PO Box 1751 250 Victoria Square Adelaide SA 5001 Adelaide SA 5000

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DEW - Department of Environment and Water

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

19/02/2020

Dear Patrick

Please find attached the Final Analytical Report for

Customer Service Request: 143419-2019-CSR-1

Account: 143419

Project: AWQC-141861 DEW - Healthy Coorong Healthy Basin Phase 0 - Non routine

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



toria Square Tel: 1300 653 366 e SA 5000 Fax: 1300 883 171

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Report Information

Project Name AWQC-141861

Customer DEW - Department of Environment and Water

Endorsed

CSR_ID 143419-2019-CSR-1

Analytical Results

Status

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 16/12/2019
 9:20:00AM

 Sample Received Date
 17/12/2019
 10:44:36AM

 Sample Analysis Completed
 31/12/2019
 10:07:31AM

 Sample ID
 2019-008-6524

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	49.3 µg/L	
Chlorophyll b	0.1	6.45 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)	. , ,	17/12/2019
Chlorophyll a	0.1	46.6 µg/L	
Phaeophytin a	0.1	6.92 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	5°C		
Ammonia as N T0100-01(ADEL)			30/12/2019
Ammonia as N	0.005	0.152 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	55100 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	0.007 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		6.14 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.008 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.206 mg/L	
Silica - Reactive T0111-01(ADEL)			19/12/2019
Silica - Reactive	0.05	2.96 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019



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Analytical Results

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 16/12/2019
 9:20:00AM

 Sample Received Date
 17/12/2019
 10:44:36AM

 Sample Analysis Completed
 31/12/2019
 10:07:31AM

 Sample ID
 2019-008-6524

 Status
 Endorsed

Collection Type Customer Collected

TKN as N T0112-01(ADEL) 23/12/2019

TKN as Nitrogen 0.05 6.13 mg/L

Organic Chemistry	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		
Dissolved Organic Carbon T0158-07(ADI	≣L)		24/12/2019
Dissolved Organic Carbon	1	25.9 mg/L	
Total Organic Carbon T0158-07(ADEL)			24/12/2019
Total Organic Carbon	1	31.8 mg/L	
Inorganic Chemistry - Physical	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		
Alkalinity Carbonate Bicarbonate and H	ydroxide T0101-0	1(ADEL)	19/12/2019
Alkalinity as Calcium Carbonate		228 mg/L	
Bicarbonate		278 mg/L	
Carbonate		0 mg/L	
Hydroxide		0 mg/L	
pH T0010-01(ADEL)			19/12/2019
рН		7.8 pH units	
Temperature at which pH is measured		23.5 °C	
Turbidity T0018-01(ADEL)			19/12/2019
Turbidity	0.1	16 NTU	
Inorganic Chemistry - Waste Water	LOR	Result	Test Start Date
Sample temperature at time of receipt 9 Suspended Solids T0160-01(ADEL)	.5°C		30/12/2019
Suspended Solids	1.0	25 mg/L	

109000 mg/L

<1 mg/L

25 mg/L

1

1

1



Fixed Solids

Volatile Suspended Solids

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

Volatile Suspended Solids T0160-01(ADEL)

Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation)

27/12/2019

30/12/2019

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Analytical Results

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 16/12/2019
 9:20:00AM

 Sample Received Date
 17/12/2019
 10:44:36AM

 Sample Analysis Completed
 31/12/2019
 10:07:31AM

 Sample ID
 2019-008-6524

 Status
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Collection Type Customer Collected



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Analytical Results

Sampling Point 31518-EPA - 12 South Salt Creek 16/12/2019 10:30:00AM **Sampled Date** 17/12/2019 10:45:59AM **Sample Received Date** 31/12/2019 10:04:33AM Sample Analysis Completed 2019-008-6522 Sample ID

Status Endorsed

Customer Collected Collection Type

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		_
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	76.1 μg/L	
Chlorophyll b	0.1	8.27 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)	i nacopnyuno)	17/12/2019
Chlorophyll a	0.1	70.8 µg/L	
Phaeophytin a	0.1	12.0 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
		roout	
Sample temperature at time of receipt 9 Ammonia as N T0100-01(ADEL)	.5°C		30/12/2019
Ammonia as N	0.005	0.012 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	51200 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	0.004 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		5.53 mg/L	
Phosphorus - Filterable Reactive as P TO)108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.173 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	3.27 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	5.53 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 16/12/2019
 10:30:00AM

