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

08/10/2019

Dear Patrick

Please find attached the Final Analytical Report for

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

143419 Account:

Project: AWQC-138250 DEW - Healthy Coorong Healthy Basin Phase 0 - Non routine

19/20

This report has also been sent to: Frank Mangeruca

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



Test Start Date

**FINAL REPORT: 260826** 

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### **Report Information**

Project Name AWQC-138250

Customer DEW - Department of Environment and Water

LOR

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

# **Analytical Results**

**Biology Operations** 

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 29/08/2019
 7:50:00AM

 Sample Received Date
 30/08/2019
 9:17:05AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0212

Status Endorsed

Collection Type Customer Collected

Biology Operations	LUK	Result	lest Start Date
Sample temperature at time of receipt	4.8°C		00/00/00/0
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	84.7 μg/L	
Chlorophyll b	0.1	7.80 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)		30/08/2019
Chlorophyll a	0.1	79.2 µg/L	
Phaeophytin a	0.1	12.1 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4 Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	0.021 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	31100 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		4.66 mg/L	
Phosphorus - Filterable Reactive as P T	0108-01(ADEL)		10/09/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/09/2019
Phosphorus - Total	0.005	0.059 mg/L	
Silica - Reactive T0111-01(ADEL)		5	02/09/2019
Silica - Reactive	0.05	3.70 mg/L	
TKN as N T0112-01(ADEL)		<del>g</del>	09/09/2019

Result



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Analytical I	Results
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Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 29/08/2019
 7:50:00AM

 Sample Received Date
 30/08/2019
 9:17:05AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0212

Sample ID 2019-005-0 Status Endorsed

Collection Type Customer Collected

TKN as N T0112-01(ADEL) 09/09/2019

TKN as Nitrogen 0.05 4.66 mg/L

Organic Chemistry	LOR	Result	Test Start Date
Sample temperature at time of receipt	4.8°C		
Dissolved Organic Carbon T0158-07(AI	DEL)		03/09/2019
Dissolved Organic Carbon	1	19.8 mg/L	
Total Organic Carbon T0158-07(ADEL)			03/09/2019
Total Organic Carbon	1	26.7 mg/L	
Inorganic Chemistry - Physical	LOR	Result	Test Start Date

Sample temperature at time of receip	ot 4.8°C		_
Alkalinity Carbonate Bicarbonate and	Hydroxide T0101-0	1(ADEL)	30/08/2019
Alkalinity as Calcium Carbonate		243 mg/L	
Bicarbonate		296 mg/L	
Carbonate		0 mg/L	
Hydroxide		0 mg/L	
Conductivity & Total Dissolved Solids	T0016-01(ADEL)		30/08/2019
Conductivity	2	84500 µS/cm	
Total Dissolved Solids (by EC)	1	68000 mg/L	
pH T0010-01(ADEL)			30/08/2019
рН		8.0 pH units	
Temperature at which pH is measured		22.3 °C	
Turbidity T0018-01(ADEL)			03/09/2019
Turbidity	0.1	13 NTU	

Inorganic Chemistry - Waste Water	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.8°	C		
Suspended Solids T0160-01(ADEL)			04/09/2019
Suspended Solids	1.0	32 mg/L	
Volatile Suspended Solids T0160-01(ADEL)	)		04/09/2019
Fixed Solids	1	<1 mg/L	



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**Analytical Results** 

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 29/08/2019
 7:50:00AM

 Sample Received Date
 30/08/2019
 9:17:05AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0212

Status Endorsed

Collection Type Customer Collected

Volatile Suspended Solids T0160-01(ADEL)

04/09/2019

Volatile Suspended Solids 1 32 mg/L



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# **Analytical Results**

Sampling Point 315191-EPA - Morella Creek @ guage

 Sampled Date
 29/08/2019
 8:00:00AM

 Sample Received Date
 30/08/2019
 9:17:43AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 \*2019-005-0223

 Status
 Endorsed

Collection Type Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	.8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	89.1 µg/L	
Chlorophyll b	0.1	9.49 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)		30/08/2019
Chlorophyll a	0.1	76.8 μg/L	
Phaeophytin a	0.1	24.4 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	.8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	0.169 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	2520 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	0.008 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		2.34 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		10/09/2019
Phosphorus - Filterable Reactive as P	0.003	0.009 mg/L	
Phosphorus - Total T0109-44(ADEL)			09/09/2019
Phosphorus - Total	0.005	0.292 mg/L	
Silica - Reactive T0111-01(ADEL)			02/09/2019
Silica - Reactive	0.05	14.3 mg/L	
TKN as N T0112-01(ADEL)			04/09/2019
TKN as Nitrogen	0.05	2.33 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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03/09/2019

**Test Start Date** 

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### **Analytical Results**

315191-EPA - Morella Creek @ guage **Sampling Point** 

29/08/2019 8:00:00AM Sampled Date 30/08/2019 9:17:43AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed \*2019-005-0223 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature a	at time of receipt 4.8°C
----------------------	--------------------------

03/09/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 15.5 mg/L

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

Total Organic Carbon 1 21.2 mg/L

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

#### Sample temperature at time of receipt 4.8°C

• •	•		
Alkalinity Carbonate	Bicarbonate and Hydroxide	T0101-01(ADEL)	03/09/2019
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Alkalinity as Calcium Carbonate 346 mg/L Bicarbonate 423 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

