

Severn Road Resource Recovery Centre - Groundwater Quality Baseline Summary

Determinand	Unit	BHC01				BHC03				BHC04			
		Count	Min	Average	Max	Count	Min	Average	Max	Count	Min	Average	Max
Hardness Total	mg/l	1	520.00	520.00	520.00	1	100.00	100.00	100.00	1	300.00	300.00	300.00
Arsenic Dissolved	mg/l	3	0.02	0.31	0.49	3	0.012	0.134	0.210	3	0.002	0.013	0.020
Cadmium Dissolved	mg/l	3	0.00011	0.00011	0.00011	3	0.00031	0.00036	0.00044	3	0.00011	0.00011	0.00011
Calcium Dissolved	mg/l	3	66.00	442.00	630.00	3	19.00	86.33	140.00	3	57.00	322.33	480.00
Chromium Dissolved	mg/l	3	0.0060	0.2020	0.3500	3	0.023	0.104	0.150	3	0.0140	0.0780	0.1100
Copper Dissolved	mg/l	3	0.0008	0.0133	0.0260	3	0.015	0.251	0.700	3	0.008	0.029	0.064
Iron Dissolved	mg/l	3	0.0800	0.9600	1.5000	3	0.120	1.873	3.800	3	0.49	2.63	4.20
Lead Dissolved	mg/l	3	0.0006	0.0015	0.0025	3	0.012	0.016	0.022	3	0.0010	0.0017	0.0026
Magnesium Dissolved	mg/l	3	86.00	588.67	840.00	3	14.00	81.33	120.00	3	39.00	249.67	390.00
Manganese Dissolved	mg/l	3	0.23	1.74	2.90	3	0.07	0.54	0.78	3	0.22	1.17	1.70
Nickel Dissolved	mg/l	3	0.0023	0.0201	0.0310	3	0.004	0.024	0.040	3	0.012	0.024	0.044
Selenium Dissolved	mg/l	3	0.0090	0.0713	0.1100	3	0.003	0.022	0.041	3	0.001	0.015	0.022
Zinc Dissolved	mg/l	3	0.0025	0.0192	0.0390	3	0.034	0.098	0.140	3	0.017	0.082	0.130
Mercury Dissolved	mg/l	3	0.000005	0.000005	0.000005	3	0.000005	0.000005	0.000005	3	0.000005	0.000005	0.000005
Total Alkalinity as CaCO ₃	mg/l	3	1600.00	1600.00	1600.00	3	900.00	926.67	950.00	3	710.00	743.33	800.00
BOD	mg/l	3	0.50	5.00	14.00	3	0.50	1.83	3.00	2	0.50	1.75	3.00
COD	mg/l	3	150.00	266.67	410.00	3	98.00	106.00	120.00	3	190.00	230.00	250.00
Conductivity (at 20 deg.C)	mS/cm	3	4.70	4.80	4.90	3	1.90	2.00	2.10	3	1.40	1.47	1.50
Potassium Dissolved	mg/l	3	68.00	72.67	75.00	3	28.00	31.33	36.00	3	39.00	40.33	42.00
Sodium Dissolved	mg/l	3	1100.00	1166.67	1200.00	3	470.00	540.00	600.00	3	270.00	300.00	330.00
Nitrate as NO ₃	mg/l	3	0.15	1.00	2.70	3	0.15	1.47	4.10	3	0.15	0.77	2.00
Nitrite as NO ₂	mg/l	3	0.03	0.06	0.14	3	0.025	0.025	0.025	3	0.03	0.03	0.03
Sulphate (soluble)	mg/l	3	77.00	93.67	110.00	3	130.00	160.00	180.00	3	65.00	71.67	75.00
Total Oxidised Nitrogen as N	mg/l	3	0.15	0.30	0.60	3	0.15	0.40	0.90	3	0.15	0.27	0.50
Chloride	mg/l	3	900.00	943.33	990.00	3	96.00	105.33	110.00	3	73.00	81.00	90.00
Fluoride	mg/l	3	0.25	0.72	1.10	3	1.60	1.70	1.80	3	0.90	0.93	1.00
Phosphate (Ortho as PO ₄)	mg/l	3	18.00	19.33	20.00	3	6.90	10.97	13.00	3	9.40	10.13	11.00
Ammoniacal Nitrogen as N	mg/l	3	6.90	7.17	7.40	3	0.80	0.97	1.20	3	3.00	3.00	3.00
Total Organic Carbon	mg/l	3	36.00	42.33	50.00	3	29.00	30.67	32.00	3	16.00	18.33	20.00
Phenols Monohydric	mg/l	3	0.005	0.005	0.005	3	0.005	0.005	0.005	3	0.005	0.005	0.005
Total Cyanide	mg/l	1	0.025	0.025	0.025	1	0.025	0.025	0.025	1	0.350	0.350	0.350
Free Cyanide	mg/l	1	0.025	0.025	0.025	1	0.025	0.025	0.025	1	0.025	0.025	0.025
pH Value	pH Units	3	7.69	8.21	8.51	3	8.17	8.54	8.89	3	7.75	285.81	841.00

Note: If a concentration was recorded below the laboratory report limit, the value has been represented as half of that detection limit.

