Annual Water Quality Report

June 2018 – July 2019

Watercare
An Auckland Council Organisation

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Introduction

This report gives an overview of the compliance monitoring data collected from Watercare's Distribution Network Grading Zones and the Water Treatment Plants (WTPs). This data is collected to ensure that Watercare remains compliant with the Drinking-water Standards for New Zealand 2005 (Revised 2018) (the DWSNZ).

The Maximum Acceptable Value (MAV) is the concentration of a microbial or chemical constituent below which the presence of the determinand does not result in any significant risk to the health of the consumer over a lifetime consumption of that water. Guideline Values (GVs) are for parameters which have no effect on human health but can contribute to aesthetic complaints if they are exceeded.

Where the MAV for a determinand was exceeded, Watercare responded in accordance with the DWSNZ, including notifying the Auckland Regional Public Health Service (ARPHS) of the event and conducting a full investigation.

Watercare's water supply is currently graded Aa*. This was determined by a Ministry of Health assessment of Watercare's compliance with the criteria set out in the Public Health Grading of Water Supplies document and the DWSNZ.

Reporting of total coliform results under the 2018 revision of the DWSNZ came into effect on 1 March 2019. However the DWSNZ do not give a GV or an MAV for this determinand. As such, only total coliform data collected since 1 March 2019 has been included in this report, as required to ensure compliance with the DWSNZ.

Low level, periodic detection of total coliforms – consistent with international best practice guidelines – have been observed through to the beginning of 2019. In the absence of *E. coli*, these coliforms are considered as being from an environmental source and as such pose a negligible risk to public health.

The report is split into two parts: the WTP data and the Distribution Network data.

Water Treatment Plant Data

The MAVs for the monitored determinands at the WTPs are included alongside the data, along with an indication of whether the WTP achieved compliance under the DWSNZ for that determinand. This indication is only given for those determinands that have an assigned MAV.

If a determinand was not detected in the monitoring period, 'ND' ("not detected") is noted.

* The Warkworth Wells WTP is a new facility and has not yet been assessed under the Grading criteria.

Distribution Network Data

The GVs and MAVs for the monitored determinands in the Distribution Network are summarised below:

Drinking-water Standards for New Zealand 2005 (Revised 2018) MAVs and GVs

Determinand	GV	MAV	Unit
Chlorine Residual	0.6 - 1.0	5	mg/L
pH	7.0 - 8.5	-	pH unit
Turbidity	2.5	-	NTU
E. coli	-	<1.0/100mL	MPN/100mL
Total coliforms	-	-	MPN/100mL

List of Water Treatment Plants and the Distribution Network Grading Zones Supplied

Water Treatment Plant	Grading Zones Supplied
Ardmore	Auckland Airport, Auckland, Anzac, Buckland, Central Business District, Clarks / Waiau Beach, East Tamaki / Botany, Glenbrook Beach, Glen Eden / New Lynn, Henderson, High Head, Hillsborough, Howick / Pakuranga, Hilltop, HBC / Waiwera, Kitchener, Maungawhau, Mangere, Mt Hobson, Manurewa, Otara / Papatoetoe / Manukau Central, Oratia, Otahuhu, Patumahoe, North Shore South, North Shore West, Swanson, Te Henga, Whenuapai
Bombay	Bombay
Cornwall Road	Waiuku
Helensville	Helensville / Parakai
Huia	Auckland, Central Business District, Glen Eden / New Lynn, Henderson, Hillsborough, HBC / Waiwera, Laingholm, Maungawhau, Montana, Oratia, Swanson, Te Henga, North Shore West, Whenuapai
Huia Village	Huia Village
Muriwai	Muriwai
Onehunga (Local)	Onehunga
Onehunga (Metro)	Auckland, Hillsborough
Snells / Algies	Snells / Algies
Victoria Avenue	Waiuku

Water Treatment Plant	Grading Zones Supplied
Waikato	Auckland Airport, Auckland, Anzac, Buckland, Central Business District, Clarks / Waiau Beach, East Tamaki / Botany, Glenbrook Beach, Glen Eden / New Lynn, Henderson, High Head, Hillsborough, Howick / Pakuranga, Hilltop, HBC / Waiwera, Kitchener, Maungawhau, Mangere, Mt Hobson, Manurewa, Otara / Papatoetoe / Manukau Central, Oratia, Otahuhu, Patumahoe, North Shore South, North Shore West, Swanson, Te Henga, Whenuapai
Waitakere	Glen Eden / New Lynn, HBC / Waiwera, Oratia, Swanson, Te Henga, Whenuapai
Waiuku Road	Waiuku
Warkworth*	Warkworth
Warkworth Wells*	Warkworth
Wellsford	Wellsford / Te Hana

*The Warkworth WTP and river source was taken out of service on 06/12/18 and was replaced by the Warkworth Wells WTP and new groundwater source which was put into service on 06/12/2018.

Water Quality Compliance Data for the Water Treatment Plants

Ardmore WTP Treated A Block

Acidic Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1080	mg/L	1	ND	ND	ND	0.0001	0.0035		√
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	4	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	4	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	4	ND	ND	ND	0.0001			
Bentazone	mg/L	4	ND	ND	ND	0.0001			
Dichlorprop	mg/L	4	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	4	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	4	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	4	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	4	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	52	0.020	0.011	0.015	0.002			
Alkalinity (Total)	mg/L CaCO3	52	18	14	17	1			
Aluminium	mg/L	52	0.037	0.018	0.024	0.005		0.1	
Bromate	mg/L	15	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	15	0.02	0.01	0.01	0.01			
Calcium	mg/L	15	7.7	5.3	6.8	0.01			
Calcium Hardness	mg/L	15	19	13	17	0.025			
Chlorate	mg/L	15	ND	ND	ND	0.01	0.8		√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorine Residual	mg/L	361*	1.91**	0.38	1.26	0.02	5	0.6-1.0	√
Chlorite	mg/L	15	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	13	ND	ND	ND	5		10	
Conductivity	mS/cm	13	11.5	9.9	10.5	0.5			
Cyanide	mg/L	3	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	52	0.8	0.60	0.7	0.02	1.5		√
Iodide	mg/L	4	0.006	0.003	0.004	0.002			
Iron (Total)	mg/L	52	0.160	0.006	0.015	0.002		0.2	
Magnesium	mg/L	15	1.50	1.10	1.39	0.001			
Magnesium Hardness	mg/L	15	6.300	4.400	5.747	0.0041			
Manganese	mg/L	52	0.0850	0.0014	0.0078	0.0005	0.4	0.04	√
pH	pH Units	361*	8.9	6.3***	7.7	0.1		7.0-8.5	
Potassium	mg/L	5	1.1	1.0	1.0	0.1			
Silicon	mg/L	5	14.0	12.0	13.0	0.1			
Sodium	mg/L	5	8.6	7.7	8.4	0.1		200	
Sulphate	mg/L	5	8.6	7.7	8.3	0.02		250	
Suspended Solids	mg/L	11	0.4	ND	0.1	0.2			
Total Hardness	mg/L	15	25.00	18.00	22.80	0.029		200	
Total Organic Carbon TOC	mg/L	13	1.3	0.70	1.0	0.1			
Turbidity	NTU	361*	2.2****	ND	0.2	0.1		2.5	

* In 2018/19, four samples were not collected due to the Ardmore A block being isolated for maintenance.

** In 2018/19, 98.6% of all samples collected from the treated water tank at the Ardmore A block returned the results for chlorine residual greater than the GV value of 1 mg/L. All tested samples were compliant with MAV for chlorine residual.

*** In July, August and September 2018, four treated water samples tested at the Ardmore A block, had the pH below the lower GV limit of 7, as set out in the DWSNZ. This was due to the laboratory testing that has coincided with the short period of time when the post lime dosing was shut down. The post lime dosing was stopped to enable some changes to the control system software.

**** In 2018/19, an elevated turbidity result was reported by the laboratory on 16/09/18. An investigation was completed which determined that a sample collection coincided with the time when the Ardmore A block was isolated for maintenance.

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limits**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Confirmed Cryptosporidium per 100L	cysts/100 L	4	ND	ND	ND	1	<1		√
Confirmed Giardia per 100L	cysts/100 L	4	ND	ND	ND	1	<1		√
E.coli	MPN/100mL	361*	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	5	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	5	0.008	0.005	0.006	0.005			
Nitrate	mg/L NO3	5	0.208	0.155	0.195	0.009	50		√
Nitrite	mg/L NO2	5	ND	ND	ND	0.007	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	5	0.3	ND	0.1	0.1			
Total Phosphorus	mg/L	5	0.011	ND	0.006	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	3	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	3	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo[a]pyrene	µg/L	3	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	3	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	3	ND	ND	ND	0.01	0.2		√
Llindane	µg/L	3	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	3	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	3	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	3	ND	ND	ND	0.1			
Methoxychlor	µg/L	3	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	3	ND	ND	ND	0.2			
DDT + isomers	µg/L	3	ND	ND	ND	0.2	1		√
Procymidone	µg/L	3	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	3	ND	ND	ND	0.2	20		√
Atrazine	µg/L	3	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	3	ND	ND	ND	0.1	10		√
Molinate	µg/L	3	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	3	ND	ND	ND	0.2	20		√
Propanil	µg/L	3	ND	ND	ND	0.1			
Simazine	µg/L	3	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	3	ND	ND	ND	0.2	8		√
trifluralin	µg/L	3	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	3	ND	ND	ND	0.2	40		√
Diazinon	µg/L	3	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	3	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	5	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	5	0.0003	0.0002	0.0002	0.0001	0.01		√
Barium	mg/L	5	0.0071	0.0052	0.0062	0.0002	0.7		√
Boron	mg/L	15	0.010	0.005	0.008	0.005	1.4		√
Cadmium	mg/L	5	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	5	0.0008	ND	0.0005	0.0005	0.05		√
Copper	mg/L	5	0.0015	0.0003	0.0006	0.0002	2		√
Lead	mg/L	5	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	4	0.0005	0.0003	0.0004	0.0001			
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	5	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	5	0.0004	ND	0.0001	0.0001	0.08		√
Selenium	mg/L	5	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	5	0.002	ND	ND	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	52	0.0159	0.0024	0.0055	0.0001	0.06		√
Bromoform	mg/L	52	0.0063	ND	0.0015	0.0001	0.1		√
Chloroform	mg/L	52	0.0162	0.0018	0.0050	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0162	0.0025	0.0051	0.0001	0.15		√
THMs Ratio		52	0.48	0.06	0.15		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	5	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	5	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	5	ND	ND	ND	0.0001			

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,2-dichlorobenzene	mg/L	5	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	5	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	5	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	5	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	5	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	5	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	5	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	5	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	5	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	5	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	5	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	5	ND	ND	ND	0.0001	0.02		√

Ardmore WTP Treated B1 Block

Acidic Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1080 (Sodium floroacetate)	mg/L	1	ND	ND	ND	0.0001	0.0035		√
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	2	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	2	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	2	ND	ND	ND	0.0001			
Bentazone	mg/L	2	ND	ND	ND	0.0001			
Dichlorprop	mg/L	2	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	2	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	2	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	2	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	2	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	32	0.017	0.012	0.014	0.002			
Alkalinity (Total)	mg/L CaCO3	32	19	11	16	1			
Aluminium	mg/L	32	0.034	0.019	0.024	0.005		0.1	
Bromate	mg/L	9	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	9	0.04	ND	0.01	0.01			
Calcium	mg/L	9	7.8	5.9	7.0	0.01			
Calcium Hardness	mg/L	9	19.00	15.00	17.33	0.025			
Chlorate	mg/L	9	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	9	14.00	11.00	12.33	0.02		250	
Chlorine Residual	mg/L	221*	1.78	1.02	1.27	0.02	5	0.6-1.00	√
Chlorite	mg/L	8	ND	ND	ND	0.005	0.8		√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Colour	Hazen Units	8	ND	ND	ND	5		10	
Conductivity	mS/cm	8	11.1	9.9	10.4	0.5			
Cyanide	mg/L	2	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	32	0.74	0.59	0.67	0.02	1.5		√
Iodide	mg/L	3	0.005	0.002	0.004	0.002			
Iron (Total)	mg/L	32	0.023	0.004	0.010	0.002		0.2	
Magnesium	mg/L	9	1.50	1.20	1.38	0.001			
Magnesium Hardness	mg/L	9	6.300	4.800	5.667	0.0041			
Manganese	mg/L	32	0.0069	0.0014	0.0032	0.0005	0.4	0.04	√
pH	pH Units	221*	8.4	7.0	7.8	0.1		7.0-8.5	
Potassium	mg/L	3	1.1	1.0	1.0	0.1			
Silicon	mg/L	3	13.0	12.0	12.7	0.1			
Sodium	mg/L	3	8.9	7.8	8.4	0.1		200	
Sulphate	mg/L	3	8.20	7.60	7.87	0.02		250	
Suspended Solids	mg/L	8	0.20	ND	ND	0.20			
Total Hardness	mg/L	9	26	20	23	0.029		200	
Total Organic Carbon TOC	mg/L	8	1.1	0.7	0.9	0.1			
Turbidity	NTU	221*	0.6	0.1	0.2	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Confirmed Cryptosporidium per 100L	cysts/100 L	2	ND	ND	ND	1	<1		√
Confirmed Giardia per 100L	cysts/100 L	2	ND	ND	ND	1	<1		√
E.coli	MPN/100mL	221*	ND	ND	ND	1	<1		√

*In 2018/19, 144 *E. coli*, pH, chlorine residual and turbidity samples were not collected due to the treatment plant being isolated for upgrade and maintenance.

