



**FEHILY
TIMONEY**

CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

APPENDIX 8.B2

Biological Water Quality
(Q-Sample Results)

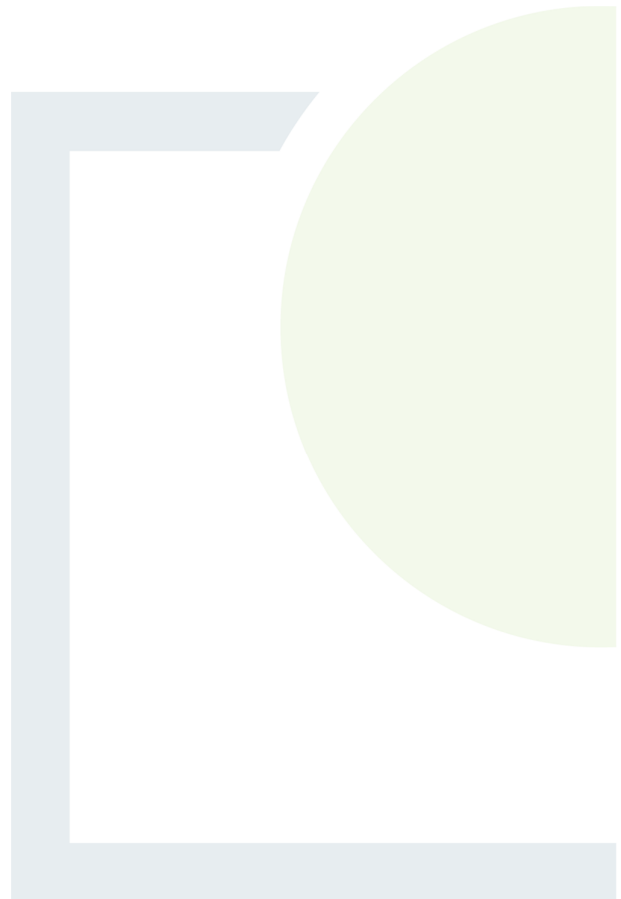


Table 8B.8-1: Macro-invertebrate Q-sampling results for survey sites A1, A2, A5, B6, B8, B9, B10 and B11, July 2020

Group	Family	Species	Site A1	Site A2	Site A5	Site B6	Site B8	Site B9	Site B10	Site B11	EPA class
Ephemeroptera	Heptageniidae	<i>Ecdyonurus venosus</i>			2		1		1	1	A
Ephemeroptera	Heptageniidae	<i>Rhithrogena semicolorata</i>				10	43	32	2	1	A
Ephemeroptera	Heptageniidae	<i>Heptagenia sulphurea</i>				1	2	1	3	1	A
Plecoptera	Chloroperlidae	<i>Siphonoperla torrentium</i>	7	8	16			2	1	2	A
Plecoptera	Nemouridae	<i>Protonemura meyeri</i>						2		2	A
Plecoptera	Perlodidae	<i>Isoperla grammatica</i>	2	3	21	3		7		1	A
Plecoptera	Leuctridae	<i>Leuctra hippopus</i>	9	1	4			1		8	B
Trichoptera	Glossosomatidae	<i>Agapetus fuscipes</i>						1			B
Trichoptera	Goeridae	<i>Silo pallipes</i>				9					B
Trichoptera	Limnephilidae	<i>Potamophylax cingulatus</i>		1	1		1				B
Trichoptera	Limnephilidae	<i>Chaetopteryx villosa</i>			6						B
Trichoptera	Limnephilidae	<i>Drusus annulatus</i>				1					B
Trichoptera	Limnephilidae	<i>Halesus radiatus</i>						1			B
Trichoptera	Odontoceridae	<i>Odontocerum albicorne</i>				1	1				B
Trichoptera	Sericostomatidae	<i>Sericostoma personatum</i>					1	1			B
Ephemeroptera	Baetidae	<i>Baetis rhodani</i>	8	68	17	2	13	4		38	C
Ephemeroptera	Caenidae	<i>Caenis rivulorum</i>								3	C
Ephemeroptera	Ephemerellidae	<i>Serratella ignita</i>			31	6	50	11		19	C
Trichoptera	Hydropsychidae	<i>Hydropsyche siltalai</i>			15	2	4	4	1		C
Trichoptera	Philopotamidae	<i>Wormaldia occipitalis</i>			28				2		C
Trichoptera	Philopotamidae	<i>Philopotamus montanus</i>				3			1	1	C
Trichoptera	Polycentropodidae	<i>Plectrocnemia conspersa</i>	9	2	3					1	C
Trichoptera	Polycentropodidae	<i>Plectrocnemia geniculata</i>			5				1		C
Trichoptera	Polycentropodidae	<i>Polycentropus kingi</i>			1						C

