

suspect data

1 Characterisation Values - Tests from Final Manhole Effluent

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	15-Jul-08	12-Aug-08	16-Sep-08	21-Oct-08	18-Nov-08	18-Dec-08	27-Jan-09	09-Feb-09	05-Mar-09	21-Apr-09	21-May-09	16-Jun-09
Suspended Solids	g/cum	3.9	2.1	8.4	4.6	9.7	6.60	3.30	3.00	2.00	3.40	5.20	3.80	3.90	2.00	4.00	9.70	8.60
BOD	g/cum	2.8	2.2	6.4	4.8	22.0	2.20	6.50	2.90	22.00	2.20	2.60	3.50	2.10	2.70	2.70	3.00	5.40
COD	g/cum	26	22	29	29	74	24.00	74.00	28.00	12.00	27.00	29.00	29.00	22.00	23.00	26.00	22.00	
Ammoniacal-N	g/cum	1.7	0.7	6.9	4.3	29.0	29.00	2.90	0.89	1.30	0.76	1.60	2.90	0.58	0.67	1.80	2.40	7.30
TKN	g/cum	2.8	1.8	6.7	5.1	26.0	26.00	5.10	2.10	2.90	1.80	2.70	4.60	2.10	1.40	3.00	2.50	6.90
Nitrate	g/cum	29.0	15.3	38.9	27.5	39.0	1.20	15.00	18.00	24.00	25.00	27.00	36.00	31.00	37.00	38.00	39.00	39.00
Nitrite	g/cum	0.25	0.05	1.03	1.85	19.00	0.38	19.00	1.10	0.38	0.16	0.29	0.23	0.10	0.15	0.04	0.04	0.27
TN	g/cum	35.9	27.0	41.5	34.5	46.2	27.58	39.10	21.20	27.28	26.96	29.99	40.83	33.20	38.55	41.04	41.54	46.17
DRP	g/cum	7.7	4.5	8.6	6.9	10.0	3.40	5.00	4.40	5.40	6.40	8.60	10.00	7.90	7.50	8.10	8.30	7.90
Total Phosphorus	g/cum	7.5	4.7	8.6	7.0	10.0	3.40	4.90	4.70	5.60	7.50	8.50	10.00	7.70	7.30	8.50	8.60	
Faecal coliforms	MPN/100mL	4700	1450	19500	9117	29000	20000.00	29000.00	15000.00	1400.00	4200.00	5200.00	12000.00	1900.00	3600.00	3000.00	1100.00	13000.00
E coli	MPN/100mL	2800	1070	17300	6180	20000	20000.00	17000.00	9000.00	800.00	2600.00	5200.00		1400.00	1700.00	3000.00	1100.00	1100.00
pH (field)	units	6.0	5.4	6.2	5.9	7.2	7.23	5.95	6.15	6.05	6.03	5.96	6.19	5.55	5.70	5.34	5.26	5.49
alkalinity	g/cum	29.0	4.4	45.0	38.0	190.0	190.00	26.00	45.00	38.00	29.00	31.00	36.00	9.30	4.40	3.80	5.40	
Conductivity(field)	uS/cm	587.0	489.7	660.0	586.8	710.0	661.00	573.00	450.00	486.00	523.00	588.00	710.00	562.00	586.00	651.00	607.00	645.00
Temperature	°C	16.5	11.5	22.9	16.9	25.0	11.40	11.90	15.00	16.10	16.80	19.80	23.00	25.00	21.80	17.00	14.00	10.70
Dissolved Oxygen		4.0	3.1	6.5	4.4	7.4	7.39	4.39	3.05	2.83	3.43	3.56	3.10	3.60	4.77	5.50	6.56	4.71

