Adelaide SA 5001

Internet: www.awqc.com.au

Email: awqc@sawater.com.au

Tel: 1300 653 366

Fax: 1300 883 171



**DEW - Department of Environment and Water** 

ATTN: Patrick Betham 24-26 Tikalara street Regency Park SA 5010 AUSTRALIA

11/12/2019

Dear Patrick

Please find attached the Final Analytical Report for

**Customer Service Request:** 143419-2019-CSR-1

143419 Account:

AWQC-141029 DEW - Healthy Coorong Healthy Basin Phase 0 - Non routine Project:

19/20

This report has also been sent to: Frank Mangeruca Mark de Jong

AWQC Sample Receipt hours are Monday and Tuesday 8:30am to 8pm and Wednesday, Thursday and Friday 8:30am to 4:30pm.

Yours sincerely,

Darren Seebohm **Customer Services Officer** Darren.Seebohm@sawater.com.au +61 8 7424 2150



ctoria Square Tel: 1300 653 366 de SA 5000 Fax: 1300 883 171

Email: awqc@sawater.com.au



**FINAL REPORT: 265658** 

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### **Report Information**

Project Name AWQC-141029

Customer DEW - Department of Environment and Water

**CSR\_ID** 143419-2019-CSR-1

### **Analytical Results**

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 19/11/2019
 8:15:00AM

 Sample Received Date
 20/11/2019
 10:32:26AM

 Sample Analysis Completed
 3/12/2019
 10:58:09AM

 Sample ID
 2019-007-8197

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	.6°C		_
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	62.1 μg/L	
Chlorophyll b	0.1	9.30 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of	
		chlorophyll & their degradation by products (	
Obligation to the Company of the Com	(ADEL)	Phaeophytins)	20/11/2019
Chlorophyll a & Phaeophytin a T0380-02( Chlorophyll a	( <b>ADEL)</b> 0.1	50.0	20/11/2019
• •	0.1	58.8 μg/L	
Phaeophytin a	0.1	9.03 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	.6°C		
Ammonia as N T0100-01(ADEL)			02/12/2019
Ammonia as N	0.005	0.048 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	48500 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	0.004 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		5.68 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.171 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	3.00 mg/L	
TKN as N T0112-01(ADEL)			25/11/2019



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**Test Start Date** 

**Test Start Date** 

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### **Analytical Results**

**Organic Chemistry** 

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 19/11/2019 8:15:00AM

 Sample Received Date
 20/11/2019 10:32:26AM

 Sample Analysis Completed
 3/12/2019 10:58:09AM

 Sample ID
 2019-007-8197

Status Endorsed

Collection Type Customer Collected

TKN as N T0112-01(ADEL) 25/11/2019

Result

TKN as Nitrogen 0.05 5.68 mg/L

LOR

LOR

Sample temperature at time of receipt	8.6°C		
Dissolved Organic Carbon T0158-07(AE			22/11/2019
Dissolved Organic Carbon	1	23.8 mg/L	
Total Organic Carbon T0158-07(ADEL)			22/11/2019
Total Organic Carbon	1	32.3 mg/L	
Inorganic Chemistry - Physical	LOR	Result	Test Start Date
Sample temperature at time of receipt	8.6°C		_
Sample temperature at time of receipt Alkalinity Carbonate Bicarbonate and I		1(ADEL)	25/11/2019
		<b>1(ADEL)</b> 221 mg/L	25/11/2019
Alkalinity Carbonate Bicarbonate and I		, ,	25/11/2019
Alkalinity Carbonate Bicarbonate and I Alkalinity as Calcium Carbonate		221 mg/L	25/11/2019
Alkalinity Carbonate Bicarbonate and I Alkalinity as Calcium Carbonate Bicarbonate		221 mg/L 269 mg/L	25/11/2019
Alkalinity Carbonate Bicarbonate and I Alkalinity as Calcium Carbonate Bicarbonate Carbonate		221 mg/L 269 mg/L 0 mg/L	25/11/2019 25/11/2019
Alkalinity Carbonate Bicarbonate and I Alkalinity as Calcium Carbonate Bicarbonate Carbonate Hydroxide		221 mg/L 269 mg/L 0 mg/L	
Alkalinity Carbonate Bicarbonate and I Alkalinity as Calcium Carbonate Bicarbonate Carbonate Hydroxide PH T0010-01(ADEL)		221 mg/L 269 mg/L 0 mg/L 0 mg/L	
Alkalinity Carbonate Bicarbonate and I Alkalinity as Calcium Carbonate Bicarbonate Carbonate Hydroxide  PH T0010-01(ADEL) pH		221 mg/L 269 mg/L 0 mg/L 0 mg/L 8.0 pH units	

Sample temperature at time of receipt a	8.6°C		
Suspended Solids T0160-01(ADEL)	28/11/2019		
Suspended Solids	1.0	50 mg/L	
Total Dissolved Solids by Evaporation 1	29/11/2019		
Total Dissolved Solids (by evaporation)	1	92500 mg/L	
Volatile Suspended Solids T0160-01(AD	28/11/2019		
Fixed Solids	1	<1 mg/L	
Volatile Suspended Solids	1	50 mg/L	

Result



Corporate Accreditation No.1115 Chemical and Biological Testing Accredited for compliance with ISO/IEC 17025 -Testing

**Inorganic Chemistry - Waste Water** 

PO Box 1751 250 Victoria Square Adelaide SA 5001 Adelaide SA 5000 Tel: 1300 653 366 Fax: 1300 883 171 AWQC

