





## APPENDIX A: GLOSSARY OF TERMS

<b>acid sulfate soils</b>	Are sediments which contain sulfidic mineral pyrite which may become extremely acid following disturbance or drainage as sulfur compounds react when exposed to oxygen to form sulfuric acid. More detailed explanation and definition can be found in the NSW Government Acid Sulfate Soil Manual published by Acid Sulfate Soil Management Advisory Committee.
<b>Annual Exceedance Probability (AEP)</b>	The chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, if a peak flood discharge of 500 m <sup>3</sup> /s has an AEP of 5%, it means that there is a 5% chance (that is one-in-20 chance) of a 500 m <sup>3</sup> /s or larger event occurring in any one year (see ARI).
<b>Australian Height Datum (AHD)</b>	A common national surface level datum approximately corresponding to mean sea level.
<b>Average Recurrence Interval (ARI)</b>	The long term average number of years between the occurrence of a flood as big as, or larger than, the selected event. For example, floods with a discharge as great as, or greater than, the 20 year ARI flood event will occur on average once every 20 years. ARI is another way of expressing the likelihood of occurrence of a flood event.
<b>catchment</b>	The land area draining through the main stream, as well as tributary streams, to a particular site. It always relates to an area above a specific location.
<b>development</b>	Is defined in Part 4 of the Environmental Planning and Assessment Act (EP&A Act).
<b>discharge</b>	The rate of flow of water measured in terms of volume per unit time, for example, cubic metres per second (m <sup>3</sup> /s). Discharge is different from the speed or velocity of flow, which is a measure of how fast the water is moving for example, metres per second (m/s).
<b>ecologically sustainable development (ESD)</b>	Using, conserving and enhancing natural resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be maintained or increased. A more detailed definition is included in the Local Government Act 1993. The use of sustainability and sustainable in this manual relate to ESD.
<b>flood</b>	Relatively high stream flow which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with major drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves overtopping coastline defences excluding tsunamis.
<b>flood liable land</b>	Is synonymous with flood prone land (i.e. land susceptible to flooding by the probable maximum flood (PMF) event). Note that the term flood liable land covers the whole of the floodplain, not just that part below the flood planning level (see flood planning area).
<b>floodplain</b>	Area of land which is subject to inundation by floods up to and including the probable maximum flood event, that is, flood prone land.
<b>flood prone land</b>	Is land susceptible to flooding by the Probable Maximum Flood (PMF) event. Flood prone land is synonymous with flood liable land.
<b>hydraulics</b>	Term given to the study of water flow in waterways; in particular, the evaluation of flow parameters such as water level and velocity.

<b>hydrograph</b>	A graph which shows how the discharge or stage/flood level at any particular location varies with time during a flood.
<b>hydrology</b>	Term given to the study of the rainfall and runoff process; in particular, the evaluation of peak flows, flow volumes and the derivation of hydrographs for a range of floods.
<b>local overland flooding</b>	Inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.
<b>mainstream flooding</b>	Inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam.
<b>mathematical/computer models</b>	The mathematical representation of the physical processes involved in runoff generation and stream flow. These models are often run on computers due to the complexity of the mathematical relationships between runoff, stream flow and the distribution of flows across the floodplain.
<b>peak discharge</b>	The maximum discharge occurring during a flood event.
<b>Probable Maximum Flood (PMF)</b>	The PMF is the largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation, and where applicable, snow melt, coupled with the worst flood producing catchment conditions. Generally, it is not physically or economically possible to provide complete protection against this event. The PMF defines the extent of flood prone land, that is, the floodplain. The extent, nature and potential consequences of flooding associated with a range of events rarer than the flood used for designing mitigation works and controlling development, up to and including the PMF event should be addressed in a floodplain risk management study.
<b>Probable Maximum Precipitation (PMP)</b>	The PMP is the greatest depth of precipitation for a given duration meteorologically possible over a given size storm area at a particular location at a particular time of the year, with no allowance made for long-term climatic trends (World Meteorological Organisation, 1986). It is the primary input to PMF estimation.
<b>probability</b>	A statistical measure of the expected chance of flooding (see AEP).
<b>risk</b>	Chance of something happening that will have an impact. It is measured in terms of consequences and likelihood. In the context of the manual it is the likelihood of consequences arising from the interaction of floods, communities and the environment.
<b>runoff</b>	The amount of rainfall which actually ends up as streamflow, also known as rainfall excess.
<b>stage</b>	Equivalent to "water level". Both are measured with reference to a specified datum.
<b>stage hydrograph</b>	A graph that shows how the water level at a particular location changes with time during a flood. It must be referenced to a particular datum.
<b>water surface profile</b>	A graph showing the flood stage at any given location along a watercourse at a particular time.
<b>wind fetch</b>	The horizontal distance in the direction of wind over which wind waves are generated.

## GLOSSARY OF BIOGEOCHEMICAL TERMS

<b>Ambient Nutrient Concentrations</b>	The surrounding or background concentrations in the estuarine water column.
<b>Ammonium (ammonia)</b>	Compound consisting of a single nitrogen atom and four (or three) hydrogen atoms.
<b>Benthic</b>	Belonging to the bottom of the estuary.
<b>Bloom</b>	When the biomass and species composition of phytoplankton populations change rapidly.
<b>Biomass</b>	The living weight of plant and animal material.
<b>Chlorophyll</b>	The green pigments of plants which capture and use the energy from the sun to drive the photosynthesis processes.
<b>Conservative</b>	Concentrations of a given material decrease (or increase) due only to dilution (i.e. they are not subjected to biogeochemical processes).
<b>Denitrification</b>	Bacterial reduction of nitrate to nitrous oxide (gas, N <sub>2</sub> ).
<b>Dissolved Inorganic Phosphorus (DIP)</b>	The most reactive or bio-available form of phosphorus. Sometimes referred to phosphate, ortho-phosphate (PO <sub>4</sub> ), reactive phosphorus, or dissolved reactive phosphorus (DRP).
<b>End-member</b>	Concentration at the ocean or freshwater end of the salinity gradient.
<b>Flushing Time</b>	The time it takes to replace the freshwater in an estuary at a rate equal to the river discharge.
<b>Isotope</b>	Element with the same atom number (number of protons), but a different number of neutrons <sup>14</sup> N: 7 protons + 7 neutrons; <sup>15</sup> N: 7 protons + 8 neutrons.
<b>Mixing plot</b>	A plot of a given parameter as a function of salinity.
<b><sup>15</sup>N</b>	Stable isotope of nitrogen (see Isotope). 99.64% of the nitrogen on the earth is <sup>14</sup> N and 0.36630% is <sup>15</sup> N.
<b>Nitrate</b>	The NO <sub>3</sub> anion.
<b>Nitrite</b>	The NO <sub>2</sub> anion.
<b>Nutrients</b>	Substances required for plant growth. Phosphorus and nitrogen are considered the most important nutrients because they commonly provide the limiting controls on primary production.
<b>Nutrient Limitation</b>	The restriction of phytoplankton growth rates and biomass accumulation by the low availability of a nutrient.
<b>Oxygen Saturation</b>	The maximum amount of oxygen that can be held in a body of water at a given temperature and salinity.
<b>Phosphate</b>	See Dissolved Inorganic Phosphorus.

<b>Photic Depth</b>	The depth of 1% surface irradiance.
<b>Phytoplankton</b>	Microalgae which live in the water column.
<b>Practical Salinity Scale</b>	The practical salinity scale is used for measuring and reporting the salinity of water. It has been the official scale recognised by all international authorities since the early 1980's. The practical salinity scale is defined as a conductivity ratio and hence has no units.
<b>Redfield Ratio</b>	The ration of nitrogen to phosphorus that phytoplankton typically require (i.e. 16:1 molar).
<b>Stratified</b>	Where there is a distinct difference in salinity between the surface and bottom of the water column.
<b>Well Mixed</b>	Where there is little difference in salinity between the surface and bottom of the water column.