SRRC - Avonmouth: List I Groundwater Quality

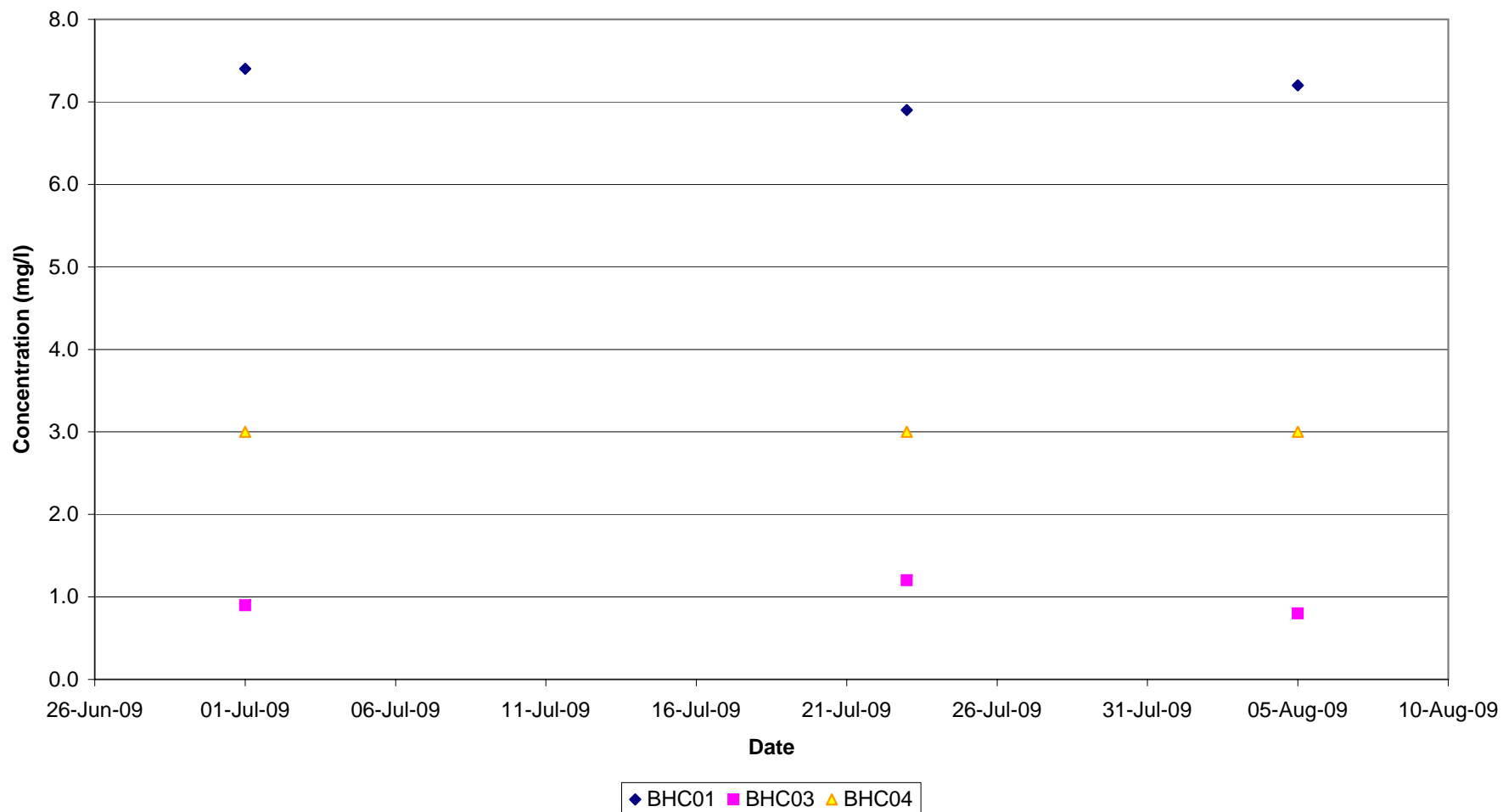
Sample Identity		BHC01	BHC04	BHC03	BHC03	BHC03
Units		01/07/2009	01/07/2009	01/07/2009	23/07/2009	05/08/2009
Mineral Oil Aqueous	mg/l	<0.01	<0.01	0.56		
Aliphatics >C12-C16 Aqueous	mg/l	<0.01	<0.01	<0.01		
Aliphatics >C16-C21 Aqueous	mg/l	<0.01	<0.01	<0.01		
Aliphatics >C21-C35 Aqueous	mg/l	<0.01	<0.01	0.21		
Total Aliphatics >C12-C35 Aqueous	mg/l	<0.01	<0.01	0.21		
Aromatics >EC12-EC16 Aqueous	mg/l	<0.01	<0.01	<0.01		
Aromatics >EC16-EC21 Aqueous	mg/l	<0.01	<0.01	<0.01		
Aromatics >EC21-EC35 Aqueous	mg/l	<0.01	<0.01	<0.01		
Total Aromatics >EC12-EC35 Aqueous	mg/l	<0.01	<0.01	<0.01		
PAH by GCMS						
Naphthalene Aqueous	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Acenaphthylene Aqueous	mg/l	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011
Acenaphthene Aqueous	mg/l	<0.000015	<0.000015	<0.000015	<0.000015	0.000019
Fluorene Aqueous	mg/l	<0.000014	<0.000014	<0.000014	<0.000014	<0.000014
Phenanthrene Aqueous	mg/l	<0.000022	<0.000022	0.000033	0.00003	<0.000022
Anthracene Aqueous	mg/l	<0.000015	<0.000015	<0.000015	<0.000015	<0.000015
Fluoranthene Aqueous	mg/l	0.000018	<0.000017	0.000036	0.00004	<0.000017
Pyrene Aqueous	mg/l	<0.000015	<0.000015	0.000028	0.00003	<0.000015
Benz(a)anthracene Aqueous	mg/l	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017