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	2	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	3	0.009	0.005	0.007	0.005			
Nitrate	mg/L NO3	3	0.204	0.177	0.189	0.009	50		√
Nitrite	mg/L NO2	3	ND	ND	ND	0.007	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	2	ND	ND	ND	0.1			
Total Phosphorus	mg/L	2	0.010	0.006	0.008	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	2	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	2	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	2	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	3	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	3	ND	ND	ND	0.01	0.2		√
Llindane	µg/L	3	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	3	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	3	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	3	ND	ND	ND	0.1			
Methoxychlor	µg/L	3	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	3	ND	ND	ND	0.2			

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
DDT + isomers	µg/L	3	ND	ND	ND	0.2	1		√
Procymidone	µg/L	3	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	3	ND	ND	ND	0.2	20		√
Atrazine	µg/L	3	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	3	ND	ND	ND	0.1	10		√
Molinate	µg/L	3	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	3	ND	ND	ND	0.2	20		√
Propanil	µg/L	3	ND	ND	ND	0.1			
Simazine	µg/L	3	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	3	ND	ND	ND	0.2	8		√
trifluralin	µg/L	3	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	3	ND	ND	ND	0.2	40		√
Diazinon	µg/L	3	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	3	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	3	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	3	0.0002	0.0002	0.0002	0.0001	0.01		√
Barium	mg/L	3	0.0065	0.0057	0.0062	0.0002	0.7		√
Boron	mg/L	9	0.010	0.006	0.009	0.005	1.4		√
Cadmium	mg/L	3	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	3	0.0006	ND	0.0002	0.0005	0.05		√
Copper	mg/L	3	0.0008	0.0002	0.0004	0.0002	2		√
Lead	mg/L	3	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	2	0.0005	0.0004	0.0005	0.0001			

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Mercury	mg/L	2	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	3	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	3	0.0002	ND	0.0001	0.0001	0.08		√
Selenium	mg/L	3	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	3	ND	ND	ND	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	32	0.0110	0.0027	0.0067	0.0001	0.06		√
Bromoform	mg/L	32	0.0027	ND	0.0011	0.0001	0.1		√
Chloroform	mg/L	32	0.0120	0.0010	0.0053	0.0001	0.4		√
Dibromochloromethane	mg/L	32	0.0082	0.0022	0.0055	0.0001	0.15		√
THMs Ratio		32	0.25	0.06	0.18		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	3	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	3	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	3	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	3	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	3	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	3	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	3	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	3	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	3	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	3	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	3	ND	ND	ND	0.0001	0.03	0.004	√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
tetrachloroethane	mg/L	3	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	3	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	3	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	3	ND	ND	ND	0.0001	0.02		√

Ardmore WTP Treated B2 Block

Acidic Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1080 (Sodium floroacetate)	mg/L	1	ND	ND	ND	0.0001	0.0035		√
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	4	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	4	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic (2,4-DB)	mg/L	4	ND	ND	ND	0.0001			
Bentazone	mg/L	4	ND	ND	ND	0.0001			
Dichlorprop	mg/L	4	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	4	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	4	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	4	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	4	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	52	0.019	0.010	0.014	0.002			
Alkalinity (Total)	mg/L CaCO3	52	19	10	17	1			
Aluminium	mg/L	52	0.056	0.018	0.026	0.005		0.1	
Bromate	mg/L	15	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	15	0.03	ND	0.01	0.01			
Calcium	mg/L	15	7.8	5.9	7.0	0.01			
Calcium Hardness	mg/L	15	19	15	18	0.025			
Chlorate	mg/L	15	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	15	14.00	11.00	12.47	0.02		250	
Chlorine Residual	mg/L	364*	1.95**	0.33	1.27	0.02	5	0.6-1.00	√
Chlorite	mg/L	15	ND	ND	ND	0.005	0.8		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Colour	Hazen Units	13	ND	ND	ND	5		10	
Conductivity	mS/cm	13	10.9	9.9	10.4	0.5			
Cyanide	mg/L	3	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	52	0.76	0.56	0.68	0.02	1.5		√
Iodide	mg/L	5	0.005	0.003	0.004	0.002			
Iron (Total)	mg/L	52	0.063	0.007	0.015	0.002		0.2	
Magnesium	mg/L	15	1.60	1.20	1.43	0.001			
Magnesium Hardness	mg/L	15	6.400	4.800	5.827	0.0041			
Manganese	mg/L	52	0.011	0.001	0.003	0.0005	0.4	0.04	√
pH	pH Units	364*	8.8	6.9	7.8	0.1		7.0-8.5	
Potassium	mg/L	5	1.2	1.0	1.1	0.1			
Silicon	mg/L	5	14.0	11.0	13.0	0.1			
Sodium	mg/L	5	8.9	7.8	8.5	0.1		200	
Sulphate	mg/L	5	9.00	7.60	8.34	0.02		250	
Suspended Solids	mg/L	11	2.4	ND	0.3	0.2			
Total Hardness	mg/L	15	26	20	24	0.029		200	
Total Organic Carbon TOC	mg/L	13	1.2	0.7	0.9	0.1			
Turbidity	NTU	364*	1.7	0.1	0.2	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Confirmed Cryptosporidium per 100L	cysts/100 L	5	ND	ND	ND	1	<1		√
Confirmed Giardia per 100L	cysts/100 L	5	ND	ND	ND	1	<1		√
E.coli	MPN/100mL	364*	ND	ND	ND	1	<1		√

*In 2018/19, one sample was not collected on 04/07/2018 due to the Ardmore B2 block being isolated for maintenance.

** In 2018/19, 98.9% of all samples collected from the Ardmore WTP B2 block returned the results for chlorine residual greater than the GV value of 1 mg/L. All tested samples were compliant with the MAV for chlorine residual.

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	5	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	5	0.009	0.006	0.007	0.005			
Nitrate	mg/L NO3	5	0.213	0.159	0.190	0.009	50		√
Nitrite	mg/L NO2	5	ND	ND	ND	0.007	0.2		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	4	0.100	ND	0.025	0.1			
Total Phosphorus	mg/L	4	0.017	0.006	0.009	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	3	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	3	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	3	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	3	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	3	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	3	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	3	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	3	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	3	ND	ND	ND	0.1			
Methoxychlor	µg/L	3	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	3	ND	ND	ND	0.2			

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
DDT + isomers	µg/L	3	ND	ND	ND	0.2	1		√
Procymidone	µg/L	3	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	3	ND	ND	ND	0.2	20		√
Atrazine	µg/L	3	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	3	ND	ND	ND	0.1	10		√
Molinate	µg/L	3	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	3	ND	ND	ND	0.2	20		√
Propanil	µg/L	3	ND	ND	ND	0.1			
Simazine	µg/L	3	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	3	ND	ND	ND	0.2	8		√
trifluralin	µg/L	3	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	3	ND	ND	ND	0.2	40		√
Diazinon	µg/L	3	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	3	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	5	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	5	0.0002	0.0002	0.0002	0.0001	0.01		√
Barium	mg/L	5	0.0073	0.0053	0.0061	0.0002	0.7		√
Boron	mg/L	15	0.010	ND	0.007	0.005	1.4		√
Cadmium	mg/L	5	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	5	0.0014	ND	0.0006	0.0005	0.05		√
Copper	mg/L	5	0.0003	0.0002	0.0003	0.0002	2		√
Lead	mg/L	5	0.0003	ND	0.0001	0.0001	0.01		√
Lithium	mg/L	4	0.0005	0.0003	0.0004	0.0001			

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	5	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	5	0.0004	ND	0.0001	0.0001	0.08		√
Selenium	mg/L	5	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	5	ND	ND	ND	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	52	0.0140	0.0031	0.0075	0.0001	0.06		√
Bromoform	mg/L	52	0.0037	ND	0.0016	0.0001	0.1		√
Chloroform	mg/L	52	0.0130	0.0013	0.0062	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0120	0.0024	0.0063	0.0001	0.15		√
THMs Ratio		52	0.36	0.07	0.20		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	5	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	5	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	5	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	5	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	5	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	5	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	5	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	5	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	5	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	5	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	5	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	5	ND	ND	ND	0.0001	0.05		√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Toluene	mg/L	5	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	5	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	5	ND	ND	ND	0.0001	0.02		√

Bombay WTP Treated

Acidic Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	13	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	13	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic (2,4-DB)	mg/L	13	ND	ND	ND	0.0001			
Bentazone	mg/L	13	ND	ND	ND	0.0001			
Dichlorprop	mg/L	13	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	13	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	13	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	13	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	13	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Alkalinity (Total)	mg/L CaCO3	4	79	72	77	1			
Aluminium	mg/L	4	ND	ND	ND	0.005		0.1	
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	4	0.03	0.01	0.18	0.01			
Calcium	mg/L	4	13.0	12.0	12.8	0.01			
Calcium Hardness	mg/L	4	33.00	31.00	32.00	0.025			
Chlorate	mg/L	4	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	4	170.00	72.00	102.25	0.02		250	
Chlorine Residual	mg/L	122	1.41	0.46	0.83	0.02	5	0.6-1.0	√
Chlorite	mg/L	4	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/cm	1	45.3	45.3	45.3	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Fluoride	mg/L	4	0.03	0.02	0.03	0.02	1.5		√
Iodide	mg/L	1	0.010	0.010	0.010	0.002			
Iron (Total)	mg/L	4	ND	ND	ND	0.002		0.2	
Magnesium	mg/L	4	13.00	12.00	12.75	0.001			
Magnesium Hardness	mg/L	4	54.00	51.00	52.25	0.0041			
Manganese	mg/L	4	ND	ND	ND	0.0005	0.4	0.04	√
pH	pH Units	122	8.0	6.8	7.6	0.1		7.0-8.5	
Potassium	mg/L	1	1.5	1.5	1.5	0.1			
Silicon	mg/L	1	39.0	39.0	39.0	0.1			
Sodium	mg/L	1	50.0	50.0	50.0	0.1		200	
Sulphate	mg/L	1	ND	ND	ND	0.02		250	
Suspended Solids	mg/L	1	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	1	270	270	270	15		1000	
Total Hardness	mg/L	4	87.00	83.00	84.50	0.029		200	
Total Organic Carbon TOC	mg/L	13	1.2	ND	0.3	0.1			
Turbidity	NTU	122	0.4	0.1	0.1	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	122	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.011	0.011	0.011	0.005			
Nitrate	mg/L NO3	50	14.614	12.276	15.455	0.009	50		√
Nitrite	mg/L NO2	1	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.015	0.015	0.015	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	4	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	4	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L		ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	4	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	4	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	4	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	4	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	4	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			
Methoxychlor	µg/L	4	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	4	ND	ND	ND	0.2			
DDT + isomers	µg/L	4	ND	ND	ND	0.2	1		√
Procymidone	µg/L	4	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	4	ND	ND	ND	0.2	20		√
Atrazine	µg/L	4	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	4	ND	ND	ND	0.1	10		√
Molinate	µg/L	4	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	4	ND	ND	ND	0.2	20		√
Propanil	µg/L	4	ND	ND	ND	0.1			

Organonitrogen Herbicides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Alachlor	µg/L	4	ND	ND	ND	0.2	20		√
Simazine	µg/L	4	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	4	ND	ND	ND	0.2	8		√
trifluralin	µg/L	4	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	4	ND	ND	ND	0.2	40		√
Diazinon	µg/L	4	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	4	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	1	ND	ND	ND	0.0001	0.01		√
Barium	mg/L	1	0.002	0.002	0.002	0.0002	0.7		√
Boron	mg/L	1	ND	ND	ND	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0005	0.05		√
Copper	mg/L	4	0.0004	0.0005	0.0004	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0004	0.0004	0.0004	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	0.001	0.001	0.001	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	0.0014	ND	0.0002	0.0001	0.06		√
Bromoform	mg/L	13	0.0019	ND	0.0003	0.0001	0.1		√
Chloroform	mg/L	13	0.0005	ND	0.0001	0.0001	0.4		√
Dibromochloromethane	mg/L	13	0.0017	ND	0.0002	0.0001	0.15		√
THMs Ratio		13	0.05	ND	0.01		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	1	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Cornwall Road WTP Treated

