

CERTIFICATE OF ANALYSIS

Work Order : EM2101680

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 : ----

Client

Sampler : JOSHUA CASTLE

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 : 05-Feb-2021 11:40

Date Analysis Commenced : 05-Feb-2021

Issue Date : 15-Feb-2021 13:51



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.

SignatoriesPositionAccreditation CategoryAnkit JoshiInorganic ChemistSydney Inorganics, Smithfield, NSWArenie VijayaratnamNon-Metals Team LeaderMelbourne Inorganics, Springvale, VIC

Dilani Fernando Senior Inorganic 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.

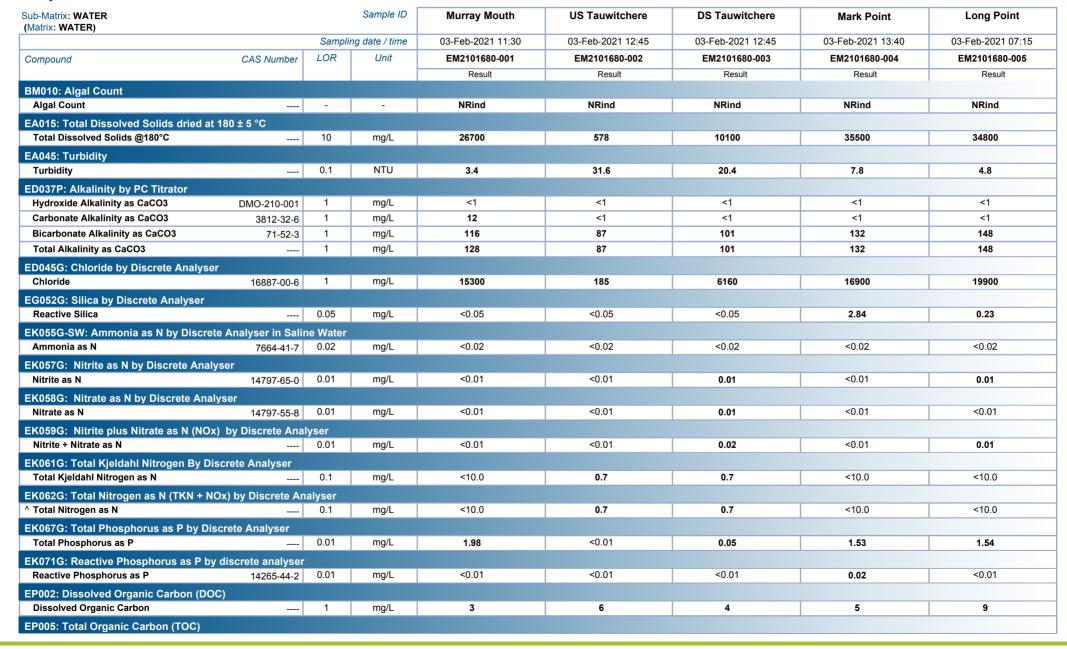
LOR = Limit of reporting

- ^ = 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.
- ED037-P: EM2101680 #1, 8 & 10. Alkalinity has been confirmed via re-preparation and re-analysis.
- EP002,EP005: EM2101680 It is recognised that total organic carbon is less than dissolved dissolved organic carbon for samples #1 and #2 However, the difference is within experimental variation of the methods.
- EK055G: EM2101680 #13 Sample required dilution prior to analysis due to sample matrix. LOR has been raised accordingly.
- EP008, LOR raised for Chlorophyll b and Pheophytin -a due to sample matrix.
- EP008, Chlorophyll-a standard does not contained Pheophytin-a standard.
- EK061G: EM2101680 #1, #4 to #19 have been diluted prior to analysis for TKN due to sample matrix (hyposaline). LOR'S have been raised accordingly.
- EA015H: EM2101680 #10, #13, #18: 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.
- EP005: EM2101685 #1 Poor duplicate precision for TOC due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- EP005: EM2101551 #2 Poor matrix spike recovery for TOC due to sample matrix. 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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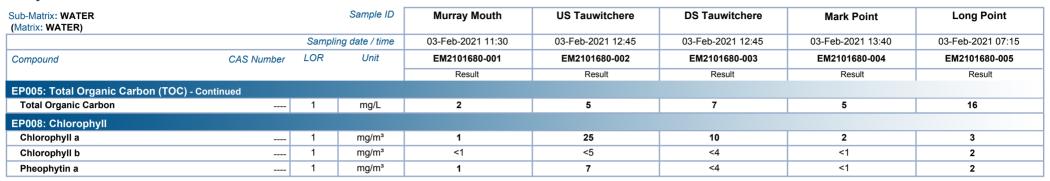