Chrysene Aqueous	mg/l	<0.000013	<0.000013	0.000018	0.00002	<0.000013
Benzo(b)fluoranthene Aqueous	mg/l	<0.000023	<0.000023	<0.000023	<0.000023	<0.000023
Benzo(k)fluoranthene Aqueous	mg/l	<0.000027	<0.000027	<0.000027	<0.000027	<0.000027
Benzo(a)pyrene Aqueous	mg/l	<0.000009	<0.000009	0.000011	0.00001	<0.000009
Indeno(123cd)pyrene Aqueous	mg/l	<0.000014	<0.000014	<0.000014	<0.000014	<0.000014
Dibenzo(ah)anthracene Aqueous	mg/l	<0.000016	<0.000016	<0.000016	<0.000016	<0.000016
Benzo(ghi)perylene Aqueous	mg/l	<0.000016	<0.000016	<0.000016	<0.000016	<0.000016
PAH 16 Total Aqueous	mg/l	<0.0001	<0.0001	0.00013	0.00013	<0.0001
OCP						
Tecnazene	mg/l	<0.01	<0.01	<0.01		
Trifluralin	mg/l	<0.01	<0.01	<0.01		
Alpha-BHC (Lindane)	mg/l	<0.01	<0.01	<0.01		
Hexachlorobenzene	mg/l	<0.01	<0.01	<0.01		
Beta-BHC (Lindane)	mg/l	<0.01	<0.01	<0.01		
Gamma-BHC (Lindane)	mg/l	<0.01	<0.01	<0.01		
Quintozene (PCNB)	mg/l	<0.01	<0.01	<0.01		
Triallate	mg/l	<0.01	<0.01	<0.01		
Chlorothalonil	mg/l	<0.01	<0.01	<0.01		
Heptachlor	mg/l	<0.01	<0.01	<0.01		
Aldrin	mg/l	<0.01	<0.01	<0.01		
Triadimefon	mg/l	<0.01	<0.01	<0.01		
Telodrin	mg/l	<0.01	<0.01	<0.01		
Isodrin	mg/l	<0.01	<0.01	<0.01		
Pendimethalin	mg/l	<0.01	<0.01	<0.01		
Heptachlor Epoxide	mg/l	<0.01	<0.01	<0.01		
trans-Chlordane	mg/l	<0.01	<0.01	<0.01		
o,p'-DDE	mg/l	<0.01	<0.01	<0.01		
Endosulphan I	mg/l	<0.01	<0.01	<0.01		