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### **Analytical Results**

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 19/11/2019
 8:15:00AM

 Sample Received Date
 20/11/2019
 10:32:26AM

 Sample Analysis Completed
 3/12/2019
 10:58:09AM

 Sample ID
 2019-007-8197

 Status
 Endorsed

Collection Type Customer Collected



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### **Analytical Results**

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 19/11/2019
 8:20:00AM

 Sample Received Date
 20/11/2019
 10:33:00AM

 Sample Analysis Completed
 3/12/2019
 10:49:45AM

 Sample ID
 2019-007-8199

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt N	IA		
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	52.1 μg/L	
Chlorophyll b	0.1	7.97 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of	
		chlorophyll & their degradation by products (	
011 1 11 0 11 1 11 7000 00	(A.D.E.L.)	Phaeophytins)	20/11/2019
Chlorophyll a & Phaeophytin a T0380-02			20/11/2019
Chlorophyll a	0.1	48.2 μg/L	
Phaeophytin a	0.1	9.53 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt N	IA		
Ammonia as N T0100-01(ADEL)			02/12/2019
Ammonia as N	0.005	0.051 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	50700 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	0.005 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		5.43 mg/L	
Phosphorus - Filterable Reactive as P TO	)108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.172 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	2.58 mg/L	
TKN as N T0112-01(ADEL)		•	25/11/2019
TKN as Nitrogen	0.05	5.42 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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22/11/2019

28/11/2019

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### **Analytical Results**

31511-EPA - 3.2km South Salt Creek **Sampling Point** 

19/11/2019 8:20:00AM Sampled Date 20/11/2019 10:33:00AM Sample Received Date 3/12/2019 10:49:45AM Sample Analysis Completed 2019-007-8199 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

Sam	ple	temp	erature	at at	time	of	rec	ceip	t NA	i

22/11/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 25.3 mg/L

**Total Organic Carbon T0158-07(ADEL)** Total Organic Carbon 1 33.2 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt NA

25/11/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 224 mg/L Bicarbonate 273 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/11/2019 pH T0010-01(ADEL)

7.9 pH units Temperature at which pH is measured 22.4 °C

26/11/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 15 NTU

**Inorganic Chemistry - Waste Water** LOR Result **Test Start Date** 

Sample temperature at time of receipt NA

Suspended Solids T0160-01(ADEL) 28/11/2019

Total Dissolved Solids by Evaporation T015-05(ADEL)

29/11/2019 Total Dissolved Solids (by evaporation) 1 95500 mg/L

47 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1

1.0

<1 mg/L

Volatile Suspended Solids 1 47 mg/L



Suspended Solids

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### **Analytical Results**

Sampling Point 31517-EPA - 1.8km West Salt Creek

 Sampled Date
 19/11/2019
 8:30:00AM

 Sample Received Date
 20/11/2019
 10:32:32AM

 Sample Analysis Completed
 5/12/2019
 2:37:47PM

 Sample ID
 2019-007-8201

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	6°C		
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	70.5 μg/L	
Chlorophyll b	0.1	9.62 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)	Trideophy and	20/11/2019
Chlorophyll a	0.1	65.9 µg/L	
Phaeophytin a	0.1	11.3 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	6°C		
Ammonia as N T0100-01(ADEL)			02/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	48500 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		5.32 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.162 mg/L	
Silica - Reactive T0111-01(ADEL)		5.102 mg/2	21/11/2019
Silica - Reactive	0.05	2.96 mg/L	
TKN as N T0112-01(ADEL)		2.30 mg/L	25/11/2019
TKN as Nitrogen	0.05	5.32 mg/L	
Organia Chamistry	LOB	Papulé	Took Stort Data
Organic Chemistry	LOR	Result	Test Start Date



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22/11/2019

04/12/2019

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### **Analytical Results**

**Collection Type** 

31517-EPA - 1.8km West Salt Creek **Sampling Point** 

19/11/2019 8:30:00AM Sampled Date 20/11/2019 10:32:32AM Sample Received Date 5/12/2019 2:37:47PM Sample Analysis Completed 2019-007-8201 Sample ID

**Status** Endorsed

Sample temperature at time of receipt 8.6°C

22/11/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

32.9 mg/L

**Customer Collected** 

1

Dissolved Organic Carbon 1 22.5 mg/L

**Total Organic Carbon T0158-07(ADEL)** Total Organic Carbon

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

# Sample temperature at time of receipt 8.6°C

25/11/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 227 mg/L Bicarbonate 277 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/11/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 111000 µS/cm Total Dissolved Solids (by EC) 1 98200 mg/L

25/11/2019 pH T0010-01(ADEL)

рΗ 8.1 pH units Temperature at which pH is measured 22.2 °C

25/11/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 13 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 8.6°C

04/12/2019 Suspended Solids T0160-01(ADEL)

