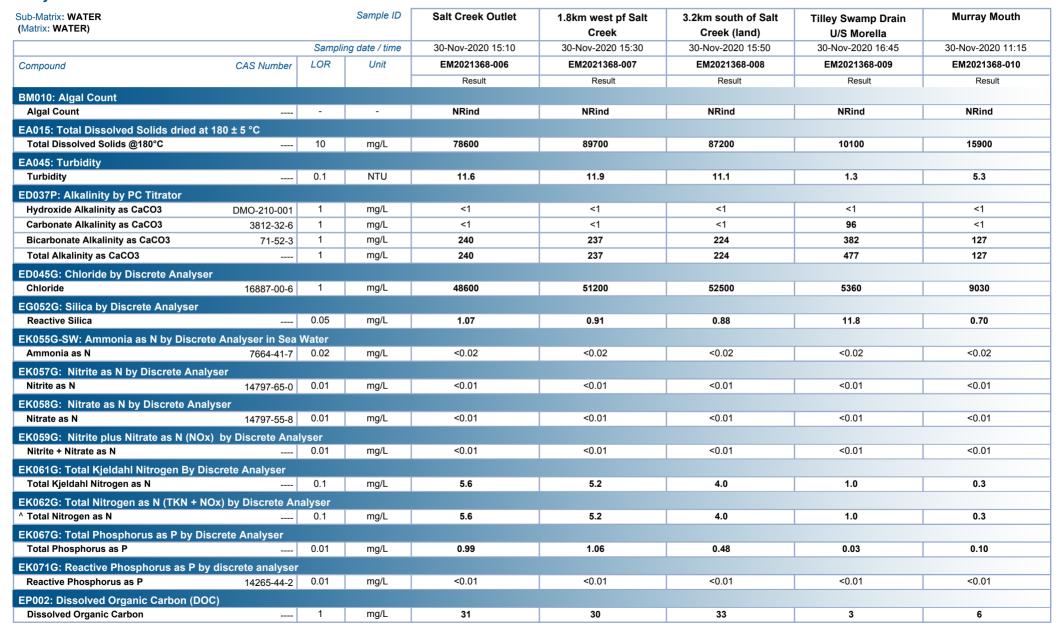




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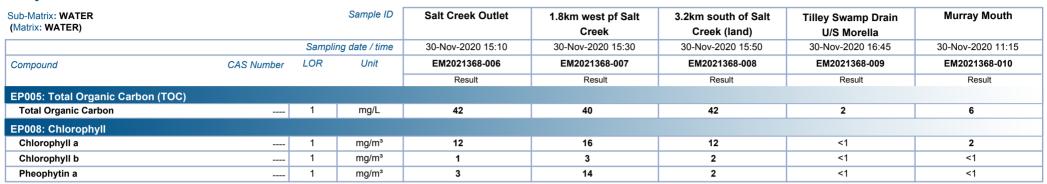




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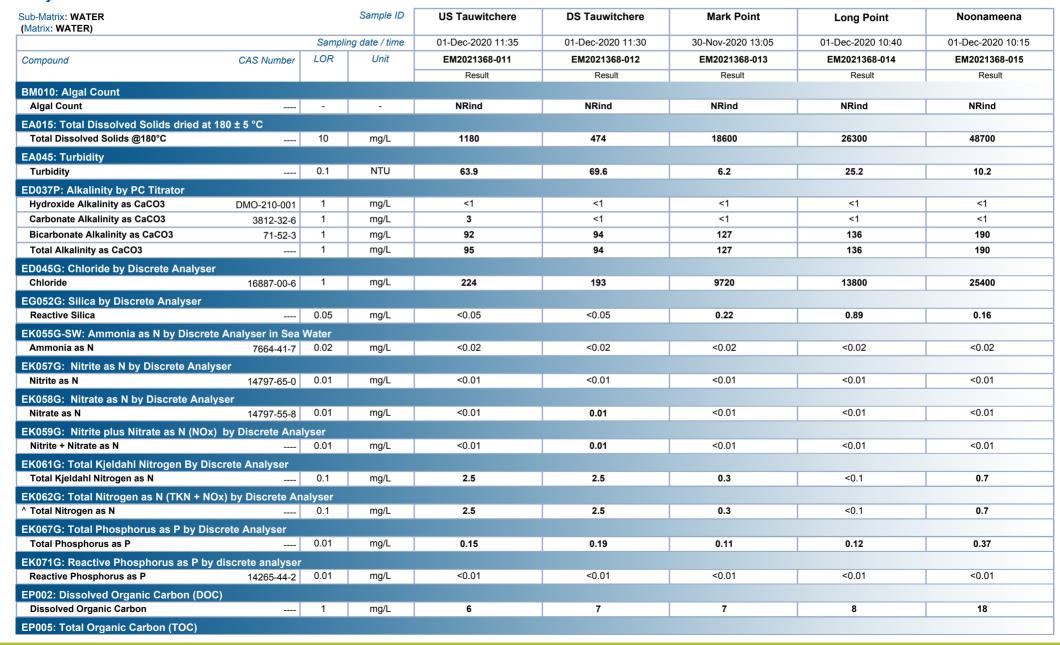




