

Equipment	Company (Part Number)	Use
FIELD EQUIPMENT		
GPS unit	<most modern GPS units suffice>	Map coordinates for water sample locations
SinkFast PVC Bailers	Envirotechonline (AQ-SF36)	Water sample collection
25um polyester filter	Duda Energy (sheets:25u)	Pre-filter
0.22um stericup filter	Fisher (SCGPU05RE)	Pathogen-capturing filter
Hand-held vacuum pump	Mountain Home Biological (LB122)	Aid filtration of the large water sample volumes
70% Ethanol	<locally obtained from pharmacy>	Sterilize and fix organisms to 0.22um filter
1.5L bottle	<locally obtained soda bottle>	Temporary water sample storage
Rope	<locally obtained>	Retrieve water-filled bailers
LAB EQUIPMENT		
TE Buffer, pH 7.4	Fisher (BP2476-100)	Resuspension of organisms fixed on filters
Qiagen QiaShredder columns	Qiagen (79656)	Separate filter pieces from DNA-containing buffer
Promega Wizard DNA isolation kit	Fisher (PR-A1120)	Isolation of DNA from water samples
PCR kit	Thermo Scientific (K1082)	Amplify any organisms from water samples
PCR thermocycler	Bio-Rad MyCycler	Run PCR reactions
DNA agarose gel apparatus	-	Run gels to check PCRs
UV box	Fotodyne, Inc. Transilluminator	Visualize PCR bands on agarose gels

Supplemental Table 1: Equipment list and use

Table 1 displays the items used to collect water samples, isolate DNA, and verify amplification of DNA from those samples. Within 24 hours of sample collection, water samples were filtered through the 25um filter, then vacuum-filtered onto the 0.22um Stericup filter, followed by organism fixation with locally obtained 70% ethanol. This treatment also disinfects the membrane, permitting safe transport. Organisms are then resuspended from the Steriflip filter in TE buffer at the destination laboratory, followed by DNA isolation and PCR assays to detect pathogens.

Sample #	Location	DNA Quantity (ng/μL)	DNA quality (260/280)	DNA quality (260/230)
1	River surface	< 1.0	N/A	N/A
2	River surface	< 1.0	N/A	N/A
3	River surface	< 1.0	N/A	N/A
4	River surface	167.2	1.62	0.69
5	River surface	< 1.0	N/A	N/A
6	River deep	40.8	1.36	0.69
7	River deep	16.6	1.56	0.91
8	River deep	83.6	1.43	1.02
9	River deep	29.5	1.68	1.77
10	River deep	5.6	1.65	1.8
11	River deep	7.7	1.64	1.19
12	Ocean surface	3.6	1.76	0.68
13	Residential tap	< 1.0	N/A	N/A
14	Residential tap	< 1.0	N/A	N/A
15	Residential tap	< 1.0	N/A	N/A
16	Residential tap	< 1.0	N/A	N/A
17	Residential tap	< 1.0	N/A	N/A
18	Residential tap	< 1.0	N/A	N/A
19	Residential tap	< 1.0	N/A	N/A
20	Residential tap	2.5	N/A	N/A
21	Residential tap	< 1.0	N/A	N/A
22	Residential tap	< 1.0	N/A	N/A

Supplemental Table 2

Table shows 22 water sample location types, and the quantity and quality of DNA isolated from each sample. River surface water was obtained without sinking the bailer, while river deep water was obtained from bailers which sunk due to attached weights (rocks). The concentration, 260/280, 260/230 ratio readings were taken via Nanodrop2000c. When DNA quantity was below 1ng/ul, DNA quality was not determined.