

Waikato District Council Wastewater Treatment Monitoring Results

Matangi WWTP
10551
Jul 2010 - Jun 2011

Consent number	10551
Report Period	Jul 2010 - Jun 2011
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-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11
Suspended Solids	g/cm	3.0	3.0	4.1	3.0	9.0	3.0	3.0	4.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
cBOD5	g/cm	2.3	1.3	5.5	3.0	10.0	1.8	1.0	10.0	1.8	2.6	5.8	2.8	1.2	1.8	2.4	2.4	2.2
COD	g/cm	20.0	14.6	26.1	20.3	27.0	16.00							14	24			27
Ammoniacal-N	g/cm	0.4	0.2	3.7	1.6	7.9	0.38	0.42	7.9	0.2	0.21	0.56	0.34	0.21	1.80	3.70	0.29	3.20
TKN	g/cm	1.6	1.2	4.3	2.6	9.3	1.5	1.2	1.22	2.60	1.81	1.20	2.40	4.50	1.06	2.60		
Nitrate	g/cm	36.0	16.8	47.4	31.6	51.0	30	16.9	1.03	17	22	35	51	40	42	40	48	37
Nitrite	g/cm	0.27	0.1	0.6	0.3	1.9	0.036	0.061	0.97	0.07	0.11	0.48	0.29	0.167	0.60	0.54	0.29	0.24
TN	g/cm	39.0	18.1	48.9	34.5	53.1	31.45	18.41	11.30	18.05	23.33	38.08	53.10	41.39	45.00	45.04	49.35	39.84
DRP	g/cm	7.3	3.6	9.4	6.8	10.5	4.9	3.6	3.0	3.8	5.2	7.5	10.5	9.0	9.4	9.2	8.5	7.1
Total Phosphorus	g/cm	9.2	6.5	9.8	8.6	10.5	4.8											
Faecal coliforms	MPN/100mL	11000	1500	43800	18542	45000	3300	4400	42000	11000	45000	23000	44000	1300	700	11000	9500	
E coli	MPN/100mL	3300	1320	15600	7060	20000	3300			9000	20000					600		2400
pH (field)	units	8.8	8.6	7.2	8.8	7.4	5.71	6.75	7.10	7.24	7.25	7.36	7.04	6.75	6.6	6.69	6.93	6.7
alkalinity	g/cm																	
Conductivity(field)	uS/cm	809.0	371.7	930.5	750.7	1063.0	342	531	354	744	881	936	1083	878	783	832	858	786
Temperature	°C	17.8	13.9	21.8	18.1	23.3	12.7	13.8	15.2	15.5	17.5	21.6	23.3	21.6	20.3	21.0	18.0	16.4
Dissolved Oxygen	%	4.1	2.8	6.9	4.6	7.6	7.00	7.50	1.47	5.0	4.13	5.85	4.13	4.10	3.51	2.75	5.87	4.05

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

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	Jul-10	Oct-10	Jan-11	Apr-11
Suspended Solids	g/cm	1915	1207	2210	1768	2300	1830	940	2300	2000
cBOD5	g/cm	1	1	1	1	2	1	1	1	1.5
COD	g/cm	89	89	89	89	89	89	89	89	89
Ammoniacal-N	g/cm	0.04	0.02	0.11	0.05	0.13	0.014	0.029	0.042	0.134
TKN	g/cm	1.08	0.86	1.46	1.15	1.55	1.55	0.81	26	1.08
Nitrate	g/cm	20.15	9.72	37.30	22.55	43.00	24	16.3	6.9	43
Nitrite	g/cm	0.003	0.002	0.035	0.014	0.048	0.002	0.004	0.002	0.048
TN	g/cm	21.33	9.97	38.56	23.42	44.13	25.55	17.11	6.90	44.13
DRP	g/cm	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.02	0.02
Total Phosphorus	g/cm	2.10	2.10	2.50	2.27	2.60	2.10			2.60
Faecal coliforms	MPN/100mL	10	4	24	13	30	2	10	10	30
E coli	MPN/100mL	10	4	26	14	30	2	10	10	30
pH (field)	units	6.06	5.95	6.11	6.04	6.11	5.9	6.0	6.1	6.1
alkalinity	g/cm	473	385	600	487	640	353.1	465.0	461.0	649.0
Conductivity(field)	uS/cm	15.75	13.58	19.69	16.03	19.20	13.4	14.0	17.5	19.2
Temperature	°C	4.06	2.64	4.93	3.86	5.23	5.23	3.90	2.10	4.22
Dissolved Oxygen	%									