cis-Chlordane	mg/l	<0.01	<0.01	<0.01		
p,p'-DDE	mg/l	<0.01	<0.01	<0.01		
Dieldrin	mg/l	<0.01	<0.01	<0.01		
p,p'-TDE (DDD)	mg/l	<0.01	<0.01	<0.01		
Endrin	mg/l	<0.01	<0.01	<0.01		
Endosulphan II	mg/l	<0.01	<0.01	<0.01		
o,p'-TDE (DDD)	mg/l	<0.01	<0.01	<0.01		
o,p'-DDT	mg/l	<0.01	<0.01	<0.01		
p,p'-DDT	mg/l	<0.01	<0.01	<0.01		
Endosulphan sulphate	mg/l	<0.01	<0.01	<0.01		
o,p'-Methoxychlor	mg/l	<0.01	<0.01	<0.01		
p,p'-Methoxychlor	mg/l	<0.01	<0.01	<0.01		
Permethrin I	mg/l	<0.01	<0.01	<0.01		
Permethrin II	mg/l	<0.01	<0.01	<0.01		

Sample Identity		BHC01	BHC04	BHC03	BHC03	BHC03
Units		01/07/2009	01/07/2009	01/07/2009	23/07/2009	05/08/2009
OPP						
Dichlorvos	mg/l	<0.01	<0.01	<0.01		
Mevinphos	mg/l	<0.01	<0.01	<0.01		
Dimethoate	mg/l	<0.01	<0.01	<0.01		
Propetamphos	mg/l	<0.01	<0.01	<0.01		
Diazinon	mg/l	<0.01	<0.01	<0.01		
Disulphoton	mg/l	<0.01	<0.01	<0.01		
Etrimphos	mg/l	<0.01	<0.01	<0.01		
Chlorpyrifos methyl	mg/l	<0.01	<0.01	<0.01		
Methyl Parathion	mg/l	<0.01	<0.01	<0.01		
Pirimiphos-methyl	mg/l	<0.01	<0.01	<0.01		
Fenitrothion	mg/l	<0.01	<0.01	<0.01		
Malathion	mg/l	<0.01	<0.01	<0.01		
Fenthion	mg/l	<0.01	<0.01	<0.01		
Chlorpyrifos	mg/l	<0.01	<0.01	<0.01		
Parathion	mg/l	<0.01	<0.01	<0.01		
Chlorfenvinphos	mg/l	<0.01	<0.01	<0.01		
Ethion	mg/l	<0.01	<0.01	<0.01		
Triazophos	mg/l	<0.01	<0.01	<0.01		
Carbophenothion	mg/l	<0.01	<0.01	<0.01		