28 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

1.0

Volatile Suspended Solids 28 mg/L



Suspended Solids

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### **Analytical Results**

 Sampling Point
 31515-EPA - Snipe Point

 Sampled Date
 19/11/2019 8:40:00AM

 Sample Received Date
 20/11/2019 10:32:20AM

 Sample Analysis Completed
 2/12/2019 4:06:50PM

 Sample ID
 2019-007-8200

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	8.6°C		
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	68.4 μg/L	
Chlorophyll b	0.1	10.2 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)	· nasspiryuns/	20/11/2019
Chlorophyll a	0.1	63.6 µg/L	
Phaeophytin a	0.1	11.9 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	8.6°C		02/12/2019
Ammonia as N T0100-01(ADEL)  Ammonia as N	0.005		02/12/2019
	0.005	<0.005 mg/L	21/11/2019
Chloride T0104-02(ADEL)	4.0		21/11/2019
Chloride	4.0	48200 mg/L	28/11/2019
Nitrate + Nitrite as N T0161-01(ADEL)  Nitrate + Nitrite as N	0.000		20/11/2019
	0.003	<0.003 mg/L	20/11/2019
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total	2400 04/ABEL	5.34 mg/L	28/11/2019
Phosphorus - Filterable Reactive as P TO Phosphorus - Filterable Reactive as P	0.003	0.004	20/11/2019
·	0.003	0.004 mg/L	25/11/2019
Phosphorus - Total T0109-44(ADEL) Phosphorus - Total	0.005	0.400	23/11/2019
•	0.005	0.188 mg/L	21/11/2019
Silica - Reactive T0111-01(ADEL) Silica - Reactive	0.05	0.07	21/11/2019
	0.05	2.87 mg/L	25/11/2019
TKN as N T0112-01(ADEL) TKN as Nitrogen	0.05	5.24	25/11/2019
Trivi as Ividuyen	0.00	5.34 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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22/11/2019

22/11/2019

27/11/2019

27/11/2019

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### **Analytical Results**

31515-EPA - Snipe Point **Sampling Point** 19/11/2019 8:40:00AM Sampled Date 20/11/2019 10:32:20AM Sample Received Date 2/12/2019 4:06:50PM Sample Analysis Completed 2019-007-8200 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

### Sample temperature at time of receipt 8.6°C

**Dissolved Organic Carbon T0158-07(ADEL)** Dissolved Organic Carbon 1 22.5 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 29.6 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt 8.6°C

•	•	
<b>Alkalinity Carbonat</b>	e Bicarbonate and Hydroxide T0101-01(ADEL)	25/11/2019

Alkalinity as Calcium Carbonate 222 mg/L Bicarbonate 271 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/11/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 111000 µS/cm Total Dissolved Solids (by EC) 1 98200 mg/L

25/11/2019 pH T0010-01(ADEL)

рΗ 8.1 pH units Temperature at which pH is measured 22.6 °C

25/11/2019 **Turbidity T0018-01(ADEL)** 

0.1

Turbidity 12 NTU

### **Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 8.6°C

Suspended Solids 1.0 47 mg/L Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 14 mg/L

Volatile Suspended Solids 33 mg/L



No.1115 Chemical and **Biological Testing** Accredited for compliance with ISO/IEC 17025 -Testing

Suspended Solids T0160-01(ADEL)

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### **Analytical Results**

 Sampling Point
 31516-EPA - Seagull Island

 Sampled Date
 19/11/2019 9:00:00AM

 Sample Received Date
 20/11/2019 10:32:39AM

 Sample Analysis Completed
 3/12/2019 10:58:09AM

 Sample ID
 2019-007-8198

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	6°C		
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	67.1 μg/L	
Chlorophyll b	0.1	9.20 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)		20/11/2019
Chlorophyll a	0.1	62.6 µg/L	
Phaeophytin a	0.1	11.1 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	6°C		
Ammonia as N T0100-01(ADEL)			02/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	46700 mg/L	00/44/0040
Nitrate + Nitrite as N T0161-01(ADEL)	0.000		28/11/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	20/44/2040
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		5.70 mg/L	28/11/2019
Phosphorus - Filterable Reactive as P T0 Phosphorus - Filterable Reactive as P	108-01(ADEL) 0.003	0.000 #	20/11/2019
•	0.003	<0.003 mg/L	25/11/2019
Phosphorus - Total T0109-44(ADEL) Phosphorus - Total	0.005	0.212 ma/l	23/11/2013
Silica - Reactive T0111-01(ADEL)	0.003	0.212 mg/L	21/11/2019
Silica - Reactive 10111-01(ADEL)	0.05	2.45 mg/L	21/11/2010
TKN as N T0112-01(ADEL)	0.00	2.40 mg/L	25/11/2019
TKN as Nitrogen	0.05	5.70 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



22/11/2019

22/11/2019

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### **Analytical Results**

31516-EPA - Seagull Island **Sampling Point** 19/11/2019 9:00:00AM Sampled Date 20/11/2019 10:32:39AM Sample Received Date 3/12/2019 10:58:09AM Sample Analysis Completed 2019-007-8198 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

### Sample temperature at time of receipt 8.6°C

**Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 22.4 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 31.1 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt 8.6°C

25/11/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 229 mg/L Bicarbonate 279 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/11/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 110000 µS/cm Total Dissolved Solids (by EC) 1 97000 mg/L

25/11/2019 pH T0010-01(ADEL)

рΗ 8.1 pH units Temperature at which pH is measured 22.1 °C

25/11/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1

13 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 8.6°C

28/11/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

38 mg/L

44 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L



Volatile Suspended Solids

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### **Analytical Results**

Sampling Point 31519-EPA - Morella Basin at Outlet Regulator

 Sampled Date
 19/11/2019
 9:00:00AM

 Sample Received Date
 20/11/2019
 10:33:07AM

 Sample Analysis Completed
 4/12/2019
 3:20:57PM

 Sample ID
 2019-007-8≥05

 Status
 Endorsed

Collection Type Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt N.	A		_
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	43.3 μg/L	
Chlorophyll b	0.1	0.87 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)	, ,	20/11/2019
Chlorophyll a	0.1	37.5 μg/L	
Phaeophytin a	0.1	10.0 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt N.	<u></u>		
Ammonia as N T0100-01(ADEL)			04/12/2019
Ammonia as N	0.005	0.137 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	4770 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	0.004 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		3.21 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	0.010 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.085 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	13.0 mg/L	
TKN as N T0112-01(ADEL)			25/11/2019
TKN as Nitrogen	0.05	3.21 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