 Sample Received Date
 17/12/2019
 10:45:59AM

 Sample Analysis Completed
 31/12/2019
 10:04:33AM

 Sample ID
 2019-008-6522

 Status
 Endorsed

Collection Type Customer Collected

Sample temperature	at time	of receipt 9.5°C
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Dissolved Organic Carbon T0158-07(ADEL) 24/12/2019

Dissolved Organic Carbon 1 24.2 mg/L

Total Organic Carbon T0158-07(ADEL)Total Organic Carbon 1 32.3 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

 Alkalinity as Calcium Carbonate
 229 mg/L

 Bicarbonate
 280 mg/L

 Carbonate
 0 mg/L

 Hydroxide
 0 mg/L

pH T0010-01(ADEL) 19/12/2019

pH 8.0 pH units Temperature at which pH is measured 23.6 $^{\circ}$ C

Turbidity T0018-01(ADEL) 19/12/2019

Turbidity 0.1 13 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Suspended Solids T0160-01(ADEL) 30/12/2019

Suspended Solids 1.0 97 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL) 27/12/2019

Total Dissolved Solids (by evaporation) 1 98300 mg/L

Volatile Suspended Solids T0160-01(ADEL) 30/12/2019

Fixed Solids 1 41 mg/L

Volatile Suspended Solids 1 56 mg/L



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Analytical Results

Sampling Point 31519-EPA - Morella Basin at Outlet Regulator

 Sampled Date
 16/12/2019
 10:30:00AM

 Sample Received Date
 17/12/2019
 10:44:43AM

 Sample Analysis Completed
 7/01/2020
 12:42:45PM

 Sample ID
 2019-008-6530

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	5°C		_
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	18.2 μg/L	
Chlorophyll b	0.1	1.22 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)		17/12/2019
Chlorophyll a	0.1	14.0 μg/L	
Phaeophytin a	0.1	7.57 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	5°C		
Ammonia as N T0100-01(ADEL)			30/12/2019
Ammonia as N	0.005	0.116 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	6990 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	0.007 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		3.33 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.007 mg/L	
Phosphorus - Total T0109-44(ADEL)			06/01/2020
Phosphorus - Total	0.005	0.074 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	6.04 mg/L	
TKN as N T0112-01(ADEL)			06/01/2020
TKN as Nitrogen	0.05	3.32 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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24/12/2019

Test Start Date

30/12/2019

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Analytical Results

Status

31519-EPA - Morella Basin at Outlet Regulator **Sampling Point**

Endorsed

16/12/2019 10:30:00AM Sampled Date 17/12/2019 10:44:43AM **Sample Received Date** 7/01/2020 12:42:45PM Sample Analysis Completed 2019-008-6530 Sample ID

Customer Collected Collection Type

Sample temperature	at time	of receipt 9.5°C
--------------------	---------	------------------

24/12/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 23.9 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 28.2 mg/L

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

Sample temperature at time of receipt 9.5°C Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

19/12/2019

Alkalinity as Calcium Carbonate 340 mg/L Bicarbonate 299 mg/L Carbonate 57 mg/L Hydroxide 0 mg/L

19/12/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 18400 µS/cm Total Dissolved Solids (by EC) 1 11200 mg/L

19/12/2019 pH T0010-01(ADEL)

рΗ 9.0 pH units Temperature at which pH is measured 23.3 °C

19/12/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0.1 3.3 NTU

Result

3 mg/L

Sample temperature at time of receipt 9.5°C

Inorganic Chemistry - Waste Water

30/12/2019 Suspended Solids T0160-01(ADEL)

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L Volatile Suspended Solids 3 mg/L