2 Characterisation Values - Tests from Sampling Bore 1 (in paddock)

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	15-Jul-08	12-Aug-08	16-Sep-08	21-Oct-08	18-Nov-08	18-Dec-08	21-Apr-09
Suspended Solids	g/cum	1200.0	724.0	2900.0	1572.9	3500.0	310.00	1000.00	1000.00	3500.00	1200.00	1500.00	2500.00
BOD	g/cum	1.4	1.0	5.7	2.8	12.0	1.00	1.00	1.40	1.30	1.50	12.00	1.50
COD	g/cum	290.0	104.4	448.0	278.7	490.0	120.00	81.00	400.00	490.00	420.00	150.00	290.00
Ammoniacal-N	g/cum	0.014	0.010	0.044	0.024	0.064	0.06	0.03	0.01	0.01	0.01	0.01	0.03
TKN	g/cum	1.3	1.0	1.9	1.4	1.9	1.30	0.64	1.80	1.90	1.20	1.20	1.90
Nitrate	g/cum	16.0	9.2	22.2	15.6	24.0	16.00	24.00	21.00	10.00	9.50	8.80	20.00
Nitrite	g/cum	0.002	0.002	0.058	0.021	0.087	0.038	0.017	0.002	0.002	0.002	0.087	0.001
TN	g/cum	17.3	10.5	23.5	17.1	24.7	17.34	24.66	22.80	11.90	10.70	10.09	21.90
DRP	g/cum	0.0	0.0	0.0	0.0	0.0	0.02	0.01	0.02	0.02	0.02	0.02	0.02
Total Phosphorus	g/cum	1.6	0.6	3.4	1.9	4.4	2.40	1.10	1.70	4.40		1.50	0.12
Faecal coliforms	MPN/100mL	6	1	126	47	300	10.00	1.00	2.00	1.00	9.20	6.00	300.00
E coli	MPN/100mL	6	1	126	47	300	10.00	1.00	2.00	1.00	6.90	6.00	300.00
pH (field)	units	6	6	7	6	7	6.78	6.52	6.31	6.24	6.26	6.18	6.12
alkalinity	g/cum	56	44	76	60	84	30.00	55.00	54.00	56.00	71.00	84.00	67.00
Conductivity(field)	uS/cm	435	366	515	439	560	316.00	485.00	435.00	400.00	425.00	451.00	560.00
Temperature	°C	13.9	12.6	16.3	14.2	16.8	13.20	11.60	13.90	14.00	13.80	16.00	16.80
Dissolved Oxygen		4.8	2.8	8.4	5.3	8.8	8.77	8.20	5.68	4.76	2.07	4.42	3.22

3 Characterisation Values - Tests from Sampling Bore 2 (between gates)

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	15-Jul-08	12-Aug-08	16-Sep-08	21-Oct-08	18-Nov-08	18-Dec-08	27-Jan-09	21-Apr-09
Suspended Solids	g/cum	450.0	149.0	601.0	387.5	650.0	650	410	180	490	520	580	100	170
BOD	g/cum	1.6	1.0	2.5	1.7	4.0	1.1	1.7	1.5	1.6	1.8	4	1	1
COD	g/cum	13.0	6.5	33.2	19.3	71.0	16	71	17	13	12	13	7.2	5
Ammoniacal-N	g/cum	0.225	0.018	1.251	0.513	2.000	2	0.59	0.01	0.021	0.17	0.1	0.28	0.93
TKN	g/cum	1.1	0.7	2.1	1.3	3.0	3	1.7	0.86	1.2	0.93	1.3	0.51	0.76
Nitrate	g/cum	20.0	17.5	30.8	22.8	35.0	19	29	21	19	19	14	26	35
Nitrite	g/cum	0.018	0.007	0.058	0.028	0.110	0.014	0.11	0.036	0.0088	0.018	0.021	0.017	0.0021
TN	g/cum	22.0	18.6	32.3	24.1	35.8	22.014	30.81	21.896	20.2088	19.948	15.321	26.527	35.7621
DRP	g/cum	2.9	1.5	4.5	2.9	4.7	4.4	3.2	2	1.4	1.6	2.5	3.2	4.7
Total Phosphorus	g/cum	3.5	2.1	4.9	3.5	5.0	5	4.2	2.5	2.2	1.9	3.7	3.2	4.9
Faecal coliforms	MPN/100mL	10.0	2.4	490.0	142.9	700.0	10	3	10	10	400	700	1	9
E coli	MPN/100mL	10.0	4.8	480.0	148.3	600.0	10	3	6	10	400	600		9
pH (field)	units	5.9	5.7	6.0	5.8	6.0	5.87	5.67	5.92	5.68	5.83	5.74	5.92	6.04
alkalinity	g/cum	33.5	25.7	47.6	34.4	49.0	49	34	47	27	25	33	34	26
Conductivity(field)	uS/cm	506.0	426.7	634.5	523.1	652.0	528	627	484	419	430	481	564	652
Temperature	°C	15.6	13.0	18.8	15.8	20.0	13.8	13	12.9	15.8	15.3	17.1	20	18.3
Dissolved Oxygen		2.8	2.1	5.3	3.4	6.8	1.88	2.85	6.76	4.67	2.23	3.55	2.16	2.81

