UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

April 21, 2010

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Reply To: ECL-111

Marko Adzic
Teck American Incorporated
501 North Riverpoint Boulevard, Suite 300
Spokane, Washington 99202

RE: Triplicate Samples in the Surface Water Sampling Program

Dear Mr. Adzic,

I am writing in response to your email message dated April 5th, in which you informed the United Stated Environmental Agency (EPA) that Teck planned to drop planned triplicate samples from the ongoing surface water sampling program. EPA directed Teck to collect the triplicate samples as planned, while we reviewed the technical analysis that you provided as an attachment to your April 5th email message. The samples were collected. Technical experts representing EPA and Teck have held several meetings by teleconference since April 5th to discuss this issue, and Teck has provided additional statistical analyses and data requested by EPA. After reviewing all the information, EPA has determined that triplicate samples are no longer needed. Teck is not required to analyze the triplicate samples that were collected during the April sampling event, and triplicate samples will not be required during the third sampling event that will take place later this year. We wish to clarify that triplicate samples are still required on the quality assurance transect, as described in the Quality Assurance Project Plan.

However, the timing, format, and language of Teck's email notification on this issue were unacceptable. The email arrived the day before the first triplicate samples were to be collected and informed EPA that Teck had unilaterally decided not to collect triplicate samples. Teck must get EPA approval for any changes to approved sampling programs. We understand that Teck spent more than $150,000 collecting triplicate samples that will never be analyzed. This is unfortunate, but it was Teck's responsibility to provide EPA the sampling data analysis with adequate time to evaluate the analysis in order to determine whether triplicate sampling was necessary. Validated surface water data from the first round of sampling has been available for months now. Teck could have brought this analysis to EPA in a timely manner.

Sincerely,

Helen H Bottcher

Helen Bottcher
Project Manager

cc: Dan Audet, U.S. Department of the Interior
Patti Bailey, Confederated Tribes of the Colville Reservation
Randy Connolly, Spokane Tribe of Indians
John Roland, Washington State Department of Ecology
David Godlewski, Teck

Exponent®

EXTERNAL MEMORANDUM

TO: Bruce Duncan, EPA

FROM: Melanie Edwards

DATE: April 13, 2010

PROJECT: 0900083.013

SUBJECT: Statistical analysis of surface water samples using variability of field triplicate samples

As discussed on the conference call on April 8th, I have conducted a statistical analysis of a selected few metals to assess whether field triplicate sampling should be continued at transects CAN1 and TC3. EPA indicated on the aforementioned conference call that the currently available field triplicate samples represent an agreed upon level of effort and, therefore, could be used as the residual variability when assessing significant interactions between locations and depths within a transect. The materials associated with this memo provide a summary of the analysis conducted for three selected metals, specifically cadmium, cobalt, and manganese that lead to the conclusion of no significant and meaningful interaction terms.

Table 1 provides a summary of the metals and metalloids measured in surface water samples, including both undisturbed and disturbed samples. The three metals selected for analysis have only a few undetected results and one or more samples with concentrations above the lowest criterion. Dissolved manganese was not evaluated because a large majority of samples had undetected concentrations.

Table 2 provides an overview of the analysis of variance models fit to each metal. Initially, the complete model was fit, including a term for transect differences as well as terms for location, depth, and their interaction within each transect. In this manner, the depth and location differences were evaluated within each transect. The full ANOVA model was simplified sequentially be removing each non-significant term individually then refitting the resulting model. *P*-values for each term in each of the models are provided in Table 2. Pages A1-A9 provide the original statistical output with several plots of the residuals from the final model for each metal. Total and dissolved manganese concentrations were $\log_{10}$ transformed to meet the method assumptions.

Multiple comparisons followed the final ANOVA model for each metal to assess differences between locations and/or depths within each transect. A Bonferroni adjustment was used to account for the number of comparisons in order to achieve an overall 0.05 significance level, i.e., 95 percent confidence. Table 3 provides the *P*-values for the significant terms in the final ANOVA model for each metal and a summary of the significant differences found between locations and depths at each transect. The sample design does not provide enough degrees of freedom to assess pairwise comparisons of the interaction term. A significant interaction term indicates differences between locations within transects may not be consistent for all depths. Alternatively, it could indicate that differences between depths within transects may not be consistent for all three locations. When the interaction term was significant, separate ANOVA models were evaluated based on subsets of the data, specifically evaluating depth differences for each location individually and evaluating location differences for each depth individually. The significance of the statistical comparisons must be interpreted jointly with an assessment of the magnitude of the difference and number of undetected results to evaluate how “real” (or meaningful) it is.

The only significant interaction term was for dissolved cobalt. Comparisons within transects identified only one significant difference between near bottom and nearshore samples on the left bank of TC2. Within each transect the range in concentration was 0.016 μg/L or less when calculated with undetected results included at the full detection limit (0.024 – 0.028 μg/L). The significant difference identified is because the undetected concentrations were included at half the detection limit in the statistical analysis (0.012 – 0.014 μg/L). Table 4 shows the range in concentrations measured within each transect, with undetected results at half the detection limit.

Table 5 provides the measured concentrations by sample for the three metals evaluated. Figures 1 – 3 show the measured concentrations by transect, along with the appropriate comparison criteria. Symbols distinguish between depths (near-surface, nearshore, and near-bottom) within each area of a transect (i.e., left bank, mid-channel, and right bank) as well as indicating undetected concentration samples.

These three metals reasonably represent patterns among many of the other metals/chemicals. Total manganese was detected at a fairly wide range of concentrations whereas cadmium and cobalt were generally detected over a smaller range. All three exceeded the minimum comparison criteria level. The small range in cadmium and cobalt concentrations resulted in detectable differences that may not be meaningful. The only significant interaction term between location and depth was for dissolved cobalt, which was due to undetected results included at half the detection limit

Overall, the evaluation of these three metals indicates the field triplicate samples provided the variability estimate necessary for comparisons between depths and locations by transect. However, it is recommended that field triplicate samples be discontinued in the later rounds of sampling. The analysis included here indicated no significant and meaningful interaction terms, therefore the multiple depth and/or location samples provide the necessary replication for statistical assessments. Further, the second and third rounds of surface water sampling will provide even more samples.

Table 1. Summary of concentrations measured in surface water samples (including disturbed samples)

Metals and Metalloids (μ g/L)	N	Detects	% ND	Min.[a]	Maximum All[a]	Maximum Detect	Median[b]	Mean[b]	Criteria AWQC	Criteria DWS	Criteria RBC
Dissolved aluminum	96	11	89	1.2	18.9	18.9	2.0	2.4	87	--	--
Total aluminum	96	56	42	5.5	469	469	10.6	35.9	--	50-200	23
Dissolved antimony	96	91	5	0.018	0.23	0.23	0.18	0.17	--	--	--
Total antimony	96	91	5	0.020	1.1	1.1	0.18	0.18	--	6	0.34
Dissolved arsenic	96	34	65	0.075	0.90	0.70	0.25	0.31	150	--	--
Total arsenic	96	12	88	0.083	1.1	0.70	0.25	0.26	--	10	0.013
Dissolved inorganic arsenic	62	62	0	0.053	0.75	0.75	0.34	0.34	150	--	--
Total inorganic arsenic	62	62	0	0.067	1.0	1.0	0.37	0.37	--	10	0.013
Dissolved barium	96	96	0	17.6	58.6	58.6	29.9	31.0	--	--	--
Total barium	96	96	0	18.0	59.7	59.7	31.1	32.1	--	2,000	3.3
Dissolved beryllium	96	0	100	0.0060	0.0060	--	0.0030	0.0030	--	--	--
Total beryllium	96	13	86	0.0047	0.029	0.029	0.0030	0.0041	--	4	0.029
Dissolved bismuth	62	4	94	0.0031	0.0050	0.0045	0.0025	0.0026	--	--	--
Total bismuth	62	7	89	0.0033	0.0063	0.0063	0.0025	0.0028	--	--	--
Dissolved boron	63	7	89	1.7	9.4	3.6	1.5	1.9	--	--	--
Total boron	63	11	83	1.5	11.9	4.9	1.7	2.1	--	6,000	130
Dissolved cadmium	96	87	9	0.0037	0.028	0.028	0.010	0.012	0.25	--	--
Total cadmium	96	91	5	0.0062	0.27	0.27	0.015	0.019	--	5	0.039
Dissolved calcium	96	96	0	15.7	20.3	20.3	18.2	18.2	--	--	--
Total calcium	96	96	0	15.8	20.5	20.5	18.2	18.1	--	--	--
Dissolved cerium	62	1	98	0.0090	0.015	0.015	0.0045	0.0047	--	--	--
Total cerium	62	62	0	0.013	0.23	0.23	0.029	0.035	--	--	--
Dissolved cesium	62	59	5	0.0067	0.020	0.020	0.010	0.013	--	--	--
Total cesium	62	62	0	0.010	0.030	0.030	0.020	0.018	--	--	--
Dissolved chromium	96	8	92	0.030	0.21	0.16	0.055	0.056	74	--	--
Total chromium	96	16	83	0.038	1.2	1.2	0.070	0.10	--	100	100
Dissolved cobalt	96	89	7	0.021	0.084	0.084	0.034	0.033	--	--	--
Total cobalt	96	95	1	0.029	0.47	0.47	0.044	0.064	--	--	0.025
Dissolved copper	96	9	91	0.17	0.84	0.64	0.26	0.27	9	--	--
Total copper	96	82	15	0.19	14.9	14.9	0.60	0.82	--	1,000	34
Dissolved dysprosium	62	0	100	0.0070	0.0070	--	0.0035	0.0035	--	--	--
Total dysprosium	62	5	92	0.00533	0.014	0.014	0.0035	0.0039	--	--	--
Dissolved erbium	62	0	100	0.010	0.010	--	0.0050	0.0050	--	--	--
Total erbium	62	0	100	0.010	0.010	--	0.0050	0.0050	--	--	--
Dissolved europium	62	23	63	0.0040	0.011	0.011	0.0030	0.0044	--	--	--
Total europium	62	35	44	0.0040	0.015	0.015	0.006	0.006	--	--	--
Dissolved gadolinium	62	0	100	0.010	0.010	--	0.0050	0.0050	--	--	--
Total gadolinium	62	4	94	0.00667	0.020	0.020	0.0050	0.0054	--	--	--
Dissolved gallium	62	0	100	0.020	0.020	--	0.010	0.010	--	--	--
Total gallium	62	3	95	0.017	0.040	0.040	0.010	0.011	--	--	--
Dissolved germanium	62	4	94	0.012	0.13	0.031	0.015	0.019	--	--	--
Total germanium	62	9	85	0.017	0.18	0.049	0.025	0.026	--	--	--
Dissolved gold	63	3	95	0.030	0.14	0.048	0.025	0.027	--	--	--
Total gold	63	8	87	0.028	0.17	0.073	0.025	0.035	--	--	--
Dissolved holmium	62	0	100	0.0090	0.0090	--	0.0045	0.0045	--	--	--
Total holmium	62	0	100	0.0090	0.0090	--	0.0045	0.0045	--	--	--
Dissolved indium	62	0	100	0.0060	0.0060	--	0.0030	0.0030	--	--	--
Total indium	62	2	97	0.0045	0.0070	0.0070	0.0030	0.0031	--	--	--
Dissolved iron	88	16	82	2.1	19.9	19.9	1.5	2.1	1,000	--	--
Total iron	96	76	21	3.0	1,477	1,477	23.1	79.9	--	300	600
Dissolved lanthanum	62	5	92	0.0040	0.0080	0.0080	0.0030	0.0032	--	--	--
Total lanthanum	62	62	0	0.011	0.12	0.12	0.019	0.022	--	--	--
Dissolved lead	96	6	94	0.0033	0.030	0.028	0.0070	0.0072	2.5	--	--
Total lead	96	44	54	0.023	17.2	17.2	0.060	0.34	--	15	15
Dissolved lithium	63	12	81	1.4	3.9	2.7	1.0	1.3	--	--	--
Total lithium	63	14	78	1.3	3.4	3.4	1.0	1.2	--	--	17
Dissolved lutetium	62	0	100	0.0060	0.0060	--	0.0030	0.0030	--	--	--
Total lutetium	62	1	98	0.0045	0.0060	0.0045	0.0030	0.0030	--	--	--

Table 1. Cont.

Metals and Metalloids (μ g/L)	N	Detects	% ND	Min.[a]	Maximum		Median[b]	Mean[b]	Criteria		
					All[a]	Detect			AWQC	DWS	RBC
Dissolved magnesium	96	96	0	3,683	5,600	5,600	4,460	4,437	--	--	--
Total magnesium	96	96	0	3,580	5,420	5,420	4,455	4,438	--	--	--
Dissolved manganese	96	11	89	0.11	1.3	1.3	0.22	0.24	--	--	--
Total manganese	96	96	0	1.6	32.5	32.5	3.1	4.7	--	300	0.33
Dissolved mercury	96	0	100	0.080	0.67	--	0.14	0.14	800	--	--
Total mercury	96	5	95	0.090	19.9	19.9	0.24	0.47	--	2,000	0.000089
Dissolved molybdenum	96	96	0	0.52	0.72	0.72	0.58	0.59	--	--	--
Total molybdenum	96	96	0	0.49	0.71	0.71	0.57	0.57	--	40	4.3
Dissolved neodymium	62	0	100	0.020	0.020	--	0.010	0.010	--	--	--
Total neodymium	62	20	68	0.013	0.11	0.11	0.010	0.016	--	--	--
Dissolved nickel	96	83	14	0.16	0.58	0.58	0.39	0.35	52	--	--
Total nickel	96	87	9	0.17	1.2	1.2	0.42	0.40	--	100	17
Dissolved niobium	63	5	92	0.010	0.040	0.020	0.0050	0.011	--	--	--
Total niobium	63	5	92	0.010	0.070	0.060	0.010	0.013	--	--	--
Dissolved potassium	96	96	0	548	782	782	636	643	--	--	--
Total potassium	96	96	0	528	851	851	632	646	--	--	--
Dissolved praseodymium	62	0	100	0.0060	0.0060	--	0.0030	0.0030	--	--	--
Total praseodymium	62	14	77	0.0040	0.024	0.024	0.0030	0.0043	--	--	--
Dissolved rubidium	62	62	0	0.72	1.1	1.1	0.98	0.97	--	--	--
Total rubidium	62	62	0	0.80	1.1	1.1	1.0	1.0	--	--	--
Dissolved samarium	62	0	100	0.0080	0.0080	--	0.0040	0.0040	--	--	--
Total samarium	62	5	92	0.0065	0.019	0.019	0.0040	0.0046	--	--	--
Dissolved scandium	62	53	15	0.077	0.36	0.36	0.25	0.21	--	--	--
Total scandium	62	54	13	0.094	0.41	0.41	0.26	0.23	--	--	--
Dissolved selenium	96	5	95	0.23	0.60	0.50	0.15	0.18	5	--	--
Total selenium	96	3	97	0.21	0.50	0.38	0.15	0.16	--	50	4.3
Dissolved silver	96	0	100	0.0040	0.011	--	0.0020	0.0021	1.6	--	--
Total silver	96	2	98	0.0040	0.037	0.037	0.0020	0.0024	--	100	4.3
Dissolved sodium	96	96	0	1,233	2,450	2,450	1,770	1,774	--	--	--
Total sodium	96	96	0	1,263	2,500	2,500	1,718	1,752	--	--	--
Dissolved strontium	63	63	0	62.6	107	107	94.8	93.7	--	--	--
Total strontium	63	63	0	63.5	109	109	94.1	93.7	--	4,000	520
Dissolved tantalum	59	4	93	0.0066	0.012	0.012	0.0040	0.0043	--	--	--
Total tantalum	59	4	93	0.0060	0.013	0.011	0.0040	0.0043	--	--	--
Dissolved tellurium	62	0	100	0.050	0.070	--	0.025	0.025	--	--	--
Total tellurium	62	1	98	0.050	0.59	0.59	0.025	0.034	--	--	--
Dissolved terbium	62	0	100	0.0070	0.0070	--	0.0035	0.0035	--	--	--
Total terbium	62	0	100	0.0070	0.0070	--	0.0035	0.0035	--	--	--
Dissolved thallium	96	18	81	0.0049	0.056	0.042	0.0095	0.013	--	--	--
Total thallium	96	20	79	0.0050	0.048	0.042	0.012	0.014	--	2	0.06
Dissolved thorium	63	2	97	0.00583	0.057	0.0080	0.0030	0.0043	--	--	--
Total thorium	63	16	75	0.0040	0.061	0.061	0.0043	0.0066	--	--	--
Dissolved thulium	62	0	100	0.0080	0.0080	--	0.0040	0.0040	--	--	--
Total thulium	62	0	100	0.0080	0.0080	--	0.0040	0.0040	--	--	--
Dissolved tin	62	3	95	0.013	0.080	0.018	0.010	0.011	--	--	--
Total tin	63	5	92	0.017	0.060	0.060	0.010	0.012	--	--	--
Dissolved titanium	63	1	98	0.32	1.0	0.32	0.20	0.21	--	--	--
Total titanium	63	11	83	0.30	8.7	8.7	0.40	0.60	--	--	--
Dissolved tungsten	62	6	90	0.050	0.45	0.25	0.050	0.073	--	--	--
Total tungsten	62	7	89	0.042	0.20	0.16	0.030	0.042	--	--	--
Dissolved uranium	100	100	0	0.41	0.57	0.57	0.48	0.48	--	--	--
Total uranium	100	100	0	0.41	0.63	0.63	0.49	0.49	--	--	--
Dissolved vanadium	96	62	35	0.10	0.33	0.23	0.13	0.14	--	--	--
Total vanadium	96	25	74	0.073	1.4	1.4	0.12	0.18	--	--	0.86
Dissolved ytterbium	62	0	100	0.0080	0.0080	--	0.0040	0.0040	--	--	--
Total ytterbium	62	1	98	0.0060	0.0080	0.0060	0.0040	0.0040	--	--	--
Dissolved yttrium	62	31	50	0.0067	0.010	0.010	0.0058	0.0073	--	--	--
Total yttrium	62	62	0	0.010	0.060	0.060	0.020	0.022	--	--	--

Table 1. Cont.

Metals and Metalloids (μ g/L)	N	Detects	% ND	Min.[a]	Maximum		Median[b]	Mean[b]	Criteria		
					All[a]	Detect			AWQC	DWS	RBC
Dissolved zinc	96	7	93	0.20	3.9	0.83	0.40	0.45	120	--	--
Total zinc	96	16	83	0.32	126	126	0.60	2.97	--	2,000	260

[a] Calculated with non-detected results at the full detection limit.

[b] Calculated with non-detected results at half the detection limit.

[c] Criterion was only exceeded by unfiltered disturbed surface water samples.

AWQC - Chronic ambient water quality criteria

DWS - U.S. EPA drinking water standard

RBC - Spokane Tribe risk based concentration drinking water standard

Table 2. Summary of analysis of variance model assessments

	Cadmium		Cobalt		Manganese	
	Total	Dissolved	Total	Dissolved	Total	Dissolved
Number of results	129	129	128	127	128	127
Number of undetected results	8	23	1	9	0	117
Percent undetected results	6.2	17.8	0.8	7.1	0	92.1
P-values for sequential ANOVA models						
Full model						
Transect	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NA
Depth w/in transect	0.1206	0.1204	0.0003	0.0126	<0.0001	
Location w/in transect	0.0122	0.0121	0.0001	<0.0001	0.0126	
Interaction w/in transect	0.4277	0.1103	0.0700	0.0055	0.0551	
Without interaction						
Transect	<0.0001	<0.0001	<0.0001	NA	<0.0001	NA
Depth w/in transect	0.1130	0.2134	0.0007		<0.0001	
Location w/in transect	0.0088	0.0252	0.0002		0.0381	
Type difference model						
Transect	NA	NA	NA	NA	NA	NA
Depth w/in transect						
Side difference model						
Transect	<0.0001	<0.0001	NA	NA	NA	NA
Location w/in transect	0.0171	0.0054				

Note: Disturbed samples and samples from CAN2 were excluded from analysis.
Values for the ANOVA models are the P-values for each term in the model, rounded to four decimal places
Results of multiple comparisons are reportd in Table 3.
ANOVA - Analysis of variance
NA - Not analyzed

Table 3. Summary of multiple comparisons between depths and locations

		Cadmium		Cobalt		Manganese	
		Total	Dissolved	Total	Dissolved	Total	Dissolved
P-values from final ANOVA model							
Transect		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NA[a]
Depth w/in transect		ns	ns	0.0007	0.0126	<0.0001	
Location w/in transect		0.0171	0.0054	0.0002	<0.0001	0.0381	
Interaction w/in transect		ns	ns	ns	0.0055	ns	
Location comparisons							
CAN1	Left - Right	--	--	--	--	--	
TC10	Left - Right	--	--	--	--	--	
TC9	Left - Right	--	--	--	--	--	
TC1	Left - Mid-channel	--	--	--	--	--	
	Left - Right	--	--	--	--	--	
	Mid-channel - Right	--	--	--	--	--	
TC2	Left - Mid-channel	--	--	--	--	--	
	Left - Right	--	--	Signif.	--	--	
	Mid-channel - Right	Signif.	Signif.	Signif.	--	--	
TC3	Left - Mid-channel	--	--	--	--	--	
	Left - Right	--	--	Signif.	--	--	
	Mid-channel - Right	--	--	--	--	--	
TC4	Left - Mid-channel	--	--	--	--	--	
	Left - Right	--	--	--	--	--	
	Mid-channel - Right	--	--	--	--	--	
TC5	Left - Mid-channel	--	--	--	--	--	
	Left - Right	--	--	--	--	--	
	Mid-channel - Right	--	--	--	--	--	
TC6	Left - Mid-channel	--	--	--	--	--	
	Left - Right	--	--	--	--	--	
	Mid-channel - Right	--	--	--	--	--	
TC7	Left - Mid-channel	--	--	--	--	--	
	Left - Right	--	--	--	--	--	
	Mid-channel - Right	--	--	--	--	--	
Depth comparisons							
CAN1	Bottom - Shore	NA	NA	--	--	--	
	Bottom - Surface			--	--	--	
	Shore - Surface			--	--	--	
TC10	Bottom - Shore			--	--	--	
	Bottom - Surface			--	--	--	
	Shore - Surface			--	--	--	
TC9	Bottom - Shore			--	--	--	
	Bottom - Surface			--	--	--	
	Shore - Surface			--	--	--	
TC1	Bottom - Shore			--	--	--	
	Bottom - Surface			--	--	--	
	Shore - Surface			--	--	--	

Table 3. Cont.

		Cadmium		Cobalt		Manganese	
		Total	Dissolved	Total	Dissolved	Total	Dissolved
Depth comparisons (cont.)							
TC2	Bottom - Shore			--	Signif.[b]	--	
	Bottom - Surface			--	--	--	
	Shore - Surface			--	--	--	
TC3	Bottom - Shore			--	--	--	
	Bottom - Surface			--	--	--	
	Shore - Surface			Signif.	--	--	
TC4	Bottom - Shore			--	--	--	
	Bottom - Surface			--	--	Signif.	
	Shore - Surface			--	--	--	
TC5	Bottom - Shore			--	--	--	
	Bottom - Surface			--	--	Signif.	
	Shore - Surface			--	--	--	
TC6	Bottom - Shore			--	--	--	
	Bottom - Surface			--	--	Signif.	
	Shore - Surface			Signif.	--	--	
TC7	Bottom - Shore			--	--	--	
	Bottom - Surface			--	--	Signif.	
	Shore - Surface			--	--	--	

ANOVA - Analysis of variance

NA - Not analyzed

ns - Not significant at 0.05 level.

-- - Not significant at overall 0.05 level.

[a] - Not analyzed because 92 percent of results were undetected.

[b] - Difference is significant only for the left samples.

Table 4. Range of measured concentrations by transect

	Total Cadmium (µg/L)			Dissolved Cadmium (µg/L)		
Transect	Min.	Max.	Difference	Min.	Max.	Difference
CAN1	0.003 *U*	0.019	0.017	0.003 *U*	0.010	0.008
CAN2	0.009 *U*	0.023	0.014	0.008 *U*	0.015 *U*	ND
TC10	0.021	0.033	0.012	0.018	0.028	0.010
TC9	0.016	0.031	0.015	0.009	0.024	0.015
TC1	0.013 *U*	0.031	0.019	0.009 *U*	0.013	0.004
TC2	0.008 *U*	0.020	0.013	0.008 *U*	0.019	0.012
TC3	0.010	0.028	0.018	0.010	0.020	0.010
TC4	0.011	0.018	0.007	0.008	0.013	0.005
TC5	0.008	0.022	0.014	0.006	0.011	0.005
TC6	0.005	0.017	0.012	0.003 *U*	0.013	0.011
TC7	0.009	0.016	0.007	0.005 *U*	0.013	0.008

	Total Cobalt (µg/L)			Dissolved Cobalt (µg/L)		
Transect	Min.	Max.	Difference	Min.	Max.	Difference
CAN1	0.025	0.041	0.016	0.022	0.029	0.007
CAN2	0.037	0.069	0.032	0.059	0.088	0.029
TC10	0.032	0.036	0.004	0.025	0.032	0.007
TC9	0.031	0.053	0.022	0.028	0.038	0.010
TC1	0.036	0.056	0.020	0.012 *U*	0.040	0.029
TC2	0.015 *U*	0.056	0.041	0.014 *U*	0.042	0.028
TC3	0.035	0.074	0.039	0.014 *U*	0.043	0.030
TC4	0.038	0.081	0.043	0.030	0.039	0.009
TC5	0.043	0.060	0.017	0.029	0.042	0.013
TC6	0.039	0.080	0.041	0.029	0.041	0.012
TC7	0.033	0.041	0.008	0.027	0.037	0.010

	Total Manganese (µg/L)			Dissolved Manganese (µg/L)		
Transect	Min.	Max.	Difference	Min.	Max.	Difference
CAN1	1.64	1.93	0.29	0.110 *U*	0.209	0.099
CAN2	1.92	3.07	1.15	0.177 *U*	0.299	0.122
TC10	1.98	2.12	0.14	0.244 *U*	0.618	0.374
TC9	2.43	4.45	2.02	0.243 *U*	0.335 *U*	ND
TC1	2.46	3.47	1.02	0.238 *U*	0.274 *U*	ND
TC2	2.48	3.51	1.03	0.130 *U*	0.295 *U*	ND
TC3	2.60	4.83	2.23	0.078 *U*	0.322 *U*	ND
TC4	1.58	5.12	3.54	0.122 *U*	1.10	0.978
TC5	2.04	5.67	3.63	0.111 *U*	0.291 *U*	ND
TC6	2.63	13.2	10.57	0.107 *U*	0.398	0.291
TC7	3.05	12.5	9.45	0.178 *U*	0.951	0.773

Note: Undetected results included at half the detection limit.
ND - Differences were not calculated between two undetected results.

Table 5. Measured concentrations by sample

Transect	Depth	Loc.	Field Trip.	Sample	Total Cadmium (μg/L)	Dissolved Cadmium (μg/L)	Total Cobalt (μg/L)	Dissolved Cobalt (μg/L)	Total Manganese (μg/L)	Dissolved Manganese (μg/L)
CAN1	Bottom	L	A	SW0000010	0.009	0.007	0.041	0.027	1.82	0.121 *U*
CAN1	Bottom	L	B	SW0000012	0.003 *U*	0.003 *U*	0.029	0.026	1.72	0.129 *U*
CAN1	Bottom	L	C	SW0000011	0.007	0.003 *U*	0.030	0.024	1.70	0.123 *U*
CAN1	Bottom	R	A	SW0000016	0.007	0.003 *U*	0.030	0.024	1.75	0.159 *U*
CAN1	Bottom	R	B	SW0000017	0.007	0.003 *U*	0.030	0.028	1.76	0.163 *U*
CAN1	Bottom	R	C	SW0000018	0.011	0.006	0.026	0.027	1.70	0.161 *U*
CAN1	Shore	L	A	SW0000019	0.009	0.003 *U*	0.031	0.024	1.93	0.151 *U*
CAN1	Shore	L	B	SW0000020	0.009	0.003 *U*	0.030	0.028	1.87	0.181 *U*
CAN1	Shore	L	C	SW0000021	0.008	0.007	0.025	0.027	1.88	0.180 *U*
CAN1	Shore	R	A	SW0000022	0.006	0.006	0.032	0.028	1.91	0.180 *U*
CAN1	Shore	R	B	SW0000023	0.009	0.006	0.028	0.026	1.92	0.180 *U*
CAN1	Shore	R	C	SW0000024	0.009	0.008	0.034	0.025	1.89	0.181 *U*
CAN1	Surface	L	A	SW0000007	0.009	0.010	0.034	0.026	1.75	0.112 *U*
CAN1	Surface	L	B	SW0000009	0.011	0.008	0.032	0.029	1.68	0.110 *U*
CAN1	Surface	L	C	SW0000008	0.007	0.003 *U*	0.029	0.022	1.70	0.209
CAN1	Surface	R	A	SW0000013	0.010	0.008	0.027	0.028	1.72	0.150 *U*
CAN1	Surface	R	B	SW0000014	0.008	0.003 *U*	0.028	0.025	1.71	0.152 *U*
CAN1	Surface	R	C	SW0000015	0.019	0.006	0.034	0.024	1.64	0.155 *U*
CAN2[a]	Shore	L		SW0000001	0.009 *U*	0.009 *U*				
CAN2[a]	Shore	L		SW0000002	0.011 *U*	0.015 *U*	0.069	0.088	2.13	0.178 *U*
CAN2[a]	Shore	L		SW0000003	0.020	0.008 *U*	0.037	0.059	1.92	0.299
CAN2[a]	Shore	L		SW0000004	0.023	0.008 *U*	0.054		3.07	
CAN2[a]	Shore	L		SW0000005	0.021	0.010 *U*	0.051	0.084	2.10	0.177 *U*
TC10	Bottom	L		SW0000026	0.031	0.028	0.035	0.032	2.12	0.361 *U*
TC10	Bottom	R		SW0000028	0.021	0.023	0.032	0.025	2.07	0.277 *U*
TC10	Shore	L		SW0000029	0.033	0.023	0.035	0.027	2.09	0.368 *U*
TC10	Shore	R		SW0000030	0.026	0.018	0.036	0.029	1.98	0.244 *U*
TC10	Surface	L		SW0000025	0.026	0.027	0.036	0.032	2.06	0.618
TC10	Surface	R		SW0000027	0.023	0.018	0.033	0.028	2.03	0.260 *U*
TC9	Bottom	L		SW0000032	0.023	0.020	0.037	0.033	2.90	0.335 *U*
TC9	Bottom	R		SW0000034	0.028	0.021	0.034	0.030	2.43	0.291 *U*
TC9	Shore	L		SW0000035	0.016	0.009	0.053	0.038	4.45	0.243 *U*
TC9	Shore	R		SW0000036	0.031	0.024	0.035	0.029	2.43	0.294 *U*
TC9	Surface	L		SW0000031	0.021	0.024	0.043	0.031	3.35	0.311 *U*
TC9	Surface	R		SW0000033	0.029	0.021	0.031	0.028	2.46	0.298 *U*
TC1	Bottom	L		SW0000042	0.031	0.009 *U*	0.036	0.013 *U*	2.64	0.238 *U*
TC1	Bottom	M		SW0000044	0.020	0.011	0.044	0.032	3.45	0.274 *U*
TC1	Bottom	R		SW0000046	0.018	0.012	0.043	0.031	3.30	0.268 *U*
TC1	Shore	L		SW0000047	0.013 *U*	0.010 *U*	0.039	0.014 *U*	2.62	0.266 *U*
TC1	Shore	R		SW0000052	0.021	0.009	0.056	0.040	3.42	0.261 *U*
TC1	Surface	L		SW0000041	0.026	0.009 *U*	0.036	0.012 *U*	2.46	0.248 *U*
TC1	Surface	M		SW0000043	0.020	0.013	0.043	0.033	3.47	0.267 *U*
TC1	Surface	R		SW0000045	0.014	0.012	0.041	0.037	3.08	0.251 *U*
TC2	Bottom	L		SW0000057	0.018	0.016	0.056	0.042	3.51	0.295 *U*
TC2	Bottom	M		SW0000059	0.020	0.013	0.051	0.037	3.18	0.136 *U*
TC2	Bottom	R		SW0000061	0.010 *U*	0.008 *U*	0.015 *U*	0.014 *U*	2.48	0.179 *U*
TC2	Shore	L		SW0000062	0.012 *U*	0.008 *U*	0.042	0.014 *U*	3.24	0.164 *U*
TC2	Shore	R		SW0000066	0.008 *U*	0.008 *U*	0.037	0.014 *U*	3.07	0.222 *U*
TC2	Surface	L		SW0000056	0.020	0.013	0.056	0.039	3.08	0.136 *U*
TC2	Surface	M		SW0000058	0.020	0.019	0.056	0.036	3.21	0.130 *U*
TC2	Surface	R		SW0000060	0.011 *U*	0.008 *U*	0.038	0.015 *U*	3.13	0.163 *U*

Table 5. Cont.