LOR

1.0



Suspended Solids

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Analytical Results

Sampling Point 31517-EPA - 1.8km West Salt Creek

 Sampled Date
 16/12/2019
 10:40:00AM

 Sample Received Date
 17/12/2019
 10:45:14AM

 Sample Analysis Completed
 31/12/2019
 10:18:09AM

 Sample ID
 2019-008-6526

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	87.6 μg/L	
Chlorophyll b	0.1	8.66 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)		17/12/2019
Chlorophyll a	0.1	73.5 µg/L	
Phaeophytin a	0.1	27.1 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		
Ammonia as N T0100-01(ADEL)			30/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	49600 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		5.28 mg/L	
Phosphorus - Filterable Reactive as P TO)108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.211 mg/L	
Silica - Reactive T0111-01(ADEL)			19/12/2019
Silica - Reactive	0.05	3.27 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	5.28 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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24/12/2019

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Analytical Results

Sampling Point 31517-EPA - 1.8km West Salt Creek

 Sampled Date
 16/12/2019
 10:40:00AM

 Sample Received Date
 17/12/2019
 10:45:14AM

 Sample Analysis Completed
 31/12/2019
 10:18:09AM

 Sample ID
 2019-008-6526

 Status
 Endorsed

Collection Type Customer Collected

Sample temperature	at time of	receipt 9.5°C
--------------------	------------	---------------

Total Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon T0158-07(ADEL) 24/12/2019

Dissolved Organic Carbon 1 24.2 mg/L

Total Organic Carbon 1 31.3 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 230 $\,$ mg/L Bicarbonate 280 $\,$ mg/L Carbonate 0 $\,$ mg/L Hydroxide 0 $\,$ mg/L

pH T0010-01(ADEL) 19/12/2019

pH 8.0 pH units Temperature at which pH is measured 23.5 $^{\circ}$ C

Turbidity T0018-01(ADEL) 19/12/2019

Turbidity 0.1 13 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Suspended Solids T0160-01(ADEL) 30/12/2019

Suspended Solids 1.0 26 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL) 27/12/2019

Total Dissolved Solids (by evaporation) 1 98000 mg/L

Volatile Suspended Solids T0160-01(ADEL) 30/12/2019

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 1 26 mg/L



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Analytical Results

 Sampling Point
 31515-EPA - Snipe Point

 Sampled Date
 16/12/2019 11:10:00AM

 Sample Received Date
 17/12/2019 10:45:29AM

 Sample Analysis Completed
 31/12/2019 10:16:46AM

 Sample ID
 2019-008-6525

Sample ID 2019-008-69
Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	85.3 μg/L	
Chlorophyll b	0.1	8.29 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)	i nacopnymio)	17/12/2019
Chlorophyll a	0.1	79.2 µg/L	
Phaeophytin a	0.1	13.4 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
	590		
Sample temperature at time of receipt 9 Ammonia as N T0100-01(ADEL)	.5°C		23/12/2019
Ammonia as N	0.005	0.006 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	52700 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		5.37 mg/L	
Phosphorus - Filterable Reactive as P TO)108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.006 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.223 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	1.35 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	5.37 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical	Results
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 Sampling Point
 31515-EPA - Snipe Point

 Sampled Date
 16/12/2019 11:10:00AM

 Sample Received Date
 17/12/2019 10:45:29AM

 Sample Analysis Completed
 31/12/2019 10:16:46AM

 Sample ID
 2019-008-6525

 Status
 Endorsed

Collection Type Customer Collected

Sample	temperature	at time of	of receipt 9.5°C
--------	-------------	------------	------------------

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 23.3 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 32.1 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

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

pH T0010-01(ADEL) 19/12/2019

pH 8.0 pH units Temperature at which pH is measured 23.6 $^{\circ}$ C

Turbidity T0018-01(ADEL) 19/12/2019

Turbidity 0.1 12 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Suspended Solids T0160-01(ADEL) 30/12/2019

Suspended Solids 1.0 26 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL) 27/12/2019

Total Dissolved Solids (by evaporation) 1 101000 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 1 26 mg/L



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Analytical Results

 Sampling Point
 31516-EPA - Seagull Island

 Sampled Date
 16/12/2019 11:25:00AM

 Sample Received Date
 17/12/2019 10:45:21AM

 Sample Analysis Completed
 31/12/2019 10:05:47AM

 Sample ID
 2019-008-6523

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	73.2 µg/L	
Chlorophyll b	0.1	7.62 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)	17/12/2019
Chlorophyll a	(ADEL) 0.1	68.7 µg/L	1771272010
Phaeophytin a	0.1	66.7 μg/L 10.5 μg/L	
Theophysii a	0.1	10.3 руд	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		
Ammonia as N T0100-01(ADEL)			23/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	50500 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		5.39 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.226 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	3.93 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	5.39 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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24/12/2019

