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**DEW - Department of Environment and Water** 

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

07/04/2020

Dear Patrick

Please find attached the Final Analytical Report for

Customer Service Request: 143419-2020-CSR-2

**Account:** 143419

Project: AWQC-146319 DEW - Healthy Coorong Healthy Basin Phase 1 - Adhoc

AWQC Morella sampling - 19/20

This report has also been sent to: Frank Mangeruca Peter Metten

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



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**FINAL REPORT: 279739** 

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# **Report Information**

Project Name AWQC-146319

Customer DEW - Department of Environment and Water

**CSR\_ID** 143419-2020-CSR-2

# **Analytical Results**

 Sampling Point
 31525-EPA - Villa de Yumpa

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:59:40AM

 Sample Analysis Completed
 1/04/2020 5:40:49PM

 Sample ID
 2020-002-3816

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.8°C Chlorophyll a & Phaeophytin a T0380-02(ADEL)			17/03/2020
Chlorophyll a	0.1	46.9 μg/L	
Phaeophytin a	0.1	<0.1 µg/L	

Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt	8.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	90 μg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	71500 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	3.1 μg/L	
# Nitrate + Nitrite as NO3	2.3	13.7 μg/L	
# Nitrate as Nitrogen		1.59 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	1.5 μg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		6.69 mg/L	
Phosphorus - Filterable Reactive as P (A	ADEL)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	7.774 µg/L	
Phosphorus-Filterable Reactive as P	0.5	2.6 μg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.198 mg/L	
Silica - Reactive T0111-01(ADEL)			17/03/2020
Silica - Reactive	0.05	2.04 mg/L	
TKN as N T0112-01(ADEL)			26/03/2020
TKN as Nitrogen	0.05	6.69 mg/L	
		•	



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# **Analytical Results**

 Sampling Point
 31525-EPA - Villa de Yumpa

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:59:40AM

 Sample Analysis Completed
 1/04/2020 5:40:49PM

 Sample ID
 2020-002-3816

 Status
 Endorsed

Collection Type Customer Collected

Organic Chemistry	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	8°C		
Dissolved Organic Carbon T0158-07(ADE	EL)		20/03/2020
Dissolved Organic Carbon	1	28.9 mg/L	
Total Organic Carbon T0158-07(ADEL)			20/03/2020
Total Organic Carbon	1	37.5 mg/L	
Inorganic Chemistry - Physical	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	8°C		
Alkalinity Carbonate Bicarbonate and Hy	droxide T0101-01	(ADEL)	18/03/2020
Alkalinity as Calcium Carbonate		218 mg/L	
Bicarbonate		265 mg/L	
Carbonate		0 mg/L	
Hydroxide		0 mg/L	
pH T0010-01(ADEL)			18/03/2020
pH		7.8 pH units	
Temperature at which pH is measured		22.6 °C	
Turbidity T0018-01(ADEL)			17/03/2020
Turbidity	0.1	25 NTU	
Inorganic Chemistry - Waste Water	LOR	Result	Test Start Date
Sample temperature at time of receipt 8.	8°C		
Suspended Solids T0160-01(ADEL)	0 0		31/03/2020
Suspended Solids 10100-01(ADEE)	1.0	25 mg/L	
'		25 mg/L	27/03/2020
Total Dissolved Solids by Evaporation Total Dissolved Solids (by evaporation)	1 15-05(ADEL)	137000 mg/l	21705/2020
	-	137000 mg/L	31/03/2020
Volatile Suspended Solids T0160-01(ADE Fixed Solids	1 1	40	31/03/2020
		10 mg/L	
Volatile Suspended Solids	1	15 mg/L	



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# **Analytical Results**

 Sampling Point
 353180-EPA - Tauwitchere

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:58:48AM

 Sample Analysis Completed
 1/04/2020 9:39:51PM

 Sample ID
 2020-002-38:17

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt			_
Chlorophyll a & Phaeophytin a T0380-0	` '		17/03/2020
Chlorophyll a	0.1	31.4 μg/L	
Phaeophytin a	0.1	12.9 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt	8.8°C		04/04/0000
Ammonia as N T0100-01(ADEL)	0.005		01/04/2020
Ammonia as N	0.005	0.162 mg/L	47/00/0000
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	6230 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	24.4 μg/L	
# Nitrate + Nitrite as NO3	2.3	108 μg/L	
# Nitrate as Nitrogen		20.7 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	3.7 µg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		2.23 mg/L	
Phosphorus - Filterable Reactive as P (	ADEL)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	23.322 μg/L	
Phosphorus-Filterable Reactive as P	0.5	7.8 µg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.086 mg/L	
Silica - Reactive T0111-01(ADEL)			17/03/2020
Silica - Reactive	0.05	0.27 mg/L	
TKN as N T0112-01(ADEL)			26/03/2020
TKN as Nitrogen	0.05	2.21 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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20/03/2020

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18/03/2020

18/03/2020

18/03/2020

31/03/2020

27/03/2020

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## **Analytical Results**

 Sampling Point
 353180-EPA - Tauwitchere

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:58:48AM

 Sample Analysis Completed
 1/04/2020 9:39:51PM

 Sample ID
 2020-002-3817

 Status
 Endorsed

Collection Type Customer Collected

<b>D</b> : 1 1	•	<u> </u>	T0450	0-/4 DEL \
Dissolved	Organic	Carbon	10158	-0/(ADEL)