Phosalone	mg/l	<0.01	<0.01	<0.01		
Azinphos-methyl	mg/l	<0.01	<0.01	<0.01		
Azinphos-ethyl	mg/l	<0.01	<0.01	<0.01		
SVOC by GCMS						
Phenols						
SVOC Derivatized		See Attached	See Attached	See Attached		
2-Chlorophenol	mg/l	<0.001	<0.001	<0.001		
2-Methylphenol	mg/l	<0.001	<0.001	<0.001		
2-Nitrophenol	mg/l	<0.001	<0.001	<0.001		
2,4-Dichlorophenol	mg/l	<0.001	<0.001	<0.001		
2,4-Dimethylphenol	mg/l	<0.001	<0.001	<0.001		
2,4,5-Trichlorophenol	mg/l	<0.001	<0.001	<0.001		
2,4,6-Trichlorophenol	mg/l	<0.001	<0.001	<0.001		
4-Chloro-3-methylphenol	mg/l	<0.001	<0.001	<0.001		
4-Methylphenol	mg/l	<0.001	<0.001	<0.001		
4-Nitrophenol	mg/l	<0.001	<0.001	<0.001		
Pentachlorophenol	mg/l	<0.001	<0.001	<0.001		
Phenol	mg/l	<0.001	<0.001	<0.001		
PAHs						
2-Chloronaphthalene	mg/l	<0.001	<0.001	<0.001		
2-Methylnaphthalene	mg/l	<0.001	<0.001	<0.001		
Acenaphthene	mg/l	-	-	-		
Acenaphthylene	mg/l	-	-	-		
Anthracene	mg/l	-	-	-		
Benzo(a)anthracene	mg/l	-	-	-		
Benzo(a)pyrene	mg/l	-	-	-		
Benzo(b)fluoranthene	mg/l	-	-	-		
Benzo(ghi)perylene	mg/l	-	-	-		
Benzo(k)fluoranthene	mg/l	-	-	-		
Chrysene	mg/l	-	-	-		
Dibenzo(a,h)anthracene	mg/l	-	-	-		
Fluoranthene	mg/l	-	-	-		
Fluorene	mg/l	-	-	-		
Indeno(1,2,3-cd)pyrene	mg/l	-	-	-		
Naphthalene	mg/l	-	-	-		
Phenanthrene	mg/l	-	-	-		
Pyrene	mg/l	-	-	-		
Phthalates						
Bis(2-ethylhexyl) phthalate	ug/l	<3	<3	<3		