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	1	ND	ND	ND	0.002			
Alkalinity (Total)	mg/L CaCO3	4	130.00	120.00	128.00	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	1	0.07	0.07	0.07	0.01			
Calcium	mg/L	12	33.00	29.00	31.08	0.01			
Calcium Hardness	mg/L	12	82.00	73.00	77.67	0.025			
Chlorate	mg/L	1	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	1	31.00	31.00	31.00	0.02		250	
Chlorine Residual	mg/L	122	1.23	0.36	0.69	0.02	5	0.6-1.0	√
Chlorite	mg/L	1	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/cm	1	36.40	36.40	36.40	0.5			
Cyanide	mg/L	1	ND	ND	ND		0.6		√
Fluoride	mg/L	1	0.05	0.05	0.05	0.02	1.5		√
Iodide	mg/L	1	0.01	0.01	0.01	0.002			
Iron (Total)	mg/L	15	ND	ND	ND	0.002		0.2	
Magnesium	mg/L	12	10.00	9.00	9.57	0.001			
Magnesium Hardness	mg/L	12	42.00	37.00	39.42	0.0041			
Manganese	mg/L	15	ND	ND	ND	0.0005	0.4	0.04	√
pH	pH Units	122	8.20	7.80	7.96	0.1		7.0-8.5	
Potassium	mg/L	1	3.40	3.40	3.40	0.1			
Silicon	mg/L	1	53.00	53.00	53.00	0.1			
Sodium	mg/L	1	21.00	21.00	21.00	0.1		200	
Sulphate	mg/L	1	5.00	5.00	5.00	0.02		250	
Suspended Solids	mg/L	1	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	1	280.00	280.00	280.00	15		1000	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Total Hardness	mg/L	12	120.00	110.00	116.67	0.029		200	
Turbidity	NTU	122	0.70	ND	0.11	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	122	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	1	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.043	0.043	0.043	0.005			
Nitrate	mg/L NO3	1	0.190	0.190	0.190	0.009	50		√
Nitrite	mg/L NO2	1	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.045	0.045	0.045	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	1	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	1	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
pp-DDT	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pe0.00imethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
trifluralin	µg/L	1	ND	ND	ND	0.2	30		√
Organophosphorus pesticides									
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	15	0.0048	0.0042	0.0045	0.0001	0.01		√
Barium	mg/L	1	0.0005	0.0005	0.0005	0.0002	0.7		√
Boron	mg/L	1	0.019	0.019	0.019	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0005	0.05		√
Copper	mg/L	1	ND	ND	ND	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0093	0.0093	0.0093	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	0.001	0.001	0.001	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	0.0014	ND	0.0002	0.0001	0.06		√
Bromoform	mg/L	13	0.0022	ND	0.0005	0.0001	0.1		√
Chloroform	mg/L	13	0.0005	ND	0.0001	0.0001	0.4		√
Dibromochloromethane	mg/L	13	0.0021	ND	0.0004	0.0001	0.15		√
THMs Ratio		13	0.06	ND	0.01		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
m- & p-Xylene	mg/L	1	ND	ND	ND	0.0001	0.6		√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.004	0.004	√
tetrachloroethane	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	1	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Helensville WTP Treated

Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	13	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	13	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic (2,4-DB)	mg/L	13	ND	ND	ND	0.0001			
Bentazone	mg/L	13	ND	ND	ND	0.0001			
Dichlorprop	mg/L	13	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	13	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	13	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	13	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	13	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV Absorbance	Abs units	52	0.036	0.014	0.021	0.002			
Alkalinity (Total)	mg/L CaCO3	52	96	21	62	1			
Aluminium	mg/L	52	0.073	0.010	0.018	0.005		0.1	
Bromate	mg/L	5	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	5	0.04	0.01	0.03	0.01			
Calcium	mg/L	15	20.00	7.20	15.25	0.01			
Calcium Hardness	mg/L	15	50.00	18.00	37.93	0.025			
Chlorate	mg/L	5	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	5	71.00	45.00	56.40	0.02		250	
Chlorine Residual	mg/L	122	1.95	0.65	1.34	0.02	5	0.6-1.0	√
Chlorite	mg/L	5	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	5	ND	ND	ND	5		10	
Conductivity	mS/cm	15	54.3	29.1	43.7	0.5			

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Cyanide	mg/L	5	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	13	0.05	ND	0.02	0.02	1.5		√
Iodide	mg/L	5	0.006	ND	0.003	0.002			
Iron (Total)	mg/L	15	0.007	ND	ND	0.002		0.2	
Magnesium	mg/L	15	17.00	5.70	12.61	0.001			
Magnesium Hardness	mg/L	15	71.000	23.000	51.933	0.0041			
Manganese	mg/L	15	0.0038	ND	0.0012	0.0005	0.4	0.04	√
pH	pH Units	122	8.2	6.8	7.2	0.1		7.0-8.5	
Potassium	mg/L	4	4.4	2.0	2.7	0.1			
Silicon	mg/L	4	25.0	19.0	21.3	0.1			
Sodium	mg/L	4	57.0	37.0	45.0	0.1		200	
Sulphate	mg/L	5	65.00	34.00	45.40	0.02		250	
Suspended Solids	mg/L	12	0.3	ND	0.1	0.2			
Total Dissolved Solids	mg/L	13	340	160	248	15		1000	
Total Hardness	mg/L	15	120.0	41.0	90.2	0.029		200	
Total Organic Carbon TOC	mg/L	52	3.3	1.1	1.6	0.1			
Turbidity	NTU	122	0.6	ND	0.1	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	122	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	5	0.007	ND	0.003	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	15	0.009	0.003	0.007	0.005			
Nitrate	mg/L NO3	15	0.527	0.071	0.225	0.009	50		√
Nitrite	mg/L NO2	15	ND	ND	ND	0.007	0.20		√

Nutrients cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
TKN (Total Kjeldahl Nitrogen)	mg/L N	5	0.1	ND	0.1	0.1			
Total Phosphorus	mg/L	13	0.015	ND	0.008	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	13	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	13	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	13	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	13	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	13	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	13	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	13	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	13	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	13	ND	ND	ND	0.1			
Methoxychlor	µg/L	13	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	13	ND	ND	ND	0.2			
DDT + isomers	µg/L	13	ND	ND	ND	0.2	1		√
Procymidone	µg/L	13	ND	ND	ND	0.2	700		√

Organonitrogen Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Alachlor	µg/L	13	ND	ND	ND	0.2	20		√
Atrazine	µg/L	13	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	13	ND	ND	ND	0.1	10		√
Molinate	µg/L	13	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	13	ND	ND	ND	0.2	20		√
Propanil	µg/L	13	ND	ND	ND	0.1			
Simazine	µg/L	13	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	13	ND	ND	ND	0.2	8		√
Trifluralin	µg/L	13	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	13	ND	ND	ND	0.2	40		√
Diazinon	µg/L	13	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	13	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	15	0.0003	0.0001	0.0002	0.0001	0.01		√
Barium	mg/L	4	0.0320	0.0190	0.0268	0.0002	0.7		√
Boron	mg/L	4	0.030	0.021	0.025	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	4	0.0007	ND	0.0005	0.0005	0.05		√
Copper	mg/L	4	0.0039	0.0019	0.0030	0.0002	2		√
Lead	mg/L	4	0.0004	ND	0.0002	0.0001	0.01		√
Lithium	mg/L	4	0.0031	0.0026	0.0029	0.0001			
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0007	0.0004	0.0006	0.0001	0.08		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	0.0043	0.003	0.004	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	50	0.0240	0.0028	0.0076	0.0001	0.06		√
Bromoform	mg/L	50	0.0200	0.0025	0.0082	0.0001	0.1		√
Chloroform	mg/L	50	0.0100	ND	0.0023	0.0001	0.4		√
Dibromochloromethane	mg/L	50	0.0340	0.0048	0.0131	0.0001	0.15		√
THMs Ratio		50	0.70	0.13	0.30		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	13	ND	ND	ND	0.0001	0.02		√

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Acidic Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	4	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	4	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic (2,4-DB)	mg/L	4	ND	ND	ND	0.0001			
Bentazone	mg/L	4	ND	ND	ND	0.0001			
Dichlorprop	mg/L	4	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	4	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	4	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	4	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	4	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	53	0.031	0.010	0.017	0.002			
Alkalinity (Total)	mg/L CaCO3	53	25	12	17	1			
Aluminium	mg/L	52	0.560	ND	0.043	0.005		0.1	
Bromate	mg/L	5	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	5	0.04	0.01	0.02	0.01			
Calcium	mg/L	15	11.0	7.6	9.6	0.01			
Calcium Hardness	mg/L	15	27	ND	22	0.025			
Chlorate	mg/L	5	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	5	22.00	19.00	20.40	0.02		250	
Chlorine Residual	mg/L	365	1.44	0.71	1.09	0.02	5	0.6-1.0	√
Chlorite	mg/L	5	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	13	ND	ND	ND	5		10	
Conductivity	mS/cm	13	16.2	15.1	13.6	0.5			

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	52	0.78	ND*	0.68	0.02	1.5		√
Iodide	mg/L	5	0.005	ND	0.003	0.002			
Iron (Total)	mg/L	52	1.20	ND	0.05	0.002		0.2	
Magnesium	mg/L	15	2.8	2.1	2.5	0.001			
Magnesium Hardness	mg/L	15	12.0	ND	9.8	0.0041			
Manganese	mg/L	52	0.0550	ND	0.0057	0.0005	0.4	0.04	√
pH	pH Units	365	8.6	7.2	7.6	0.1		7.0-8.5	
Potassium	mg/L	5	1.0	0.8	0.9	0.1			
Silicon	mg/L	5	15.0	12.0	13.4	0.1			
Sodium	mg/L	5	13.0	11.0	12.0	0.1		200	
Sulphate	mg/L	5	20.00	13.00	16.20	0.02		250	
Suspended Solids	mg/L	13	0.5	ND	0.1	0.2			
Total Hardness	mg/L	15	38	ND	32	0.029		200	
Total Organic Carbon TOC	mg/L	13	1.6	0.7	1.1	0.1			
Turbidity	NTU	365	4.1**	0.1	0.2	0.1		2.5	

*Online fluoride monitoring data was used to demonstrate performance to target levels due to a laboratory analysis issue associated with the sample collected on 04/02/2019. The average online fluoride concentration on this date was 0.72 mg/L.

**Two elevated turbidity results were reported by the laboratory on 09/03/2019 and 06/05/2019. An investigation was completed which determined that the sample results were not representative of water being produced by the plant. A build-up of material in the sampling line and adjustments to sampling flow was identified as the issue.

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	365	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	5	0.009	0.004	0.007	0.005			
Nitrate	mg/L NO3	5	0.213	0.111	0.172	0.009	50		√
Nitrite	mg/L NO2	5	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	4	ND	ND	ND	0.1			
Total Phosphorus	mg/L	4	0.014	0.007	0.009	0.005			

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	5	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	5	0.0002	ND	0.0001	0.0001	0.01		√
Barium	mg/L	5	0.0049	0.0037	0.0043	0.0002	0.7		√
Boron	mg/L	5	0.012	0.010	0.011	0.005	1.4		√
Cadmium	mg/L	5	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	5	0.0010	ND	0.0005	0.0005	0.05		√
Copper	mg/L	5	0.0023	0.0013	0.0017	0.0002	2		√
Lead	mg/L	5	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	5	0.0005	0.0003	0.0004	0.0001			
Molybdenum	mg/L	5	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	5	0.0002	ND	0.0001	0.0001	0.08		√
Selenium	mg/L	5	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	5	0.009	ND	0.002	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	52	0.0160	0.0023	0.0067	0.0001	0.06		√
Bromoform	mg/L	52	0.0041	ND	0.0022	0.0001	0.1		√
Chloroform	mg/L	52	0.0130	0.0005	0.0043	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0160	0.0036	0.0071	0.0001	0.15		√
THMs Ratio		52	0.45	0.07	0.19		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	5	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	5	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	5	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	5	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	5	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	5	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	5	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	5	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	5	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	5	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	5	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	5	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	5	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	5	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	5	ND	ND	ND	0.0001	0.02		√

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Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	4	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	4	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic (2,4-DB)	mg/L	4	ND	ND	ND	0.0001			
Bentazone	mg/L	4	ND	ND	ND	0.0001			
Dichlorprop	mg/L	4	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	4	ND	ND	ND	0.0001	0.002		√
Mecoprop (MCPP)	mg/L	4	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	4	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	4	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	52	0.05	0.01	0.02	0.002			
Alkalinity (Total)	mg/L CaCO3	52	27	19	23	1			
Aluminium	mg/L	52	0.009	ND	0.001	0.005		0.1	
Bromate	mg/L	5	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	5	0.03	0.01	0.01	0.01			
Calcium	mg/L	15	5.3	4.1	4.6	0.01			
Calcium Hardness	mg/L	15	13	10	11	0.025			
Chlorate	mg/L	15	0.46	0.06	0.18	0.01	0.8		√
Chloride	mg/L	5	29.00	26.00	27.40	0.02		250	
Chlorine Residual	mg/L	121	1.72	0.51	1.02	0.02	5	0.6-1.0	√
Chlorite	mg/L	5	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	13	ND	ND	ND	5		10	
Conductivity	mS/cm	13	16.3	14.6	15.6	0.5			

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	13	ND	ND	ND	0.02	1.5		√
Iodide	mg/L	5	0.004	ND	0.003	0.002			
Iron (Total)	mg/L	15	0.012	ND	0.002	0.002		0.2	
Magnesium	mg/L	15	3.20	2.60	2.82	0.001			
Magnesium Hardness	mg/L	15	13.000	11.000	12.200	0.0041			
Manganese	mg/L	15	ND	ND	ND	0.0005	0.4	0.04	√
pH	pH Units	120*	8.1	7.5	7.8	0.1		7.0-8.5	
Potassium	mg/L	4	1.1	1.0	1.0	0.1			
Silicon	mg/L	4	16.0	14.0	14.8	0.1			
Sodium	mg/L	4	20.0	19.0	19.3	0.1		200	
Sulphate	mg/L	5	5.20	4.40	4.86	0.02		250	
Suspended Solids	mg/L	11	0.2	ND	ND	0.2			
Total Hardness	mg/L	15	26	21	23	0.1		200	
Total Organic Carbon TOC	mg/L	13	25.0	21.0	13.0	0.1			
Turbidity	NTU	120*	0.60	ND	0.10			2.5	

* The turbidity and pH sample from 4/02/2019 was missed due to a laboratory sampling error. Laboratory processes were subsequently reviewed and updated to prevent a reoccurrence of this incident.