Dissolved Organic Carbon 1 7.9 mg/L

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

Total Organic Carbon 1 17.1 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

# Sample temperature at time of receipt 8.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADE	ĒL)
Alkalinity as Calcium Carbonate	120 mg/L

Bicarbonate 146 mg/L Carbonate 0 mg/L

Hydroxide 0 mg/L

pH T0010-01(ADEL)
pH 7.6 pH units

Temperature at which pH is measured 22.6 °C

Turbidity T0018-01(ADEL)
Turbidity 0.1 34 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 8.8°C Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 43 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 10600 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 20 mg/L

Volatile Suspended Solids 1 23 mg/L



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# **Analytical Results**

 Sampling Point
 31523-EPA - Long Point

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:58:43AM

 Sample Analysis Completed
 1/04/2020 5:40:49PM

 Sample ID
 2020-002-3818

 Status
 Endorsed

 Collection Type
 Customer Collected

LOR	Result	Test Start Date
•		17/03/2020
0.1	5.24 µa/L	,55,2525
0.1	1.70 μg/L	
	receipt 8.8°C F0380-02(ADEL)  0.1	receipt 8.8°C Γ0380-02(ADEL) 0.1 5.24 μg/L

Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	8.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	22 μg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	29800 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	11.5 μg/L	
# Nitrate + Nitrite as NO3	2.3	50.9 μg/L	
# Nitrate as Nitrogen		8.74 µg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.8 µg/L	
Nitrogen - Total TMZ-M06(ADEL)		. •	17/03/2020
Nitrogen - Total		2.76 mg/L	
Phosphorus - Filterable Reactive as P (A	(DEL)	5	25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	12.857 μg/L	
Phosphorus-Filterable Reactive as P	0.5	4.3 μg/L	
Phosphorus - Total T0109-44(ADEL)		13	26/03/2020
Phosphorus - Total	0.005	0.075 mg/L	
Silica - Reactive T0111-01(ADEL)		5.5.15 <b>g</b> , <u></u>	17/03/2020
Silica - Reactive	0.05	0.77 mg/L	
TKN as N T0112-01(ADEL)		5, mg, E	26/03/2020
TKN as Nitrogen	0.05	2.75 mg/L	
Title as reliaged	0.03	2.75 mg/L	

Result

LOR

Sample temperature at time of receipt 8.8°C



**Organic Chemistry** 

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

20/03/2020

18/03/2020

18/03/2020

31/03/2020

27/03/2020

31/03/2020

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## **Analytical Results**

**Sampling Point** 31523-EPA - Long Point 16/03/2020 4:59:00AM **Sampled Date** 17/03/2020 11:58:43AM Sample Received Date 1/04/2020 5:40:49PM Sample Analysis Completed 2020-002-3818 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

20/03/2020 Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 13.0 mg/L

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

Total Organic Carbon 13.7 mg/L 1

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

# Sample temperature at time of receipt 8.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide 10101-01(ADI	EL)
Alkalinity as Calcium Carbonate	170 mg/L
D. I. I	

Bicarbonate 208 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

18/03/2020 pH T0010-01(ADEL)

8.1 pH units Temperature at which pH is measured 23.4 °C

**Turbidity T0018-01(ADEL)** Turbidity 0.1 5.6 NTU

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

Sample temperature at time of receipt 8.8°C

Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 8 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 52300 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 5 mg/L

Volatile Suspended Solids 1 3 mg/L



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# **Analytical Results**

 Sampling Point
 31526-EPA - Nth Jack Point

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:59:30AM

 Sample Analysis Completed
 1/04/2020 5:40:49PM

 Sample ID
 2020-002-3819

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	8.8°C		
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)		17/03/2020
Chlorophyll a	0.1	48.3 μg/L	
Phaeophytin a	0.1	12.7 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	8.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	79 μg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	66100 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	3.1 μg/L	
# Nitrate + Nitrite as NO3	2.3	13.7 μg/L	
# Nitrate as Nitrogen		0.385 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.7 μg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		6.61 mg/L	
Phosphorus - Filterable Reactive as P (A	(DEL)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	8.97 µg/L	
Phosphorus-Filterable Reactive as P	0.5	3.0 µg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.139 mg/L	
Silica - Reactive T0111-01(ADEL)		-	17/03/2020
Silica - Reactive	0.05	2.04 mg/L	
TKN as N T0112-01(ADEL)		Č	26/03/2020
TKN as Nitrogen	0.05	6.61 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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20/03/2020

18/03/2020

17/03/2020

27/03/2020

31/03/2020

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## **Analytical Results**

 Sampling Point
 31526-EPA - Nth Jack Point

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:59:30AM

 Sample Analysis Completed
 1/04/2020 5:40:49PM

 Sample ID
 2020-002-3819

 Status
 Endorsed

Collection Type Customer Collected

Dissolved Organic Carbon T0158-07(ADEL) 20/03/2020

Dissolved Organic Carbon 1 28.4 mg/L

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

Total Organic Carbon 1 36.7 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

# Sample temperature at time of receipt 8.8°C

Alkalinity Carbonate Bicarbonate and Hydrox	ide T0101-01(ADEL)	
Alkalinity as Calcium Carbonate	215 mg/L	

