

Waikato District Council Wastewater Treatment Monitoring Results

Site: Matangi WWTP  
 Consent number: 105551  
 Report Period: July 2011 - June 2012

Missing data	
Suspect data	
Value actually < number shown	

1 Characterisation Values - Tests from Final Manhole Effluent

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12
Suspended Solids	g/cum	3.0	3.0	3.0	3.2	5.0	3	3	3	3	3	3	3	3	3.0	3.0	3	3
cBOD5	g/cum	1.8	1.1	2.0	2.0	5.0	1.8	1.0	1.7	1.2	1.8	2.0	1.7	1.1	3.0	5.0	2	2
Ammoniacal-N	g/cum	0.6	0.2	1.4	0.7	2.0	2	0.35	0.32	0.13	0.62	0.66	0.71	0.73	0.22	1.40	0.49	1.20
Nitrate	g/cum	32.0	23.2	41.6	30.9	47.0	29	25	0.32	36	34	38	23	30	38	29	47	42
TN	g/cum	32.8	23.9	42.9	31.8	47.5	31.00	25.35	0.64	36.13	34.6	40	23.71	30.73	38.22	30.40	47.49	43.20
DRP	g/cum	7.4	4.5	8.7	7.0	10.1	4.4	3.5	5.4	6.9	7.1	8.8	5.7	7.7	8.2	8.1	10.1	7.7
Faecal coliforms	MPN/100mL	3800	2260	1880	7894	37000	5500	3900	2800	2200	810	4400	20000	8600	3400	37000	3700	3500
pH (field)	units	8.7	8.6	8.3	7.1	6.64	6.64	6.80	6.30	6.59	6.55	6.67	6.80	6.76	7.13	6.64	6.71	6.7
Conductivity(field)	uS/cm	756	568	964	757	1006.0	622	562	547	734	661	826	747	794	977	765	1006	842
Temperature	°C	18.5	14.1	21.8	18.2	22.5	14.1	14.3	15.5	17.0	19.1	22.5	21.3	21.9	21.0	20.1	17.8	14.0
Dissolved Oxygen		3.6	2.3	5.4	3.8	5.6	5.61	5.46	3.00	4.1	2.88	2.29	1.86	2.95	4.53	3.06	5.13	5.29

2 Characterisation Values - Tests from Sampling Bore 1 (in paddock within dripper irrigation disposal bed)

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-11	Oct-11	Jan-12	Apr-12
Suspended Solids	g/cum	895	410	1737	1023	1920	380	480	1310	1920
cBOD5	g/cum	2	2	2	2	2	2	2	2	2
Ammoniacal-N	g/cum	0.02	0.01	0.06	0.03	0.07	0.07	0.01	0.018	0.03
Nitrate	g/cum	12.20	7.34	24.55	14.88	28.00	28	16.5	7.9	7.1
TN	g/cum	12.21	7.37	24.61	14.91	28.09	28.09	16.51	7.918	7.13
DRP	g/cum	0.02	0.02	0.02	0.02	0.02	0.02	0.015	0.02	0.023
Faecal coliforms	MPN/100mL	10	4	66	28	90	10	10	90	2
pH (field)	units	6.23	6.16	7.21	6.53	7.61	6.80	6.1	6.19	6.26
Conductivity(field)	uS/cm	548	522	835	539	551	548.0	511	551	547
Temperature	°C	15.85	14.19	19.47	16.55	20.40	14.4	14.1	17.3	20.4
Dissolved Oxygen		4.26	2.60	5.56	4.13	5.63	5.63	5.41	2.38	3.1