03/09/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 8890 µS/cm Total Dissolved Solids (by EC) 1 5140 mg/L

03/09/2019 pH T0010-01(ADEL)

рΗ 8.0 pH units Temperature at which pH is measured 22.4 °C

03/09/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 37 NTU

Result

Sample temperature at time of receipt 4.8°C

LOR

1

04/09/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 38 mg/L

04/09/2019 Volatile Suspended Solids T0160-01(ADEL)

13 mg/L Volatile Suspended Solids 25 mg/L



Fixed Solids

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

**Inorganic Chemistry - Waste Water** 

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# **Analytical Results**

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 29/08/2019
 8:20:00AM

 Sample Received Date
 30/08/2019
 9:17:39AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0214

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	.8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	89.9 μg/L	
Chlorophyll b	0.1	7.69 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of	
		chlorophyll & their degradation by products (	
		Phaeophytins)	00/00/0040
Chlorophyll a & Phaeophytin a T0380-02	•		30/08/2019
Chlorophyll a	0.1	84.6 µg/L	
Phaeophytin a	0.1	11.8 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	.8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	38000 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		<0.05 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADFL)	5	10/09/2019
Phosphorus - Filterable Reactive as P	0.003	0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)		51555 mg/2	04/09/2019
Phosphorus - Total	0.005	<0.005 mg/L	
Silica - Reactive T0111-01(ADEL)	0.000	10.000 Hig/E	02/09/2019
Silica - Reactive	0.05	2.51 mg/L	02.00.20.0
	0.00	2.51 Hg/L	04/09/2019
TKN as N T0112-01(ADEL)	0.05	0.05	0-7/03/2013
TKN as Nitrogen	0.05	<0.05 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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03/09/2019

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### **Analytical Results**

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

29/08/2019 8:20:00AM Sampled Date 30/08/2019 9:17:39AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed 2019-005-0214

Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature	at time of	receipt 4.8°C
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**Total Organic Carbon T0158-07(ADEL)** 

03/09/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 21.8 mg/L

Total Organic Carbon 1 28.8 mg/L

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

#### Sample temperature at time of receipt 4.8°C

30/08/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 212 mg/L Bicarbonate 258 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

30/08/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 101000 μS/cm Total Dissolved Solids (by EC) 1 86300 mg/L

30/08/2019 pH T0010-01(ADEL)

рΗ 8.0 pH units Temperature at which pH is measured 22.3 °C

03/09/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 12 NTU

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

Sample temperature at time of receipt 4.8°C

04/09/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 33 mg/L

04/09/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 33 mg/L



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# **Analytical Results**

Sampling Point 300711-Tilley Swamp Drain U/S Morella

 Sampled Date
 29/08/2019
 8:30:00AM

 Sample Received Date
 30/08/2019
 9:18:36AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0221

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4	.8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	8.10 µg/L	
Chlorophyll b	0.1	0.93 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of	
		chlorophyll & their degradation by products (	
		Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	-		30/08/2019
Chlorophyll a	0.1	7.33 μg/L	
Phaeophytin a	0.1	1.65 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4	.8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	0.167 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	3050 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	0.022 mg/L	
Nitrogen - Total TMZ-M06(ADEL)		•	30/08/2019
Nitrogen - Total		0.95 mg/L	
Phosphorus - Filterable Reactive as P TO	1108-01(ADFL)		10/09/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)		-0.000 mg/L	04/09/2019
Phosphorus - Total To To 3-44 (ADEL)	0.005	0.051 mg/L	
,	0.000	0.031 Hg/L	02/09/2019
Silica - Reactive T0111-01(ADEL) Silica - Reactive	0.05	4.00	02/00/2013
	0.03	4.02 mg/L	04/09/2019
TKN as N T0112-01(ADEL)	0.05		04/09/2019
TKN as Nitrogen	0.05	0.93 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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03/09/2019

30/08/2019

30/08/2019

04/09/2019

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### **Analytical Results**

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

29/08/2019 8:30:00AM Sampled Date 30/08/2019 9:18:36AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed

2019-005-0221 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature a	at time of receipt 4.8°C
----------------------	--------------------------

03/09/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 8.2 mg/L

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

Total Organic Carbon 1 9.2 mg/L

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

#### Sample temperature at time of receipt 4.8°C

30/08/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 311 mg/L Bicarbonate 332 mg/L Carbonate 24 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 11000 µS/cm Total Dissolved Solids (by EC) 1 6430 mg/L

pH T0010-01(ADEL)

1.0

рΗ 8.7 pH units

Temperature at which pH is measured 22.3 °C 03/09/2019

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 3.1 NTU

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

Sample temperature at time of receipt 4.8°C

04/09/2019 Suspended Solids T0160-01(ADEL)

29 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 12 mg/L

Volatile Suspended Solids 17 mg/L



Suspended Solids

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# **Analytical Results**

**Collection Type** 

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

29/08/2019 8:40:00AM **Sampled Date** 30/08/2019 9:18:17AM **Sample Received Date** 13/09/2019 8:36:03AM Sample Analysis Completed 2019-005-0216 Sample ID