 Bicarbonate
 262 mg/L

 Carbonate
 0 mg/L

 Hydroxide
 0 mg/L

pH T0010-01(ADEL) 18/03/2020

pH 7.9 pH units
Temperature at which pH is measured 22.6 °C

Turbidity T0018-01(ADEL)

Turbidity 0.1 30 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 8.8°C
Suspended Solids T0160-01(ADEL)

 Suspended Solids T0160-01(ADEL)
 31/03/2020

 Suspended Solids
 1.0
 33 mg/L

Suspended Solids 1.0 33 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation)

1 129000 mg/L

Total Dissolved Solids (by evaporation) 1 129000 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 3 mg/L

Volatile Suspended Solids 1 30 mg/L



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# **Analytical Results**

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:59:49AM

 Sample Analysis Completed
 1/04/2020 5:40:50PM

 Sample ID
 2020-002-3820

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 8			
Chlorophyll a & Phaeophytin a T0380-02	•		17/03/2020
Chlorophyll a	0.1	65.8 μg/L	
Phaeophytin a	0.1	12.7 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	3.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	83 µg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	65500 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	5.2 μg/L	
# Nitrate + Nitrite as NO3	2.3	23.0 μg/L	
# Nitrate as Nitrogen		4.06 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	1.1 µg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		6.13 mg/L	
Phosphorus - Filterable Reactive as P (A	ADFL)	Ğ	25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	5.98 μg/L	
Phosphorus-Filterable Reactive as P	0.5	2.0 µg/L	
Phosphorus - Total T0109-44(ADEL)		-10 149/-	26/03/2020
Phosphorus - Total	0.005	0.156 mg/L	
Silica - Reactive T0111-01(ADEL)		0.100 mg/L	17/03/2020
Silica - Reactive	0.05	5.01 mg/L	
TKN as N T0112-01(ADEL)	0.00	3.01 mg/L	26/03/2020
TKN as N 10112-01(ADEL) TKN as Nitrogen	0.05	6.12 ma/l	20,00/2020
That as tradogon	0.00	6.12 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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20/03/2020

17/03/2020

31/03/2020

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## **Analytical Results**

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 16/03/2020
 4:59:00AM

 Sample Received Date
 17/03/2020
 11:59:49AM

 Sample Analysis Completed
 1/04/2020
 5:40:50PM

 Sample ID
 2020-002-3820

 Status
 Endorsed

Collection Type Customer Collected

Dissolved Organic Carbon T0158-07(ADEL) 20/03/2020

Dissolved Organic Carbon 1 27.2 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 35.7 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

# Sample temperature at time of receipt 8.8°C

<b>Alkalinity Carbonate</b>	Bicarbonate and Hydroxide	T0101-01(ADEL)	18/03/2020
-----------------------------	---------------------------	----------------	------------

Alkalinity as Calcium Carbonate 223 mg/L
Bicarbonate 272 mg/L
Carbonate 0 mg/L
Hydroxide 0 mg/L

pH T0010-01(ADEL) 18/03/2020

pH 7.9 pH units Temperature at which pH is measured 22.7  $^{\circ}$ 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 8.8°C

Suspended Solids T0160-01(ADEL)
Suspended Solids 1.0 30 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL) 27/03/2020

Total Dissolved Solids (by evaporation) 1 128000 mg/L

Volatile Suspended Solids T0160-01(ADEL)

31/03/2020

Fixed Solids 1 7 mg/L

Volatile Suspended Solids 1 23 mg/L



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# **Analytical Results**

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 16/03/2020
 4:59:00AM

 Sample Received Date
 17/03/2020
 11:59:11AM

 Sample Analysis Completed
 1/04/2020
 9:39:52PM

 Sample ID
 2020-002-3821

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt a			_
Chlorophyll a & Phaeophytin a T0380-02	2(ADEL)		17/03/2020
Chlorophyll a	0.1	29.4 μg/L	
Phaeophytin a	0.1	4.46 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt a	8.8°C		
Ammonia as N T0100-01(ADEL)			01/04/2020
Ammonia as N	0.005	0.062 mg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	77100 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	8.9 µg/L	
# Nitrate + Nitrite as NO3	2.3	39.4 μg/L	
# Nitrate as Nitrogen		6.09 µg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.8 µg/L	
Nitrogen - Total TMZ-M06(ADEL)		10	17/03/2020
Nitrogen - Total		8.44 mg/L	
Phosphorus - Filterable Reactive as P (A	ADEL)	5.11 mg/L	25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	12.857 µg/L	
Phosphorus-Filterable Reactive as P	0.5	4.3 µg/L	
Phosphorus - Total T0109-44(ADEL)		4.0 μg/L	26/03/2020
Phosphorus - Total	0.005	0.187 mg/L	
•	0.000	0.107 Hig/L	17/03/2020
Silica - Reactive T0111-01(ADEL) Silica - Reactive	0.05	7.83 mg/L	11700/2020
	0.00	7.03 HIg/L	26/03/2020
TKN as N T0112-01(ADEL)	0.05	0.42	20/03/2020
TKN as Nitrogen	0.05	8.43 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



