

QUALITY CONTROL REPORT

Work Order : **EM2216764**

Client : Dept for Environment & Water

Contact : DARCY MORRIS

Address : GPO BOX 2834

ADELAIDE SA, AUSTRALIA 5001

Telephone : ----

Project : HCHB Monitoring Program

Order number : -

C-O-C number : 41794

Sampler : Bryce Drechsler, DARCY MORRIS

Site : HCBC Land 30/31st August

Quote number : AD/052/20 V2

No. of samples received : 12

No. of samples analysed : 12

Page : 1 of 8

Laboratory : Environmental Division Melbourne

Contact : Kieren Burns

Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +61881625130

Date Samples Received : 01-Sep-2022

Date Analysis Commenced : 02-Sep-2022

Issue Date : 09-Sep-2022



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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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 Senior Chemist - Inorganics Sydney Inorganics, Smithfield, NSW
Dilani Fernando Laboratory Coordinator Melbourne Inorganics, Springvale, VIC
Jarwis Nheu Non-Metals Team Leader Melbourne Inorganics, Springvale, VIC

Page : 2 of 8 Work Order : EM2216764

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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.

Key: Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: WATER					Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)			
EK055G-SW: Ammonia as N by Discrete Analyser in Saline Water (QC Lot: 4559796)												
EM2216763-001	Anonymous	EK055G-SW: Ammonia as N	7664-41-7	0.02	mg/L	<0.02	<0.02	0.0	No Limit			
EM2216763-010	Anonymous	EK055G-SW: Ammonia as N	7664-41-7	0.02	mg/L	<0.02	<0.02	0.0	No Limit			
EK055G-SW: Ammon	ia as N by Discrete Analyse	r in Saline Water (QC Lot: 4559798)										
EM2216764-011	Tilley Swamp Drain U/S Morella	EK055G-SW: Ammonia as N	7664-41-7	0.02	mg/L	<0.02	<0.02	0.0	No Limit			
EA015: Total Dissolve	ed Solids dried at 180 ± 5 °C	(QC Lot: 4561737)										
EM2216764-002	DS Tauwitchere	EA015H: Total Dissolved Solids @180°C		10	mg/L	951	937	1.5	0% - 20%			
EM2216817-009	Anonymous	EA015H: Total Dissolved Solids @180°C		10	mg/L	13000	13100	0.7	0% - 20%			
EM2216829-003	Anonymous	EA015H: Total Dissolved Solids @180°C		10	mg/L	351	342	2.6	0% - 20%			
EM2216685-001	Anonymous	EA015H: Total Dissolved Solids @180°C		10	mg/L	4910	4850	1.2	0% - 20%			
EA015: Total Dissolve	ed Solids dried at 180 ± 5 °C	(QC Lot: 4564623)										
EM2216763-003	Anonymous	EA015H: Total Dissolved Solids @180°C		10	mg/L	54900	56800	3.5	0% - 20%			
EM2216764-009	Morella Creek @ gauge	EA015H: Total Dissolved Solids @180°C		10	mg/L	6950	7020	1.0	0% - 20%			
EM2216817-008	Anonymous	EA015H: Total Dissolved Solids @180°C		10	mg/L	4620	4740	2.6	0% - 20%			
EM2216871-004	Anonymous	EA015H: Total Dissolved Solids @180°C		10	mg/L	288	275	4.4	0% - 20%			
EA045: Turbidity (QC	Lot: 4557550)											
EM2216763-001	Anonymous	EA045: Turbidity		0.1	NTU	65.4	67.5	3.2	0% - 20%			
EM2216763-010	Anonymous	EA045: Turbidity		0.1	NTU	12.7	12.4	2.4	0% - 20%			
EA045: Turbidity (QC	Lot: 4557551)											
EM2216764-011	Tilley Swamp Drain U/S Morella	EA045: Turbidity		0.1	NTU	2.1	2.1	0.0	0% - 20%			
ED037P: Alkalinity by	PC Titrator (QC Lot: 45650	13)										
EM2216764-001	US Tauwitchere	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit			