4 Characterisation Values - Tests from Sampling Bore 3 (by railway line)

Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	15-Jul-08	12-Aug-08	16-Sep-08	21-Oct-08	18-Nov-08	18-Dec-08	27-Jan-09	21-Apr-09
Suspended Solids	g/cum	395.0	131.4	619.0	396.0	850.0	180	520	370	300	510	420	18	850
BOD	g/cum	1.0	0.9	1.0	1.0	1.0	1	1	1	0.9	1	1	1	0.9
COD	g/cum	9.9	5.7	83.4	28.8	110.0	7.7	110	72	5	6	12	6	12
Ammoniacal-N	g/cum	0.010	0.009	0.013	0.011	0.013	0.013	0.013	0.01	0.009	0.01	0.011	0.01	0.009
TKN	g/cum	0.4	0.2	0.7	0.4	0.9	0.41	0.61	0.34	0.3	0.55	0.25	0.1	0.93
Nitrate	g/cum	4.9	4.0	7.5	5.5	9.5	9.5	4.4	3.4	4.2	5.4	6.2	6.6	4.3
Nitrite	g/cum	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.0019	0.002	0.002	0.002	0.001
TN	g/cum	5.6	4.3	7.7	5.9	9.9	9.912	5.012	3.742	4.5019	5.952	6.452	6.702	5.231
DRP	g/cum	0.0	0.0	0.0	0.0	0.0	0.025	0.026	0.019	0.015	0.016	0.017	0.028	0.028
Total Phosphorus	g/cum	0.4	0.1	0.5	0.3	0.5	0.18	0.52	0.45	0.36	0.42	0.42	0.039	0.17
Faecal coliforms	MPN/100mL	9.0	1.7	53.9	18.8	70.0	10	47	2	9	70	2	1	9
E coli	MPN/100mL	9.0	1.6	55.0	20.9	70.0	10	45	2	9	70	1		9
pH (field)	units	6.1	6.0	6.2	6.1	6.3	6	6.13	6.08	6.08	6.1	6	6.26	6.2
alkalinity	g/cum	16.5	13.7	18.6	16.3	20.0	14	15	17	17	20	18	16	13
Conductivity(field)	uS/cm	129.5	117.4	146.9	131.6	163.0	163	131	122	121	140	128	138.8	109
Temperature	°C	14.5	13.2	16.7	14.9	18.1	13.2	13.1	14.4	14.6	14	15.9	18.1	16.1
Dissolved Oxygen		8.9	5.5	9.6	8.1	10.0	8.51	10.01	9.43	6.81	2.41	9.47	8.89	8.91

5 Daily Discharge Volume		Limit - 52 m3/day																
Parameter	Units	Median	10 Percentile	90 Percentile	Average	Maximum	04-Jul-08	11-Jul-08	11-Aug-08	19-Aug-08	26-Aug-08	02-Sep-08	16-Sep-08	19-Sep-08	24-Sep-08	30-Sep-08	01-Oct-08	07-Oct-08
Avg Daily Flow	m3/day	33.5	28.1	50.7	36.9	59.9		28.1	28.6	42.9	57.7	59.9	50.7	50.7	48.0	44.5	35.0	32.2
							14-Oct-08	21-Oct-08	18-Nov-08	09-Dec-08	18-Dec-08	05-Jan-09	14-Jan-09	27-Jan-09	04-Feb-09	16-Feb-09	05-Mar-09	18-Mar-09
							34.0	0.3	55.4	24.4	32.9	28.1	26.3	26.3	32.0	40.3	37.1	33.8
							31-Mar-09	15-Apr-09	21-Apr-09	27-Apr-09	12-May-09	21-May-09	26-May-09	10-Jun-09	16-Jun-09			
							33.5	30.6	29.7	32.8	32.0	36.9	32.2	33.2	35.3			

6 Characterisation Values - Nutrient Loads		Median	10 Percentile	90 Percentile	Average	Maximum	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09
Average TN discharged per day	kg/day	1.24	0.86	1.57	1.23	1.68	0.78	1.68	1.08	0.92	1.49	0.86	1.10	1.20	1.34	1.27	1.40	1.58
Average TN application rate	kg/Ha.day	11.44	8.18	14.23	11.36	16.03	7.39	16.03	10.25	8.76	14.23	8.18	10.47	11.44	12.77	12.13	13.33	15.07
Average TP discharged per day	kg/day	0.25	0.19	0.29	0.25	0.42	0.10	0.21	0.24	0.19	0.42	0.24	0.27	0.28	0.25	0.26	0.29	
Average TP application rate	kg/Ha.day	2.42	1.80	2.76	2.38	3.96	0.91	2.01	2.27	1.80	3.96	2.32	2.56	2.65	2.42	2.51	2.76	0.00