20/03/2020

17/03/2020

27/03/2020

31/03/2020

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# **Analytical Results**

**Status** 

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

16/03/2020 4:59:00AM Sampled Date 17/03/2020 11:59:11AM Sample Received Date 1/04/2020 9:39:52PM Sample Analysis Completed 2020-002-3821 Sample ID

**Customer Collected Collection Type** 

20/03/2020 **Dissolved Organic Carbon T0158-07(ADEL)** 

Endorsed

Dissolved Organic Carbon 1 31.4 mg/L

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

Total Organic Carbon 1 38.3 mg/L

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

# Sample temperature at time of receipt 8.8°C

18/03/2020 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 221 mg/L Bicarbonate 269 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

18/03/2020 pH T0010-01(ADEL)

7.6 pH units Temperature at which pH is measured 22.7 °C

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 26 NTU

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

Sample temperature at time of receipt 8.8°C 31/03/2020 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 47 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 157000 mg/L Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 20 mg/L

Volatile Suspended Solids 1 27 mg/L



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# **Analytical Results**

 Sampling Point
 31515-EPA - Snipe Point

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:59:45AM

 Sample Analysis Completed
 1/04/2020 5:40:50PM

 Sample ID
 2020-002-3822

 Status
 Endorsed

Collection Type Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	.8°C		
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)		17/03/2020
Chlorophyll a	0.1	60.5 μg/L	
Phaeophytin a	0.1	18.4 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	.8°C		05/00/0000
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	81 µg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	67000 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	4.0 μg/L	
# Nitrate + Nitrite as NO3	2.3	17.7 μg/L	
# Nitrate as Nitrogen		2.61 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	1.4 µg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		6.12 mg/L	
Phosphorus - Filterable Reactive as P (A	DEL)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	8.671 μg/L	
Phosphorus-Filterable Reactive as P	0.5	2.9 µg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.189 mg/L	
Silica - Reactive T0111-01(ADEL)			17/03/2020
Silica - Reactive	0.05	4.88 mg/L	
TKN as N T0112-01(ADEL)			26/03/2020
TKN as Nitrogen	0.05	6.12 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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20/03/2020

18/03/2020

18/03/2020

17/03/2020

27/03/2020

31/03/2020

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## **Analytical Results**

**Sampling Point** 31515-EPA - Snipe Point 16/03/2020 4:59:00AM **Sampled Date** 17/03/2020 11:59:45AM Sample Received Date 1/04/2020 5:40:50PM Sample Analysis Completed 2020-002-3822 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

20/03/2020 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 28.4 mg/L

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

Total Organic Carbon 1 35.4 mg/L

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

# Sample temperature at time of receipt 8.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(Al	)EL)
Alkalinity as Calcium Carbonate	222 mg/L

Bicarbonate 271 mg/L Carbonate 0 mg/L

Hydroxide 0 mg/L

pH T0010-01(ADEL) 7.9 pH units

Temperature at which pH is measured 22.7 °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 8.8°C

31/03/2020 Suspended Solids T0160-01(ADEL) 1.0

Suspended Solids 20 mg/L Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1

129000 mg/L Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 15 mg/L

Volatile Suspended Solids 1 5 mg/L



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# **Analytical Results**

**Sampling Point** 31516-EPA - Seagull Island 16/03/2020 4:59:00AM **Sampled Date** 17/03/2020 11:59:16AM Sample Received Date 1/04/2020 5:40:49PM Sample Analysis Completed 2020-002-3823 Sample ID Status Endorsed **Customer Collected Collection Type** 

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	3.8°C		
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)		17/03/2020
Chlorophyll a	0.1	57.0 μg/L	
Phaeophytin a	0.1	15.8 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	3.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	69 µg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	64200 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	2.3 μg/L	
# Nitrate + Nitrite as NO3	2.3	10.2 μg/L	
# Nitrate as Nitrogen		0.150 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.2 µg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		6.20 mg/L	
Phosphorus - Filterable Reactive as P (A	ADEL)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	8.97 µg/L	
Phosphorus-Filterable Reactive as P	0.5	3.0 μg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.164 mg/L	
Silica - Reactive T0111-01(ADEL)			17/03/2020
Silica - Reactive	0.05	4.05 mg/L	
TKN as N T0112-01(ADEL)			26/03/2020
TKN as Nitrogen	0.05	6.20 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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17/03/2020

31/03/2020

27/03/2020

31/03/2020

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# **Analytical Results**

31516-EPA - Seagull Island **Sampling Point** 16/03/2020 4:59:00AM Sampled Date 17/03/2020 11:59:16AM **Sample Received Date** 1/04/2020 5:40:49PM Sample Analysis Completed 2020-002-3823 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

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

Dissolved Organic Carbon 1 27.5 mg/L

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

Total Organic Carbon 1 35.1 mg/L

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

# Sample temperature at time of receipt 8.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL) Alkalinity as Calcium Carbonate 220 mg/L

Bicarbonate 268 mg/L Carbonate 0 mg/L

Hydroxide 0 mg/L

pH T0010-01(ADEL) 7.9 pH units

Temperature at which pH is measured 22.6 °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 8.8°C Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 20 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 128000 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 2 mg/L