Sampling Point 31519-EPA - Morella Basin at Outlet Regulator

 Sampled Date
 19/11/2019
 9:00:00AM

 Sample Received Date
 20/11/2019
 10:33:07AM

 Sample Analysis Completed
 4/12/2019
 3:20:57PM

 Sample ID
 2019-007-8205

Status Endorsed

Collection Type Customer Collected

San	ıple	tempe	erature	at	time of receipt NA
				-	

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 21.6 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 27.2 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

## Sample temperature at time of receipt NA

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 353 mg/L
Bicarbonate 360 mg/L
Carbonate 34 mg/L
Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 15700  $\mu$ S/cm Total Dissolved Solids (by EC) 1 9400  $\mu$ G/cm

pH T0010-01(ADEL) 25/11/2019

pH 8.7 pH units Temperature at which pH is measured 22.5  $^{\circ}$ C

Turbidity T0018-01(ADEL) 26/11/2019

Turbidity 0.1 5.3 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt NA

Suspended Solids T0160-01(ADEL)
Suspended Solids 1.0 13 mg/L

10 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 13 mg/L

Volatile Suspended Solids 1 <1 mg/L



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### **Analytical Results**

 Sampling Point
 31526-EPA - Nth Jack Point

 Sampled Date
 19/11/2019 9:15:00AM

 Sample Received Date
 20/11/2019 10:32:46AM

 Sample Analysis Completed
 3/12/2019 10:58:09AM

 Sample ID
 2019-007-8196

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt	8.6°C		
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	51.4 μg/L	
Chlorophyll b	0.1	6.73 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	2(ADEL)	,	20/11/2019
Chlorophyll a	0.1	48.2 μg/L	
Phaeophytin a	0.1	8.00 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt	8.6°C		
Ammonia as N T0100-01(ADEL)			02/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	45700 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		5.02 mg/L	
Phosphorus - Filterable Reactive as P T	0108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.167 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	1.23 mg/L	
TKN as N T0112-01(ADEL)			25/11/2019
TKN as Nitrogen	0.05	5.02 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

31526-EPA - Nth Jack Point **Sampling Point** 19/11/2019 9:15:00AM Sampled Date 20/11/2019 10:32:46AM Sample Received Date 3/12/2019 10:58:09AM Sample Analysis Completed 2019-007-8196 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature at til	me of receipt 8.6°C
---------------------------	---------------------

22/11/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 23.0 mg/L

**Total Organic Carbon T0158-07(ADEL)** Total Organic Carbon 1 29.9 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt 8.6°C

25/11/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 222 mg/L Bicarbonate 271 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/11/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 107000 μS/cm Total Dissolved Solids (by EC) 1 93400 mg/L

25/11/2019 pH T0010-01(ADEL)

рΗ 8.1 pH units Temperature at which pH is measured 22.2 °C

25/11/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1

15 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

28/11/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 53 mg/L

28/11/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 53 mg/L



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Sample temperature at time of receipt 8.6°C

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### **Analytical Results**

Sampling Point 300711-Tilley Swamp Drain U/S Morella

 Sampled Date
 19/11/2019
 9:20:00AM

 Sample Received Date
 20/11/2019
 10:33:16AM

 Sample Analysis Completed
 2/12/2019
 4:06:46PM

 Sample ID
 2019-007-8≥06

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt N	IA		_
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	4.45 μg/L	
Chlorophyll b	0.1	<0.1 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)	. , ,	20/11/2019
Chlorophyll a	0.1	3.96 µg/L	
Phaeophytin a	0.1	0.81 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt N	IA		
Ammonia as N T0100-01(ADEL)			02/12/2019
Ammonia as N	0.005	0.102 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	2740 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	0.016 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		0.61 mg/L	
Phosphorus - Filterable Reactive as P TO	108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	0.008 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.010 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	8.41 mg/L	
TKN as N T0112-01(ADEL)			25/11/2019
TKN as Nitrogen	0.05	0.59 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

**Status** 

300711-Tilley Swamp Drain U/S Morella **Sampling Point** 

Endorsed

19/11/2019 9:20:00AM Sampled Date 20/11/2019 10:33:16AM Sample Received Date 2/12/2019 4:06:46PM Sample Analysis Completed 2019-007-8206 Sample ID

**Customer Collected Collection Type** 

San	ıple	tempe	rature	at time	of re	ceipt NA

22/11/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 6.1 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 6.8 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

# Sample temperature at time of receipt NA

25/11/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 340 mg/L Bicarbonate 393 mg/L Carbonate 11 mg/L Hydroxide 0 mg/L

25/11/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 10400 µS/cm Total Dissolved Solids (by EC) 1 6060 mg/L

25/11/2019 pH T0010-01(ADEL)

рΗ 8.5 pH units Temperature at which pH is measured 22.3 °C

26/11/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 0.61 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt NA

Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

9 mg/L Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 6 mg/L

Volatile Suspended Solids 3 mg/L



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### **Analytical Results**

Sampling Point 300713-Tilley Swamp Drain D/S Northern Outlet

 Sampled Date
 19/11/2019
 9:40:00AM

 Sample Received Date
 20/11/2019
 10:33:23AM

 Sample Analysis Completed
 4/12/2019
 3:19:18PM

 Sample ID
 2019-007-8207

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt N	IA		_
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	2.43 μg/L	
Chlorophyll b	0.1	<0.1 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)	, ,	20/11/2019
Chlorophyll a	0.1	2.21 μg/L	
Phaeophytin a	0.1	0.32 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt N	IA		
Ammonia as N T0100-01(ADEL)			04/12/2019
Ammonia as N	0.005	0.072 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	2930 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	0.027 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		0.91 mg/L	
Phosphorus - Filterable Reactive as P TO	108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	0.008 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.012 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	9.50 mg/L	
TKN as N T0112-01(ADEL)			25/11/2019
TKN as Nitrogen	0.05	0.88 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

Sampling Point 300713-Tilley Swamp Drain D/S Northern Outlet

 Sampled Date
 19/11/2019
 9:40:00AM

 Sample Received Date
 20/11/2019
 10:33:23AM

 Sample Analysis Completed
 4/12/2019
 3:19:18PM

 Sample ID
 2019-007-8207

 Status
 Endorsed

Collection Type Customer Collected

San	ıple	tempe	rature	at time	of re	ceipt NA
	_					

Dissolved Organic Carbon T0158-07(ADEL) 22/11/2019

Dissolved Organic Carbon 1 6.1 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 7.7 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

# Sample temperature at time of receipt NA Alkalinity Carbonate Ricarbonate and Hydroxide T0101-01(ADE

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

 Alkalinity as Calcium Carbonate
 355 mg/L

 Bicarbonate
 393 mg/L

 Carbonate
 20 mg/L

 Hydroxide
 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL) 25/11/2019

Conductivity 2 10600  $\mu$ S/cm Total Dissolved Solids (by EC) 1 6190 mg/L

pH T0010-01(ADEL) 25/11/2019

pH 8.6 pH units Temperature at which pH is measured 22.4  $^{\circ}$ C

Turbidity T0018-01(ADEL) 25/11/2019

Turbidity 0.1 2.9 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt NA

Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 4 mg/L

Volatile Suspended Solids T0160-01(ADEL) 27/11/2019

Fixed Solids 1 2 mg/L

Volatile Suspended Solids

1 2 mg/L
2 mg/L



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### **Analytical Results**

 Sampling Point
 31514-EPA - Stoney Well

 Sampled Date
 19/11/2019 9:55:00AM

 Sample Received Date
 20/11/2019 10:32:53AM

 Sample Analysis Completed
 3/12/2019 10:58:09AM

 Sample ID
 2019-007-8202

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of rec	eipt NA		
Chlorophyll a & b T0380-02(ADEL)	•		20/11/2019
Chlorophyll a	0.1	36.3 µg/L	
Chlorophyll b	0.1	4.14 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of	
		chlorophyll & their degradation by products (	
		Phaeophytins)	
Chlorophyll a & Phaeophytin a T03	80-02(ADEL)		20/11/2019
Chlorophyll a	0.1	34.2 µg/L	
Phaeophytin a	0.1	5.17 μg/L	

Phaeophytin a	0.1	5.17 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt N	A		
Ammonia as N T0100-01(ADEL)			02/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	37600 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		4.33 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)		-	25/11/2019
Phosphorus - Total	0.005	0.166 mg/L	
Silica - Reactive T0111-01(ADEL)		, and the second	21/11/2019
Silica - Reactive	0.05	0.66 mg/L	
TKN as N T0112-01(ADEL)		· ·	25/11/2019
TKN as Nitrogen	0.05	4.33 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

**Collection Type** 

**Sampling Point** 31514-EPA - Stoney Well 19/11/2019 9:55:00AM Sampled Date 20/11/2019 10:32:53AM Sample Received Date 3/12/2019 10:58:09AM Sample Analysis Completed 2019-007-8202 Sample ID

**Status** Endorsed **Customer Collected** 

Sample temperature at time of receipt NA

22/11/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 18.8 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 27.8 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt NA

25/11/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 220 mg/L Bicarbonate 269 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/11/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 99900 µS/cm Total Dissolved Solids (by EC) 1 85100 mg/L

25/11/2019 pH T0010-01(ADEL)

рΗ 8.1 pH units Temperature at which pH is measured 22.3 °C

25/11/2019 **Turbidity T0018-01(ADEL)** 

0.1

Turbidity 15 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt NA 28/11/2019

Suspended Solids 1.0 38 mg/L

28/11/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 13 mg/L

Volatile Suspended Solids 25 mg/L



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Suspended Solids T0160-01(ADEL)

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### **Analytical Results**

 Sampling Point
 31525-EPA - Villa de Yumpa

 Sampled Date
 19/11/2019 10:10:00AM

 Sample Received Date
 20/11/2019 10:32:05AM

 Sample Analysis Completed
 4/12/2019 3:19:20PM

 Sample ID
 2019-007-8193

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	.6°C		
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	33.5 µg/L	
Chlorophyll b	0.1	3.72 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	(ADEL)		20/11/2019
Chlorophyll a	0.1	30.6 µg/L	
Phaeophytin a	0.1	6.36 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	.6°C		
Ammonia as N T0100-01(ADEL)			04/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	41600 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		4.24 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.149 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	0.49 mg/L	
TKN as N T0112-01(ADEL)			25/11/2019
TKN as Nitrogen	0.05	4.24 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