24/12/2019

19/12/2019

19/12/2019

19/12/2019

30/12/2019

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Analytical Results

 Sampling Point
 31516-EPA - Seagull Island

 Sampled Date
 16/12/2019 11:25:00AM

 Sample Received Date
 17/12/2019 10:45:21AM

 Sample Analysis Completed
 31/12/2019 10:05:47AM

 Sample ID
 2019-008-6523

 Status
 Endorsed

Collection Type Customer Collected

Sample temperature	at time	of receipt 9.5°C
--------------------	---------	------------------

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 23.3 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 32.1 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 228 mg/L
Bicarbonate 278 mg/L
Carbonate 0 mg/L
Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 113000 μ S/cm

Total Dissolved Solids (by EC) 1 101000 mg/L pH T0010-01(ADEL)

pH 8.0 pH units

Temperature at which pH is measured 23.0 °C

Turbidity T0018-01(ADEL)

Turbidity 0.1 13 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Suspended Solids T0160-01(ADEL) 30/12/2019

20 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L
Volatile Suspended Solids 1 20 mg/L

1.0



Suspended Solids

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Analytical Results

Sampling Point 300711-Tilley Swamp Drain U/S Morella

Endorsed

16/12/2019 11:25:00AM **Sampled Date** 17/12/2019 10:46:13AM **Sample Received Date** 31/12/2019 3:32:42PM Sample Analysis Completed 2019-008-6531 Sample ID

Status **Customer Collected Collection Type**

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		_
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	1.68 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)	, , ,	17/12/2019
Chlorophyll a	0.1	1.44 μg/L	
Phaeophytin a	0.1	0.41 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		_
Ammonia as N T0100-01(ADEL)			23/12/2019
Ammonia as N	0.005	0.059 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	3630 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	0.004 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		0.80 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.007 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.009 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	10.0 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	0.80 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

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

16/12/2019 11:25:00AM Sampled Date 17/12/2019 10:46:13AM **Sample Received Date** 31/12/2019 3:32:42PM Sample Analysis Completed 2019-008-6531 Sample ID

Status Endorsed

Customer Collected Collection Type

San	ıple	te	mpe	rature	at	time c	of re	ceipt 9.5°C

24/12/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 7.4 mg/L

Total Organic Carbon T0158-07(ADEL) Total Organic Carbon 1 7.6 mg/L

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

Sample temperature at time of receipt 9.5°C

•	•	-			
Alkalinit	y Carbonate	Bicarbonate and H	ydroxide T0101-01	(ADEL)	19/12/2019

Alkalinity as Calcium Carbonate 336 mg/L Bicarbonate 346 mg/L Carbonate 31 mg/L Hydroxide 0 mg/L

19/12/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

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

19/12/2019 pH T0010-01(ADEL)

рΗ 8.8 pH units Temperature at which pH is measured 23.6 °C

19/12/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0.1 1.2 NTU

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

Sample temperature at time of receipt 9.5°C

30/12/2019 Suspended Solids T0160-01(ADEL)

2 mg/L

30/12/2019 Volatile Suspended Solids T0160-01(ADEL)

1.0

Fixed Solids 1 1 mg/L

Volatile Suspended Solids 1 mg/L



Suspended Solids

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Analytical Results

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

 Sampled Date
 16/12/2019
 11:45:00AM

 Sample Received Date
 17/12/2019
 10:46:22AM

 Sample Analysis Completed
 31/12/2019
 10:28:09AM

 Sample ID
 *2019-008-6532

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	.5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	2.35 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)		17/12/2019
Chlorophyll a	0.1	2.21 μg/L	
Phaeophytin a	0.1	0.27 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	.5°C		
Ammonia as N T0100-01(ADEL)			23/12/2019
Ammonia as N	0.005	0.023 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	3850 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	0.011 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		0.80 mg/L	
Phosphorus - Filterable Reactive as P T0	, ,		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.010 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	<0.005 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	11.3 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	0.79 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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30/12/2019

