



ANALYSIS REPORT

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Client:	Fulton Hogan Nelson	Lab No:	1290112	SPV1
Contact:	Adrian Wardrop	Date Registered:	23-Jun-2014	
	C/- Fulton Hogan Nelson	Date Reported:	07-Jul-2014	
	Private Bag 1	Quote No:	55261	
	NELSON 7040	Order No:		
		Client Reference:		
		Submitted By:	Adrian Wardrop	

Sample Type: Aqueous

Sample Name:	NWTP Clearwater 20-Jun-2014 11:15 am	Maitai South Branch 20-Jun-2014 12:15 pm	Maitai Dam 20-Jun-2014 12:40 pm	Roding Dam 20-Jun-2014 8:30 am	
Lab Number:	1290112.1	1290112.2	1290112.3	1290112.4	

Individual Tests

Total Alkalinity	g/m ³ as CaCO ₃	62	67	62	66	-
Total Hardness	g/m ³ as CaCO ₃	62	64	63	63	-
Dissolved Calcium	g/m ³	12.0	9.4	18.3	13.4	-
Dissolved Magnesium	g/m ³	7.9	9.8	4.2	7.3	-
Total Cyanide	g/m ³	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-
Fluoride	g/m ³	< 0.05	0.06	< 0.05	< 0.05	-
Total Ammoniacal-N	g/m ³	-	< 0.005	0.008	< 0.005	-
Nitrite-N	g/m ³	< 0.002	< 0.002	< 0.002	< 0.002	-
Nitrate-N	g/m ³	0.038	0.042	0.044	0.042	-
Nitrate-N + Nitrite-N	g/m ³	0.038	0.042	0.046	0.042	-
Dissolved Reactive Phosphorus	g/m ³	-	0.0027	< 0.0010	0.0046	-

OrganoNitrogen & Phosphorus pesticides, trace, liq/liq GCMS

Acetochlor	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Alachlor	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Atrazine	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Atrazine-desethyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Atrazine-desisopropyl	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Azaconazole	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Azinphos-methyl	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Benalaxyl	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Bitertanol	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Bromacil	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Bromopropylate	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Butachlor	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Captan	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Carbaryl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Carbofenthion	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Carbofuran	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Chlorfluazuron	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Chlorothalonil	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Chlorpyrifos	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Chlorpyrifos-methyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Chlortoluron	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Cyanazine	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Cyfluthrin	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Cyhalothrin	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-

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Lab Number:		1290112.1	1290112.2	1290112.3	1290112.4	
OrganoNitrogen & Phosphorus pesticides, trace, liq/liq GCMS						
Cypermethrin	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Deltamethrin (including Tralomethrin)	g/m ³	-	< 0.00006	< 0.00006	< 0.00006	-
Diazinon	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Dichlofluanid	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Dichloran	g/m ³	-	< 0.0002	< 0.0002	< 0.0002	-
Dichlorvos	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Difenoconazole	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Dimethoate	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Diphenylamine	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Diuron	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Fenpropimorph	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Fluazifop-butyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Fluometuron	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Flusilazole	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Fluvalinate	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Furalaxyl	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Haloxypop-methyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Hexaconazole	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Hexazinone	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	g/m ³	-	< 0.0002	< 0.0002	< 0.0002	-
Kresoxim-methyl	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Linuron	g/m ³	-	< 0.00005	< 0.00005	< 0.00005	-
Malathion	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Metalaxyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Metolachlor	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Metribuzin	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Molinate	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Myclobutanil	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Naled	g/m ³	-	< 0.0002	< 0.0002	< 0.0002	-
Norflurazon	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-
Oxadiazon	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Oxyfluorfen	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Paclobutrazol	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Parathion-ethyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Parathion-methyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Pendimethalin	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Permethrin	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Pirimicarb	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Pirimiphos-methyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Prochloraz	g/m ³	-	< 0.0002	< 0.0002	< 0.0002	-
Procymidone	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Prometryn	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Propachlor	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Propanil	g/m ³	-	< 0.0002	< 0.0002	< 0.0002	-
Propazine	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Propiconazole	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Pyriproxyfen	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Quizalofop-ethyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Simazine	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Simetryn	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Sulfentrazone	g/m ³	-	< 0.0002	< 0.0002	< 0.0002	-
TCMTB [2-(thiocyanomethylthio)benzothiazole, Busan]	g/m ³	-	< 0.00008	< 0.00008	< 0.00008	-