Status Endorsed

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4	1.8°C		_
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	114 μg/L	
Chlorophyll b	0.1	10.9 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)	Phaeophytins)	30/08/2019
Chlorophyll a	0.1	107 μg/L	
Phaeophytin a	0.1	15.7 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4	1.8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	38700 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		4.94 mg/L	
Phosphorus - Filterable Reactive as P To	0108-01(ADEL)		10/09/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			02/09/2019
Phosphorus - Total	0.005	0.206 mg/L	
Silica - Reactive T0111-01(ADEL)			02/09/2019
Silica - Reactive	0.05	2.71 mg/L	
TKN as N T0112-01(ADEL)			02/09/2019
TKN as Nitrogen	0.05	4.94 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

**Customer Collected** 



03/09/2019

03/09/2019

30/08/2019

30/08/2019

03/09/2019

04/09/2019

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### **Analytical Results**

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

29/08/2019 8:40:00AM Sampled Date 30/08/2019 9:18:17AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed 2019-005-0216

Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature	at time o	of receipt 4.8°C
--------------------	-----------	------------------

**Dissolved Organic Carbon T0158-07(ADEL)** Dissolved Organic Carbon 1 21.2 mg/L

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

Total Organic Carbon 1 28.7 mg/L

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

### Sample temperature at time of receipt 4.8°C

30/08/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 211 mg/L Bicarbonate 258 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 99300 µS/cm

Total Dissolved Solids (by EC) 1 84400 mg/L pH T0010-01(ADEL)

рΗ 8.0 pH units

Temperature at which pH is measured 21.9 °C

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 13 NTU

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

Sample temperature at time of receipt 4.8°C

04/09/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

50 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 10 mg/L

Volatile Suspended Solids 40 mg/L



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# **Analytical Results**

 Sampling Point
 31515-EPA - Snipe Point

 Sampled Date
 29/08/2019
 8:55:00AM

 Sample Received Date
 30/08/2019
 9:17:57AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0215

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 4	1.8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	115 µg/L	
Chlorophyll b	0.1	11.1 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)	Phaeophytins)	30/08/2019
Chlorophyll a	0.1	107 μg/L	
Phaeophytin a	0.1	16.6 μg/L	
		.000 pg.2	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4	1.8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	38000 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	00/00/00/0
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		4.98 mg/L	40/00/0040
Phosphorus - Filterable Reactive as P To	• •		10/09/2019
Phosphorus - Filterable Reactive as P	0.003	0.005 mg/L	00/00/00/0
Phosphorus - Total T0109-44(ADEL)	0.005		02/09/2019
Phosphorus - Total	0.005	0.196 mg/L	02/00/2040
Silica - Reactive T0111-01(ADEL)	0.05		02/09/2019
Silica - Reactive	0.05	2.66 mg/L	02/00/2040
TKN as N T0112-01(ADEL)	0.05		02/09/2019
TKN as Nitrogen	0.05	4.98 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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03/09/2019

03/09/2019

30/08/2019

03/09/2019

04/09/2019

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Analytical	Results
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31515-EPA - Snipe Point **Sampling Point** 29/08/2019 8:55:00AM Sampled Date 30/08/2019 9:17:57AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed 2019-005-0215 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature at time of receipt 4	l.8°C
---	-------

**Dissolved Organic Carbon T0158-07(ADEL)** Dissolved Organic Carbon 1 21.5 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 4.8°C

30/08/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 211 mg/L Bicarbonate 257 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 99100 µS/cm 1 84100 mg/L

Total Dissolved Solids (by EC)

30/08/2019 pH T0010-01(ADEL)

рΗ 8.0 pH units

Temperature at which pH is measured 21.9 °C

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 13 NTU

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

Sample temperature at time of receipt 4.8°C

04/09/2019 Suspended Solids T0160-01(ADEL)

46 mg/L

42 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 4 mg/L

1.0

Volatile Suspended Solids



Suspended Solids

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# **Analytical Results**

 Sampling Point
 31516-EPA - Seagull Island

 Sampled Date
 29/08/2019
 9:05:00AM

 Sample Received Date
 30/08/2019
 9:17:22AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0213

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	101 μg/L	
Chlorophyll b	0.1	9.63 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)	, ,	30/08/2019
Chlorophyll a	0.1	93.7 µg/L	
Phaeophytin a	0.1	16.1 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	<0.005 mg/L	00/00/00/0
Chloride T0104-02(ADEL)	4.0		02/09/2019
Chloride	4.0	38400 mg/L	40/00/0040
Nitrate + Nitrite as N T0161-01(ADEL)	0.000		10/09/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	30/08/2019
Nitrogen - Total TMZ-M06(ADEL)		4.00 //	30/06/2019
Nitrogen - Total	400 04/ADEL\	4.89 mg/L	10/09/2019
Phosphorus - Filterable Reactive as P T0 Phosphorus - Filterable Reactive as P	0.003	40,000,	10/09/2019
•	0.003	<0.003 mg/L	04/09/2019
Phosphorus - Total T0109-44(ADEL) Phosphorus - Total	0.005	0.208 mg/L	0 1/00/2010
Silica - Reactive T0111-01(ADEL)	0.000	0.200 Hig/L	02/09/2019
Silica - Reactive	0.05	2.59 mg/L	
TKN as N T0112-01(ADEL)			04/09/2019
TKN as Nitrogen	0.05	4.89 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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03/09/2019

03/09/2019

30/08/2019

30/08/2019

30/08/2019

03/09/2019

04/09/2019

04/09/2019

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# **Analytical Results**

Dissolved Organic Carbon

 Sampling Point
 31516-EPA - Seagull Island

 Sampled Date
 29/08/2019
 9:05:00AM

 Sample Received Date
 30/08/2019
 9:17:22AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0213