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Analytical Results

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

 Sampled Date
 16/12/2019
 11:45:00AM

 Sample Received Date
 17/12/2019
 10:46:22AM

 Sample Analysis Completed
 31/12/2019
 10:28:09AM

 Sample ID
 *2019-008-6532

Sample ID *2019-008-Status Endorsed

Collection Type Customer Collected

Sample temperature	at time of receipt 9.5°C
--------------------	--------------------------

Total Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 7.2 mg/L

Total Organic Carbon 1 7.8 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

 Alkalinity as Calcium Carbonate
 346 mg/L

 Bicarbonate
 367 mg/L

 Carbonate
 27 mg/L

 Hydroxide
 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 10300 μ S/cm Total Dissolved Solids (by EC) 1 6000 μ G/L

pH T0010-01(ADEL) 19/12/2019

pH 8.7 pH units
Temperature at which pH is measured 23.6 °C

Turbidity T0018-01(ADEL) 19/12/2019

Turbidity 0.1 5.8 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Suspended Solids T0160-01(ADEL) 30/12/2019

9 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Volatile Suspended Solids 10160-01(ADEL)

Fixed Solids 1 5 mg/l

1.0

Fixed Solids 1 5 mg/L Volatile Suspended Solids 1 4 mg/L

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Suspended Solids

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Analytical Results

 Sampling Point
 31526-EPA - Nth Jack Point

 Sampled Date
 16/12/2019 12:00:00PM

 Sample Received Date
 17/12/2019 10:46:06AM

 Sample Analysis Completed
 31/12/2019 10:02:25AM

 Sample ID
 2019-008-6521

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	42.1 μg/L	
Chlorophyll b	0.1	5.91 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)		17/12/2019
Chlorophyll a	0.1	39.8 μg/L	
Phaeophytin a	0.1	6.03 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	5°C		
Ammonia as N T0100-01(ADEL)			23/12/2019
Ammonia as N	0.005	0.007 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	45300 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		4.98 mg/L	
Phosphorus - Filterable Reactive as P T0	•		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.123 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	1.41 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	4.98 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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19/12/2019

19/12/2019

30/12/2019

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Analytical Results

31526-EPA - Nth Jack Point **Sampling Point** 16/12/2019 12:00:00PM Sampled Date 17/12/2019 10:46:06AM Sample Received Date 31/12/2019 10:02:25AM Sample Analysis Completed

2019-008-6521 Sample ID **Status** Endorsed

Customer Collected Collection Type

Sample temperature	at time of receipt 9.5°C
--------------------	--------------------------

Dissolved Organic Carbon T0158-07(ADEL) Dissolved Organic Carbon 1 23.3 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 30.8 mg/L

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

Sample temperature at time of receipt 9.5°C

19/12/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 221 mg/L Bicarbonate 270 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

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

98200 mg/L pH T0010-01(ADEL)

рΗ 8.1 pH units

Temperature at which pH is measured 23.5 °C **Turbidity T0018-01(ADEL)**

Turbidity 0.1 12 NTU

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

Sample temperature at time of receipt 9.5°C

30/12/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 20 mg/L Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 20 mg/L



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Analytical Results

 Sampling Point
 31512-EPA - McGrath Flat North

 Sampled Date
 16/12/2019
 1:15:00PM

 Sample Received Date
 17/12/2019
 10:45:07AM

 Sample Analysis Completed
 31/12/2019
 10:20:32AM

 Sample ID
 2019-008-6528

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		_
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	30.6 μg/L	
Chlorophyll b	0.1	2.94 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)	, ,	17/12/2019
Chlorophyll a	0.1	28.5 μg/L	
Phaeophytin a	0.1	4.55 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	.5°C		
Ammonia as N T0100-01(ADEL)			23/12/2019
Ammonia as N	0.005	0.028 mg/L	
Chloride T0104-02(ADEL)		· ·	17/12/2019
Chloride	4.0	44000 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			30/12/2019
Nitrate + Nitrite as N	0.003	0.425 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		5.11 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.157 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	4.07 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	4.68 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

 Sampling Point
 31512-EPA - McGrath Flat North

 Sampled Date
 16/12/2019
 1:15:00PM

 Sample Received Date
 17/12/2019
 10:45:07AM

 Sample Analysis Completed
 31/12/2019
 10:20:32AM

 Sample ID
 2019-008-6528

Status Endorsed

Collection Type Customer Collected

Sample temperature	at time of receipt 9.5°C
--------------------	--------------------------