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	121	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	4	0.048	ND	0.012	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	5	0.010	ND	ND	0.005			
Nitrate	mg/L NO3	5	0.051	0.025	0.041	0.009	50		√

Nutrients cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Nitrite	mg/L NO2	5	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	4	0.1	ND	ND	0.1			
Total Phosphorus	mg/L	4	0.011	0.004	0.001	0.005			
Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	4	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	4	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	4	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	4	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	4	ND	ND	ND	0.01	0.2		√
Heptachlor	µg/L	4	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	4	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			
Methoxychlor	µg/L	4	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	4	ND	ND	ND	0.2			
DDT + isomers	µg/L	4	ND	ND	ND	0.2	1		√
Procymidone	µg/L	4	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	4	ND	ND	ND	0.2	20		√
Atrazine	µg/L	4	ND	ND	ND	0.1	2		√

Organonitrogen Herbicides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Metolachlor	µg/L	4	ND	ND	ND	0.1	10		√
Molinate	µg/L	4	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	4	ND	ND	ND	0.2	20		√
Propanil	µg/L	4	ND	ND	ND	0.1			
Simazine	µg/L	4	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	4	ND	ND	ND	0.2	8		√
trifluralin	µg/L	4	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	4	ND	ND	ND	0.2	40		√
Diazinon	µg/L	4	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	4	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	ND	ND	ND	0.0001	0.01		√
Barium	mg/L	4	0.0045	0.0032	0.0039	0.0002	0.7		√
Boron	mg/L	4	0.016	ND	0.010	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	4	0.0007	ND	0.0005	0.0005	0.05		√
Copper	mg/L	4	0.0003	ND	0.0002	0.0002	2		√
Lead	mg/L	4	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	4	0.0004	ND	0.0003	0.0001			
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0004	0.0002	0.0002	0.0001	0.08		√
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	0.003	0.002	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	14	0.0100	ND	0.0051	0.0001	0.06		√
Bromoform	mg/L	14	0.0037	ND	0.0024	0.0001	0.1		√
Chloroform	mg/L	14	0.0081	ND	0.0030	0.0001	0.4		√
Dibromochloromethane	mg/L	14	0.0110	ND	0.0066	0.0001	0.15		√
THMs Ratio		14	0.31	0.01	0.16		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	14	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	14	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	14	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	14	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	14	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	14	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	14	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	14	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	14	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	14	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	14	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	14	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	14	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	14	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	14	ND	ND	ND	0.0001	0.02		√

Muriwai WTP Treated

Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	5	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	5	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic (2,4-DB)	mg/L	5	ND	ND	ND	0.0001			
Bentazone	mg/L	5	ND	ND	ND	0.0001			
Dichlorprop	mg/L	5	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	5	ND	ND	ND	0.0001	0.002		√
Mecoprop (MCPP)	mg/L	5	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	5	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	5	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	13	0.008	ND	0.005	0.002			
Alkalinity (Total)	mg/L CaCO3	5	78	73	76	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	1	0.1	0.1	0.1	0.01			
Calcium	mg/L	5	7.6	6.2	7.1	0.01			
Calcium Hardness	mg/L	5	19.00	16.00	18.00	0.025			
Chlorate	mg/L	15	0.38	0.11	0.19	0.01	0.8		√
Chloride	mg/L	1	70	70	70	0.02		250	
Chlorine Residual	mg/L	122	1.68	0.33	1.01	0.02	5		√
Chlorite	mg/L	5	0.040	ND	0.010	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/cm	1	41.6	41.6	41.6	0.5			

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.04	0.04	0.04	0.020	1.5		√
Iodide	mg/L	1	0.010	0.010	0.010	0.002			
Iron (Total)	mg/L	5	0.004	0.002	0.003	0.002		0.2	
Magnesium	mg/L	5	6.20	5.30	5.90	0.001			
Magnesium Hardness	mg/L	5	26.000	22.000	24.400	0.0041			
Manganese	mg/L	5	ND	ND	ND	0.0005	0.4	0.04	√
pH	pH Units	122	7.7	7.3	7.5	0.1		7.0-8.5	
Potassium	mg/L	1	1.6	1.6	1.6	0.1			
Silicon	mg/L	1	53	53	53	0.1			
Sodium	mg/L	1	56	56	56	0.1		200	
Sulphate	mg/L	1	14	14	14	0.02		250	
Suspended Solids	mg/L	5	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	5	290	260	272	15		1000	
Total Hardness	mg/L	5	45	37	42	0.029		200	
Total Organic Carbon TOC	mg/L	13	0.5	0.1	0.3	0.1			
Turbidity	NTU	122	0.3	ND	0.1	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	122	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	5	0.005	ND	0.001	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	5	0.052	0.044	0.048	0.005			
Nitrate	mg/L NO3	5	3.720	3.233	3.561	0.009	50		√
Nitrite	mg/L NO2	5	ND	ND	ND	0.007	0.20		√

Nutrients cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
TKN (Total Kjeldahl Nitrogen)	mg/L N	5	0.460	ND	0.174	0.1			
Total Phosphorus	mg/L	5	0.054	0.047	0.051	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	1	ND	ND	ND	0.01	0.2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
DDT + isomers	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√

Organonitrogen Herbicides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
Terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
Triflularin	µg/L	1	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	5	ND	ND	ND	0.0001	0.01		√
Barium	mg/L	1	0.018	0.018	0.018	0.0002	0.7		√
Boron	mg/L	1	0.035	0.035	0.035	0.005	1.4		√
Cadmium	mg/L	5	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	0.0011	0.0011	0.0011	0.0005	0.05		√
Copper	mg/L	5	0.0018	0.0007	0.0010	0.0002	2		√
Lead	mg/L	5	0.0002	ND	0.0001	0.0001	0.01		√
Lithium	mg/L	1	0.0034	0.0034	0.0034	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	5	0.0004	0.0002	0.0003	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	5	0.008	0.002	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	ND	ND	ND	0.0001	0.06		√
Bromoform	mg/L	13	0.0035	ND	0.0017	0.0001	0.1		√
Chloroform	mg/L	13	ND	ND	ND	0.0001	0.4		√
Dibromochloromethane	mg/L	13	0.0022	ND	0.0006	0.0001	0.15		√
THMs Ratio		13	0.05	ND	0.02		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylene	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
Tetrachloroethane	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	13	ND	ND	ND	0.0001	0.02		√

Onehunga WTP Treated (Local and Metropolitan)

Acidic Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	5	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	5	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic (2,4-DB)	mg/L	5	ND	ND	ND	0.0001			
Bentazone	mg/L	5	ND	ND	ND	0.0001			
Dichlorprop	mg/L	5	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	5	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	5	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	5	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	5	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	13	0.011	0.007	0.009	0.002			
Alkalinity (Total)	mg/L CaCO3	5	67	62	64	1			
Aluminium	mg/L	52	0.120	0.037	0.025	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	15	0.04	0.02	0.03	0.01			
Calcium	mg/L	5	10.0	9.6	9.8	0.01			
Calcium Hardness	mg/L	5	25.0	24.0	24.4	0.025			
Chlorate	mg/L	5	0.08	0.04	0.06	0.01	0.8		√
Chloride	mg/L	15	22	18	20	0.02		250	
Chlorine Residual	mg/L	363*	1.41	0.61	1.03	0.02	5	0.6-1.0	√
Chlorite	mg/L	5	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/cm	13	25.8	22.5	24.4	0.5			

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride (Onehunga Local)	mg/L	13	0.17**	0.11**	0.14**	0.02	1.5		√
Fluoride (Onehunga Metropolitan)	mg/L	52	0.72	0.11	0.62	0.02	1.5		√
Iodide	mg/L	1	0.052	0.052	0.052	0.002			
Iron (Total)	mg/L	52	0.008	ND	0.001	0.002		0.2	
Magnesium	mg/L	5	8.50	8.30	8.42	0.001			
Magnesium Hardness	mg/L	5	35.000	34.000	34.800	0.0041			
Manganese	mg/L	5	ND	ND	ND	0.0005	0.4	0.04	√
pH	pH Units	363*	8.6	7.5	7.9	0.1		7.0-8.5	
Potassium	mg/L	1	3.5	3.5	3.5	0.1			
Silicon	mg/L	1	37.0	37.0	37.0	0.1			
Sodium	mg/L	1	21.0	21.0	21.0	0.1		200	
Sulphate	mg/L	15	13.0	11.0	12.3	0.02		250	
Suspended Solids	mg/L	3	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	5	200	120	164	15.0		1000	
Total Hardness	mg/L	5	60.00	58.00	59.00	0.029		200	
Total Organic Carbon TOC	mg/L	51	1.2	0.4	0.5	0.1			
Turbidity	NTU	363*	0.8	ND	0.1	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	353*	ND	ND	ND	1	<1		√

* During the 2018/19 reporting period, the Onehunga WTP was shut down for maintenance from 11/02/2019 - 14/02/2019. Daily compliance samples were not collected on the dates that the plant was not producing water. Samples were collected on the day the plant was shut down and on the day the plant was restarted (within 1 hour of plant restart)

** Naturally occurring fluoride levels only

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	5	0.100	0.086	0.094	0.005			
Nitrate	mg/L NO3	5	13.73	11.07	12.67	0.009	50		√
Nitrite	mg/L NO2	5	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	4	ND	ND	ND	0.1			
Total Phosphorus	mg/L	4	0.110	0.090	0.100	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	4	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	4	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	4	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	4	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	4	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	4	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	4	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	4	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	4	ND	ND	ND	0.1			
Methoxychlor	µg/L	4	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	4	ND	ND	ND	0.2			

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
DDT + isomers	µg/L	4	ND	ND	ND	0.2	1		√
Procymidone	µg/L	4	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	4	ND	ND	ND	0.2	20		√
Atrazine	µg/L	4	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	4	ND	ND	ND	0.1	10		√
Molinate	µg/L	4	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	4	ND	ND	ND	0.2	20		√
Propanil	µg/L	4	ND	ND	ND	0.1			
Simazine	µg/L	4	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	4	ND	ND	ND	0.2	8		√
trifluralin	µg/L	4	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	4	ND	ND	ND	0.2	40		√
Diazinon	µg/L	4	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	4	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	5	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	5	0.0004	0.0003	0.0003	0.0001	0.01		√
Barium	mg/L	1	0.0014	0.0014	0.0014	0.0002	0.7		√
Boron	mg/L	1	0.053	0.053	0.053	0.005	1.4		√
Cadmium	mg/L	5	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	5	0.0012	0.0007	0.0010	0.0005	0.05		√
Copper	mg/L	5	0.0029	0.0012	0.0019	0.0002	2		√
Lead	mg/L	5	0.0006	ND	0.0002	0.0001	0.01		√
Lithium	mg/L	1	0.0005	0.0005	0.0005	0.0001			

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Mercury	mg/L	5	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	0.0011	0.0011	0.0011	0.0003	0.07		√
Nickel	mg/L	5	0.0001	ND	0.0001	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	5	0.002	ND	0.001	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	15	0.0015	ND	0.0002	0.0001	0.06		√
Bromoform	mg/L	15	0.0034	ND	0.0020	0.0001	0.1		√
Chloroform	mg/L	15	0.0015	ND	0.0002	0.0001	0.4		√
Dibromochloromethane	mg/L	15	0.0029	ND	0.0013	0.0001	0.15		√
THMs Ratio		15	0.08	ND	0.03		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	15	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	15	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	15	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	15	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	15	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	15	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	15	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	15	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	15	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	15	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	15	ND	ND	ND	0.0001	0.03	0.004	√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
tetrachloroethane	mg/L	15	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	15	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	15	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	15	ND	ND	ND	0.0001	0.02		√