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 25m x 33m)

7 Characterisation Values - Comparison of Treated Quality 2007-08 versus 2008-09

Parameter	Units	2007-08 Median	2008-09 Median	2007-08 90 Percentile	2008-09 90 Percentile	2007-08 Average	2008-09 Average
TKN	g/cum	36.00	2.80	42.40	6.72	36.67	5.09
Ammonia NH4-N (median from 10pa)	g/cum	37.00	1.70	39.20	6.86	36.46	4.34
DRP	g/cum	11.00	7.70	14.20	8.57	11.53	6.91
BOD (median from 10)	g/cum	12.00	2.80	13.20	6.39	10.99	4.82
FC (m median from 5 samples in 30 days)	MPN/100mL	85000	4700	134000	19500	91333	9117

8 Comparison of 2007-08 vs 2008-09 - Bore 1 (in paddock)

		2007-08 Median	2008-09 Median	2007-08 90 Percentile	2008-09 90 Percentile	2007-08 Average	2008-09 Average
BOD	g/cum	1.50	1.40	1.88	5.70	1.14	2.81
COD	g/cum	375.00	290.00	465.00	448.00	330.00	278.71
Ammoniacal-N	g/cum	1.10	0.01	1.68	0.04	0.96	0.02
Total Kjeldahl Nitrogen	g/cum	2.80	1.30	3.42	1.90	2.71	1.42
Nitrate	g/cum	12.00	16.00	18.80	22.20	12.74	15.61
Nitrite	g/cum	0.05	0.00	0.09	0.06	0.06	0.02
TN	g/cum	14.16	17.34	21.74	23.54	15.52	17.06
DRP	g/cum	0.03	0.02	0.03	0.02	0.02	0.02
Total Phosphorus	g/cum	4.30	1.70	10.68	38.24	6.06	14.32
Faecal coliforms	MPN/100mL	10.00	6.00	449.20	126.00	160.70	47.03

9 Comparison of 2007-08 vs 2008-09 - Bore 2 (between gates)

		2007-08 Median	2008-09 Median	2007-08 90 Percentile	2008-09 90 Percentile	2007-08 Average	2008-09 Average
BOD	g/cum	1.00	1.55	1.18	2.46	0.91	1.71
COD	g/cum	6.75	13.00	61.00	33.20	24.58	19.28
Ammoniacal-N	g/cum	1.90	0.23	3.48	1.25	2.03	0.51
Total Kjeldahl Nitrogen	g/cum	1.80	1.07	3.12	2.09	1.84	1.28
Nitrate	g/cum	27.00	20.00	32.00	30.80	26.94	22.75
Nitrite	g/cum	0.01	0.02	0.04	0.06	0.02	0.03
TN	g/cum	30.61	21.96	33.76	32.30	28.80	24.06
DRP	g/cum	5.30	2.85	6.84	4.49	5.49	2.88
Total Phosphorus	g/cum	5.70	3.45	7.20	4.93	5.98	3.45
Faecal coliforms	MPN/100mL	9.00	10.00	27.20	490.00	11.57	142.88

10 Comparison of 2007-08 vs 2008-09 - Bore 2 (by railway line)

		2007-08 Median	2008-09 Median	2007-08 90 Percentile	2008-09 90 Percentile	2007-08 Average	2008-09 Average
BOD	g/cum	1.00	1.00	1.00	1.00	0.86	0.98
COD	g/cum	6.00	9.85	87.00	83.40	33.00	28.84
Ammoniacal-N	g/cum	0.01	0.01	0.01	0.01	0.01	0.01
Total Kjeldahl Nitrogen	g/cum	0.10	0.38	0.58	0.71	0.26	0.44
Nitrate	g/cum	6.72	4.90	7.72	7.47	6.22	5.50
Nitrite	g/cum	0.00	0.00	0.00	0.00	0.00	0.00
TN	g/cum	6.82	5.59	7.82	7.67	6.48	5.94
DRP	g/cum	0.03	0.02	0.04	0.03	0.03	0.02
Total Phosphorus	g/cum	0.04	0.39	0.74	0.47	0.26	0.32
Faecal coliforms	MPN/100mL	1.00	9.00	15.60	53.90	5.57	18.75