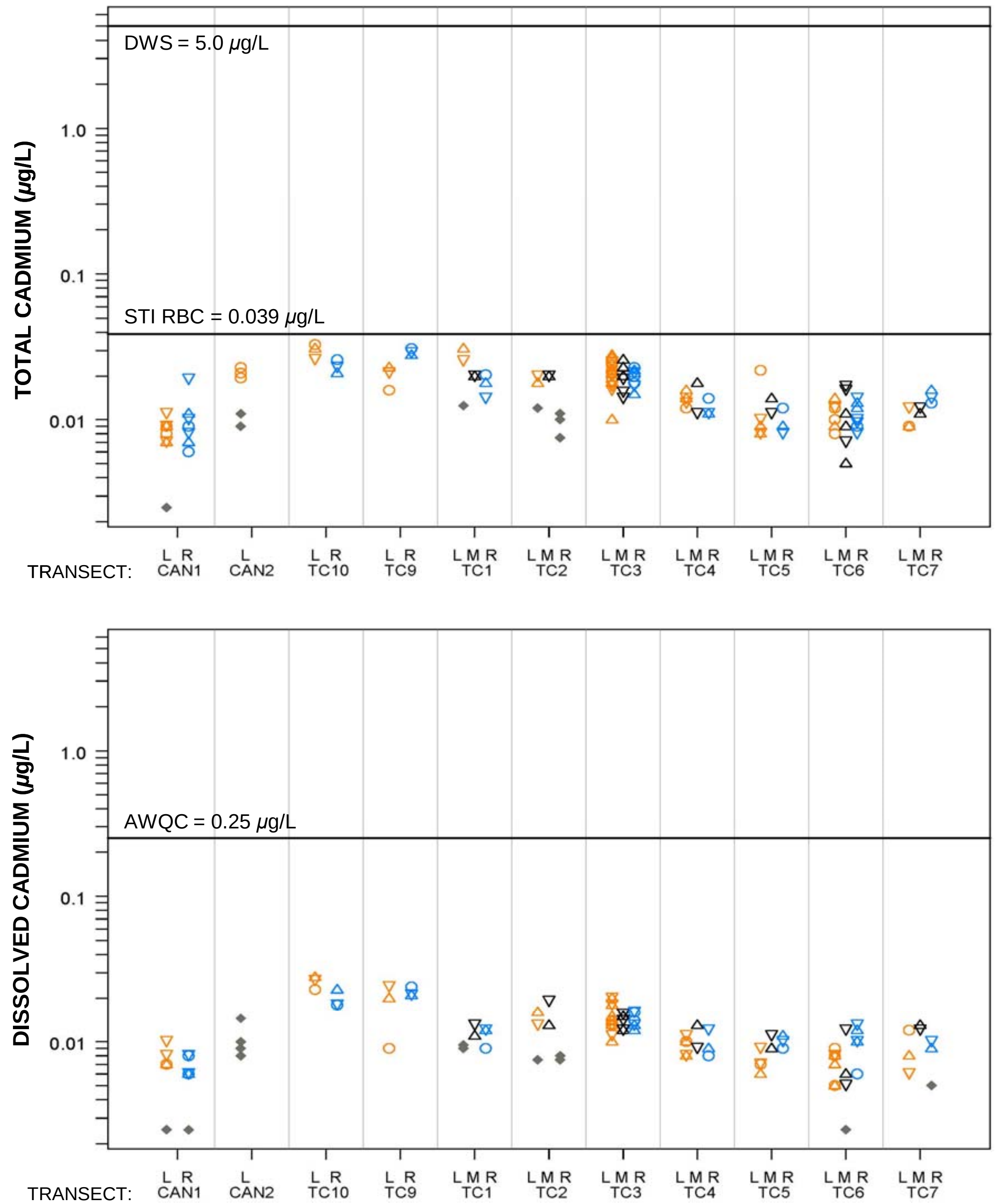
Transect	Depth	Loc.	Field Trip.	Sample	Total Cadmium (μg/L)	Dissolved Cadmium (μg/L)	Total Cobalt (μg/L)	Dissolved Cobalt (μg/L)	Total Manganese (μg/L)	Dissolved Manganese (μg/L)
TC3	Bottom	M	A	SW0000085	0.026	0.015	0.053	0.038	3.52	0.149 *U*
TC3	Bottom	M	B	SW0000086	0.023	0.015	0.044	0.038	3.20	0.131 *U*
TC3	Bottom	M	C	SW0000087	0.020	0.012	0.052	0.036	3.41	0.136 *U*
TC3	Bottom	R	A	SW0000091	0.022	0.012	0.051	0.034	3.24	0.203 *U*
TC3	Bottom	R	B	SW0000092	0.021	0.013	0.047	0.036	2.98	0.094 *U*
TC3	Bottom	R	C	SW0000093	0.015	0.012	0.047	0.032	3.18	0.105 *U*
TC3	Bottom	L	A	SW0000073	0.028	0.015	0.055	0.038	3.63	0.322 *U*
TC3	Bottom	L	B	SW0000074	0.022	0.018	0.051	0.040	3.26	0.201 *U*
TC3	Bottom	L	C	SW0000075	0.027	0.020	0.054	0.040	3.47	0.185 *U*
TC3	Bottom	L	A	SW0000079	0.010	0.010	0.051	0.040	3.55	0.249 *U*
TC3	Bottom	L	B	SW0000080	0.018	0.014	0.050	0.037	3.89	0.243 *U*
TC3	Bottom	L	C	SW0000081	0.021	0.013	0.055	0.035	4.21	0.272 *U*
TC3	Shore	L	A	SW0000094	0.026	0.014	0.074	0.034	4.83	0.194 *U*
TC3	Shore	L	B	SW0000095	0.022	0.013	0.068	0.037	4.18	0.183 *U*
TC3	Shore	L	C	SW0000096	0.024	0.014	0.051	0.034	3.40	0.173 *U*
TC3	Shore	R	A	SW0000100	0.020	0.014	0.048	0.034	3.14	0.174 *U*
TC3	Shore	R	B	SW0000101	0.018	0.016	0.045	0.031	2.72	0.174 *U*
TC3	Shore	R	C	SW0000102	0.023	0.016	0.044	0.035	2.60	0.160 *U*
TC3	Surface	M	A	SW0000082	0.016	0.016	0.047	0.041	2.75	0.241
TC3	Surface	M	B	SW0000083	0.019	0.014	0.048	0.037	2.75	0.078 *U*
TC3	Surface	M	C	SW0000084	0.014	0.012	0.046	0.039	2.79	0.083 *U*
TC3	Surface	R	A	SW0000088	0.017	0.016	0.046	0.035	2.82	0.105 *U*
TC3	Surface	R	B	SW0000089	0.021	0.016	0.035	0.014 *U*	2.85	0.101 *U*
TC3	Surface	R	C	SW0000090	0.017	0.013	0.035	0.014 *U*	2.80	0.102 *U*
TC3	Surface	L	A	SW0000070	0.023	0.011	0.045	0.043	2.73	0.127 *U*
TC3	Surface	L	B	SW0000071	0.017	0.011	0.049	0.039	2.85	0.135 *U*
TC3	Surface	L	C	SW0000072	0.016	0.018	0.043	0.035	2.82	0.145 *U*
TC3	Surface	L	A	SW0000076	0.025	0.011	0.048	0.037	3.11	0.160 *U*
TC3	Surface	L	B	SW0000077	0.020	0.013	0.049	0.043	3.17	0.152 *U*
TC3	Surface	L	C	SW0000078	0.018	0.020	0.046	0.035	3.28	0.158 *U*
TC4	Bottom	M		SW0000111	0.018	0.013	0.046	0.030	3.31	0.161 *U*
TC4	Bottom	R		SW0000113	0.011	0.009	0.048	0.039	3.08	0.135 *U*
TC4	Bottom	L		SW0000107	0.014	0.010	0.044	0.035	5.12	1.100
TC4	Bottom	L		SW0000109	0.016	0.008	0.039	0.031	2.92	0.206 *U*
TC4	Shore	L		SW0000114	0.012	0.010	0.042	0.034	2.27	0.122 *U*
TC4	Shore	R		SW0000118	0.014	0.008	0.081	0.037	3.92	0.155 *U*
TC4	Surface	M		SW0000110	0.011	0.009	0.038	0.034	1.76	0.183 *U*
TC4	Surface	R		SW0000112	0.011	0.012	0.043	0.038	1.90	0.149 *U*
TC4	Surface	L		SW0000106	0.013	0.011	0.044	0.039	1.75	0.289
TC4	Surface	L		SW0000108	0.014	0.008	0.044	0.036	1.58	0.143 *U*
TC5	Bottom	M		SW0000127	0.014	0.009	0.046	0.036	5.67	0.291 *U*
TC5	Bottom	R		SW0000129	0.009	0.011	0.053	0.036	4.31	0.134 *U*
TC5	Bottom	L		SW0000123	0.009	0.006	0.052	0.035	4.11	0.143 *U*
TC5	Bottom	L		SW0000125	0.008	0.006	0.051	0.032	4.04	0.271 *U*
TC5	Shore	L		SW0000130	0.022	0.007	0.054	0.032	3.10	0.186 *U*
TC5	Shore	R		SW0000134	0.012	0.009	0.060	0.038	3.07	0.232 *U*
TC5	Surface	M		SW0000126	0.011	0.011	0.043	0.029	2.24	0.192 *U*
TC5	Surface	R		SW0000128	0.008	0.010	0.043	0.036	2.47	0.111 *U*
TC5	Surface	L		SW0000122	0.010	0.007	0.044	0.038	2.04	0.277 *U*
TC5	Surface	L		SW0000124	0.008	0.009	0.044	0.042	2.06	0.281 *U*

Table 5. Cont.

Transect	Depth	Loc.	Field Trip.	Sample	Total Cadmium (μg/L)	Dissolved Cadmium (μg/L)	Total Cobalt (μg/L)	Dissolved Cobalt (μg/L)	Total Manganese (μg/L)	Dissolved Manganese (μg/L)
TC6	Bottom	L	A	SW0000139	0.009	0.005	0.046	0.037	2.83	0.208 *U*
TC6	Bottom	L	B	SW0000140	0.014	0.008	0.049	0.037	2.81	0.152 *U*
TC6	Bottom	L	C	SW0000141	0.009	0.007	0.040	0.034	2.83	0.168 *U*
TC6	Bottom	M	A	SW0000146	0.009	0.003 *U*	0.049	0.033	5.49	0.107 *U*
TC6	Bottom	M	B	SW0000147	0.005	0.006	0.051	0.038	4.89	0.107 *U*
TC6	Bottom	M	C	SW0000148	0.011	0.003 *U*	0.042	0.034	4.83	0.122 *U*
TC6	Bottom	R		SW0000150	0.012	0.010	0.051	0.037	13.20	0.375
TC6	Bottom	R		SW0000154	0.013	0.012	0.047	0.035	2.93	0.296 *U*
TC6	Shore	L	A	SW0000155	0.012	0.009	0.080	0.037	5.06	0.120 *U*
TC6	Shore	L	B	SW0000156	0.008	0.005	0.049	0.039	3.27	0.163 *U*
TC6	Shore	L	C	SW0000157	0.010	0.008	0.045	0.032	3.16	0.187 *U*
TC6	Shore	R		SW0000161	0.009	0.006	0.048	0.038	2.71	0.341 *U*
TC6	Surface	L		SW0000138	0.012	0.008	0.044	0.034	2.83	0.294
TC6	Surface	M	A	SW0000143	0.016	0.012	0.044	0.033	2.70	0.223 *U*
TC6	Surface	M	B	SW0000144	0.007	0.012	0.039	0.036	2.71	0.263 *U*
TC6	Surface	M	C	SW0000145	0.017	0.005	0.039	0.029	2.63	0.246 *U*
TC6	Surface	R		SW0000149	0.010	0.010	0.046	0.036	2.99	0.398
TC6	Surface	R	A	SW0000151	0.014	0.013	0.041	0.037	2.86	0.162 *U*
TC6	Surface	R	B	SW0000152	0.008	0.010	0.046	0.038	2.88	0.202 *U*
TC6	Surface	R	C	SW0000153	0.010	0.013	0.040	0.041	2.83	0.147 *U*
TC7	Bottom	L		SW0000166	0.009	0.008	0.039	0.030	3.86	0.178 *U*
TC7	Bottom	M		SW0000168	0.011	0.013	0.036	0.032	12.50	0.951
TC7	Bottom	R		SW0000170	0.016	0.009	0.040	0.029	6.21	0.313 *U*
TC7	Shore	L		SW0000171	0.009	0.012	0.034	0.030	3.05	0.179 *U*
TC7	Shore	R		SW0000175	0.013	0.005 *U*	0.041	0.032	3.50	0.298 *U*
TC7	Surface	L		SW0000165	0.012	0.006	0.037	0.027	3.39	0.210 *U*
TC7	Surface	M		SW0000167	0.012	0.012	0.033	0.031	3.20	0.198 *U*
TC7	Surface	R		SW0000169	0.014	0.010	0.036	0.037	3.14	0.256 *U*

Note: Undetected results are reported at half the detection limit.

[a] - CAN2 was excluded from statistical analysis of location and depth differences.

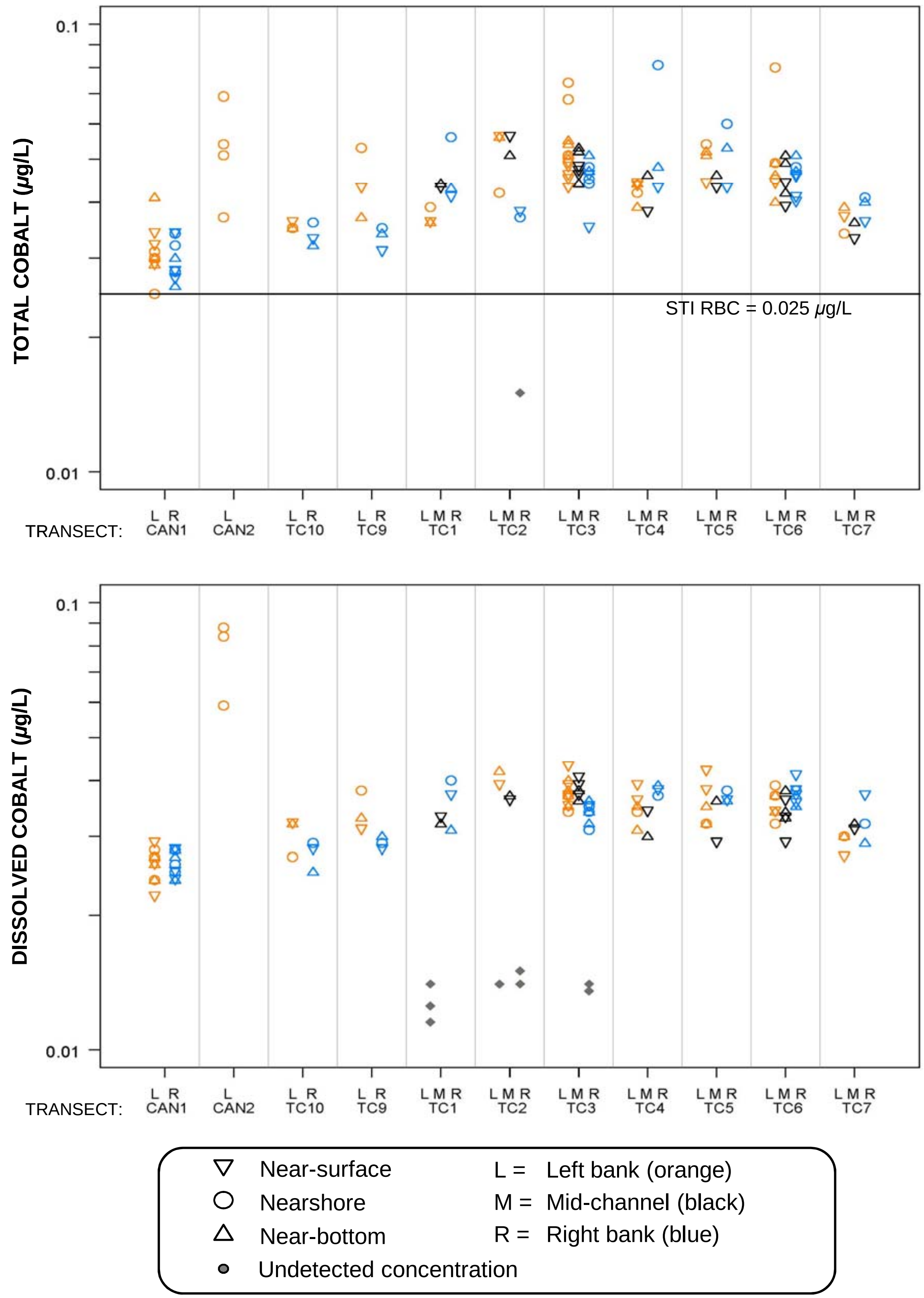


▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (black)
△	Near-bottom	R =	Right bank (blue)
●	Undetected concentration		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS EPA drinking water standard
STI RBC Spokane Tribe risk based concentration
AWQC Chronic EPA ambient water quality criterion

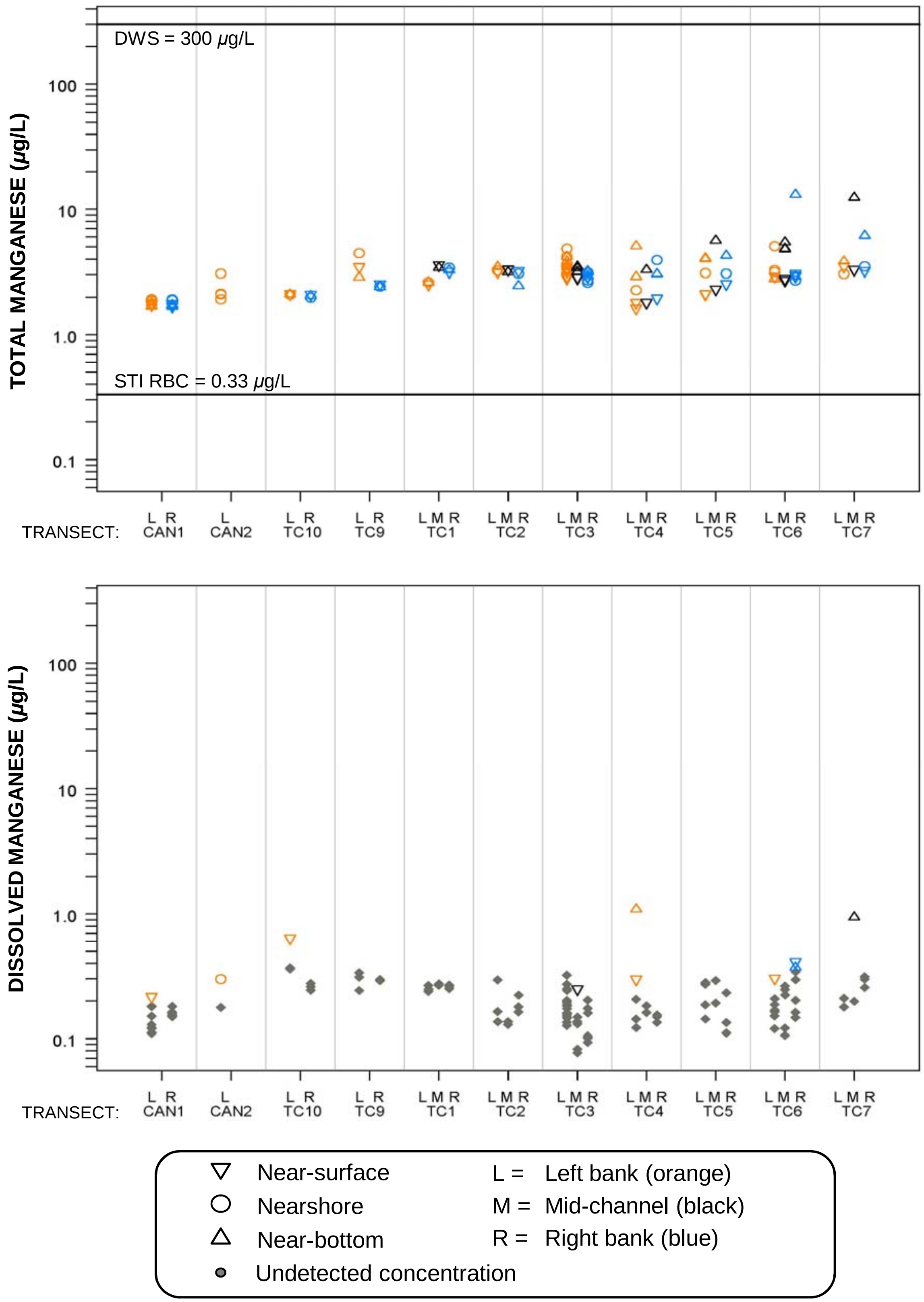
Figure 1. Cadmium concentrations by transect, depth, and location



Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS EPA drinking water standard
STI RBC Spokane Tribe risk based concentration
AWQC Chronic EPA ambient water quality criterion

Figure 2. Cobalt concentrations by transect, depth, and location



Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS EPA drinking water standard
STI RBC Spokane Tribe risk based concentration
AWQC Chronic EPA ambient water quality criterion

Figure 3. Manganese concentrations by transect, depth, and location

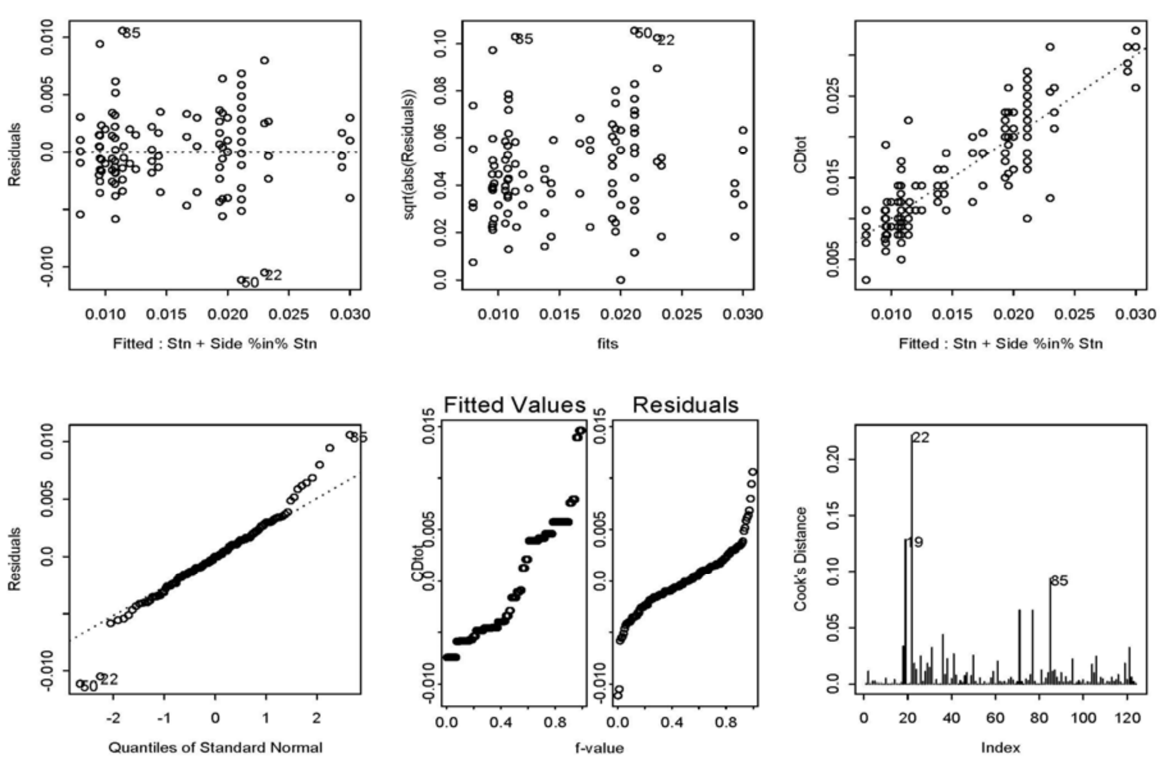
U:\Correspondence\Official\Sent\2010\PDFs\04-13-10_SW Data-Triplicate Samples_BDuncan

Total Cadmium

```
temp <- aov(CDtot ~ Stn + Type %in% Stn * Side %in% Stn, na.action = na.omit,
         subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp)
                                Df   Sum of Sq       Mean Sq  F Value
                            Stn  9 0.003728882 0.0004143202 33.66518
                  Type %in% Stn 20 0.000371160 0.0000185580  1.50791
                  Side %in% Stn 17 0.000478153 0.0000281267  2.28540
(Type %in% Stn):(Side %in% Stn) 27 0.000349440 0.0000129422  1.05161
                      Residuals 50 0.000615354 0.0000123071
                                    Pr(F)
                            Stn 0.0000000
                  Type %in% Stn 0.1205555
                  Side %in% Stn 0.0121776
(Type %in% Stn):(Side %in% Stn) 0.4277479  remove and rerun model
                      Residuals
```

```
> temp2 <- aov(CDtot ~ Stn + Type %in% Stn + Side %in% Stn, na.action = na.omit,
         subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp2)
              Df   Sum of Sq       Mean Sq  F Value     Pr(F)
          Stn  9 0.003728882 0.0004143202 33.06679 0.0000000
Type %in% Stn 20 0.000371160 0.0000185580  1.48111 0.1130019  remove and rerun model
Side %in% Stn 17 0.000478153 0.0000281267  2.24478 0.0087631
    Residuals 77 0.000964795 0.0000125298
```

```
> temp3 <- aov(CDtot ~ Stn + Side %in% Stn, na.action = na.omit, subset = Stn !=
         CAN2 & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp3)
              Df   Sum of Sq       Mean Sq  F Value      Pr(F)
          Stn  9 0.003728882 0.0004143202 29.98746 0.00000000
Side %in% Stn 17 0.000473913 0.0000278772  2.01768 0.01711169
    Residuals 97 0.001340196 0.0000138164
```

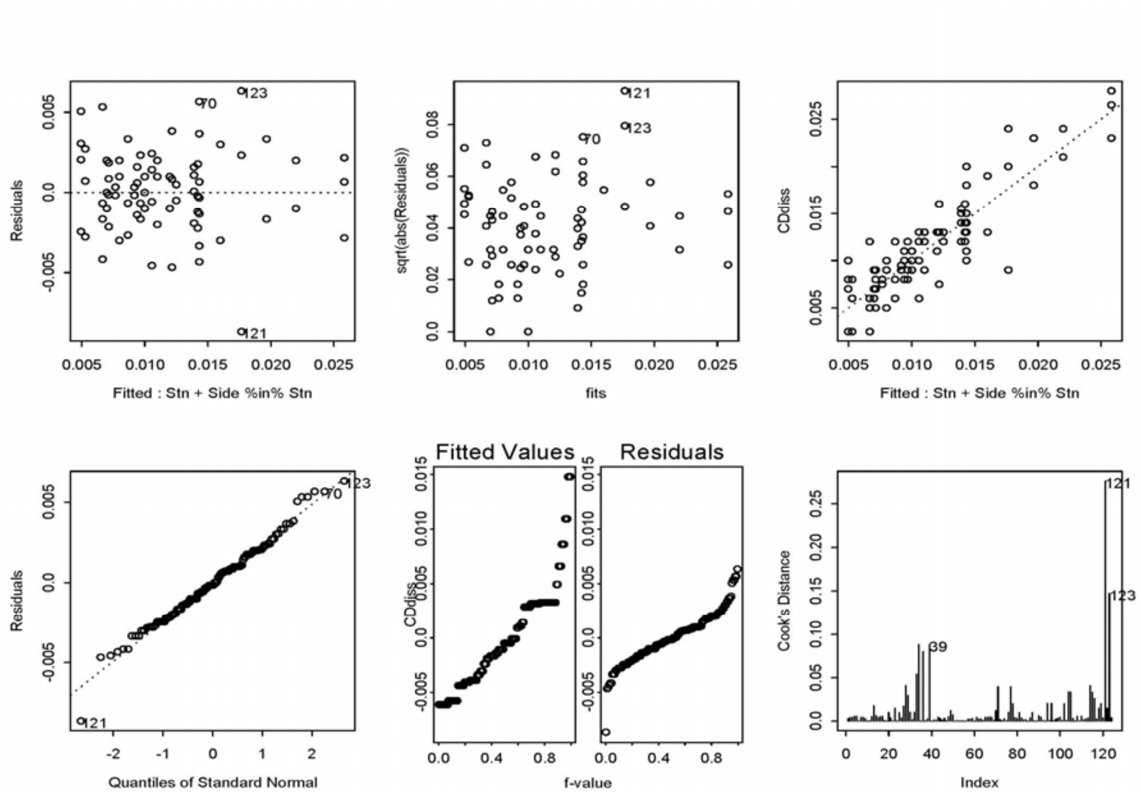


Dissolved Cadmium

```
temp <- aov(CDdiss ~ Stn + Type %in% Stn * Side %in% Stn, na.action = na.omit,
         subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp)
                                Df   Sum of Sq      Mean Sq  F Value
                            Stn  9 0.002488544 0.0002765048 42.75848
                  Type %in% Stn 20 0.000195086 0.0000097543  1.50840
                  Side %in% Stn 17 0.000251495 0.0000147938  2.28771
(Type %in% Stn):(Side %in% Stn) 27 0.000260026 0.0000096306  1.48927
                      Residuals 50 0.000323333 0.0000064667
                                    Pr(F)
                            Stn 0.0000000
                  Type %in% Stn 0.1203761
                  Side %in% Stn 0.0120899
(Type %in% Stn):(Side %in% Stn) 0.1103032  remove and rerun model
                      Residuals
```

```
> temp2 <- aov(CDdiss ~ Stn + Type %in% Stn + Side %in% Stn, na.action = na.omit,
         subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp2)
              Df   Sum of Sq      Mean Sq  F Value     Pr(F)
          Stn  9 0.002488544 0.0002765048 36.49703 0.0000000
Type %in% Stn 20 0.000195086 0.0000097543  1.28751 0.2134396  remove and rerun model
Side %in% Stn 17 0.000251495 0.0000147938  1.95270 0.0252230
    Residuals 77 0.000583359 0.0000075761
```

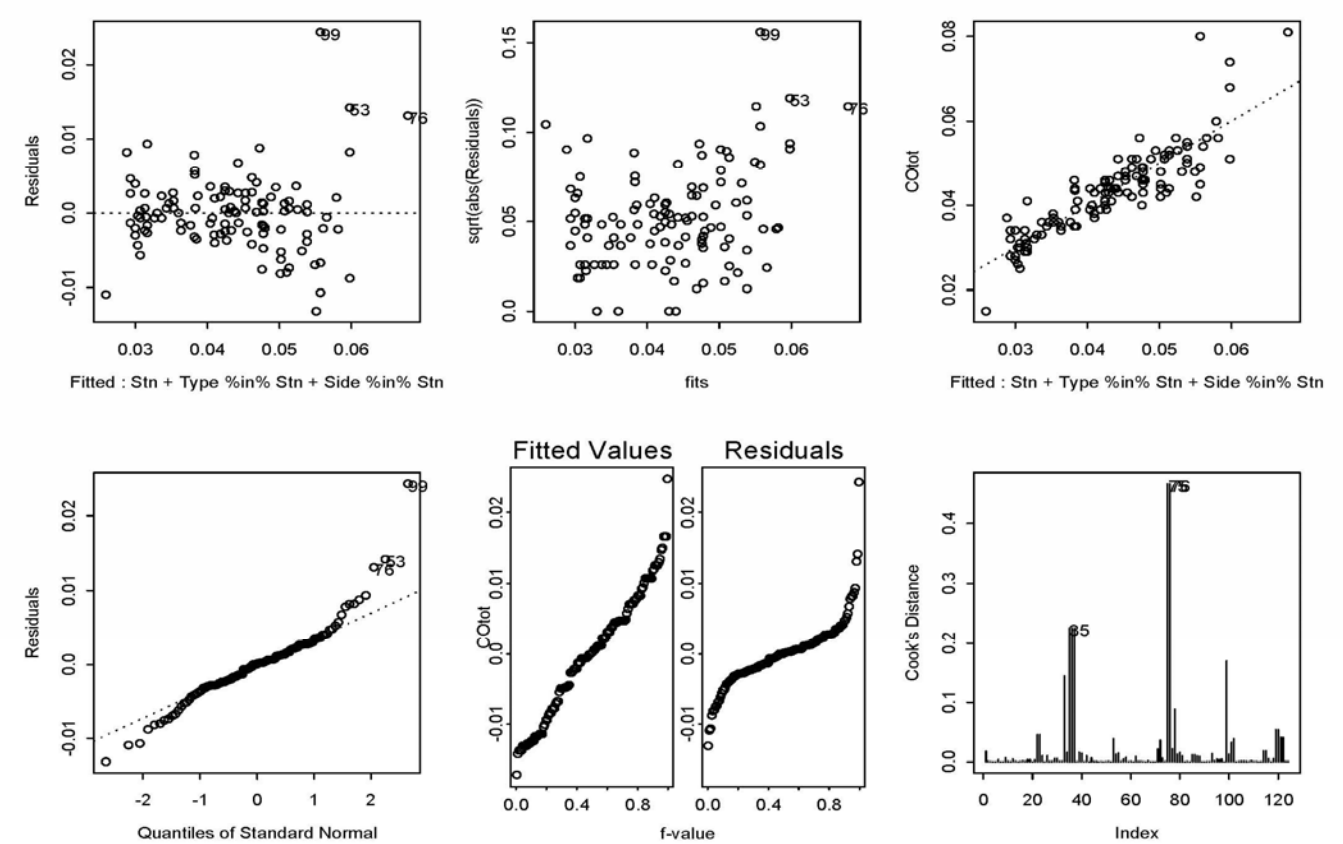
```
> temp3 <- aov(CDdiss ~ Stn + Side %in% Stn, na.action = na.omit, subset = Stn !=
         CAN2 & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp3)
              Df   Sum of Sq      Mean Sq  F Value       Pr(F)
          Stn  9 0.002488544 0.0002765048 36.60001 0.000000000
Side %in% Stn 17 0.000297127 0.0000174781  2.31351 0.005415231
    Residuals 97 0.000732813 0.0000075548
```