 Sample ID
 2019-005-0

 Status
 Endorsed

Collection Type Customer Collected

Sample temperature	at time of	of receipt 4.8°C
--------------------	------------	------------------

Dissolved Organic Carbon T0158-07(ADEL)

20.6 mg/L

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

Total Organic Carbon 1 27.6 mg/L

1

Inorganic Chemistry - Physical LOR Result Test Start Date

### Sample temperature at time of receipt 4.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 212 mg/L Bicarbonate 259 mg/L

Carbonate 0 mg/L
Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 97700 µS/cm

Total Dissolved Solids (by EC) 1 82500 mg/L pH T0010-01(ADEL)

pH 8.1 pH units

Temperature at which pH is measured 22.0 °C

Turbidity T0018-01(ADEL)

Turbidity 0.1 14 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 4.8°C

Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 37 mg/L

Volatile Suspended Solids T0160-01(ADEL)
Fixed Solids 1 2 mg/L

Volatile Suspended Solids 1 35 mg/L



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# **Analytical Results**

Sampling Point 300712-Tilley Swamp Watercourse Outlet Channel

 Sampled Date
 29/08/2019
 9:15:00AM

 Sample Received Date
 30/08/2019
 9:17:36AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0224

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	.8°C		_
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	0.42 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(	(ADFL)	r nacopriyuna)	30/08/2019
Chlorophyll a	0.1	0.35 μg/L	
Phaeophytin a	0.1	<0.1 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	.8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	0.029 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	2580 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)		Ç	10/09/2019
Nitrate + Nitrite as N	0.003	0.006 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		1.05 mg/L	
Phosphorus - Filterable Reactive as P T0	108_01/ADEL\	1.00 mg/L	10/09/2019
Phosphorus - Filterable Reactive as P	0.003	0.008 mg/L	
Phosphorus - Total T0109-44(ADEL)	0.000	0.000 mg/L	04/09/2019
Phosphorus - Total TOTO3-44(ADEL)	0.005	0.045 mg/l	0 1/00/2010
•	0.000	0.045 mg/L	02/09/2019
Silica - Reactive T0111-01(ADEL) Silica - Reactive	0.05	44.0	02/09/2019
	0.05	14.3 mg/L	04/09/2019
TKN as N T0112-01(ADEL)	0.05		04/09/2019
TKN as Nitrogen	0.05	1.04 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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03/09/2019

04/09/2019

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### **Analytical Results**

300712-Tilley Swamp Watercourse Outlet Channel **Sampling Point** 

29/08/2019 9:15:00AM Sampled Date 30/08/2019 9:17:36AM **Sample Received Date** 13/09/2019 8:36:03AM Sample Analysis Completed

2019-005-0224 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature a	at time of receipt 4.8°C
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03/09/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 17.0 mg/L

**Total Organic Carbon T0158-07(ADEL)** Total Organic Carbon 1 17.2 mg/L

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

### Sample temperature at time of receipt 4.8°C

	•	
Alkalinity Carbonate	Bicarbonate and Hydroxide T0101-01(ADEL)	03/09/2019

Alkalinity as Calcium Carbonate 374 mg/L Bicarbonate 451 mg/L Carbonate 2 mg/L Hydroxide 0 mg/L

03/09/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 8900 µS/cm Total Dissolved Solids (by EC) 1 5150 mg/L

03/09/2019 pH T0010-01(ADEL)

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

03/09/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 1.8 NTU

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

Suspended Solids T0160-01(ADEL)

04/09/2019 Suspended Solids 1.0 12 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Sample temperature at time of receipt 4.8°C

Fixed Solids 1 8 mg/L Volatile Suspended Solids 4 mg/L

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# **Analytical Results**

**Collection Type** 

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

**Customer Collected** 

 Sampled Date
 29/08/2019
 9:20:00AM

 Sample Received Date
 30/08/2019
 9:17:50AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0222

 Status
 Endorsed

Test Start Date	Result	LOR	Biology Operations
		.8°C	Sample temperature at time of receipt 4.
30/08/2019			Chlorophyll a & b T0380-02(ADEL)
	1.59 µg/L	0.1	Chlorophyll a
	<0.1 µg/L	0.1	Chlorophyll b
	Chlorophyll a & b results are the sum of		Chlorophyll comment
	chlorophyll & their degradation by products ( Phaeophytins)		
30/08/2019	T naeopriyuna)	(ADEL)	Chlorophyll a & Phaeophytin a T0380-02(
	1.28 µg/L	0.1	Chlorophyll a
	0.56 µg/L	0.1	Phaeophytin a
Test Start Date	Result	LOR	Inorganic Chemistry - Nutrients
40/00/0040		.8°C	Sample temperature at time of receipt 4.
12/09/2019		0.005	Ammonia as N T0100-01(ADEL)
02/09/2019	0.046 mg/L	0.005	Ammonia as N
02/09/2019	4000 #	4.0	Chloride T0104-02(ADEL) Chloride
10/09/2019	4380 mg/L	4.0	
10/09/2019	4.40	0.003	Nitrate + Nitrite as N T0161-01(ADEL)  Nitrate + Nitrite as N
30/08/2019	1.19 mg/L	0.003	
30/06/2019	4.00		Nitrogen - Total TMZ-M06(ADEL) Nitrogen - Total
10/09/2019	1.83 mg/L	400 04/4 051 \	· ·
10/09/2019	0.000	0.003	Phosphorus - Filterable Reactive as P T0 <sup>-</sup> Phosphorus - Filterable Reactive as P
02/09/2019	0.006 mg/L	0.003	·
02/03/2019	0.000	0.005	Phosphorus - Total T0109-44(ADEL) Phosphorus - Total
02/09/2019	0.009 mg/L	0.005	·
02/09/2019	0.40	0.05	Silica - Reactive T0111-01(ADEL)
02/09/2019	9.19 mg/L	0.05	Silica - Reactive
02/09/2019	0.04	0.05	TKN as N T0112-01(ADEL)
	0.64 mg/L	0.05	i Kin as milfogen
	0.64 mg/L	0.05	TKN as Nitrogen