 Sampling Point
 31525-EPA - Villa de Yumpa

 Sampled Date
 19/11/2019 10:10:00AM

 Sample Received Date
 20/11/2019 10:32:05AM

 Sample Analysis Completed
 4/12/2019 3:19:20PM

 Sample ID
 2019-007-8193

 Status
 Endorsed

Collection Type Customer Collected

### Sample temperature at time of receipt 8.6°C

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 20.3 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 27.7 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

# Sample temperature at time of receipt 8.6°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 214  $\,$  mg/L Bicarbonate 261  $\,$  mg/L Carbonate 0  $\,$  mg/L Hydroxide 0  $\,$  mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL) 25/11/2019

Conductivity 2 98900  $\mu$ S/cm Total Dissolved Solids (by EC) 1 83900  $\mu$ G/cm

pH T0010-01(ADEL) 25/11/2019

pH 8.2 pH units
Temperature at which pH is measured 22.1 °C

Turbidity T0018-01(ADEL) 25/11/2019

Turbidity 0.1 17 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 8.6°C

Suspended Solids T0160-01(ADEL) 28/11/2019

40 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L
Volatile Suspended Solids 1 40 mg/L

1.0



Suspended Solids

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### **Analytical Results**

Sampling Point 31513-EPA - Parnka Point Boat Ramp

 Sampled Date
 19/11/2019
 11:40:00AM

 Sample Received Date
 20/11/2019
 10:32:13AM

 Sample Analysis Completed
 4/12/2019
 3:19:20PM

 Sample ID
 2019-007-8204

 Status
 Endorsed

Collection Type Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	6°C		
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	32.5 µg/L	
Chlorophyll b	0.1	3.20 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)	,	20/11/2019
Chlorophyll a	0.1	30.4 µg/L	
Phaeophytin a	0.1	4.79 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	6°C		
Ammonia as N T0100-01(ADEL)			04/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	41600 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		4.27 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.139 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	0.43 mg/L	
TKN as N T0112-01(ADEL)			25/11/2019
TKN as Nitrogen	0.05	4.27 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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22/11/2019

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### **Analytical Results**

**Status** 

31513-EPA - Parnka Point Boat Ramp **Sampling Point** 

Endorsed

1

19/11/2019 11:40:00AM Sampled Date 20/11/2019 10:32:13AM Sample Received Date 4/12/2019 3:19:20PM Sample Analysis Completed 2019-007-8204 Sample ID

**Customer Collected Collection Type** 

Sample temperature	at time of receipt 8.6°C
--------------------	--------------------------

22/11/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 20.8 mg/L

**Total Organic Carbon T0158-07(ADEL)** Total Organic Carbon

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

28.1 mg/L

### Sample temperature at time of receipt 8.6°C

25/11/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 194 mg/L Bicarbonate 237 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/11/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 99400 µS/cm Total Dissolved Solids (by EC) 1 84500 mg/L

25/11/2019 pH T0010-01(ADEL)

рΗ 8.2 pH units Temperature at which pH is measured 22.4 °C

25/11/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 15 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 8.6°C

27/11/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 54 mg/L

27/11/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 28 mg/L Volatile Suspended Solids 26 mg/L



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### **Analytical Results**

 Sampling Point
 31512-EPA - McGrath Flat North

 Sampled Date
 19/11/2019 12:05:00PM

 Sample Received Date
 20/11/2019 10:31:57AM

 Sample Analysis Completed
 4/12/2019 3:19:17PM

 Sample ID
 2019-007-8203

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	.6°C		
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	12.3 µg/L	
Chlorophyll b	0.1	0.43 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)		20/11/2019
Chlorophyll a	0.1	11.5 μg/L	
Phaeophytin a	0.1	1.45 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	.6°C		
Ammonia as N T0100-01(ADEL)			04/12/2019
Ammonia as N	0.005	0.159 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	30400 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	0.006 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		3.00 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.132 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	0.20 mg/L	
TKN as N T0112-01(ADEL)			25/11/2019
TKN as Nitrogen	0.05	2.99 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

 Sampling Point
 31512-EPA - McGrath Flat North

 Sampled Date
 19/11/2019 12:05:00PM

 Sample Received Date
 20/11/2019 10:31:57AM

 Sample Analysis Completed
 4/12/2019 3:19:17PM

 Sample ID
 2019-007-8203

 Status
 Endorsed

Collection Type Customer Collected

Sample temperature at time of receipt 8.6°C

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 16.7 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 21.0 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

# Sample temperature at time of receipt 8.6°C

	•	
Alkalinity Carbonate	Bicarbonate and Hydroxide T0101-01(ADEL)	25/11/2019

Alkalinity as Calcium Carbonate 187  $\,$  mg/L Bicarbonate 217  $\,$  mg/L Carbonate 5  $\,$  mg/L Hydroxide 0  $\,$  mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 74900  $\mu$ S/cm Total Dissolved Solids (by EC) 1 58200  $\mu$ G/cm