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 23.3 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 31.6 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Alkalinity Carbonate Bicarbonate and Hydroxide	e T0101-01(ADEL) 19/12/201	9

Alkalinity as Calcium Carbonate 191 mg/L
Bicarbonate 233 mg/L
Carbonate 0 mg/L
Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 105000 μ S/cm Total Dissolved Solids (by EC) 1 91000 μ G/cm

pH T0010-01(ADEL) 19/12/2019

pH 8.1 pH units
Temperature at which pH is measured 23.0 °C

Turbidity T0018-01(ADEL) 19/12/2019

Turbidity 0.1 51 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Suspended Solids T0160-01(ADEL) 30/12/2019

108 mg/L

52 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 56 mg/L

1.0

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Suspended Solids

Volatile Suspended Solids

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Analytical Results

 Sampling Point
 31514-EPA - Stoney Well

 Sampled Date
 16/12/2019 2:20:00PM

 Sample Received Date
 17/12/2019 10:45:37AM

 Sample Analysis Completed
 7/01/2020 12:42:43PM

 Sample ID
 2019-008-6527

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	.5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	47.9 μg/L	
Chlorophyll b	0.1	4.16 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)		17/12/2019
Chlorophyll a	0.1	43.4 µg/L	
Phaeophytin a	0.1	9.23 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9. Ammonia as N T0100-01(ADEL)	5°C		30/12/2019
Ammonia as N	0.005	0.007 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	45700 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)		Ç	27/12/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)		•	17/12/2019
Nitrogen - Total		4.80 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.005 mg/L	
Phosphorus - Total T0109-44(ADEL)			06/01/2020
Phosphorus - Total	0.005	0.156 mg/L	
Silica - Reactive T0111-01(ADEL)			19/12/2019
Silica - Reactive	0.05	0.25 mg/L	
TKN as N T0112-01(ADEL)			06/01/2020
TKN as Nitrogen	0.05	4.80 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



24/12/2019

24/12/2019

19/12/2019

19/12/2019

19/12/2019

19/12/2019

30/12/2019

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Analytical Results

Sampling Point 31514-EPA - Stoney Well 16/12/2019 2:20:00PM Sampled Date 17/12/2019 10:45:37AM Sample Received Date 7/01/2020 12:42:43PM Sample Analysis Completed 2019-008-6527 Sample ID **Status** Endorsed

Customer Collected Collection Type

Sample temperature at time of receipt 9.5°C

Dissolved Organic Carbon T0158-07(ADEL) Dissolved Organic Carbon 1 22.0 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 30.1 mg/L

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

Sample temperature at time of receipt 9.5°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 199 mg/L Bicarbonate 243 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

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

pH T0010-01(ADEL)

рΗ 8.1 pH units

Temperature at which pH is measured 23.4 °C

Turbidity T0018-01(ADEL)

Turbidity 0.1 15 NTU

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

22 mg/L

Sample temperature at time of receipt 9.5°C

30/12/2019 Suspended Solids T0160-01(ADEL)

1.0

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 22 mg/L



Suspended Solids

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Analytical Results

 Sampling Point
 31523-EPA - Long Point

 Sampled Date
 16/12/2019 2:30:00PM

 Sample Received Date
 17/12/2019 10:44:52AM

 Sample Analysis Completed
 7/01/2020 12:42:40PM

 Sample ID
 2019-008-6520

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	9.5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	3.24 µg/L	
Chlorophyll b	0.1	0.14 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)	r nassprijans)	17/12/2019
Chlorophyll a	0.1	2.79 µg/L	
Phaeophytin a	0.1	0.82 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9 Ammonia as N T0100-01(ADEL)	9.5°C		30/12/2019
Ammonia as N	0.005	0.024 mg/L	
Chloride T0104-02(ADEL)		, and the second	17/12/2019
Chloride	4.0	14900 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	0.016 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		1.63 mg/L	
Phosphorus - Filterable Reactive as P T	0108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			06/01/2020
Phosphorus - Total	0.005	0.045 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	0.26 mg/L	
TKN as N T0112-01(ADEL)			06/01/2020
TKN as Nitrogen	0.05	1.61 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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30/12/2019