Volatile Suspended Solids 1 18 mg/L



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# **Analytical Results**

Sampling Point 31517-EPA - 1.8km West Salt Creek

 Sampled Date
 16/03/2020
 4:59:00AM

 Sample Received Date
 17/03/2020
 11:59:35AM

 Sample Analysis Completed
 1/04/2020
 5:40:49PM

 Sample ID
 2020-002-3824

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt a			_
Chlorophyll a & Phaeophytin a T0380-02	2(ADEL)		17/03/2020
Chlorophyll a	0.1	73.9 µg/L	
Phaeophytin a	0.1	17.1 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt a	8.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	82 µg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	68800 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	3.2 µg/L	
# Nitrate + Nitrite as NO3	2.3	14.2 µg/L	
# Nitrate as Nitrogen		0.990 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.2 µg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		6.18 mg/L	
Phosphorus - Filterable Reactive as P (A	ADEL)	, and the second	25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	7.475 µg/L	
Phosphorus-Filterable Reactive as P	0.5	2.5 µg/L	
Phosphorus - Total T0109-44(ADEL)		13	26/03/2020
Phosphorus - Total	0.005	0.157 mg/L	
Silica - Reactive T0111-01(ADEL)			17/03/2020
Silica - Reactive	0.05	4.97 mg/L	
TKN as N T0112-01(ADEL)			26/03/2020
TKN as Nitrogen	0.05	6.18 mg/L	
	0.00	5.10 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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## **Analytical Results**

Sampling Point 31517-EPA - 1.8km West Salt Creek

 Sampled Date
 16/03/2020
 4:59:00AM

 Sample Received Date
 17/03/2020
 11:59:35AM

 Sample Analysis Completed
 1/04/2020
 5:40:49PM

 Sample ID
 2020-002-3824

 Status
 Endorsed

Collection Type Customer Collected

Dissolved Organic Carbon T0158-07(ADEL) 20/03/2020

Dissolved Organic Carbon 1 26.6 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 35.9 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

# Sample temperature at time of receipt 8.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 225 mg/L
Bicarbonate 275 mg/L
Carbonate 0 mg/L
Hydroxide 0 mg/L

pH T0010-01(ADEL) 18/03/2020

pH 7.9 pH units Temperature at which pH is measured 22.6  $^{\circ}$ 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 8.8°C
Suspended Solids T0160-01(ADEL)
31/03/2020

Suspended Solids 1.0 14 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL) 27/03/2020

Total Dissolved Solids (by evaporation) 1 128000 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 1 14 mg/L



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# **Analytical Results**

Sampling Point 31513-EPA - Parnka Point Boat Ramp

 Sampled Date
 16/03/2020
 4:59:00AM

 Sample Received Date
 17/03/2020
 11:59:02AM

 Sample Analysis Completed
 1/04/2020
 5:40:49PM

 Sample ID
 2020-002-3825

 Status
 Endorsed

Collection Type Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 8			
Chlorophyll a & Phaeophytin a T0380-02			17/03/2020
Chlorophyll a	0.1	52.7 μg/L	
Phaeophytin a	0.1	20.1 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	3.8°C		05/00/0000
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	103 μg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	67400 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	4.5 μg/L	
# Nitrate + Nitrite as NO3	2.3	19.9 μg/L	
# Nitrate as Nitrogen		1.97 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.5 µg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		6.73 mg/L	
Phosphorus - Filterable Reactive as P (A	ADEL)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	10.465 μg/L	
Phosphorus-Filterable Reactive as P	0.5	3.5 µg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.299 mg/L	
Silica - Reactive T0111-01(ADEL)		<del>-</del>	17/03/2020
Silica - Reactive	0.05	2.51 mg/L	
TKN as N T0112-01(ADEL)		•	26/03/2020
TKN as Nitrogen	0.05	6.73 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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31/03/2020

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## **Analytical Results**

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

16/03/2020 4:59:00AM Sampled Date 17/03/2020 11:59:02AM Sample Received Date 1/04/2020 5:40:49PM Sample Analysis Completed 2020-002-3825 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

20/03/2020 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 30.1 mg/L

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

Total Organic Carbon 1 38.3 mg/L

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

# Sample temperature at time of receipt 8.8°C

18/03/2020 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 215 mg/L Bicarbonate 263 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

18/03/2020 pH T0010-01(ADEL)

7.8 pH units Temperature at which pH is measured 22.3 °C

**Turbidity T0018-01(ADEL)** Turbidity 0.1 36 NTU

**Inorganic Chemistry - Waste Water** LOR Result **Test Start Date** Sample temperature at time of receipt 8.8°C

Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 63 mg/L

27/03/2020 Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 133000 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1

26 mg/L Volatile Suspended Solids 1 37 mg/L



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# **Analytical Results**

 Sampling Point
 31514-EPA - Stoney Well

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:59:25AM

 Sample Analysis Completed
 1/04/2020 5:40:50PM

 Sample ID
 2020-002-3826

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt	8.8°C		
Chlorophyll a & Phaeophytin a T0380-02	2(ADEL)		17/03/2020
Chlorophyll a	0.1	44.2 μg/L	
Phaeophytin a	0.1	13.1 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt	8.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	89 µg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	70800 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	4.3 μg/L	
# Nitrate + Nitrite as NO3	2.3	19.0 μg/L	
# Nitrate as Nitrogen		2.08 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.2 μg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		6.60 mg/L	
Phosphorus - Filterable Reactive as P (A	ADEL)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	13.455 μg/L	
Phosphorus-Filterable Reactive as P	0.5	4.5 μg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.172 mg/L	
Silica - Reactive T0111-01(ADEL)		•	17/03/2020
Silica - Reactive	0.05	1.56 mg/L	
TKN as N T0112-01(ADEL)		-	26/03/2020
TKN as Nitrogen	0.05	6.60 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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31/03/2020