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

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	July-10	Oct-10	Jan-11	Apr-11
Suspended Solids	g/cm	3.0	3.0	21.9	9.8	30	3	3	3	30
cBOD5	g/cm	1.0	1.0	1.0	1.0	1	1	1	1	1
COD	g/cm	6.0	6.0	6.0	6.0	6	6	6	6	6
Ammoniacal-N	g/cm	0.036	0.010	0.354	0.140	0.480	0.01	0.48	0.061	0.010
TKN	g/cm	0.57	0.23	3.51	0.82	3.1	0.82	0.1	0.56	0.4
Nitrate	g/cm	17.7	9.2	36.2	21.3	41	25	8.7	10.4	41
Nitrite	g/cm	0.009	0.004	0.023	0.012	0.027	0.005	0.004	0.027	0.013
TN	g/cm	18.1	10.0	36.6	21.9	42	25.11	9.52	11.02	41.55
DRP	g/cm	3.65	2.58	4.93	3.73	5.20	2.4	4.3	5.2	
Total Phosphorus	g/cm	4.4	3.3	4.8	4.1	4.9	3.0		4.4	4.9
Faecal coliforms	MPN/100mL	3	2	4	3	4	2	4	2	4
E coli	MPN/100mL	2	2	4	3	4	2	4	2	4
pH (field)	units	6.6	6.2	6.7	6.5	6.7	6.07	6.6	6.67	6.69
alkalinity	g/cm	529.0	370.2	741.0	548.0	813	321	485	573	813
Conductivity(field)	uS/cm	16.05	13.44	19.29	16.28	19.80	13.2	14	18.1	19.8
Temperature	°C	3.50	2.48	3.90	3.26	3.90	3.1	3.9	2.21	3.89
Dissolved Oxygen	%									

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	July-10	Oct-10	Jan-11	Apr-11
Suspended Solids	g/cm	3.0	3.0	4.0	3.0	7.3	3	3	7	3
cBOD5	g/cm	1.0	1.0	1.0	1.0	1	1	1	1	1
COD	g/cm	6.0	6.0	6.0	6.0	6	6	6	6	6
Ammoniacal-N	g/cm	0.01	0.01	0.01	0.01	0.01	0.010	0.016	0.01	0.01
TKN	g/cm	0.1	0.1	0.2	0.1	0.2	0.11	0.10	0.18	0.18
Nitrate	g/cm	3.3	2.6	8.0	4.7	9.8	2.7	9.8	2.5	3.9
Nitrite	g/cm	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
TN	g/cm	3.442	2.662	8.163	4.850	9.912	2.802	9.91	2.60	4.08
DRP	g/cm	0.03	0.02	0.04	0.03	0.04	0.03	0.02	0.038	0.027
Total Phosphorus	g/cm	0.03	0.03	0.04	0.03	0.04	0.03	0.04	0.044	0.027
Faecal coliforms	MPN/100mL	3.0	2.0	3.2	2.5	10.0	2	4	10	2
E coli	MPN/100mL	2.0	2.0	3.6	2.7	4.0	2	4	4	2
pH (field)	units	6.31	6.12	6.45	6.30	6.49	6.49	6.07	6.25	6.37
alkalinity	g/cm	106.0	79.2	226.5	139.5	273.0	72.9	273	94	118
Conductivity(field)	uS/cm	15.4	13.6	16.6	15.2	16.8	13.2	14.5	16.8	16.2
Temperature	°C	7.77	3.66	9.60	6.93	9.63	6.33	2.64	9.2	
Dissolved Oxygen	%									