Total Cobalt

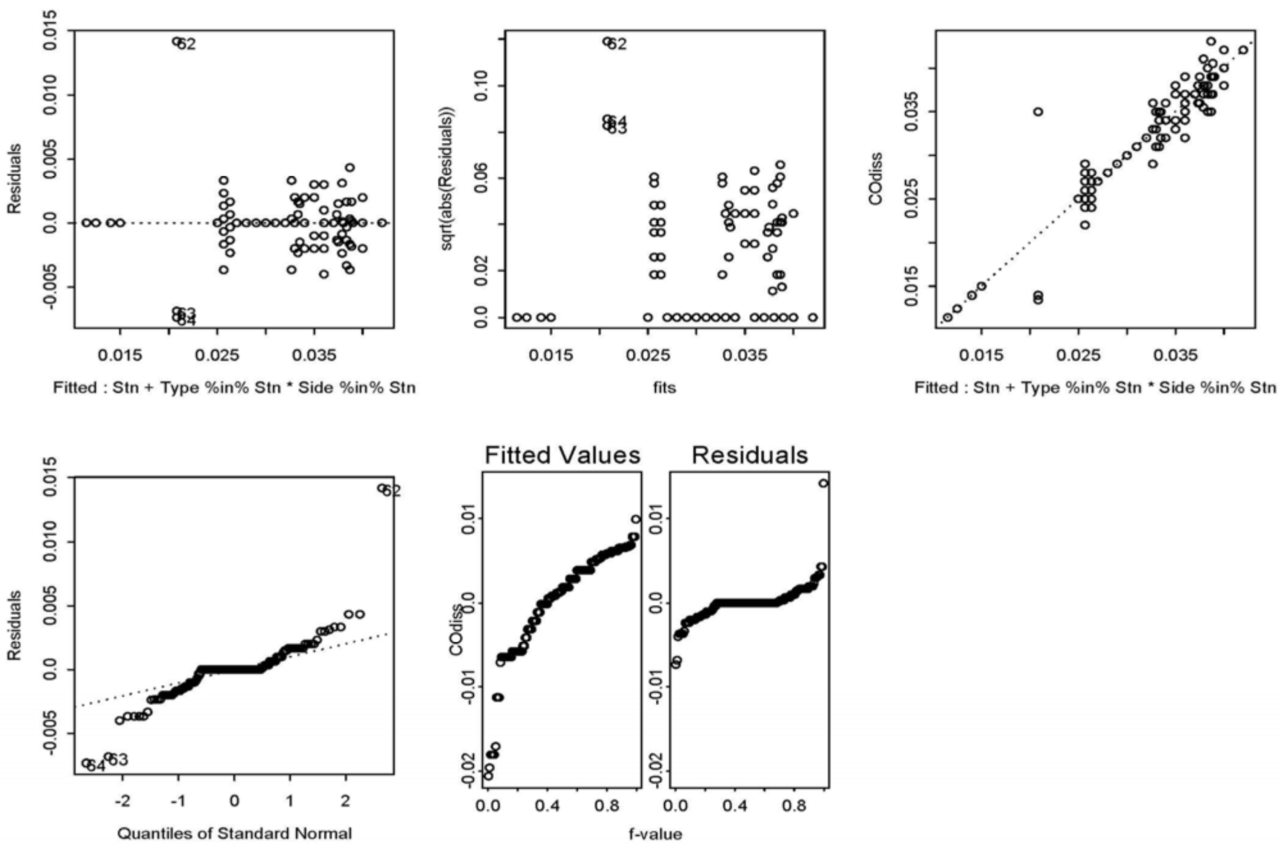
```
> temp <- aov(COtot ~ Stn + Type %in% Stn * Side %in% Stn, na.action = na.omit,
        subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp)
                                Df   Sum of Sq      Mean Sq  F Value
                            Stn  9 0.005581137 0.0006201264 19.91867
                  Type %in% Stn 20 0.002099251 0.0001049625  3.37143
                  Side %in% Stn 17 0.002103171 0.0001237159  3.97380
(Type %in% Stn):(Side %in% Stn) 27 0.001359714 0.0000503598  1.61757
                      Residuals 50 0.001556646 0.0000311329
                                     Pr(F)
                            Stn 0.00000000
                  Type %in% Stn 0.00025329
                  Side %in% Stn 0.00007135
(Type %in% Stn):(Side %in% Stn) 0.06997234  remove and rerun model
                      Residuals
```

```
> temp2 <- aov(COtot ~ Stn + Type %in% Stn + Side %in% Stn, na.action = na.omit,
        subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp2)
              Df   Sum of Sq      Mean Sq  F Value        Pr(F)
          Stn  9 0.005581137 0.0006201264 16.37306 0.0000000000
Type %in% Stn 20 0.002099251 0.0001049625  2.77130 0.0007314517
Side %in% Stn 17 0.002103171 0.0001237159  3.26644 0.0001965381
    Residuals 77 0.002916360 0.0000378748
```



Dissolved Cobalt

```
> temp <- aov(COdiss ~ Stn + Type %in% Stn * Side %in% Stn, na.action = na.omit,
        subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp)
                                Df   Sum of Sq      Mean Sq  F Value
                            Stn  9 0.002057793 0.0002286436 19.20770
                  Type %in% Stn 20 0.000522977 0.0000261489  2.19669
                  Side %in% Stn 17 0.002127483 0.0001251461 10.51316
(Type %in% Stn):(Side %in% Stn) 27 0.000736339 0.0000272718  2.29103
                      Residuals 50 0.000595188 0.0000119038
                                     Pr(F)
                            Stn 0.00000000
                  Type %in% Stn 0.01260826
                  Side %in% Stn 0.00000000
(Type %in% Stn):(Side %in% Stn) 0.00553188
                      Residuals
```



Dissolved Cobalt (cont.)

Left bank only

```
> temp1 <- aov(COdiss ~ Stn + Type %in% Stn, na.action = na.omit, subset = Side ==
         L & Stn != "CAN2" & Stn != "zzzzz", data =
         MetalsInput.FldTripsHalfDL.)
> summary(temp1)
                Df    Sum of Sq      Mean Sq  F Value        Pr(F)
            Stn  9 0.002212322 0.0002458135 33.69676 0.0000000000
Type %in% Stn 20 0.000640351 0.0000320175  4.38905 0.0002732274
    Residuals 26 0.000189667 0.0000072949
```

Mid-channel only

```
> temp1 <- aov(COdiss ~ Stn + Type %in% Stn, na.action = na.omit, subset = Side ==
         M & Stn != "CAN2" & Stn != "zzzzz", data =
         MetalsInput.FldTripsHalfDL.)
> summary(temp1)
                Df     Sum of Sq       Mean Sq  F Value     Pr(F)
            Stn  6 0.0001339242 0.00002232071 3.759277 0.0441781
Type %in% Stn  7 0.0000455417 0.00000650595 1.095739 0.4453337
    Residuals  8 0.0000475000 0.00000593750
```

Right bank only

```
> temp1 <- aov(COdiss ~ Stn + Type %in% Stn, na.action = na.omit, subset = Side ==
         R & Stn != "CAN2" & Stn != "zzzzz", data =
         MetalsInput.FldTripsHalfDL.)
> summary(temp1)
                Df    Sum of Sq      Mean Sq  F Value     Pr(F)
            Stn  9 0.001722198 0.0001913554 8.551698 0.0001259
Type %in% Stn 20 0.000426781 0.0000213390 0.953645 0.5463575
    Residuals 16 0.000358021 0.0000223763
```

Near-bottom only

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
0.0125	0.03	0.034	0.03273	0.037	0.042

```
> temp2 <- aov(COdiss ~ Stn + Side %in% Stn, na.action = na.omit, subset = Type ==
         Bottom & Stn != "CAN2" & Stn != "zzzzz", data =
         MetalsInput.FldTripsHalfDL.)
> summary(temp1)
                Df    Sum of Sq      Mean Sq  F Value     Pr(F)
            Stn  9 0.001722198 0.0001913554 8.551698 0.0001259
Type %in% Stn 20 0.000426781 0.0000213390 0.953645 0.5463575
    Residuals 16 0.000358021 0.0000223763
```

Nearshore only

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
0.014	0.02725	0.032	0.03057	0.0365	0.04

```
> temp2 <- aov(COdiss ~ Stn + Side %in% Stn, na.action = na.omit, subset = Type ==
         Shore & Stn != "CAN2" & Stn != "zzzzz", data =
         MetalsInput.FldTripsHalfDL.)
> summary(temp1)
                Df    Sum of Sq      Mean Sq  F Value     Pr(F)
            Stn  9 0.001722198 0.0001913554 8.551698 0.0001259
Type %in% Stn 20 0.000426781 0.0000213390 0.953645 0.5463575
    Residuals 16 0.000358021 0.0000223763
```

Near-surface only

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
0.0115	0.0285	0.035	0.03247	0.0375	0.043

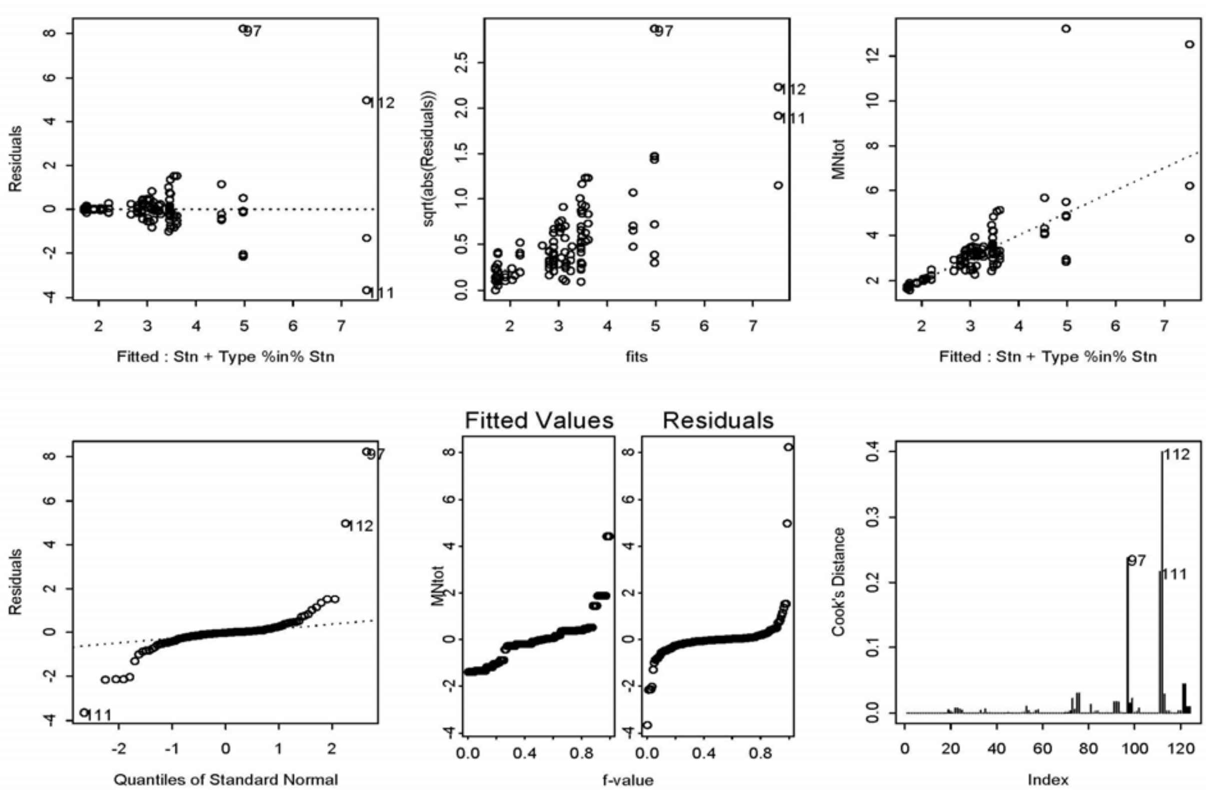
```
> temp2 <- aov(COdiss ~ Stn + Side %in% Stn, na.action = na.omit, subset = Type ==
         Surface & Stn != "CAN2" & Stn != "zzzzz", data =
         MetalsInput.FldTripsHalfDL.)
> summary(temp1)
                Df    Sum of Sq      Mean Sq  F Value     Pr(F)
            Stn  9 0.001722198 0.0001913554 8.551698 0.0001259
Type %in% Stn 20 0.000426781 0.0000213390 0.953645 0.5463575
    Residuals 16 0.000358021 0.0000223763
```

Total Manganese

```
> temp <- aov(MNtot ~ Stn + Type %in% Stn * Side %in% Stn, na.action = na.omit,
         subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp)
                                 Df Sum of Sq  Mean Sq  F Value     Pr(F)
                             Stn  9  75.18430 8.353811 6.979907 0.0000019
                    Type %in% Stn 20  74.77819 3.738909 3.123992 0.0005651
                    Side %in% Stn 17  36.92437 2.172022 1.814801 0.0525853
(Type %in% Stn):(Side %in% Stn) 27  48.81147 1.807832 1.510508 0.1024215  remove and rerun model
                        Residuals 50  59.84185 1.196837
```

```
> temp2 <- aov(MNtot ~ Stn + Type %in% Stn + Side %in% Stn, na.action = na.omit,
         subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp2)
               Df Sum of Sq  Mean Sq  F Value     Pr(F)
           Stn  9   75.1843 8.353811 5.920145 0.0000030
Type %in% Stn 20   74.7782 3.738909 2.649675 0.0012001
Side %in% Stn 17   36.9244 2.172022 1.539260 0.1034083  remove and rerun model
    Residuals 77  108.6533 1.411082
```

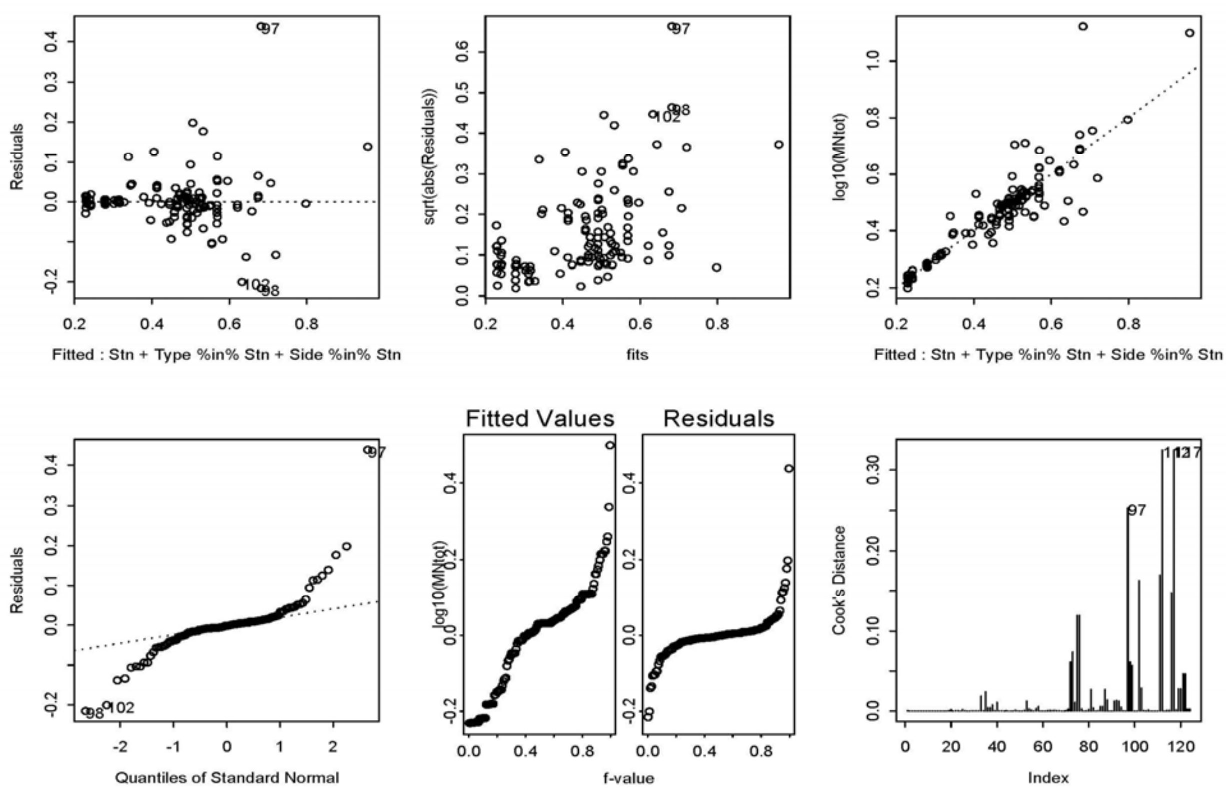
```
> temp3 <- aov(MNtot ~ Stn + Type %in% Stn, na.action = na.omit, subset = Stn !=
         CAN2 & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp3)
               Df Sum of Sq  Mean Sq  F Value       Pr(F)
           Stn  9   75.1843 8.353811 5.394084 0.000006083
Type %in% Stn 20   74.7782 3.738909 2.414226 0.002377702
    Residuals 94  145.5777 1.548699
```



Log_{10}(Total Manganese)

```
> temp <- aov(log10(MNtot) ~ Stn + Type %in% Stn * Side %in% Stn, na.action =
         na.omit, subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp)
                                Df Sum of Sq   Mean Sq  F Value      Pr(F)
                            Stn  9  1.389466 0.1543851 25.40723 0.00000000
                  Type %in% Stn 20  0.766828 0.0383414  6.30986 0.00000006
                  Side %in% Stn 17  0.235022 0.0138248  2.27515 0.01257625
(Type %in% Stn):(Side %in% Stn) 27  0.276164 0.0102283  1.68327 0.05510171  remove and rerun model
                      Residuals 50  0.303821 0.0060764
```

```
> temp2 <- aov(log10(MNtot) ~ Stn + Type %in% Stn + Side %in% Stn, na.action =
         na.omit, subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp2)
              Df Sum of Sq   Mean Sq  F Value      Pr(F)
          Stn  9  1.389466 0.1543851 20.49649 0.00000000
Type %in% Stn 20  0.766828 0.0383414  5.09029 0.00000009
Side %in% Stn 17  0.235022 0.0138248  1.83541 0.03813187
    Residuals 77  0.579985 0.0075323
```

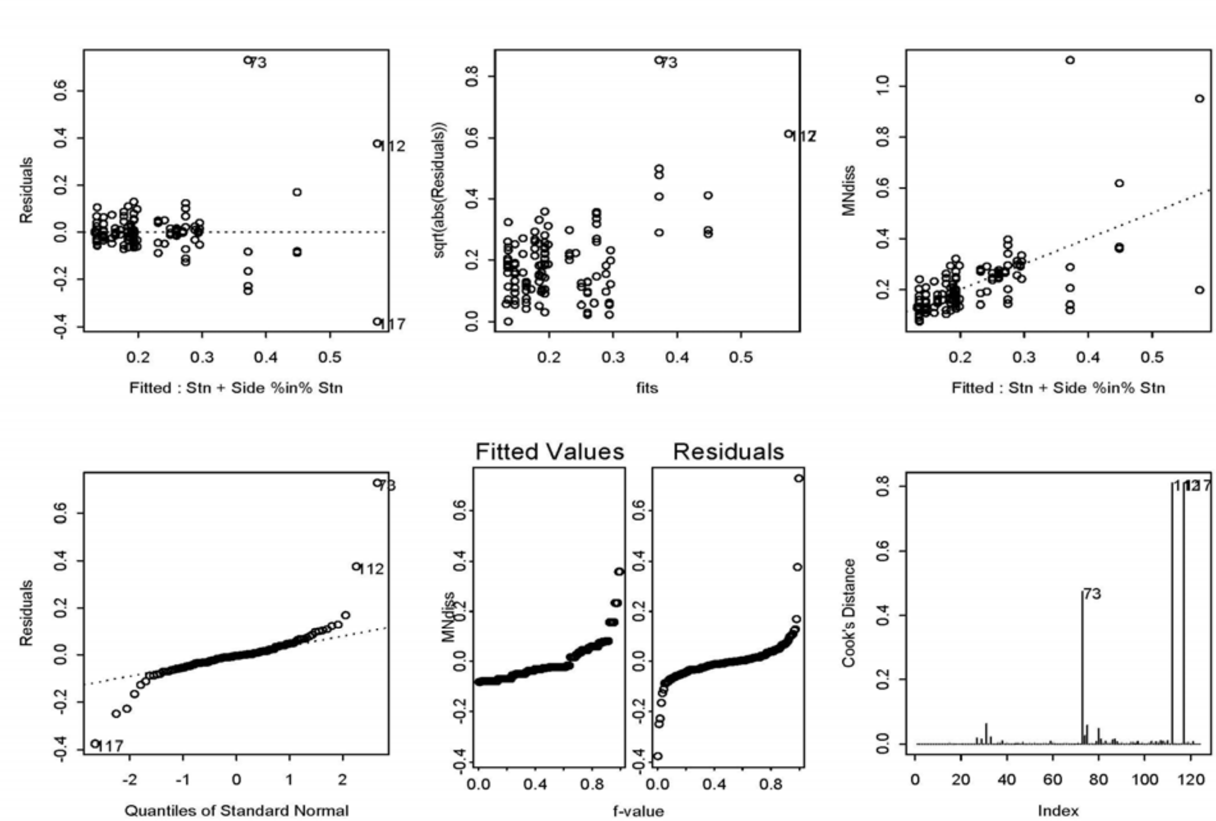


Dissolved Manganese

```
> temp <- aov(MNdiss ~ Stn + Type %in% Stn * Side %in% Stn, na.action = na.omit,
        subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp)
                                Df Sum of Sq    Mean Sq  F Value     Pr(F)
                            Stn  9 0.4399550 0.04888388 4.776241 0.0001312
                  Type %in% Stn 20 0.3133645 0.01566822 1.530877 0.1123009
                  Side %in% Stn 17 0.4126372 0.02427278 2.371592 0.0092872
(Type %in% Stn):(Side %in% Stn) 27 0.4565722 0.01691008 1.652214 0.0617167  remove and rerun model
                      Residuals 50 0.5117401 0.01023480
```

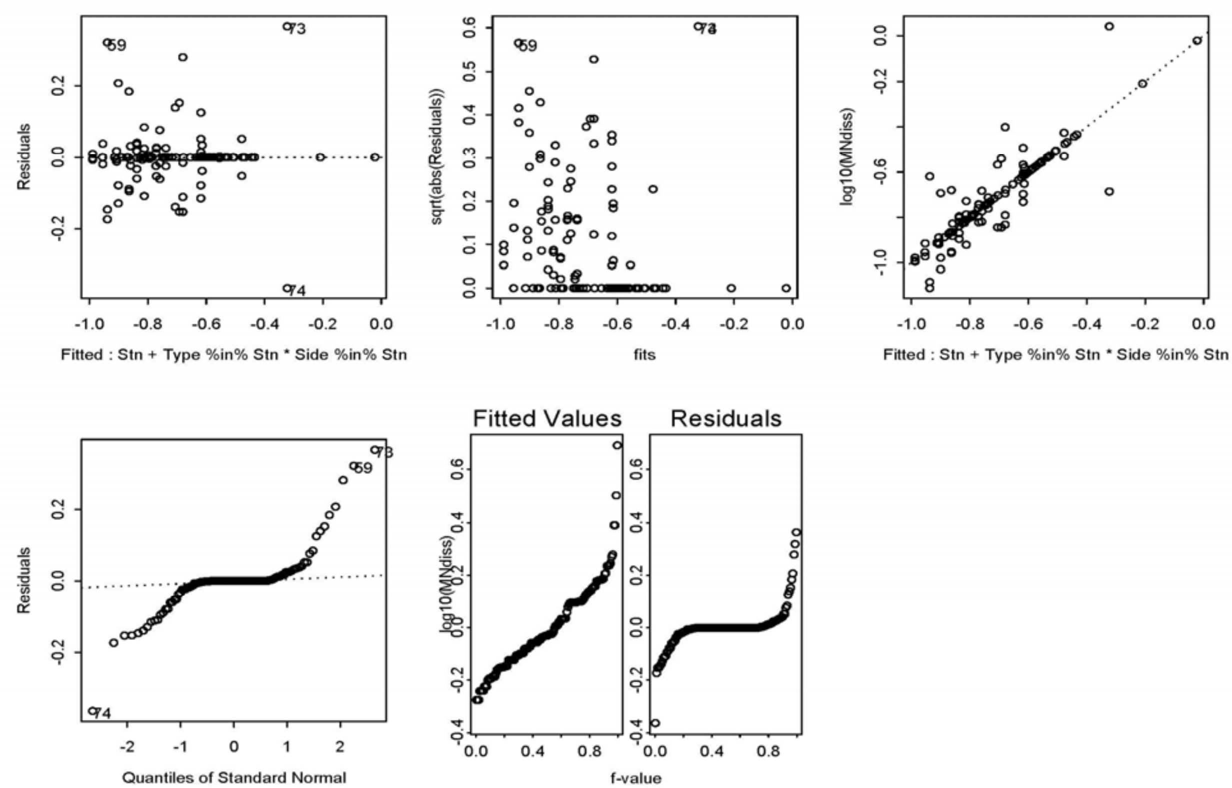
```
> temp2 <- aov(MNdiss ~ Stn + Type %in% Stn + Side %in% Stn, na.action = na.omit,
        subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp2)
              Df Sum of Sq    Mean Sq  F Value     Pr(F)
          Stn  9 0.4399550 0.04888388 3.887236 0.0004225
Type %in% Stn 20 0.3133645 0.01566822 1.245934 0.2424382  remove and rerun model
Side %in% Stn 17 0.4126372 0.02427278 1.930166 0.0273241
    Residuals 77 0.9683124 0.01257549
```

```
> temp3 <- aov(MNdiss ~ Stn + Side %in% Stn, na.action = na.omit, subset = Stn !=
        CAN2 & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.)
> summary(temp3)
              Df Sum of Sq    Mean Sq  F Value      Pr(F)
          Stn  9  0.439955 0.04888388 3.775857 0.00041371
Side %in% Stn 17  0.438510 0.02579470 1.992417 0.01884030
    Residuals 97  1.255804 0.01294643
```



Log_{10}(Dissolved Manganese)

```
> temp <- aov(log10(MNdiss) ~ Stn + Type %in% Stn * Side %in% Stn, na.action =
         na.omit, subset = Stn != "CAN2" & Stn != "zzzzz", data = MetalsInput.FldTripsHalfDL.
> summary(temp)
                                Df Sum of Sq   Mean Sq  F Value      Pr(F)
                            Stn  9  1.344761 0.1494178 9.042455 0.00000006
                   Type %in% Stn 20  0.526683 0.0263341 1.593687 0.09227570
                   Side %in% Stn 17  0.771231 0.0453666 2.745489 0.00287442
(Type %in% Stn):(Side %in% Stn) 27  0.823549 0.0305018 1.845906 0.03012881
                      Residuals 50  0.826202 0.0165240
```



Adzic Marko SPOK

From: Adzic Marko SPOK
Sent: Monday, April 05, 2010 4:45 PM
To: 'Bottcher.Helen@epamail.epa.gov'
Cc: 'Melanie Edwards'; Anne Fairbrother
Subject: Surface Water - Triplicate Sampling Rounds 2 and 3
Attachments: 04-05-10_Triplicate Sampling_MEdwards.pdf

Helen,
Please find attached a memorandum as prepared by Ms Melanie Edwards of Exponent which indicates that triplicate sampling, as outlined for the first round of surface water sampling, is not necessary in subsequent sampling rounds. Please note that the memorandum was developed per the QAPP to help us ascertain the need (added statistical power) for additional triplicates per the QAPP. As indicated by the attached, Ms Edwards has identified an alternative and more robust method of data analysis which can, and will, be used to evaluate the data at the completion of all three sampling events. Therefore and consistent with the QAPP, additional triplicate samples are not necessary and will not be collected at transects CAN1, TC3, and TC6 in subsequent sampling events. Please let me know if you have any questions.
Regards,

Marko Adzic
Manager, Environmental Engineering
Teck American Incorporated
Direct Phone: +1.509.892.2585
Phone: 509.747.6111
Fax:
eMail: Marko.Adzic@teck.com
www.teck.com

Exponent®

EXTERNAL MEMORANDUM

TO: Marko Adzic

FROM: Melanie Edwards

DATE: April 5, 2010

PROJECT: 0900083.013

SUBJECT: Justification for no additional field triplicate sampling

---

As directed in the approved Surface Water Quality Assurance Project Plan (QAPP), the first round of surface water sample concentrations were evaluated according to the methodology outlined for statistical comparisons. Based on this analysis, it was determined that field triplicate sampling at transects CAN1, TC3, and TC6 is not necessary during subsequent rounds of surface water sampling.

Adhering to the statistical comparison approach outlined in the QAPP, the field triplicate samples collected during the first round of sampling provide the necessary estimates of variability.[1] It is important to note that a large number of the compounds measured (46 percent) were not detected at any location, with even more compounds (71 percent) detected in fewer than 10 samples. Given the high proportion of undetected concentrations, statistical comparisons are not anticipated, and variability estimates not necessary, for these compounds. The compounds that do have detected concentrations at multiple transects generally were detected most frequently at the three transects with first round triplicate samples.

An alternative approach for statistical comparisons is based on more commonly used statistical methods (analysis of variance) than the method outlined in the QAPP and does not rely upon variability estimates from the field triplicate samples. This approach identifies significant differences by evaluating differences among depths and locations, as well as transects, using all of the available data in two separate models. Conclusions about differences among samples are drawn from the results of both models and plots of the data. This approach will be used for comparisons following the completion of all surface water sampling events.

[1] The method outlined in the QAPP uses Monte Carlo random sampling from a normal distribution. The field triplicate samples are used to estimate a coefficient of variability (CV), which combined with the average concentration yields the mean and standard deviation estimates necessary to characterize the normal distribution. Specifics on how this method is applied are outlined in the Surface Water QAPP.

Memorandum

Teck American Incorporated
501 North Riverpoint Boulevard
Suite 300
Spokane, WA 99202 USA

+1 509 747 6111 Tel
+1 509 922 8767 Fax
www.teck.com

Teck

To: Dr. Laura Buelow, U.S. Environmental Protection Agency (EPA)

Date: August 6, 2012

From: Kris McCaig, Teck American Incorporated (TAI)

File No.: 01-773180-000

Cc: Helen Bottcher, EPA
Marko Adzic, TAI
Dr. Anne Fairbrother, Exponent, Inc. (Exponent)
Cristy Kessel, Exponent

RE: Upper Columbia River Remedial Investigation Feasibility Study Database Detection Limit Analysis Update

TAI submitted a memorandum regarding the above-referenced to Helen Bottcher on December 5, 2011 and has since reviewed the information per EPA's request.

The review was conducted by the project database manager (i.e., Exponent) to determine if there was a group of data for certain parameters, within a study program, or done by a certain laboratory in which data were reported inconsistent with requirements of respective quality assurance project plans (QAPPs).