Result

LOR



**Organic Chemistry** 

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

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06/09/2019

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### **Analytical Results**

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

29/08/2019 9:20:00AM Sampled Date 30/08/2019 9:17:50AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed 2019-005-0222 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature a	at time of receipt 4.8°C
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06/09/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 6.6 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 4.8°C

30/08/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 429 mg/L Bicarbonate 524 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

30/08/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 15500 µS/cm Total Dissolved Solids (by EC) 1 9270 mg/L

30/08/2019 pH T0010-01(ADEL)

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

03/09/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 2.6 NTU

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

Sample temperature at time of receipt 4.8°C

04/09/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 9 mg/L

04/09/2019 Volatile Suspended Solids T0160-01(ADEL)

6 mg/L

1

Volatile Suspended Solids 3 mg/L



Fixed Solids

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# **Analytical Results**

**Sampling Point** 31526-EPA - Nth Jack Point 29/08/2019 9:30:00AM **Sampled Date** 30/08/2019 9:16:47AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed 2019-005-0211 Sample ID Endorsed Status **Customer Collected Collection Type** 

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt	4.8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	102 μg/L	
Chlorophyll b	0.1	8.72 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of	
		chlorophyll & their degradation by products (	
		Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	• •		30/08/2019
Chlorophyll a	0.1	94.3 μg/L	
Phaeophytin a	0.1	15.7 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt	4.8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	37200 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)		<b>G</b>	30/08/2019
Nitrogen - Total		4.67 mg/L	
Phosphorus - Filterable Reactive as P T	0108-01(ADFL)	3	10/09/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/09/2019
Phosphorus - Total	0.005	0.217 mg/L	
Silica - Reactive T0111-01(ADEL)		5. <u>2</u>	02/09/2019
Silica - Reactive	0.05	2.24 mg/L	
TKN as N T0112-01(ADEL)		·	04/09/2019
TKN as Nitrogen	0.05	4.67 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

31526-EPA - Nth Jack Point **Sampling Point** 29/08/2019 9:30:00AM Sampled Date 30/08/2019 9:16:47AM **Sample Received Date** 13/09/2019 8:36:03AM Sample Analysis Completed

2019-005-0211 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature	at time	of receipt	4.8°C
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**Dissolved Organic Carbon T0158-07(ADEL)** 

03/09/2019

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

1

1

LOR

LOR

1.0

1

17.5 mg/L 26.2 mg/L

**Inorganic Chemistry - Physical** 

Total Organic Carbon

Result

**Test Start Date** 

# Sample temperature at time of receipt 4.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

30/08/2019

03/09/2019

Alkalinity as Calcium Carbonate 210 mg/L Bicarbonate 257 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

30/08/2019

Conductivity 94900 µS/cm Total Dissolved Solids (by EC) 1 79400 mg/L

pH T0010-01(ADEL)

30/08/2019

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

**Turbidity T0018-01(ADEL)** 

03/09/2019

Turbidity 0.1 17 NTU

**Test Start Date** 

04/09/2019

04/09/2019

Sample temperature at time of receipt 4.8°C Suspended Solids T0160-01(ADEL)

**Inorganic Chemistry - Waste Water** 

32 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids

<1 mg/L

Result

Volatile Suspended Solids 32 mg/L



Suspended Solids

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# **Analytical Results**

 Sampling Point
 31514-EPA - Stoney Well

 Sampled Date
 29/08/2019 9:50:00AM

 Sample Received Date
 30/08/2019 9:18:34AM

 Sample Analysis Completed
 13/09/2019 8:36:03AM

 Sample ID
 2019-005-0217

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		_
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	86.1 μg/L	
Chlorophyll b	0.1	8.30 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)		30/08/2019
Chlorophyll a	0.1	78.8 μg/L	
Phaeophytin a	0.1	15.4 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	35300 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		5.00 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		10/09/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			02/09/2019
Phosphorus - Total	0.005	0.227 mg/L	
Silica - Reactive T0111-01(ADEL)			02/09/2019
Silica - Reactive	0.05	1.94 mg/L	
TKN as N T0112-01(ADEL)			02/09/2019
TKN as Nitrogen	0.05	5.00 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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03/09/2019

03/09/2019

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03/09/2019

04/09/2019

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<b>Analytical Result</b>	ts
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 Sampling Point
 31514-EPA - Stoney Well

 Sampled Date
 29/08/2019
 9:50:00AM

 Sample Received Date
 30/08/2019
 9:18:34AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0217

Status Endorsed

Collection Type Customer Collected

Sample temperature at time of receipt 4.8°C

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 16.8 mg/L

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

Total Organic Carbon 1 25.5 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