Table B 1: Sediment Sampling Results

Sample No	Sample Overall			Quartz			Lithic			Silt & Clay Content	Shell Content	Fe Stain	Organic Coating
	Size	Shape	Sorting	Colour	%	Size	Shape	Sorting	%				
<b>RIVER ENTRANCE</b>													
R60	Fine-Medium	Rounded	Well	Fawn	96	Fine-Medium	Rounded	Well	4	None	Traces	Traces	None
R31	Medium	Rounded	Well	Fawn	95	Medium	Sub-rounded	Well	5	None	Traces	Some	Some
R32	Fine-Medium	Sub-rounded	Well	Fawn	82	Fine-Medium	Sub-rounded	Well	18	Traces	Traces	Some	Some
R33	Fine-Medium	Sub-rounded	Well	Fawn	83	Fine-Medium	sub-rounded	Well	17	None	Traces	Some	Some
<b>RIVER LOWER</b>													
R1	Fine-Medium	Sub-rounded	Well	Fawn-Grey	63	Fine-Medium	Sub-rounded	Well	37	None	Major	Some	Some
R2	Fine-Medium	Sub-rounded	Well	Fawn-Grey	63	Fine-Medium	Sub-rounded	Well	37	Traces	Minor	None	None
R3	Fine-Medium	Sub-rounded	Well	Fawn-Grey	62	Fine-Medium	Sub-rounded	Well	38	Traces	Minor	Few	Some
R4	Fine-Medium	Sub-rounded	Well	Fawn-Grey	61	Fine-Medium	Sub-rounded	Well	39	Traces	Minor	Few	Some
R5	Fine	Sub-rounded	Well	Fawn-Black	60	Fine	Sub-rounded	Well	40	Some	Minor	None	None
R6	Medium	Sub-rounded	Moderate	Fawn-Black	66	Medium	Sub-rounded	Well	34	Traces	Minor	None	None
R7	Fine	Sub-rounded	Well	Fawn-Black	59	Fine	Sub-rounded	Well	41	Some	Major	None	None
<b>RIVER - LOWER MIDDLE</b>													
R8	Fine-Medium	Sub-angular	Well	Fawn-Black	57	Fine-Medium	Sub-rounded	Well	43	Traces	Minor	None	None
R9	Fine-Medium	Sub-angular	Moderate	Black-Fawn	58	Fine-Medium	Sub-rounded	Moderate	42	Some	Minor	None	None
R10	Fine-Medium	Sub-angular	Moderate	Black-Fawn	61	Fine-Medium	Sub-rounded	Moderate	39	Some	Major	None	None
R11	Fine-Medium	Sub-angular	Moderate	Black-Fawn	53	Medium	Sub-rounded	Moderate	47	Some	Major	None	None
R12	Fine-Medium	Sub-angular	Moderate	Black-Fawn	58	Medium	Sub-rounded	Moderate	42	Traces	Major	None	Traces
R13	Fine-Medium	Sub-angular	Moderate	Black-Fawn	56	Medium	Sub-rounded	Moderate	44	Some	Major	Few	None
R14	Fine-Medium	Sub-angular	Moderate	Black-Fawn	53	Medium	Sub-rounded	Moderate	47	Some	Major	None	Traces
<b>RIVER - UPPER MIDDLE</b>													
R15	Medium	Sub-angular	Well	Dark Brown	49	Medium	Sub-angular	Well	51	Traces	Major	None	None
R16	Med-Coarse	Sub-angular	Poor	Dark Brown	47	Medium	Sub-angular	Well	53	Traces	Major	None	Traces
R17	Medium	Sub-angular	Well	Dark Brown	50	Medium	Sub-angular	Well	50	Traces	Major	None	Traces
R18	Medium	Sub-angular	Well	Dark Brown	46	Medium	Sub-angular	Well	54	Some	Major	None	Traces
R19	Medium	Sub-angular	Well	Dark Brown	44	Medium	Sub-angular	Well	56	Traces	Major	None	Traces
R20	Fine	Sub-angular	Well	Brown	44	Medium	Sub-angular	Well	56	Some	Major	None	Traces
R21	Medium	Sub-angular	Well	Dark Brown	42	Medium	Sub-angular	Well	58	Traces	Minor	Few	None
R22	Fine	Sub-angular	Well	Brown	55	Fine	Sub-angular	Well	45	Traces	Major	None	Traces
R23	Medium	Sub-angular	Poor	Dark Brown	40	Med-Coarse	Sub-angular	Moderate	60	Traces	Major	Few	None
R24	Fine	Sub-angular	Well	Brown	42	Fine	Sub-angular	Well	58	Traces	Minor	Trace	None
<b>RIVER - UPPER</b>													
R25	Med-Coarse	Angular	Well	Dark Brown	40	Med-Coarse	Angular	Well	60	Traces	Major	None	Traces
R26	Med-Coarse	Angular	Well	Dark Brown	48	Med-Coarse	Angular	Well	52	Traces	Major	None	Traces
R27	Med-Coarse	Angular	Well	Dark Brown	39	Med-Coarse	Angular	Well	61	Traces	Major	None	Traces
R28	Med-VCoarse	Angular	Poor	Dark Brown	41	Med-Coarse	Angular	Poor	59	None	Major	None	Traces
R29	Med-Coarse	Angular	Well	Dark Brown	31	Med-Coarse	Angular	Well	69	Traces	Major	None	Traces
R30	Med-Coarse	Angular	Well	Dark Brown	43	Med-Coarse	Angular	Well	57	Traces	Major	None	Traces
<b>ARM - LOWER</b>													
R34	Fine	Sub-rounded	Well	Light Grey	83	Fine	Sub-rounded	Well	17	None	Minor	Traces	None
R35	Fine-Medium	Sub-rounded	Well	Fawn	87	Fine-Medium	Sub-rounded	Well	13	None	Minor	Some	Traces
R46	Medium	Rounded	Well	Clear	91	Medium	Rounded	Well	9	None	Minor	Traces	None
R36	Fine	Rounded	Moderate	Clear	92	Fine	Rounded	Moderate	8	None	Minor	Traces	None
<b>ARM - MIDDLE</b>													
R37	Fine-Medium	Rounded	Moderate	Fawn	92	Medium	Rounded	Well	8	None	Traces	Traces	None
R38	Fine-Medium	Rounded	Moderate	Fawn	91	Medium	Rounded	Well	9	None	Traces	Traces	None
R39	Fine-Medium	Rounded	Moderate	Fawn	92	Medium	Rounded	Well	8	None	Traces	Traces	None
R40	Fine-Medium	Rounded	Moderate	Fawn	91	Medium	Rounded	Well	9	None	Traces	Traces	None
R41	Fine-Medium	Rounded	Moderate	Fawn	92	Medium	Rounded	Well	8	None	Traces	Traces	None
R42	Fine-Medium	Rounded	Moderate	Fawn	92	Medium	Rounded	Well	8	None	Traces	Traces	None
R43	Fine-Medium	Rounded	Moderate	Fawn	92	Medium	Rounded	Moderate	8	None	Traces	Traces	None





**Table C 1: Water Quality Data – Physicochemical Parameters and Algal Biomass**

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a	Phaeophytin
units	mS/Cm	mg/L	oC	NTU	m	mg/L	ug/L	ug/L		
MWQ1-1	31.34	53.7	8.19	20.00	8.05	2.4	6.5	19.0	0.1	1.1
MWQ1-2	31.11	53.3	8.22	19.93	8.03	0.0	B	17.0	2.7	0.1
MWQ1-3	23.77	39.6	8.87	17.38	7.89	22.7	B	13.6	1.1	0.1
MWQ1-4	25.21	41.1	8.78	16.65	7.74	21.1	2	18.2	1.6	0.1
MWQ1-5	26.51	43.3	8.47	17.03	7.75	7.7	2.5	13.6	1.1	0.7
MWQ1-6	23.28	38.0	10.19	16.41	7.71	22.4	bottom	11.2	0.9	1.1
MWQ1-7	23.25	39.6	9.21	18.29	8.00	29.9	2	8.2	0.7	0.4
MWQ1-8	15.69	27.2	9.40	17.50	7.91	34.5	2	8.2	0.9	0.7
MWQ1-9	11.89	20.9	9.68	17.15	7.85	9.4	2	10.4	1.0	0.8
MWQ1-10	8.57	15.4	9.81	16.80	7.77	1.7	1.5	7.8	3.1	1.3
MWQ1-11	3.16	6.1	10.04	16.78	7.58	4.0	1.3	7.8	0.5	0.9
MWQ1-12	1.47	2.9		16.16	7.62	11.2	0.75	10.2	2.4	0.1
MWQ1-13	0.17	0.4	9.96	16.90	7.35	26.3	1	10.0	1.7	2.1
MWQ1-14	0.61	1.3	10.46	16.69	7.40	3.3	1	7.8	1.5	1.2
MWQ1-15	0.04	0.1		17.45	7.56	4.8	1.2	6.2	1.0	1.5
MWQ1-16	0.48	1.0		17.48	7.44	10.2	1.8	4.8	1.2	1.6
MWQ1-17	0.02	0.0		18.37	7.70	6.8	2.8	4.8	0.3	0.6
MWQ1-18	18.73	32.1	11.19	17.65	7.93	0.0		13.4	0.2	0.9
MWQ2-1	35.77	54.5	7.18	20.24	8.29	0.0	bottom	23.0	0.1	0.4
MWQ2-2	35.77	54.5	7.02	20.21	8.28	0.0	bottom	27.6	0.7	0.1
MWQ2-3	34.39	52.6	6.89	20.51	8.23	0.0	bottom	26.2	0.2	1.3

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a		Phaeophytin	
									mS/Cm	mg/L	oC	NTU
units												
MWQ2-4	30.93	4.8	6.54	21.22	8.12	1.2	2	22.8	1.0	0.5		
MWQ2-5	29.00	4.5	6.53	21.35	8.07	8.1	1.25	18.4	3.5	0.5		
MWQ2-6	28.24	44.1	6.63	20.29	7.94	0.3	bottom	20.4	1.7	0.8		
MWQ2-7	32.79	50.3	7.00	20.89	8.22	0.0	3.5	20.2	0.2	0.5		
MWQ2-8	28.77	45.1	6.82	21.09	8.16	0.0	3	20.6	1.4	0.6		
MWQ2-9	26.57	41.7	6.92	21.14	8.13	12.0	bottom	19.8	1.6	0.6		
MWQ2-10	23.98	38.0	6.82	21.29	8.10	4.2	2.5	17.6	1.9	1.2		
MWQ2-11	20.45	32.8	7.10	21.40	8.07	1.9	1.75	15.2	3.4	0.1		
MWQ2-12	18.48	29.8	7.17	21.38	8.04	25.0	1.5	14.4	0.1	7.1		
MWQ2-13	14.67	24.3	7.39	21.40	7.99	5.2	2	14.2	3.0	0.8		
MWQ2-14	12.12	20.3	7.53	21.45	7.94	6.8	1.5	12.6	3.1	1.1		
MWQ2-15	8.43	14.6	7.59	21.58	7.82	4.9	1.75	14.0	3.7	1.3		
MWQ2-16	5.15	9.2	7.66	21.75	7.72	1.2	1	15.4	4.3	1.3		
MWQ2-17	2.19	4.1	7.64	21.71	7.66	9.5	1	14.4	5.9	1.2		
MWQ2-18	0.14	0.3	8.05	21.85	7.00	10.3	bottom	5.2	1.1	2.4		
MWQ2-19	0.07	0.1	8.88	21.75	8.85	14.3	bottom	2.5	5.7	3.1		
MWQ2-20	0.06	0.1	8.90	21.89	8.99	13.7	2.5	3.6	1.1	0.9		
MWQ2-21	0.06	0.1	9.07	22.30	9.09	6.9	4.5	4.2	0.5	0.9		
MWQ3-1	36.30	55.2	7.20	20.42	8.23	0.0	6	132.5	0.7	0.3		
MWQ3-2	36.30	55.1	6.83	20.46	8.28	3.1	bottom	112.2	1.2	0.1		
MWQ3-3	32.62	5.0	7.60	21.48	8.27	0.0	bottom	21.2	0.6	0.3		
MWQ3-4	26.69	41.8	6.53	22.36	8.15	12.0	2.5	55.6	1.3	0.1		
MWQ3-5	27.76	43.2	6.97	22.20	8.13	0.0	1.75	20.0	1.1	0.3		
MWQ3-6	29.33	45.5	6.83	23.90	8.14	0.0	bottom	19.3	2.1	0.7		
MWQ3-7	28.50	44.6	7.10	22.42	8.25	0.0	bottom		0.1	5.2		