Page : 3 of 8
Work Order : EM2216764



EM221976-Attentinely by PC Titrator (CDL Lot ±565013) - continued EM221976-4:001 US aswitchers ED237-P: Carbonnets Alkalinity as CaCO3 3812-32-6 1 mg/l. 66 67 0.0 0% - 20% ED237-P: Indexindent Alkalinity as CaCO3	Sub-Matrix: WATER					Laboratory Duplicate (DUP) Report						
EM2219784-001 US Tauwitchere ED037-P: Carbonine Akalininty as CaCO3 71-8-23 1 mg/L 66 67 0.0 0% - 20%	Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
E0037-P Enterhorate Alkalinity as CaCO3	ED037P: Alkalinity b	y PC Titrator (QC Lot: 4565	013) - continued									
E0037-P, Total Akalimity as CaCO3	EM2216764-001	US Tauwitchere	ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit		
EM2216493-005			ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	66	67	0.0	0% - 20%		
ED037-P. Carbonate Alkalinity as CaCO3			ED037-P: Total Alkalinity as CaCO3		1	mg/L	66	67	0.0	0% - 20%		
ED037P: Bicarbonate Alkalinity as CaCO3	EM2216493-005	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit		
E0037P- Total Alkalinity as CaCO3		EBOOT T. Tiyaroxido 7 iind		3812-32-6	1	mg/L	<1	<1	0.0	No Limit		
E0037P: Alkalinity by PC Titrator (QC Lot: 4565031) EM2216764-011 Tilley Swamp Drain US E0037-P: Hydroxide Alkalinity as CaCO3 DMO-210-001 1 mg/L <1 <1 0.0 No Limit			ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	204	196	4.0	0% - 20%		
EM2216764-011 Tiley Swamp Drain U/S Morella ED037-P: Hydroxide Alkalinity as CaCO3 DMO-210-001 1 mg/L <1 <1 <1 0.0 No Limit			ED037-P: Total Alkalinity as CaCO3		1	mg/L	204	196	4.0	0% - 20%		
Morelle	ED037P: Alkalinity b	y PC Titrator (QC Lot: 4565	015)									
ED037-P. Bicarbonate Alkalinity as CaCO3 71-52-3 1 mg/L 403 403 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 — 1 mg/L 403 403 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 — 1 mg/L 403 403 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 3 DMO-210-001 1 mg/L <1 <1 0.0 No Limit ED037-P. Carbonate Alkalinity as CaCO3 3181-32-6 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 89 6.2 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 0.0 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 0.0 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 0.0 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 0.0 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 0.0 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 0.0 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 0.0 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 0.0 0.0 0% - 20% ED037-P. Total Alkalinity as CaCO3 71-52-3 1 mg/L 96 0.0 0.0 0% - 20% ED037-P. Total Alkalinit	EM2216764-011	'	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit		
ED037-P: Total Alkalinity as CaCO3			ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit		
EM2217005-001 Anonymous ED037-P: Hydroxide Alkelinity as CaCO3 BD037-P: Carbonate Alkelinity as CaCO3 BD037-P: Carbonate Alkelinity as CaCO3 BD037-P: Carbonate Alkelinity as CaCO3 BD037-P: Total Alkalinity as CaCO3 BD045G: Chloride by Discrete Analyser (OC Lot: 4556439) EM2216763-009 Anonymous ED045G: Chloride BD045G: Chloride by Discrete Analyser (OC Lot: 4556439) EM2216763-001 Anonymous ED045G: Chloride BD045G: Chloride BB87-00-6			ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	403	403	0.0	0% - 20%		
ED037-P. Carbonate Alkalinity as CaCO3 3812-32-6 1 mg/L <1 <1 0.0 No Limit			ED037-P: Total Alkalinity as CaCO3		1	mg/L	403	403	0.0	0% - 20%		