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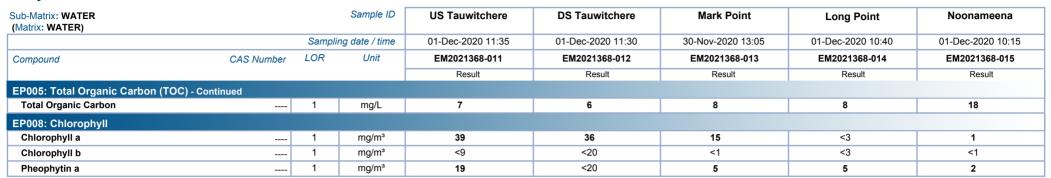




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ub-Matrix: WATER Matrix: WATER)			Sample ID	Bonneys	McGrath Flat North	Parnka Point	Villa de Yumpa	
		Sampli	ng date / time	01-Dec-2020 09:50	01-Dec-2020 09:20	01-Dec-2020 08:50	01-Dec-2020 07:50	
Compound	CAS Number	LOR	Unit	EM2021368-016	EM2021368-017	EM2021368-018	EM2021368-019	
				Result	Result	Result	Result	
BM010: Algal Count								
Algal Count		-	-	NRind	NRind	NRind	NRind	
EA015: Total Dissolved Solids dried at	t 180 ± 5 °C							
Total Dissolved Solids @180°C		10	mg/L	56300	82200	86200	102000	
EA045: Turbidity								
Turbidity		0.1	NTU	21.0	13.8	79.8	23.0	
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	206	214	191	222	
Total Alkalinity as CaCO3		1	mg/L	206	214	191	222	
ED045G: Chloride by Discrete Analyse	er							
Chloride	16887-00-6	1	mg/L	30500	39400	42900	50700	
EG052G: Silica by Discrete Analyser								
Reactive Silica		0.05	mg/L	0.36	<0.05	0.86	0.09	
EK055G-SW: Ammonia as N by Discre	te Analys <u>er in Sea \</u>	Nate <u>r</u>						
Ammonia as N	7664-41-7	0.02	mg/L	<0.02	<0.02	<0.02	<0.02	
EK057G: Nitrite as N by Discrete Anal	vser							
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete Ana	lvser							
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
EK059G: Nitrite plus Nitrate as N (NO		vser						
Nitrite + Nitrate as N		0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
EK061G: Total Kjeldahl Nitrogen By Di	iscrete Analyser		<u> </u>					
Total Kjeldahl Nitrogen By Di		0.1	mg/L	1.7	2.8	4.6	5.0	
EK062G: Total Nitrogen as N (TKN + N	(Ov) by Discrete An							
-Ru62G: Total Nitrogen as N (TKN + N ^ Total Nitrogen as N	Discrete And	0.1	mg/L	1.7	2.8	4.6	5.0	
EK067G: Total Phosphorus as P by Di	scroto Anglysor	J.,				•	4.4	
Total Phosphorus as P by Di	screte Analyser	0.01	mg/L	0.28	0.57	0.96	0.81	
		3.01	mg/L	V. 2 U	0.01	0.00	V.U I	
EK071G: Reactive Phosphorus as P by Reactive Phosphorus as P	y discrete analyser 14265-44-2	0.01	mg/L	0.02	<0.01	<0.01	<0.01	
		0.01	mg/L	U.U2	30.01	50.01	50.01	
EP002: Dissolved Organic Carbon (DC		1	ma/l	22	25	28	22	
Dissolved Organic Carbon		1	mg/L	22	25	∠0	32	

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