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## **Analytical Results**

 Sampling Point
 31514-EPA - Stoney Well

 Sampled Date
 16/03/2020 4:59:00AM

 Sample Received Date
 17/03/2020 11:59:25AM

 Sample Analysis Completed
 1/04/2020 5:40:50PM

 Sample ID
 2020-002-3826

 Status
 Endorsed

Collection Type Customer Collected

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 29.0 mg/L

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

Total Organic Carbon 1 36.8 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

## Sample temperature at time of receipt 8.8°C

# Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL) Alkalinity as Calcium Carbonate 219 mg/L

 Bicarbonate
 267 mg/L

 Carbonate
 0 mg/L

 Hydroxide
 0 mg/L

pH T0010-01(ADEL) 18/03/2020

pH 7.9 pH units
Temperature at which pH is measured 22.6 °C

Turbidity T0018-01(ADEL)
Turbidity 0.1 28 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 8.8°C
Suspended Solids T0160-01(ADEL)
31/03/2020

Suspended Solids 1.0 42 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL) 27/03/2020

Total Dissolved Solids (by evaporation) 1 130000 mg/L

Volatile Suspended Solids T0160-01(ADEL)
Fixed Solids 1 12 mg/L

 Fixed Solids
 1
 12 mg/L

 Volatile Suspended Solids
 1
 30 mg/L



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# **Analytical Results**

**Collection Type** 

31512-EPA - McGrath Flat North **Sampling Point** 16/03/2020 4:59:00AM **Sampled Date** 17/03/2020 11:59:07AM **Sample Received Date** 1/04/2020 9:39:51PM Sample Analysis Completed 2020-002-3827 Sample ID Endorsed Status

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt			
Chlorophyll a & Phaeophytin a T0380-02	2(ADEL)		17/03/2020
Chlorophyll a	0.1	43.1 μg/L	
Phaeophytin a	0.1	10.1 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt a	8.8°C		
Ammonia as N T0100-01(ADEL)			01/04/2020
Ammonia as N	0.005	0.021 mg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	65700 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	4.4 μg/L	
# Nitrate + Nitrite as NO3	2.3	19.5 µg/L	
# Nitrate as Nitrogen		2.10 µg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.3 µg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		7.04 mg/L	
Phosphorus - Filterable Reactive as P (A	ADFI)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	13.156 µg/L	
Phosphorus-Filterable Reactive as P	0.5	4.4 µg/L	
Phosphorus - Total T0109-44(ADEL)		kg/-	26/03/2020
Phosphorus - Total	0.005	0.258 mg/L	
Silica - Reactive T0111-01(ADEL)	0.000	0.230 mg/L	17/03/2020
Silica - Reactive 10111-01(ADEL)	0.05	2.47	17700/2020
	0.00	2.47 mg/L	26/03/2020
TKN as N T0112-01(ADEL)	0.05	7.04	20/03/2020
TKN as Nitrogen	0.05	7.04 mg/L	

Result

**Customer Collected** 

Sample temperature at time of receipt 8.8°C



**Organic Chemistry** 

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

**Test Start Date** 

LOR

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20/03/2020

31/03/2020

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# **Analytical Results**

31512-EPA - McGrath Flat North **Sampling Point** 16/03/2020 4:59:00AM **Sampled Date** 17/03/2020 11:59:07AM **Sample Received Date** 1/04/2020 9:39:51PM Sample Analysis Completed 2020-002-3827 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

20/03/2020 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 29.4 mg/L

**Total Organic Carbon T0158-07(ADEL)** Total Organic Carbon 1 37.9 mg/L

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

# Sample temperature at time of receipt 8.8°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)		
Alkalinity as Calcium Carbonate	224 mg/L	

Bicarbonate 274 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

18/03/2020 pH T0010-01(ADEL)

7.8 pH units Temperature at which pH is measured 22.6 °C

17/03/2020 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 28 NTU

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

Sample temperature at time of receipt 8.8°C 31/03/2020 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 33 mg/L

27/03/2020 Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 129000 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 3 mg/L

Volatile Suspended Solids 1 30 mg/L



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# **Analytical Results**

Sampling Point 315191-EPA - Morella Creek @ guage

 Sampled Date
 16/03/2020
 4:59:00AM

 Sample Received Date
 17/03/2020
 11:59:20AM

 Sample Analysis Completed
 1/04/2020
 9:40:21PM

 Sample ID
 2020-002-38:29

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt a			_
Chlorophyll a & Phaeophytin a T0380-02	2(ADEL)		17/03/2020
Chlorophyll a	0.1	6.11 μg/L	
Phaeophytin a	0.1	2.95 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt a	8.8°C		
Ammonia as N T0100-01(ADEL)			01/04/2020
Ammonia as N	0.005	0.548 mg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	8860 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	12.6 µg/L	
# Nitrate + Nitrite as NO3	2.3	55.8 μg/L	
# Nitrate as Nitrogen		9.99 µg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.6 µg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		2.97 mg/L	
Phosphorus - Filterable Reactive as P (A	ADEL)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	19.136 μg/L	
Phosphorus-Filterable Reactive as P	0.5	6.4 µg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.281 mg/L	
Silica - Reactive T0111-01(ADEL)		Ç	17/03/2020
Silica - Reactive	0.05	0.71 mg/L	
TKN as N T0112-01(ADEL)		•	26/03/2020
TKN as Nitrogen	0.05	2.96 mg/L	
0			
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