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OrganoNitrogen & Phosphorus pesticides, trace, liq/liq GCMS						
Tebuconazole	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Terbacil	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Terbumeton	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Terbuthylazine	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Terbuthylazine-desethyl	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Terbutryn	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Thiabendazole	g/m ³	-	< 0.0002	< 0.0002	< 0.0002	-
Thiobencarb	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Tolyfluanid	g/m ³	-	< 0.00002	< 0.00002	< 0.00002	-
Triazophos	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Trifluralin	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Vinclozolin	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Drinking water metals suite, totals, trace						
Total Aluminium	g/m ³	0.0045	0.021	0.117	0.0135	-
Total Antimony	g/m ³	< 0.00021	< 0.00021	< 0.00021	< 0.00021	-
Total Arsenic	g/m ³	< 0.0011	< 0.0011	< 0.0011	< 0.0011	-
Total Barium	g/m ³	0.0032	0.0027	0.0052	0.0037	-
Total Beryllium	g/m ³	< 0.00011	< 0.00011	< 0.00011	< 0.00011	-
Total Boron	g/m ³	0.0128	0.0085	0.0117	0.0173	-
Total Cadmium	g/m ³	< 0.000053	< 0.000053	< 0.000053	< 0.000053	-
Total Calcium	g/m ³	11.7	9.2	18.0	13.2	-
Total Chromium	g/m ³	0.00119	0.00132	0.0029	0.00133	-
Total Copper	g/m ³	0.00057	< 0.00053	< 0.00053	< 0.00053	-
Total Iron	g/m ³	< 0.021	0.042	0.24	0.024	-
Total Lead	g/m ³	< 0.00011	< 0.00011	< 0.00011	< 0.00011	-
Total Lithium	g/m ³	0.00189	0.00101	0.00045	0.0032	-
Total Magnesium	g/m ³	8.9	11.0	4.2	8.0	-
Total Manganese	g/m ³	0.0040	0.00080	0.041	0.00053	-
Total Mercury	g/m ³	< 0.00008	< 0.00008	< 0.00008	< 0.00008	-
Total Molybdenum	g/m ³	< 0.00021	< 0.00021	< 0.00021	< 0.00021	-
Total Nickel	g/m ³	0.0036	0.0059	0.0066	0.0036	-
Total Potassium	g/m ³	0.25	0.20	0.30	0.28	-
Total Selenium	g/m ³	< 0.0011	< 0.0011	< 0.0011	< 0.0011	-
Total Silver	g/m ³	< 0.00011	< 0.00011	< 0.00011	< 0.00011	-
Total Sodium	g/m ³	4.6	3.2	3.1	4.0	-
Total Tin	g/m ³	< 0.00053	< 0.00053	< 0.00053	< 0.00053	-
Total Uranium	g/m ³	< 0.000021	< 0.000021	< 0.000021	< 0.000021	-
Total Zinc	g/m ³	< 0.0011	< 0.0011	0.0014	< 0.0011	-
Acid Herbicides Trace in Water by LCMSMS						
Acifluorfen	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Bentazone	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Bromoxynil	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Clopyralid	g/m ³	-	< 0.00006	< 0.00006	< 0.00006	-
2,4-Dichlorophenoxyacetic acid (24D)	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
2,4-Dichlorophenoxybutyric acid (24DB)	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Dicamba	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Dichlorprop	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Fluazifop	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Fluroxypyr	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Haloxypfop	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
2-methyl-4-chlorophenoxyacetic acid (MCPA)	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
2-methyl-4-chlorophenoxybutanoic acid (MCPB)	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-