# Sample temperature at time of receipt 4.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)	
---	--

Alkalinity as Calcium Carbonate 212 mg/L Bicarbonate 259 mg/L

Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 91300  $\mu$ S/cm Total Dissolved Solids (by EC) 1 75400  $\mu$ G/cm

pH T0010-01(ADEL)

pH 8.1 pH units

Temperature at which pH is measured 21.9 °C

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 21 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

68 mg/L

Sample temperature at time of receipt 4.8°C

Suspended Solids T0160-01(ADEL) 04/09/2019

1.0

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 26 mg/L

Volatile Suspended Solids 1 42 mg/L



Suspended Solids

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# **Analytical Results**

**Collection Type** 

**Sampling Point** 31525-EPA - Villa de Yumpa 29/08/2019 10:10:00AM **Sampled Date** 30/08/2019 9:19:30AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed 2019-004-9933 Sample ID Endorsed Status **Customer Collected** 

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	70.3 μg/L	
Chlorophyll b	0.1	7.43 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)	• • •	30/08/2019
Chlorophyll a	0.1	64.0 µg/L	
Phaeophytin a	0.1	13.4 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	33700 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		4.29 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		10/09/2019
Phosphorus - Filterable Reactive as P	0.003	0.008 mg/L	
Phosphorus - Total T0109-44(ADEL)			02/09/2019
Phosphorus - Total	0.005	0.176 mg/L	
Silica - Reactive T0111-01(ADEL)			02/09/2019
Silica - Reactive	0.05	2.09 mg/L	
TKN as N T0112-01(ADEL)			02/09/2019
TKN as Nitrogen	0.05	4.29 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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03/09/2019

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03/09/2019

04/09/2019

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### **Analytical Results**

**Sampling Point** 31525-EPA - Villa de Yumpa 29/08/2019 10:10:00AM Sampled Date 30/08/2019 9:19:30AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed 2019-004-9933 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

### Sample temperature at time of receipt 4.8°C

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

Dissolved Organic Carbon 1 18.5 mg/L

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

Total Organic Carbon 1 26.5 mg/L

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

### Sample temperature at time of receipt 4.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 211 mg/L Bicarbonate 257 mg/L

Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 90500 µS/cm

Total Dissolved Solids (by EC) 1 74500 mg/L pH T0010-01(ADEL)

рΗ 8.1 pH units

Temperature at which pH is measured 22.3 °C

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 20 NTU

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

40 mg/L

Sample temperature at time of receipt 4.8°C

04/09/2019 Suspended Solids T0160-01(ADEL)

1.0

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 9 mg/L

Volatile Suspended Solids 31 mg/L



Suspended Solids

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# **Analytical Results**

Sampling Point 31513-EPA - Parnka Point Boat Ramp

 Sampled Date
 29/08/2019
 10:40:00AM

 Sample Received Date
 30/08/2019
 9:19:12AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0219

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	.8°C		_
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	19.3 μg/L	
Chlorophyll b	0.1	1.78 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (	
		Phaeophytins)	00/00/0040
Chlorophyll a & Phaeophytin a T0380-02	-		30/08/2019
Chlorophyll a	0.1	17.7 μg/L	
Phaeophytin a	0.1	3.35 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4	.8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	35400 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		4.28 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADFL)	•	10/09/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)		10.000 mg/L	04/09/2019
Phosphorus - Total	0.005	0.216 mg/L	
•	0.000	0.210 Hig/L	02/09/2019
Silica - Reactive T0111-01(ADEL) Silica - Reactive	0.05	1 66 mg/l	02/00/2010
	0.03	1.66 mg/L	04/09/2019
TKN as N T0112-01(ADEL)	0.05		04/09/2019
TKN as Nitrogen	0.05	4.28 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

**Collection Type** 

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

29/08/2019 10:40:00AM Sampled Date 30/08/2019 9:19:12AM Sample Received Date 13/09/2019 8:36:03AM Sample Analysis Completed 2019-005-0219 Sample ID

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

Sample temperature at time of receipt 4.8°C

03/09/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 17.5 mg/L

**Total Organic Carbon T0158-07(ADEL)** Total Organic Carbon 1 25.2 mg/L

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

#### Sample temperature at time of receipt 4.8°C

Alkalinity Carbonata, Disarbonata and Hydroxida T0101 01/ADEL)	
Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)	30/08/2019

Alkalinity as Calcium Carbonate 210 mg/L Bicarbonate 257 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

30/08/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 89200 µS/cm Total Dissolved Solids (by EC) 1 73100 mg/L

30/08/2019 pH T0010-01(ADEL)

рΗ 8.2 pH units Temperature at which pH is measured 22.3 °C

03/09/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1

21 NTU

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

Sample temperature at time of receipt 4.8°C

04/09/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 38 mg/L

04/09/2019 Volatile Suspended Solids T0160-01(ADEL)

<1 mg/L Volatile Suspended Solids 38 mg/L

1



Fixed Solids

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# **Analytical Results**

**Collection Type** 

**Sampling Point** 31512-EPA - McGrath Flat North 29/08/2019 11:20:00AM **Sampled Date** 30/08/2019 9:18:51AM **Sample Received Date** 13/09/2019 8:36:03AM Sample Analysis Completed 2019-005-0218 Sample ID Status Endorsed **Customer Collected** 