20/03/2020

17/03/2020

31/03/2020

27/03/2020

31/03/2020

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# **Analytical Results**

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

16/03/2020 4:59:00AM Sampled Date 17/03/2020 11:59:20AM Sample Received Date 1/04/2020 9:40:21PM Sample Analysis Completed 2020-002-3829 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

20/03/2020 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 24.1 mg/L

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

Total Organic Carbon 1 26.9 mg/L

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

# Sample temperature at time of receipt 8.8°C

18/03/2020 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 271 mg/L Bicarbonate 77 mg/L Carbonate 125 mg/L Hydroxide 0 mg/L

18/03/2020 pH T0010-01(ADEL)

9.8 pH units Temperature at which pH is measured

22.8 °C

**Turbidity T0018-01(ADEL)** Turbidity 0.1 2.6 NTU

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

Sample temperature at time of receipt 8.8°C

Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

<1 mg/L Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 16000 mg/L

Volatile Suspended Solids T0160-01(ADEL) Fixed Solids 1

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



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# **Analytical Results**

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

16/03/2020 4:59:00AM **Sampled Date** 17/03/2020 11:58:57AM Sample Received Date 2/04/2020 12:44:43PM Sample Analysis Completed 2020-002-3830 Sample ID Endorsed Status

**Customer Collected Collection Type** 

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	3.8°C		
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)		17/03/2020
Chlorophyll a	0.1	1.80 μg/L	
Phaeophytin a	0.1	0.53 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	3.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	44 µg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	3280 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	29.0 μg/L	
# Nitrate + Nitrite as NO3	2.3	128 μg/L	
# Nitrate as Nitrogen		28.5 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	0.5 μg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		0.77 mg/L	
Phosphorus - Filterable Reactive as P (A	ADEL)		25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	13.455 μg/L	
Phosphorus-Filterable Reactive as P	0.5	4.5 μg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.008 mg/L	
Silica - Reactive T0111-01(ADEL)			17/03/2020
Silica - Reactive	0.05	11.8 mg/L	
TKN as N T0112-01(ADEL)			26/03/2020
TKN as Nitrogen	0.05	0.74 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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20/03/2020

31/03/2020

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## **Analytical Results**

Total Organic Carbon

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

1

16/03/2020 4:59:00AM **Sampled Date** 17/03/2020 11:58:57AM **Sample Received Date** 2/04/2020 12:44:43PM Sample Analysis Completed 2020-002-3830 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

20/03/2020 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 7.2 mg/L

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

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

7.3 mg/L

# Sample temperature at time of receipt 8.8°C

Cample temperature at time of receipt 0.0 0		
Alkalinity Carbonate Bicarbonate and Hydroxid	e T0101-01(ADEL)	18/03/2020
Alkalinity as Calcium Carbonate	404 ma/l	

404 mg/L Bicarbonate 459 mg/L Carbonate 16 mg/L Hydroxide 0 mg/L

18/03/2020 pH T0010-01(ADEL)

8.5 pH units Temperature at which pH is measured 22 4 °C

18/03/2020 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 7.5 NTU

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

Sample temperature at time of receipt 8.8°C 31/03/2020 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 <1 mg/L

27/03/2020 Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 5400 mg/L

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

Volatile Suspended Solids 1 <1 mg/L



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# **Analytical Results**

Sampling Point 300711-Tilley Swamp Drain U/S Morella

 Sampled Date
 16/03/2020
 4:59:00AM

 Sample Received Date
 17/03/2020
 11:58:52AM

 Sample Analysis Completed
 1/04/2020
 5:40:50PM

 Sample ID
 2020-002-3831

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt a			
Chlorophyll a & Phaeophytin a T0380-02	2(ADEL)		17/03/2020
Chlorophyll a	0.1	0.81 μg/L	
Phaeophytin a	0.1	2.25 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt a	8.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	59 μg/L	
Chloride T0104-02(ADEL)			17/03/2020
Chloride	4.0	3330 mg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	10.2 μg/L	
# Nitrate + Nitrite as NO3	2.3	45.2 μg/L	
# Nitrate as Nitrogen		9.00 µg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	1.2 μg/L	
Nitrogen - Total TMZ-M06(ADEL)		10	17/03/2020
Nitrogen - Total		0.93 mg/L	
Phosphorus - Filterable Reactive as P (A	ADEL)	0.00 mg/L	25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	15.548 µg/L	
Phosphorus-Filterable Reactive as P	0.5	5.2 μg/L	
Phosphorus - Total T0109-44(ADEL)		0.2 μg/L	26/03/2020
Phosphorus - Total 10109-44(ADEL)	0.005	0.007 mg/L	26/26/2625
•	0.000	0.007 Hig/L	17/03/2020
Silica - Reactive T0111-01(ADEL) Silica - Reactive	0.05	10.7 mall	17703/2020
	0.03	10.7 mg/L	26/03/2020
TKN as N T0112-01(ADEL)	0.05	0.00	20/03/2020
TKN as Nitrogen	0.05	0.92 mg/L	
Organic Chemistry	LOR	Result	Test Start Date