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Analytical Results

 Sampling Point
 31523-EPA - Long Point

 Sampled Date
 16/12/2019 2:30:00PM

 Sample Received Date
 17/12/2019 10:44:52AM

 Sample Analysis Completed
 7/01/2020 12:42:40PM

 Sample ID
 2019-008-6520

 Status
 Endorsed

Collection Type Customer Collected

Sample temperature at time of receipt 9.5°C

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 10.6 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 10.9 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

	•		
Alkalinity Carbonate	Bicarbonate and Hydroxide T	Г0101-01(ADEL)	19/12/2019

Alkalinity as Calcium Carbonate 158 mg/L
Bicarbonate 163 mg/L
Carbonate 14 mg/L
Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 39100 μ S/cm Total Dissolved Solids (by EC) 1 26200 mg/L

pH T0010-01(ADEL)

pH 8.5 pH units Temperature at which pH is measured 23.6 $^{\circ}$ C

Turbidity T0018-01(ADEL)

Turbidity 0.1 7.2 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Suspended Solids T0160-01(ADEL)
Suspended Solids 1.0 14 mg/L

Volatile Suspended Solids T0160-01(ADEL)

 Fixed Solids
 1
 12 mg/L

 Volatile Suspended Solids
 1
 2 mg/L



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Analytical Results

 Sampling Point
 31525-EPA - Villa de Yumpa

 Sampled Date
 16/12/2019 2:40:00PM

 Sample Received Date
 17/12/2019 10:45:44AM

 Sample Analysis Completed
 31/12/2019 9:57:58AM

 Sample ID
 2019-008-6518

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	32.7 µg/L	
Chlorophyll b	0.1	3.66 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)		17/12/2019
Chlorophyll a	0.1	30.3 µg/L	
Phaeophytin a	0.1	5.50 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	5°C		
Ammonia as N T0100-01(ADEL)			30/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	46100 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		4.24 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.162 mg/L	
Silica - Reactive T0111-01(ADEL)			19/12/2019
Silica - Reactive	0.05	0.19 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
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
 16/12/2019 2:40:00PM

 Sample Received Date
 17/12/2019 10:45:44AM

 Sample Analysis Completed
 31/12/2019 9:57:58AM

 Sample ID
 2019-008-6518

Status Endorsed

Collection Type Customer Collected

Sample temperature	at time of	receipt 9.5°C
--------------------	------------	---------------

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 22.2 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 29.3 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 191 $\,$ mg/L Bicarbonate 233 $\,$ mg/L Carbonate 0 $\,$ mg/L Hydroxide 0 $\,$ mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 105000 μ S/cm

Total Dissolved Solids (by EC) 1 91000 mg/L pH T0010-01(ADEL)

pH 8.1 pH units

Temperature at which pH is measured 23.0 °C

Turbidity T0018-01(ADEL)

Turbidity 0.1 15 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.5°C

Suspended Solids T0160-01(ADEL)
Suspended Solids 1.0 16 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 1 16 mg/L



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Analytical Results

 Sampling Point
 353180-EPA - Tauwitchere

 Sampled Date
 16/12/2019 3:40:00PM

 Sample Received Date
 17/12/2019 10:44:59AM

 Sample Analysis Completed
 31/12/2019 9:59:25AM

 Sample ID
 2019-008-6519

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	.5°C		_
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	14.4 µg/L	
Chlorophyll b	0.1	1.40 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)		17/12/2019
Chlorophyll a	0.1	13.1 µg/L	
Phaeophytin a	0.1	2.71 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	.5°C		
Ammonia as N T0100-01(ADEL)			23/12/2019
Ammonia as N	0.005	0.050 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	8960 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	0.014 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/12/2019
Nitrogen - Total		1.60 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)			23/12/2019
Phosphorus - Total	0.005	0.142 mg/L	
Silica - Reactive T0111-01(ADEL)			17/12/2019
Silica - Reactive	0.05	0.49 mg/L	
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	1.59 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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19/12/2019

19/12/2019

30/12/2019

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Analytical Results

353180-EPA - Tauwitchere **Sampling Point** 16/12/2019 3:40:00PM Sampled Date 17/12/2019 10:44:59AM **Sample Received Date** 31/12/2019 9:59:25AM Sample Analysis Completed 2019-008-6519