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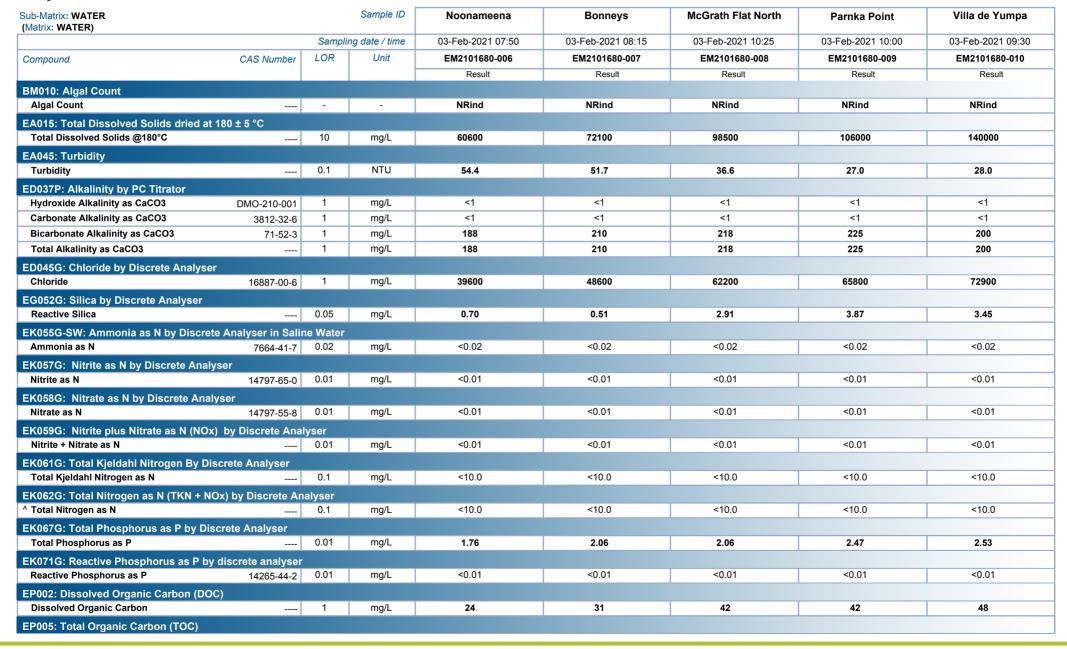




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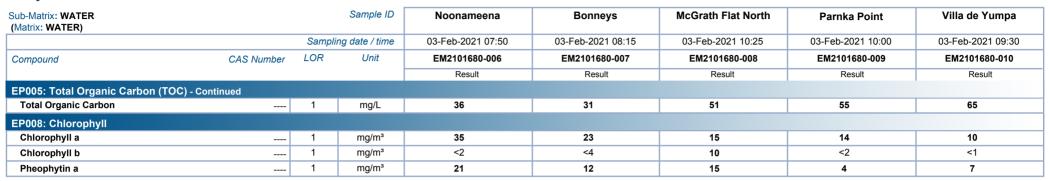




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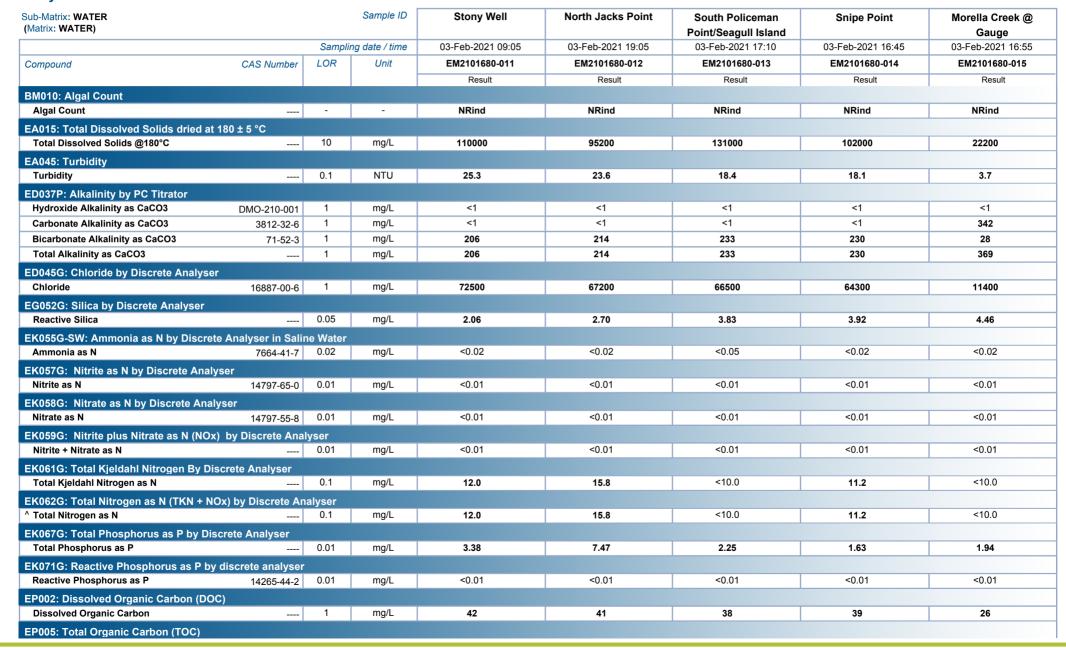