Findings of the review are as follows:

1. When the December 2011 analysis was conducted, information returned from the database included results for lab replicates, field replicates, field triplicates, blank water, and rinse water quality control (QC) samples. Therefore, any non-detects for these analyses were included in the number of results reported to the method detection limit (MDL) or the method reporting limit (MRL). Given that these data are for quality assurance/quality control (QA/QC) purposes only and will not be used in the risk assessment they were inappropriately included in the 2011 analysis. This has been corrected and is detailed within Tables 2 through 8, see attached.

2. The December 2011 analysis enumerated results identified as non-detects based on data validation activities rather than laboratory reporting limits. In other words, results were initially reported by the laboratory at a value above the MRL; but were later flagged as non-detected for QA/QC reasons (e.g., blank contamination). In such instances, these non-detects should not have been considered in the analysis of whether or not the QAPP reporting requirements were met. Therefore, these results are not included in the new Tables 2 through 8 attached to this memorandum.

3. The December 2011 analysis inadvertently miss-counted non-detect results for which the MDL was equal to the MRL. For example, in the Surface Water Study Rounds 1, 2, and

3, all non-detected results for high-resolution gas chromatography/high-resolution mass spectrometry (HRGC/HRMS) analyses were reported to the MRL and therefore categorized as "Non-detects NOT reported per QAPP". However, for all of these analyses, the MDL was equal to the MRL and therefore were reported consistent with the QAPP (i.e., "Non-detects reported per QAPP"). This is reflected in the attached tables (see Tables 2 through 8).

4. No revision to the information presented in the December 2011 memorandum for the 2009 Fish Tissue data was necessary as all non-detects were reported per the QAPP.

Attachments (8)

Table 1	December 5, 2011 Memorandum Table 3 Summary of Non-detect Values Reported from Teck UCR RI/FS Studies
Table 2	2009 Beach Sediment Data Review of How Non-detect Results Are Reported
Table 3	2010 Beach Sediment Data Review of How Non-detect Results Are Reported
Table 4	2011 Beach Sediment Data Review of How Non-detect Results Are Reported
Table 5	2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported
Table 6	2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported
Table 7	2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported
Table 8	2010 White Sturgeon Sediment Toxicity Testing Data Review of How Non-detect Results Are Reported

Table 1. Summary of Non-detect Values Reported from Teck UCR RI/FS Studies

Teck Program	NDs Reported at MRL	NDs Reported at MDL	NDs Not Reported to MRL or MDL	Explanation Where Non-detect Results are Not Equal to MRL or MDL	Total Count of NDs	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
2009 Beach Sediment	73	1,332	37	1[a], 34[b], 2[c]	1,442			
2010 Beach Sediment	67	2,168	33	28[b], 1[d], 4[c]	2,268			
2011 Beach Sediment	510	14,686	310	220[b], 76[d], 14[c]	15,506			
Beach Sediment Total	650	18,186	380		19,216	ND=MRL	650	18,566
2009 Surface Water Round 1	3,976	26,811	307	2[a], 295[b], 10[c]	31,094			
Non-HRGC/HRMS Data	3,030	15,482	10		18,522	ND=MRL	3,030	15,482
HRGC/HRMS Data	946	11,329	297		12,572	ND=MDL	11,329	946
2010 Surface Water Round 2	11,697	13,794	16	1[b], 15[c]	25,507			
Non-HRGC/HRMS Data	2,077	12,584	15		14,676	ND=MRL	2,077	12,584
HRGC/HRMS Data	9,620	1,210	1		10,831	ND=MDL	1,210	9,620
2010 Surface Water Round 3	11,791	12,951	14	14[c]	24,756			
Non-HRGC/HRMS Data	2,180	11,679	14		13,873	ND=MRL	2,180	11,679
HRGC/HRMS Data	9,611	1,272	--		10,883	ND=MDL	1,272	9,611
Non-HRGC/HRMS Data Total	7,287	39,745	39		47,071	ND=MRL	7,287	39,784
HRGC/HRMS Data Total	20,177	13,811	298		34,286	ND=MDL	13,811	20,475
Surface Water Total	27,464	53,556	337		81,357		21,098	60,259
2009 Fish Total	--	80,221	11	11[b]	80,232	ND=MDL	80,221	11[b]
2010 Sturgeon Sediment Toxicity Total	8,623	14,793	1,947	1904[e], 43[d]	25,363	ND=MRL	8,623	16,740
All Programs Total	**36,737**	**166,756**	**2,675**		**206,168**		**110,592**	**95,565**

Notes:

[a] U* flag assigned by validator. U* definition: analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.

[b] EMPC flag assigned by lab or validator. EMPC definition: the detection limit represents the estimated maximum possible concentration if the compound was present.

[c] Pace radionuclides nondetect results - The typical environmental term, method detection limit (MDL) is not applicable to radiochemistry as the detection limit is unique to each sample as well as each method. Therefore following a prescribed methodology such as that described in CFR Part 136 Appendix B would not result in the actual detection limit for the actual sample.

[d] These records are CAS grain size results where all of the measured values = 0, and there are no detection/reporting/quantification limits for grain size analysis. The validator assigned the "UJ" flag to these records stating "large discrepancies were observed between the results for these particle size fractions in the associated field duplicate analyses".

[e] The reported measured value contains the calculated concentration from the DGT probe; see the "comments" field of these records for more details.

Table 2. 2009 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2009 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	73	1,332

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Conventionals								
	Columbia Analytical Services							
		pH	16	0	MRL	0	0	0
		Solids	54	0	MRL	0	0	0
		Sulfide	16	0	MRL	0	0	0
		TOC	16	0	MRL	0	0	0
Dioxins/Furans								
	SGS NC							
		1,2,3,4,6,7,8-Heptachlorodibenzodioxin	1	1	MRL	1	0	1
		1,2,3,4,6,7,8-Heptachlorodibenzofuran	1	1	MRL	1	0	1
		1,2,3,4,7,8,9-Heptachlorodibenzofuran	1	1	MRL	1	0	1
		1,2,3,4,7,8-Hexachlorodibenzodioxin	1	1	MRL	1	0	1
		1,2,3,4,7,8-Hexachlorodibenzofuran	1	1	MRL	1	0	1
		1,2,3,6,7,8-Hexachlorodibenzodioxin	1	1	MRL	1	0	1
		1,2,3,6,7,8-Hexachlorodibenzofuran	1	1	MRL	1	0	1
		1,2,3,7,8,9-Hexachlorodibenzodioxin	1	1	MRL	1	0	1
		1,2,3,7,8,9-Hexachlorodibenzofuran	1	1	MRL	1	0	1
		1,2,3,7,8-Pentachlorodibenzofuran	1	1	MRL	1	0	1
		1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1	1	MRL	1	0	1
		2,3,4,6,7,8-Hexachlorodibenzofuran	1	1	MRL	1	0	1
		2,3,4,7,8-Pentachlorodibenzofuran	1	1	MRL	1	0	1
		2,3,7,8-Tetrachlorodibenzodioxin	1	1	MRL	1	0	1
		2,3,7,8-Tetrachlorodibenzofuran	1	1	MRL	1	0	1
		Heptachlorodibenzodioxin (Total)	1	0	MRL	0	0	0
		Heptachlorodibenzofuran (Total)	1	0	MRL	0	0	0
		Hexachlorodibenzodioxin (Total)	1	1	MRL	1	0	1
		Hexachlorodibenzofuran (Total)	1	0	MRL	0	0	0
		Octachlorodibenzodioxin	1	1	MRL	1	0	1
		Octachlorodibenzofuran	1	1	MRL	1	0	1
		Pentachlorodibenzodioxin (Total)	1	1	MRL	1	0	1
		Pentachlorodibenzofuran (Total)	1	0	MRL	0	0	0
		Tetrachlorodibenzodioxin (Total)	1	1	MRL	1	0	1
		Tetrachlorodibenzofuran (Total)	1	0	MRL	0	0	0

Table 2. 2009 Beach Sediment Data Review of How Non-detect Results Are Reported

	December 2011 Summary of 2009 Beach Sediment [a]	
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	73	1,332

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Grain Size								
	Columbia Analytical Services							
		Clay	16	0	MRL	0	0	0
		Coarse Gravel	16	0	MRL	0	0	0
		Coarse sand	16	0	MRL	0	0	0
		Cobbles	16	0	MRL	0	0	0
		Fine Gravel	16	0	MRL	0	0	0
		Fine Sand	16	0	MRL	0	0	0
		Med. Sand	16	0	MRL	0	0	0
		Medium Gravel	16	0	MRL	0	0	0
		Silt	16	0	MRL	0	0	0
		Very Coarse Gravel	16	0	MRL	0	0	0
		Very Coarse Sand	16	0	MRL	0	0	0
		Very Fine Gravel	16	0	MRL	0	0	0
		Very fine sand	16	0	MRL	0	0	0
Metals/Metalloids								
	Columbia Analytical Services							
		Aluminum	48	0	MRL	0	0	0
		Antimony	48	0	MRL	0	0	0
		Arsenic	56	0	MRL	0	0	0
		Barium	48	0	MRL	0	0	0
		Beryllium	48	0	MRL	0	0	0
		Cadmium	48	0	MRL	0	0	0
		Calcium	48	0	MRL	0	0	0
		Chromium	48	0	MRL	0	0	0
		Cobalt	48	0	MRL	0	0	0
		Copper	48	0	MRL	0	0	0
		Iron	48	0	MRL	0	0	0
		Lead	56	0	MRL	0	0	0
		Magnesium	48	0	MRL	0	0	0
		Manganese	48	0	MRL	0	0	0
		Mercury	48	0	MRL	0	0	0
		Nickel	48	0	MRL	0	0	0
		Potassium	48	0	MRL	0	0	0
		Selenium	48	1	MRL	1	0	1
		Silver	48	0	MRL	0	0	0

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Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Metals/Metalloids (continued)								
		Sodium	48	0	MRL	0	0	0
		Thallium	48	10	MRL	0	10	0
		Uranium	24	0	MRL	0	0	0
		Vanadium	48	0	MRL	0	0	0
		Zinc	48	0	MRL	0	0	0
PAHs								
	Columbia Analytical Services							
		1,1'-Biphenyl	6	6	MRL	6	0	6
		2-Methylnaphthalene	6	1	MRL	1	0	1
		Acenaphthene	6	6	MRL	6	0	6
		Acenaphthylene	6	6	MRL	6	0	6
		Anthracene	6	6	MRL	6	0	6
		Benzo[a]anthracene	6	4	MRL	4	0	4
		Benzo[a]pyrene	6	5	MRL	5	0	5
		Benzo[b]fluoranthene	6	4	MRL	4	0	4
		Benzo[g,h,i]perylene	6	5	MRL	5	0	5
		Benzo[k]fluoranthene	6	6	MRL	6	0	6
		Chrysene	6	4	MRL	4	0	4
		Dibenzo[a,h]anthracene	6	6	MRL	6	0	6
		Dibenzofuran	6	6	MRL	6	0	6
		Fluoranthene	6	3	MRL	3	0	3
		Fluorene	6	6	MRL	6	0	6
		Indeno[1,2,3-cd]pyrene	6	6	MRL	6	0	6
		Naphthalene	6	6	MRL	6	0	6
		Phenanthrene	6	3	MRL	3	0	3
		Pyrene	6	4	MRL	4	0	4
PBDEs								
	SGS NC							
		2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether	1	1	MRL	0	1	0
		2,2',3,3',4,4'-Hexabromodiphenyl ether	1	1	MRL	0	1	0
		2,2',3,4,4',5,5',6-Octabromodiphenyl ether	1	1	MRL	1	0	1
		2,2',3,4,4',5',6-Heptabromodiphenyl ether	1	1	MRL	1	0	1
		2,2',3,4,4',6,6'-Heptabromodiphenyl ether	1	1	MRL	1	0	1
		2,2',3,4,4'-Pentabromodiphenyl ether	1	1	MRL	0	1	0
		2,2',4,4',5,5'-Hexabromodiphenyl ether	1	1	MRL	1	0	1
		2,2',4,4',5,6'-Hexabromodiphenyl ether	1	1	MRL	1	0	1
		2,2',4,4',5-Pentabromodiphenyl ether	1	1	MRL	0	1	0
		2,2',4,4',6-Pentabromodiphenyl ether	1	1	MRL	0	1	0
		2,2',4,4'-Tetrabromodiphenyl ether	1	1	MRL	0	1	0
		2,2',4,5'-Tetrabromodiphenyl ether	1	1	MRL	0	1	0
		2,3,3',4,4',5',6-Heptabromodiphenyl ether	1	1	MRL	0	1	0

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Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PBDEs (continued)								
		2,3,3',4,4',5,6-Heptabromodiphenyl ether	1	1	MRL	0	1	0
		2,3',4,4'-Tetrabromodiphenyl ether	1	1	MRL	0	1	0
		2,3',4',6-Tetrabromodiphenyl ether	1	1	MRL	0	1	0
		Coelution of PBDE 138 and 166	1	1	MRL	0	1	0
		Coelution of PBDE 17 and 25	1	1	MRL	1	0	1
		Coelution of PBDE 28 and 33	1	1	MRL	1	0	1
		Decabromodiphenyl ether	1	1	MRL	0	1	0
PCBs								
	Columbia Analytical Services							
		Aroclor 1016	6	6	MRL	6	0	6
		Aroclor 1221	6	6	MRL	6	0	6
		Aroclor 1232	6	6	MRL	6	0	6
		Aroclor 1242	6	6	MRL	6	0	6
		Aroclor 1248	6	6	MRL	6	0	6
		Aroclor 1254	6	6	MRL	6	0	6
		Aroclor 1260	6	6	MRL	6	0	6
		Aroclor 1262	5	5	MRL	5	0	5
		Aroclor 1268	5	5	MRL	5	0	5
	SGS NC							
		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1	1	MRL	0	0	0
		2,2',3,3',4,4',5,5'-Octachlorobiphenyl	1	0	MRL	0	0	0
		2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,4',5,6'-Octachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,4',5,6-Octachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,4',5-Heptachlorobiphenyl	1	1	MRL	0	0	0
		2,2',3,3',4,4',6,6'-Octachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,4',6-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,4'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,5,5',6-Octachlorobiphenyl	1	1	MRL	0	0	0
		2,2',3,3',4,5,5'-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,5',6,6'-Octachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,5',6'-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,5',6-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,5,6'-Heptachlorobiphenyl	1	0	MRL	0	0	0
		2,2',3,3',4,5'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,5-Hexachlorobiphenyl	1	0	MRL	0	0	0
		2,2',3,3',4,6,6'-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,6'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4,6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',4-Pentachlorobiphenyl	1	1	MRL	1	0	1

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December 2011 Summary of 2009 Beach Sediment [a]		
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ND=MRL	73	1,332

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,2',3,3',5,5',6,6'-Octachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',5,5',6-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',5,5'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',5,6,6'-Heptachlorobiphenyl	1	0	MRL	0	0	0
		2,2',3,3',5,6'-Hexachlorobiphenyl	1	1	MRL	0	0	0
		2,2',3,3',5,6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',5-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',6,6'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3',6-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,3'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,4',5,5',6-Octachlorobiphenyl	1	1	MRL	0	0	0
		2,2',3,4,4',5,5'-Heptachlorobiphenyl	1	0	MRL	0	0	0
		2,2',3,4,4',5,6,6'-Octachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,4',5',6-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,4',5,6'-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,4',5,6-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,4',5-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,4',6,6'-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,4',6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,4'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4',5,5',6-Heptachlorobiphenyl	1	0	MRL	0	0	0
		2,2',3,4',5,5'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,5,5'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4',5,6,6'-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,5,6,6'-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4',5,6'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4',5,6-Hexachlorobiphenyl	1	0	MRL	0	0	0
		2,2',3,4,5',6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,5,6'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,5,6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4',5-Pentachlorobiphenyl	1	0	MRL	0	0	0
		2,2',3,4,5-Pentachlorobiphenyl	1	1	MRL	0	0	0
		2,2',3,4',6,6'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,6,6'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4',6'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,6'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4,6-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,4-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,5,5'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,5,6,6'-Hexachlorobiphenyl	1	1	MRL	1	0	1

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PCBs (continued)								
		2,2',3,5',6-Pentachlorobiphenyl	1	1	MRL	0	0	0
		2,2',3,5,6'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,5,6-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,5'-Tetrachlorobiphenyl	1	0	MRL	0	0	0
		2,2',3,5-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,6,6'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,6'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3,6-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,2',3-Trichlorobiphenyl	1	1	MRL	0	0	0
		2,2',4,4',5,5'-Hexachlorobiphenyl	1	0	MRL	0	0	0
		2,2',4,4',5,6'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',4,4',5-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',4,4',6,6'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,2',4,5',6-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',4,5'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,2',4,5-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,2',4,6,6'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,2',4,6-Tetrachlorobiphenyl	1	1	MRL	0	0	0
		2,2',4-Trichlorobiphenyl	1	0	MRL	0	0	0
		2,2',5,5'-Tetrachlorobiphenyl	1	0	MRL	0	0	0
		2,2',5-Trichlorobiphenyl	1	0	MRL	0	0	0
		2,2',6,6'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,2',6-Trichlorobiphenyl	1	1	MRL	1	0	1
		2,2'-Dichlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,4',5,5',6-Octachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,4',5,5'-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,4',5',6-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,4',5,6-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,4',5-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,4',6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,4'-Pentachlorobiphenyl	1	1	MRL	0	0	0
		2,3,3',4,5,5',6-Heptachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4',5,5'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,5,5'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4',5',6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,5',6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,5,6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4',5'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4',5-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4,5-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4',6-Pentachlorobiphenyl	1	0	MRL	0	0	0

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QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	73	1,332

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,3,3',4,6-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',4-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',5,5',6-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',5,5'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',5,6-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',5'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',5-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3',6-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3,3'-Trichlorobiphenyl	1	1	MRL	0	1	0
		2,3',4,4',5,5'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		2,3',4,4',5'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3',4,4',5-Pentachlorobiphenyl	1	0	MRL	0	0	0
		2,3,4,4',5-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3',4,4'-Tetrachlorobiphenyl	1	0	MRL	0	0	0
		2,3,4,4'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3',4,5,5'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3',4,5',6-Pentachlorobiphenyl	1	1	MRL	1	0	1
		2,3',4,5'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3',4,5-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3,4',5-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3,4,5-Tetrachlorobiphenyl	1	1	MRL	0	1	0
		2,3,4',6-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3',4-Trichlorobiphenyl	1	1	MRL	0	0	0
		2,3,4'-Trichlorobiphenyl	1	0	MRL	0	0	0
		2,3,4-Trichlorobiphenyl	1	1	MRL	0	1	0
		2,3',5,5'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3',5',6-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		2,3',5'-Trichlorobiphenyl	1	1	MRL	1	0	1
		2,3',5-Trichlorobiphenyl	1	1	MRL	0	0	0
		2,3,5-Trichlorobiphenyl	1	1	MRL	1	0	1
		2,3',6-Trichlorobiphenyl	1	1	MRL	1	0	1
		2,3,6-Trichlorobiphenyl	1	1	MRL	1	0	1
		2,3'-Dichlorobiphenyl	1	1	MRL	0	0	0
		2,3-Dichlorobiphenyl	1	1	MRL	1	0	1
		2,4',5-Trichlorobiphenyl	1	1	MRL	0	1	0
		2,4',6-Trichlorobiphenyl	1	1	MRL	0	0	0
		2,4'-Dichlorobiphenyl	1	1	MRL	0	1	0
		2,4-Dichlorobiphenyl	1	1	MRL	1	0	1
		2,5-Dichlorobiphenyl	1	1	MRL	1	0	1
		2,6-Dichlorobiphenyl	1	1	MRL	1	0	1

Table 2. 2009 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2009 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	73	1,332

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		3,3',4,4',5,5'-Hexachlorobiphenyl	1	1	MRL	1	0	1
		3,3',4,4',5-Pentachlorobiphenyl	1	1	MRL	1	0	1
		3,3',4,4'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		3,3',4,5,5'-Pentachlorobiphenyl	1	1	MRL	1	0	1
		3,3',4,5'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		3,3',4,5-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		3,3',4-Trichlorobiphenyl	1	1	MRL	1	0	1
		3,3',5,5'-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		3,3',5-Trichlorobiphenyl	1	1	MRL	1	0	1
		3,3'-Dichlorobiphenyl	1	1	MRL	0	1	0
		3,4,4',5-Tetrachlorobiphenyl	1	1	MRL	1	0	1
		3,4,4'-Trichlorobiphenyl	1	1	MRL	0	1	0
		3,4',5-Trichlorobiphenyl	1	1	MRL	1	0	1
		3,4,5-Trichlorobiphenyl	1	1	MRL	1	0	1
		3,4-Dichlorobiphenyl	1	1	MRL	0	0	0
		Decachlorobiphenyl (PCB 209)	1	0	MRL	0	0	0
		PCB congener 1	1	0	MRL	0	0	0
		PCB congener 14	1	1	MRL	1	0	1
		PCB congener 15	1	1	MRL	0	1	0
		PCB congener 2	1	1	MRL	0	0	0
		PCB congener 3	1	1	MRL	0	0	0
		PCB TEQ using WHO 2005 TEFs ND=0 DL	1	0	MRL	0	0	0
		PCB TEQ using WHO 2005 TEFs ND=1/2 DL	1	0	MRL	0	0	0
Pesticides/Herbicides								
	Columbia Analytical Services							
		2,4'-DDD	6	6	MRL	6	0	6
		2,4'-DDE	6	6	MRL	6	0	6
		2,4'-DDT	6	6	MRL	6	0	6
		4,4'-DDD	6	6	MRL	6	0	6
		4,4'-DDE	6	6	MRL	6	0	6
		4,4'-DDT	6	6	MRL	6	0	6
		Aldrin	6	6	MRL	6	0	6
		alpha-Benzenehexachloride	6	6	MRL	6	0	6
		alpha-Chlordane	6	6	MRL	6	0	6
		beta-BHC	6	6	MRL	6	0	6
		Chlordane	6	6	MRL	6	0	6
		cis-Nonachlor	6	6	MRL	6	0	6
		delta-BHC	6	6	MRL	6	0	6
		Dieldrin	6	6	MRL	6	0	6
		Endosulfan I	6	6	MRL	6	0	6
		Endosulfan II	6	6	MRL	6	0	6

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December 2011 Summary of 2009 Beach Sediment [a]		
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ND=MRL	73	1,332

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Pesticides/Herbicides (continued)								
		Endosulfan sulfate	6	6	MRL	6	0	6
		Endrin	6	6	MRL	6	0	6
		Endrin aldehyde	6	6	MRL	6	0	6
		Endrin ketone	6	6	MRL	6	0	6
		gamma-BHC	6	6	MRL	6	0	6
		gamma-Chlordane	6	6	MRL	6	0	6
		Heptachlor	6	6	MRL	6	0	6
		Heptachlor epoxide	6	6	MRL	6	0	6
		Methoxychlor	6	6	MRL	6	0	6
		Mirex	6	6	MRL	6	0	6
		Oxychlordane	6	6	MRL	6	0	6
		Toxaphene	6	6	MRL	5	1	5
		trans-Nonachlor	6	6	MRL	6	0	6
Radionuclides								
	Pace Analytical							
		Radium-226	1	0	MRL	0	0	0
		Uranium-238	1	0	MRL	0	0	0
SVOCs								
	Columbia Analytical Services							
		1,2,4-Trichlorobenzene	6	6	MRL	6	0	6
		1,2-Dichlorobenzene	6	6	MRL	6	0	6
		1,3-Dichlorobenzene	6	6	MRL	6	0	6
		1,4-Dichlorobenzene	6	6	MRL	6	0	6
		2,2'-oxybis(1-Chloropropane)	6	6	MRL	6	0	6
		2,4,5-Trichlorophenol	6	6	MRL	6	0	6
		2,4,6-Trichlorophenol	6	6	MRL	6	0	6
		2,4-Dichlorophenol	6	6	MRL	6	0	6
		2,4-Dimethylphenol	6	6	MRL	6	0	6
		2,4-Dinitrophenol	6	6	MRL	6	0	6
		2,4-Dinitrotoluene	6	6	MRL	6	0	6
		2,6-Dinitrotoluene	6	6	MRL	6	0	6
		2-Chloronaphthalene	6	6	MRL	6	0	6
		2-Chlorophenol	6	6	MRL	6	0	6
		2-Methylphenol	6	6	MRL	6	0	6
		2-Nitroaniline	6	6	MRL	6	0	6
		2-Nitrophenol	6	6	MRL	6	0	6
		3,3'-Dichlorobenzidine	6	6	MRL	6	0	6
		3-Nitroaniline	6	6	MRL	6	0	6
		4,6-Dinitro-2-methylphenol	6	6	MRL	6	0	6
		4-Bromophenyl-phenylether	6	6	MRL	6	0	6
		4-Chloro-3-methylphenol	6	6	MRL	6	0	6

Table 2. 2009 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2009 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	73	1,332

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
SVOCs (continued)								
		4-Chloroaniline	6	6	MRL	6	0	6
		4-Chlorophenyl-phenyl ether	6	6	MRL	6	0	6
		4-Methylphenol	6	6	MRL	6	0	6
		4-Nitroaniline	6	6	MRL	6	0	6
		4-Nitrophenol	6	6	MRL	6	0	6
		Acetophenone	6	6	MRL	1	5	1
		Benzaldehyde	6	6	MRL	6	0	6
		Benzoic acid	6	6	MRL	6	0	6
		Benzyl alcohol	6	6	MRL	6	0	6
		Benzyl n-butyl phthalate	6	6	MRL	6	0	6
		bis(2-Chloroethoxy)methane	6	6	MRL	6	0	6
		Bis(2-chloroethyl)ether	6	6	MRL	6	0	6
		bis(2-Ethylhexyl)phthalate	6	2	MRL	1	1	1
		Caprolactam	6	6	MRL	6	0	6
		Carbazole	6	6	MRL	6	0	6
		Diethyl phthalate	6	6	MRL	6	0	6
		Dimethyl phthalate	6	6	MRL	6	0	6
		Di-n-butyl phthalate	6	6	MRL	6	0	6
		Di-n-octylphthalate	6	6	MRL	6	0	6
		Hexachlorobenzene	6	6	MRL	6	0	6
		Hexachlorobutadiene	6	6	MRL	6	0	6
		Hexachlorocyclopentadiene	6	6	MRL	6	0	6
		Hexachloroethane	6	6	MRL	6	0	6
		Isophorone	6	6	MRL	6	0	6
		Nitrobenzene	6	6	MRL	6	0	6
		N-Nitrosodi-n-propylamine	6	6	MRL	6	0	6
		N-Nitrosodiphenylamine	6	6	MRL	6	0	6
		Pentachlorophenol	6	6	MRL	6	0	6
		Phenol	6	3	MRL	3	0	3
		2009 Beach Sediment [b]	**2,315**	**816**	**MRL**	**761**	**38**	**761**

Notes:

[a] The December 2011 analysis and summary included results for lab replicates, field replicates, field triplicates, blank water, rinse water/QC samples whereas the current table does not.

[b] Excludes all duplicate/triplicate/replicate/blank and rinsewater QC sample results

Table 3. 2010 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2010 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Conventionals								
	Columbia Analytical Services							
		Organic carbon	33	1	MRL	1	0	1
		pH	33	0	MRL	0	0	0
		Solids	113	0	MRL	0	0	0
		Sulfide	33	8	MRL	8	0	8
Dioxins/Furans								
	SGS NC							
		1,2,3,4,6,7,8-Heptachlorodibenzodioxin	2	0	MRL	0	0	0
		1,2,3,4,6,7,8-Heptachlorodibenzofuran	2	2	MRL	0	2	0
		1,2,3,4,7,8,9-Heptachlorodibenzofuran	2	2	MRL	2	0	2
		1,2,3,4,7,8-Hexachlorodibenzodioxin	2	2	MRL	2	0	2
		1,2,3,4,7,8-Hexachlorodibenzofuran	2	2	MRL	2	0	2
		1,2,3,6,7,8-Hexachlorodibenzodioxin	2	2	MRL	2	0	2
		1,2,3,6,7,8-Hexachlorodibenzofuran	2	2	MRL	2	0	2
		1,2,3,7,8,9-Hexachlorodibenzodioxin	2	1	MRL	1	0	1
		1,2,3,7,8,9-Hexachlorodibenzofuran	2	2	MRL	2	0	2
		1,2,3,7,8-Pentachlorodibenzofuran	2	2	MRL	2	0	2
		1,2,3,7,8-Pentachlorodibenzo-p-dioxin	2	1	MRL	1	0	1
		2,3,4,6,7,8-Hexachlorodibenzofuran	2	2	MRL	2	0	2
		2,3,4,7,8-Pentachlorodibenzofuran	2	2	MRL	2	0	2
		2,3,7,8-Tetrachlorodibenzodioxin	2	1	MRL	1	0	1
		2,3,7,8-Tetrachlorodibenzofuran	2	0	MRL	0	0	0
		Heptachlorodibenzodioxin (Total)	2	0	MRL	0	0	0
		Heptachlorodibenzofuran (Total)	2	0	MRL	0	0	0
		Hexachlorodibenzodioxin (Total)	2	0	MRL	0	0	0
		Hexachlorodibenzofuran (Total)	2	0	MRL	0	0	0
		Octachlorodibenzodioxin	2	1	MRL	0	1	0
		Octachlorodibenzofuran	2	2	MRL	1	1	1
		Pentachlorodibenzodioxin (Total)	2	0	MRL	0	0	0
		Pentachlorodibenzofuran (Total)	2	0	MRL	0	0	0
		Tetrachlorodibenzodioxin (Total)	2	0	MRL	0	0	0
		Tetrachlorodibenzofuran (Total)	2	0	MRL	0	0	0

Table 3. 2010 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2010 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Grain Size								
	Columbia Analytical Services							
		Clay	32	0	MRL	0	0	0
		Coarse Gravel	32	0	MRL	0	0	0
		Coarse sand	32	0	MRL	0	0	0
		Cobbles	32	0	MRL	0	0	0
		Fine Gravel	32	0	MRL	0	0	0
		Fine Sand	32	0	MRL	0	0	0
		Med. Sand	32	0	MRL	0	0	0
		Medium Gravel	32	0	MRL	0	0	0
		Silt	32	0	MRL	0	0	0
		Very Coarse Gravel	32	0	MRL	0	0	0
		Very Coarse Sand	32	0	MRL	0	0	0
		Very Fine Gravel	32	0	MRL	0	0	0
		Very fine sand	32	0	MRL	0	0	0
Metals/Metalloids								
	Columbia Analytical Services							
		Aluminum	101	0	MRL	0	0	0
		Antimony	101	2	MRL	0	2	0
		Arsenic	144	2	MRL	0	2	0
		Barium	101	0	MRL	0	0	0
		Beryllium	101	0	MRL	0	0	0
		Cadmium	101	0	MRL	0	0	0
		Calcium	101	0	MRL	0	0	0
		Chromium	101	0	MRL	0	0	0
		Cobalt	101	0	MRL	0	0	0
		Copper	101	0	MRL	0	0	0
		Iron	101	0	MRL	0	0	0
		Lead	144	0	MRL	0	0	0
		Magnesium	101	0	MRL	0	0	0
		Manganese	101	0	MRL	0	0	0
		Mercury	101	3	MRL	3	0	3
		Nickel	101	0	MRL	0	0	0
		Potassium	101	0	MRL	0	0	0
		Selenium	101	59	MRL	42	17	42
		Silver	101	0	MRL	0	0	0
		Sodium	101	0	MRL	0	0	0