Group	Family	Species	Site A1	Site A2	Site A5	Site B6	Site B8	Site B9	Site B10	Site B11	EPA class
Trichoptera	Polycentropodidae	<i>Polycentropus flavomaculatus</i>								1	C
Trichoptera	Rhyacophilidae	<i>Rhyacophila munda</i>	2	1		2	2				C
Trichoptera	Rhyacophilidae	<i>Rhyacophila dorsalis</i>			3	1		1		1	C
Coleoptera	Dytiscidae	<i>Oreodytes sanmarkii</i>	1				2				C
Coleoptera	Elmidae	<i>Elmis aenea</i>		2	7		1	3		12	C
Coleoptera	Elmidae	<i>Limnius volckmari</i>				2	1	1		1	C
Coleoptera	Hydraenidae	<i>Hydraena gracilis</i>	1	2	1	1	1	2		4	C
Coleoptera	Scirtidae	Scirtidae larva						1	1		C
Diptera	Chironomidae	Chironomid larva	2	2	9		5	2		34	C
Diptera	Limoniidae	<i>Eloeophila</i> sp. larva								2	C
Diptera	Pediciidae	<i>Dicranota</i> sp.	2	2	7		1			6	C
Diptera	Simuliidae	<i>Prosimulium</i> sp.				1		6	1	2	C
Amphipoda	Gammaridae	<i>Gammarus duebeni</i>		5	2	3	4	1	12	7	C
Mollusca	Planorbidae	<i>Ancylus fluviatilis</i>		3				2			C
Hemiptera	Veliidae	<i>Veliidae nymph</i>			1					1	C
Hemiptera	Veliidae	<i>Velia caprai</i>								1	C
Arachnida	Hydrachnidia	Unidentified species			1					30	C
Annelidae	Oligochaeta	Unidentified species	2	2			1				n/a
Abundance			45	102	181	48	134	86	28	178	
Taxon richness			11	14	18	14	15	19	10	19	
Q-rating			Q4	Q4	Q4	Q4	Q4	Q4-5	Q4	Q4	
WFD status			Good	Good	Good	Good	Good	High	Good	Good	

Table 8B.8-2: Macro-invertebrate Q-sampling results for riverine survey sites C3, C5, C7, C11, C12, C13 and C17, July 2020