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Acid Herbicides Trace in Water by LCMSMS						
Mecoprop	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Oryzalin	g/m ³	-	< 0.00011	< 0.00011	< 0.00011	-
2,3,4,6-Tetrachlorophenol (TCP)	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
2,4,5-trichlorophenoxypropionic acid (245TP,Fenoprop, Silvex)	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
2,4,5-Trichlorophenoxyacetic acid (245T)	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Pentachlorophenol (PCP)	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Picloram	g/m ³	-	< 0.00006	< 0.00006	< 0.00006	-
Quizalofop	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Triclopyr	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
Haloethers Trace in SVOC Water Samples by GC-MS						
Bis(2-chloroethoxy) methane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Bis(2-chloroethyl)ether	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Bis(2-chloroisopropyl)ether	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
4-Bromophenyl phenyl ether	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
4-Chlorophenyl phenyl ether	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Nitrogen containing compounds Trace in SVOC Water Samples, GC-MS						
3,3'-Dichlorobenzidine	g/m ³	-	< 0.003	< 0.003	< 0.003	-
2,4-Dinitrotoluene	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
2,6-Dinitrotoluene	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Nitrobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
N-Nitrosodi-n-propylamine	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
N-Nitrosodiphenylamine	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Organochlorine Pesticides Trace in SVOC Water Samples by GC-MS						
Aldrin	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
alpha-BHC	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
beta-BHC	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
delta-BHC	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
gamma-BHC (Lindane)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
4,4'-DDD	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
4,4'-DDE	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
4,4'-DDT	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Dieldrin	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Endosulfan I	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Endosulfan II	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Endosulfan sulfate	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Endrin	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Endrin ketone	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Heptachlor	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Heptachlor epoxide	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Hexachlorobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Polycyclic Aromatic Hydrocarbons Trace in SVOC Water Samples						
Acenaphthene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Acenaphthylene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Anthracene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Benzo[a]anthracene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Benzo[a]pyrene (BAP)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Benzo[g,h,i]perylene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Benzo[k]fluoranthene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
2-Chloronaphthalene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Chrysene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Dibenzo[a,h]anthracene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-

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Polycyclic Aromatic Hydrocarbons Trace in SVOC Water Samples						
Fluoranthene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Fluorene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Indeno(1,2,3-c,d)pyrene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
2-Methylnaphthalene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Naphthalene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Phenanthrene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Pyrene	g/m ³	-	< 0.0003	< 0.0003	< 0.0003	-
Phenols Trace (drinkingwater) in SVOC Water Samples by GC-MS						
2-Chlorophenol	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
2,4-Dichlorophenol	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
2,4,6-Trichlorophenol	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Phenols Trace (non-drinkingwater) in SVOC Water Samples by GC-MS						
4-Chloro-3-methylphenol	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
2,4-Dimethylphenol	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
3 & 4-Methylphenol (m- + p-cresol)	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
2-Methylphenol (o-Cresol)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
2-Nitrophenol	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Pentachlorophenol (PCP)	g/m ³	-	< 0.010	< 0.010	< 0.010	-
Phenol	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
2,4,5-Trichlorophenol	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Plasticisers Trace (non-drinkingwater) in SVOC Water by GCMS						
Butylbenzylphthalate	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Diethylphthalate	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Dimethylphthalate	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Di-n-butylphthalate	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Di-n-octylphthalate	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Plasticisers Trace (drinkingwater) in SVOC Water Samples by GCMS						
Bis(2-ethylhexyl)phthalate	g/m ³	-	< 0.003	< 0.003	< 0.003	-
Di(2-ethylhexyl)adipate	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Other Halogenated compounds Trace (drinkingwater) in SVOC Water						
1,2-Dichlorobenzene	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
1,3-Dichlorobenzene	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
1,4-Dichlorobenzene	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Other Halogenated compounds Trace (non-drinkingwater) in SVOC						
Hexachlorobutadiene	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Hexachloroethane	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
1,2,4-Trichlorobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Other SVOC Trace in SVOC Water Samples by GC-MS						
Benzyl alcohol	g/m ³	-	< 0.005	< 0.005	< 0.005	-
Carbazole	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Dibenzofuran	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Isophorone	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Tributyl Tin Trace in Water samples by GCMS						
Dibutyltin (as Sn)	g/m ³	-	< 0.00006	< 0.00006	< 0.00006	-
Tributyltin (as Sn)	g/m ³	-	< 0.00005	< 0.00005	< 0.00005	-
Triphenyltin (as Sn)	g/m ³	-	< 0.00004	< 0.00004	< 0.00004	-
BTEX in VOC Water by Purge&Trap GC-MS						
Benzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Toluene	g/m ³	-	< 0.0010	< 0.0010	< 0.0010	-
Ethylbenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
m&p-Xylene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
o-Xylene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-