Sample temperature at time of receipt 8.8°C



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20/03/2020

18/03/2020

17/03/2020

31/03/2020

27/03/2020

31/03/2020

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## **Analytical Results**

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

16/03/2020 4:59:00AM **Sampled Date** 17/03/2020 11:58:52AM **Sample Received Date** 1/04/2020 5:40:50PM Sample Analysis Completed 2020-002-3831 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

Dissolved Organic Carbon T0158-07(ADEL)	20/03/2020

Dissolved Organic Carbon 1 7.6 mg/L

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

Total Organic Carbon 7.8 mg/L

Inorganic Chemistry - Physical LO	R Result	Test Start Date
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#### Sample temperature at time of receipt 8.8°C Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL) Alkalinity as Calcium Carbonate 400 mg/L

Bicarbonate 455 mg/L Carbonate 17 mg/L Hydroxide

0 mg/L 18/03/2020 pH T0010-01(ADEL)

8.5 pH units Temperature at which pH is measured 22.7 °C

**Turbidity T0018-01(ADEL)** Turbidity 0.1 2.3 NTU

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

Sample temperature at time of receipt 8.8°C Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 3 mg/L

Total Dissolved Solids by Evaporation T015-05(ADEL)

Total Dissolved Solids (by evaporation) 1 5360 mg/L

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

Volatile Suspended Solids 1 2 mg/L



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# **Analytical Results**

Sampling Point 300712-Tilley Swamp Watercourse Outlet Channel

 Sampled Date
 16/03/2020
 4:59:00AM

 Sample Received Date
 17/03/2020
 11:59:54AM

 Sample Analysis Completed
 1/04/2020
 5:40:49PM

 Sample ID
 2020-002-3832

 Status
 Endorsed

Collection Type Customer Collected

Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 8	2.8°C		
Ammonia as N (ADEL)			25/03/2020
# Ammonia as N	1	93 μg/L	
Nitrate + Nitrite as N (ADEL)			25/03/2020
# Nitrate + Nitrite as N	0.5	2.3 μg/L	
# Nitrate + Nitrite as NO3	2.3	10.2 μg/L	
# Nitrate as Nitrogen		0.260 μg/L	
Nitrite as N (ADEL)			25/03/2020
# Nitrite as N	0.5	2.0 μg/L	
Nitrogen - Total TMZ-M06(ADEL)			17/03/2020
Nitrogen - Total		0.74 mg/L	
Phosphorus - Filterable Reactive as P (A	DEL)	-	25/03/2020
# Phosphorus -Filterable Reactive as PO4	1.5	3.887 µg/L	
Phosphorus-Filterable Reactive as P	0.5	1.3 μg/L	
Phosphorus - Total T0109-44(ADEL)			26/03/2020
Phosphorus - Total	0.005	0.006 mg/L	
TKN as N T0112-01(ADEL)		<b>G</b>	26/03/2020
TKN as Nitrogen	0.05	0.74 mg/L	
Inorganic Chemistry - Waste Water	LOR	Result	Test Start Date
Sample temperature at time of receipt 8 Total Dissolved Solids by Evaporation T			27/03/2020
Total Dissolved Solids (by evaporation)	1	135000 mg/L	



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## **AWQC Signatories**

Mira Banasiak - Supervisor Bacteriology

Dzung Bui - Supervisor Metals and Physical

Thuy Diep - Technical Officer Chemistry

David Evans - Technical Officer Chemistry

Andrew Ford - Technical Officer Chemistry

Kerrie Jooste - Supervisor Nutrients and Waste

Aji John - Technical Officer Chemistry

John Martini - Method Development Coordinator

Dean Newman - Algal Specialist

Gayle Polley - Snr Technical Officer



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## **Analytical Method**

Analytical Method Code	Description	Reference Method	
T0010-01	Determination of pH	AP4500HB	
T0018-01	Turbidity - Nephelometric Measurement	APAWWA-WEF	
T0100-01	Ammonia/Ammonium - Automated Flow Colorimetry	AP4500NH3G	
<sup>-</sup> 0101-01	Alkalinity - Automated Acidimetric Titration	AP2320B	
0104-02	Chloride - Discrete Analyser	AP4500CLE	
<sup>-</sup> 0109-44	Phosphorous -total Kjeldahl for seawater by automated flow colorimetry	AP4500PF	
0111-01	Silica by automated fow colorimetry	AP4500SI02	
0112-01	Nitrogen- Total Kjeldahl by discrete analyser	AP4500NORGA	
015-05	Total Dissolved Solids by Evaporation	AP2540C	
0158-07	Total and Dissolved Organic Carbon (Ol Analytical)	SM5310C	
0160-01	Suspended Solids 103C to 105C	AP2540DE	
0160-01	Suspended Solids 103C to 105C	AP4500	
0380-02	Chlorophyll a & b and phaeophytin	ISO10260	
MZ-M06	Derived Results and Data Checks	AP4500NORGA	

#### **Laboratory Information**

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