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a		Phaeophytin	
									mS/Cm	mg/L	NTU	m
units												
MWQ3- 8	25.41	34.5	7.32	23.12	8.26	14.5		35.0		1.2		0.5
MWQ3- 9	22.01	34.9	7.23	22.81	8.29	27.8	2.4	15.2		1.9		0.1
MWQ3- 10	18.85	30.5	7.73	22.83	8.26	24.7	4			1.6		0.5
MWQ3- 11	16.70	27.3	7.43	22.99	8.18	27.5	3.5	11.8		2.3		0.4
MWQ3- 12	12.77	21.1	7.32	22.83	8.11	35.6	B	12.8		2.6		0.1
MWQ3- 13	9.39	16.1	7.84	22.91	8.08	15.2	3	8.8		5.0		0.5
MWQ3- 14	6.14	11.1	8.00	22.76	7.97	11.8	3	6.0		3.9		2.9
MWQ3- 15	4.15	7.6	7.78	22.90	7.89	36.3	2.5	4.0		3.5		0.4
MWQ3- 16	1.24	2.4	7.30	22.67	7.63	12.2	2	4.2		2.2		0.4
MWQ3- 17	0.28	0.6	7.58	22.90	7.28	3.8	2	4.2		2.4		0.5
MWQ3- 18	0.07	0.1	6.94	22.84	7.14	0.0	2.5	5.2		0.6		0.4
MWQ3- 19	0.06	0.1	6.11	22.24	6.60	3.1	1.5	5.0		1.4		1.3
MWQ3- 20	0.06	0.1	6.22	21.86	6.52	5.4	0.75	5.4		1.7		1.1
MWQ3- 21	0.06	0.1	6.55	21.82	6.56	2.1	0.75	5.8		1.6		1.2
MWQ4- 1	38.20	57.6	7.76	22.24	8.28	17.3	4	4.4		0.3		0.1
MWQ4- 2	38.20	57.6	7.80	22.25	8.24	15.8	2.5	6.2		0.2		0.1
MWQ4- 3	36.04	54.0	7.60	23.51	8.15	16.3	2.25	11.2		0.2		0.3
MWQ4- 4	33.78	57.5	7.36	24.16	8.12	24.4	2.5	5.4		1.1		0.1
MWQ4- 5	32.59	49.9	7.22	23.84	8.13	31.1	1	4.8		1.5		0.1
MWQ4- 6	31.81	49.4	8.95	24.16	8.23	35.0	1	5.0		1.9		0.9
MWQ4- 7	34.14	52.4	7.46	23.75	8.16	13.9	4	2.6		0.3		0.1
MWQ4- 8	31.22	48.0	7.31	24.23	8.05	21.6	2.75	2.8		0.9		0.1
MWQ4- 9	27.40	42.8	7.16	24.27	8.04	27.1	3	8.8		1.3		0.1
MWQ4- 10	25.07	39.4	7.55	24.45	8.02	16.3	1.5	4.6		1.3		0.2
MWQ4- 11	18.35	29.7	7.83	24.36	7.98	8.6	2	3.0		2.2		0.2

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a		Phaeophytin	
									mS/Cm	mg/L	oC	NTU
units												
MWQ4-12	14.26	23.5	7.94	24.29	7.92	8.3	2	4.2	2.1	0.3		
MWQ4-13	10.55	17.9	8.21	24.77	7.88	6.5	1.5	4.4	3.4	0.3		
MWQ4-14	8.97	15.4	8.16	25.04	7.83	5.4	1.5	5.0	2.5	0.8		
MWQ4-15	5.94	10.9	8.44	25.35	7.85	4.7	1.5	8.0	3.1	0.4		
MWQ4-16	3.08	5.6	9.57	25.40	7.87	5.1	1	3.4	3.6	0.2		
MWQ4-17	1.66	3.2	8.48	25.13	7.95	3.7	1.5	3.0	2.7	0.5		
MWQ4-18	0.48	1.0	9.30	25.56	8.27	1.7	2	2.6	2.1	0.4		
MWQ4-19	0.13	0.3	9.37	25.08	8.67	0.4	2	7.0	1.4	0.5		
MWQ4-20	0.09	0.2	10.20	25.18	8.73	0.0	2.75	5.6	1.4	0.4		
MWQ4-21	0.08	0.2	9.44	25.71	8.86	0.4	2.75	1.2	1.5	0.5		
MWQ5-1	36.44	55.1	8.64	24.02	8.09		3.5	1.6	1.1	0.1		
MWQ5-2	35.70	54.2	8.44	21.14	8.06		4	2.8	0.8	1.9		
MWQ5-3	34.81	52.8	8.10	25.43	7.95		2	8.4	1.0	1.2		
MWQ5-4	33.79	51.5	8.27	26.97	7.95		bottom	5.8	0.9	0.5		
MWQ5-5	34.01	51.6	7.88	27.10	7.94		2	3.6	6.9	3.7		
MWQ5-6	33.41	50.9	9.52	27.04	8.19		bottom	9.0	2.4	0.1		
MWQ5-7	34.69	52.6	8.63	24.56	8.03		2	1.6	2.5	0.1		
MWQ5-8	31.23	48.0	8.46	25.85	7.96		4	0.8	1.0	0.1		
MWQ5-9	29.97	46.2	8.40	25.34	7.93		2.75	3.2	1.6	0.1		
MWQ5-10	27.09	42.1	8.21	25.28	7.90		bottom	2.8	0.8	0.1		
MWQ5-11	23.36	36.8	8.42	24.94	7.85		3.5	3.6	0.4	0.4		
MWQ5-12	21.82	34.7	8.40	25.97	7.83		3	1.8	1.9	0.1		
MWQ5-13	17.84	28.8	8.69	26.13	7.79		3	1.8	2.2	0.1		
MWQ5-14	16.03	26.2	8.63	26.44	7.75		3.5	1.4	3.8	0.1		

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a		Phaeophytin	
									mS/Cm	mg/L	NTU	m
units												
MWQ5- 15	14.09	23.3	8.64	26.16	7.71		3	3.8	1.8		0.4	
MWQ5- 16	11.74	19.7	8.96	26.62	7.72		3.5	2.4	2.1		0.8	
MWQ5- 17	9.43	16.0	8.96	26.81	7.72		3	3.8	1.5		1.3	
MWQ5- 18	7.23	13.3	9.27	26.72	7.77		3	2.6	2.4		1.1	
MWQ5- 19	5.72	10.2	9.54	26.74	7.82		2.5	1.5	1.6		2.4	
MWQ5- 20	3.96	7.3	10.18	26.89	8.15		2.5	0.4	3.1		0.8	
MWQ5- 21	1.82	3.5	10.13	26.81	8.29		2.5	1.3	2.5		0.9	
MWQ5- 22	0.15	0.3	11.70	27.17	8.87		2.25	0.6	4.5		1.5	
MWQ6- 1	37.69	56.7	6.45	24.85	8.27		8	2.0	0.3		0.1	
MWQ6- 2	37.69	56.7	6.46	24.93	8.26		bottom	1.8	0.3		0.1	
MWQ6- 3	36.90	54.7	6.29	26.22	8.15	3.7	bottom	8.6	1.1		0.1	
MWQ6- 4	35.76	53.9	5.95	27.89	8.00	6.2	2	5.2	1.8		0.2	
MWQ6- 5	35.91	54.1	5.81	27.83	7.97	4.8	2	4.0	2.7		0.2	
MWQ6- 6	35.81	53.8	8.92	30.30	8.19	9.7	bottom	5.8	4.2		0.6	
MWQ6- 7	33.85	51.5	6.47	26.83	8.17	0.0	3	2.2	1.0		0.1	
MWQ6- 8	31.94	48.6	6.35	27.07	8.13	0.0	3	2.4	1.5		0.1	
MWQ6- 9	29.70	45.7	6.22	27.44	8.08	0.0	bottom	3.4	1.6		0.1	
MWQ6- 10	24.41	38.9	6.59	27.76	8.01	0.0	bottom	3.6	1.1		0.4	
MWQ6- 11	21.04	33.5	6.91	27.64	7.96	0.0	3	2.6	1.7		0.1	
MWQ6- 12	19.10	30.7	6.75	27.54	7.91	0.0	bottom	2.8	1.4		0.1	
MWQ6- 13	16.59	27.0	6.97	27.65	7.88	0.0	3	7.0	2.5		0.3	
MWQ6- 14	13.85	22.9	7.17	27.77	7.85	0.0	2.5	3.6	2.6		0.2	
MWQ6- 15	10.21	17.3	7.32	28.28	7.81	1.7	2.5	4.0	4.4		0.3	
MWQ6- 16	7.54	13.1	7.65	28.21	7.92	0.0	2		4.4		0.3	