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	64.5 μg/L	
Chlorophyll b	0.1	6.24 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)		30/08/2019
Chlorophyll a	0.1	59.8 μg/L	
Phaeophytin a	0.1	10.4 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		12/09/2019
Ammonia as N T0100-01(ADEL) Ammonia as N	0.005		12/09/2019
	0.005	0.014 mg/L	02/09/2019
Chloride T0104-02(ADEL) Chloride	4.0	00.400	02/09/2019
	4.0	38400 mg/L	10/09/2019
Nitrate + Nitrite as N T0161-01(ADEL) Nitrate + Nitrite as N	0.003	0.005	10/09/2019
	0.003	0.005 mg/L	30/08/2019
Nitrogen - Total TMZ-M06(ADEL) Nitrogen - Total		4.40	30/00/2013
	400 04/ADEL\	4.42 mg/L	10/09/2019
Phosphorus - Filterable Reactive as P T0 Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	10/00/2013
•	0.000	<0.003 Hig/L	04/09/2019
Phosphorus - Total T0109-44(ADEL) Phosphorus - Total	0.005	0.184 mg/L	0 1/00/2010
Silica - Reactive T0111-01(ADEL)	0.000	0.104 mg/L	02/09/2019
Silica - Reactive	0.05	1.60 mg/L	
TKN as N T0112-01(ADEL)		1.00 mg/L	04/09/2019
TKN as Nitrogen	0.05	4.41 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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04/09/2019

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# **Analytical Results**

 Sampling Point
 31512-EPA - McGrath Flat North

 Sampled Date
 29/08/2019
 11:20:00AM

 Sample Received Date
 30/08/2019
 9:18:51AM

 Sample Analysis Completed
 13/09/2019
 8:36:03AM

 Sample ID
 2019-005-0218

Status Endorsed

Collection Type Customer Collected

# Sample temperature at time of receipt 4.8°C

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 18.0 mg/L

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

Total Organic Carbon 1 24.8 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

#### Sample temperature at time of receipt 4.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 211  $\,$  mg/L Bicarbonate 257  $\,$  mg/L Carbonate 0  $\,$  mg/L Hydroxide 0  $\,$  mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 87800  $\mu$ S/cm Total Dissolved Solids (by EC) 1 71600  $\mu$ G/cm

pH T0010-01(ADEL)

pH 8.2 pH units

Temperature at which pH is measured 21.9 °C

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 18 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 4.8°C

Suspended Solids T0160-01(ADEL) 04/09/2019

68 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 33 mg/L

Volatile Suspended Solids 1 35 mg/L

1.0



Suspended Solids

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# **Analytical Results**

 Sampling Point
 353180-EPA - Tauwitchere

 Sampled Date
 29/08/2019 1:30:00PM

 Sample Received Date
 30/08/2019 9:19:12AM

 Sample Analysis Completed
 13/09/2019 8:36:03AM

 Sample ID
 2019-004-9934

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	26.6 µg/L	
Chlorophyll b	0.1	1.82 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)		30/08/2019
Chlorophyll a	0.1	22.1 μg/L	
Phaeophytin a	0.1	8.33 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4.	8°C		
Ammonia as N T0100-01(ADEL)			12/09/2019
Ammonia as N	0.005	0.091 mg/L	
Chloride T0104-02(ADEL)			02/09/2019
Chloride	4.0	3820 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			10/09/2019
Nitrate + Nitrite as N	0.003	0.012 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			30/08/2019
Nitrogen - Total		1.44 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		10/09/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			02/09/2019
Phosphorus - Total	0.005	0.096 mg/L	
Silica - Reactive T0111-01(ADEL)			02/09/2019
Silica - Reactive	0.05	0.19 mg/L	
TKN as N T0112-01(ADEL)			02/09/2019
TKN as Nitrogen	0.05	1.43 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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353180-EPA - Tauwitchere **Sampling Point** 29/08/2019 1:30:00PM **Sampled Date** 30/08/2019 9:19:12AM **Sample Received Date** 13/09/2019 8:36:03AM Sample Analysis Completed 2019-004-9934 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

Sample	temperati	ure at	time o	f receipt	4.8°C
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**Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 8.2 mg/L

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

Total Organic Carbon 1 14.1 mg/L

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

# Sample temperature at time of receipt 4.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 112 mg/L Bicarbonate

134 mg/L Carbonate 1 mg/L

Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL) Conductivity

13200 µS/cm

Total Dissolved Solids (by EC) 1 7810 mg/L

pH T0010-01(ADEL) рΗ 8.3 pH units

Temperature at which pH is measured 22.3 °C

**Turbidity T0018-01(ADEL)** 0.1

Turbidity 23 NTU

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

Sample temperature at time of receipt 4.8°C

04/09/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 48 mg/L

Volatile Suspended Solids T0160-01(ADEL) Fixed Solids 1 22 mg/L

Volatile Suspended Solids 26 mg/L



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# **Analytical Results**

**Sampling Point** 31523-EPA - Long Point 29/08/2019 10:30:00PM **Sampled Date** 30/08/2019 9:18:54AM **Sample Received Date** 13/09/2019 8:36:03AM Sample Analysis Completed 2019-004-9935 Sample ID Status Endorsed **Customer Collected Collection Type** 