Table 3. 2010 Beach Sediment Data Review of How Non-detect Results Are Reported

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ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Metals/Metalloids (continued)								
		Thallium	101	3	MRL	0	3	0
		Uranium	53	0	MRL	0	0	0
		Vanadium	101	0	MRL	0	0	0
		Zinc	101	0	MRL	0	0	0
PAHs								
	Columbia Analytical Services							
		1,1'-Biphenyl	12	12	MRL	12	0	12
		2-Methylnaphthalene	12	5	MRL	5	0	5
		Acenaphthene	12	12	MRL	12	0	12
		Acenaphthylene	12	12	MRL	12	0	12
		Anthracene	12	12	MRL	12	0	12
		Benzo[a]anthracene	12	9	MRL	9	0	9
		Benzo[a]pyrene	12	9	MRL	9	0	9
		Benzo[b]fluoranthene	12	7	MRL	7	0	7
		Benzo[g,h,i]perylene	12	8	MRL	8	0	8
		Benzo[k]fluoranthene	12	11	MRL	11	0	11
		Chrysene	12	6	MRL	6	0	6
		Dibenzo[a,h]anthracene	12	12	MRL	12	0	12
		Dibenzofuran	12	11	MRL	11	0	11
		Fluoranthene	12	7	MRL	7	0	7
		Fluorene	12	12	MRL	12	0	12
		Indeno[1,2,3-cd]pyrene	12	10	MRL	10	0	10
		Naphthalene	12	3	MRL	2	1	2
		Phenanthrene	12	5	MRL	5	0	5
		Pyrene	12	7	MRL	7	0	7
PBDEs								
	SGS NC							
		2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether	2	2	MRL	2	0	2
		2,2',3,3',4,4'-Hexabromodiphenyl ether	2	2	MRL	2	0	2
		2,2',3,4,4',5,5',6-Octabromodiphenyl ether	2	2	MRL	2	0	2
		2,2',3,4,4',5',6-Heptabromodiphenyl ether	2	1	MRL	1	0	1
		2,2',3,4,4',6,6'-Heptabromodiphenyl ether	2	2	MRL	2	0	2
		2,2',3,4,4'-Pentabromodiphenyl ether	2	2	MRL	1	1	1
		2,2',4,4',5,5'-Hexabromodiphenyl ether	2	1	MRL	1	0	1
		2,2',4,4',5,6'-Hexabromodiphenyl ether	2	1	MRL	1	0	1
		2,2',4,4',5-Pentabromodiphenyl ether	2	2	MRL	0	2	0
		2,2',4,4',6-Pentabromodiphenyl ether	2	1	MRL	1	0	1
		2,2',4,4'-Tetrabromodiphenyl ether	2	1	MRL	0	1	0
		2,2',4,5'-Tetrabromodiphenyl ether	2	0	MRL	0	0	0
		2,3,3',4,4',5',6-Heptabromodiphenyl ether	2	2	MRL	2	0	2
		2,3,3',4,4',5,6-Heptabromodiphenyl ether	2	2	MRL	2	0	2
		2,3',4,4'-Tetrabromodiphenyl ether	2	1	MRL	1	0	1

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ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PBDEs (continued)								
		2,3',4',6-Tetrabromodiphenyl ether	2	2	MRL	2	0	2
		Coelution of PBDE 138 and 166	2	2	MRL	2	0	2
		Coelution of PBDE 17 and 25	2	2	MRL	2	0	2
		Coelution of PBDE 28 and 33	2	2	MRL	2	0	2
		Decabromodiphenyl ether	2	2	MRL	1	0	1
PCBs								
	Columbia Analytical Services							
		Aroclor 1016	12	12	MRL	12	0	12
		Aroclor 1221	12	12	MRL	12	0	12
		Aroclor 1232	12	12	MRL	12	0	12
		Aroclor 1242	12	12	MRL	12	0	12
		Aroclor 1248	12	12	MRL	12	0	12
		Aroclor 1254	12	12	MRL	12	0	12
		Aroclor 1260	12	12	MRL	12	0	12
		Aroclor 1262	12	12	MRL	12	0	12
		Aroclor 1268	12	12	MRL	12	0	12
	SGS NC							
		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',4,4',5,5'-Octachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',4,4',5,6'-Octachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',4,4',5,6-Octachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',4,4',5-Heptachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',4,5,5'-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',4,5',6,6'-Octachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',4,5',6'-Heptachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',4,5',6-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',4,5,6'-Heptachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',4,5'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',4,6,6'-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',4,6'-Hexachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',4,6-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',4-Pentachlorobiphenyl	2	2	MRL	1	0	1
		2,2',3,3',5,5',6,6'-Octachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',5,5',6-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',5,5'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',5,6,6'-Heptachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',5,6-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',5-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',6,6'-Hexachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,3',6-Pentachlorobiphenyl	2	2	MRL	1	0	1

Table 3. 2010 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2010 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,2',3,4,4',5,5',6-Octachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,4,4',5,6,6'-Octachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,4',5,6'-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,4',5,6-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,4',5-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,4',6,6'-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,4',6-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4',5,5',6-Heptachlorobiphenyl	2	1	MRL	0	0	0
		2,2',3,4',5,5'-Hexachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,4,5,5'-Hexachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,4',5,6,6'-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,5,6,6'-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4',5,6'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,5',6-Hexachlorobiphenyl	2	2	MRL	1	0	1
		2,2',3,4,5,6'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,5,6-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4',6,6'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,6,6'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4',6'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,6'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,5,5'-Pentachlorobiphenyl	2	1	MRL	1	0	1
		2,2',3,5,6,6'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,5',6-Pentachlorobiphenyl	2	0	MRL	0	0	0
		2,2',3,5,6'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,5-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,6,6'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,6'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3-Trichlorobiphenyl	2	2	MRL	1	0	1
		2,2',4,4',5,6'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',4,4',5-Pentachlorobiphenyl	2	1	MRL	1	0	1
		2,2',4,4',6,6'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',4,5',6-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',4,5-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,2',4,6,6'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',4-Trichlorobiphenyl	2	1	MRL	0	0	0
		2,2',5,5'-Tetrachlorobiphenyl	2	0	MRL	0	0	0
		2,2',6,6'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,2',6-Trichlorobiphenyl	2	1	MRL	1	0	1
		2,2'-Dichlorobiphenyl	2	1	MRL	0	1	0
		2,3,3',4,4',5,5',6-Octachlorobiphenyl	2	2	MRL	2	0	2

Table 3. 2010 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2010 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,3,3',4,4',5,5'-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4,4',5',6-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4,4',5,6-Heptachlorobiphenyl	2	1	MRL	1	0	1
		2,3,3',4,4',5-Hexachlorobiphenyl	2	2	MRL	1	0	1
		2,3,3',4,4',6-Hexachlorobiphenyl	2	1	MRL	1	0	1
		2,3,3',4,4'-Pentachlorobiphenyl	2	0	MRL	0	0	0
		2,3,3',4,5,5',6-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4',5,5'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4,5,5'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4',5',6-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4,5',6-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4,5,6-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4',5'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4,5-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4,6-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',4'-Tetrachlorobiphenyl	2	1	MRL	0	0	0
		2,3,3',4-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',5,5',6-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',5,5'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',5,6-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',5'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',5-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3,3',6-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4,4',5,5'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4,4',5'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4,4',5-Pentachlorobiphenyl	2	0	MRL	0	0	0
		2,3,4,4',5-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4,4'-Tetrachlorobiphenyl	2	0	MRL	0	0	0
		2,3,4,4'-Tetrachlorobiphenyl	2	1	MRL	0	0	0
		2,3',4,5,5'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4,5',6-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4,5'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4,5-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3,4',5-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3,4',6-Tetrachlorobiphenyl	2	1	MRL	0	0	0
		2,3',4-Trichlorobiphenyl	2	1	MRL	1	0	1
		2,3,4'-Trichlorobiphenyl	2	1	MRL	0	1	0
		2,3',5,5'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3',5',6-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3',5'-Trichlorobiphenyl	2	2	MRL	2	0	2
		2,3,5-Trichlorobiphenyl	2	1	MRL	1	0	1
		2,3',6-Trichlorobiphenyl	2	2	MRL	2	0	2

Table 3. 2010 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2010 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,3,6-Trichlorobiphenyl	2	2	MRL	2	0	2
		2,3'-Dichlorobiphenyl	2	0	MRL	0	0	0
		2,3-Dichlorobiphenyl	2	1	MRL	0	0	0
		2,4',5-Trichlorobiphenyl	2	2	MRL	0	2	0
		2,4',6-Trichlorobiphenyl	2	1	MRL	1	0	1
		2,4'-Dichlorobiphenyl	2	1	MRL	0	1	0
		2,4-Dichlorobiphenyl	2	1	MRL	0	0	0
		2,5-Dichlorobiphenyl	2	1	MRL	0	0	0
		2,6-Dichlorobiphenyl	2	2	MRL	1	0	1
		3,3',4,4',5,5'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		3,3',4,4',5-Pentachlorobiphenyl	2	2	MRL	2	0	2
		3,3',4,4'-Tetrachlorobiphenyl	2	2	MRL	1	0	1
		3,3',4,5,5'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		3,3',4,5'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		3,3',4,5-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		3,3',4-Trichlorobiphenyl	2	2	MRL	1	0	1
		3,3',5,5'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		3,3',5-Trichlorobiphenyl	2	2	MRL	2	0	2
		3,3'-Dichlorobiphenyl	2	2	MRL	0	2	0
		3,4,4',5-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		3,4,4'-Trichlorobiphenyl	2	2	MRL	0	2	0
		3,4',5-Trichlorobiphenyl	2	2	MRL	2	0	2
		3,4,5-Trichlorobiphenyl	2	2	MRL	2	0	2
		Coelution of PCB 107 and 124	2	2	MRL	2	0	2
		Coelution of PCB 110 and 115	2	0	MRL	0	0	0
		Coelution of PCB 12 and 13	2	1	MRL	0	0	0
		Coelution of PCB 128 and 166	2	1	MRL	1	0	1
		Coelution of PCB 135 and 151	2	0	MRL	0	0	0
		Coelution of PCB 147 and 149	2	0	MRL	0	0	0
		Coelution of PCB 153 and 168	2	0	MRL	0	0	0
		Coelution of PCB 171 and 173	2	1	MRL	1	0	1
		Coelution of PCB 18 and 30	2	2	MRL	0	2	0
		Coelution of PCB 180 and 193	2	1	MRL	0	0	0
		Coelution of PCB 183 and 185	2	1	MRL	1	0	1
		Coelution of PCB 197 and 200	2	2	MRL	2	0	2
		Coelution of PCB 198 and 199	2	1	MRL	1	0	1
		Coelution of PCB 20 and 28	2	0	MRL	0	0	0
		Coelution of PCB 21 and 33	2	0	MRL	0	0	0
		Coelution of PCB 26 and 29	2	1	MRL	1	0	1
		Coelution of PCB 44, 47, and 65	2	0	MRL	0	0	0
		Coelution of PCB 45 and 51	2	1	MRL	0	0	0
		Coelution of PCB 49 and 69	2	0	MRL	0	0	0

Table 3. 2010 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2010 Beach Sediment [a]		
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ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		Coelution of PCB 50 and 53	2	1	MRL	0	0	0
		Coelution of PCB 61,70,74 and 76	2	1	MRL	0	1	0
		Coelution of PCB 85+116+117	2	1	MRL	1	0	1
		Coelution of PCB 86, 87, 97, 108, 119, and 125	2	1	MRL	0	0	0
		Coelution of PCB 88 and 91	2	1	MRL	1	0	1
		Coelution of PCB 90, 101, and 113	2	1	MRL	0	1	0
		Decachlorobiphenyl (PCB 209)	2	1	MRL	1	0	1
		PCB congener 1	2	1	MRL	0	0	0
		PCB congener 14	2	2	MRL	2	0	2
		PCB congener 15	2	2	MRL	0	2	0
		PCB congener 2	2	2	MRL	1	0	1
		PCB congener 3	2	0	MRL	0	0	0
		PCB TEQ using WHO 2005 TEFs ND=0 DL	2	0	MRL	0	0	0
		PCB TEQ using WHO 2005 TEFs ND=1/2 DL	2	0	MRL	0	0	0
		PCB_129+138+163	2	0	MRL	0	0	0
		PCB_cong_40+71	2	2	MRL	1	0	1
		PCB_cong_93+100	2	2	MRL	1	1	1
Pesticides/Herbicides								
	Columbia Analytical Services							
		2,4'-DDD	12	12	MRL	12	0	12
		2,4'-DDE	12	12	MRL	12	0	12
		2,4'-DDT	12	12	MRL	12	0	12
		4,4'-DDD	12	12	MRL	12	0	12
		4,4'-DDE	12	10	MRL	10	0	10
		4,4'-DDT	12	11	MRL	11	0	11
		Aldrin	12	12	MRL	12	0	12
		alpha-Benzenehexachloride	12	12	MRL	12	0	12
		alpha-Chlordane	12	12	MRL	12	0	12
		beta-BHC	12	11	MRL	11	0	11
		Chlordane	12	12	MRL	12	0	12
		cis-Nonachlor	12	12	MRL	12	0	12
		delta-BHC	12	12	MRL	12	0	12
		Dieldrin	12	12	MRL	12	0	12
		Endosulfan I	12	12	MRL	12	0	12
		Endosulfan II	12	12	MRL	12	0	12
		Endosulfan sulfate	12	12	MRL	12	0	12
		Endrin	12	12	MRL	12	0	12
		Endrin aldehyde	12	12	MRL	12	0	12
		Endrin ketone	12	12	MRL	12	0	12
		gamma-BHC	12	12	MRL	12	0	12
		gamma-Chlordane	12	12	MRL	12	0	12
		Heptachlor	12	12	MRL	12	0	12

Table 3. 2010 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2010 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Pesticides/Herbicides (continued)								
		Heptachlor epoxide	12	12	MRL	12	0	12
		Methoxychlor	12	12	MRL	12	0	12
		Mirex	12	12	MRL	12	0	12
		Oxychlordane	12	12	MRL	12	0	12
		Toxaphene	12	12	MRL	12	0	12
		trans-Nonachlor	12	12	MRL	12	0	12
Radionuclides								
	Pace Analytical							
		Radium-226	2	0	MRL	0	0	0
		Uranium-238	2	0	MRL	0	0	0
SVOCs								
	Columbia Analytical Services							
		1,2,4-Trichlorobenzene	12	12	MRL	12	0	12
		1,2-Dichlorobenzene	12	12	MRL	12	0	12
		1,3-Dichlorobenzene	12	12	MRL	12	0	12
		1,4-Dichlorobenzene	12	12	MRL	12	0	12
		2,2'-oxybis(1-Chloropropane)	12	12	MRL	12	0	12
		2,4,5-Trichlorophenol	12	12	MRL	12	0	12
		2,4,6-Trichlorophenol	12	12	MRL	12	0	12
		2,4-Dichlorophenol	12	12	MRL	12	0	12
		2,4-Dimethylphenol	12	12	MRL	12	0	12
		2,4-Dinitrophenol	12	12	MRL	12	0	12
		2,4-Dinitrotoluene	12	12	MRL	12	0	12
		2,6-Dinitrotoluene	12	12	MRL	12	0	12
		2-Chloronaphthalene	12	12	MRL	12	0	12
		2-Chlorophenol	12	12	MRL	12	0	12
		2-Methylphenol	12	12	MRL	12	0	12
		2-Nitroaniline	12	12	MRL	12	0	12
		2-Nitrophenol	12	12	MRL	12	0	12
		3,3'-Dichlorobenzidine	12	12	MRL	12	0	12
		3-Nitroaniline	12	12	MRL	12	0	12
		4,6-Dinitro-2-methylphenol	12	12	MRL	12	0	12
		4-Bromophenyl-phenylether	12	12	MRL	12	0	12
		4-Chloro-3-methylphenol	12	12	MRL	12	0	12
		4-Chloroaniline	12	12	MRL	12	0	12
		4-Chlorophenyl-phenyl ether	12	12	MRL	12	0	12
		4-Methylphenol	12	12	MRL	12	0	12
		4-Nitroaniline	12	12	MRL	12	0	12
		4-Nitrophenol	12	12	MRL	12	0	12
		Acetophenone	12	12	MRL	11	1	11
		Benzaldehyde	12	11	MRL	11	0	11
		Benzoic acid	12	12	MRL	12	0	12

Table 3. 2010 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2010 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	67	2,168

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
SVOCs (continued)								
		Benzyl alcohol	12	12	MRL	12	0	12
		Benzyl n-butyl phthalate	12	10	MRL	10	0	10
		bis(2-Chloroethoxy)methane	12	12	MRL	12	0	12
		Bis(2-chloroethyl)ether	12	12	MRL	12	0	12
		bis(2-Ethylhexyl)phthalate	12	3	MRL	3	0	3
		Caprolactam	12	12	MRL	12	0	12
		Carbazole	12	12	MRL	12	0	12
		Diethyl phthalate	12	12	MRL	12	0	12
		Dimethyl phthalate	12	12	MRL	12	0	12
		Di-n-butyl phthalate	12	12	MRL	12	0	12
		Di-n-octylphthalate	12	12	MRL	2	10	2
		Hexachlorobenzene	12	11	MRL	11	0	11
		Hexachlorobutadiene	12	12	MRL	12	0	12
		Hexachlorocyclopentadiene	12	12	MRL	12	0	12
		Hexachloroethane	12	12	MRL	12	0	12
		Isophorone	12	12	MRL	12	0	12
		Nitrobenzene	12	12	MRL	12	0	12
		N-Nitrosodi-n-propylamine	12	12	MRL	12	0	12
		N-Nitrosodiphenylamine	12	12	MRL	12	0	12
		Pentachlorophenol	12	12	MRL	12	0	12
		Phenol	12	12	MRL	12	0	12
		2010 Beach Sediment [b]	**4,816**	**1,608**	**MRL**	**1,523**	**60**	**1,523**

Notes:

[a] The December 2011 analysis and summary included results for lab replicates, field replicates, field triplicates, blank water, rinse water/QC samples whereas the current table does not.

[b] Excludes all duplicate/triplicate/replicate/blank and rinsewater QC sample results

Table 4. 2011 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2011 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Conventionals								
	Columbia Analytical Services							
		Organic carbon	208	1	MRL	1	0	1
		pH	208	0	MRL	0	0	0
		Solids	805	0	MRL	0	0	0
		Sulfide	208	72	MRL	72	0	72
Dioxins/Furans								
	SGS NC							
		1,2,3,4,6,7,8-Heptachlorodibenzodioxin	6	1	MRL	0	0	0
		1,2,3,4,6,7,8-Heptachlorodibenzofuran	6	1	MRL	0	0	0
		1,2,3,4,7,8,9-Heptachlorodibenzofuran	6	5	MRL	5	0	5
		1,2,3,4,7,8-Hexachlorodibenzodioxin	6	3	MRL	3	0	3
		1,2,3,4,7,8-Hexachlorodibenzofuran	6	5	MRL	3	0	3
		1,2,3,6,7,8-Hexachlorodibenzodioxin	6	4	MRL	3	0	3
		1,2,3,6,7,8-Hexachlorodibenzofuran	6	3	MRL	3	0	3
		1,2,3,7,8,9-Hexachlorodibenzodioxin	6	5	MRL	3	0	3
		1,2,3,7,8,9-Hexachlorodibenzofuran	6	5	MRL	3	0	3
		1,2,3,7,8-Pentachlorodibenzofuran	6	4	MRL	3	0	3
		1,2,3,7,8-Pentachlorodibenzo-p-dioxin	6	6	MRL	3	0	3
		2,3,4,6,7,8-Hexachlorodibenzofuran	6	5	MRL	3	0	3
		2,3,4,7,8-Pentachlorodibenzofuran	6	3	MRL	2	0	2
		2,3,7,8-Tetrachlorodibenzodioxin	6	6	MRL	4	0	4
		2,3,7,8-Tetrachlorodibenzofuran	6	0	MRL	0	0	0
		Heptachlorodibenzodioxin (Total)	6	0	MRL	0	0	0
		Heptachlorodibenzofuran (Total)	6	0	MRL	0	0	0
		Hexachlorodibenzodioxin (Total)	6	0	MRL	0	0	0
		Hexachlorodibenzofuran (Total)	6	1	MRL	1	0	1
		Octachlorodibenzodioxin	6	0	MRL	0	0	0
		Octachlorodibenzofuran	6	0	MRL	0	0	0
		Pentachlorodibenzodioxin (Total)	6	5	MRL	5	0	5
		Pentachlorodibenzofuran (Total)	6	0	MRL	0	0	0
		Tetrachlorodibenzodioxin (Total)	6	5	MRL	5	0	5
		Tetrachlorodibenzofuran (Total)	6	0	MRL	0	0	0

Table 4. 2011 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2011 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Grain Size								
	Columbia Analytical Services							
		Clay	208	0	MRL	0	0	0
		Coarse Gravel	208	0	MRL	0	0	0
		Coarse sand	208	0	MRL	0	0	0
		Cobbles	208	0	MRL	0	0	0
		Fine Gravel	208	23	MRL	0	0	0
		Fine Sand	208	0	MRL	0	0	0
		Med. Sand	208	0	MRL	0	0	0
		Medium Gravel	208	39	MRL	0	0	0
		Silt	208	0	MRL	0	0	0
		Very Coarse Gravel	208	1	MRL	0	0	0
		Very Coarse Sand	208	0	MRL	0	0	0
		Very Fine Gravel	208	0	MRL	0	0	0
		Very fine sand	208	0	MRL	0	0	0
Metals/Metalloids								
	Columbia Analytical Services							
		Aluminum	623	0	MRL	0	0	0
		Antimony	623	76	MRL	16	60	16
		Arsenic	849	0	MRL	0	0	0
		Barium	623	0	MRL	0	0	0
		Beryllium	623	0	MRL	0	0	0
		Cadmium	629	40	MRL	0	40	0
		Calcium	623	0	MRL	0	0	0
		Chromium	629	0	MRL	0	0	0
		Cobalt	623	0	MRL	0	0	0
		Copper	623	0	MRL	0	0	0
		Iron	623	0	MRL	0	0	0
		Lead	849	0	MRL	0	0	0
		Magnesium	623	0	MRL	0	0	0
		Manganese	623	0	MRL	0	0	0
		Mercury	623	48	MRL	48	0	48
		Nickel	623	0	MRL	0	0	0
		Potassium	623	0	MRL	0	0	0
		Selenium	629	480	MRL	480	0	480

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ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Metals/Metalloids (continued)								
		Silver	623	100	MRL	2	98	2
		Sodium	623	0	MRL	0	0	0
		Thallium	629	55	MRL	0	55	0
		Uranium	312	0	MRL	0	0	0
		Vanadium	629	0	MRL	0	0	0
		Zinc	623	0	MRL	0	0	0
PAHs								
	Columbia Analytical Services							
		1,1'-Biphenyl	78	71	MRL	71	0	71
		2-Methylnaphthalene	78	57	MRL	57	0	57
		Acenaphthene	78	78	MRL	78	0	78
		Acenaphthylene	78	75	MRL	75	0	75
		Anthracene	78	71	MRL	71	0	71
		Benzo[a]anthracene	78	61	MRL	61	0	61
		Benzo[a]pyrene	78	62	MRL	62	0	62
		Benzo[b]fluoranthene	78	60	MRL	60	0	60
		Benzo[g,h,i]perylene	78	61	MRL	61	0	61
		Benzo[k]fluoranthene	78	67	MRL	67	0	67
		Chrysene	78	61	MRL	61	0	61
		Dibenzo[a,h]anthracene	78	74	MRL	74	0	74
		Dibenzofuran	78	67	MRL	67	0	67
		Fluoranthene	78	59	MRL	59	0	59
		Fluorene	78	67	MRL	67	0	67
		Indeno[1,2,3-cd]pyrene	78	64	MRL	64	0	64
		Naphthalene	78	45	MRL	45	0	45
		Phenanthrene	78	62	MRL	59	3	59
		Pyrene	78	53	MRL	53	0	53
PBDEs								
	SGS NC							
		2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether	6	6	MRL	0	4	0
		2,2',3,3',4,4'-Hexabromodiphenyl ether	6	6	MRL	6	0	6
		2,2',3,4,4',5,5',6-Octabromodiphenyl ether	6	5	MRL	3	0	3
		2,2',3,4,4',5',6-Heptabromodiphenyl ether	6	2	MRL	0	0	0
		2,2',3,4,4',6,6'-Heptabromodiphenyl ether	6	5	MRL	4	0	4

Table 4. 2011 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2011 Beach Sediment [a]		
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ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PBDEs (continued)								
		2,2',3,4,4'-Pentabromodiphenyl ether	6	1	MRL	0	0	0
		2,2',4,4',5,5'-Hexabromodiphenyl ether	6	0	MRL	0	0	0
		2,2',4,4',5,6'-Hexabromodiphenyl ether	6	0	MRL	0	0	0
		2,2',4,4',5-Pentabromodiphenyl ether	6	0	MRL	0	0	0
		2,2',4,4',6-Pentabromodiphenyl ether	6	0	MRL	0	0	0
		2,2',4,4'-Tetrabromodiphenyl ether	6	0	MRL	0	0	0
		2,2',4,5'-Tetrabromodiphenyl ether	6	1	MRL	0	0	0
		2,3,3',4,4',5',6-Heptabromodiphenyl ether	6	6	MRL	6	0	6
		2,3,3',4,4',5,6-Heptabromodiphenyl ether	6	6	MRL	6	0	6
		2,3',4,4'-Tetrabromodiphenyl ether	6	3	MRL	0	0	0
		2,3',4',6-Tetrabromodiphenyl ether	6	3	MRL	2	0	2
		Coelution of PBDE 138 and 166	6	4	MRL	1	0	1
		Coelution of PBDE 17 and 25	6	3	MRL	0	0	0
		Coelution of PBDE 28 and 33	6	6	MRL	4	0	4
		Decabromodiphenyl ether	6	4	MRL	0	1	0
PCBs								
	Columbia Analytical Services							
		Aroclor 1016	78	78	MRL	78	0	78
		Aroclor 1221	78	78	MRL	78	0	78
		Aroclor 1232	78	78	MRL	78	0	78
		Aroclor 1242	78	78	MRL	78	0	78
		Aroclor 1248	78	78	MRL	78	0	78
		Aroclor 1254	78	77	MRL	77	0	77
		Aroclor 1260	78	74	MRL	74	0	74
		Aroclor 1262	78	78	MRL	78	0	78
		Aroclor 1268	78	78	MRL	78	0	78
	SGS NC							
		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,4',5,5'-Octachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,4',5,6'-Octachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,4',5,6-Octachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,4',5-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	6	0	MRL	0	0	0

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Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,2',3,3',4,5,5'-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,5',6,6'-Octachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,5',6'-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,5',6-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,5,6'-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,5'-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,6,6'-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,6'-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4,6-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',4-Pentachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',5,5',6,6'-Octachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',5,5',6-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',5,5'-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',5,6,6'-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',5,6-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',5-Pentachlorobiphenyl	6	1	MRL	0	0	0
		2,2',3,3',6,6'-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,3',6-Pentachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,4,4',5,5',6-Octachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,4,4',5,6,6'-Octachlorobiphenyl	6	6	MRL	6	0	6
		2,2',3,4,4',5,6'-Heptachlorobiphenyl	6	5	MRL	4	0	4
		2,2',3,4,4',5,6-Heptachlorobiphenyl	6	5	MRL	4	0	4
		2,2',3,4,4',5-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,4,4',6,6'-Heptachlorobiphenyl	6	6	MRL	6	0	6
		2,2',3,4',5,5',6-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,4',5,5'-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,4,5,5'-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,4',5,6,6'-Heptachlorobiphenyl	6	5	MRL	5	0	5
		2,2',3,4,5,6,6'-Heptachlorobiphenyl	6	6	MRL	6	0	6
		2,2',3,4',5,6'-Hexachlorobiphenyl	6	5	MRL	4	0	4
		2,2',3,4,5',6-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,4,5,6'-Hexachlorobiphenyl	6	6	MRL	6	0	6
		2,2',3,4,5,6-Hexachlorobiphenyl	6	6	MRL	6	0	6
		2,2',3,4',6,6'-Hexachlorobiphenyl	6	5	MRL	4	0	4

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ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,2',3,4,6,6'-Hexachlorobiphenyl	6	6	MRL	5	0	5
		2,2',3,4,6'-Pentachlorobiphenyl	6	2	MRL	1	0	1
		2,2',3,4'-Tetrachlorobiphenyl	6	2	MRL	0	2	0
		2,2',3,4-Tetrachlorobiphenyl	6	1	MRL	0	0	0
		2,2',3,5,5'-Pentachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,5,6,6'-Hexachlorobiphenyl	6	5	MRL	4	0	4
		2,2',3,5',6-Pentachlorobiphenyl	6	0	MRL	0	0	0
		2,2',3,5,6'-Pentachlorobiphenyl	6	3	MRL	2	0	2
		2,2',3,5-Tetrachlorobiphenyl	6	2	MRL	1	0	1
		2,2',3,6,6'-Pentachlorobiphenyl	6	1	MRL	0	0	0
		2,2',3,6-Tetrachlorobiphenyl	6	4	MRL	0	0	0
		2,2',3-Trichlorobiphenyl	6	5	MRL	0	4	0
		2,2',4,4',5,6'-Hexachlorobiphenyl	6	2	MRL	0	0	0
		2,2',4,4',5-Pentachlorobiphenyl	6	0	MRL	0	0	0
		2,2',4,4',6,6'-Hexachlorobiphenyl	6	5	MRL	5	0	5
		2,2',4,5',6-Pentachlorobiphenyl	6	4	MRL	2	0	2
		2,2',4,5-Tetrachlorobiphenyl	6	1	MRL	0	0	0
		2,2',4,6,6'-Pentachlorobiphenyl	6	6	MRL	6	0	6
		2,2',4-Trichlorobiphenyl	6	0	MRL	0	0	0
		2,2',5,5'-Tetrachlorobiphenyl	6	0	MRL	0	0	0
		2,2',6,6'-Tetrachlorobiphenyl	6	3	MRL	3	0	3
		2,2',6-Trichlorobiphenyl	6	2	MRL	0	0	0
		2,2'-Dichlorobiphenyl	6	6	MRL	0	6	0
		2,3,3',4,4',5,5',6-Octachlorobiphenyl	6	1	MRL	0	0	0
		2,3,3',4,4',5,5'-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,3,3',4,4',5',6-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,3,3',4,4',5,6-Heptachlorobiphenyl	6	0	MRL	0	0	0
		2,3,3',4,4',6-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,3,3',4,4'-Pentachlorobiphenyl	6	0	MRL	0	0	0
		2,3,3',4,5,5',6-Heptachlorobiphenyl	6	6	MRL	6	0	6
		2,3,3',4',5,5'-Hexachlorobiphenyl	6	6	MRL	5	0	5
		2,3,3',4,5,5'-Hexachlorobiphenyl	6	6	MRL	6	0	6
		2,3,3',4',5',6-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,3,3',4,5',6-Hexachlorobiphenyl	6	6	MRL	6	0	6

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PCBs (continued)								
		2,3,3',4,5,6-Hexachlorobiphenyl	6	6	MRL	6	0	6
		2,3,3',4',5'-Pentachlorobiphenyl	6	2	MRL	0	0	0
		2,3,3',4,5-Pentachlorobiphenyl	6	6	MRL	6	0	6
		2,3,3',4,6-Pentachlorobiphenyl	6	0	MRL	0	0	0
		2,3,3',4'-Tetrachlorobiphenyl	6	1	MRL	0	1	0
		2,3,3',4-Tetrachlorobiphenyl	6	6	MRL	6	0	6
		2,3,3',5,5',6-Hexachlorobiphenyl	6	4	MRL	4	0	4
		2,3,3',5,5'-Pentachlorobiphenyl	6	6	MRL	6	0	6
		2,3,3',5,6-Pentachlorobiphenyl	6	6	MRL	6	0	6
		2,3,3',5'-Tetrachlorobiphenyl	6	5	MRL	5	0	5
		2,3,3',5-Tetrachlorobiphenyl	6	6	MRL	6	0	6
		2,3',4,4',5,5'-Hexachlorobiphenyl	6	0	MRL	0	0	0
		2,3',4,4',5'-Pentachlorobiphenyl	6	1	MRL	0	0	0
		2,3',4,4',5-Pentachlorobiphenyl	6	0	MRL	0	0	0
		2,3,4,4',5-Pentachlorobiphenyl	6	1	MRL	0	0	0
		2,3',4,4'-Tetrachlorobiphenyl	6	1	MRL	0	1	0
		2,3,4,4'-Tetrachlorobiphenyl	6	0	MRL	0	0	0
		2,3',4,5,5'-Pentachlorobiphenyl	6	5	MRL	3	0	3
		2,3',4,5',6-Pentachlorobiphenyl	6	6	MRL	6	0	6
		2,3',4,5'-Tetrachlorobiphenyl	6	4	MRL	3	0	3
		2,3',4,5-Tetrachlorobiphenyl	6	2	MRL	0	0	0
		2,3,4',5-Tetrachlorobiphenyl	6	2	MRL	0	0	0
		2,3,4',6-Tetrachlorobiphenyl	6	1	MRL	0	1	0
		2,3',4-Trichlorobiphenyl	6	0	MRL	0	0	0
		2,3,4'-Trichlorobiphenyl	6	5	MRL	0	5	0
		2,3',5,5'-Tetrachlorobiphenyl	6	4	MRL	3	0	3
		2,3',5',6-Tetrachlorobiphenyl	6	5	MRL	5	0	5
		2,3',5'-Trichlorobiphenyl	6	6	MRL	5	0	5
		2,3,5-Trichlorobiphenyl	6	6	MRL	5	0	5
		2,3',6-Trichlorobiphenyl	6	6	MRL	5	1	5
		2,3,6-Trichlorobiphenyl	6	5	MRL	4	0	4
		2,3'-Dichlorobiphenyl	6	6	MRL	0	3	0
		2,3-Dichlorobiphenyl	6	6	MRL	5	0	5
		2,4',5-Trichlorobiphenyl	6	5	MRL	0	5	0