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a		Phaeophytin	
									mS/Cm	mg/L	NTU	m
units												
MWQ6-17	3.82	7.0	8.63	28.38	8.25	0.0	2.5	3.2	2.6	0.1		
MWQ6-18	1.53	3.0	8.93	28.15	8.50	0.9	3	1.8	1.2	0.4		
MWQ6-19	0.89	1.8	8.98	28.15	8.48	0.8	3.5	1.6	3.1	0.1		
MWQ6-20	0.26	0.5	9.34	28.54	8.37	2.1	2.5	1.8	2.6	0.3		
MWQ7-1	34.95	53.0	7.82	25.17	8.37	0.0	bottom	4.8	0.1	0.4		
MWQ7-2	32.36	49.5	7.59	25.45	8.20	0.0	bottom	1.6	1.5	0.1		
MWQ7-3	23.89	37.7	6.94	25.05	8.12	14.4	1.5	4.2	1.5	0.3		
MWQ7-4	25.15	39.5	7.45	24.91	7.99	13.5	1.75	1.0	2.1	0.4		
MWQ7-5	25.80	40.3	7.25	25.05	7.97	15.2	2.25	2.0	2.9	0.3		
MWQ7-6	25.12	39.3	10.25	25.80	8.09	6.8	bottom	2.6	2.7	1.7		
MWQ7-7	16.21	27.4	7.14	25.69	8.04	0.0	2.5	4.8	0.1	2.1		
MWQ7-8	13.87	22.9	6.73	25.77	7.94	7.9	2	6.8	0.4	0.4		
MWQ7-9	8.57	14.8	6.74	25.54	7.77	0.0	1.5	7.8	1.1	0.3		
MWQ7-10	7.54	12.0	6.56	25.59	7.71	0.0	1.5	6.8	0.3	0.5		
MWQ7-11	5.51	9.8	6.47	25.51	7.51	9.1	1	7.8	1.0	0.4		
MWQ7-12	3.10	5.2	6.35	25.51	7.53	1.4	1.25	8.6	0.7	0.6		
MWQ7-13	2.09	3.9	6.27	25.49	7.49	0.0	1.25	7.4	1.4	0.9		
MWQ7-14	1.16	2.3	6.08	25.44	7.34	3.5	1	13.6	0.1	3.4		
MWQ7-15	0.13	2.6	5.49	25.15	7.03	4.9	1	8.4	0.1	1.2		
MWQ7-16	0.07	0.2	6.07	25.35	7.02	0.0	1.25	5.4	2.3	0.7		
MWQ7-17	0.07	0.1	6.15	25.03	6.81		1.25	4.0	1.4	0.5		
MWQ7-18	0.07	0.1	6.88	26.30	6.89	1.6	1	4.2	3.3	0.1		
MWQ8-1	35.13	53.3	7.33	24.52	8.19	3.0	bottom	19.0	4.0	0.1		
MWQ8-2	33.66	51.4	7.16	24.57	8.10	0.0	3	20.6	7.4	0.1		

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a		Phaeophytin	
									mS/Cm	mg/L	NTU	m
units				oC				mg/L				
MWQ8-3	30.81	47.4	7.22	24.62	7.99	2.5	1	24.8	2.9	0.1		
MWQ8-4	29.40	45.5	6.45	23.92	7.84	2.9	2.5	19.4	0.5	3.2		
MWQ8-5	28.90	44.8	7.12	24.10	7.95	0.0	bottom	11.6	1.9	0.1		
MWQ8-6	28.01	43.4	6.76	23.41	7.56	7.6	bottom	21.0	0.6	0.4		
MWQ8-7	31.97	49.0	7.00	24.59	8.04	3.3	1.5	22.6	0.9	1.2		
MWQ8-8	27.91	43.4	6.93	24.40	8.07	0.0	2	20.0	0.7	0.4		
MWQ8-9	25.35	40.0	6.67	24.39	7.98	1.4	1.5	21.6	1.6	0.5		
MWQ8-10	22.47	35.7	6.88	24.40	7.95	0.0	2.75	18.2	1.1	0.1		
MWQ8-11	19.09	31.6	6.89	24.37	7.91	0.0	2.5	16.8	2.2	1.3		
MWQ8-12	16.32	26.8	7.37	24.34	7.90	1.6	2.5	11.6	2.2	0.5		
MWQ8-13	13.60	22.5	7.34	24.04	7.87	0.2	2.5	10.2	3.5	0.1		
MWQ8-14	10.23	17.4	7.46	23.97	7.79		1.5	9.6	4.7	7.5		
MWQ8-15	7.10	12.5	7.74	12.47	7.71	0.0	2.5	6.6	2.8	0.2		
MWQ8-16	4.80	8.6	7.38	24.13	7.62	1.1	2	7.8	0.1	15.4		
MWQ8-17	0.80	1.6	7.21	24.03	7.63	2.7	1.5	7.0	1.7	0.6		
MWQ8-18	0.07	0.1	8.05	24.09	7.65	2.3	2.3	3.8	0.9	0.6		
MWQ8-19	0.07	0.1	8.97	24.31	8.11	7.3	3	3.2	3.0	0.1		
MWQ8-20	0.06	0.1	9.62	24.85	8.44	9.9	2.5	3.0	1.6	0.7		
MWQ9-1	35.31	53.7	6.71	22.46	8.54	0.0	bottom	15.6	6.5	0.1		
MWQ9-2	34.33	52.4	7.12	22.04	8.49	0.1	4	18.4	1.3	0.1		
MWQ9-3	32.39	49.8	6.47	21.39	8.37	0.7	2	23.0	1.8	0.1		
MWQ9-4	31.44	48.6	6.85	21.19	8.31	3.7	2.5	20.4	2.2	0.1		
MWQ9-5	31.43	48.5	7.11	21.03	8.32	6.2	bottom	18.8	2.5	0.1		
MWQ9-6	30.62	47.3	9.26	22.24	8.46	4.0	bottom	20.0	2.3	0.9		
MWQ9-7	30.26	46.8	6.86	22.16	8.47	0.2	3	24.2	1.3	0.1		

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a		Phaeophytin	
									mS/Cm	mg/L	ug/L	ug/L
units				oC		NTU	m	mg/L				
MWQ9- 8	27.95	43.4	6.99	21.91	8.45	0.0	2.5	16.4	1.6		0.1	0.1
MWQ9- 9	24.05	37.6	7.15	21.55	8.40	0.0	3	12.8	4.3		0.1	0.1
MWQ9- 10	21.89	31.4	7.08	21.36	8.39	0.0	2.75	14.8	5.2		0.1	0.1
MWQ9- 11	18.54	30.1	7.36	21.17	8.35	0.0	2.75	12.0	9.8		0.1	0.1
MWQ9- 12	14.73	24.7	7.30	21.22	8.27	0.0	2	9.4	4.0		0.1	0.1
MWQ9- 13	12.76	21.2	7.13	20.90	8.22	0.0	bottom	6.6	3.2		0.1	0.1
MWQ9- 14	8.68	15.0	7.60	21.44	8.13	0.0	2.5	5.4	2.3		0.1	0.1
MWQ9- 15	6.66	11.8	7.63	21.09	8.08	0.0	2.75	7.0	3.6		0.5	0.5
MWQ9- 16	3.36	6.2	8.05	21.11	8.14	0.0	2	2.4	4.1		0.6	0.6
MWQ9- 17	0.88	1.7	8.00	20.77	8.02	0.0	2.5	1.2	3.1		0.4	0.4
MWQ9- 18	0.25	0.5	8.28	20.45	8.03	0.0	bottom	1.4	2.0		1.4	1.4
MWQ9- 19	0.09	0.2	8.80	20.72	8.30	0.0	3	3.0	3.0		0.1	0.1
MWQ9- 20	0.06	0.1	9.87	21.21	8.68	0.0	4.5	1.4	1.4		0.3	0.3
MWQ10- 1	37.06	56.1	6.75	21.95	8.11	0.0	bottom	20.2	0.4		0.1	0.1
MWQ10- 2	36.76	55.7	6.32	21.21	8.16	0.0	bottom	18.8	2.1		0.1	0.1
MWQ10- 3	34.56	53.0	6.43	18.51	7.92	15.7	bottom	19.2	2.1		0.1	0.1
MWQ10- 4	39.04	52.3	6.24	18.20	7.83	13.1	2.5	16.4	2.5		0.1	0.1
MWQ10- 5	33.90	52.2	5.79	18.31	7.79	8.6	2.5	15.8	2.4		0.2	0.2
MWQ10- 6	32.93	50.8	5.03	18.01	7.69	8.4	bottom	19.0	3.1		0.1	0.1
MWQ10- 7	33.10	51.8	6.50	20.08	8.03	0.0	5.5	20.2	3.9		0.1	0.1
MWQ10- 8	30.32	47.1	6.43	18.92	7.94	4.8	4.5	17.0	1.9		0.1	0.1
MWQ10- 9	29.31	45.8	6.63	18.92	7.95	1.7	bottom	15.6	1.8		0.1	0.1
MWQ10- 10	26.89	42.7	6.46	18.58	7.88	1.1	2.5	15.0	1.5		0.1	0.1
MWQ10- 11	23.73	38.8	6.70	18.44	7.86	0.0	bottom	14.8	1.9		0.1	0.1
MWQ10- 12	20.43	32.8	7.07	18.29	7.83	0.0	bottom	16.6	2.1		0.1	0.1