Snells/Algies WTP Treated

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	1	0.010	0.010	0.010	0.002			
Alkalinity (Total)	mg/L CaCO3	4	200	190	198	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	1	0.02	0.02	0.02	0.01			
Calcium	mg/L	4	3.6	3.4	3.5	0.01			
Calcium Hardness	mg/L	4	9.00	8.60	8.73	0.025			
Chlorate	mg/L	4	0.01	ND	0.01	0.01	0.8		√
Chloride	mg/L	1	37	37	37	0.02		250	
Chlorine Residual	mg/L	122	1.60	0.73	1.28	0.02	5	0.6-1.0	√
Chlorite	mg/L	4	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/cm	1	50.9	50.9	50.9	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.10	0.10	0.10	0.02	1.5		√
Iodide	mg/L	1	0.013	0.013	0.013	0.002			
Iron (Total)	mg/L	14	0.012	0.002	0.004	0.002		0.2	
Magnesium	mg/L	4	0.31	0.29	0.30	0.001			
Magnesium Hardness	mg/L	4	1.300	1.200	1.225	0.0041			
Manganese	mg/L	13	0.0019	0.0014	0.0016	0.0005	0.4	0.04	√
pH	pH Units	122	8.4	7.3	8.3	0.1		7.0-8.5	
Potassium	mg/L	1	0.3	0.3	0.3	0.1			
Silicon	mg/L	1	44	44	44	0.1			
Sodium	mg/L	1	110.0	110.0	110.0	0.1		200	
Sulphate	mg/L	1	4.8	4.8	4.8	0.02		250	
Suspended Solids	mg/L	1	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	1	340	340	340	15		1000	
Total Hardness	mg/L	4	10.0	9.8	9.9	0.029		200	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Total Organic Carbon TOC	mg/L	1	0.6	0.6	0.6	0.1			
Turbidity	NTU	122	0.3	ND	0.1	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	122	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	1	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.091	0.091	0.091	0.005			
Nitrate	mg/L NO3	1	0.066	0.066	0.066	0.009	50		√
Nitrite	mg/L NO2	1	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.11	0.11	0.11	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
gamma-Chlordan	µg/L	1	ND	ND	ND	0.01			
Lindane	µg/L	1	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
DDT + isomers	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
trifluralin	µg/L	1	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	14	ND	ND	ND	0.0001	0.01		√
Barium	mg/L	1	ND	ND	ND	0.0002	0.7		√
Boron	mg/L	1	0.17	0.17	0.17	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0005	0.05		√
Copper	mg/L	1	0.001	0.001	0.001	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.024	0.024	0.024	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	0.003	0.003	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	14	0.0023	ND	0.0006	0.0001	0.06		√
Bromoform	mg/L	14	0.0030	ND	0.0011	0.0001	0.1		√
Chloroform	mg/L	14	0.0014	ND	0.0002	0.0002	0.4		√
Dibromochloromethane	mg/L	14	0.0031	ND	0.0018	0.0001	0.15		√
THM Ratio		14	0.09	ND	0.04		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
Xylene	mg/L	1	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	1	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Victoria Avenue WTP Treated

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	1	ND	ND	ND	0.002			
Alkalinity (Total)	mg/L CaCO3	4	130	120	128	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	1	0.06	0.06	0.06	0.01			
Calcium	mg/L	12	32.0	28.0	29.9	0.01			
Calcium Hardness	mg/L	12	80	70	75	0.025			
Chlorate	mg/L	1	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	1	31.00	31.00	31.00	0.02		250	
Chlorine Residual	mg/L	122	1.10	0.45	0.74	0.02	5	0.6-1.0	√
Chlorite	mg/L	1	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/cm	1	36.5	36.5	36.5	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.05	0.05	0.05	0.02	1.5		√
Iodide	mg/L	1	0.005	0.005	0.005	0.002			
Iron (Total)	mg/L	15	0.006	ND	0.001	0.002		0.2	
Magnesium	mg/L	12	10.00	8.50	9.18	0.001			
Magnesium Hardness	mg/L	12	41.000	35.000	37.750	0.0041			
Manganese	mg/L	15	0.0018	ND	0.0008	0.0005	0.4	0.04	√
pH	pH Units	122	8.1	7.4	7.8	0.1		7.0-8.5	
Potassium	mg/L	1	3.4	3.4	3.4	0.1			
Silicon	mg/L	1	54.0	54.0	54.0	0.1			
Sodium	mg/L	1	21.0	21.0	21.0	0.1		200	
Sulphate	mg/L	1	5.0	5.0	5.0	0.02		250	
Suspended Solids	mg/L	1	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	1	250	250	250	15		1000	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Total Hardness	mg/L	12	120	110	113	0.029		200	
Turbidity	NTU	122	0.3	ND	0.1	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	122	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	1	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.042	0.042	0.042	0.005			
Nitrate	mg/L NO3	1	0.195	0.195	0.195	0.009	50		√
Nitrite	mg/L NO2	1	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.046	0.046	0.046	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
gamma-Chlordan	µg/L	1	ND	ND	ND	0.01			
Lindane	µg/L	1	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
DDT + isomers	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
trifluralin	µg/L	1	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	15	0.0051	0.0042	0.0047	0.0001	0.01		√
Barium	mg/L	1	0.0004	0.0004	0.0004	0.0002	0.7		√
Boron	mg/L	1	0.019	0.019	0.019	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0005	0.05		√
Copper	mg/L	1	ND	ND	ND	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.009	0.009	0.009	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	0.001	0.001	0.001	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	0.0031	ND	0.0011	0.0001	0.06		√
Bromoform	mg/L	13	0.0053	ND	0.0028	0.0001	0.1		√
Chloroform	mg/L	13	0.0010	ND	0.0001	0.0001	0.4		√
Dibromochloromethane	mg/L	13	0.0056	ND	0.0027	0.0001	0.15		√
THM Ratio		13	0.14	ND	0.06		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
Xylene	mg/L	1	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	1	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Waitakere WTP Treated

Acidic Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	3	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	3	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic (2,4-DB)	mg/L	3	ND	ND	ND	0.0001			
Bentazone	mg/L	3	ND	ND	ND	0.0001			
Dichlorprop	mg/L	3	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	3	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	3	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	3	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	3	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	52	0.034	0.010	0.017	0.002			
Alkalinity (Total)	mg/L CaCO3	52	35	12	17	1			
Aluminium	mg/L	52	0.052	0.017	0.024	0.005		0.1	
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	4	0.027	0.007	0.016	0.01			
Calcium	mg/L	15	13.0	8.2	10.2	0.01			
Calcium Hardness	mg/L	15	32.00	20.00	25.33	0.025			
Chlorate	mg/L	4	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	4	24.00	20.00	22.00	0.02		250	
Chlorine Residual	mg/L	365	1.59	1.00	0.53	0.02	5	0.6-1.0	√
Colour	Hazen Units	13	ND	ND	ND	5		10	
Chlorite	mg/L	4	ND	ND	ND	0	0.8		√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Conductivity	mS/cm	13	17.4	14.9	15.9	0.5			
Cyanide	mg/L	3	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	52	0.82	0.60	0.70	0.02	1.5		√
Iodide	mg/L	4	0.004	nD	0.003	0.002			
Iron (Total)	mg/L	52	0.065	0.008	0.013	0.002		0.2	
Magnesium	mg/L	15	2.90	2.00	2.42	0.001			
Magnesium Hardness	mg/L	15	12.000	8.300	9.973	0.0041			
Manganese	mg/L	52	0.0410	0.0013	0.0111	0.0005	0.4	0.04	√
pH	pH Units	365	8.3	7.1	7.6	0.1		7.0-8.5	
Potassium	mg/L	4	1.2	0.9	1.0	0.1			
Silicon	mg/L	4	17.0	11.0	14.3	0.1			
Sodium	mg/L	4	15.0	12.0	13.5	0.1		200	
Sulphate	mg/L	4	22.00	14.00	17.25			250	
Suspended Solids	mg/L	12	0.9	ND	0.2	0.2			
Total Hardness	mg/L	13	42.00	30.00	35.40	0.029		200	
Total Organic Carbon TOC	mg/L	13	1.8	0.7	1.1	0.1			
Turbidity	NTU	365	3.0*	ND	0.3	0.1		2.5	

*Elevated turbidity results were reported by the laboratory on the 22/05/2019. An investigation was completed which determined that the sample results were not representative of water being produced by the plant and was attributed to a sampling issue.

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	365	ND	ND	ND	1	<1		

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	3	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	4	0.009	0.007	0.008	0.005			
Nitrate	mg/L NO3	4	0.244	0.038	0.118	0.009	50		√
Nitrite	mg/L NO2	4	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	3	ND	ND	ND	0.1			
Total Phosphorus	mg/L	3	0.017	0.007	0.011	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	3	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	3	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									√
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	3	ND	ND	ND	0	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	3	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	3	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	3	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	3	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	3	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	3	ND	ND	ND	0.1			
Methoxychlor	µg/L	3	ND	ND	ND	0.2	20		√

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Permethrin (cis + trans)	µg/L	3	ND	ND	ND	0.2			
DDT + isomers	µg/L	3	ND	ND	ND	0.2	1		√
Procymidone	µg/L	3	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	3	ND	ND	ND	0.2	20		√
Atrazine	µg/L	3	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	3	ND	ND	ND	0.1	10		√
Molinate	µg/L	3	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	3	ND	ND	ND	0.2	20		√
Propanil	µg/L	3	ND	ND	ND	0.1			
Simazine	µg/L	3	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	3	ND	ND	ND	0.2	8		√
trifluralin	µg/L	3	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	3	ND	ND	ND	0.2	40		√
Diazinon	µg/L	3	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	3	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	0.0002	ND	0.0001	0.0001	0.01		√
Barium	mg/L	4	0.0084	0.0055	0.0068	0.0002	0.7		√
Boron	mg/L	4	0.013	0.012	0.013	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	4	0.0010	ND	0.0005	0.0005	0.05		√
Copper	mg/L	4	0.0040	0.0026	0.0035	0.0002	2		√
Lead	mg/L	4	ND	ND	ND	0.0001	0.01		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Lithium	mg/L	4	0.0050	0.0003	0.0017	0.0001			
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0003	ND	0.0002	0.0001	0.08		√
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	0.006	0.002	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	52	0.0270	0.0027	0.0111	0.0001	0.06		√
Bromoform	mg/L	52	0.0051	ND	0.0030	0.0001	0.1		√
Chloroform	mg/L	52	0.0240	ND	0.0078	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0220	0.0019	0.0104	0.0001	0.15		√
THMs Ratio		52	0.70	0.09	0.30		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	5	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	5	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	5	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	5	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	5	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	5	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	5	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	5	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	5	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	5	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	5	ND	ND	ND	0.0001	0.03	0.03	√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
tetrachloroethane	mg/L	5	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	5	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	5	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	5	ND	ND	ND	0.0001	0.02		√

Waikato WTP Treated

Acidic Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1080 (Sodium fluoroacetate)	mg/L	2	ND	ND	ND	0.0001	0.0035		
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	13	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	13	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	13	ND	ND	ND	0.0001			
Bentazone	mg/L	13	ND	ND	ND	0.0001			
Dichlorprop	mg/L	13	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	13	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	13	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	13	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	13	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	53	0.041	0.002	0.018	0.002			
Alkalinity (Total)	mg/L CaCO3	53	56	2	46	1			
Aluminium	mg/L	52	0.220	0.025	0.036	0.005		0.1	
Bromate	mg/L	13	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	13	0.04	ND	0.01	0.01			
Calcium	mg/L	13	18.0	13.0	15.8	0.01			
Calcium Hardness	mg/L	13	46	34	39	0.025			
Chlorate	mg/L	13	0.24	0.10	0.17	0.01	0.8		√
Chloride	mg/L	13	21.00	16.00	18.23	0.02		250	
Chlorine Residual	mg/L	365	1.65	0.38	1.24	0.02	5	0.6-1.0	√
Chlorite	mg/L	13	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	4	ND	ND	ND	5		10	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Conductivity	mS/cm	13	23.5	19.4	21.7	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	53	0.83	0.37	0.70	0.02	1.5		√
Iodide	mg/L	4	0.004	0.002	0.003	0.002			
Iron (Total)	mg/L	51	0.410	0.017	0.031	0.002		0.2	
Magnesium	mg/L	13	3.0	2.5	2.7	0.001			
Magnesium Hardness	mg/L	13	12.000	10.000	11.077	0.0041			
Manganese	mg/L	52	0.045	0.001	0.003	0.0005	0.4	0.04	√
pH	pH Units	365	8.3	7.0	7.7	0.1		7.0-8.5	
Potassium	mg/L	4	3.1	2.9	3.0	0.1			
Silicon	mg/L	4	37.0	29.0	31.8	0.1			
Sodium	mg/L	4	19.0	17.0	18.3	0.1		200	
Sulphate	mg/L	13	26.00	20.00	22.85	0.02		250	
Suspended Solids	mg/L	12	1.7	ND	0.4	0.2			
Total Dissolved Solids	mg/L	12	190	130	147				
Total Hardness	mg/L	13	58.0	44.0	50.5	0.029		200	
Total Organic Carbon TOC	mg/L	13	2.0	0.6	1.3	0.1			
Turbidity	NTU	365	0.5	0.05	0.25	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Confirmed Cryptosporidium per 100L	cysts/100 L	10*	ND	ND	ND	1	<1		√
Confirmed Giardia per 100L	cysts/100 L	10*	ND	ND	ND	1	<1		√
E.coli	MPN/100mL	365	ND	ND	ND	1	<1		√

* Due to a scheduling error, samples were not collected in December 2018 and May 2019. The laboratory scheduling and logging system has since been updated to prevent a reoccurrence of this event.