Table 4. 2011 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2011 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,4',6-Trichlorobiphenyl	6	5	MRL	0	5	0
		2,4'-Dichlorobiphenyl	6	5	MRL	0	5	0
		2,4-Dichlorobiphenyl	6	5	MRL	4	0	4
		2,5-Dichlorobiphenyl	6	6	MRL	3	0	3
		2,6-Dichlorobiphenyl	6	6	MRL	6	0	6
		3,3',4,4',5,5'-Hexachlorobiphenyl	6	5	MRL	4	0	4
		3,3',4,4',5-Pentachlorobiphenyl	6	3	MRL	2	0	2
		3,3',4,4'-Tetrachlorobiphenyl	6	0	MRL	0	0	0
		3,3',4,5,5'-Pentachlorobiphenyl	6	6	MRL	6	0	6
		3,3',4,5'-Tetrachlorobiphenyl	6	5	MRL	5	0	5
		3,3',4,5-Tetrachlorobiphenyl	6	6	MRL	6	0	6
		3,3',4-Trichlorobiphenyl	6	6	MRL	5	1	5
		3,3',5,5'-Tetrachlorobiphenyl	6	5	MRL	4	0	4
		3,3',5-Trichlorobiphenyl	6	6	MRL	6	0	6
		3,3'-Dichlorobiphenyl	6	6	MRL	0	6	0
		3,4,4',5-Tetrachlorobiphenyl	6	6	MRL	6	0	6
		3,4,4'-Trichlorobiphenyl	6	5	MRL	0	5	0
		3,4',5-Trichlorobiphenyl	6	6	MRL	6	0	6
		3,4,5-Trichlorobiphenyl	6	5	MRL	5	0	5
		Coelution of PCB 107 and 124	6	0	MRL	0	0	0
		Coelution of PCB 110 and 115	6	0	MRL	0	0	0
		Coelution of PCB 12 and 13	6	2	MRL	1	0	1
		Coelution of PCB 128 and 166	6	0	MRL	0	0	0
		Coelution of PCB 135 and 151	6	0	MRL	0	0	0
		Coelution of PCB 139 and 140	6	1	MRL	0	0	0
		Coelution of PCB 147 and 149	6	0	MRL	0	0	0
		Coelution of PCB 153 and 168	6	0	MRL	0	0	0
		Coelution of PCB 156 and 157	6	0	MRL	0	0	0
		Coelution of PCB 171 and 173	6	0	MRL	0	0	0
		Coelution of PCB 18 and 30	6	5	MRL	0	5	0
		Coelution of PCB 180 and 193	6	0	MRL	0	0	0
		Coelution of PCB 183 and 185	6	0	MRL	0	0	0
		Coelution of PCB 197 and 200	6	0	MRL	0	0	0
		Coelution of PCB 198 and 199	6	0	MRL	0	0	0

Table 4. 2011 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2011 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		Coelution of PCB 20 and 28	6	5	MRL	0	5	0
		Coelution of PCB 21 and 33	6	5	MRL	0	5	0
		Coelution of PCB 26 and 29	6	6	MRL	0	6	0
		Coelution of PCB 44, 47, and 65	6	1	MRL	0	1	0
		Coelution of PCB 45 and 51	6	1	MRL	0	0	0
		Coelution of PCB 49 and 69	6	2	MRL	0	2	0
		Coelution of PCB 50 and 53	6	5	MRL	0	3	0
		Coelution of PCB 59, 62, and 75	6	1	MRL	0	0	0
		Coelution of PCB 61,70,74 and 76	6	0	MRL	0	0	0
		Coelution of PCB 85+116+117	6	0	MRL	0	0	0
		Coelution of PCB 86, 87, 97, 108, 119, and 125	6	0	MRL	0	0	0
		Coelution of PCB 88 and 91	6	0	MRL	0	0	0
		Coelution of PCB 90, 101, and 113	6	0	MRL	0	0	0
		Decachlorobiphenyl (PCB 209)	6	0	MRL	0	0	0
		Dichlorobiphenyl homologs	6	0	MRL	0	0	0
		Heptachlorobiphenyl homologs	6	0	MRL	0	0	0
		Hexachlorobiphenyl homologs	6	0	MRL	0	0	0
		Monochlorobiphenyl homologs	6	0	MRL	0	0	0
		Nonachlorobiphenyl homologs	6	0	MRL	0	0	0
		Octachlorobiphenyl homologs	6	0	MRL	0	0	0
		PCB congener 1	6	5	MRL	0	5	0
		PCB congener 14	6	6	MRL	6	0	6
		PCB congener 15	6	2	MRL	0	2	0
		PCB congener 2	6	6	MRL	1	5	1
		PCB congener 3	6	5	MRL	0	5	0
		PCB_129+138+163	6	0	MRL	0	0	0
		PCB_cong_40+71	6	2	MRL	0	2	0
		PCB_cong_93+100	6	4	MRL	4	0	4
		Pentachlorobiphenyl homologs	6	0	MRL	0	0	0
		Tetrachlorobiphenyl homologs	6	0	MRL	0	0	0
		Trichlorobiphenyl homologs	6	0	MRL	0	0	0

Table 4. 2011 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2011 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Pesticides/Herbicides								
	Columbia Analytical Services							
		2,4'-DDD	78	78	MRL	77	1	77
		2,4'-DDE	78	78	MRL	77	1	77
		2,4'-DDT	78	75	MRL	75	0	75
		4,4'-DDD	78	78	MRL	74	4	74
		4,4'-DDE	78	71	MRL	48	23	48
		4,4'-DDT	78	74	MRL	73	1	73
		Aldrin	78	78	MRL	78	0	78
		alpha-Benzenehexachloride	78	78	MRL	78	0	78
		alpha-Chlordane	78	77	MRL	67	10	67
		beta-BHC	78	78	MRL	78	0	78
		Chlordane	78	78	MRL	78	0	78
		cis-Nonachlor	78	78	MRL	78	0	78
		delta-BHC	78	78	MRL	78	0	78
		Dieldrin	78	78	MRL	78	0	78
		Endosulfan I	78	78	MRL	78	0	78
		Endosulfan II	78	78	MRL	78	0	78
		Endosulfan sulfate	78	78	MRL	76	2	76
		Endrin	78	78	MRL	78	0	78
		Endrin aldehyde	78	78	MRL	78	0	78
		Endrin ketone	78	78	MRL	78	0	78
		gamma-BHC	78	77	MRL	77	0	77
		gamma-Chlordane	78	76	MRL	76	0	76
		Heptachlor	78	78	MRL	78	0	78
		Heptachlor epoxide	78	78	MRL	78	0	78
		Methoxychlor	78	78	MRL	77	1	77
		Oxychlordane	78	78	MRL	74	4	74
		Toxaphene	78	78	MRL	77	1	77
		trans-Nonachlor	78	78	MRL	78	0	78
Radionuclides								
	Pace Analytical							
		Radium-226	5	0	MRL	0	0	0
		Uranium-238	5	0	MRL	0	0	0

Table 4. 2011 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2011 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
SVOCs								
	Columbia Analytical Services							
		1,2,4-Trichlorobenzene	78	78	MRL	78	0	78
		1,2-Dichlorobenzene	78	78	MRL	78	0	78
		1,3-Dichlorobenzene	78	78	MRL	78	0	78
		1,4-Dichlorobenzene	78	78	MRL	78	0	78
		2,2'-oxybis(1-Chloropropane)	78	78	MRL	78	0	78
		2,4,5-Trichlorophenol	78	78	MRL	78	0	78
		2,4,6-Trichlorophenol	78	78	MRL	78	0	78
		2,4-Dichlorophenol	78	78	MRL	78	0	78
		2,4-Dimethylphenol	78	60	MRL	60	0	60
		2,4-Dinitrophenol	78	78	MRL	78	0	78
		2,4-Dinitrotoluene	78	78	MRL	78	0	78
		2,6-Dinitrotoluene	78	78	MRL	78	0	78
		2-Chloronaphthalene	78	78	MRL	78	0	78
		2-Chlorophenol	78	78	MRL	78	0	78
		2-Methylphenol	78	78	MRL	78	0	78
		2-Nitroaniline	78	78	MRL	78	0	78
		2-Nitrophenol	78	78	MRL	78	0	78
		3,3'-Dichlorobenzidine	78	78	MRL	78	0	78
		3-Nitroaniline	78	78	MRL	78	0	78
		4,6-Dinitro-2-methylphenol	78	78	MRL	78	0	78
		4-Bromophenyl-phenylether	78	78	MRL	78	0	78
		4-Chloro-3-methylphenol	78	78	MRL	78	0	78
		4-Chloroaniline	78	78	MRL	78	0	78
		4-Chlorophenyl-phenyl ether	78	78	MRL	78	0	78
		4-Methylphenol	78	72	MRL	72	0	72
		4-Nitroaniline	78	78	MRL	78	0	78
		4-Nitrophenol	78	78	MRL	78	0	78
		Acetophenone	78	70	MRL	70	0	70
		Benzaldehyde	78	69	MRL	69	0	69
		Benzoic acid	78	76	MRL	76	0	76
		Benzyl alcohol	78	77	MRL	77	0	77
		Benzyl n-butyl phthalate	78	73	MRL	73	0	73
		bis(2-Chloroethoxy)methane	78	78	MRL	78	0	78

Table 4. 2011 Beach Sediment Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2011 Beach Sediment [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	510	14,686

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
SVOCs (continued)								
		Bis(2-chloroethyl)ether	78	78	MRL	78	0	78
		bis(2-Ethylhexyl)phthalate	78	76	MRL	76	0	76
		Caprolactam	78	78	MRL	78	0	78
		Carbazole	78	74	MRL	74	0	74
		Diethyl phthalate	78	75	MRL	75	0	75
		Dimethyl phthalate	78	66	MRL	66	0	66
		Di-n-butyl phthalate	78	78	MRL	78	0	78
		Di-n-octylphthalate	78	78	MRL	78	0	78
		Hexachlorobenzene	78	76	MRL	76	0	76
		Hexachlorobutadiene	78	78	MRL	78	0	78
		Hexachlorocyclopentadiene	78	78	MRL	72	6	72
		Hexachloroethane	78	78	MRL	78	0	78
		Isophorone	78	78	MRL	78	0	78
		Nitrobenzene	78	78	MRL	78	0	78
		N-Nitrosodi-n-propylamine	78	78	MRL	78	0	78
		N-Nitrosodiphenylamine	78	78	MRL	78	0	78
		Pentachlorophenol	78	78	MRL	78	0	78
		Phenol	78	41	MRL	41	0	41
		2011 Beach Sediment [b]	**28,926**	**9,437**	**MRL**	**8,862**	**412**	**8,862**

Notes:

[a] The December 2011 analysis and summary included results for lab replicates, field replicates, field triplicates, blank water, rinse water/QC samples whereas the current table does not.

[b] Excludes all duplicate/triplicate/replicate/blank and rinsewater QC sample results

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

	December 2011 Summary of 2009 Surface Water Round 1 [a]		
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Conventionals								
	Columbia Analytical Services							
		Alkalinity	87	0	MRL	0	0	0
		Fluoride	87	0	MRL	0	0	0
		Hardness as CaCO3	94	0	MRL	0	0	0
		Organic carbon	174	174	MRL	0	174	0
		pH	87	0	MRL	0	0	0
		Sulfate	87	0	MRL	0	0	0
		Total dissolved solids	87	2	MRL	0	2	0
		Total Suspended Solids	93	89	MRL	0	89	0
Metals/Metalloids								
	Columbia Analytical Services							
		Aluminum	200	149	MRL	0	149	0
		Antimony	200	12	MRL	12	0	12
		Arsenic	200	172	MRL	57	115	57
		Barium	200	0	MRL	0	0	0
		Beryllium	200	192	MRL	192	0	192
		Bismuth	122	112	MRL	112	0	112
		Boron	122	122	MRL	122	0	122
		Cadmium	200	27	MRL	17	10	17
		Calcium	200	0	MRL	0	0	0
		Cerium	122	60	MRL	60	0	60
		Cesium	122	5	MRL	5	0	5
		Chloride ion	87	44	MRL	0	44	0
		Chromium	200	194	MRL	177	17	177
		Cobalt	200	9	MRL	0	9	0
		Copper	200	117	MRL	0	117	0
		Dysprosium	122	118	MRL	118	0	118
		Erbium	122	122	MRL	122	0	122
		Europium	122	69	MRL	69	0	69
		Gadolinium	122	119	MRL	119	0	119
		Gallium	122	119	MRL	119	0	119
		Germanium	122	120	MRL	116	4	116
		Gold	122	122	MRL	106	16	106

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2009 Surface Water Round 1 [a]	
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Metals/Metalloids (continued)								
		Holmium	122	122	MRL	122	0	122
		Indium	122	121	MRL	121	0	121
		Iron	200	114	MRL	90	24	90
		Lanthanum	122	58	MRL	58	0	58
		Lead	200	165	MRL	70	95	70
		Lithium	122	104	MRL	104	0	104
		Lutetium	122	121	MRL	121	0	121
		Magnesium	200	0	MRL	0	0	0
		Manganese	200	94	MRL	0	94	0
		Mercury	200	193	MRL	191	2	191
		Molybdenum	200	0	MRL	0	0	0
		Neodymium	122	103	MRL	103	0	103
		Nickel	200	32	MRL	3	29	3
		Niobium	122	122	MRL	122	0	122
		Potassium	200	0	MRL	0	0	0
		Praseodymium	122	111	MRL	111	0	111
		Rubidium	122	0	MRL	0	0	0
		Samarium	122	118	MRL	118	0	118
		Scandium	122	19	MRL	4	15	4
		Selenium	200	196	MRL	196	0	196
		Silica	87	6	MRL	0	6	0
		Silicon	122	0	MRL	0	0	0
		Silver	200	199	MRL	198	1	198
		Sodium	200	0	MRL	0	0	0
		Strontium	122	0	MRL	0	0	0
		Tantalum	122	121	MRL	121	0	121
		Tellurium	122	121	MRL	120	1	120
		Terbium	122	122	MRL	122	0	122
		Thallium	200	172	MRL	68	104	68
		Thorium	122	109	MRL	109	0	109
		Thulium	122	122	MRL	122	0	122
		Tin	122	120	MRL	120	0	120
		Titanium	122	121	MRL	94	27	94

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2009 Surface Water Round 1 [a]	
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Metals/Metalloids (continued)								
		Tungsten	122	122	MRL	69	53	69
		Uranium	200	0	MRL	0	0	0
		Vanadium	200	128	MRL	47	81	47
		Ytterbium	122	121	MRL	121	0	121
		Yttrium	122	33	MRL	33	0	33
		Zinc	200	197	MRL	11	186	11
	Frontier GeoSciences							
		Inorganic Arsenic	202	7	MRL	1	6	1
Nutrients								
	Columbia Analytical Services							
		Ammonia as Nitrogen	87	48	MRL	48	0	48
		Nitrate plus nitrite	87	85	MRL	67	18	67
		Phosphorus	87	85	MRL	74	11	74
PAHs								
	Columbia Analytical Services							
		1,1'-Biphenyl	44	44	MRL	44	0	44
		2-Methylnaphthalene	44	44	MRL	42	2	42
		Acenaphthene	44	44	MRL	44	0	44
		Acenaphthylene	44	41	MRL	41	0	41
		Anthracene	44	43	MRL	43	0	43
		Benzo(e)pyrene	44	42	MRL	42	0	42
		Benzo[a]anthracene	44	43	MRL	43	0	43
		Benzo[a]pyrene	44	41	MRL	41	0	41
		Benzo[b]fluoranthene	44	39	MRL	39	0	39
		Benzo[g,h,i]perylene	44	38	MRL	38	0	38
		Benzo[k]fluoranthene	44	41	MRL	41	0	41
		Chrysene	44	43	MRL	43	0	43
		Dibenzo[a,h]anthracene	44	41	MRL	41	0	41
		Dibenzofuran	44	42	MRL	42	0	42
		Fluoranthene	44	44	MRL	44	0	44
		Fluorene	44	44	MRL	44	0	44
		Indeno[1,2,3-cd]pyrene	44	41	MRL	41	0	41
		Naphthalene	44	43	MRL	3	40	3

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

December 2011 Summary of 2009 Surface Water Round 1 [a]			
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PAHs (continued)								
		Perylene	44	43	MRL	43	0	43
		Phenanthrene	44	44	MRL	40	4	40
		Pyrene	44	44	MRL	44	0	44
		Pyrene	37	36	MRL	36	0	36
PBDEs								
	SGS NC							
		2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether	44	44	MDL	44	0	0
		2,2',3,3',4,4'-Hexabromodiphenyl ether	44	44	MDL	44	0	0
		2,2',3,4,4',5,5',6-Octabromodiphenyl ether	44	44	MDL	44	0	0
		2,2',3,4,4',5',6-Heptabromodiphenyl ether	44	44	MDL	44	0	0
		2,2',3,4,4',6,6'-Heptabromodiphenyl ether	44	44	MDL	44	0	0
		2,2',3,4,4'-Pentabromodiphenyl ether	44	43	MDL	43	0	0
		2,2',4,4',5,5'-Hexabromodiphenyl ether	44	41	MDL	41	0	0
		2,2',4,4',5,6'-Hexabromodiphenyl ether	44	43	MDL	43	0	0
		2,2',4,4',5-Pentabromodiphenyl ether	44	43	MDL	43	0	0
		2,2',4,4',6-Pentabromodiphenyl ether	44	37	MDL	37	0	0
		2,2',4,4'-Tetrabromodiphenyl ether	44	44	MDL	44	0	0
		2,2',4,5'-Tetrabromodiphenyl ether	44	44	MDL	44	0	0
		2,3,3',4,4',5',6-Heptabromodiphenyl ether	44	44	MDL	44	0	0
		2,3,3',4,4',5,6-Heptabromodiphenyl ether	44	44	MDL	44	0	0
		2,3',4,4'-Tetrabromodiphenyl ether	44	41	MDL	41	0	0
		2,3',4',6-Tetrabromodiphenyl ether	44	44	MDL	44	0	0
		Coelution of PBDE 138 and 166	44	44	MDL	44	0	0
		Coelution of PBDE 17 and 25	44	42	MDL	42	0	0
		Coelution of PBDE 28 and 33	44	43	MDL	43	0	0
		Decabromodiphenyl ether	44	44	MDL	44	0	0

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

	December 2011 Summary of 2009 Surface Water Round 1 [a]		
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs								
	SGS NC							
		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,4',5,5'-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,4',5,6'-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,4',5,6-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,4',5-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,4',6,6'-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,4',6-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,4'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,5,5',6-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,5,5'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,5',6,6'-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,5',6'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,5',6-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,5,6'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,5'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,5-Hexachlorobiphenyl	44	41	MDL	37	0	0
		2,2',3,3',4,6,6'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,6'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4,6-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',4-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',5,5',6,6'-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',5,5',6-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',5,5'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',5,6,6'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',5,6'-Hexachlorobiphenyl	44	43	MDL	42	0	0
		2,2',3,3',5,6-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',5-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3',6,6'-Hexachlorobiphenyl	44	43	MDL	43	0	0
		2,2',3,3',6-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,3'-Tetrachlorobiphenyl	44	42	MDL	42	0	0

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

	December 2011 Summary of 2009 Surface Water Round 1 [a]		
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,2',3,4,4',5,5',6-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,4',5,5'-Heptachlorobiphenyl	44	42	MDL	42	0	0
		2,2',3,4,4',5,6,6'-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,4',5',6-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,4',5,6'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,4',5,6-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,4',5-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,4',6,6'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,4',6-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,4'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4',5,5',6-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4',5,5'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,5,5'-Hexachlorobiphenyl	44	43	MDL	43	0	0
		2,2',3,4',5,6,6'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,5,6,6'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4',5,6'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4',5,6-Hexachlorobiphenyl	44	40	MDL	39	0	0
		2,2',3,4,5',6-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,5,6'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,5,6-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4',5-Pentachlorobiphenyl	44	35	MDL	24	0	0
		2,2',3,4,5-Pentachlorobiphenyl	44	39	MDL	38	0	0
		2,2',3,4',6,6'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,6,6'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4',6'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,6'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4,6-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,4'-Tetrachlorobiphenyl	44	44	MDL	43	0	0
		2,2',3,4-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,5,5'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,5,6,6'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,5',6-Pentachlorobiphenyl	44	34	MDL	29	0	0
		2,2',3,5,6'-Pentachlorobiphenyl	44	44	MDL	44	0	0

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2009 Surface Water Round 1 [a]	
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,2',3,5,6-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,5'-Tetrachlorobiphenyl	44	29	MDL	23	0	0
		2,2',3,5-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,6,6'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',3,6'-Tetrachlorobiphenyl	44	44	MDL	43	0	0
		2,2',3,6-Tetrachlorobiphenyl	44	42	MDL	39	0	0
		2,2',3-Trichlorobiphenyl	44	39	MDL	34	0	0
		2,2',4,4',5,5'-Hexachlorobiphenyl	44	41	MDL	39	0	0
		2,2',4,4',5,6'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',4,4',5-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',4,4',6,6'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,2',4,5',6-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',4,5'-Tetrachlorobiphenyl	44	42	MDL	37	0	0
		2,2',4,5-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,2',4,6,6'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,2',4,6-Tetrachlorobiphenyl	44	42	MDL	42	0	0
		2,2',4-Trichlorobiphenyl	44	35	MDL	31	0	0
		2,2',5,5'-Tetrachlorobiphenyl	44	33	MDL	25	0	0
		2,2',5-Trichlorobiphenyl	44	35	MDL	33	0	0
		2,2',6,6'-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,2',6-Trichlorobiphenyl	44	41	MDL	40	0	0
		2,2'-Dichlorobiphenyl	44	31	MDL	27	0	0
		2,3,3',4,4',5,5',6-Octachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,4',5,5'-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,4',5',6-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,4',5,6-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,4',5-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,4',6-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,4'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,5,5',6-Heptachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4',5,5'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,5,5'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4',5',6-Hexachlorobiphenyl	44	44	MDL	44	0	0

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2009 Surface Water Round 1 [a]	
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,3,3',4,5',6-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,5,6-Hexachlorobiphenyl	44	44	MDL	43	0	0
		2,3,3',4',5'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4',5-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4,5-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4',6-Pentachlorobiphenyl	44	30	MDL	17	0	0
		2,3,3',4,6-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',4'-Tetrachlorobiphenyl	44	44	MDL	43	0	0
		2,3,3',4-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',5,5',6-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',5,5'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',5,6-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',5'-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',5-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3',6-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,3,3'-Trichlorobiphenyl	44	35	MDL	31	0	0
		2,3',4,4',5,5'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		2,3',4,4',5'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3',4,4',5-Pentachlorobiphenyl	44	37	MDL	28	0	0
		2,3,4,4',5-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3',4,4'-Tetrachlorobiphenyl	44	40	MDL	27	0	0
		2,3,4,4'-Tetrachlorobiphenyl	44	44	MDL	43	0	0
		2,3',4,5,5'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3',4,5',6-Pentachlorobiphenyl	44	44	MDL	44	0	0
		2,3',4,5'-Tetrachlorobiphenyl	44	44	MDL	43	0	0
		2,3',4,5-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,3,4',5-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,3,4,5-Tetrachlorobiphenyl	44	27	MDL	11	0	0
		2,3,4',6-Tetrachlorobiphenyl	44	41	MDL	41	0	0
		2,3',4-Trichlorobiphenyl	44	44	MDL	43	0	0
		2,3,4'-Trichlorobiphenyl	44	37	MDL	31	0	0
		2,3,4-Trichlorobiphenyl	44	31	MDL	27	0	0
		2,3',5,5'-Tetrachlorobiphenyl	44	44	MDL	44	0	0

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	December 2011 Summary of 2009 Surface Water Round 1 [a]		
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,3',5',6-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		2,3',5'-Trichlorobiphenyl	44	44	MDL	44	0	0
		2,3',5-Trichlorobiphenyl	44	40	MDL	36	0	0
		2,3,5-Trichlorobiphenyl	44	44	MDL	44	0	0
		2,3',6-Trichlorobiphenyl	44	43	MDL	43	0	0
		2,3,6-Trichlorobiphenyl	44	43	MDL	43	0	0
		2,3'-Dichlorobiphenyl	44	33	MDL	26	0	0
		2,3-Dichlorobiphenyl	44	43	MDL	42	0	0
		2,4',5-Trichlorobiphenyl	44	27	MDL	24	0	0
		2,4',6-Trichlorobiphenyl	44	37	MDL	32	0	0
		2,4'-Dichlorobiphenyl	44	24	MDL	24	0	0
		2,4-Dichlorobiphenyl	44	41	MDL	41	0	0
		2,5-Dichlorobiphenyl	44	43	MDL	41	0	0
		2,6-Dichlorobiphenyl	44	44	MDL	44	0	0
		3,3',4,4',5,5'-Hexachlorobiphenyl	44	44	MDL	44	0	0
		3,3',4,4',5-Pentachlorobiphenyl	44	44	MDL	44	0	0
		3,3',4,4'-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		3,3',4,5,5'-Pentachlorobiphenyl	44	44	MDL	44	0	0
		3,3',4,5'-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		3,3',4,5-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		3,3',4-Trichlorobiphenyl	44	44	MDL	44	0	0
		3,3',5,5'-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		3,3',5-Trichlorobiphenyl	44	44	MDL	44	0	0
		3,3'-Dichlorobiphenyl	44	32	MDL	32	0	0
		3,4,4',5-Tetrachlorobiphenyl	44	44	MDL	44	0	0
		3,4,4'-Trichlorobiphenyl	44	40	MDL	34	1	1
		3,4',5-Trichlorobiphenyl	44	44	MDL	44	0	0
		3,4,5-Trichlorobiphenyl	44	44	MDL	44	0	0
		3,4-Dichlorobiphenyl	44	43	MDL	42	0	0
		Decachlorobiphenyl (PCB 209)	44	44	MDL	44	0	0
		PCB congener 1	44	42	MDL	37	0	0
		PCB congener 14	44	44	MDL	44	0	0
		PCB congener 15	44	32	MDL	25	0	0

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2009 Surface Water Round 1 [a]	
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		PCB congener 2	44	44	MDL	44	0	0
		PCB congener 3	44	43	MDL	41	0	0
Pesticides/Herbicides								
	Columbia Analytical Services							
		2,4'-DDD	44	43	MRL	36	7	36
		2,4'-DDE	44	44	MRL	41	3	41
		2,4'-DDT	44	43	MRL	35	8	35
		4,4'-DDD	44	44	MRL	25	19	25
		4,4'-DDE	44	42	MRL	21	21	21
		4,4'-DDT	44	44	MRL	40	4	40
		Aldrin	44	44	MRL	36	8	36
		alpha-Benzenehexachloride	44	44	MRL	44	0	44
		alpha-Chlordane	44	44	MRL	38	6	38
		beta-BHC	44	44	MRL	44	0	44
		Chlordane	44	44	MRL	27	17	27
		cis-Nonachlor	44	44	MRL	29	15	29
		delta-BHC	44	44	MRL	44	0	44
		Dieldrin	44	44	MRL	44	0	44
		Endosulfan I	44	44	MRL	42	2	42
		Endosulfan II	44	40	MRL	28	12	28
		Endosulfan sulfate	44	44	MRL	44	0	44
		Endrin	44	44	MRL	40	4	40
		Endrin aldehyde	44	44	MRL	44	0	44
		Endrin ketone	44	44	MRL	44	0	44
		gamma-BHC	44	44	MRL	44	0	44
		gamma-Chlordane	44	38	MRL	36	2	36
		Heptachlor	44	44	MRL	40	4	40
		Heptachlor epoxide	44	44	MRL	42	2	42
		Methoxychlor	44	44	MRL	42	2	42
		Oxychlordane	44	44	MRL	16	28	16
		Toxaphene	44	44	MRL	1	43	1
		trans-Nonachlor	44	39	MRL	33	6	33

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		December 2011 Summary of 2009 Surface Water Round 1 [a]	
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Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Radionuclides								
	Isotech							
		Stable hydrogen isotope-ratio	82	0	MRL	0	0	0
		Stable oxygen isotope-ratio	82	0	MRL	0	0	0
	Pace Analytical							
		Radium-226	6	6	MRL	0	0	0
		Uranium-238	6	0	MRL	0	0	0
SVOCs								
	Columbia Analytical Services							
		1,2,4-Trichlorobenzene	44	42	MRL	42	0	42
		1,2-Dichlorobenzene	44	42	MRL	42	0	42
		1,3-Dichlorobenzene	44	44	MRL	44	0	44
		1,4-Dichlorobenzene	44	44	MRL	44	0	44
		2,2'-oxybis(1-Chloropropane)	44	44	MRL	44	0	44
		2,4,5-Trichlorophenol	44	42	MRL	42	0	42
		2,4,6-Trichlorophenol	44	43	MRL	43	0	43
		2,4-Dichlorophenol	44	44	MRL	44	0	44
		2,4-Dimethylphenol	44	44	MRL	43	1	43
		2,4-Dinitrophenol	44	44	MRL	44	0	44
		2,4-Dinitrotoluene	44	44	MRL	44	0	44
		2,6-Dinitrotoluene	44	44	MRL	44	0	44
		2-Chloronaphthalene	44	43	MRL	43	0	43
		2-Chlorophenol	44	42	MRL	42	0	42
		2-Methylphenol	44	44	MRL	44	0	44
		2-Nitroaniline	44	44	MRL	44	0	44
		2-Nitrophenol	44	44	MRL	44	0	44
		3,3'-Dichlorobenzidine	44	44	MRL	44	0	44
		3-Nitroaniline	44	44	MRL	44	0	44
		4,6-Dinitro-2-methylphenol	44	44	MRL	44	0	44
		4-Bromophenyl-phenylether	44	44	MRL	44	0	44
		4-Chloro-3-methylphenol	44	38	MRL	38	0	38
		4-Chloroaniline	44	44	MRL	44	0	44
		4-Chlorophenyl-phenyl ether	44	44	MRL	44	0	44
		4-Methylphenol	44	44	MRL	44	0	44

Table 5. 2009 Surface Water Round 1 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2009 Surface Water Round 1 [a]	
2009 Surface Water Round 1	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	3,030	15,482
HRGC/HRMS Data	ND=MDL	11,329	946

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
SVOCs (continued)								
		4-Nitroaniline	44	44	MRL	44	0	44
		4-Nitrophenol	44	44	MRL	44	0	44
		Acetophenone	44	44	MRL	44	0	44
		Benzaldehyde	44	44	MRL	44	0	44
		Benzoic acid	44	43	MRL	43	0	43
		Benzyl alcohol	44	43	MRL	43	0	43
		Benzyl n-butyl phthalate	44	44	MRL	44	0	44
		bis(2-Chloroethoxy)methane	44	44	MRL	44	0	44
		Bis(2-chloroethyl)ether	44	43	MRL	43	0	43
		bis(2-Ethylhexyl)phthalate	44	44	MRL	38	6	38
		Caprolactam	44	44	MRL	44	0	44
		Carbazole	88	87	MRL	87	0	87
		Dibenzothiophene	44	44	MRL	44	0	44
		Diethyl phthalate	44	36	MRL	36	0	36
		Dimethyl phthalate	44	42	MRL	42	0	42
		Di-n-butyl phthalate	44	44	MRL	44	0	44
		Di-n-octylphthalate	44	42	MRL	42	0	42
		Hexachlorobenzene	44	44	MRL	44	0	44
		Hexachlorobutadiene	44	43	MRL	40	3	40
		Hexachlorocyclopentadiene	44	44	MRL	44	0	44
		Hexachloroethane	44	44	MRL	44	0	44
		Isophorone	44	43	MRL	43	0	43
		Nitrobenzene	44	44	MRL	44	0	44
		N-Nitrosodi-n-propylamine	44	44	MRL	44	0	44
		N-Nitrosodiphenylamine	44	44	MRL	44	0	44
		Pentachlorophenol	44	44	MRL	44	0	44
		Phenol	44	44	MRL	44	0	44
			15,282	**10,543**	**MRL**	**8,769**	**1,768**	**8,769**
			8,184	**7,881**	**MDL**	**7,703**	**1**	**1**
		2009 Surface Water R1 [b]	**23,466**	**18,424**	**ALL**	**16,472**	**1,769**	**8,770**

Notes:

[a] The December 2011 analysis and summary included results for lab replicates, field replicates, field triplicates, blank water, rinse water/QC samples whereas the current table does not.