ED037-P: Bicarbonate Alkalimity as CaCO3 71-52-3 1 mg/L 95 89 6.2 0% - 20% ED037-P: Total Alkalimity as CaCO3 1 mg/L 95 89 6.2 0% - 20% ED045G: Chloride by Discrete Analyser (QC Lot: 4556430) EM2216763-009 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 30900 30500 1.2 0% - 20% EM2216763-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 4680 4580 2.1 0% - 20% EM2216763-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 4080 4580 0.2 0 0% - 20% EM2216763-01 Inlies Swamp Drain U/S ED045G: Chloride 16887-00-6 1 mg/L 209 208 0.0 0% - 20% EM2216764-011 Tilley Swamp Drain U/S ED045G: Chloride 16887-00-6 1 mg/L 4110 4150 0.9 0% - 20% EM2216764-001 US Tauwitchere EG052G: Reactive Silica EM2216763-001 Anonymous EG052G: Reactive Silica EM2216763-001 Discrete Analyser (QC Lot: 4556429) EM2216764-011 Tilley Swamp Drain U/S EG052G: Reactive Silica 0.05 mg/L 2.72 2.73 0.0 0% - 20% EM2216763-001 Anonymous EG052G: Reactive Silica 0.05 mg/L 2.72 2.73 0.0 0% - 20% EM2216763-01 Tilley Swamp Drain U/S EG052G: Reactive Silica 0.05 mg/L 2.72 2.73 0.0 0% - 20% EM2216763-01 Tilley Swamp Drain U/S EG052G: Reactive Silica 0.05 mg/L 2.72 2.73 0.0 0% - 20% EM2216763-01 Anonymous EG052G: Reactive Silica 0.05 mg/L 2.72 2.73 0.0 0% - 20% EM2216763-01 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.01 0.01 0.0 No Limit EM2216763-010 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.01 0.01 0.0 No Limit EM2216763-010 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.01 0.01 0.0 No Limit EM2216763-011 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.01 0.01 0.0 No Limit EM2216764-011 Tilley Swamp Drain U/S EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.02 0.02 0.0 No Limit EM2216764-011 Tilley Swamp Drain U/S EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.02 0.02 0.0 No Limit EM2216764-011 Tilley Swamp Drain U/S EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.02 0.02 0.0 No Limit EM2216764-011 Tilley Swamp Drain U/S EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.02 0.02 0.0 No Limit EM2216764-011 Tilley Swamp Drain U/S	EM2217005-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit		
ED045G: Chloride by Discrete Analyser (QC Lot: 4556439) ED045G: Chloride by Discrete Analyser (QC Lot: 4556430) EM2216763-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 4680 4580 2.1 0% - 20% EM2216763-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 4680 4580 2.1 0% - 20% EM2216763-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 4110 4150 0.9 0% - 20% EM2216764-011 Tilley Swamp Drain U/S Morella EM2216764-011 Tilley Swamp Drain U/S ED045G: Chloride 16887-00-6 1 mg/L 4110 4150 0.9 0% - 20% EM2216763-001 Anonymous EG052G: Reactive Silica			ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit		
ED045G: Chloride by Discrete Analyser (QC Lot: 4556430) EM2216763-009 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 30900 30500 1.2 0%-20% ED045G: Chloride by Discrete Analyser (QC Lot: 4556433) EM2216860-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 209 208 0.0 0%-20% EM2216764-011 Tilley Swamp Drain U/S ED045G: Chloride 16887-00-6 1 mg/L 4110 4150 0.9 0%-20% Morella EG052G: Silica by Discrete Analyser (QC Lot: 4556428) EM2216764-011 US Tauwitchere EG052G: Reactive Silica			ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	95	89	6.2	0% - 20%		