Group	Family	Species	Site C3	Site C5	Site C7	Site C11	Site C12	Site C13	Site C17	EPA class
Ephemeroptera	Heptageniidae	<i>Ecdyonurus venosus</i>				3	1	3		A
Ephemeroptera	Heptageniidae	<i>Rhithrogena semicolorata</i>	7		9	30		6		A
Ephemeroptera	Heptageniidae	<i>Heptagenia sulphurea</i>	1	1		1				A
Ephemeroptera	Heptageniidae	<i>Ecdyonurus insignis</i>			6					A
Plecoptera	Chloroperlidae	<i>Siphonoperla torrentium</i>	1							A
Plecoptera	Chloroperlidae	<i>Chloroperla tripunctata</i>					3	2		A
Plecoptera	Nemouridae	<i>Nemoura cinerea</i>								A
Plecoptera	Perlidae	<i>Perla bipunctata</i>			6	11	6	2		A
Plecoptera	Leuctridae	<i>Leuctra hippopus</i>		10	1	1	10			B
Trichoptera	Glossosomatidae	<i>Agapetus delicatulus</i>				1				B
Trichoptera	Glossosomatidae	<i>Glossosoma boltoni</i>			1					B
Trichoptera	Goeridae	<i>Silo pallipes</i>	3			1				B
Trichoptera	Odontoceridae	<i>Odontocerum albicorne</i>			3		1			B
Trichoptera	Limnephilidae	<i>Drusus annulatus</i>							1	B
Trichoptera	Limnephilidae	<i>Potamophylax latipennis</i>			2					B
Trichoptera	Sericostomatidae	<i>Sericostoma personatum</i>	1				1			B
Ephemeroptera	Baetidae	<i>Baetis rhodani</i>	9	13	19	15	10	17	16	C
Ephemeroptera	Caenidae	<i>Caenis rivulorum</i>		2		7	3	9		C
Ephemeroptera	Ephemerellidae	<i>Serratella ignita</i>	5	8	57	15		53	1	C
Trichoptera	Hydropsychidae	<i>Hydropsyche siltalai</i>				24	3	18	1	C
Trichoptera	Philopotamidae	<i>Wormaldia occipitalis</i>								C
Trichoptera	Philopotamidae	<i>Philopotamus montanus</i>				1	1		1	C
Trichoptera	Polycentropodidae	<i>Plectrocnemia conspersa</i>	2							C
Trichoptera	Polycentropodidae	<i>Plectrocnemia geniculata</i>		1						C
Trichoptera	Polycentropodidae	<i>Polycentropus kingi</i>							2	C

Group	Family	Species	Site C3	Site C5	Site C7	Site C11	Site C12	Site C13	Site C17	EPA class
Trichoptera	Polycentropodidae	<i>Polycentropus flavomaculatus</i>					1	2		C
Trichoptera	Rhyacophilidae	<i>Rhyacophila munda</i>		1		1		1		C
Trichoptera	Rhyacophilidae	<i>Rhyacophila dorsalis</i>	1		2	1	3	11	3	C
Coleoptera	Dytiscidae	<i>Oreodytes sanmarkii</i>	1	2						C
Coleoptera	Dytiscidae	<i>Hydroporus tessellatus</i>	1	1						C
Coleoptera	Dytiscidae	<i>Agabus guttatus</i>							2	C
Coleoptera	Dytiscidae	<i>Dytiscidae</i> larva							2	C
Coleoptera	Elmidae	<i>Elmis aenea</i>		7	5		5	4		C
Coleoptera	Elmidae	<i>Limnius volckmari</i>		5	1	1		1		C
Coleoptera	Halipliidae	<i>Halipilus ruficollis</i> group		1						C
Coleoptera	Hydraenidae	<i>Hydraena gracilis</i>		1		1	3			C
Coleoptera	Hydrophilidae	<i>Helophorus brevipalpis</i>							2	C
Coleoptera	Scirtidae	<i>Cyphon</i> sp. larva						1		C
Diptera	Chironomidae	Chironomid larva		5	4	2	18	5	8	C
Diptera	Limoniidae	<i>Eloeophila</i> sp. larva		2		1				C
Diptera	Pediciidae	<i>Dicranota</i> sp.	4	7		1	6		36	C
Diptera	Simuliidae	Unidentified larva		2	1	8	1	3	6	C
Diptera	Tipuliidae	<i>Tipula</i> sp.							1	C
Amphipoda	Gammaridae	<i>Gammarus duebeni</i>	15	9	4	3	3	2		C
Mollusca	Planorbidae	<i>Ancylus fluviatilis</i>		2		1				C
Arachnida	Hydrachnidiae	Unidentified species		18			12			C
Annelidae	Oligochaeta	Unidentified species		3		1	3	1	8	n/a
Abundance			51	101	121	131	94	141	90	
Taxon richness			11	19	13	20	20	15	14	
Q-rating			Q4	Q3-4	Q4	Q4	Q4	Q4	Q3	
WFD status			Good	Mod.	Good	Good	Good	Good	Poor	