pH T0010-01(ADEL) 25/11/2019

pH 8.3 pH units
Temperature at which pH is measured 22.4 °C

Turbidity T0018-01(ADEL) 25/11/2019

Turbidity 0.1 10 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 8.6°C

Suspended Solids T0160-01(ADEL) 28/11/2019

Suspended Solids 1.0 20 mg/L

Volatile Suspended Solids T0160-01(ADEL)
28/11/2019

Fixed Solids 1 4 mg/L

Volatile Suspended Solids 1 16 mg/L



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### **Analytical Results**

 Sampling Point
 31523-EPA - Long Point

 Sampled Date
 19/11/2019 1:30:00PM

 Sample Received Date
 20/11/2019 10:33:35AM

 Sample Analysis Completed
 2/12/2019 4:06:50PM

 Sample ID
 2019-007-8195

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt N	IA		
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	5.26 μg/L	
Chlorophyll b	0.1	0.36 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)		20/11/2019
Chlorophyll a	0.1	4.07 μg/L	
Phaeophytin a	0.1	2.15 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt N	IA		
Ammonia as N T0100-01(ADEL)			02/12/2019
Ammonia as N	0.005	0.139 mg/L	
Chloride T0104-02(ADEL)			21/11/2019
Chloride	4.0	9840 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	0.019 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			20/11/2019
Nitrogen - Total		1.46 mg/L	
Phosphorus - Filterable Reactive as P TO	• •		28/11/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			25/11/2019
Phosphorus - Total	0.005	0.065 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	0.35 mg/L	05/44/0040
TKN as N T0112-01(ADEL)	0.05		25/11/2019
TKN as Nitrogen	0.05	1.44 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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22/11/2019

27/11/2019

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Analytical I	Results
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**Sampling Point** 31523-EPA - Long Point 19/11/2019 1:30:00PM Sampled Date 20/11/2019 10:33:35AM Sample Received Date 2/12/2019 4:06:50PM Sample Analysis Completed 2019-007-8195 Sample ID

**Status** Endorsed **Customer Collected Collection Type** 

Sample temperature at time of receipt NA

22/11/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 8.2 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 10.3 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt NA

•	•	-			
Alkalinit	y Carbonate	Bicarbonate and Hy	droxide T0101-01	(ADEL)	25/11/2019

Alkalinity as Calcium Carbonate 138 mg/L Bicarbonate 165 mg/L Carbonate 2 mg/L Hydroxide 0 mg/L

25/11/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 31300 µS/cm Total Dissolved Solids (by EC) 1 20200 mg/L

25/11/2019 pH T0010-01(ADEL)

рΗ 8.3 pH units Temperature at which pH is measured 22.5 °C

26/11/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 7.1 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt NA

27/11/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 11 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 5 mg/L Volatile Suspended Solids 6 mg/L



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### **Analytical Results**

 Sampling Point
 353180-EPA - Tauwitchere

 Sampled Date
 19/11/2019 2:10:00PM

 Sample Received Date
 20/11/2019 10:33:29AM

 Sample Analysis Completed
 4/12/2019 3:19:15PM

 Sample ID
 2019-007-8194

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt N	IA		_
Chlorophyll a & b T0380-02(ADEL)			20/11/2019
Chlorophyll a	0.1	36.1 μg/L	
Chlorophyll b	0.1	4.64 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADFL)	r naeopnyuns)	20/11/2019
Chlorophyll a	0.1	32.6 µg/L	
Phaeophytin a	0.1	7.59 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
	LOR	Result	Test Start Date
Sample temperature at time of receipt N Ammonia as N T0100-01(ADEL)			04/12/2019
Ammonia as N	0.005	0.135 mg/L	
Chloride T0104-02(ADEL) Chloride	4.0	2420 mg/L	21/11/2019
Nitrate + Nitrite as N T0161-01(ADEL)			28/11/2019
Nitrate + Nitrite as N	0.003	0.020 mg/L	
Nitrogen - Total TMZ-M06(ADEL) Nitrogen - Total		1.83 mg/L	20/11/2019
Phosphorus - Filterable Reactive as P TO	1108_01/ADEL\	1.00 mg/L	28/11/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)		10.000 Hig/E	25/11/2019
Phosphorus - Total	0.005	0.117 mg/L	
Silica - Reactive T0111-01(ADEL)			21/11/2019
Silica - Reactive	0.05	0.58 mg/L	
TKN as N T0112-01(ADEL)			25/11/2019
TKN as Nitrogen	0.05	1.81 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

353180-EPA - Tauwitchere **Sampling Point** 19/11/2019 2:10:00PM Sampled Date 20/11/2019 10:33:29AM Sample Received Date 4/12/2019 3:19:15PM Sample Analysis Completed 2019-007-8194 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature at time of receipt NA

22/11/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 6.9 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 15.7 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

## Sample temperature at time of receipt NA

25/11/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 105 mg/L Bicarbonate 123 mg/L Carbonate 2 mg/L Hydroxide 0 mg/L

25/11/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 7910 µS/cm Total Dissolved Solids (by EC) 1 4550 mg/L

25/11/2019 pH T0010-01(ADEL)

рΗ 8.4 pH units Temperature at which pH is measured 22.1 °C

26/11/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 25 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt NA

27/11/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 56 mg/L

27/11/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 38 mg/L

Volatile Suspended Solids 18 mg/L



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### **AWQC Signatories**

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Ivana Cech - Technical Officer Chemistry

Thuy Diep - Technical Officer Chemistry

David Evans - Technical Officer Chemistry

Andrew Ford - Technical Officer Chemistry

Kerrie Jooste - Supervisor Nutrients and Waste

Aji John - Technical Officer Chemistry

Dean Newman - Algal Specialist

Melissa Phillips - Technical Officer Chemistry

Gayle Polley - Snr Technical Officer

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### **Samples Not Collected**

Sample ID	S.Point	Description	Sampled Date	Non Collect Reason
2019-007-8208	315191	EPA - Morella Creek @ guage	4/11/2019	Dry
2019-007-8209	300712	Tilley Swamp Watercourse Outlet Channel	4/11/2019	Dry