Butylbenzyl phthalate	ug/l	<1	<1	<1		
Di-n-butyl phthalate	ug/l	<3	<3	<3		
Di-n-Octyl phthalate	ug/l	<5	<5	<5		

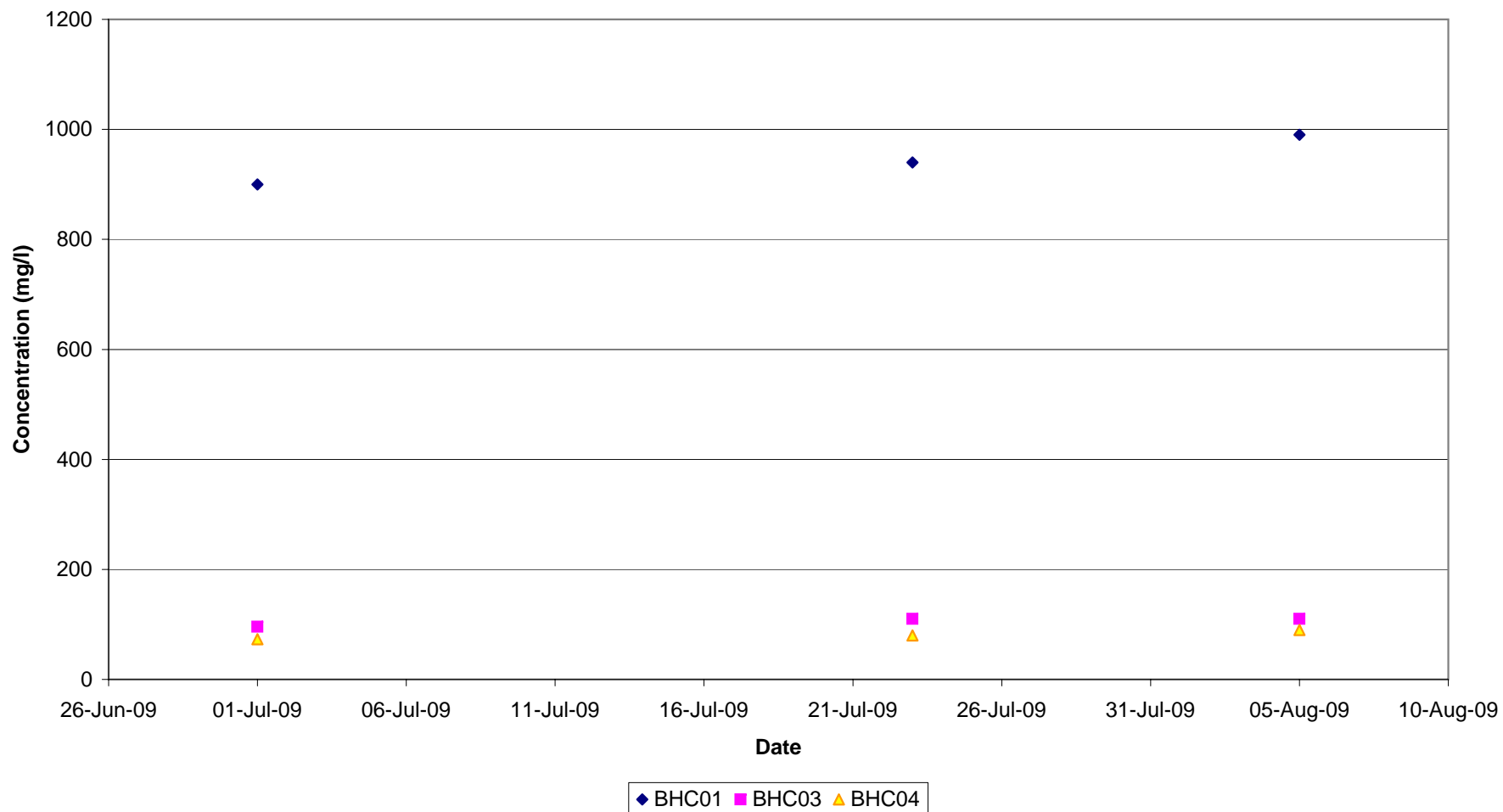
Sample Identity		BHC01	BHC04	BHC03	BHC03	BHC03
Units		01/07/2009	01/07/2009	01/07/2009	23/07/2009	05/08/2009
Diethyl phthalate	ug/l	<1	<1	<1		
Dimethyl phthalate	ug/l	<1	<1	<1		
Other Semi-volatiles						
1,2-Dichlorobenzene	ug/l	<1	<1	<1		
1,2,4-Trichlorobenzene	ug/l	<1	<1	<1		
1,3-Dichlorobenzene	ug/l	<1	<1	<1		
1,4-Dichlorobenzene	ug/l	<1	<1	<1		
2-Nitroaniline	ug/l	<1	<1	<1		
2,4-Dinitrotoluene	ug/l	<1	<1	<1		
2,6-Dinitrotoluene	ug/l	<1	<1	<1		
3-Nitroaniline	ug/l	<1	<1	<1		
4-Bromophenylphenylether	ug/l	<1	<1	<1		
4-Chloroaniline	ug/l	<1	<1	<1		
4-Chlorophenylphenylether	ug/l	<1	<1	<1		
4-Nitroaniline	ug/l	<1	<1	<1		
Azobenzene	ug/l	<1	<1	<1		
Bis(2-chloroethoxy)methane	ug/l	<1	<1	<1		
Bis(2-chloroethyl)ether	ug/l	<1	<1	<1		
Carbazole	ug/l	<1	<1	<1		
Dibenzofuran	ug/l	<1	<1	<1		
Hexachlorobenzene	ug/l	<1	<1	<1		
Hexachlorobutadiene	ug/l	<1	<1	<1		
Hexachlorocyclopentadiene	ug/l	<1	<1	<1		
Hexachloroethane	ug/l	<1	<1	<1		
Isophorone	ug/l	<3	<3	<3		
N-nitrosodi-n-propylamine	ug/l	<1	<1	<1		
Nitrobenzene	ug/l	<1	<1	<1		
Volatile Organic Compounds						
Dibromofluoromethane % Surrogate	%	110	110	110		
Toluene-d8 % Surrogate Recovery	%	100	100	100		
4-Bromofluorobenzene % Surrogate	%	99	100	99		