Table 8B.8-3: Macro-invertebrate Q-sampling results for riverine survey sites N1, N2, N3, N4 and B7 (May 2021) and N5 (December 2021)

Group	Family	Species	Site N1	Site N2	Site N3	Site N4	Site B7	Site N5	EPA class
Ephemeroptera	Heptageniidae	<i>Rhithrogena semicolorata</i>		19	5	28	15	22	A
Ephemeroptera	Heptageniidae	<i>Ecdyonurus venosus</i>			9	2	1	27	A
Plecoptera	Chloroperlidae	<i>Chloroperla tripunctata</i>		8				18	A
Plecoptera	Chloroperlidae	<i>Siphonoperla torrentium</i>			9		6		A
Plecoptera	Perlidae	<i>Perla bipunctata</i>						23	A
Plecoptera	Nemouridae	<i>Amphinemura sulcicollis</i>		2	1		1		A
Plecoptera	Perlodidae	<i>Isoperla grammatica</i>			1	4	11		A
Ephemeroptera	Baetidae	<i>Alainites (Baetis) muticus</i>		4	2		1		B
Plecoptera	Leuctridae	<i>Leuctra inermis</i>		6	3	1	17		B
Plecoptera	Leuctridae	<i>Leuctra hipposus</i>						18	B
Trichoptera	Goeridae	<i>Silo pallipes</i>		4		8	1		B
Trichoptera	Limnephilidae	<i>Drusus annulatus</i>		1		4	3		B
Trichoptera	Odontoceridae	<i>Odontocerum albicorne</i>				3	2		B
Trichoptera	Sericostomatidae	<i>Sericostoma personatum</i>					1	3	B
Ephemeroptera	Baetidae	<i>Baetis rhodani</i>		27	63	4	11	15	C
Ephemeroptera	Ephemerellidae	<i>Serratella ignita</i>					6		C
Trichoptera	Hydropsychidae	<i>Hydropsyche siltalai</i>					1		C
Trichoptera	Rhyacophilidae	<i>Rhyacophila dorsalis</i>						3	C
Trichoptera	Philopotamidae	<i>Philopotamus montanus</i>					1		C
Trichoptera	Polycentropodidae	<i>Plectrocnemia conspersa</i>			1		2		C
Trichoptera	Polycentropodidae	<i>Polycentropus flavomaculatus</i>					1		C
Coleoptera	Dytiscidae	<i>Oreodytes sanmarkii</i>			1	3	5		C
Coleoptera	Dytiscidae	Unidentified larva						1	C
Coleoptera	Elmidae	<i>Limnius volckmari</i>				1	1		C

Group	Family	Species	Site N1	Site N2	Site N3	Site N4	Site B7	Site N5	EPA class
Coleoptera	Elmidae	<i>Elmis aenea</i>					4	1	C
Coleoptera	Hydraenidae	<i>Hydraena gracilis</i>		1					C
Diptera	Chironomidae	Chironomid larva		2	2		7		C
Diptera	Pediciidae	<i>Dicranota</i> sp.		1	2		3		C
Diptera	Simuliidae	Unidentified larva		5	10		2	5	C
Crustacea	Gammaridae	<i>Gammarus duebenii</i>		8	19	2	3	8	C
Arachnida	Hydrachnidiae	Unidentified species		1					C
Annelidae	Naididae (Tubificidae)	Unidentified species	3	1			2		E
Oligochaeta	Lumbricidae	<i>Lumbriculus</i> sp.	1		3	1	3		n/a
Abundance			4	90	131	61	111	125	
Taxon richness			2	8	7	6	8	10	
Q-rating			*n/a	Q4	Q4-5	Q4	Q4-5	Q4	
WFD status			*n/a	Good	High	Good	High	Good	

*n/a - Whilst a Q-sample was taken in June 2021, the low numbers of macro-invertebrate individuals and species recorded (very low numbers of Tubificidae larvae and *Lumbriculus* sp.) was not sufficient to reliably calculate water quality status. This was considered an artefact of the non-perennial nature of the stream.