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	4	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	13	0.015	0.007	0.010	0.005			
Nitrate	mg/L NO3	13	3.897	0.886	2.290	0.009	50		√
Nitrite	mg/L NO2	13	0.005	ND	0.000	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	4	ND	ND	ND	0.1			
Total Phosphorus	mg/L	13	0.018	0.009	0.013	0.005			

Plasticizers									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	13	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	13	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	13	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	13	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	13	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	13	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	13	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	13	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	13	ND	ND	ND	0.1			
Methoxychlor	µg/L	13	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	13	ND	ND	ND	0.2			

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
DDT + isomers	µg/L	13	ND	ND	ND	0.2	1		√
Procymidone	µg/L	13	ND	ND	ND	0.2	700		√

Organonitrogen Herbicides									
Alachlor	µg/L	13	ND	ND	ND	0.2	20		√
Atrazine	µg/L	13	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	13	ND	ND	ND	0.1	10		√
Molinate	µg/L	13	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	13	ND	ND	ND	0.2	20		√
Propanil	µg/L	13	ND	ND	ND	0.1			
Simazine	µg/L	13	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	13	ND	ND	ND	0.2	8		√
trifluralin	µg/L	13	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	13	ND	ND	ND	0.2	40		√
Diazinon	µg/L	13	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	13	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	13	0.0025	0.0004	0.0012	0.0001	0.01		√
Barium	mg/L	13	0.0190	0.0150	0.0180	0.0002	0.7		√
Boron	mg/L	13	0.220	0.100	0.170	0.005	1.4		√
Cadmium	mg/L	13	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	13	0.0011	ND	0.0006	0.0005	0.05		√
Copper	mg/L	13	0.0043	ND	0.0014	0.0002	2		√
Lead	mg/L	4	0.0003	ND	0.0001	0.0001	0.01		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Lithium	mg/L	4	0.0680	0.0360	0.0515	0.0001			
Mercury	mg/L	52	0.00044	ND	0.00001	0.00005	0.007		√
Molybdenum	mg/L	4	0.0004	ND	0.0002	0.0003	0.07		√
Nickel	mg/L	4	0.0010	0.0001	0.0004	0.0001	0.08		√
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	0.003	0.002	0.002	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	52	0.0110	0.0020	0.0050	0.0001	0.06		√
Bromoform	mg/L	52	0.0040	ND	0.0010	0.0001	0.1		√
Chloroform	mg/L	52	0.0180	ND	0.0040	0.0001	0.4		√
Dibromochloromethane	mg/L	52	0.0090	0.0020	0.0040	0.0001	0.15		√
THMs Ratio		52	0.27	0.05	0.12		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√

Waiuku Road WTP Treated

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	1	0.003	0.003	0.003	0.002			
Alkalinity (Total)	mg/L CaCO3	4	120	120	120	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	1	0.05	0.05	0.05	0.01			
Calcium	mg/L	12	29.0	27.0	27.4	0.01			
Calcium Hardness	mg/L	12	72	66	68	0.025			
Chlorate	mg/L	1	0.02	0.02	0.02	0.01	0.8		√
Chloride	mg/L	1	32.00	32.00	32.00	0.02		250	
Chlorine Residual	mg/L	122	1.22*	0.36	0.79	0.02	5	0.6-1.0	√
Chlorite	mg/L	1	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/cm	1	34.6	34.6	34.6	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.04	0.04	0.04	0.02	1.5		√
Iodide	mg/L	1	0.002	0.002	0.002	0.002			
Iron (Total)	mg/L	15	0.004	ND	0.001	0.002		0.2	
Magnesium	mg/L	12	7.3	6.8	7.0	0.001			
Magnesium Hardness	mg/L	12	30	28	29	0.0041			
Manganese	mg/L	15	0.0010	ND	0.0005	0.0005	0.4	0.04	√
pH	pH Units	122	8.1	7.8	7.9	0.1		7.0-8.5	
Potassium	mg/L	1	4.9	4.9	4.9	0.1			
Silicon	mg/L	1	34.0	34.0	34.0	0.1			
Sodium	mg/L	1	25.0	25.0	25.0	0.1		200	
Sulphate	mg/L	1	4.80	4.80	4.80	0.02		250	
Suspended Solids	mg/L	1	ND	ND	ND	0.2			
Total Dissolved Solids	mg/L	1	140	140	140	15		1000	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Total Hardness	mg/L	12	100	95	97	0.03		200	
Turbidity		122	0.3	ND	0.1	0.1		2.5	

*In 2018/19, 7.4% of all samples collected from the treated water at the Waiuku Road WTP returned the results for chlorine residual greater than the GV value of 1mg/L. All tested samples were compliant with MAV for chlorine residual.

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	122	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	1	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	1	0.052	0.052	0.052	0.005			
Nitrate	mg/L NO3	1	0.115	0.115	0.115	0.009	50		√
Nitrite	mg/L NO2	1	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	1	ND	ND	ND	0.1			
Total Phosphorus	mg/L	1	0.053	0.053	0.053	0.005			

Plasticizers									
bis (2-ethylhexyl) adipate	µg/L	1	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	1	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Benzo(a)pyrene	µg/L	1	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	1	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	1	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			
DDT + isomers	µg/L	1	ND	ND	ND	0.2	1		√
Procymidone	µg/L	1	ND	ND	ND	0.2	700		√
Organonitrogen Herbicides									
Alachlor	µg/L	1	ND	ND	ND	0.2	20		√
Atrazine	µg/L	1	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	1	ND	ND	ND	0.1	10		√
Molinate	µg/L	1	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	1	ND	ND	ND	0.2	20		√
Propanil	µg/L	1	ND	ND	ND	0.1			
Simazine	µg/L	1	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	1	ND	ND	ND	0.2	8		√
trifluralin	µg/L	1	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	1	ND	ND	ND	0.2	40		√
Diazinon	µg/L	1	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	1	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	15	0.0038	0.0031	0.0035	0.0001	0.01		√
Barium	mg/L	1	0.0005	0.0005	0.0005	0.0002	0.7		√
Boron	mg/L	1	0.025	0.025	0.025	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	ND	ND	ND	0.0005	0.05		√
Copper	mg/L	1	0.0006	0.0006	0.0006	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.0130	0.0130	0.0130	0.0001			
Molybdenum	mg/L	1	ND	ND	ND	0.00005	0.07		√
Mercury	mg/L	1	ND	ND	ND	0.0003	0.007		√
Nickel	mg/L	1	ND	ND	ND	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	0.003	0.003	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	13	0.0033	0.0011	0.0023	0.0001	0.06		√
Bromoform	mg/L	13	0.0046	0.0015	0.0029	0.0001	0.1		√
Chloroform	mg/L	13	0.0027	ND	0.0007	0.0001	0.4		√
Dibromochloromethane	mg/L	13	0.0049	0.0024	0.0038	0.0001	0.15		√
THMs Ratio		13	0.14	0.05	0.10		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
m- & p-Xylene	mg/L	1	ND	ND	ND	0.0001	0.6		√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	1	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Warkworth WTP Treated*

* The Warkworth WTP and river source was taken out of service on 06/12/18, to be replaced by the new Warkworth Wells WTP and groundwater source. No further compliance sampling was undertaken for the original Warkworth WTP after this date.

Acidic Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	6	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	6	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	6	ND	ND	ND	0.0001			
Bentazone	mg/L	6	ND	ND	ND	0.0001			
Dichlorprop	mg/L	6	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	6	ND	ND	ND	0.0001	0.002		√
Mecoprop	mg/L	6	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	6	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	6	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	22	0.02	0.01	0.01	0.002			
Alkalinity (Total)	mg/L CaCO3	23	53	22	34	1			
Aluminium	mg/L	23	0.023	0.010	0.014	0.005		0.1	
Bromate	mg/L	2	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	2	0.036	0.022	0.029	0.01			
Calcium	mg/L	7	23.0	10.0	13.4	0.01			
Calcium Hardness	mg/L	6	35	26	30	0.025			
Chlorate	mg/L	2	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	2	27.0	26.0	26.5	0.02		250	
Chlorine Residual	mg/L	53	1.40	0.86	1.13	0.02	5	0.6-1.0	√

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Chlorite	mg/L	2	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	2	ND	ND	ND	5		10	
Conductivity	mS/cm	6	27.5	21.0	23.5	0.5			
Cyanide	mg/L	2	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	6	0.04	ND	0.01	0.02	1.5		√
Iodide	mg/L	2	0.005	0.003	0.004	0.002			
Iron (Total)	mg/L	7	0.003	ND	0.001	0.002		0.2	
Magnesium	mg/L	7	7.40	3.70	4.69	0.001			
Magnesium Hardness	mg/L	6	19.000	15.000	17.333	0.0041			
Manganese	mg/L	7	0.0260	ND	0.0131	0.0005	0.4	0.04	√
pH	pH Units	53	7.7	7.1	7.3	0.1		7.0-8.5	
Potassium	mg/L	2	1.20	0.94	1.07	0.1			
Silicon	mg/L	2	19.0	18.0	18.5	0.1			
Sodium	mg/L	2	25	21	23	0.1		200	
Sulphate	mg/L	2	32	24	28	0.02		250	
Suspended Solids	mg/L	6	0.30	ND	0.05	0.2			
Total Dissolved Solids	mg/L	6	180.00	120.00	145.00	15		1000	
Total Hardness	mg/L	7	87.00	41.00	52.29	0.029		200	
Total Organic Carbon	mg/L	7	1.60	0.70	1.04	0.1			
Turbidity	NTU	53	0.7	0.1	0.1	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	53	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	2	ND	ND	ND	0.005		1.5	
Dissolved Reactive Phosphorus	mg/L	6	0.009	0.003	0.007	0.005			
Nitrate	mg/L NO3	6	0.260	0.052	0.168	0.009	50		√
Nitrite	mg/L NO2	6	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	2	ND	ND	ND	0.1			
Total Phosphorus	mg/L	6	0.068	0.006	0.018	0.005			

Plasticizers									
bis (2-ethylhexyl) adipate	µg/L	6	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	6	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Benzo(a)pyrene	µg/L	6	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	6	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	6	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	6	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	6	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	6	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	6	ND	ND	ND	0.1			
Methoxychlor	µg/L	6	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	6	ND	ND	ND	0.2			
DDT + isomers	µg/L	6	ND	ND	ND	0.2	1		√
Procymidone	µg/L	6	ND	ND	ND	0.2	700		√

Organonitrogen Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Alachlor	µg/L	6	ND	ND	ND	0.2	20		√
Atrazine	µg/L	6	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	6	ND	ND	ND	0.1	10		√
Molinate	µg/L	6	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	6	ND	ND	ND	0.2	20		√
Propanil	µg/L	6	ND	ND	ND	0.1			
Simazine	µg/L	6	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	6	ND	ND	ND	0.2	8		√
trifluralin	µg/L	6	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	6	ND	ND	ND	0.2	40		√
Diazinon	µg/L	6	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	6	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	2	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	2	0.0002	ND	0.0001	0.0001	0.01		√
Barium	mg/L	2	0.016	0.014	0.015	0.0002	0.7		√
Boron	mg/L	2	0.015	0.015	0.015	0.005	1.4		√
Cadmium	mg/L	2	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	2	0.0005	ND	0.0003	0.0005	0.05		√
Copper	mg/L	2	0.0010	0.0006	0.0008	0.0002	2		√
Lead	mg/L	2	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	2	0.0026	0.0013	0.0020	0.0001			
Molybdenum	mg/L	2	ND	ND	ND	0.00005	0.07		√
Mercury	mg/L	2	ND	ND	ND	0.0003	0.007		√
Nickel	mg/L	2	ND	ND	ND	0.0001	0.08		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Selenium	mg/L	2	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	2	0.004	0.003	0.004	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	22	0.0064	ND	0.0026	0.0001	0.06		√
Bromoform	mg/L	22	0.0035	ND	0.0024	0.0001	0.1		√
Chloroform	mg/L	22	0.0056	ND	0.0005	0.0001	0.4		√
Dibromochloromethane	mg/L	22	0.0064	0.0013	0.0040	0.0001	0.15		√
THMs Ratio		22	0.18	0.03	0.10		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	6	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	6	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	6	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	6	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	6	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	6	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	6	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	6	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	6	ND	ND	ND	0.0001	0.3	0.002	√
m- & p-Xylene	mg/L	6	ND	ND	ND	0.0001	0.6		√
Styrene	mg/L	6	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	6	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	6	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	6	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	6	ND	ND	ND	0.0001	0.02		√

Warkworth Wells WTP Treated*

* The Warkworth Wells WTP and new groundwater source was put into service on 06/12/2018. Routine compliance sampling is reported from this date onwards.