EM2216763-009 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 30900 30500 1.2 0% - 20% EM2216763-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 4680 4580 2.1 0% - 20% ED045G: Chloride by Discrete Analyser (QC Lot: 4556433) EM2216860-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 209 208 0.0 0% - 20% EM2216860-001 Tilley Swamp Drain U/S ED045G: Chloride 16887-00-6 1 mg/L 4110 4150 0.9 0% - 20% EM2216764-011 US Tauwitchere EG052G: Reactive Silica 0.05 mg/L 2.94 3.02 2.5 0% - 20% EM2216764-001 US Tauwitchere EG052G: Reactive Silica 0.05 mg/L 2.72 2.73 0.0 0% - 20% EM2216763-001 Anonymous EG052G: Reactive Silica 0.05 mg/L 11.6 11.8 2.0 0% - 20% EM2216764-011			ED037-P: Total Alkalinity as CaCO3		1	mg/L	95	89	6.2	0% - 20%		
EM2216763-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 4680 4580 2.1 0% - 20% ED045G: Chloride by Discrete Analyser (QC Lot: 4556433) EM2216764-011 Tilley Swamp Drain U/S ED045G: Chloride 16887-00-6 1 mg/L 209 208 0.0 0% - 20% Morella 16887-00-6 1 mg/L 4110 4150 0.9 0% - 20% Morella 16887-00-6 1 mg/L 4110 4150 0.9 0% - 20% Morella 16887-00-6 1 mg/L 2.94 3.02 2.5 0% - 20% Morella 16887-00-6 1 mg/L 2.94 3.02 2.5 0% - 20% Morella 2.72 2.73 0.0 0.0 0% - 20% Morella 2.72 2.73 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	ED045G: Chloride by	y Discrete Analyser (QC Lot	: 4556430)									
ED045G: Chloride by Discrete Analyser (QC Lot: 4556433) EM2216860-001 Anonymous ED045G: Chloride 16887-00-6 1 mg/L 209 208 0.0 0% - 20% EM2216764-011 Tilley Swamp Drain U/S E0045G: Chloride 16887-00-6 1 mg/L 4110 4150 0.9 0% - 20% Morella EG052G: Silica by Discrete Analyser (QC Lot: 4556428) EM2216764-001 US Tauwitchere EG052G: Reactive Silica	EM2216763-009	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	30900	30500	1.2	0% - 20%		
EM2216764-001 Anonymous ED0455: Chloride 16887-00-6 1 mg/L 209 208 0.0 0%-20% EM2216764-011 Tilley Swamp Drain U/S ED045G: Chloride 16887-00-6 1 mg/L 4110 4150 0.9 0%-20% Morella Morella US Tauwitchere EG052G: Reactive Silica 0.05 mg/L 2.94 3.02 2.5 0%-20% EM2216763-001 Anonymous EG052G: Reactive Silica 0.05 mg/L 2.72 2.73 0.0 0%-20% EG052G: Silica by Discrete Analyser (QC Lot: 4556431) 0.05 mg/L 11.6 11.8 2.0 0%-20% EM2216764-011 Tilley Swamp Drain U/S EG052G: Reactive Silica 0.05 mg/L 11.6 11.8 2.0 0%-20% EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4556429) 0.05 mg/L 11.6 11.8 2.0 0%-20% EM2216763-010 Anonymous EK057G: Nitrite as N 14797-65-0 <t< td=""><td>EM2216763-001</td><td>Anonymous</td><td>ED045G: Chloride</td><td>16887-00-6</td><td>1</td><td>mg/L</td><td>4680</td><td>4580</td><td>2.1</td><td>0% - 20%</td></t<>	EM2216763-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	4680	4580	2.1	0% - 20%		
EM2216764-011 Tilley Swamp Drain U/S Morella ED045G: Chloride 16887-00-6 1 mg/L 4110 4150 0.9 0% - 20% EG052G: Silica by Discrete Analyser (QC Lot: 4556428) EM2216764-001 US Tauwitchere EG052G: Reactive Silica 0.05 mg/L 2.72 2.73 0.0 0% - 20% EM2216763-001 Anonymous EG052G: Reactive Silica 0.05 mg/L 2.72 2.73 0.0 0% - 20% EG052G: Silica by Discrete Analyser (QC Lot: 4556431) EM2216764-011 Tilley Swamp Drain U/S EG052G: Reactive Silica 0.05 mg/L 11.6 11.8 2.0 0% - 20% Morella	ED045G: Chloride by	Discrete Analyser (QC Lot	: 4556433)									
EG052G: Silica by Discrete Analyser (QC Lot: 4556428) EM2216764-001 US Tauwitchere EG052G: Reactive Silica	EM2216860-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	209	208	0.0	0% - 20%		