3 Characterisation Values - Tests from Sampling Bore 2 (between WWTP entry gates on Robinson Lane)

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-11	Oct-11	Jan-12	Apr-12
Suspended Solids	g/cum	5.0	3.0	9.1	5.8	10	3	10	3	7
cBOD5	g/cum	1.0	1.0	1.7	1.3	2.0	1	1	1	2
Ammoniacal-N	g/cum	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Nitrate	g/cum	26.0	6.32	34.50	22.01	36	21	31	0.026	36
TN	g/cum	26.0	6.33	34.51	22.02	36	21.009	31.01	0.036	36
DRP	g/cum	4.8	4.1	5.7	4.9	6	5.3	4	5.9	4.2
Faecal coliforms	MPN/100mL	3	2	46	18	64	2	2	4	64
pH (field)	units	6.23	6.5	6.9	6.6	7	6.80	6.51	6.65	6.55
Conductivity(field)	uS/cm	632	625	835	702	920	635	623	628	920
Temperature	°C	17.7	15.5	19.9	17.7	20	15.6	15.5	20	19.7
Dissolved Oxygen		4.3	3.4	5	4	5	4.3	4.77	3.0	4.27

4 Characterisation Values - Tests from Sampling Bore 3 (by railway line on north side of farmers gate)

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-11	Oct-11	Jan-12	Apr-12
Suspended Solids	g/cum	3.0	3.0	3.0	3.0	3.0	3	3	3	3
cBOD5	g/cum	1.0	1.0	1.7	1.3	2.0	1	1	1	2
Ammoniacal-N	g/cum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.010	0.010
Nitrate	g/cum	2.10	2.00	2.80	2.31	3.10	2.1	2.1	3.1	1.95
TN	g/cum	2.6	2.0	3.5	2.7	3.6	3.6	2.11	3.11	1.96
DRP	g/cum	0.03	0.03	0.03	0.03	0.04	0.026	0.03	0.028	0.037
Faecal coliforms	MPN/100mL	2	2	2	2	2	2	2	2	2
pH (field)	units	6.35	6.23	6.38	6.32	6.38	6.33	6.38	6.37	6.18
Conductivity(field)	uS/cm	127	109	132	103	170	132	103	122	170
Temperature	°C	15.85	14.78	16.92	15.85	17.10	14.6	15.2	16.5	17.1
Dissolved Oxygen		9.2	6.1	9.9	8.4	10.1	5	10.13	9.47	8.91

5 Daily Discharge Volume

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	22-Jul-11	26-Jul-11	05-Aug-11	11-Aug-11	18-Aug-11	23-Aug-11	30-Aug-11	06-Sep-11	13-Sep-11	21-Sep-11	27-Sep-11	04-Oct-11	10-Oct-11	11-Oct-11	20-Oct-11	1-Nov-11	2-Nov-11	8-Nov-11	15-Nov-11	22-Nov-11
Avg Daily Flow	m3/day	20.0	14.1	43.0	23.4	48.6	15.0	15.0	15.0	15.0	15.0	14.4	15.0	24.7	14.4	13.2	12.2	13.9	18.2	15.0	16.4	19.0	29.0	14.0	14.1	12.7
							28-Nov-11	6-Dec-11	8-Dec-11	12-Dec-11	19-Dec-11	29-Dec-11	5-Jan-12	9-Jan-12	17-Jan-12	24-Jan-12	31-Jan-12	1-Feb-12	7-Feb-12	14-Feb-12	21-Feb-12	28-Feb-12	1-Mar-12	6-Mar-12	13-Mar-12	20-Mar-12
							15.0	16.5	23.0	18.8	17.4	6.3	31.4	17.0	20.75	18.7	18.9	25.0	20.0	21.9	27.0	26.4	28.00	23.60	23.29	44.14
							3-Apr-12	10-Apr-12	12-Apr-12	17-Apr-12	23-Apr-12	2-May-12	11-May-12	15-May-12	22-May-12	28-May-12	5-Jun-12	13-Jun-12	18-Jun-12	20-Jun-12	25-Jun-12					
							47.7	47.0	45.0	41.4	37.0	45.2	48.6	36.3	29.3	20.17	20	25.5	23.4	29.5	29.0					