Dichlorodifluoromethane	ug/l	<1	<1	<1		
Chloromethane	ug/l	<1	<1	<1		
Vinyl Chloride	ug/l	<1	<1	<1		
Bromomethane	ug/l	<2	<2	<2		
Chloroethane	ug/l	<2	<2	<2		
Trichlorofluoromethane	ug/l	<2	<2	<2		
trans-1-2-Dichloroethene	ug/l	<2	<2	<2		
Dichloromethane	ug/l	<3	<3	<3		
Carbon Disulphide	ug/l	3	<2	<2		
1,1-Dichloroethene	ug/l	<1	<1	<1		
1,1-Dichloroethane	ug/l	<1	<1	<1		
Methyl Tertiary Butyl Ether	ug/l	<2	<2	<2		
cis-1-2-Dichloroethene	ug/l	<2	<2	<2		
Bromochloromethane	ug/l	<2	<2	<2		
Chloroform	ug/l	<2	<2	<2		
2,2-Dichloropropane	ug/l	<1	<1	<1		
1,2-Dichloroethane	ug/l	<4	<4	<4		
1,1,1-Trichloroethane	ug/l	<1	<1	<1		
1,1-Dichloropropene	ug/l	<1	<1	<1		
Benzene	ug/l	<1	<1	<1		
Carbontetrachloride	ug/l	<1	<1	<1		
Dibromomethane	ug/l	<3	<3	<3		
1,2-Dichloropropane	ug/l	<3	<3	<3		
Bromodichloromethane	ug/l	<1	<1	<1		
Trichloroethene	ug/l	<2	<2	<2		
cis-1-3-Dichloropropene	ug/l	<2	<2	<2		
trans-1-3-Dichloropropene	ug/l	<3	<3	<3		
1,1,2-Trichloroethane	ug/l	<2	<2	<2		
Toluene	ug/l	<1	<1	<1		
1,3-Dichloropropane	ug/l	<2	<2	<2		
Dibromochloromethane	ug/l	<2	<2	<2		
1,2-Dibromoethane	ug/l	<2	<2	<2		
Tetrachloroethene	ug/l	<2	<2	<2		

Sample Identity		BHC01	BHC04	BHC03	BHC03	BHC03
Units		01/07/2009	01/07/2009	01/07/2009	23/07/2009	05/08/2009
1.1.1.2-Tetrachloroethane	ug/l	<1	<1	<1		
Chlorobenzene	ug/l	<4	<4	<4		
Ethylbenzene	ug/l	<2	<2	<2		