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a		Phaeophytin	
									mS/Cm	mg/L	ug/L	ug/L
<b>units</b>						NTU	m	mg/L	ug/L	ug/L	ug/L	ug/L
MWQ10-13	16.66	27.4	7.26	18.14	7.78	0.0	4	11.6	2.8	0.1	0.1	0.1
MWQ10-14	14.74	24.6	7.40	18.10	7.75		bottom	8.4	1.8	0.1	0.1	0.1
MWQ10-15	11.24	18.3	7.58	18.01	7.72	0.0	4.25	8.8	1.8	0.1	0.1	0.1
MWQ10-16	7.83	13.7	7.84	17.89	7.71	4.2	2.75	8.2	3.4	0.3	0.3	0.3
MWQ10-17	5.06	9.1	8.24	17.89	7.85	0.0	2.75	6.4	2.6	0.1	0.1	0.1
MWQ10-18	1.58	3.0	9.07	17.52	8.30	0.0	3.5	3.0	2.1	0.1	0.1	0.1
MWQ10-19	0.65	1.3	9.42	17.76	8.64	0.1	4	2.8	1.6	0.3	0.3	0.3
MWQ10-20	0.13	0.3	7.78	17.70	8.87	0.0	6	8.0	1.4	0.2	0.2	0.2
MWQ11-1	36.04	55.0	7.13	18.68	8.09		4.5	13.8	1.6	0.2	0.2	0.2
MWQ11-2	36.04	55.0	6.79	18.70	8.02		4.5	16.6	1.4	0.1	0.1	0.1
MWQ11-3	32.27	50.0	6.80	16.49	7.92	3.1	bottom	14.8	1.3	0.1	0.1	0.1
MWQ11-4	32.27	50.1	6.86	15.28	7.84	7.5	2.6	15.8	1.7	0.1	0.1	0.1
MWQ11-5	32.06	49.8	6.99	15.26	7.84	12.2	3	15.8	2.2	0.1	0.1	0.1
MWQ11-6	31.68	49.2	7.43	15.01	7.87	3.1		23.0	1.5	0.1	0.1	0.1
MWQ11-7	32.25	49.5	7.24	17.32	8.00	124.0	2.3	16.0	1.1	0.1	0.1	0.1
MWQ11-8	29.77	46.5	7.38	16.71	8.01	124.0	bottom	17.2	0.7	0.1	0.1	0.1
MWQ11-9	27.34	43.0	7.80	16.09	7.99		3.5	13.0	1.4	0.1	0.1	0.1
MWQ11-10	23.68	37.9	7.74	15.50	7.96		bottom	11.2	1.7	0.1	0.1	0.1
MWQ11-11	20.87	33.6	7.96	15.12	7.94		3.4	14.0	2.0	0.1	0.1	0.1
MWQ11-12	17.84	29.2	8.17	14.73	7.92		bottom	10.6	1.7	0.1	0.1	0.1
MWQ11-13	15.32	25.6	8.32	14.55	7.91		3	13.2	1.7	0.1	0.1	0.1
MWQ11-14	12.78	21.6	8.59	14.27	7.85	4.8	2.5	9.2	3.1	0.1	0.1	0.1
MWQ11-15	9.61	16.6	8.66	14.16	7.79	9.0	2.7	7.6	1.9	0.1	0.1	0.1
MWQ11-16	6.47	11.5	9.09	13.98	7.74	5.0	3.1	7.4	3.1	0.1	0.1	0.1
MWQ11-17	3.02	5.7	9.95	13.82	7.77		2.5	6.6	5.0	0.2	0.2	0.2

Sample ID	Salinity	Cond	DO	Temp	pH	Turb	Secchi Depth	Total Suspended Solids	Chlorophyll a		Phaeophytin	
									mS/Cm	mg/L	ug/L	ug/L
units						NTU	m	mg/L				
MWQ11-18	1.31	2.6	10.31	13.96	7.76		2.7	5.0	3.2		0.1	
MWQ11-19	0.62	1.3	9.83	14.09	8.14	20.2	2.8	2.0	1.4		0.6	
MWQ11-20	0.18	0.4	10.10	13.84	8.09		3.5	3.6	1.0		0.2	
MWQ12-1	36.97	56.2	6.93	19.39	7.42	52.7	bottom	14.4	2.0		0.1	
MWQ12-2	36.88	56.1	6.76	19.16	6.97	30.9	bottom	14.0	0.3		0.2	
MWQ12-3	35.37	54.2	6.89	17.37	6.91	47.2	bottom	18.2	0.9		0.1	
MWQ12-4	34.31	52.8	7.63	16.74	8.28	45.4	2.3	13.6	1.4		0.1	
MWQ12-5	33.50	51.7	7.71	16.50	7.76	56.2	2.5	17.0	2.0		0.2	
MWQ12-6	32.85	50.8	8.43	16.55	7.90	55.0	bottom	15.6	1.7		0.5	
MWQ12-7	32.89	50.7	7.51	17.19	7.90	24.3	2.5	15.6	1.2		0.1	
MWQ12-8	30.64	47.7	7.62	16.80	7.86	20.5	2.75	14.4	1.4		0.1	
MWQ12-9	27.16	43.1	7.50	16.91	7.82	16.1	3	11.6	1.1		0.1	
MWQ12-10	23.78	38.0	7.83	16.01	7.60	20.7	2.5	13.0	2.1		0.1	
MWQ12-11	20.35	33.1	8.12	15.58	7.51	24.0	2.75	9.2	1.1		0.1	
MWQ12-12	17.92	29.3	8.12	15.36	7.50	23.9	2	11.0	1.1		0.2	
MWQ12-13	14.42	24.7	8.34	15.15	7.45	25.7	2.5	6.6	0.9		0.3	
MWQ12-14	10.81	18.5	8.47	14.95	7.42	24.9	1.9	3.8	1.4		0.9	
MWQ12-15	8.51	14.8	9.15	14.55	7.42	27.7	1.5	3.2	2.6		0.9	
MWQ12-16	5.19	9.3	10.56	14.58	7.65	21.6	1.5	3.0	1.6		0.4	
MWQ12-17	2.45	4.5	10.06	14.50	8.11		2	1.0	1.8		0.6	
MWQ12-18	1.45	2.8	10.33	14.38	8.39	17.8	3.5	2.2	1.9		0.7	
MWQ12-19	0.40	0.8	10.85	15.62	9.12	10.8	6	0.4	1.2		0.4	

Table C 2: Water Quality Data - Nutrients

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ1-1	221	<10	221	213	8	2	<2	6	12	<10	12	<10	5
MWQ1-2	158	<10	158	146	13	3	<2	10	12	<10	11	<10	5
MWQ1-3	285	<10	285	238	47	30	<2	16	23	<10	16	<10	9
MWQ1-4	297	33	264	236	28	11	4	12	27	<10	18	10	8
MWQ1-5	293	40	253	237	16	5	<2	11	25	<10	17	<10	8
MWQ1-6	348	85	263	255	8	<2	<2	5	36	16	20	<10	8
MWQ1-7	260	<10	260	202	58	43	<2	14	32	<10	23	10	13
MWQ1-8	304	30	274	198	76	57	<2	17	40	15	25	10	15
MWQ1-9	357	37	320	131	189	68	<2	119	46	16	31	15	16
MWQ1-10	356	36	320	223	96	77	<2	18	54	15	38	19	19
MWQ1-11	435	46	389	385	4	<2	<2	3	71	22	48	34	14
MWQ1-12	758	96	662	657	6	<2	2	4	183	64	119	79	40
MWQ1-13	512	48	464	286	178	115	4	60	77	23	53	18	36
MWQ1-14	397	27	371	216	155	129	3	23	25	10	15	<10	12
MWQ1-15	386	16	370	201	170	145	3	21	21	<10	13	<10	9
MWQ1-16	310	15	295	188	107	86	2	19	19	<10	12	<10	9
MWQ1-17	239	18	221	181	40	28	<2	10	14	<10	10	<10	7
MWQ1-18	286	40	246	177	69	51	<2	17	34	11	23	<10	14
MWQ2-1	186	25	160	152	8	<2	<2	7	13	<10	11	<10	4
MWQ2-2	228	72	156	149	7	<2	<2	6	13	<10	10	<10	5
MWQ2-3	201	44	157	148	9	3	<2	7	17	<10	12	<10	7
MWQ2-4	273	19	254	248	6	<2	<2	5	24	<10	17	10	8
MWQ2-5	272	13	258	253	5	<2	<2	4	30	11	20	11	9
MWQ2-6	397	116	281	276	6	<2	<2	6	38	17	22	14	8