EM2216764-001 US Tauwitchere EG052G: Reactive Silica	EM2216764-011		ED045G: Chloride	16887-00-6	1	mg/L	4110	4150	0.9	0% - 20%		
EM2216763-001 Anonymous EG052G: Reactive Silica	EG052G: Silica by D	iscrete Analyser (QC Lot: 4	556428)									
EG052G: Silica by Discrete Analyser (QC Lot: 4556431) EM2216764-011 Tilley Swamp Drain U/S Morella EG052G: Reactive Silica	EM2216764-001	US Tauwitchere	EG052G: Reactive Silica		0.05	mg/L	2.94	3.02	2.5	0% - 20%		
EM2216764-011 Tilley Swamp Drain U/S Morella EG052G: Reactive Silica	EM2216763-001	Anonymous			0.05	mg/L	2.72	2.73	0.0	0% - 20%		
EM2216764-011 Tilley Swamp Drain U/S Morella EG052G: Reactive Silica	EG052G: Silica by D	iscrete Analyser (QC Lot: 4	556431)									
EM2216763-010 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L <0.01 <0.01 0.0 No Limit EM2216763-001 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.01 0.01 0.0 No Limit EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4556432) EM2216911-001 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.31 0.31 0.0 0% - 20% EM2216764-011 Tilley Swamp Drain U/S EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.02 0.02 0.0 No Limit EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4559797)		Tilley Swamp Drain U/S			0.05	mg/L	11.6	11.8	2.0	0% - 20%		
EM2216763-010 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L <0.01 <0.01 0.0 No Limit EM2216763-001 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.01 0.01 0.0 No Limit EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4556432) EM2216911-001 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.31 0.31 0.0 0% - 20% EM2216764-011 Tilley Swamp Drain U/S EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.02 0.02 0.0 No Limit EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4559797)	EK057G: Nitrite as I	N by Discrete Analyser (QC	Lot: 4556429)									
EM2216763-001 Anonymous EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4556432) EM2216911-001 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.01 0.01 0.0 No Limit EM2216764-011 Tilley Swamp Drain U/S K057G: Nitrite as N 14797-65-0 0.01 mg/L 0.31 0.31 0.0 0% - 20% 0.02 0.02 0.02 No Limit EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4559797)				14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit		
EM2216911-001 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.31 0.31 0.0 0% - 20% EM2216764-011 Tilley Swamp Drain U/S Morella EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.02 0.02 0.00 No Limit EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4559797)	EM2216763-001	Anonymous		14797-65-0	0.01	mg/L	0.01	0.01	0.0	No Limit		
EM2216911-001 Anonymous EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.31 0.31 0.0 0% - 20% EM2216764-011 Tilley Swamp Drain U/S Morella EK057G: Nitrite as N 14797-65-0 0.01 mg/L 0.02 0.02 0.00 No Limit EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4559797)	EK057G: Nitrite as I	N by Discrete Analyser (QC	Lot: 4556432)									
EM2216764-011 Tilley Swamp Drain U/S		,		14797-65-0	0.01	mg/L	0.31	0.31	0.0	0% - 20%		
		Tilley Swamp Drain U/S										
FM2216763-001 Anonymous FK059G: Nitrite + Nitrate as N 0.01 mg/l 0.06 0.06 0.0 No Limit	EK059G: Nitrite plus	s Nitrate as N (NOx) by Disc	rete Analyser (QC Lot: 4559797)									
	EM2216763-001	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	0.06	0.06	0.0	No Limit		