Sample ID **Status** Endorsed

Customer Collected Collection Type

Sample temperature	at time of receipt 9.5°C
--------------------	--------------------------

Dissolved Organic Carbon T0158-07(ADEL) Dissolved Organic Carbon 1 6.7 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 13.2 mg/L

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

Sample temperature at time of receipt 9.5°C

19/12/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 125 mg/L Bicarbonate 145 mg/L Carbonate 4 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 24200 µS/cm

Total Dissolved Solids (by EC) 1 15100 mg/L

pH T0010-01(ADEL) рΗ 8.4 pH units

Temperature at which pH is measured 23.0 °C

Turbidity T0018-01(ADEL)

Turbidity 0.1 22 NTU

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

Sample temperature at time of receipt 9.5°C

30/12/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

24 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 6 mg/L Volatile Suspended Solids 18 mg/L



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Analytical Results

Sampling Point 31513-EPA - Parnka Point Boat Ramp

 Sampled Date
 16/12/2019
 4:10:00PM

 Sample Received Date
 17/12/2019
 10:45:51AM

 Sample Analysis Completed
 31/12/2019
 10:21:45AM

 Sample ID
 2019-008-6529

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		
Chlorophyll a & b T0380-02(ADEL)			17/12/2019
Chlorophyll a	0.1	29.4 μg/L	
Chlorophyll b	0.1	3.68 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (
Chlorophyll a 8 Dhacamhytin a T0200 02	(ADEL)	Phaeophytins)	17/12/2019
Chlorophyll a & Phaeophytin a T0380-02 Chlorophyll a	(ADEL) 0.1	07.0	17/12/2019
Phaeophytin a	0.1	27.2 μg/L	
гнаеорнушта	0.1	5.13 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.5°C		
Ammonia as N T0100-01(ADEL)			30/12/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			17/12/2019
Chloride	4.0	47900 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			27/12/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)		•	17/12/2019
Nitrogen - Total		4.89 mg/L	
Phosphorus - Filterable Reactive as P T0	1108-01(ADFL)		27/12/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)	0.000	10.000 mg/L	23/12/2019
Phosphorus - Total To To 9-44 (ADEL)	0.005	0.204 mg/l	20/12/2010
,	0.003	0.201 mg/L	19/12/2019
Silica - Reactive T0111-01(ADEL)	0.05		19/12/2019
Silica - Reactive	0.05	0.52 mg/L	00/40/0040
TKN as N T0112-01(ADEL)			23/12/2019
TKN as Nitrogen	0.05	4.89 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

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

16/12/2019 4:10:00PM Sampled Date 17/12/2019 10:45:51AM Sample Received Date 31/12/2019 10:21:45AM Sample Analysis Completed

2019-008-6529 Sample ID **Status** Endorsed

Customer Collected Collection Type

Sample temperature	at time of receipt 9.5°C
--------------------	--------------------------

24/12/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 23.3 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 30.2 mg/L

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

Sample temperature at time of receipt 9.5°C

19/12/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 189 mg/L Bicarbonate 231 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

19/12/2019 pH T0010-01(ADEL)

8.1 pH units Temperature at which pH is measured 23.5 °C

19/12/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0 1 21 NTU

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

Sample temperature at time of receipt 9.5°C

Suspended Solids T0160-01(ADEL) 30/12/2019

Suspended Solids 1.0 28 mg/L

27/12/2019 Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 93200 mg/L

Volatile Suspended Solids T0160-01(ADEL)

1

4 mg/L Volatile Suspended Solids 1 24 mg/L

WORLD RECOGNISED
ACCREDITATION

Fixed Solids

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AWQC Signatories

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Andrew Ford - Technical Officer Chemistry

Kerrie Jooste - Supervisor Nutrients and Waste

Aji John - Technical Officer Chemistry

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Incidents

Sample ID	S.Point	Description	Sampled Date	Analysis (where Applicable)	Incident Description
2019-008-6532	300713	Tilley Swamp Drain D/S Northern Outlet	16/12/2019	Phosphorus - Filterable Reactive as P	Dependent results are within acceptable analytical uncertainty

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/
- 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.