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	1	0.009	0.009	0.009	0.002			
Alkalinity (Total)	mg/L CaCO3	3	180	110	157	1			
Aluminium	mg/L	1	ND	ND	ND	0.005		0.1	
Bromate	mg/L	1	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	1	0.015	0.015	0.015	0.01			
Calcium	mg/L	3	24.0	17.0	19.3	0.01			
Calcium Hardness	mg/L	2	59	42	51	0.025			
Chlorate	mg/L	2	0.018	ND	0.009	0.01	0.8		√
Chloride	mg/L	1	25	25	25	0.02		250	
Chlorine Residual	mg/L	69	1.50	0.60	1.03	0.02	5	0.6-1.0	√
Chlorite	mg/L	2	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	1	ND	ND	ND	5		10	
Conductivity	mS/cm	1	42.1	42.1	42.1	0.5			
Cyanide	mg/L	1	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	1	0.15	0.15	0.15	0.02	1.5		√
Iodide	mg/L	1	0.006	0.006	0.006	0.002			
Iron (Total)	mg/L	29	0.004	ND	ND	0.002		0.2	
Magnesium	mg/L	2	7.4	4.7	6.0	0.001			
Magnesium Hardness	mg/L	2	31	19	25	0.0041			
Manganese	mg/L	29	0.0014	ND	0.0001	0.0005	0.4	0.04	√
pH	pH Units	69	7.9	7.4	7.7	0.1		7.0-8.5	
Potassium	mg/L	1	0.40	0.40	0.40	0.1			
Silicon	mg/L	1	53.0	53.0	53.0	0.1			
Sodium	mg/L	1	68	68	68	0.1		200	
Sulphate	mg/L	1	5	5	5	0.02		250	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Suspended Solids	mg/L	1	ND	ND	ND	0.2			
Total Hardness	mg/L	2	90	61	76	0.029		200	
Total Organic Carbon	mg/L	1	0.8	0.8	0.8	0.1			
Turbidity	NTU	69	0.3	0.1	0.1	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	69	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	1	ND	ND	ND	0.005		1.5	
Dissolved reactive Phosphorus	mg/L	1				0.005			
Nitrate	mg/L NO3	1	0.040	0.040	0.040	0.009	50		√
Nitrite	mg/L NO2	1	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	1	0.110	0.110	0.110	0.1			
Total Phosphorus	mg/L	1	0.078	0.078	0.078	0.005			

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	1	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	1	ND	ND	ND	0.01	0.2		√
Heptachlor	µg/L	1	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	1	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	1	ND	ND	ND	0.1			
Methoxychlor	µg/L	1	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	1	ND	ND	ND	0.2			

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	1	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	8	ND	ND	ND	0.0001	0.01		√
Barium	mg/L	1	0.0006	0.0006	0.0006	0.0002	0.7		√
Boron	mg/L	1	0.17	0.17	0.17	0.005	1.4		√
Cadmium	mg/L	1	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	1	0.0005	0.0005	0.0005	0.0005	0.05		√
Copper	mg/L	1	ND	ND	ND	0.0002	2		√
Lead	mg/L	1	ND	ND	ND	0.0001	0.01		√
Lithium	mg/L	1	0.012	0.012	0.012	0.0001			
Mercury	mg/L	1	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	1	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	1	0.0003	0.0003	0.0003	0.0001	0.08		√
Selenium	mg/L	1	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	1	0.003	0.003	0.003	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	29	0.0099	0.0035	0.0065	0.0001	0.06		√
Bromoform	mg/L	29	0.0045	ND	0.0026	0.0001	0.1		√
Chloroform	mg/L	29	0.0071	ND	0.0040	0.0001	0.4		√
Dibromochloromethane	mg/L	29	0.0110	0.0035	0.0067	0.0001	0.15		√
THMs Ratio		29	0.29	0.10	0.19		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	1	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,2,4-trichlorobenzene	mg/L	1	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	1	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	1	ND	ND	ND	0.0001	0.4	0.0003	√
Benzene	mg/L	1	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	1	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	1	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	1	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	1	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	1	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	1	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	1	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	1	ND	ND	ND	0.0001	0.02		√

Wellsford WTP Treated

Acid Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
2,4,5- trichlorophenoxyacetic acid (2,4,5-T)	mg/L	13	ND	ND	ND	0.0001			
2,4-Dichlorophenoxyacetic acid (2,4-BD)	mg/L	13	ND	ND	ND	0.0001			
4-(2,4-dichlorophenoxyl) butanoic acid (2,4-DB)	mg/L	13	ND	ND	ND	0.0001			
Bentazone	mg/L	13	ND	ND	ND	0.0001			
Dichlorprop	mg/L	13	ND	ND	ND	0.0001	0.1		√
MCPA	mg/L	13	ND	ND	ND	0.0001	0.002		
Mecoprop (MCPP)	mg/L	13	ND	ND	ND	0.0001	0.01		√
Picloram	mg/L	13	ND	ND	ND	0.0001	0.2		√
Triclopyr	mg/L	13	ND	ND	ND	0.0001	0.1		√

Chemical and Physical									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
UV absorbance	Abs units	52	0.022	0.008	0.014	0.002			
Alkalinity (Total)	mg/L CaCO3	52	62	26	46	1			
Aluminium	mg/L	52	0.40	0.007	0.03	0.005		0.1	
Bromate	mg/L	4	ND	ND	ND	0.005	0.01		√
Bromide	mg/L	4	0.03	0.03	0.03	0.01			
Calcium	mg/L	15	15.00	8.40	11.45	0.01			
Calcium Hardness	mg/L	15	38.00	21.00	29.33	0.025			
Chlorate	mg/L	4	ND	ND	ND	0.01	0.8		√
Chloride	mg/L	4	26.00	24.00	25.00	0.02		250	
Chlorine Residual	mg/L	122	1.92	0.74	1.28	0.02	5	0.6-1.0	√
Chlorite	mg/L	4	ND	ND	ND	0.005	0.8		√
Colour	Hazen Units	4	ND	ND	ND	5		10	

Chemical and Physical cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Conductivity	mS/cm	15	30.1	22.3	26.0	0.5			
Cyanide	mg/L	4	ND	ND	ND	0.005	0.6		√
Fluoride	mg/L	13	0.09	ND	0.01	0.02	1.5		√
Iodide	mg/L	4	0.004	ND	0.002	0.002			
Iron (Total)	mg/L	15	0.017	ND	0.005	0.002		0.2	
Magnesium	mg/L	15	5.3	2.2	4.2	0.001			
Magnesium Hardness	mg/L	15	22.000	8.899	17.493	0.0041			
Manganese	mg/L	15	0.120	0.006	0.022	0.0005	0.4	0.04	√
pH	pH Units	122	7.5	6.8	7.3	0.1		7.0-8.5	
Potassium	mg/L	4	1.5	1.1	1.3	0.1			
Silicon	mg/L	4	18.0	16.0	17.3	0.1			
Sodium	mg/L	4	32.0	26.0	29.5	0.1		200	
Sulphate	mg/L	4	42.0	24.0	33.0	0.02		250	
Suspended Solids	mg/L	12	1.8	ND	0.3	0.2			
Total Dissolved Solids	mg/L	13	170	100	148	15		1000	
Total Hardness	mg/L	15	56.00	30.00	46.53	0.029		200	
Total Organic Carbon	mg/L	52	2.00	0.70	1.19	0.1			
Turbidity	NTU	122	0.4	ND	0.1	0.1		2.5	

Microbiology									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
E.coli	MPN/100mL	122	ND	ND	ND	1	<1		√

Nutrients									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Ammonia	mg/L N	4	0.011	ND	0.005	0.005		1.5	
Total Dissolved Phosphorus	mg/L P	13	0.007	0.003	0.005	0.005			
Nitrate	mg/L N	15	2.834	0.021	1.130	0.009	50		√
Nitrite	mg/L N	15	ND	ND	ND	0.007	0.20		√
TKN (Total Kjeldahl Nitrogen)	mg/L N	4	ND	ND	ND	0.1			
Total Phosphorus	mg/L	13	0.075	ND	0.013	0.005			

Plasticizers									√
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
bis (2-ethylhexyl) adipate	µg/L	13	ND	ND	ND	2			
bis (2-ethylhexyl) phthalate	µg/L	13	ND	ND	ND	2	9		√

Polycyclic Aromatic Hydrocarbons									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzo(a)pyrene	µg/L	13	ND	ND	ND	0.1	0.7		√

Semi Volatile Organic Compounds									
Organochlorine Pesticides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Aldrin + Dieldrin	µg/L	13	ND	ND	ND	0.01	0.04		√
Chlordane	µg/L	13	ND	ND	ND	0.01	0.2		√
Lindane	µg/L	13	ND	ND	ND	0.01	2		√
Heptachlor	µg/L	13	ND	ND	ND	0.01			
Heptachlor epoxide	µg/L	13	ND	ND	ND	0.01			
Hexachlorobenzene	µg/L	13	ND	ND	ND	0.1			
Methoxychlor	µg/L	13	ND	ND	ND	0.2	20		√
Permethrin (cis + trans)	µg/L	13	ND	ND	ND	0.2			

Organochlorine Pesticides cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
DDT + isomers	µg/L	13	ND	ND	ND	0.2	1		√
Procymidone	µg/L	13	ND	ND	ND	0.2	700		√

Organonitrogen Herbicides									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Alachlor	µg/L	13	ND	ND	ND	0.2	20		√
Atrazine	µg/L	13	ND	ND	ND	0.1	2		√
Metolachlor	µg/L	13	ND	ND	ND	0.1	10		√
Molinate	µg/L	13	ND	ND	ND	0.1	7		√
Pendimethalin	µg/L	13	ND	ND	ND	0.2	20		√
Propanil	µg/L	13	ND	ND	ND	0.1			
Simazine	µg/L	13	ND	ND	ND	0.1	2		√
terbuthylazine	µg/L	13	ND	ND	ND	0.2	8		√
trifluralin	µg/L	13	ND	ND	ND	0.2	30		√
Organophosphorus Pesticides									
Chlorpyriphos	µg/L	13	ND	ND	ND	0.2	40		√
Diazinon	µg/L	13	ND	ND	ND	0.1			
Pirymiphos methyl	µg/L	13	ND	ND	ND	0.2	100		√

Trace Elements									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Antimony	mg/L	4	ND	ND	ND	0.001	0.02		√
Arsenic	mg/L	4	0.0002	ND	0.0001	0.0001	0.01		√
Barium	mg/L	4	0.0200	0.0140	0.0163	0.0002	0.7		√
Boron	mg/L	4	0.016	0.011	0.013	0.005	1.4		√
Cadmium	mg/L	4	ND	ND	ND	0.00005	0.004		√
Chromium	mg/L	4	0.0006	ND	0.0002	0.0005	0.05		√

Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Copper	mg/L	4	0.0080	0.0032	0.0050	0.0002	2		√
Lead	mg/L	4	0.0001	ND	ND	0.0001	0.01		√
Lithium	mg/L	4	0.0022	0.0011	0.0017	0.0001			
Mercury	mg/L	4	ND	ND	ND	0.00005	0.007		√
Molybdenum	mg/L	4	ND	ND	ND	0.0003	0.07		√
Nickel	mg/L	4	0.0005	0.0003	0.0004	0.0001	0.08		√
Trace Elements cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Selenium	mg/L	4	ND	ND	ND	0.0005	0.01		√
Zinc	mg/L	4	0.006	0.003	0.004	0.001		1.5	

Trihalomethanes									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Bromodichloromethane	mg/L	52	0.0130	0.0012	0.0052	0.0001	0.06		√
Bromoform	mg/L	52	0.0047	ND	0.0023	0.0001	0.1		√
Chloroform	mg/L	52	0.0170	ND	0.0029	0.0001	0.4		√
Dibromochlorometane	mg/L	52	0.0120	0.0021	0.0061	0.0001	0.15		√
THMs Ratio		52	0.33	0.04	0.16		1		√

Volatile Organic Compounds									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
1,1,1-trichloroethane	mg/L	13	ND	ND	ND	0.0001			
1,2,3-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2,4-trichlorobenzene	mg/L	13	ND	ND	ND	0.0001			
1,2-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	1.5	0.001	√
1,2-dichloroethane	mg/L	13	ND	ND	ND	0.0001	0.03		√
1,4-dichlorobenzene	mg/L	13	ND	ND	ND	0.0001	0.4	0.0003	√

Volatile Organic Compounds cont.									
Component Name	**Units**	**Number of Samples**	**Max**	**Min**	**Average**	**Detection Limit**	**MAV DWSNZ**	**GV DWSNZ**	**Compliance DWSNZ 2005 (Revised 2018)**
Benzene	mg/L	13	ND	ND	ND	0.0001	0.01		√
Carbon tetrachloride	mg/L	13	ND	ND	ND	0.0001			
Ethylbenzene	mg/L	13	ND	ND	ND	0.0001	0.3	0.002	√
Xylenes (total)	mg/L	13	ND	ND	ND	0.0001	0.6	0.02	√
Styrene	mg/L	13	ND	ND	ND	0.0001	0.03	0.004	√
tetrachloroethane	mg/L	13	ND	ND	ND	0.0001	0.05		√
Toluene	mg/L	13	ND	ND	ND	0.0001	0.8	0.03	√
1,2-dichloroethene (cis + trans)	mg/L	13	ND	ND	ND	0.0001	0.06		√
Trichloroethene	mg/L	13	ND	ND	ND	0.0001	0.02		√

Water Quality Compliance Data for the Distribution Network Grading Zones

Anzac Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.50	7.50	0.00
Median	0.25	0.00	0.92	7.80	0.00
Average	0.24	0.00	0.89	7.79	3.44
Maximum	0.45	0.00	1.13	8.10	130.00
Number of Samples	104	104	104	104	39

Auckland Grading Zone

Supplied by: Ardmore, Huia, Onehunga, and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.25	7.40	0.00
Median	0.15	0.00	0.93	7.80	0.00
Average	0.23	0.00	0.89	7.86	1.27
Maximum	14.00	0.00	1.60	9.00	200.00
Number of Samples	770	770	770	770	282

Auckland Airport Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.40	6.50	0.00
Median	0.15	0.00	0.92	7.90	0.00
Average	0.17	0.05	0.92	7.92	8.31
Maximum	0.45	6.4*	1.14	8.50	200.00
Number of Samples	125	125	125	125	49

* The *E.coli* result of 6.4 MPN/100mL was reported to the Auckland Regional Public Health Service. Investigations confirmed this result was due to environmental contamination of the sample and was not representative of the water in supply. Compliance with the DWSNZ was maintained.