Page : 4 of 8
Work Order : EM2216764



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EK059G: Nitrite plu	s Nitrate as N (NOx) by Disc	crete Analyser (QC Lot: 4559797) - continued							
EM2216763-010	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plu	s Nitrate as N (NOx) by Disc	crete Analyser (QC Lot: 4559799)							
EM2216764-011	Tilley Swamp Drain U/S	EK059G: Nitrite + Nitrate as N		0.01	mg/L	0.70	0.70	0.0	0% - 20%
	Morella								
EK061G: Total Kjelo	dahl Nitrogen By Discrete Ar	nalyser (QC Lot: 4558551)							
EM2216763-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	1.0	0.9	0.0	No Limit
EM2216763-010	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	3.2	4.4	31.6	No Limit
EK061G: Total Kjelo	dahl Nitrogen By Discrete Ar	nalyser (QC Lot: 4558553)							
EM2216764-011	Tilley Swamp Drain U/S	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	0.5	0.5	0.0	No Limit
	Morella								
EM2216786-004	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	0.3	0.3	0.0	No Limit
EK067G: Total Phos	sphorus as P by Discrete An	alyser (QC Lot: 4558552)							
EM2216763-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	0.04	0.04	0.0	No Limit
EM2216763-010	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	0.15	0.35	80.1	No Limit
EK067G: Total Phos	sphorus as P by Discrete An	alyser (QC Lot: 4558554)							
EM2216764-011	Tilley Swamp Drain U/S	EK067G: Total Phosphorus as P		0.01	mg/L	<0.02	<0.02	0.0	No Limit
	Morella								
EM2216786-004	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	0.07	0.09	23.6	No Limit
EP002: Dissolved O	rganic Carbon (DOC) (QC L	ot: 4558487)							
EM2216763-001	Anonymous	EP002: Dissolved Organic Carbon		1	mg/L	9	9	0.0	No Limit
EM2216763-010	Anonymous	EP002: Dissolved Organic Carbon		1	mg/L	28	29	0.0	0% - 50%
EP002: Dissolved O	rganic Carbon (DOC) (QC L	ot: 4558488)							
EM2216764-011	Tilley Swamp Drain U/S	EP002: Dissolved Organic Carbon		1	mg/L	7	8	0.0	No Limit
	Morella								
EP005: Total Organi	ic Carbon (TOC) (QC Lot: 45	558495)							
EM2216763-001	Anonymous	EP005: Total Organic Carbon		1	mg/L	8	7	0.0	No Limit
EM2216763-010	Anonymous	EP005: Total Organic Carbon		1	mg/L	35	34	3.4	0% - 50%
EP005: Total Organi	ic Carbon (TOC) (QC Lot: 45	563414)							
EM2216764-011	Tilley Swamp Drain U/S	EP005: Total Organic Carbon		1	mg/L	14	11	21.6	0% - 50%
	Morella								
EM2216916-008	Anonymous	EP005: Total Organic Carbon		1	mg/L	36	38	3.3	0% - 20%
EP008: Chlorophyll	(QC Lot: 4563690)								
EM2216764-011	Tilley Swamp Drain U/S	EP008B: Chlorophyll b		1	mg/m³	<1	<1	0.0	No Limit
	Morella								

Page : 5 of 8 Work Order : EM2216764

Client : Dept for Environment & Water
Project : HCHB Monitoring Program



Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS) Report			
				Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
:K055G-SW: Ammonia as N by Discrete Analyser in Saline Wa	ater (QCLot: 4	1559796)							
EK055G-SW: Ammonia as N	7664-41-7	0.02	mg/L	<0.02	0.5 mg/L	92.7	81.1	124	
K055G-SW: Ammonia as N by Discrete Analyser in Saline Wa	ater (QCLot: 4	1559798)							
	7664-41-7	0.02	mg/L	<0.02	0.5 mg/L	92.7	81.1	124	
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 456	61737)								
EA015H: Total Dissolved Solids @180°C		10	mg/L	<10	2000 mg/L	99.8	91.0	110	
				<10	2440 mg/L	104	81.6	118	
				<10	293 mg/L	105	91.0	110	
A015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 456	64623)								
A015H: Total Dissolved Solids @180°C		10	mg/L	<10	2000 mg/L	104	91.0	110	
				<10	2440 mg/L	108	81.6	118	
				<10	293 mg/L	104	91.0	110	
EA045: Turbidity (QCLot: 4557550)									
EA045: Turbidity		0.1	NTU	<0.1	40 NTU	101	88.1	110	
A045: Turbidity (QCLot: 4557551)									
EA045: Turbidity		0.1	NTU	<0.1	40 NTU	104	88.1	110	
ED037P: Alkalinity by PC Titrator (QCLot: 4565013)									
ED037-P: Total Alkalinity as CaCO3			mg/L		200 mg/L	93.0	85.0	116	
ED037P: Alkalinity by PC Titrator (QCLot: 4565015)									
ED037-P: Total Alkalinity as CaCO3			mg/L		200 mg/L	96.8	85.0	116	
ED045G: Chloride by Discrete Analyser (QCLot: 4556430)									
<u> </u>	16887-00-6	1	mg/L	<1	10 mg/L	102	85.0	115	
				<1	1000 mg/L	106	85.0	122	
ED045G: Chloride by Discrete Analyser (QCLot: 4556433)									
	16887-00-6	1	mg/L	<1	10 mg/L	101	85.0	115	
				<1	1000 mg/L	107	85.0	122	
EG052G: Silica by Discrete Analyser (QCLot: 4556428)									
EG052G: Reactive Silica		0.05	mg/L	<0.05	5 mg/L	97.3	78.9	118	
EG052G: Silica by Discrete Analyser (QCLot: 4556431)									
G052G: Reactive Silica		0.05	mg/L	<0.05	5 mg/L	98.4	78.9	118	
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4556429)									
	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	90.9	112	
					· -				
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4556432)	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	90.9	112	
EK057G: Nitrite as N	17101-00-0	0.01	IIIg/L	~U.U1	0.5 mg/L	104	30.3	112	