Sample Type: Aqueous						
Sample Name:		NWTP Clearwater 20-Jun-2014 11:15 am	Maitai South Branch 20-Jun-2014 12:15 pm	Maitai Dam 20-Jun-2014 12:40 pm	Roding Dam 20-Jun-2014 8:30 am	
Lab Number:		1290112.1	1290112.2	1290112.3	1290112.4	
Halogenated Aliphatics in VOC Water by Purge&Trap GC-MS						
Bromomethane (Methyl Bromide)	g/m ³	-	< 0.002	< 0.002	< 0.002	-
Carbon tetrachloride	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Chloroethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Chloromethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,2-Dibromo-3-chloropropane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,2-Dibromoethane (ethylene dibromide, EDB)	g/m ³	-	< 0.0004	< 0.0004	< 0.0004	-
Dibromomethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Dichlorodifluoromethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,1-Dichloroethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,2-Dichloroethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,1-Dichloroethene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
cis-1,2-Dichloroethene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
trans-1,2-Dichloroethene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Dichloromethane (methylene chloride)	g/m ³	-	< 0.010	< 0.010	< 0.010	-
1,2-Dichloropropane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,3-Dichloropropane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,1-Dichloropropene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
cis-1,3-Dichloropropene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
trans-1,3-Dichloropropene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Hexachlorobutadiene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,1,1,2-Tetrachloroethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,1,2,2-Tetrachloroethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Tetrachloroethene (tetrachloroethylene)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,1,1-Trichloroethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,1,2-Trichloroethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Trichloroethene (trichloroethylene)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Trichlorofluoromethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,2,3-Trichloropropane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,1,2-Trichlorotrifluoroethane (Freon 113)	g/m ³	-	< 0.004	< 0.004	< 0.004	-
Vinyl chloride	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Halogenated Aromatics in VOC Water by Purge&Trap GC-MS						
Bromobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Chlorobenzene (monochlorobenzene)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
2-Chlorotoluene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
4-Chlorotoluene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,2-Dichlorobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,3-Dichlorobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,4-Dichlorobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,2,3-Trichlorobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,2,4-Trichlorobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,3,5-Trichlorobenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Monoaromatic Hydrocarbons in VOC Water by Purge&Trap GC-MS						
n-Butylbenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
tert-Butylbenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Isopropylbenzene (Cumene)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
4-Isopropyltoluene (p-Cymene)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
n-Propylbenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
sec-Butylbenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Styrene	g/m ³	-	0.0006	0.0010	0.0008	-
1,2,4-Trimethylbenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
1,3,5-Trimethylbenzene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Ketones in VOC Water by Purge&Trap GC-MS						

Sample Type: Aqueous						
Sample Name:		NWTP Clearwater 20-Jun-2014 11:15 am	Maitai South Branch 20-Jun-2014 12:15 pm	Maitai Dam 20-Jun-2014 12:40 pm	Roding Dam 20-Jun-2014 8:30 am	
Lab Number:		1290112.1	1290112.2	1290112.3	1290112.4	
Ketones in VOC Water by Purge&Trap GC-MS						
Acetone	g/m ³	-	< 0.05	< 0.05	< 0.05	-
2-Butanone (MEK)	g/m ³	-	< 0.005	< 0.005	< 0.005	-
Methyl tert-butylether (MTBE)	g/m ³	-	< 0.005	< 0.005	< 0.005	-
4-Methylpentan-2-one (MIBK)	g/m ³	-	< 0.005	< 0.005	< 0.005	-
Trihalomethanes in VOC Water by Purge&Trap GC-MS						
Bromodichloromethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Bromoform (tribromomethane)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Chloroform (Trichloromethane)	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Dibromochloromethane	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
Other VOC in Water by Purge&Trap GC-MS						
Carbon disulphide	g/m ³	-	< 0.005	< 0.005	< 0.005	-
Naphthalene	g/m ³	-	< 0.0005	< 0.0005	< 0.0005	-
System monitoring Compounds for VOC - % Recovery						
4-Bromofluorobenzene	%	-	104	106	105	-
Toluene-d8	%	-	107	107	105	-

Analyst's Comments

It has been noted that the method performance for Iprodione and Terbufos for ONOP analysis is not acceptable therefore we are unable to report this compound at this present time.