p/m-Xylene	ug/l	<2	<2	<2		
Bromoform	ug/l	<3	<3	<3		
Styrene	ug/l	<1	<1	<1		
1.1.2.2-Tetrachloroethane	ug/l	<5	<5	<5		
o-Xylene	ug/l	<1	<1	<1		
1.2.3-Trichloropropane	ug/l	<9	<9	<9		
Isopropylbenzene	ug/l	<2	<2	<2		
Bromobenzene	ug/l	<1	<1	<1		
2-Chlorotoluene	ug/l	<2	<2	<2		
Propylbenzene	ug/l	<3	<3	<3		
4-Chlorotoluene	ug/l	<2	<2	<2		
1.2.4-Trimethylbenzene	ug/l	<1	<1	<1		
4-Isopropyltoluene	ug/l	<3	<3	<3		
1.3.5-Trimethylbenzene	ug/l	<1	<1	<1		
1.2-Dichlorobenzene	ug/l	<3	<3	<3		
1.4-Dichlorobenzene	ug/l	<1	<1	<1		
sec-Butylbenzene	ug/l	<1	<1	<1		
tert-Butylbenzene	ug/l	<2	<2	<2		
1.3-Dichlorobenzene	ug/l	<2	<2	<2		
n-Butylbenzene	ug/l	<2	<2	<2		
1.2-Dibromo-3-chloropropane	ug/l	<10	<10	<10		
1.2.4-Trichlorobenzene	ug/l	<2	<2	<2		
Naphthalene	ug/l	<4	<4	<4		
1.2.3-Trichlorobenzene	ug/l	<3	<3	<3		
Hexachlorobutadiene	ug/l	<3	<3	<3		

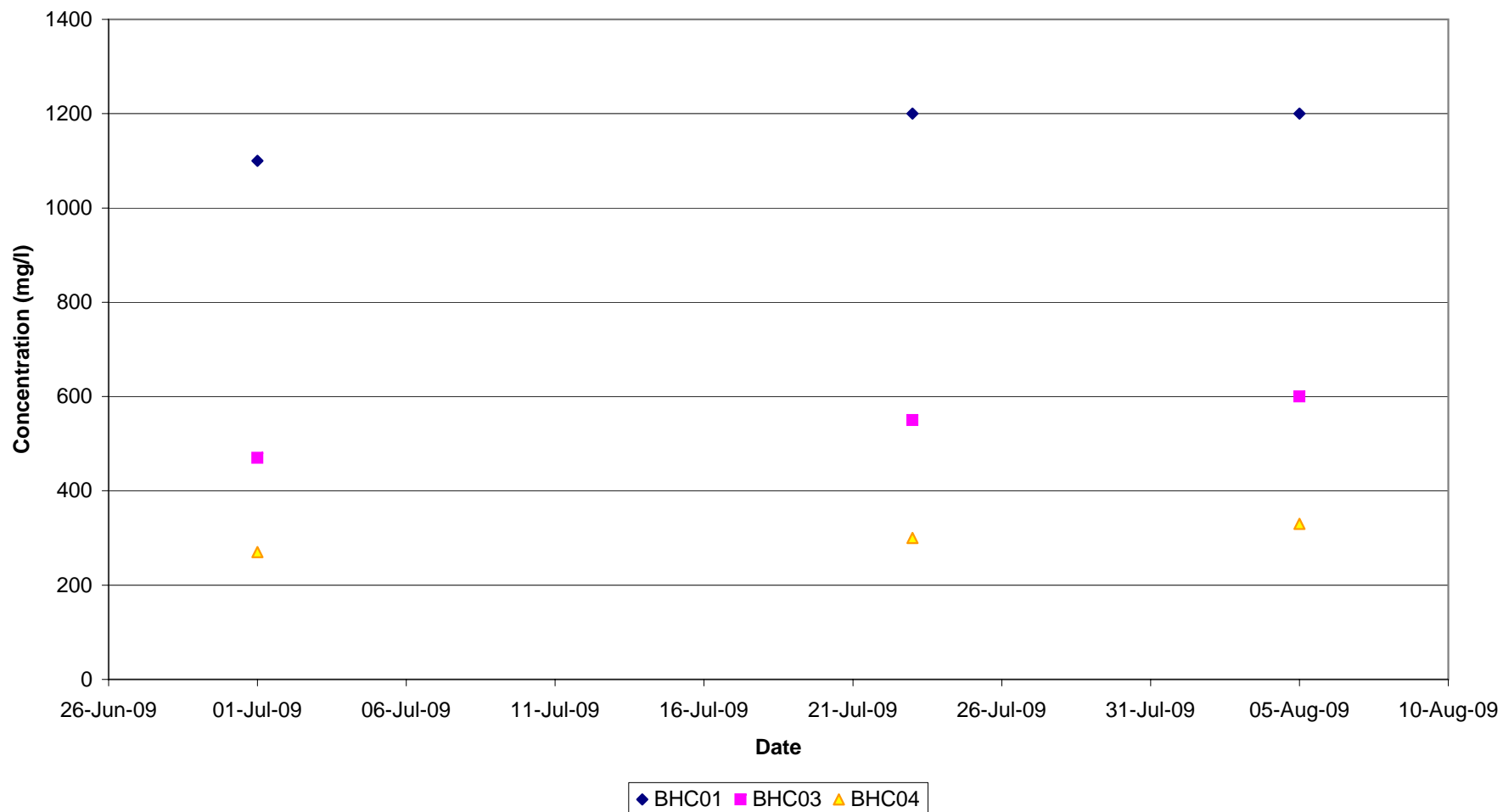
SRRRC - Avonmouth: Groundwater Quality
Ammoniacal Nitrogen
DWS: 0.39mg/l



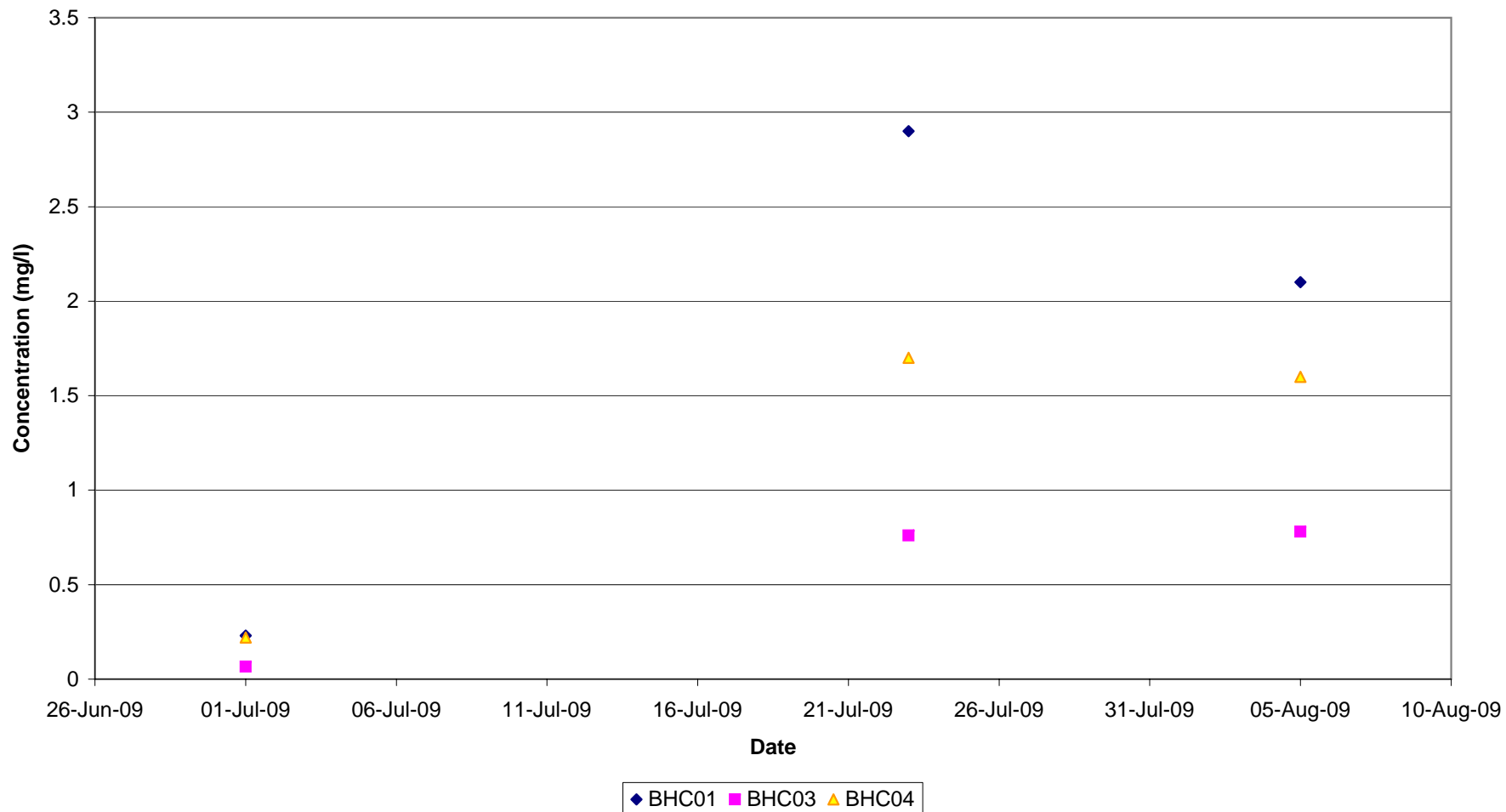
SRRRC - Avonmouth: Groundwater Quality
Chloride
DWS: 250mg/l



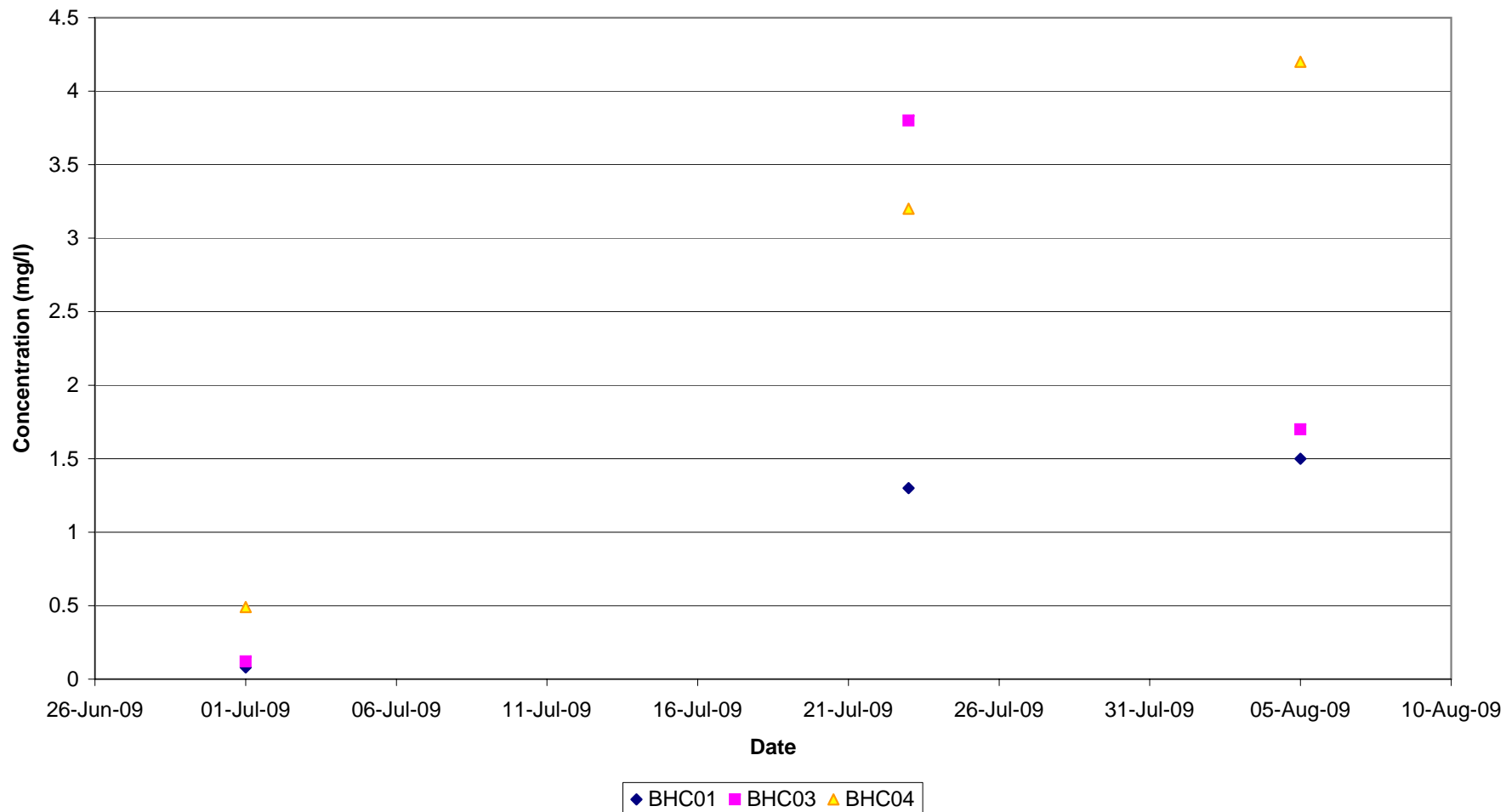
SRRRC - Avonmouth: Groundwater Quality
Sodium
DWS: 200mg/l



SRRRC - Avonmouth: Groundwater Quality
Manganese
DWS: 0.5mg/l



SRRRC - Avonmouth: Groundwater Quality
Iron
DWS: 0.2mg/l



SRRRC - Avonmouth: Groundwater Quality
Arsenic
DWS: 0.01mg/l