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ2-7	205	<10	205	197	8	<2	<2	7	19	<10	14	<10	7
MWQ2-8	215	11	204	199	5	<2	<2	4	24	<10	18	<10	9
MWQ2-9	232	<10	232	228	5	<2	<2	4	25	<10	19	<10	11
MWQ2-10	240	49	191	186	5	<2	<2	4	27	<10	20	<10	10
MWQ2-11	308	94	214	210	4	<2	<2	4	35	14	20	<10	11
MWQ2-12	247	34	213	161	52	<2	<2	51	29	<10	23	11	12
MWQ2-13	316	92	224	219	5	4	<2	<2	32	12	19	10	9
MWQ2-14	266	25	242	227	14	12	<2	2	30	11	20	11	9
MWQ2-15	296	38	258	234	24	21	<2	<2	30	11	19	12	8
MWQ2-16	335	59	276	240	36	33	<2	<2	44	25	19	11	8
MWQ2-17	328	62	266	216	51	44	2	4	40	19	21	<10	12
MWQ2-18	245	<10	235	208	27	16	<2	10	29	<10	20	<10	14
MWQ2-19	201	15	187	173	14	8	<2	6	18	<10	12	<10	9
MWQ2-20	211	18	193	180	13	8	<2	5	15	<10	10	<10	7
MWQ2-21	193	19	173	166	7	<2	<2	5	12	<10	<10	<10	6
MWQ3-1	316	<10	316	308	8	<2	<2	7	18	<10	12	<10	6
MWQ3-2	281	110	172	166	5	<2	<2	5	19	<10	11	<10	5
MWQ3-3	199	27	172	163	9	<2	<2	7	19	<10	11	<10	6
MWQ3-4	235	<10	235	226	9	<2	<2	6	25	<10	15	<10	7
MWQ3-5	267	37	230	222	8	<2	<2	5	28	14	14	<10	7
MWQ3-6	369	70	299	292	7	<2	<2	6	44	18	25	16	9
MWQ3-7	258	36	222	215	7	<2	<2	7	19	<10	12	<10	5
MWQ3-8	222	<10	214	205	9	<2	<2	8	17	<10	12	<10	5
MWQ3-9	231	<10	221	215	6	<2	<2	5	20	<10	11	<10	5
MWQ3-10	247	<10	242	233	9	<2	<2	8	20	<10	12	<10	6
MWQ3-11	276	60	216	204	12	4	<2	7	24	11	12	<10	5
MWQ3-12	243	23	220	206	14	8	<2	6	19	<10	12	<10	6

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ3-13	228	33	195	183	12	7	<2	4	19	<10	12	<10	6
MWQ3-14	266	53	213	198	15	11	<2	3	22	10	12	<10	6
MWQ3-15	274	35	240	216	24	20	<2	2	21	<10	13	<10	7
MWQ3-16	276	51	225	177	47	36	<2	10	26	12	15	<10	7
MWQ3-17	332	82	250	174	76	63	<2	11	29	15	14	<10	9
MWQ3-18	224	15	210	167	43	23	<2	17	17	<10	11	<10	5
MWQ3-19	406	20	386	314	72	52	5	15	30	14	16	<10	6
MWQ3-20	426	21	404	316	89	68	5	16	26	11	15	<10	5
MWQ3-21	390	27	363	260	103	87	4	12	23	<10	14	<10	5
MWQ4-1	322	96	226	217	9	<2	<2	7	24	<10	18	13	5
MWQ4-2	309	<10	309	299	10	<2	<2	8	21	<10	17	12	5
MWQ4-3	401	<10	401	391	10	<2	<2	8	28	<10	20	12	9
MWQ4-4	529	<10	529	519	10	<2	<2	7	29	<10	26	16	11
MWQ4-5	501	<10	501	493	8	<2	<2	6	38	<10	30	18	12
MWQ4-6	598	123	475	467	8	<2	<2	6	56	24	32	21	11
MWQ4-7	669	<10	669	660	9	<2	<2	7	26	<10	23	14	9
MWQ4-8	460	<10	460	451	8	<2	<2	6	29	<10	26	14	12
MWQ4-9	612	<10	612	601	11	4	<2	7	32	<10	28	14	14
MWQ4-10	320	<10	320	309	11	<2	<2	9	32	<10	24	10	14
MWQ4-11	356	<10	356	348	8	<2	<2	6	31	<10	31	16	15
MWQ4-12	286	19	267	258	9	3	<2	6	47	26	21	<10	14
MWQ4-13	310	<10	310	296	15	9	<2	5	32	<10	30	18	13
MWQ4-14	266	<10	265	242	23	15	<2	6	31	10	21	<10	12
MWQ4-15	301	30	271	258	14	8	<2	5	36	15	21	<10	14
MWQ4-16	313	<10	313	307	6	<2	<2	4	36	15	21	10	11
MWQ4-17	495	<10	495	484	11	4	<2	5	34	10	24	<10	16
MWQ4-18	382	34	348	335	13	6	<2	5	33	11	22	<10	13

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ4-19	277	<10	277	264	12	6	<2	4	27	<10	21	<10	14
MWQ4-20	345	<10	345	337	8	3	<2	5	22	<10	17	<10	10
MWQ4-21	267	<10	267	261	5	<2	<2	5	19	<10	13	<10	8
MWQ5-1	286	<10	286	276	10	2	<2	7	22	<10	16	<10	7
MWQ5-2	397	<10	397	387	10	<2	<2	8	33	<10	26	15	11
MWQ5-3	427	<10	427	415	12	2	<2	9	43	10	33	16	17
MWQ5-4	384	<10	384	376	9	<2	<2	6	43	10	33	16	16
MWQ5-5	580	80	500	488	12	2	<2	8	97	55	42	22	20
MWQ5-6	262	43	218	189	29	5	<2	24	24	<10	18	<10	9
MWQ5-7	257	<10	257	250	7	<2	<2	5	28	<10	21	12	8
MWQ5-8	466	<10	466	447	19	3	<2	15	37	12	25	11	14
MWQ5-9	278	<10	269	241	27	<2	<2	25	33	<10	26	<10	17
MWQ5-10	488	<10	488	479	9	<2	<2	8	34	<10	27	<10	17
MWQ5-11	221	<10	221	196	25	4	<2	20	21	<10	21	13	7
MWQ5-12	294	21	273	243	30	4	<2	26	31	<10	25	<10	16
MWQ5-13	300	<10	300	289	12	<2	<2	10	32	<10	26	11	15
MWQ5-14	302	51	251	236	16	<2	<2	13	31	<10	22	<10	14
MWQ5-15	281	41	240	225	15	2	<2	12	32	11	21	<10	12
MWQ5-16	333	101	232	203	28	5	<2	23	30	<10	21	<10	12
MWQ5-17	365	111	253	239	14	4	<2	10	28	<10	18	<10	9
MWQ5-18	289	10	278	271	8	<2	<2	5	24	<10	17	<10	9
MWQ5-19	347	88	259	253	6	<2	<2	5	28	12	16	<10	11
MWQ5-20	317	<10	317	312	6	<2	<2	4	24	11	13	<10	7
MWQ5-21	376	63	313	298	15	8	<2	6	21	<10	12	<10	8
MWQ5-22	293	32	261	212	49	<2	<2	47	25	12	14	<10	9

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ6-1	153	<10	153	144	9	4	<2	4	15	<10	15	11	4
MWQ6-2	291	<10	291	284	7	3	<2	3	15	<10	15	<10	5
MWQ6-3	178	<10	169	163	6	3	<2	3	26	<10	17	12	5
MWQ6-4	213	32	180	173	7	3	<2	4	39	11	29	19	10
MWQ6-5	255	60	194	186	8	3	<2	4	48	17	31	18	13
MWQ6-6	502	140	361	355	7	2	<2	3	129	47	81	47	34
MWQ6-7	213	12	202	196	6	2	<2	3	25	<10	24	16	7
MWQ6-8	226	<10	226	220	6	2	<2	3	28	<10	21	14	7
MWQ6-9	219	58	161	149	11	3	<2	8	32	<10	26	17	9
MWQ6-10	247	50	197	191	6	<2	<2	4	33	<10	23	12	11
MWQ6-11	306	67	239	236	4	<2	<2	3	34	<10	26	15	10
MWQ6-12	181	<10	181	176	5	<2	<2	3	30	<10	24	14	10
MWQ6-13	185	<10	176	171	4	<2	<2	2	34	<10	24	14	10
MWQ6-14	194	20	174	171	3	<2	<2	<2	34	11	23	14	10
MWQ6-15	210	45	165	162	3	<2	<2	<2	36	14	22	13	9
MWQ6-16	250	78	172	171	<2	<2	<2	<2	34	13	21	13	8
MWQ6-17	315	117	198	196	2	<2	<2	<2	36	13	23	15	8
MWQ6-18	304	80	224	205	19	15	<2	2	32	<10	24	15	10
MWQ6-19	267	66	201	194	7	6	<2	<2	31	12	19	11	8
MWQ6-20	289	107	182	181	<2	<2	<2	<2	30	14	16	<10	7
MWQ7-1	320	<10	320	300	19	11	<2	8	14	<10	12	<10	7
MWQ7-2	307	50	257	205	52	26	<2	25	17	<10	15	<10	7
MWQ7-3	488	62	426	287	139	94	4	41	40	13	27	16	11
MWQ7-4	378	84	294	246	48	27	2	19	42	13	28	16	12
MWQ7-5	370	45	325	282	43	15	<2	26	46	16	30	15	15
MWQ7-6	538	80	457	440	17	3	<2	14	107	33	74	42	33
MWQ7-7	694	14	680	429	251	187	5	60	54	16	38	20	19