[b] Excludes all duplicate/triplicate/replicate/blank and rinsewater QC sample results

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 2	
2010 Surface Water Round 2	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Conventionals								
	Columbia Analytical Services							
		Alkalinity	83	0	MRL	0	0	0
		Fluoride	83	0	MRL	0	0	0
		Hardness as CaCO3	96	0	MRL	0	0	0
		Organic carbon	166	119	MRL	0	119	0
		pH	83	0	MRL	0	0	0
		Sulfate	83	0	MRL	0	0	0
		Total dissolved solids	83	6	MRL	0	6	0
		Total Suspended Solids	89	79	MRL	0	79	0
Metals/Metalloids								
	Columbia Analytical Services							
		Aluminum	196	98	MRL	16	82	16
		Antimony	196	0	MRL	0	0	0
		Arsenic	196	76	MRL	23	53	23
		Barium	196	0	MRL	0	0	0
		Beryllium	196	181	MRL	181	0	181
		Bismuth	100	89	MRL	89	0	89
		Boron	101	87	MRL	87	0	87
		Cadmium	196	70	MRL	23	47	23
		Calcium	196	0	MRL	0	0	0
		Cerium	100	48	MRL	48	0	48
		Cesium	100	2	MRL	2	0	2
		Chloride ion	83	18	MRL	0	18	0
		Chromium	196	177	MRL	162	15	162
		Cobalt	196	87	MRL	0	87	0
		Copper	196	59	MRL	0	59	0
		Dysprosium	100	91	MRL	91	0	91
		Erbium	100	99	MRL	99	0	99
		Europium	100	26	MRL	26	0	26
		Gadolinium	100	94	MRL	94	0	94
		Gallium	100	97	MRL	97	0	97
		Germanium	100	40	MRL	39	1	39
		Gold	100	100	MRL	99	1	99
		Holmium	100	100	MRL	100	0	100
		Indium	100	100	MRL	100	0	100
		Iron	196	143	MRL	87	56	87
		Lanthanum	100	13	MRL	13	0	13
		Lead	196	98	MRL	32	66	32
		Lithium	101	99	MRL	99	0	99
		Lutetium	100	100	MRL	100	0	100

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 2	
2010 Surface Water Round 2	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Metals/Metalloids (continued)								
		Magnesium	196	0	MRL	0	0	0
		Manganese	196	47	MRL	0	47	0
		Mercury	196	143	MRL	138	5	138
		Molybdenum	196	26	MRL	0	26	0
		Neodymium	100	70	MRL	70	0	70
		Nickel	196	65	MRL	0	65	0
		Niobium	100	99	MRL	96	3	96
		Potassium	196	0	MRL	0	0	0
		Praseodymium	100	74	MRL	74	0	74
		Rubidium	100	0	MRL	0	0	0
		Samarium	100	94	MRL	94	0	94
		Scandium	100	3	MRL	0	3	0
		Selenium	196	145	MRL	145	0	145
		Silica	83	0	MRL	0	0	0
		Silicon	101	0	MRL	0	0	0
		Silver	196	177	MRL	177	0	177
		Sodium	196	0	MRL	0	0	0
		Strontium	101	0	MRL	0	0	0
		Tantalum	100	98	MRL	98	0	98
		Tellurium	100	100	MRL	100	0	100
		Terbium	100	100	MRL	100	0	100
		Thallium	196	159	MRL	89	70	89
		Thorium	100	91	MRL	90	1	90
		Thulium	41	41	MRL	41	0	41
		Tin	100	99	MRL	99	0	99
		Titanium	101	76	MRL	61	15	61
		Tungsten	100	99	MRL	78	21	78
		Uranium	196	0	MRL	0	0	0
		Vanadium	196	89	MRL	64	25	64
		Ytterbium	100	98	MRL	98	0	98
		Yttrium	100	0	MRL	0	0	0
		Zinc	196	126	MRL	0	126	0
		Zirconium	100	61	MRL	61	0	61
	Frontier GeoSciences							
		Inorganic Arsenic	196	24	MRL	0	24	0
Nutrients								
	Columbia Analytical Services							
		Ammonia as Nitrogen	83	82	MRL	82	0	82
		Nitrate plus nitrite	83	11	MRL	0	11	0
		Phosphorus	83	64	MRL	64	0	64

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 2	
2010 Surface Water Round 2	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PAHs								
	Columbia Analytical Services							
		1,1'-Biphenyl	38	38	MRL	38	0	38
		2-Methylnaphthalene	38	38	MRL	37	1	37
		Acenaphthene	38	35	MRL	35	0	35
		Acenaphthylene	38	36	MRL	36	0	36
		Anthracene	38	36	MRL	36	0	36
		Benzo(e)pyrene	38	36	MRL	36	0	36
		Benzo[a]anthracene	38	35	MRL	35	0	35
		Benzo[a]pyrene	38	37	MRL	37	0	37
		Benzo[b]fluoranthene	38	36	MRL	36	0	36
		Benzo[g,h,i]perylene	38	35	MRL	35	0	35
		Benzo[k]fluoranthene	38	36	MRL	36	0	36
		Chrysene	38	36	MRL	36	0	36
		Dibenzo[a,h]anthracene	38	36	MRL	36	0	36
		Dibenzofuran	38	38	MRL	38	0	38
		Fluoranthene	38	38	MRL	37	1	37
		Fluorene	38	32	MRL	32	0	32
		Indeno[1,2,3-cd]pyrene	38	36	MRL	36	0	36
		Naphthalene	38	33	MRL	0	33	0
		Perylene	38	37	MRL	37	0	37
		Phenanthrene	38	38	MRL	35	3	35
		Pyrene	38	37	MRL	37	0	37
	Vista Analytical Laboratory							
		2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether	38	35	MDL	35	0	0
		2,2',3,3',4,4'-Hexabromodiphenyl ether	38	38	MDL	38	0	0
		2,2',3,4,4',5'-Hexabromodiphenyl ether	38	36	MDL	36	0	0
PBDEs								
		2,2',3,4,4',6,6'-Heptabromodiphenyl ether	38	38	MDL	38	0	0
		2,2',3,4,4'-Pentabromodiphenyl ether	38	34	MDL	34	0	0
		2,2',4,4',5,5'-Hexabromodiphenyl ether	38	34	MDL	34	0	0
		2,2',4,4',5,6'-Hexabromodiphenyl ether	38	29	MDL	29	0	0
		2,2',4,4',5-Pentabromodiphenyl ether	38	36	MDL	36	0	0
		2,2',4,4',6-Pentabromodiphenyl ether	38	34	MDL	34	0	0
		2,2',4,4'-Tetrabromodiphenyl ether	38	34	MDL	34	0	0
		2,2',4,5'-Tetrabromodiphenyl ether	38	27	MDL	27	0	0
		2,2',4-Tribromodiphenyl ether	38	32	MDL	32	0	0
		2,3,3',4,4',5',6-Heptabromodiphenyl ether	38	38	MDL	38	0	0
		2,3',4,4'-Tetrabromodiphenyl ether	38	26	MDL	26	0	0
		2,3',4',6-Tetrabromodiphenyl ether	38	38	MDL	38	0	0
		Coelution of PBDE 183 and 176	38	37	MDL	37	0	0

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 2	
2010 Surface Water Round 2	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PBDEs (continued)								
		Coelution of PBDE 190 and 171	38	38	MDL	38	0	0
		Coelution of PBDE 200 and 203	38	38	MDL	38	0	0
		Coelution of PBDE 28 and 33	38	38	MDL	38	0	0
		Decabromodiphenyl ether	38	34	MDL	33	0	0
PCBs								
	Vista Analytical Laboratory							
		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	38	36	MDL	36	0	0
		2,2',3,3',4,4',5,5'-Octachlorobiphenyl	38	34	MDL	34	0	0
		2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,3',4,4',5,6'-Octachlorobiphenyl	38	34	MDL	34	0	0
		2,2',3,3',4,4',5,6-Octachlorobiphenyl	38	35	MDL	35	0	0
		2,2',3,3',4,4',5-Heptachlorobiphenyl	38	33	MDL	33	0	0
		2,2',3,3',4,4',6,6'-Octachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	38	36	MDL	36	0	0
		2,2',3,3',4,5,5'-Heptachlorobiphenyl	38	37	MDL	37	0	0
		2,2',3,3',4,5',6,6'-Octachlorobiphenyl	38	36	MDL	36	0	0
		2,2',3,3',4,5,6,6'-Octachlorobiphenyl	38	37	MDL	37	0	0
		2,2',3,3',4,5',6'-Heptachlorobiphenyl	38	35	MDL	35	0	0
		2,2',3,3',4,5',6-Heptachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,3',4,5,6'-Heptachlorobiphenyl	38	34	MDL	34	0	0
		2,2',3,3',4,5'-Hexachlorobiphenyl	38	37	MDL	37	0	0
		2,2',3,3',4,6,6'-Heptachlorobiphenyl	38	37	MDL	37	0	0
		2,2',3,3',4,6'-Hexachlorobiphenyl	38	30	MDL	30	0	0
		2,2',3,3',4,6-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,3',4-Pentachlorobiphenyl	38	37	MDL	37	0	0
		2,2',3,3',5,5',6,6'-Octachlorobiphenyl	38	36	MDL	36	0	0
		2,2',3,3',5,5',6-Heptachlorobiphenyl	38	37	MDL	37	0	0
		2,2',3,3',5,5'-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,3',5,6,6'-Heptachlorobiphenyl	38	35	MDL	35	0	0
		2,2',3,3',6,6'-Hexachlorobiphenyl	38	36	MDL	36	0	0
		2,2',3,3',6-Pentachlorobiphenyl	38	33	MDL	33	0	0
		2,2',3,4,4',5,5',6-Octachlorobiphenyl	38	34	MDL	34	0	0
		2,2',3,4,4',5,6,6'-Octachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4,4',5,6'-Heptachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4,4',5,6-Heptachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4,4',5-Hexachlorobiphenyl	38	36	MDL	36	0	0
		2,2',3,4,4',6,6'-Heptachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4',5,5',6-Heptachlorobiphenyl	38	31	MDL	31	0	0
		2,2',3,4',5,5'-Hexachlorobiphenyl	38	34	MDL	34	0	0
		2,2',3,4,5,5'-Hexachlorobiphenyl	38	33	MDL	33	0	0

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

	December 2011 Summary of 2010 Surface Water Round 2		
2010 Surface Water Round 2	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,2',3,4',5,6,6'-Heptachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4,5,6,6'-Heptachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4',5,6'-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4,5',6-Hexachlorobiphenyl	38	37	MDL	37	0	0
		2,2',3,4,5,6-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4',6,6'-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4,6,6'-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4,6'-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,4'-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,5,5'-Pentachlorobiphenyl	38	35	MDL	35	0	0
		2,2',3,5,6,6'-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,5',6-Pentachlorobiphenyl	38	22	MDL	22	0	0
		2,2',3,5,6'-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,5-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,6,6'-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3,6'-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,2',3-Trichlorobiphenyl	38	34	MDL	34	0	0
		2,2',4,4',5,6'-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,2',4,4',6,6'-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,2',4,5',6-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,2',4,5-Tetrachlorobiphenyl	38	37	MDL	37	0	0
		2,2',4,6,6'-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,2',4-Trichlorobiphenyl	38	30	MDL	30	0	0
		2,2',5,5'-Tetrachlorobiphenyl	38	24	MDL	24	0	0
		2,2',6,6'-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,2',6-Trichlorobiphenyl	38	38	MDL	38	0	0
		2,2'-Dichlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',4,4',5,5',6-Octachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',4,4',5,5'-Heptachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',4,4',5',6-Heptachlorobiphenyl	38	37	MDL	37	0	0
		2,3,3',4,4',5,6-Heptachlorobiphenyl	38	36	MDL	36	0	0
		2,3,3',4,4',6-Hexachlorobiphenyl	38	36	MDL	36	0	0
		2,3,3',4,4'-Pentachlorobiphenyl	38	26	MDL	26	0	0
		2,3,3',4,5,5',6-Heptachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',4',5,5'-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',4,5,5'-Hexachlorobiphenyl	38	37	MDL	37	0	0
		2,3,3',4',5',6-Hexachlorobiphenyl	38	37	MDL	37	0	0
		2,3,3',4,5',6-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',4',5'-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',4,5-Pentachlorobiphenyl	38	38	MDL	38	0	0

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

	December 2011 Summary of 2010 Surface Water Round 2		
2010 Surface Water Round 2	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,3,3',4,6-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',4'-Tetrachlorobiphenyl	38	31	MDL	31	0	0
		2,3,3',4-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',5,5',6-Hexachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',5,5'-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',5,6-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',5'-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,3,3',5-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,3',4,4',5,5'-Hexachlorobiphenyl	38	37	MDL	37	0	0
		2,3',4,4',5'-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,3',4,4',5-Pentachlorobiphenyl	38	25	MDL	25	0	0
		2,3,4,4',5-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,3',4,4'-Tetrachlorobiphenyl	38	25	MDL	25	0	0
		2,3,4,4'-Tetrachlorobiphenyl	38	36	MDL	36	0	0
		2,3',4,5,5'-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,3',4,5',6-Pentachlorobiphenyl	38	38	MDL	38	0	0
		2,3',4,5'-Tetrachlorobiphenyl	38	31	MDL	31	0	0
		2,3',4,5-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,3,4',5-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,3,4',6-Tetrachlorobiphenyl	38	31	MDL	31	0	0
		2,3',4-Trichlorobiphenyl	38	37	MDL	37	0	0
		2,3,4'-Trichlorobiphenyl	38	32	MDL	32	0	0
		2,3',5,5'-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,3',5',6-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		2,3',5'-Trichlorobiphenyl	38	38	MDL	38	0	0
		2,3,5-Trichlorobiphenyl	38	38	MDL	38	0	0
		2,3',6-Trichlorobiphenyl	38	38	MDL	38	0	0
		2,3,6-Trichlorobiphenyl	38	38	MDL	38	0	0
		2,3'-Dichlorobiphenyl	38	38	MDL	38	0	0
		2,3-Dichlorobiphenyl	38	38	MDL	38	0	0
		2,4',5-Trichlorobiphenyl	38	36	MDL	36	0	0
		2,4',6-Trichlorobiphenyl	38	33	MDL	33	0	0
		2,4'-Dichlorobiphenyl	38	38	MDL	38	0	0
		2,4-Dichlorobiphenyl	38	38	MDL	38	0	0
		2,5-Dichlorobiphenyl	38	38	MDL	38	0	0
		2,6-Dichlorobiphenyl	38	38	MDL	38	0	0
		3,3',4,4',5,5'-Hexachlorobiphenyl	38	38	MDL	38	0	0
		3,3',4,4',5-Pentachlorobiphenyl	38	38	MDL	38	0	0
		3,3',4,4'-Tetrachlorobiphenyl	38	37	MDL	37	0	0
		3,3',4,5,5'-Pentachlorobiphenyl	38	38	MDL	38	0	0

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

	December 2011 Summary of 2010 Surface Water Round 2		
2010 Surface Water Round 2	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		3,3',4,5'-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		3,3',4,5-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		3,3',4-Trichlorobiphenyl	38	38	MDL	38	0	0
		3,3',5,5'-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		3,3',5-Trichlorobiphenyl	38	38	MDL	38	0	0
		3,3'-Dichlorobiphenyl	38	23	MDL	23	0	0
		3,4,4',5-Tetrachlorobiphenyl	38	38	MDL	38	0	0
		3,4,4'-Trichlorobiphenyl	38	36	MDL	36	0	0
		3,4',5-Trichlorobiphenyl	38	38	MDL	38	0	0
		3,4,5-Trichlorobiphenyl	38	38	MDL	38	0	0
		Coelution of PCB 107 and 124	38	38	MDL	38	0	0
		Coelution of PCB 110 and 115	38	24	MDL	24	0	0
		Coelution of PCB 12 and 13	38	38	MDL	38	0	0
		Coelution of PCB 128 and 166	38	35	MDL	35	0	0
		Coelution of PCB 129, 138, 160, and 163	38	21	MDL	21	0	0
		Coelution of PCB 134 and 143	38	37	MDL	37	0	0
		Coelution of PCB 135 and 151	38	36	MDL	36	0	0
		Coelution of PCB 139 and 140	38	38	MDL	38	0	0
		Coelution of PCB 147 and 149	38	29	MDL	29	0	0
		Coelution of PCB 153 and 168	38	17	MDL	17	0	0
		Coelution of PCB 156 and 157	38	35	MDL	35	0	0
		Coelution of PCB 171 and 173	38	36	MDL	36	0	0
		Coelution of PCB 18 and 30	38	22	MDL	22	0	0
		Coelution of PCB 180 and 193	38	20	MDL	20	0	0
		Coelution of PCB 183 and 185	38	32	MDL	32	0	0
		Coelution of PCB 198 and 199	38	33	MDL	33	0	0
		Coelution of PCB 20 and 28	38	38	MDL	38	0	0
		Coelution of PCB 21 and 33	38	32	MDL	32	0	0
		Coelution of PCB 26 and 29	38	37	MDL	37	0	0
		Coelution of PCB 40, 41, and 71	38	33	MDL	33	0	0
		Coelution of PCB 44, 47, and 65	38	21	MDL	21	0	0
		Coelution of PCB 45 and 51	38	33	MDL	33	0	0
		Coelution of PCB 49 and 69	38	27	MDL	27	0	0
		Coelution of PCB 50 and 53	38	38	MDL	38	0	0
		Coelution of PCB 59, 62, and 75	38	38	MDL	38	0	0
		Coelution of PCB 61,70,74 and 76	38	21	MDL	21	0	0
		Coelution of PCB 83 and 99	38	32	MDL	32	0	0
		Coelution of PCB 85+116+117	38	35	MDL	35	0	0
		Coelution of PCB 86, 87, 97, 108, 119, and 125	38	33	MDL	33	0	0
		Coelution of PCB 88 and 91	38	36	MDL	36	0	0

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

2010 Surface Water Round 2	QAPP	December 2011 Summary of 2010 Surface Water Round 2 — Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		Coelution of PCB 90, 101, and 113	38	18	MDL	18	0	0
		Coelution of PCB 93, 98, 100 and 102	38	38	MDL	38	0	0
		Decachlorobiphenyl (PCB 209)	38	33	MDL	33	0	0
		Dichlorobiphenyl homologs	38	20	MDL	20	0	0
		Heptachlorobiphenyl homologs	38	17	MDL	17	0	0
		Hexachlorobiphenyl homologs	38	7	MDL	7	0	0
		Monochlorobiphenyl homologs	38	31	MDL	31	0	0
		Nonachlorobiphenyl homologs	38	36	MDL	36	0	0
		Octachlorobiphenyl homologs	38	31	MDL	31	0	0
		PCB congener 1	38	32	MDL	32	0	0
		PCB congener 14	38	38	MDL	38	0	0
		PCB congener 15	38	37	MDL	37	0	0
		PCB congener 2	38	38	MDL	38	0	0
		PCB congener 3	38	36	MDL	36	0	0
		Pentachlorobiphenyl homologs	38	11	MDL	11	0	0
		Tetrachlorobiphenyl homologs	38	6	MDL	6	0	0
		Total PCBs	38	2	MDL	2	0	0
		Trichlorobiphenyl homologs	38	4	MDL	4	0	0
Pesticides/Herbicides								
	Columbia Analytical Services							
		2,4'-DDD	38	38	MRL	35	3	35
		2,4'-DDE	38	38	MRL	37	1	37
		2,4'-DDT	38	38	MRL	34	4	34
		4,4'-DDD	38	37	MRL	18	19	18
		4,4'-DDE	38	38	MRL	24	14	24
		4,4'-DDT	38	37	MRL	34	3	34
		Aldrin	38	35	MRL	26	9	26
		alpha-Benzenehexachloride	38	38	MRL	37	1	37
		alpha-Chlordane	38	37	MRL	33	4	33
		beta-BHC	38	38	MRL	37	1	37
		Chlordane	38	38	MRL	22	16	22
		cis-Nonachlor	38	38	MRL	22	16	22
		delta-BHC	38	38	MRL	37	1	37
		Dieldrin	38	37	MRL	34	3	34
		Endosulfan I	38	38	MRL	35	3	35
		Endosulfan II	38	37	MRL	30	7	30
		Endosulfan sulfate	38	38	MRL	38	0	38
		Endrin	38	31	MRL	13	18	13
		Endrin aldehyde	38	30	MRL	22	8	22
		Endrin ketone	38	38	MRL	38	0	38

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

2010 Surface Water Round 2	QAPP	December 2011 Summary of 2010 Surface Water Round 2: Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Pesticides/Herbicides (continued)								
		gamma-BHC	38	38	MRL	38	0	38
		gamma-Chlordane	38	38	MRL	38	0	38
		Heptachlor	38	38	MRL	37	1	37
		Heptachlor epoxide	38	38	MRL	37	1	37
		Methoxychlor	38	38	MRL	37	1	37
		Oxychlordane	38	33	MRL	12	21	12
		Toxaphene	38	38	MRL	1	37	1
		trans-Nonachlor	38	38	MRL	36	2	36
Radionuclides								
	Isotech							
		Stable hydrogen isotope-ratio	95	0	MRL	0	0	0
		Stable oxygen isotope-ratio	95	0	MRL	0	0	0
	Pace Analytical							
		Radium-226	7	7	MRL	0	0	0
		Uranium-238	7	0	MRL	0	0	0
SVOCs								
	Columbia Analytical Services							
		1,2,4-Trichlorobenzene	38	38	MRL	38	0	38
		1,2-Dichlorobenzene	38	38	MRL	38	0	38
		1,3-Dichlorobenzene	38	38	MRL	38	0	38
		1,4-Dichlorobenzene	38	38	MRL	38	0	38
		2,2'-oxybis(1-Chloropropane)	38	38	MRL	38	0	38
		2,4,5-Trichlorophenol	38	37	MRL	37	0	37
		2,4,6-Trichlorophenol	38	37	MRL	37	0	37
		2,4-Dichlorophenol	38	37	MRL	37	0	37
		2,4-Dimethylphenol	38	35	MRL	35	0	35
		2,4-Dinitrophenol	38	37	MRL	37	0	37
		2,4-Dinitrotoluene	38	38	MRL	38	0	38
		2,6-Dinitrotoluene	38	38	MRL	38	0	38
		2-Chloronaphthalene	38	38	MRL	38	0	38
		2-Chlorophenol	38	37	MRL	37	0	37
		2-Methylphenol	38	37	MRL	37	0	37
		2-Nitroaniline	38	38	MRL	38	0	38
		2-Nitrophenol	38	38	MRL	38	0	38
		3,3'-Dichlorobenzidine	38	33	MRL	33	0	33
		3-Nitroaniline	38	38	MRL	38	0	38
		4,6-Dinitro-2-methylphenol	38	37	MRL	37	0	37
		4-Bromophenyl-phenylether	38	38	MRL	38	0	38
		4-Chloro-3-methylphenol	38	37	MRL	37	0	37
		4-Chloroaniline	38	38	MRL	38	0	38

Table 6. 2010 Surface Water Round 2 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 2	
2010 Surface Water Round 2	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,077	12,584
HRGC/HRMS Data	ND=MDL	1,210	9,620

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
SVOCs (continued)								
		4-Chlorophenyl-phenyl ether	38	38	MRL	38	0	38
		4-Methylphenol	38	37	MRL	37	0	37
		4-Nitroaniline	38	38	MRL	38	0	38
		4-Nitrophenol	38	37	MRL	37	0	37
		Acetophenone	38	38	MRL	38	0	38
		Benzaldehyde	38	38	MRL	38	0	38
		Benzoic acid	38	24	MRL	24	0	24
		Benzyl alcohol	38	36	MRL	36	0	36
		Benzyl n-butyl phthalate	38	37	MRL	37	0	37
		bis(2-Chloroethoxy)methane	38	38	MRL	38	0	38
		Bis(2-chloroethyl)ether	38	38	MRL	38	0	38
		bis(2-Ethylhexyl)phthalate	38	32	MRL	32	0	32
		Caprolactam	38	38	MRL	38	0	38
		Carbazole	76	76	MRL	76	0	76
		Dibenzothiophene	38	38	MRL	38	0	38
		Diethyl phthalate	38	36	MRL	35	1	35
		Dimethyl phthalate	38	37	MRL	37	0	37
		Di-n-butyl phthalate	38	37	MRL	37	0	37
		Di-n-octylphthalate	38	38	MRL	38	0	38
		Hexachlorobenzene	38	34	MRL	33	1	33
		Hexachlorobutadiene	38	38	MRL	37	1	37
		Hexachlorocyclopentadiene	38	38	MRL	38	0	38
		Hexachloroethane	38	38	MRL	38	0	38
		Isophorone	38	38	MRL	38	0	38
		Nitrobenzene	38	38	MRL	38	0	38
		N-Nitrosodi-n-propylamine	38	38	MRL	38	0	38
		N-Nitrosodiphenylamine	38	38	MRL	38	0	38
		Pentachlorophenol	38	37	MRL	37	0	37
		Phenol	38	37	MRL	37	0	37
			13,803	**8,522**	**MRL**	**7,149**	**1,366**	**7,149**
			7,296	**6,561**	**MDL**	**6,560**	**0**	**0**
		2010 Surface Water R2 [b]	**21,099**	**15,083**	**ALL**	**13,709**	**1,366**	**7,149**

Notes:

[a] The December 2011 analysis and summary included results for lab replicates, field replicates, field triplicates, blank water, rinse water/QC samples whereas the current table does not.

[b] Excludes all duplicate/triplicate/replicate/blank and rinsewater QC sample results

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

	December 2011 Summary of 2010 Surface Water Round 3		
2010 Surface Water Round 3	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Conventionals								
	Columbia Analytical Services							
		Alkalinity	82	0	MRL	0	0	0
		Fluoride	82	3	MRL	3	0	3
		Hardness as CaCO3	94	0	MRL	0	0	0
		Organic carbon	164	75	MRL	0	75	0
		pH	82	0	MRL	0	0	0
		Sulfate	82	0	MRL	0	0	0
		Total dissolved solids	82	6	MRL	0	6	0
		Total Suspended Solids	88	81	MRL	0	81	0
Metals/Metalloids								
	Columbia Analytical Services							
		Aluminum	192	44	MRL	0	44	0
		Antimony	192	21	MRL	0	21	0
		Arsenic	192	56	MRL	32	24	32
		Barium	192	0	MRL	0	0	0
		Beryllium	192	171	MRL	171	0	171
		Bismuth	98	94	MRL	94	0	94
		Boron	98	98	MRL	98	0	98
		Cadmium	192	113	MRL	64	49	64
		Calcium	192	0	MRL	0	0	0
		Cerium	98	4	MRL	4	0	4
		Cesium	98	14	MRL	14	0	14
		Chloride ion	82	45	MRL	0	45	0
		Chromium	192	169	MRL	149	20	149
		Cobalt	192	110	MRL	0	110	0
		Copper	192	53	MRL	0	53	0
		Dysprosium	98	56	MRL	56	0	56
		Erbium	98	97	MRL	97	0	97
		Europium	98	15	MRL	15	0	15
		Gadolinium	98	66	MRL	66	0	66
		Gallium	98	84	MRL	84	0	84
		Germanium	98	81	MRL	33	48	33
		Gold	98	96	MRL	80	16	80
		Holmium	98	98	MRL	98	0	98
		Indium	98	98	MRL	98	0	98
		Iron	192	121	MRL	64	57	64
		Lanthanum	98	0	MRL	0	0	0
		Lead	192	111	MRL	19	92	19
		Lithium	98	69	MRL	69	0	69
		Lutetium	98	98	MRL	98	0	98

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 3	
2010 Surface Water Round 3	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Metals/Metalloids (continued)								
		Magnesium	192	0	MRL	0	0	0
		Manganese	192	60	MRL	0	60	0
		Mercury	192	118	MRL	111	7	111
		Molybdenum	192	22	MRL	0	22	0
		Neodymium	98	22	MRL	22	0	22
		Nickel	192	81	MRL	0	81	0
		Niobium	98	91	MRL	91	0	91
		Potassium	192	4	MRL	0	4	0
		Praseodymium	98	31	MRL	31	0	31
		Rubidium	98	2	MRL	0	2	0
		Samarium	98	48	MRL	48	0	48
		Scandium	98	4	MRL	0	4	0
		Selenium	192	179	MRL	178	1	178
		Silica	82	0	MRL	0	0	0
		Silicon	98	0	MRL	0	0	0
		Silver	192	185	MRL	182	3	182
		Sodium	192	0	MRL	0	0	0
		Strontium	98	0	MRL	0	0	0
		Tantalum	98	69	MRL	69	0	69
		Tellurium	98	98	MRL	98	0	98
		Terbium	98	97	MRL	97	0	97
		Thallium	192	161	MRL	160	1	160
		Thorium	98	46	MRL	46	0	46
		Thulium	98	98	MRL	98	0	98
		Tin	98	95	MRL	95	0	95
		Titanium	98	56	MRL	52	4	52
		Tungsten	98	93	MRL	83	10	83
		Uranium	192	0	MRL	0	0	0
		Vanadium	192	90	MRL	33	57	33
		Ytterbium	98	94	MRL	94	0	94
		Yttrium	98	0	MRL	0	0	0
		Zinc	192	126	MRL	0	126	0
		Zirconium	98	12	MRL	8	4	8
	Frontier GeoSciences							
		Inorganic Arsenic	192	4	MRL	0	4	0

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 3	
2010 Surface Water Round 3	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Nutrients								
	Columbia Analytical Services							
		Ammonia as Nitrogen	82	72	MRL	71	1	71
		Nitrate plus nitrite	82	70	MRL	24	46	24
		Phosphorus	82	16	MRL	6	10	6
PAHs								
	Columbia Analytical Services							
		1,1'-Biphenyl	37	37	MRL	37	0	37
		2-Methylnaphthalene	37	37	MRL	37	0	37
		Acenaphthene	37	29	MRL	29	0	29
		Acenaphthylene	37	36	MRL	36	0	36
		Anthracene	37	37	MRL	37	0	37
		Benzo(e)pyrene	37	35	MRL	35	0	35
		Benzo[a]anthracene	37	37	MRL	37	0	37
		Benzo[a]pyrene	37	36	MRL	36	0	36
		Benzo[b]fluoranthene	37	33	MRL	33	0	33
		Benzo[g,h,i]perylene	37	34	MRL	34	0	34
		Benzo[k]fluoranthene	37	35	MRL	35	0	35
		Chrysene	37	36	MRL	36	0	36
		Dibenzo[a,h]anthracene	37	36	MRL	36	0	36
		Dibenzofuran	37	37	MRL	37	0	37
		Fluoranthene	37	37	MRL	37	0	37
		Fluorene	37	36	MRL	36	0	36
		Indeno[1,2,3-cd]pyrene	37	34	MRL	34	0	34
		Naphthalene	37	37	MRL	1	36	1
		Perylene	37	36	MRL	36	0	36
		Phenanthrene	37	37	MRL	36	1	36
		Pyrene	37	36	MRL	36	0	36
PBDEs								
	Vista Analytical Laboratory							
		2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether	37	33	MDL	33	0	0
		2,2',3,3',4,4'-Hexabromodiphenyl ether	37	34	MDL	34	0	0
		2,2',3,4,4',5'-Hexabromodiphenyl ether	37	34	MDL	34	0	0
		2,2',3,4,4',6,6'-Heptabromodiphenyl ether	37	34	MDL	34	0	0
		2,2',3,4,4'-Pentabromodiphenyl ether	37	27	MDL	27	0	0
		2,2',4,4',5,5'-Hexabromodiphenyl ether	37	34	MDL	34	0	0
		2,2',4,4',5,6'-Hexabromodiphenyl ether	37	27	MDL	27	0	0
		2,2',4,4',5-Pentabromodiphenyl ether	37	34	MDL	34	0	0
		2,2',4,4',6-Pentabromodiphenyl ether	37	33	MDL	33	0	0
		2,2',4,4'-Tetrabromodiphenyl ether	37	36	MDL	36	0	0
		2,2',4,5'-Tetrabromodiphenyl ether	37	24	MDL	24	0	0