Page : 6 of 8 Work Order : EM2216764

Client : Dept for Environment & Water
Project : HCHB Monitoring Program



Sub-Matrix: WATER	Method Blank (MB)	Laboratory Control Spike (LCS) Report					
			Report	Spike	Spike Recovery (%)	Acceptable	Limits (%)
Method: Compound CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4	559797)						
EK059G: Nitrite + Nitrate as N	0.01	mg/L	<0.01	0.5 mg/L	102	90.0	117
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4	559799)						
EK059G: Nitrite + Nitrate as N	0.01	mg/L	<0.01	0.5 mg/L	102	90.0	117
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4558551)							
EK061G: Total Kjeldahl Nitrogen as N	0.1	mg/L	<0.1	5 mg/L	73.2	70.0	117
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4558553)							
EK061G: Total Kjeldahl Nitrogen as N	0.1	mg/L	<0.1	5 mg/L	95.0	70.0	117
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4558552)							
EK067G: Total Phosphorus as P	0.01	mg/L	<0.01	2.21 mg/L	96.7	71.9	114
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4558554)							
EK067G: Total Phosphorus as P	0.01	mg/L	<0.01	2.21 mg/L	96.8	71.9	114
EP002: Dissolved Organic Carbon (DOC) (QCLot: 4558487)							
EP002: Dissolved Organic Carbon	1	mg/L	<1	100 mg/L	96.3	83.0	115
EP002: Dissolved Organic Carbon (DOC) (QCLot: 4558488)							
EP002: Dissolved Organic Carbon	1	mg/L	<1	100 mg/L	98.6	83.0	115
EP005: Total Organic Carbon (TOC) (QCLot: 4558495)							
EP005: Total Organic Carbon	1	mg/L	<1	100 mg/L	98.9	81.2	110
EP005: Total Organic Carbon (TOC) (QCLot: 4563414)							
EP005: Total Organic Carbon	1	mg/L	<1	100 mg/L	94.4	81.2	110
EP008: Chlorophyll (QCLot: 4563687)							
EP008: Chlorophyll a	1	mg/m³	<1	20 mg/m³	111	70.0	130
EP008: Pheophytin a	1	mg/m³	<1				
EP008: Chlorophyll (QCLot: 4563688)							
EP008: Chlorophyll a	1	mg/m³	<1	20 mg/m³	107	70.0	130
EP008: Pheophytin a	1	mg/m³	<1				
EP008: Chlorophyll (QCLot: 4563689)							
EP008B: Chlorophyll b	1	mg/m³	<1				
EP008: Chlorophyll (QCLot: 4563690)							
EP008B: Chlorophyll b	1	mg/m³	<1				

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER							
				Spike	SpikeRecovery(%)	Acceptable l	Limits (%)
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High