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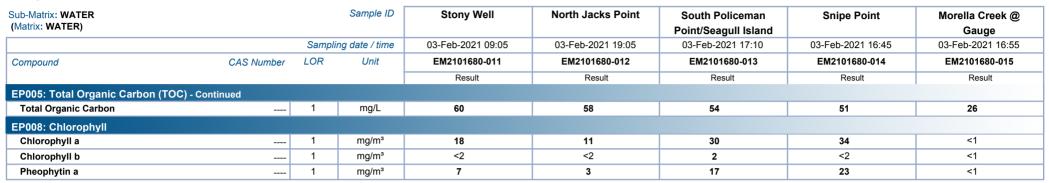




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ub-Matrix: WATER Matrix: WATER) Sample ID Sampling date / time			Salt Creek Outlet	1.8km West of Salt Creek	3.2km South of Salt Creek (Land)	Tilley Swamp Drain U/S Morella		
			03-Feb-2021 16:10	03-Feb-2021 16:25	03-Feb-2021 16:30	03-Feb-2021 17:30		
Compound	CAS Number	LOR	Unit	EM2101680-016	EM2101680-017	EM2101680-018	EM2101680-019	
				Result	Result	Result	Result	
BM010: Algal Count								
Algal Count		-	-	NRind	NRind	NRind	NRind	
EA015: Total Dissolved Solids dried	at 180 ± 5 °C							
Total Dissolved Solids @180°C		10	mg/L	102000	96000	130000	8790	
EA045: Turbidity								
Turbidity		0.1	NTU	19.8	18.2	23.2	3.9	
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	161	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	235	236	225	256	
Total Alkalinity as CaCO3		1	mg/L	235	236	225	416	
ED045G: Chloride by Discrete Analys	er							
Chloride	16887-00-6	1	mg/L	64400	65800	78800	4470	
EG052G: Silica by Discrete Analyser								
Reactive Silica		0.05	mg/L	3.88	3.92	5.36	18.0	
EK055G-SW: Ammonia as N by Discr	ete Analyser in Salin	e W <u>ater</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 Ana	alyser							
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete An								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
EK059G: Nitrite plus Nitrate as N (NC		vser						
Nitrite + Nitrate as N		0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
EK061G: Total Kjeldahl Nitrogen By I	Discrete Analyser		_					
Total Kjeldahl Nitrogen as N		0.1	mg/L	12.8	13.4	11.9	<10.0	
EK062G: Total Nitrogen as N (TKN +	NOv) by Discrete An		J					
^ Total Nitrogen as N	MOX) by Discrete Alla	0.1	mg/L	12.8	13.4	11.9	<10.0	
EK067G: Total Phosphorus as P by D	Discrete Analyses		g, =		12.1		1 12.2	
Total Phosphorus as P by L	iscrete Analyser	0.01	mg/L	1,23	1.59	4.90	1.19	
•		3.01	mg/L	1.20	1.00	4.00	1.10	
EK071G: Reactive Phosphorus as P I Reactive Phosphorus as P		0.01	mg/L	<0.01	0.01	<0.01	<0.01	
	14265-44-2	0.01	IIIg/L	~ 0.01	0.01	~0.01	\0.01	
EP002: Dissolved Organic Carbon (D		1	ma/l	20	40	40	0	
Dissolved Organic Carbon		1	mg/L	39	40	46	8	

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Analytical Results



Sub-Matrix: WATER (Matrix: WATER)			Sample ID	Salt Creek Outlet	1.8km West of Salt Creek	3.2km South of Salt Creek (Land)	Tilley Swamp Drain U/S Morella	
		Sampli	ng date / time	03-Feb-2021 16:10	03-Feb-2021 16:25	03-Feb-2021 16:30	03-Feb-2021 17:30	
Compound	CAS Number	LOR	Unit	EM2101680-016	EM2101680-017	EM2101680-018	EM2101680-019	
				Result	Result	Result	Result	
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon		1	mg/L	52	50	55	8	
EP008: Chlorophyll								
Chlorophyll a		1	mg/m³	28	27	7	4	
Chlorophyll b		1	mg/m³	<2	<2	<1	<1	
Pheophytin a		1	mg/m³	10	6	4	<1	

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP008: Chlorophyll