### **Bottles Not Collected**

Sample ID	S.Point	Description	Sampled Date	Laboratory	Non Collect Reason
2019-007-8208-0	315191	EPA - Morella Creek @ guage	4/11/2019	Inorganic Chemistry - Nutrients	Bottle not received at AWQC
2019-007-8208-0	315191	EPA - Morella Creek @ guage	4/11/2019	Biology Operations	Bottle not received at AWQC
2019-007-8208-0	315191	EPA - Morella Creek @ guage	4/11/2019	Inorganic Chemistry - Physical	Bottle not received at AWQC
2019-007-8208-0	315191	EPA - Morella Creek @ guage	4/11/2019	Organic Chemistry	Bottle not received at AWQC
2019-007-8208-0	315191	EPA - Morella Creek @ guage	4/11/2019	Inorganic Chemistry - Nutrients	Bottle not received at AWQC
2019-007-8208-0	315191	EPA - Morella Creek @ guage	4/11/2019	Inorganic Chemistry - Waste Water	Bottle not received at AWQC
2019-007-8208-0	315191	EPA - Morella Creek @ guage	4/11/2019	Inorganic Chemistry - Nutrients	Bottle not received at AWQC
2019-007-8208-0	315191	EPA - Morella Creek @ guage	4/11/2019	Inorganic Chemistry - Nutrients	Bottle not received at AWQC
2019-007-8209-0	300712	Tilley Swamp Watercourse Outlet Channel	4/11/2019	Inorganic Chemistry - Nutrients	Bottle not received at AWQC
2019-007-8209-0	300712	Tilley Swamp Watercourse Outlet Channel	4/11/2019	Biology Operations	Bottle not received at AWQC
2019-007-8209-0	300712	Tilley Swamp Watercourse Outlet Channel	4/11/2019	Inorganic Chemistry - Physical	Bottle not received at AWQC
2019-007-8209-0	300712	Tilley Swamp Watercourse Outlet Channel	4/11/2019	Organic Chemistry	Bottle not received at AWQC
2019-007-8209-0	300712	Tilley Swamp Watercourse Outlet Channel	4/11/2019	Inorganic Chemistry - Nutrients	Bottle not received at AWQC
2019-007-8209-0	300712	Tilley Swamp Watercourse Outlet Channel	4/11/2019	Inorganic Chemistry - Waste Water	Bottle not received at AWQC
2019-007-8209-0	300712	Tilley Swamp Watercourse Outlet Channel	4/11/2019	Inorganic Chemistry - Nutrients	Bottle not received at AWQC
2019-007-8209-0	300712	Tilley Swamp Watercourse Outlet Channel	4/11/2019	Inorganic Chemistry - Nutrients	Bottle not received at AWQC



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### **Analytical Method**

Analytical Method Code	Description	Reference Method
T0010-01	Determination of pH	AP4500HB
T0016-01	Determination of Conductivity - Corrected to 25C	AP2510B
T0018-01	Turbidity - Nephelometric Measurement	APAWWA-WEF
T0100-01	Ammonia/Ammonium - Automated Flow Colorimetry	AP4500NH3G
T0101-01	Alkalinity - Automated Acidimetric Titration	AP2320B
T0104-02	Chloride - Discrete Analyser	AP4500CLE
T0108-01	Filterable Reactive Phosphorus - Automated Flow Colorimetry	AP4500PG
T0109-44	Phosphorous -total Kjeldahl for seawater by automated flow colorimetry	AP4500PF
T0111-01	Silica by automated fow colorimetry	AP4500SI02
T0112-01	Nitrogen- Total Kjeldahl by discrete analyser	AP4500NORGA
T015-05	Total Dissolved Solids by Evaporation	AP2540C
T0158-07	Total and Dissolved Organic Carbon (OI Analytical)	SM5310C
T0160-01	Suspended Solids 103C to 105C	AP2540DE
T0160-01	Suspended Solids 103C to 105C	AP4500
T0161-01	Nitrate + Nitrate (NOx) - Automated Flow Colorimetry	AP4500NO3I
T0380-02	Chlorophyll a & b and phaeophytin	ISO10260
T0380-02	Chlorophyll a & b and phaeophytin	Wintermans
TMZ-M06	Derived Results and Data Checks	AP4500NORGA

### **Laboratory Information**

Laboratory	NATA accreditation ID
Inorganic Chemistry - Physical	1115
Inorganic Chemistry - Waste Water	1115
Inorganic Chemistry - Nutrients	1115
Organic Chemistry	1115
Biology Operations	1115



- 1. The last figure of the result value is a significant figure
- # determination of the component is not covered by NATA Accreditation.
   \* notice according to the reference guideline. Refer to report footer.
- 4. \* indicates an incident has been recorded against the sample. Refer to report footer.
- 5. & Indicates the results have changed since the last issued report.
- 6. The Limit of Reporting (LOR) is the lowest concentration of analyte which is reported at the AWQC and is based on the LOQ rounded up to a more readily used value. The Limit of Quantitation (LOQ) is the lowest concentration of analyte for which quantitative results may be
- obtained within a specified degree of confidence.

  7. Where collection type is AWQC Collect, NATA has confirmed that due to a robust system in place for maintaining the temperature integrity for samples collected by AWQC's Field Laboratory Services, the recording of temperature when samples arrive at the AWQC is out of scope.
- 8. Where applicable the Measurement of Uncertainty is available at https://www.awqc.com.au/our-services/analytical-services/r
- 9. If pH has been tested then the pH will be outside of its holding time unless measured in the field.
- 10. (ADEL) indicates analysed in Adelaide, (MELB) indicates analysed in Melbourne.