Page : 7 of 8
Work Order : EM2216764



Sub-Matrix: WATER					Matrix Spike (MS) Report					
				Spike	SpikeRecovery(%)	Acceptable L	imits (%)			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High			
EK055G-SW: Amn	nonia as N by Discrete Analyser in Saline Water (QCLot:	4559796)								
EM2216763-002	Anonymous	EK055G-SW: Ammonia as N	7664-41-7	0.5 mg/L	100	70.0	130			
EK055G-SW: Amn	nonia as N by Discrete Analyser in Saline Water (QCLot:	: 4559798)								
EM2216764-012	Tilley Swamp Drain Watercourse Outlet	EK055G-SW: Ammonia as N	7664-41-7	0.5 mg/L	127	70.0	130			
ED045G: Chloride	by Discrete Analyser (QCLot: 4556430)									
EM2216763-002	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	# Not Determined	70.0	142			
ED045G: Chloride	by Discrete Analyser (QCLot: 4556433)									
EM2216764-012	Tilley Swamp Drain Watercourse Outlet	ED045G: Chloride	16887-00-6	400 mg/L	# Not Determined	70.0	142			
EG052G: Silica by	/ Discrete Analyser (QCLot: 4556428)									
EM2216763-002	Anonymous	EG052G: Reactive Silica		5 mg/L	89.7	80.0	120			
EG052G: Silica by	/ Discrete Analyser (QCLot: 4556431)									
EM2216764-012	Tilley Swamp Drain Watercourse Outlet	EG052G: Reactive Silica		5 mg/L	94.4	80.0	120			
EK057G: Nitrite a	s N by Discrete Analyser (QCLot: 4556429)									
EM2216763-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	97.0	80.0	114			
EK057G: Nitrite a	s N by Discrete Analyser (QCLot: 4556432)									
EM2216911-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	# Not Determined	80.0	114			
EK059G: Nitrite p	olus Nitrate as N (NOx) by Discrete Analyser (QCLot: 45									
EM2216763-002	Anonymous	EK059G: Nitrite + Nitrate as N		0.5 mg/L	90.8	70.0	130			
EK059G: Nitrite p	olus Nitrate as N (NOx) by Discrete Analyser (QCLot: 45	59799)								
EM2216764-012	Tilley Swamp Drain Watercourse Outlet	EK059G: Nitrite + Nitrate as N		0.5 mg/L	85.7	70.0	130			
EK061G: Total Kje	eldahl Nitrogen By Discrete Analyser (QCLot: 4558551)									
EM2216763-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		5 mg/L	103	70.0	130			
EK061G: Total Kje	eldahl Nitrogen By Discrete Analyser (QCLot: 4558553)									
EM2216764-012	Tilley Swamp Drain Watercourse Outlet	EK061G: Total Kjeldahl Nitrogen as N		5 mg/L	103	70.0	130			
EK067G: Total Ph	osphorus as P by Discrete Analyser (QCLot: 4558552)									
EM2216763-002	Anonymous	EK067G: Total Phosphorus as P		1 mg/L	96.4	70.0	130			
EK067G: Total Ph	osphorus as P by Discrete Analyser (QCLot: 4558554)									
EM2216764-012	Tilley Swamp Drain Watercourse Outlet	EK067G: Total Phosphorus as P		1 mg/L	96.4	70.0	130			
EP002: Dissolved	Organic Carbon (DOC) (QCLot: 4558487)									
EM2216763-002	Anonymous	EP002: Dissolved Organic Carbon		200 mg/L	99.4	75.0	117			
EP002: Dissolved	Organic Carbon (DOC) (QCLot: 4558488)									
EM2216764-012	Tilley Swamp Drain Watercourse Outlet	EP002: Dissolved Organic Carbon		200 mg/L	104	75.0	117			

Page : 8 of 8 Work Order : EM2216764



Sub-Matrix: WATER					Matrix Spike (MS) Report					
					SpikeRecovery(%)	Acceptable L	.imits (%)			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High			
EP005: Total Orga	nic Carbon (TOC) (QCLot: 4558495)									
EM2216763-002	Anonymous	EP005: Total Organic Carbon		200 mg/L	104	76.6	125			
EP005: Total Orga	EP005: Total Organic Carbon (TOC) (QCLot: 4563414)									
EM2216764-012	Tilley Swamp Drain Watercourse Outlet	EP005: Total Organic Carbon		100 mg/L	114	76.6	125			