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ7- 8	720	14	706	434	273	200	6	66	61	22	39	20	19
MWQ7- 9	851	29	822	514	308	229	6	73	73	23	50	27	23
MWQ7- 10	937	52	886	553	332	250	7	75	80	21	59	34	24
MWQ7- 11	943	32	911	554	357	275	7	75	80	24	57	31	26
MWQ7- 12	1186	<10	1186	836	350	276	7	67	90	24	66	40	26
MWQ7- 13	1053	30	1022	599	423	348	9	66	93	26	67	40	28
MWQ7- 14	1062	23	1039	578	461	379	13	69	101	29	72	32	39
MWQ7- 15	1115	<10	1115	705	409	328	11	70	101	24	76	34	42
MWQ7- 16	1003	<10	1003	659	344	300	10	33	97	23	74	39	35
MWQ7- 17	899	<10	899	578	321	281	9	31	85	22	63	32	31
MWQ7- 18	878	31	848	532	315	282	9	24	81	24	56	28	28
MWQ8- 1	157	46	111	105	6	<2	<2	5	16	<10	12	<10	2
MWQ8- 2	182	18	164	158	6	<2	<2	4	19	<10	16	13	3
MWQ8- 3	274	104	170	164	6	<2	<2	4	34	12	22	17	6
MWQ8- 4	293	116	177	170	6	<2	<2	5	41	11	31	23	8
MWQ8- 5	272	71	201	196	6	<2	<2	5	42	12	30	22	8
MWQ8- 6	562	175	386	380	6	<2	<2	4	74	26	48	34	15
MWQ8- 7	194	46	148	140	7	<2	<2	5	26	<10	20	16	4
MWQ8- 8	257	29	228	222	6	<2	<2	5	28	<10	21	15	7
MWQ8- 9	212	16	196	191	6	<2	<2	4	35	<10	26	19	7
MWQ8- 10	250	44	206	201	5	<2	<2	4	38	<10	29	18	10
MWQ8- 11	239	53	187	182	4	<2	<2	4	38	<10	31	21	9
MWQ8- 12	253	57	196	192	5	<2	<2	4	38	<10	31	19	12
MWQ8- 13	326	134	192	188	5	<2	<2	3	40	<10	33	21	13
MWQ8- 14	304	78	227	224	3	<2	<2	2	46	<10	38	26	13
MWQ8- 15	296	79	218	215	2	<2	<2	<2	52	11	40	24	16
MWQ8- 16	778	466	313	308	4	<2	<2	4	62	17	45	32	13

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ8-17	446	162	284	282	<2	<2	<2	<2	67	11	56	42	13
MWQ8-18	358	138	220	217	3	<2	<2	<2	39	<10	31	21	10
MWQ8-19	262	95	166	163	4	<2	<2	2	30	<10	24	14	10
MWQ8-20	196	53	142	140	2	<2	<2	<2	27	<10	19	11	8
MWQ9-1	160	23	138	127	11	3	<2	7	41	<10	38	33	5
MWQ9-2	147	<10	147	138	9	2	<2	6	44	<10	39	34	5
MWQ9-3	186	34	152	145	8	2	<2	5	55	11	44	37	7
MWQ9-4	211	24	187	175	12	3	<2	8	60	12	48	38	10
MWQ9-5	208	26	182	173	9	<2	<2	6	59	10	49	39	10
MWQ9-6	319	<10	310	300	10	<2	<2	8	59	12	48	39	8
MWQ9-7	187	18	169	162	7	<2	<2	5	46	<10	40	34	7
MWQ9-8	175	17	158	151	7	<2	<2	5	46	<10	42	33	9
MWQ9-9	172	13	159	151	8	<2	<2	6	47	<10	40	31	9
MWQ9-10	201	25	176	169	7	<2	<2	6	47	<10	39	29	10
MWQ9-11	216	56	160	152	8	<2	<2	7	47	<10	38	28	10
MWQ9-12	237	35	203	175	28	19	<2	7	49	<10	39	28	11
MWQ9-13	230	29	201	162	39	25	<2	12	46	<10	41	28	13
MWQ9-14	267	73	195	152	42	35	<2	6	47	<10	37	23	14
MWQ9-15	305	91	214	171	44	36	<2	6	53	15	38	22	15
MWQ9-16	332	93	239	213	26	20	<2	4	46	16	30	15	15
MWQ9-17	256	44	212	161	51	44	<2	5	38	11	27	15	12
MWQ9-18	436	227	209	167	41	35	<2	4	37	10	27	17	10
MWQ9-19	217	45	172	162	10	6	<2	4	31	<10	25	15	10
MWQ9-20	255	104	151	146	5	<2	<2	4	26	<10	16	10	6
MWQ10-1	191	<10	191	187	3	2	<2	<2	42	<10	38	23	15
MWQ10-2	210	18	191	182	10	4	<2	6	53	<10	53	36	17

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ10-3	217	<10	217	203	14	5	<2	8	54	<10	45	27	18
MWQ10-4	242	29	213	196	17	6	<2	11	59	<10	51	31	20
MWQ10-5	302	67	235	224	11	5	<2	6	66	15	51	30	21
MWQ10-6	380	<10	380	375	5	<2	<2	3	69	16	53	33	20
MWQ10-7	404	113	291	284	7	3	<2	5	62	18	44	27	17
MWQ10-8	258	59	199	196	3	<2	<2	<2	48	<10	40	23	17
MWQ10-9	247	<10	247	243	3	3	<2	<2	45	<10	42	26	16
MWQ10-10	427	136	292	278	13	4	<2	8	53	<10	44	28	16
MWQ10-11	250	27	223	216	7	<2	<2	7	46	<10	44	27	17
MWQ10-12	210	<10	210	205	5	<2	<2	3	43	<10	43	26	17
MWQ10-13	249	<10	249	223	26	2	<2	24	42	<10	37	24	13
MWQ10-14	275	<10	275	274	<2	<2	<2	<2	38	<10	37	24	12
MWQ10-15	216	<10	216	215	<2	<2	<2	<2	35	<10	32	20	12
MWQ10-16	238	<10	238	236	2	<2	<2	<2	41	11	29	20	9
MWQ10-17	258	<10	258	256	<2	<2	<2	<2	36	12	24	18	7
MWQ10-18	333	72	261	251	9	7	2	<2	24	<10	19	15	4
MWQ10-19	266	12	254	249	5	4	<2	<2	21	<10	20	15	5
MWQ10-20	251	82	169	167	<2	<2	<2	<2	22	<10	15	11	5
MWQ11-1	224	<10	224	210	14	5	<2	9	29	<10	28	24	4
MWQ11-2	225	28	198	182	15	5	<2	9	29	<10	24	22	2
MWQ11-3	280	<10	280	263	17	6	<2	10	29	21	<10	<10	4
MWQ11-4	253	<10	253	238	15	4	<2	11	37	<10	28	22	6
MWQ11-5	290	<10	290	275	15	5	<2	9	38	<10	29	22	6
MWQ11-6	293	17	276	265	11	<2	<2	9	40	<10	32	24	7
MWQ11-7	244	<10	244	226	19	6	<2	12	31	<10	22	17	5
MWQ11-8	223	<10	223	205	18	6	<2	12	30	<10	25	19	6
MWQ11-9	252	<10	252	224	28	7	<2	21	32	<10	27	22	6

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ11-10	226	<10	224	203	21	10	<2	11	33	<10	25	17	7
MWQ11-11	263	<10	263	239	25	9	<2	15	33	<10	28	18	9
MWQ11-12	230	<10	225	207	18	12	<2	6	31	<10	22	14	8
MWQ11-13	222	<10	222	200	22	14	<2	7	28	<10	23	15	9
MWQ11-14	241	<10	241	219	22	17	<2	5	31	<10	24	17	7
MWQ11-15	250	<10	250	216	34	19	<2	14	29	<10	20	11	8
MWQ11-16	219	<10	219	160	59	4	<2	54	26	13	13	<10	6
MWQ11-17	234	<10	233	225	8	<2	<2	5	22	<10	12	10	2
MWQ11-18	242	15	226	174	52	43	<2	7	17	<10	<10	<10	3
MWQ11-19	203	<10	200	180	20	13	<2	7	16	<10	<10	<10	3
MWQ11-20	202	46	156	148	8	<2	<2	7	15	<10	<10	<10	3
MWQ12-1	289	<10	289	260	30	15	3	12	38	<10	36	34	2
MWQ12-2	223	<10	222	197	25	12	2	10	46	<10	38	37	<2
MWQ12-3	239	<10	239	223	16	5	<2	10	45	11	34	31	3
MWQ12-4	271	33	238	226	12	3	<2	8	52	13	39	34	5
MWQ12-5	412	<10	412	396	15	3	<2	13	47	<10	42	37	5
MWQ12-6	392	58	334	321	13	2	<2	11	58	<10	58	54	4
MWQ12-7	268	<10	264	235	29	5	<2	24	46	<10	38	34	3
MWQ12-8	272	<10	272	259	14	5	<2	9	48	10	38	32	6
MWQ12-9	284	<10	284	269	16	6	<2	9	44	<10	37	30	6
MWQ12-10	286	66	220	208	13	5	<2	8	34	<10	34	28	6
MWQ12-11	316	<10	316	304	13	4	<2	8	37	<10	32	27	5
MWQ12-12	366	<10	366	351	14	5	<2	9	52	24	29	23	5
MWQ12-13	322	104	218	206	12	6	<2	5	27	<10	24	20	5
MWQ12-14	255	30	225	210	15	6	<2	8	22	<10	22	18	5
MWQ12-15	375	192	183	173	10	4	<2	6	39	14	25	21	3
MWQ12-16	418	217	201	189	12	3	<2	9	14	<10	<10	<10	2

Sample ID	TN ug/L	PN ug/L	TDN ug/L	DON ug/L	DIN ug/L	NO3 ug/L	NO2 ug/L	NH4 ug/L	TP ug/L	PP ug/L	TDP ug/L	DOP ug/L	DIP ug/L
MWQ12-17	385	91	294	211	84	13	<2	70	17	<10	<10	<10	2
MWQ12-18	483	294	190	174	16	10	<2	6	19	14	<10	<10	6
MWQ12-19	201	11	190	180	10	<2	<2	9	11	<10	<10	<10	5

Table C 3: ????