5 Daily Discharge Volume

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	15-Jul-10	21-Jul-10	28-Jul-10	03-Aug-10	10-Aug-10	17-Aug-10	01-Sep-10	14-Sep-10	15-Sep-10	23-Sep-10	19-Oct-10	28-Oct-10	03-Nov-10	11-Nov-10	16-Nov-10	24-Nov-10	7-Dec-10	16-Dec-10	23-Dec-10	29-Dec-10
Avg Daily Flow	m ³ /day	45.7	21.5	111.4	55.9	129.0	63.9	64.7	67.3	48.5	53.6	87.4	110.8	87.4	129.0	124.3	117.6	100.3	42.8	111.4	74.2	56.6	56.6	69.7	26.0	36.3
6-Jan-11 12-Jan-11 19-Jan-11 20-Jan-11 8-Feb-11 22-Feb-11 1-Mar-11 10-Mar-11 16-Mar-11 22-Mar-11 29-Mar-11 6-Apr-11 No further information available from this point as meters not yet fully installed																										
21.4 21.3 22.3 19.0 39.5 29.8 28.6 33.0 28.5 32.7 32.3 31.13																										

6 Characterisation Values - Nutrient Loads

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	15-Jul-10	21-Jul-10	28-Jul-10	03-Aug-10	10-Aug-10	17-Aug-10	01-Sep-10	14-Sep-10	15-Sep-10	23-Sep-10	19-Oct-10	28-Oct-10	03-Nov-10	11-Nov-10	16-Nov-10	24-Nov-10	7-Dec-10	16-Dec-10	23-Dec-10	29-Dec-10
Average TN discharged per day	kg/day	1.4	1.0	2.1	1.5	2.7	2.01	1.72	2.12	0.89	0.99	0.32	1.25	0.96	1.46	1.40	2.12	1.81	1.00	2.60	1.73	1.32	2.16	2.65	0.99	1.38
Average TN application rate	kg/ha/day	13.3	8.4	20.2	13.9	25.3	19.14	16.38	20.16	8.50	9.40	3.03	11.93	9.41	13.68	13.38	20.22	17.24	9.51	24.75	16.49	12.55	20.53	25.28	9.43	13.16
Average TP discharged per day	kg/day	0.3	0.2	0.4	0.4	2.1	0.31	0.26	2.12	0.17	0.18	0.06	0.33	0.26	0.39	0.37	0.46	0.38	0.22	0.58	0.39	0.29	0.42	0.52	0.20	0.27
Average TP application rate	kg/ha/day	2.8	1.9	4.2	3.4	20.2	2.92	2.50	20.16	1.66	1.84	0.59	3.17	2.50	3.69	3.55	4.26	3.63	2.12	5.52	3.67	2.80	4.04	4.98	1.86	2.59
6-Jan-11 12-Jan-11 19-Jan-11 20-Jan-11 8-Feb-11 22-Feb-11 1-Mar-11 10-Mar-11 16-Mar-11 22-Mar-11 29-Mar-11 6-Apr-11 No further information available from this point as meters not yet fully installed																										
1.14 1.13 1.13 1.01 1.63 1.23 1.20 1.49 1.30 1.47 1.46 1.40																										
10.82 10.77 11.28 9.61 15.57 11.75 12.26 14.14 12.34 14.01 13.84 13.35																										
2.14 2.15 2.23 1.90 3.84 2.97 2.46 2.86 2.50 2.83 2.80 2.79																										

nb: TN = TKN+nitrate+nitrite.
Value of TN applied to site is taken from average calculated TN data from outlet x average daily inflow / 0.10