6 Characterisation Values - Nutrient Loads

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	22-Jul-11	26-Jul-11	05-Aug-11	11-Aug-11	18-Aug-11	23-Aug-11	30-Aug-11	06-Sep-11	13-Sep-11	21-Sep-11	27-Sep-11	04-Oct-11	10-Oct-11	11-Oct-11	20-Oct-11	1-Nov-11	2-Nov-11	8-Nov-11	15-Nov-11	22-Nov-11
Average TN discharged per day	kg/day	0.7	0.37	1.3	0.6	1.7	0.47	0.47	0.38	0.38	0.38	0.36	0.36	0.02	0.01	0.01	0.01	0.50	0.66	0.54	0.59	0.66	1.00	0.48	0.49	0.44
Average TN application rate	kg/ha.day	8.4	3.5	13.5	6.6	18.1	4.43	4.43	3.62	3.62	3.62	3.47	3.62	0.15	0.09	0.08	0.07	4.77	6.29	5.16	5.66	6.26	9.56	4.62	4.66	4.19
Average TP discharged per day	kg/day	0.2	0.1	0.4	0.1	0.4	0.07	0.07	0.05	0.05	0.05	0.05	0.05	0.14	0.08	0.07	0.07	0.10	0.13	0.11	0.12	0.13	0.21	0.10	0.10	0.09
Average TP application rate	kg/ha.day	1.5	0.5	3.5	1.3	3.7	0.64	0.64	0.51	0.51	0.51	0.49	0.51	1.30	0.75	0.69	0.64	0.98	1.28	1.06	1.16	1.28	1.96	0.95	0.96	0.86
							28-Nov-11	6-Dec-11	8-Dec-11	12-Dec-11	19-Dec-11	29-Dec-11	5-Jan-12	9-Jan-12	17-Jan-12	24-Jan-12	31-Jan-12	1-Feb-12	7-Feb-12	14-Feb-12	21-Feb-12	28-Feb-12	1-Mar-12	6-Mar-12	13-Mar-12	20-Mar-12
							0.52	0.66	0.92	0.75	0.70	0.25	0.75	0.40	0.49	0.44	0.45	0.77	0.61	0.67	0.83	0.81	1.07	0.90	0.89	1.69
							4.95	6.29	8.76	7.14	6.64	2.40	7.10	3.84	4.69	4.23	4.26	7.32	5.85	6.40	7.73	10.19	8.59	8.48	16.07	
							0.11	0.15	0.20	0.17	0.16	0.06	0.02	0.10	0.12	0.11	0.11	0.20	0.16	0.18	0.22	0.21	0.24	0.20	0.20	0.38
							1.01	1.40	1.95	1.59	1.48	0.53	0.21	0.96	1.17	1.05	1.06	1.93	1.54	1.69	2.08	2.04	2.27	1.91	1.89	3.57
							3-Apr-12	10-Apr-12	12-Apr-12	17-Apr-12	23-Apr-12	2-May-12	11-May-12	15-May-12	22-May-12	28-May-12	5-Jun-12	13-Jun-12	18-Jun-12	20-Jun-12	25-Jun-12					
							1.45	1.43	1.37	1.26	1.12	2.15	2.31	1.72	1.39	0.96	0.86	1.10	1.01	1.27	1.25					
							13.81	13.61	13.03	11.99	10.71	20.45	21.96	16.40	13.25	9.12	8.23	10.49	9.63	12.14	11.93					
							0.39	0.38	0.36	0.34	0.30	0.46	0.49	0.37	0.30	0.20	0.15	0.20	0.18	0.23	1.25					
							3.88	3.63	3.47	3.19	2.65	4.35	4.67	3.49	2.82	1.94	1.47	1.87	1.72	2.16	11.93					

nb: TN = TKN+nitrate+nitrite.

Value of TN applied to site is taken from average calculated TN data from outlet x average daily inflow / 0.105Ha wetland area (two disposal areas: 16m x 16m under sand filter, dripper irrigation bed