Bombay Grading Zone

Supplied by: Bombay WTP

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.47	6.80	0.00
Median	0.10	0.00	0.82	7.70	0.00
Average	0.13	0.00	0.81	7.68	0.06
Maximum	0.80	0.00	1.19	7.90	2.00
Number of Samples	89	89	89	89	32

Buckland Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.21	7.50	0.00
Median	0.20	0.00	0.88	7.80	0.00
Average	0.24	0.00	0.86	7.82	0.03
Maximum	0.70	0.00	1.04	8.20	1.00
Number of Samples	90	90	90	90	32

Central Business District Grading Zone

Supplied by: Ardmore, Huia, and Waikato WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.36	7.60	0.00
Median	0.15	0.00	0.79	7.90	0.00
Average	0.20	0.00	0.78	8.00	0.93
Maximum	2.90	0.00	1.02	9.30	24.00
Number of Samples	163	163	163	163	57

Clarks / Waiau Beach Grading Zone

Supplied by: Ardmore and Waikato WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.40	7.60	0.00
Median	0.20	0.00	0.75	7.90	0.00
Average	0.23	0.00	0.74	7.90	2.19
Maximum	0.50	0.00	1.15	8.20	62.00
Number of Samples	95	95	95	95	38

East Tamaki / Botany Grading Zone

Supplied by: Ardmore and Waikato WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.57	7.40	0.00
Median	0.15	0.00	1.02	7.80	0.00
Average	0.28	0.00	1.00	7.80	1.00
Maximum	18.00	0.00	1.27	8.50	78.00
Number of Samples	233	233	233	233	81

Glenbrook Beach Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.15	7.60	0.00
Median	0.20	0.00	0.70	7.90	0.00
Average	0.26	0.00	0.68	7.87	0.55
Maximum	1.20	0.00	0.94	8.30	6.40
Number of Samples	91	91	91	91	33

Results from 1 March 2019:

Glen Eden / New Lynn Grading Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.13	7.40	0.00
Median	0.15	0.00	0.90	7.80	0.00
Average	0.19	0.00	0.86	7.76	0.17
Maximum	1.10	0.00	1.24	8.40	6.40
Number of Samples	259	259	259	259	97

Results from 1 March 2019:

HBC / Waiwera Grading Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.07	7.70	0.00
Median	0.20	0.00	0.81	8.20	0.00
Average	0.24	0.00	0.73	8.33	3.17
Maximum	4.90	0.00	1.45	9.20	200.00
Number of Samples	176	176	176	176	63

Results from 1 March 2019:

Helensville / Parakai Grading Zone

Supplied by: Helensville WTP

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.11	7.20	0.00
Median	0.10	0.00	0.78	7.30	0.00
Average	0.14	0.00	0.75	7.37	0.10
Maximum	1.00	0.00	1.11	7.70	1.00
Number of Samples	108	108	108	108	42

Henderson Grading Zone

Supplied by: Ardmore, Huia, and Waikato WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.26	6.80	0.00
Median	0.15	0.00	0.92	7.80	0.00
Average	0.19	0.00	0.90	7.80	1.43
Maximum	1.10	0.00	1.37	8.40	200.00
Number of Samples	410	410	410	410	145

High Head Grading Zone

Supplied by: Ardmore and Waikato WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.40	7.40	0.00
Median	0.15	0.00	0.90	7.80	0.00
Average	0.17	0.00	0.90	7.78	0.00
Maximum	0.45	0.00	1.33	8.10	0.00
Number of Samples	114	114	114	114	37

Hillsborough Grading Zone

Supplied by: Ardmore, Huia, Onehunga, and Waikato WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.34	7.40	0.00
Median	0.20	0.00	0.91	7.80	0.00
Average	0.23	0.00	0.90	7.83	0.54
Maximum	3.60	1**	1.44	8.50	45.00
Number of Samples	263	263	263	263	89

** The *E.coli* result of 1 MPN/100mL was reported to the Auckland Regional Public Health Service. Investigations confirmed this result was due to environmental contamination of the sample and was not representative of the water in supply. Compliance with the DWSNZ was maintained.

Hilltop Grading Zone

Supplied by: Ardmore and Waikato WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.00	7.60	0.00
Median	0.20	0.00	0.56	7.80	0.00
Average	0.22	0.00	0.55	7.82	5.71
Maximum	0.45	0.00	1.02	8.20	200.00
Number of Samples	104	104	104	104	35

Howick / Pakuranga Grading Zone

Supplied by: Ardmore and Waikato WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.45	7.50	0.00
Median	0.15	0.00	0.85	7.90	0.00
Average	0.17	0.00	0.85	7.93	1.80
Maximum	1.40	0.00	1.24	8.70	200.00
Number of Samples	381	381	381	381	138

Huia Village Grading Zone

Supplied by: Huia Village WTP

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.21	7.50	0.00
Median	0.10	0.00	0.75	8.00	0.00
Average	0.15	0.00	0.76	7.98	0.62
Maximum	1.60	0.00	1.30	8.70	16.00
Number of Samples	106	106	106	106	41

Kitchener Grading Zone

Supplied by: Ardmore and Waikato WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.30	7.40	0.00
Median	0.25	0.00	0.89	7.80	0.00
Average	0.24	0.00	0.87	7.81	4.36
Maximum	0.80	0.00	1.35	8.20	200.00
Number of Samples	158	158	158	158	58

Laingholm Grading Zone

Supplied by: Huia WTP

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.26	7.50	0.00
Median	0.20	0.00	0.75	8.00	0.00
Average	0.22	0.00	0.72	8.00	0.00
Maximum	2.80	0.00	1.03	8.60	0.00
Number of Samples	115	115	115	115	37

Mangere Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.48	7.30	0.00
Median	0.15	0.00	1.00	7.80	0.00
Average	0.20	0.00	0.98	7.81	3.89
Maximum	3.60	0.00	1.46	8.10	200.00
Number of Samples	294	294	294	294	106

Manurewa Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.52	7.30	0.00
Median	0.15	0.00	0.95	7.90	0.00
Average	0.18	0.00	0.95	7.91	0.02
Maximum	0.80	0.00	1.55	8.50	1.00
Number of Samples	280	280	280	280	96

Maungawhau Grading Zone

Supplied by: Ardmore, Huia, and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.25	7.40	0.00
Median	0.15	0.00	0.81	7.80	0.00
Average	0.20	0.00	0.78	7.81	0.11
Maximum	3.20	0.00	1.29	8.90	8.70
Number of Samples	255	255	255	255	88

Montana Grading Zone

Supplied by: Huia WTP

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms (Results from 1 March 2019:)
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.28	7.40	0.00
Median	0.18	0.00	0.78	7.80	0.00
Average	0.19	0.00	0.77	7.85	0.33
Maximum	1.00	0.00	1.44	8.70	12.00
Number of Samples	102	102	102	102	36

Mt Hobson Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms (Results from 1 March 2019:)
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.23	7.60	0.00
Median	0.15	0.00	0.69	7.90	0.00
Average	0.18	0.00	0.66	7.91	0.26
Maximum	0.65	0.00	1.48	8.40	14.00
Number of Samples	152	152	152	152	53

Muriwai Grading Zone

Supplied by: Muriwai WTP

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms (Results from 1 March 2019:)
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.38	7.30	0.00
Median	0.15	0.00	1.01	7.40	0.00
Average	0.23	0.00	0.99	7.46	0.00
Maximum	2.30	0.00	1.97	8.10	0.00
Number of Samples	87	87	87	87	29

North Shore South Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.21	7.60	0.00
Median	0.15	0.00	0.79	7.90	0.00
Average	0.18	0.00	0.77	7.88	0.22
Maximum	1.60	0.00	1.82	9.40	18.00
Number of Samples	436	436	436	436	153

North Shore West Grading Zone

Supplied by: Ardmore, Huia, and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.21	5.90	0.00
Median	0.15	0.00	0.90	7.90	0.00
Average	0.20	0.00	0.88	7.85	0.54
Maximum	2.20	0.00	1.38	8.40	70.00
Number of Samples	417	417	417	417	150

Onehunga Grading Zone

Supplied by: Onehunga WTP

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.57	7.50	0.00
Median	0.10	0.00	0.89	7.90	0.00
Average	0.11	0.07	0.90	7.86	0.00
Maximum	0.35	11***	1.40	8.50	0.00
Number of Samples	151	151	151	151	47

*** The *E.coli* result of 11 MPN/100mL was reported to the Auckland Regional Public Health Service. Investigations confirmed this result was due to environmental contamination of the sample and was not representative of the water in supply. Compliance with the DWSNZ was maintained.

Oratia Grading Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.30	7.20	0.00
Median	0.15	0.00	0.76	8.30	0.00
Average	0.19	0.00	0.74	8.30	2.70
Maximum	1.10	0.00	1.77	9.10	48.00
Number of Samples	122	122	122	122	47

Otahuhu Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.68	7.40	0.00
Median	0.15	0.00	0.99	7.80	0.00
Average	0.19	0.00	0.99	7.83	0.60
Maximum	0.60	0.00	1.47	8.30	24.00
Number of Samples	112	112	112	112	40

Otara / Papatoetoe / Manukau Central Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.38	7.20	0.00
Median	0.15	0.00	1.02	7.80	0.00
Average	0.19	0.00	1.01	7.79	0.33
Maximum	1.20	0.00	1.36	8.40	27.00
Number of Samples	267	267	267	267	94

Patumahoe Grading Zone

Supplied by: Ardmore and Waikato WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.30	7.40	0.00
Median	0.20	0.00	0.80	7.80	0.00
Average	0.29	0.00	0.79	7.79	7.47
Maximum	4.30	0.00	1.56	8.20	200.00
Number of Samples	80	80	80	80	30

Snells / Algies Grading Zone

Supplied by: Snells/Algies WTP

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.80	8.20	0.00
Median	0.10	0.00	1.06	8.30	0.00
Average	0.13	0.00	1.08	8.34	0.00
Maximum	0.60	0.00	1.34	8.50	0.00
Number of Samples	98	98	98	98	32

Swanson Grading Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.10	0.00	0.26	7.30	0.00
Median	0.20	0.00	0.84	7.90	0.00
Average	0.22	0.00	0.78	7.93	2.27
Maximum	0.60	0.00	1.18	8.50	110.00
Number of Samples	139	139	139	139	56

Te Henga Grading Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.05	7.60	0.00
Median	0.20	0.00	0.69	8.10	0.00
Average	0.22	0.00	0.66	8.22	0.02
Maximum	0.90	0.00	1.27	9.90	1.00
Number of Samples	119	119	119	119	41

Waiuku Grading Zone

Supplied by: Cornwall Road, Victoria Avenue, and Waiuku Road WTPs

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.42	7.60	0.00
Median	0.10	0.00	0.67	8.00	0.00
Average	0.12	0.00	0.69	7.95	5.33
Maximum	0.40	0.00	1.16	8.30	200.00
Number of Samples	125	125	125	125	52

Warkworth Grading Zone

Supplied by: Warkworth WTP and Warkworth Wells WTP

	Turbidity	*E.coli*	Chlorine Residual	pH	Results from 1 March 2019: Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.05	0.00	0.35	7.10	0.00
Median	0.10	0.00	0.85	7.50	0.00
Average	0.13	0.00	0.84	7.50	0.19
Maximum	0.75	0.00	1.37	7.90	3.10
Number of Samples	97	97	97	97	37

Wellsford Grading Zone

Supplied by: Wellsford WTP

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.46	7.20	0.00
Median	0.15	0.00	0.83	7.40	0.00
Average	0.18	0.00	0.84	7.45	0.39
Maximum	1.40	0.00	1.20	7.90	9.90
Number of Samples	119	119	119	119	44

Whenuapai Grading Zone

Supplied by: Ardmore, Huia, Waikato, and Waitakere WTPs

Results from 1 March 2019:

	Turbidity	*E.coli*	Chlorine Residual	pH	Total coliforms
	NTU	MPN/100 mL	mg/L	pH unit	MPN/100 mL
Minimum	0.00	0.00	0.34	7.50	0.00
Median	0.20	0.00	0.85	7.90	0.00
Average	0.22	0.00	0.82	7.95	0.76
Maximum	1.50	0.00	1.12	8.60	38.00
Number of Samples	157	157	157	157	57