Samples 2-4 Comment:

It has been noted that the method performance for Hexachlorocyclopentadiene for SVOC analysis is not acceptable therefore we are unable to report this compound at this present time.

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1-4
Total Digestion	Boiling nitric acid digestion. APHA 3030 E 22 nd ed. 2012 (modified).	-	1-4
Total acid digest for Silver analysis	Boiling nitric / hydrochloric acid digestion (5:1 ratio). APHA 3030 F (modified) 22 nd ed. 2012.	-	1-4
Total Cyanide Distillation	Distillation following the addition of sulphuric acid, alkaline trapping solution. APHA 4500-CN ⁻ C (modified) 22 nd ed. 2012.	-	1-4
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. APHA 2320 B (Modified for alk <20) 22 nd ed. 2012.	1.0 g/m ³ as CaCO ₃	1-4
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B 22 nd ed. 2012.	1.0 g/m ³ as CaCO ₃	1-4
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B 22 nd ed. 2012.	-	1-4
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.05 g/m ³	1-4
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.02 g/m ³	1-4
Total Cyanide	Distillation, colorimetry. APHA 4500-CN ⁻ C (modified) & E (modified) 22 nd ed. 2012.	0.0010 g/m ³	1-4
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F ⁻ C 22 nd ed. 2012.	0.05 g/m ³	1-4
Total Ammoniacal-N Trace	Phenol/hypochlorite colorimetry. Flow injection analyser. (NH ₄ ⁺ -N + NH ₃ -N). APHA 4500-NH ₃ H 22 nd ed. 2012.	0.005 g/m ³	2-4
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO ₃ ⁻ I 22 nd ed. 2012.	0.002 g/m ³	1-4
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - NO ₂ N. In-House.	0.0010 g/m ³	1-4
Nitrate-N + Nitrite-N	Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO ₃ ⁻ I 22 nd ed. 2012.	0.002 g/m ³	1-4

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Dissolved Reactive Phosphorus (trace)	Filtered sample. Molybdenum blue colorimetry. Flow injection analyser. APHA 4500-P G 22 nd ed. 2012.	0.0010 g/m ³	2-4
OrganoNitrogen & Phosphorus pesticides, trace, liq/liq GCMS	Liquid/liquid extraction, GPC (if required), GCMS analysis	-	2-4
Acid Herbicides Trace in Water by LCMSMS	Acid Herbicides in water, trace level	0.00003 - 0.00004 g/m ³	2-4
Semivolatile Organic Compounds Trace in Water by GC-MS	Liquid/Liquid extraction, GPC cleanup (if required), GC-MS FS analysis	0.0003 - 0.010 g/m ³	2-4
Tributyl Tin Trace in Water samples by GCMS	Solvent extraction, ethylation, SPE cleanup, GC-MS SIM analysis	0.00003 - 0.00005 g/m ³	2-4
Volatile Organic Compounds Trace in Water by Purge&Trap	Purge & Trap, GC-MS FS analysis [KBIs:28233,2694]	0.0004 - 1.0 g/m ³	2-4
Drinking water metals suite, totals, trace			
Total Aluminium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.0032 g/m ³	1-4
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.00021 g/m ³	1-4
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.0011 g/m ³	1-4
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.00011 g/m ³	1-4
Total Beryllium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.00011 g/m ³	1-4
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0053 g/m ³	1-4
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.000053 g/m ³	1-4
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.053 g/m ³	1-4
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.00053 g/m ³	1-4
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.00053 g/m ³	1-4
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.021 g/m ³	1-4
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.00011 g/m ³	1-4
Total Lithium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.00021 g/m ³	1-4
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.021 g/m ³	1-4
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.00053 g/m ³	1-4
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m ³	1-4
Total Molybdenum	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.00021 g/m ³	1-4
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.00053 g/m ³	1-4
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.053 g/m ³	1-4
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.0011 g/m ³	1-4
Total Silver	Boiling nitric / hydrochloric acid digestion (5:1 ratio), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.00011 g/m ³	1-4
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.021 g/m ³	1-4
Total Tin	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.00053 g/m ³	1-4
Total Uranium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.000021 g/m ³	1-4
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012 / US EPA 200.8.	0.0011 g/m ³	1-4

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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A handwritten signature in blue ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

Ara Heron BSc (Tech)
Client Services Manager - Environmental Division