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 4	1.8°C		
Chlorophyll a & b T0380-02(ADEL)			30/08/2019
Chlorophyll a	0.1	7.33 µg/L	
Chlorophyll b	0.1	0.41 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)	That opiny and y	30/08/2019
Chlorophyll a	0.1	5.99 µg/L	
Phaeophytin a	0.1	2.41 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 4	1.8°C		12/09/2019
Ammonia as N T0100-01(ADEL) Ammonia as N	0.005	0.005 #	12/09/2019
	0.005	0.005 mg/L	02/09/2019
Chloride T0104-02(ADEL) Chloride	4.0	40000 #	02/09/2019
	4.0	19800 mg/L	10/09/2019
Nitrate + Nitrite as N T0161-01(ADEL)  Nitrate + Nitrite as N	0.003		10/09/2019
	0.003	0.007 mg/L	30/08/2019
Nitrogen - Total TMZ-M06(ADEL)  Nitrogen - Total		4.04	30/00/2019
	2400 04/ABEL)	1.64 mg/L	10/09/2019
Phosphorus - Filterable Reactive as P To Phosphorus - Filterable Reactive as P	0.003	40.002 mm/l	10/09/2019
•	0.003	<0.003 mg/L	04/09/2019
Phosphorus - Total T0109-44(ADEL) Phosphorus - Total	0.005	0.442	04/09/2013
·	0.003	0.143 mg/L	02/09/2019
Silica - Reactive T0111-01(ADEL) Silica - Reactive	0.05	0.04	02/09/2019
	0.03	0.81 mg/L	04/09/2019
TKN as N T0112-01(ADEL) TKN as Nitrogen	0.05	4.02	04/09/2019
Trin as miliogen	0.05	1.63 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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### **Analytical Results**

Dissolved Organic Carbon

 Sampling Point
 31523-EPA - Long Point

 Sampled Date
 29/08/2019
 10:30:00PM

 Sample Received Date
 30/08/2019
 9:18:54AM

 Sample Analysis Completed
 30/09/2019
 8:36:03AM

 Sample ID
 2019-004-9935

 Status
 Endorsed

Collection Type Customer Collected

### Sample temperature at time of receipt 4.8°C

Dissolved Organic Carbon T0158-07(ADEL)

03/09/2019

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

Total Organic Carbon

12.3 mg/L

11.3 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

# Sample temperature at time of receipt 4.8°C

Alkalinity Carbonate	Bicarbonate and H	vdroxide T0101-01(ADEL)
----------------------	-------------------	-------------------------

30/08/2019

03/09/2019

Alkalinity as Calcium Carbonate 155  $\,$  mg/L Bicarbonate 190  $\,$  mg/L Carbonate 0  $\,$  mg/L

Hydroxide 0 mg/L

30/08/2019

1 41000 IIIg/L

1

1

pH T0010-01(ADEL) 30/08/2019

pH 8.0 pH units Temperature at which pH is measured 22.4  $^{\circ}$ C

Turbidity T0018-01(ADEL) 03/09/2019

Turbidity 0.1 8.0 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 4.8°C

Suspended Solids T0160-01(ADEL) 04/09/2019

Suspended Solids 1.0 17 mg/L

Volatile Suspended Solids T0160-01(ADEL)

04/09/2019

Fixed Solids 1

Fixed Solids 1 11 mg/L

Volatile Suspended Solids

6 mg/L



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### **AWQC Signatories**

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Ivana Cech - Technical Officer Chemistry

Kerrie Jooste - Supervisor Nutrients and Waste

Thuy Diep - Technical Officer Chemistry

David Evans - Technical Officer Chemistry

John Martini - Method Development Coordinator

Andrew Mlynowskyj - Technical Officer Chemistry

Melissa Phillips - Technical Officer Chemistry

Kamilla Springer - Senior Technical Officer

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# **Samples Not Collected**

Sample ID	S.Point	Description	Sampled Date	Non Collect Reason
2019-005-0220	31519	EPA - Morella Basin at Outlet	19/08/2019	Dry
		Regulator		

### **Bottles Not Collected**

Sample ID	S.Point	Description	Sampled Date	Laboratory	Non Collect Reason
2019-005-0220-0	31519	EPA - Morella Basin at Outlet	19/08/2019	Inorganic Chemistry -	Customer chose not to
		Regulator		Nutrients	collect bottle
2019-005-0220-0	31519	EPA - Morella Basin at Outlet	19/08/2019	<b>Biology Operations</b>	Customer chose not to
		Regulator			collect bottle
2019-005-0220-0	31519	EPA - Morella Basin at Outlet	19/08/2019	Inorganic Chemistry -	Customer chose not to
		Regulator		Physical	collect bottle
2019-005-0220-0	31519	EPA - Morella Basin at Outlet	19/08/2019	Organic Chemistry	Customer chose not to
		Regulator			collect bottle
2019-005-0220-0	31519	EPA - Morella Basin at Outlet	19/08/2019	Inorganic Chemistry -	Customer chose not to
		Regulator		Nutrients	collect bottle
2019-005-0220-0	31519	EPA - Morella Basin at Outlet	19/08/2019	Inorganic Chemistry -	Customer chose not to
		Regulator		Waste Water	collect bottle
2019-005-0220-0	31519	EPA - Morella Basin at Outlet	19/08/2019	Inorganic Chemistry -	Customer chose not to
		Regulator		Nutrients	collect bottle
2019-005-0220-0	31519	EPA - Morella Basin at Outlet	19/08/2019	Inorganic Chemistry -	Customer chose not to
		Regulator		Nutrients	collect bottle

# **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
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



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### **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 in the component is not covered by NATA Accreditation.
   \* notice in the component is not covered by NATA Accreditation.
- 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.