Sample	Date	Time	NO3 ug/L	NO2 ug/L	NH4 ug/L	DIN ug/L	DON ug/L	TDN ug/L	PN ug/L	TN ug/L	PO4 ug/L	DOP ug/L	TDP ug/L	PP ug/L	TP ug/L
1	18/9/06	12:23	<2	<2	3	6	181	186	<10	186	4	<10	11	<10	14
2	4/10/06	11:00	<2	<2	<2	<2	214	216	<10	216	3	<10	10	<10	13
3	18/10/06	1:40	<2	<2	5	7	331	338	<10	338	3	<10	<10	<10	11
4	6/11/06	11:05	34	3	40	77	422	499	18	517	5	14	19	16	35
5	7/11/06	9:10	101	3	45	149	357	507	<10	507	8	14	23	14	37
6	8/11/06	12:42 PM	396	5	19	420	491	912	8	920	9	38	47	<10	52
7	9/11/06	11:10 AM	385	6	18	409	598	1008	<10	1008	8	17	25	11	36
8	10/11/06	11:20	325	5	7	337	390	727	<10	727	8	15	23	<10	29
9	15/11/06	12:40 PM	<2	<2	9	9	488	497	<10	497	8	11	19	<10	28
10	22/11/06	11:45	<2	<2	41	43	205	248	<10	251	4	15	20	<10	26
11	29/11/06	11:35	<2	<2	10	12	369	381	<10	381	3	<10	11	<10	17
12	12/12/06	3:15pm	<2	<2	6	6	203	209	52	260	3	<10	<10	<10	14
13	20/12/06	10:25	<2	<2	8	11	347	358	<10	358	3	<10	<10	<10	20
14	28/12/06	11:30	<2	<2	3	3	210	213	<10	219	2	<10	<10	<10	12
15	8/1/07	9:45	<2	<2	5	6	179	184	46	230	2	<10	<10	<10	12
16	14/2/07	9:25	9	2	63	74	223	297	16	313	6	11	17	18	35
17	20/2/07	2:20	<2	<2	11	12	158	170	38	208	3	11	14	<10	14
18	28/2/07	11:15	<2	<2	28	31	291	323	<10	323	9	<10	19	<10	23
19	1/3/07	10:10	84	8	24	116	409	525	228	753	9	29	38	25	63
20	2/3/07	9:15	141	8	75	225	362	587	102	689	14	10	25	40	65
21	5/3/07	9:15	279	10	90	379	547	926	15	940	29	27	56	20	76
22	6/3/07	9:20	303	9	49	361	381	742	98	840	25	31	56	22	78
23	8/3/07	3:00pm	208	8	91	306	351	658	<10	658	30	22	51	15	67
24	14/3/07	9:10 AM	40	<2	21	64	344	409	<10	409	20	15	35	<10	35
25	20/3/07	2:45 PM	<2	<2	11	15	338	353	<10	353	19	13	33	<10	37

WMAwater

26017:MacleayRiverEPS.doc:12 January 2009

Sample	Date	Time	NO3 ug/L	NO2 ug/L	NH4 ug/L	DIN ug/L	DON ug/L	TDN ug/L	PN ug/L	TN ug/L	PO4 ug/L	DOP ug/L	TDP ug/L	PP ug/L	TP ug/L
26	27/3/07	1:50 PM	<2	<2	17	20	296	315	<10	315	10	12	21	<10	28
27	12/4/07	2:00 PM	<2	<2	11	13	210	223	<10	223	5	<10	14	<10	18
28	18/4/07	2:30 PM	<2	<2	14	16	262	277	<10	277	4	11	15	<10	18
29	26/4/07	2:38 PM	5	<2	20	26	189	215	47	262	4	12	16	<10	18
30	2/5/07	9:50	<2	<2	8	9	119	128	<10	129	3	10	13	<10	17
31	15/5/07	12:15	5	<2	76	82	108	190	122	312	3	<10	12	<10	18
32	23/5/07	2:30 PM	2	<2	13	16	288	304	725	1029	3	<10	11	<10	17
33	7/6/07	2:20 PM	3	<2	13	17	307	323	<10	323	3	14	17	<10	17
34	27/6/07	11:40	5	<2	18	24	361	385	<10	385	3	11	14	<10	14
35	4/7/07	10:29	<2	<2	12	13	303	316	<10	316	2	<10	<10	15	18

Sample	Silver mg/L	Aluminum mg/L	Arsenic mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Iron mg/L	Manganese mg/L	Nickel mg/L	Lead mg/L	Selenium mg/L	Zinc mg/L	Mercury mg/L
1	0	0.0088	0.0011	0	0	0.0006	0.1086	0.0044	0	0	0.0006	0.0021	0
2	0	0	0.0015	0	0	0.0013	0.1098	0.0043	0	0	0.0005	0.0076	0
3	0	0	0.0015	0	0.0015	0.0021	0.1412	0.0059	0	0	0.0005	0.0024	0
4	0	0.225	0.0012	0	0.0007	0.0018	0.4702	0.0101	0.000	0	0.0006	0.002	0
5	0	0.1656	0.0015	0	0.0007	0.0017	0.321	0.0178	0	0	0.0006	0.0038	0
6	0	0.2156	0.0014	0	0.0005	0.0017	0.3626	0.0138	0	0	0.0007	0.0021	0
7	0	0.139	0.0014	0	0.0012	0.0026	0.2801	0.0101	0.000	0	0.0006	0.0022	0
8	0	0.0833	0.0015	0	0.0009	0.0014	0.2369	0.0093	0	0	0.0005	0	0
9	0	0.0313	0.0025	0	0	0.0015	0.2516	0.0187	0	0	0.0006	0.0025	0
10	0	0.0035	0.0022	0	0	0.0009	0.184	0.0124	0	0	0.0005	0.0021	0
11	0	0.0053	0.0023	0	0	0.0005	0.1749	0.0105	0	0	0.0006	0.0034	0
12	0	0.0052	0.0024	0	0.0005	0.0009	0.1724	0.0138	0	0	0.0006	0.0114	0

Sample	Silver mg/L	Aluminum mg/L	Arsenic mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Iron mg/L	Manganese mg/L	Nickel mg/L	Lead mg/L	Selenium mg/L	Zinc mg/L	Mercury mg/L
13	0	0.0145	0.0018	0	0.0007	0.0008	0.1719	0.0169	0	0	0.0005	0.0122	0
14	0	0	0.0019	0	0.0006	0.0009	0.1312	0.0064	0	0	0.0007	0.0094	0
15	0	0	0.0019	0	0.0007	0	0.1598	0.0117	0	0	0.0008	0.0041	0
16	0	0.132	0.003	0	0.001	0.003	0.309	0.032	0.002	0	0	0.056	0
17	0	0.023	0.003	0	0.001	0.002	0.121	0.009	0.001	0	0	0.031	0
18	0	0.023	0.003	0	0.001	0.002	0.147	0.013	0.001	0	0	0.018	0
19	0	0.492	0.003	0	0.001	0.003	0.515	0.026	0.001	0.00	0	0.018	0
20	0	0.58	0.004	0.001	0.002	0.004	0.608	0.027	0.002	0.00	0	0.012	0
21	0	0.356	0.005	0	0.001	0.005	0.543	0.047	0.002	0.00	0	0.025	0
22	0	0.277	0.006	0	0.001	0.003	0.487	0.038	0.002	0.00	0	0.023	0
23	0	0.152	0.007	0	0.001	0.003	0.426	0.04	0.002	0	0.001	0.019	0
24	0	0.064	0.006	0	0.001	0.003	0.289	0.03	0.001	0	0.001	0.011	0
25	0	0.04	0.006	0	0.001	0.003	0.268	0.019	0.001	0	0.001	0.011	0
26	0	0.04	0.005	0	0.001	0.004	0.195	0.011	0.002	0	0.001	0.012	0
27	0	0.028	0.003	0	0.001	0.003	0.119	0.008	0.001	0	0	0.01	0
28	0	0.027	0.003	0	0.001	0.003	0.107	0.01	0.001	0	0	0.013	0
29	0	0.02	0.003	0	0.001	0.009	0.112	0.009	0.001	0	0	0.021	0
30	0	0.025	0.002	0	0.001	0.002	0.087	0.005	0.001	0	0	0.016	0
31	0	0.034	0.002	0	0.001	0.008	0.079	0.007	0.002	0	0	0.041	0
32	0	0.022	0.002	0	0.001	0.007	0.073	0.005	0.002	0.00	0	0.018	0
33	0	0.018	0.001	0	0.001	0.002	0.065	0.006	0.001	0	0	0.006	0
34	0	0.035	0.001	0	0.001	0.003	0.047	0.004	0.001	0	0	0.007	0
35	0	0.03	0.001	0.001	0.001	0.002	0.058	0.007	0.001	0.00	0.001	0.005	0

Sample	Silver mg/L	Aluminum mg/L	Arsenic mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Iron mg/L	Manganese mg/L	Nickel mg/L	Lead mg/L	Selenium mg/L	Zinc mg/L	Mercury mg/L
										1			

Sample	type(R, U, D)	Comments
1	r	1 wk after heavy rainfall
2	r	fine weather, minor coastal showers
3	r	showers on previous two days
4	u	Heavy Rain over weekend. Slight rise in river and slightly brown
5	r	river light brown and fast moving
6	d	river light brown some flood weed debris
7	d	water level dropping, light brown
8	d	fish jumping clarity improving
9	r	clear
10	r	clear
11	r	level dropping slightly, clear
12	r	river low- base flow
13	r	level dropping- base flow
14	r	slightly above base flow, clear
15	r	light coastal showers, base flow, clear
16	r	slight rise in water level after 3 days of rain
17	r	slow flow (base), clear
18	r	slight rise in level, swift flowing
19	u	river rising, brown water
20	u	swift flowing, rising slowly, brown
21	d	falling, swift and brown
22	u	discoloured brown
23	d	colour clearing

24	r	clear, slow flowing
25	r	clear
26	r	after heavy rainfall
27	r	clear
28	r	clear
29	r	showers
30	r	clear - base flow
31	r	clear water
32	r	clear, level dropping
33	r	raining
34	r	after rain event
35	r	