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

2010 Surface Water Round 3	QAPP	December 2011 Summary of 2010 Surface Water Round 3: Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements b	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PBDEs (continued)								
		2,2',4-Tribromodiphenyl ether	37	30	MDL	30	0	0
		2,3,3',4,4',5',6-Heptabromodiphenyl ether	37	34	MDL	34	0	0
		2,3',4,4'-Tetrabromodiphenyl ether	37	33	MDL	33	0	0
		2,3',4',6-Tetrabromodiphenyl ether	37	34	MDL	34	0	0
		Coelution of PBDE 183 and 176	37	35	MDL	35	0	0
		Coelution of PBDE 190 and 171	37	34	MDL	34	0	0
		Coelution of PBDE 200 and 203	37	34	MDL	34	0	0
		Coelution of PBDE 28 and 33	37	37	MDL	37	0	0
		Decabromodiphenyl ether	37	32	MDL	32	0	0
PCBs								
	Vista Analytical Laboratory							
		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	37	35	MDL	35	0	0
		2,2',3,3',4,4',5,5'-Octachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,3',4,4',5,6'-Octachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,3',4,4',5,6-Octachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,3',4,4',5-Heptachlorobiphenyl	37	34	MDL	34	0	0
		2,2',3,3',4,4',6,6'-Octachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,3',4,5,5'-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,3',4,5',6,6'-Octachlorobiphenyl	37	35	MDL	35	0	0
		2,2',3,3',4,5,6,6'-Octachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,3',4,5',6'-Heptachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,3',4,5',6-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,3',4,5,6'-Heptachlorobiphenyl	37	34	MDL	34	0	0
		2,2',3,3',4,5'-Hexachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,3',4,6,6'-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,3',4,6'-Hexachlorobiphenyl	37	30	MDL	30	0	0
		2,2',3,3',4,6-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,3',4-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,3',5,5',6,6'-Octachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,3',5,5',6-Heptachlorobiphenyl	37	35	MDL	35	0	0
		2,2',3,3',5,5'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,3',5,6,6'-Heptachlorobiphenyl	37	35	MDL	35	0	0
		2,2',3,3',6,6'-Hexachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,3',6-Pentachlorobiphenyl	37	34	MDL	34	0	0
		2,2',3,4,4',5,5',6-Octachlorobiphenyl	37	35	MDL	35	0	0
		2,2',3,4,4',5,6,6'-Octachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4,4',5,6'-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4,4',5,6-Heptachlorobiphenyl	37	37	MDL	37	0	0

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

	December 2011 Summary of 2010 Surface Water Round 3		
2010 Surface Water Round 3	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,2',3,4,4',5-Hexachlorobiphenyl	37	34	MDL	34	0	0
		2,2',3,4,4',6,6'-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4',5,5',6-Heptachlorobiphenyl	37	27	MDL	27	0	0
		2,2',3,4',5,5'-Hexachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,4,5,5'-Hexachlorobiphenyl	37	33	MDL	33	0	0
		2,2',3,4',5,6,6'-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4,5,6,6'-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4',5,6'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4,5',6-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4,5,6-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4',6,6'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4,6,6'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4,6'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,4'-Tetrachlorobiphenyl	37	36	MDL	36	0	0
		2,2',3,5,5'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,5,6,6'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,5',6-Pentachlorobiphenyl	37	17	MDL	17	0	0
		2,2',3,5,6'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,5-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,6,6'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3,6'-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,2',3-Trichlorobiphenyl	37	36	MDL	36	0	0
		2,2',4,4',5,6'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',4,4',6,6'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,2',4,5',6-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,2',4,5-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,2',4,6,6'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,2',4-Trichlorobiphenyl	37	25	MDL	25	0	0
		2,2',5,5'-Tetrachlorobiphenyl	37	20	MDL	20	0	0
		2,2',6,6'-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,2',6-Trichlorobiphenyl	37	36	MDL	36	0	0
		2,2'-Dichlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4,4',5,5',6-Octachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4,4',5,5'-Heptachlorobiphenyl	37	36	MDL	36	0	0
		2,3,3',4,4',5',6-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4,4',5,6-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4,4',6-Hexachlorobiphenyl	37	34	MDL	34	0	0
		2,3,3',4,4'-Pentachlorobiphenyl	37	26	MDL	26	0	0
		2,3,3',4,5,5',6-Heptachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4',5,5'-Hexachlorobiphenyl	37	37	MDL	37	0	0

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 3	
2010 Surface Water Round 3	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,3,3',4,5,5'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4',5',6-Hexachlorobiphenyl	37	35	MDL	35	0	0
		2,3,3',4,5',6-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4',5'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4,5-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4,6-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',4'-Tetrachlorobiphenyl	37	35	MDL	35	0	0
		2,3,3',4-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',5,5',6-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',5,5'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',5,6-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',5'-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,3,3',5-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,3',4,4',5,5'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		2,3',4,4',5'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,3',4,4',5-Pentachlorobiphenyl	37	17	MDL	17	0	0
		2,3,4,4',5-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,3',4,4'-Tetrachlorobiphenyl	37	26	MDL	26	0	0
		2,3,4,4'-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,3',4,5,5'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,3',4,5',6-Pentachlorobiphenyl	37	37	MDL	37	0	0
		2,3',4,5'-Tetrachlorobiphenyl	37	23	MDL	23	0	0
		2,3',4,5-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,3,4',5-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,3,4',6-Tetrachlorobiphenyl	37	32	MDL	32	0	0
		2,3',4-Trichlorobiphenyl	37	37	MDL	37	0	0
		2,3,4'-Trichlorobiphenyl	37	33	MDL	33	0	0
		2,3',5,5'-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,3',5',6-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		2,3',5'-Trichlorobiphenyl	37	37	MDL	37	0	0
		2,3,5-Trichlorobiphenyl	37	37	MDL	37	0	0
		2,3',6-Trichlorobiphenyl	37	37	MDL	37	0	0
		2,3,6-Trichlorobiphenyl	37	37	MDL	37	0	0
		2,3'-Dichlorobiphenyl	37	37	MDL	37	0	0
		2,3-Dichlorobiphenyl	37	37	MDL	37	0	0
		2,4',5-Trichlorobiphenyl	37	28	MDL	28	0	0
		2,4',6-Trichlorobiphenyl	37	33	MDL	33	0	0
		2,4'-Dichlorobiphenyl	37	37	MDL	37	0	0
		2,4-Dichlorobiphenyl	37	37	MDL	37	0	0
		2,5-Dichlorobiphenyl	37	37	MDL	37	0	0

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 3	
2010 Surface Water Round 3	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		2,6-Dichlorobiphenyl	37	37	MDL	37	0	0
		3,3',4,4',5,5'-Hexachlorobiphenyl	37	37	MDL	37	0	0
		3,3',4,4',5-Pentachlorobiphenyl	37	37	MDL	37	0	0
		3,3',4,4'-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		3,3',4,5,5'-Pentachlorobiphenyl	37	37	MDL	37	0	0
		3,3',4,5'-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		3,3',4,5-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		3,3',4-Trichlorobiphenyl	37	37	MDL	37	0	0
		3,3',5,5'-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		3,3',5-Trichlorobiphenyl	37	37	MDL	37	0	0
		3,3'-Dichlorobiphenyl	37	37	MDL	37	0	0
		3,4,4',5-Tetrachlorobiphenyl	37	37	MDL	37	0	0
		3,4,4'-Trichlorobiphenyl	37	36	MDL	36	0	0
		3,4',5-Trichlorobiphenyl	37	37	MDL	37	0	0
		3,4,5-Trichlorobiphenyl	37	37	MDL	37	0	0
		Coelution of PCB 107 and 124	37	37	MDL	37	0	0
		Coelution of PCB 110 and 115	37	23	MDL	23	0	0
		Coelution of PCB 12 and 13	37	37	MDL	37	0	0
		Coelution of PCB 128 and 166	37	35	MDL	35	0	0
		Coelution of PCB 129, 138, 160, and 163	37	15	MDL	15	0	0
		Coelution of PCB 134 and 143	37	37	MDL	37	0	0
		Coelution of PCB 135 and 151	37	35	MDL	35	0	0
		Coelution of PCB 139 and 140	37	35	MDL	35	0	0
		Coelution of PCB 147 and 149	37	13	MDL	13	0	0
		Coelution of PCB 153 and 168	37	17	MDL	17	0	0
		Coelution of PCB 156 and 157	37	33	MDL	33	0	0
		Coelution of PCB 171 and 173	37	36	MDL	36	0	0
		Coelution of PCB 18 and 30	37	28	MDL	28	0	0
		Coelution of PCB 180 and 193	37	24	MDL	24	0	0
		Coelution of PCB 183 and 185	37	35	MDL	35	0	0
		Coelution of PCB 198 and 199	37	35	MDL	35	0	0
		Coelution of PCB 20 and 28	37	29	MDL	29	0	0
		Coelution of PCB 21 and 33	37	29	MDL	29	0	0
		Coelution of PCB 26 and 29	37	37	MDL	37	0	0
		Coelution of PCB 40, 41, and 71	37	34	MDL	34	0	0
		Coelution of PCB 44, 47, and 65	37	18	MDL	18	0	0
		Coelution of PCB 45 and 51	37	27	MDL	27	0	0
		Coelution of PCB 49 and 69	37	27	MDL	27	0	0
		Coelution of PCB 50 and 53	37	36	MDL	36	0	0
		Coelution of PCB 59, 62, and 75	37	37	MDL	37	0	0

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 3	
2010 Surface Water Round 3	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
PCBs (continued)								
		Coelution of PCB 61,70,74 and 76	37	22	MDL	22	0	0
		Coelution of PCB 83 and 99	37	28	MDL	28	0	0
		Coelution of PCB 85+116+117	37	33	MDL	33	0	0
		Coelution of PCB 86, 87, 97, 108, 119, and 125	37	32	MDL	32	0	0
		Coelution of PCB 88 and 91	37	36	MDL	36	0	0
		Coelution of PCB 90, 101, and 113	37	17	MDL	17	0	0
		Coelution of PCB 93, 98, 100 and 102	37	37	MDL	37	0	0
		Decachlorobiphenyl (PCB 209)	37	36	MDL	36	0	0
		Dichlorobiphenyl homologs	37	27	MDL	27	0	0
		Heptachlorobiphenyl homologs	37	18	MDL	18	0	0
		Hexachlorobiphenyl homologs	37	2	MDL	2	0	0
		Monochlorobiphenyl homologs	37	35	MDL	35	0	0
		Nonachlorobiphenyl homologs	37	35	MDL	35	0	0
		Octachlorobiphenyl homologs	37	35	MDL	35	0	0
		PCB congener 1	37	35	MDL	35	0	0
		PCB congener 14	37	37	MDL	37	0	0
		PCB congener 15	37	37	MDL	37	0	0
		PCB congener 2	37	37	MDL	37	0	0
		PCB congener 3	37	36	MDL	36	0	0
		Pentachlorobiphenyl homologs	37	5	MDL	5	0	0
		Tetrachlorobiphenyl homologs	37	0	MDL	0	0	0
		Total PCBs	37	0	MDL	0	0	0
		Trichlorobiphenyl homologs	37	0	MDL	0	0	0
Pesticides/Herbicides								
	Columbia Analytical Services							
		2,4'-DDD	37	37	MRL	37	0	37
		2,4'-DDE	37	37	MRL	37	0	37
		2,4'-DDT	37	37	MRL	36	1	36
		4,4'-DDD	37	37	MRL	15	22	15
		4,4'-DDE	37	37	MRL	13	24	13
		4,4'-DDT	37	37	MRL	29	8	29
		Aldrin	37	37	MRL	20	17	20
		alpha-Benzenehexachloride	37	37	MRL	37	0	37
		alpha-Chlordane	37	37	MRL	19	18	19
		beta-BHC	37	37	MRL	36	1	36
		Chlordane	37	37	MRL	13	24	13
		cis-Nonachlor	37	37	MRL	13	24	13
		delta-BHC	37	33	MRL	32	1	32
		Dieldrin	37	37	MRL	37	0	37
		Endosulfan I	37	37	MRL	36	1	36

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

2010 Surface Water Round 3	QAPP	December 2011 Summary of 2010 Surface Water Round 3: Number of NDs Results Reported as per QAPP	December 2011 Summary of 2010 Surface Water Round 3: Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
Pesticides/Herbicides (continued)								
		Endosulfan II	37	37	MRL	23	14	23
		Endosulfan sulfate	37	37	MRL	37	0	37
		Endrin	37	37	MRL	35	2	35
		Endrin aldehyde	37	34	MRL	22	12	22
		Endrin ketone	37	37	MRL	37	0	37
		gamma-BHC	37	37	MRL	37	0	37
		gamma-Chlordane	37	37	MRL	36	1	36
		Heptachlor	37	37	MRL	31	6	31
		Heptachlor epoxide	37	37	MRL	36	1	36
		Methoxychlor	37	37	MRL	37	0	37
		Oxychlordane	37	37	MRL	12	25	12
		Toxaphene	37	37	MRL	8	29	8
		trans-Nonachlor	37	37	MRL	34	3	34
Radionuclides								
	Isotech							
		Stable hydrogen isotope-ratio	75	0	MRL	0	0	0
		Stable oxygen isotope-ratio	75	0	MRL	0	0	0
	Pace Analytical							
		Radium-226	6	6	MRL	0	0	0
		Uranium-238	6	2	MRL	0	1	0
SVOCs								
	Columbia Analytical Services							
		1,2,4-Trichlorobenzene	37	37	MRL	37	0	37
		1,2-Dichlorobenzene	37	37	MRL	37	0	37
		1,3-Dichlorobenzene	37	37	MRL	37	0	37
		1,4-Dichlorobenzene	37	37	MRL	37	0	37
		2,2'-oxybis(1-Chloropropane)	37	37	MRL	37	0	37
		2,4,5-Trichlorophenol	37	37	MRL	37	0	37
		2,4,6-Trichlorophenol	37	37	MRL	37	0	37
		2,4-Dichlorophenol	37	37	MRL	37	0	37
		2,4-Dimethylphenol	37	37	MRL	37	0	37
		2,4-Dinitrophenol	37	37	MRL	37	0	37
		2,4-Dinitrotoluene	37	37	MRL	37	0	37
		2,6-Dinitrotoluene	37	37	MRL	37	0	37
		2-Chloronaphthalene	37	37	MRL	37	0	37
		2-Chlorophenol	37	37	MRL	37	0	37
		2-Methylphenol	37	37	MRL	37	0	37
		2-Nitroaniline	37	37	MRL	37	0	37
		2-Nitrophenol	37	37	MRL	37	0	37
		3,3'-Dichlorobenzidine	37	19	MRL	19	0	19

Table 7. 2010 Surface Water Round 3 Data Review of How Non-detect Results Are Reported

		December 2011 Summary of 2010 Surface Water Round 3	
2010 Surface Water Round 3	QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
Non-HRGC/HRMS Data	ND=MRL	2,180	11,679
HRGC/HRMS Data	ND=MDL	1,272	9,611

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements Not Reported per QAPP
SVOCs (continued)								
		3-Nitroaniline	37	37	MRL	37	0	37
		4,6-Dinitro-2-methylphenol	37	37	MRL	37	0	37
		4-Bromophenyl-phenylether	37	37	MRL	37	0	37
		4-Chloro-3-methylphenol	37	37	MRL	37	0	37
		4-Chloroaniline	37	36	MRL	36	0	36
		4-Chlorophenyl-phenyl ether	37	37	MRL	37	0	37
		4-Methylphenol	37	37	MRL	37	0	37
		4-Nitroaniline	37	37	MRL	37	0	37
		4-Nitrophenol	37	37	MRL	37	0	37
		Acetophenone	37	37	MRL	37	0	37
		Benzaldehyde	37	37	MRL	37	0	37
		Benzoic acid	37	28	MRL	28	0	28
		Benzyl alcohol	37	37	MRL	37	0	37
		Benzyl n-butyl phthalate	37	36	MRL	36	0	36
		bis(2-Chloroethoxy)methane	37	37	MRL	37	0	37
		Bis(2-chloroethyl)ether	37	37	MRL	37	0	37
		bis(2-Ethylhexyl)phthalate	37	35	MRL	34	1	34
		Caprolactam	37	37	MRL	37	0	37
		Carbazole	74	74	MRL	74	0	74
		Dibenzothiophene	37	37	MRL	37	0	37
		Diethyl phthalate	37	37	MRL	37	0	37
		Dimethyl phthalate	37	32	MRL	32	0	32
		Di-n-butyl phthalate	37	37	MRL	37	0	37
		Di-n-octylphthalate	37	37	MRL	37	0	37
		Hexachlorobenzene	37	35	MRL	35	0	35
		Hexachlorobutadiene	37	37	MRL	37	0	37
		Hexachlorocyclopentadiene	37	37	MRL	37	0	37
		Hexachloroethane	37	37	MRL	37	0	37
		Isophorone	37	37	MRL	37	0	37
		Nitrobenzene	37	37	MRL	37	0	37
		N-Nitrosodi-n-propylamine	37	37	MRL	37	0	37
		N-Nitrosodiphenylamine	37	37	MRL	37	0	37
		Pentachlorophenol	37	37	MRL	37	0	37
		Phenol	37	37	MRL	37	0	37
			13,524	**8,099**	**MRL**	**6,631**	**1,461**	**6,631**
			7,104	**6,379**	**MDL**	**6,379**	**0**	**0**
		2010 Surface Water R3 [b]	**20,628**	**14,478**	**ALL**	**13,010**	**1,461**	**6,631**

Notes:

[a] The December 2011 analysis and summary included results for lab replicates, field replicates, field triplicates, blank water, rinse water/QC samples whereas the current table does not.

[b] Excludes all duplicate/triplicate/replicate/blank and rinsewater QC sample results

Table 8. 2010 White Sturgeon Sediment Toxicity Testing Data Review of How Non-detect Results are Reported

December 2011 Summary of 2010 White Sturgeon Sediment Toxicity Testing [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	8,623	16,740

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements not Reported per QAPP
Conventionals								
	Columbia Analytical Services							
		Alkalinity	818	9	MRL	7	2	7
		Fluoride	1395	58	MRL	58	0	58
		Hardness as CaCO3	1670	46	MRL	1	21	1
		Organic carbon	1458	317	MRL	1	316	1
		pH	58	0	MRL	0	0	0
		Solids	54	0	MRL	0	0	0
		Sulfate	1395	7	MRL	7	0	7
		Sulfide	20	4	MRL	4	0	4
		Sulfide-AVS	34	9	MRL	9	0	9
		Total dissolved solids	659	100	MRL	0	100	0
		Total Suspended Solids	4	4	MRL	0	4	0
	University of Saskatchewan							
		Alkalinity	930	0	MRL	0	0	0
		Conductivity	3797	0	MRL	0	0	0
		Dissolved oxygen	137	0	MRL	0	0	0
		Dissolved oxygen - % saturation adjusted for temperature	3662	0	MRL	0	0	0
		Hardness	1543	0	MRL	0	0	0
		pH	3800	0	MRL	0	0	0
Grain Size								
	Columbia Analytical Services							
		Clay	23	0	MRL	0	0	0
		Coarse Gravel	23	6	MRL	0	0	0
		Coarse sand	23	0	MRL	0	0	0
		Cobbles	23	6	MRL	0	0	0
		Fine Gravel	23	6	MRL	0	0	0
		Fine Sand	23	0	MRL	0	0	0
		Med. Sand	23	0	MRL	0	0	0
		Medium Gravel	23	7	MRL	0	0	0
		Silt	23	0	MRL	0	0	0
		Very Coarse Gravel	23	6	MRL	0	0	0
		Very Coarse Sand	23	0	MRL	0	0	0
		Very Fine Gravel	23	1	MRL	0	0	0
		Very fine sand	23	0	MRL	0	0	0
Metals/Metalloids								
	Columbia Analytical Services							
		Aluminum	2100	629	MRL	150	411	150
		Antimony	2154	522	MRL	321	201	321
		Arsenic	2153	996	MRL	949	47	949
		Barium	2100	246	MRL	7	239	7
		Beryllium	2100	1941	MRL	1937	4	1937
		Cadmium	2296	1403	MRL	660	530	660
		Calcium	2242	17	MRL	14	3	14
		Chloride ion	1395	48	MRL	5	43	5
		Chromium	2154	1361	MRL	203	949	203
		Cobalt	2100	984	MRL	264	575	264

Table 8. 2010 White Sturgeon Sediment Toxicity Testing Data Review of How Non-detect Results are Reported

December 2011 Summary of 2010 White Sturgeon Sediment Toxicity Testing [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	8,623	16,740

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements not Reported per QAPP
Metals/Metalloids (continued)								
		Copper	2282	975	MRL	166	625	166
		Iron	2100	1412	MRL	1076	153	1076
		Lead	2296	1358	MRL	178	1004	178
		Magnesium	2242	20	MRL	18	2	18
		Manganese	2100	720	MRL	120	534	120
		Mercury	1124	438	MRL	264	174	264
		Molybdenum	2098	445	MRL	294	151	294
		Nickel	2140	1124	MRL	195	717	195
		Potassium	2242	392	MRL	341	51	341
		Selenium	2100	1614	MRL	1613	1	1613
		Silicon	392	10	MRL	8	2	8
		Silver	2100	1795	MRL	1512	52	1512
		Sodium	2242	284	MRL	62	222	62
		Thallium	2100	1482	MRL	1264	218	1264
		Vanadium	2100	822	MRL	670	152	670
		Zinc	2282	1369	MRL	146	1030	146
	University of Saskatchewan							
		Chloride ion	44	44	MRL	0	0	0
Nutrients								
	Columbia Analytical Services							
		Ammonia as Nitrogen	853	50	MRL	50	0	50
		Nitrate as nitrogen	1004	8	MRL	8	0	8
		Nitrate plus nitrite	394	0	MRL	0	0	0
		Nitrite as nitrogen	1004	137	MRL	137	0	137
		Orthophosphate as phosphorus	139	34	MRL	34	0	34
		Phosphorus	4	4	MRL	4	0	4
	University of Saskatchewan							
		Ammonia	729	255	MRL	0	0	0
		Ammonia as Nitrogen	57	37	MRL	0	0	0
		Nitrate	664	171	MRL	0	0	0
		Nitrite	1061	657	MRL	0	0	0
PAHs								
	Columbia Analytical Services							
		2-Methylnaphthalene	14	0	MRL	0	0	0
		Acenaphthene	14	0	MRL	0	0	0
		Acenaphthylene	14	0	MRL	0	0	0
		Anthracene	14	0	MRL	0	0	0
		Benzo(e)pyrene	14	0	MRL	0	0	0
		Benzo[a]anthracene	14	0	MRL	0	0	0
		Benzo[a]pyrene	14	0	MRL	0	0	0
		Benzo[b]fluoranthene	14	0	MRL	0	0	0
		Benzo[g,h,i]perylene	14	0	MRL	0	0	0
		Benzo[k]fluoranthene	14	0	MRL	0	0	0
		Chrysene	14	0	MRL	0	0	0
		Dibenzo[a,h]anthracene	14	0	MRL	0	0	0
		Fluoranthene	14	0	MRL	0	0	0

Table 8. 2010 White Sturgeon Sediment Toxicity Testing Data Review of How Non-detect Results are Reported

December 2011 Summary of 2010 White Sturgeon Sediment Toxicity Testing [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	8,623	16,740

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements not Reported per QAPP
PAHs (continued)								
		Fluorene	14	0	MRL	0	0	0
		Indeno[1,2,3-cd]pyrene	14	0	MRL	0	0	0
		Naphthalene	14	14	MRL	11	3	11
		Perylene	14	0	MRL	0	0	0
		Phenanthrene	14	0	MRL	0	0	0
		Pyrene	14	0	MRL	0	0	0
PCBs								
	Columbia Analytical Services							
		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,3',4,4',5,5'-Octachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,3',4,4',5,6-Octachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,3',4,4',5-Heptachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,3',4,4'-Hexachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,3',4,5',6,6'-Octachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,3',4,5',6'-Heptachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,3',4,5,6'-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,3',4,6'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,4',5,5',6-Octachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,4',5,5'-Heptachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,4,4',5',6-Heptachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,4,4',5'-Hexachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,4,4',6,6'-Heptachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4',5,5',6-Heptachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,4,5,5'-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4',5',6-Hexachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,4',5'-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4',5-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,4,5'-Pentachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,5,5',6-Hexachlorobiphenyl	16	2	MRL	2	0	2
		2,2',3,5',6-Pentachlorobiphenyl	2	2	MRL	2	0	2
		2,2',3,5'-Tetrachlorobiphenyl	16	2	MRL	2	0	2
		2,2',4,4',5,5'-Hexachlorobiphenyl	16	2	MRL	2	0	2
		2,2',4,4',5-Pentachlorobiphenyl	16	2	MRL	2	0	2
		2,2',4,5,5'-Pentachlorobiphenyl	16	2	MRL	2	0	2
		2,2',4,5'-Tetrachlorobiphenyl	16	2	MRL	2	0	2
		2,2',5,5'-Tetrachlorobiphenyl	16	2	MRL	2	0	2
		2,2',5-Trichlorobiphenyl	16	2	MRL	2	0	2
		2,3,3',4,4',5,5'-Heptachlorobiphenyl	16	2	MRL	2	0	2
		2,3,3',4,4',5'-Hexachlorobiphenyl	16	2	MRL	2	0	2
		2,3,3',4,4',5-Hexachlorobiphenyl	16	2	MRL	2	0	2
		2,3,3',4,4',6-Hexachlorobiphenyl	16	2	MRL	2	0	2
		2,3,3',4,4'-Pentachlorobiphenyl	16	2	MRL	2	0	2
		2,3,3',4',6-Pentachlorobiphenyl	16	2	MRL	2	0	2
		2,3,3',4'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4,4',5,5'-Hexachlorobiphenyl	16	2	MRL	2	0	2
		2,3',4,4',5',6-Hexachlorobiphenyl	16	2	MRL	2	0	2

Table 8. 2010 White Sturgeon Sediment Toxicity Testing Data Review of How Non-detect Results are Reported

December 2011 Summary of 2010 White Sturgeon Sediment Toxicity Testing [a]		
QAPP	Number of NDs Results Reported as per QAPP	Number of NDs Results Not Reported as per QAPP
ND=MRL	8,623	16,740

Analyte Type	Lab Name	Analyte	No. of Measurements [b]	No. of Reported Non-detects	QAPP Requirement	Non-Detects Reported to MDL?	Non-Detects Reported to MRL?	No. of Measurements not Reported per QAPP
PCBs (continued)								
		2,3,4,4',5,6-Hexachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4,4',5'-Pentachlorobiphenyl	16	2	MRL	2	0	2
		2,3',4,4',5-Pentachlorobiphenyl	16	2	MRL	2	0	2
		2,3,4,4',5-Pentachlorobiphenyl	16	2	MRL	2	0	2
		2,3',4,4',6-Pentachlorobiphenyl	16	2	MRL	2	0	2
		2,3',4,4'-Tetrachlorobiphenyl	16	2	MRL	2	0	2
		2,3,4,4'-Tetrachlorobiphenyl	2	2	MRL	2	0	2
		2,3',4',5-Tetrachlorobiphenyl	16	2	MRL	2	0	2
		2,3',4'-Trichlorobiphenyl	2	2	MRL	2	0	2
		2,3-Dichlorobiphenyl	2	2	MRL	2	0	2
		2,4,4',5-Tetrachlorobiphenyl	16	2	MRL	2	0	2
		2,4,4'-Trichlorobiphenyl	16	2	MRL	2	0	2
		2,4',5-Trichlorobiphenyl	2	2	MRL	2	0	2
		2,4'-Dichlorobiphenyl	16	2	MRL	2	0	2
		2-Chlorobiphenyl	2	2	MRL	2	0	2
		3,3',4,4',5,5'-Hexachlorobiphenyl	16	2	MRL	2	0	2
		3,3',4,4',5-Pentachlorobiphenyl	16	2	MRL	2	0	2
		3,3',4,4'-Tetrachlorobiphenyl	16	2	MRL	2	0	2
		3,4,4',5-Tetrachlorobiphenyl	16	2	MRL	2	0	2
		3,4,4'-Trichlorobiphenyl	16	2	MRL	2	0	2
		Decachlorobiphenyl (PCB 209)	16	2	MRL	2	0	2
Pesticides/Herbicides								
	Columbia Analytical Services							
		2,4'-DDD	16	2	MRL	2	0	2
		2,4'-DDE	16	2	MRL	2	0	2
		2,4'-DDT	16	2	MRL	2	0	2
		4,4'-DDD	16	2	MRL	2	0	2
		4,4'-DDE	16	2	MRL	2	0	2
		4,4'-DDT	16	2	MRL	2	0	2
Physical-Chemical Properties								
	University of Saskatchewan							
		Temperature	3799	0	MRL	0	0	0
SVOCs								
	Columbia Analytical Services							
		Carbazole	14	0	MRL	0	0	0
		Dibenzothiophene	14	0	MRL	0	0	0
		Teck 2010 White Sturgeon Sediment Toxicity [b]	**85,343**	**24,534**	**MRL**	**12,898**	**8,536**	**12,898**

Notes:

[a] The December 2011 analysis and summary included results for lab replicates, field replicates, field triplicates, blank water, rinse water/QC samples whereas the current table does not.

[b] Excludes all duplicate/triplicate/replicate/blank and rinsewater QC sample results.

Memorandum

Teck American Incorporated
501 North Riverpoint Boulevard
Suite 300
Spokane, WA 99202 USA

+1 509 747 6111 Tel
+1 509 922 8767 Fax
www.teck.com

Teck

To: Helen Bottcher, U.S. Environmental Protection Agency (EPA) Region 10 (R10)

Date: December 5, 2011

From: Kris McCaig, Teck American Incorporated (TAI)

File No.: 01-773180-000

Cc: Marko Adzic, TAI
Anne Fairbrother, Exponent, Inc.

RE: Upper Columbia River Remedial Investigation Feasibility Study (UCR RI/FS) Database Detection Limit Analysis Summary and Results

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As you know, Maja Tritt identified a discrepancy between reporting limits listed in approved Quality Assurance Project Plans (QAPPs) and the database. Specifically, M. Tritt noted that "It appears that Teck is reporting non-detects at the MDL (method detection limit) in their database rather than the MRL (method reporting limit). According to the QAPP (i.e., Surface Water Study as referenced below), non-detects should be reported at the MRL. This affects risk assessments to the extent that non-detects are used to calculate risks. MDLs may be reported for non-detects for the entire database, though I only checked the surface water data."

As requested, we have conducted an analysis for the above-mentioned discrepancy. To that end, approved QAPPs (e.g., 2009 Beach Sediment Study) were reviewed for clarification of requirements for reporting non-detected values in the database. Table 1 below identifies requirements and specific citations found in each QAPP:

Table 1 – UCR RI/FS QAPP Requirements

QAPP	Requirement	Citation
2009 Beach Sediment Study	Nondetected values will be reported at the MRL and will be adjusted by the laboratory as necessary to reflect sample dilution or matrix interference.	Page A-23, third full paragraph
2009/2010 Surface Water Study	Nondetected values will be reported at the MRL and will be adjusted by the laboratory as necessary to reflect sample dilution or matrix interference.	Page B-19, third full paragraph
	For HRGC/HRMS methods non-detects will be reported to the sample specific detection limit (SDL). For all other methods non-detects will be reported to the MRL.	Table B-2, Note c (table page 6 of 6)
2009 Fish Tissue Study	Nondetected values will be reported at the MDL and will be adjusted by the laboratory as necessary to reflect sample dilution or matrix interference.	Page B-16, third full paragraph
	For high-resolution gas chromatography/high-resolution mass spectrometry (HRGC/HRMS) analyses (i.e., Dioxins/Furans, PCB Congeners, and PBDEs) the analytes will be reported to an estimated detection limit (EDL). The EDL is sample and analyte specific and is based on the signal and noise on the instrument.	Table B-2, Note i (table page 10 of 10)
2010 White Sturgeon Sediment Toxicity Study	Nondetected values will be reported at the MRL and will be adjusted by the laboratory as necessary to reflect sample dilution or matrix interference.	Page B-24, second bullet and continued on B-25
	For HRGC/HRMS methods non-detects will be reported to the SDL. For all other methods non-detects will be reported to the MRL.	Table A-2, Note c (table page 6 of 6)

The database manager (i.e., Exponent) ran a query for all records associated with "Teck" studies in the database to return all records where the undetected field = TRUE. Once the initial review was complete, questions were identified in certain data sets and TAI worked with the respective analytical laboratories to obtain answers and make appropriate updates to the database. Table 2 below is a download from the database webtool under the database history notes tab where updates made to the database regarding the above referenced are recorded based on our work with the laboratories and the validator (i.e., Environmental Standards, Inc.) to clarify or correct data records.

Table 2 – Database History Notes Relating to Non-Detect Reporting

Comments	Data Manager	Change Date
For the Teck 2009 sturgeon toxicity studies, 247 pH results records updated by the removal of the "U*" validation flag. The U* flags were originally assigned based on review of the measured values only, and an undetected flag is not appropriate for a pH measurement.	C. Kessel	9/12/2011
For the Teck 2009 fish study lab sample K0911736-005 mercury analysis of rinse water, updated the detection limit from 0.2 to 0.02 per review of EDD and lab report.	C. Kessel	9/13/2011
For the Teck 2009 fish study, 5 non-detect result records were updated per correction from Vista; the 5 records have the following note added to the comments field: "Missing detection limit added, and meas_value updated from reporting_limit to detection_limit on 10/4/2011 per correction from Vista.".	C. Kessel	10/4/2011
For the Teck 2009 fish study and 3 rounds of surface water, undetected, estimated and validator_flags fields were updated for 37 records per corrections from validator. All affected records contains details of updates made plus "...per validation correction, 10/4/11." in the comments field.	C. Kessel	10/4/2011
For the Teck 2010 Sturgeon Toxicity study, updated 990 undetected results detection limit field to equal the measured value per review by M. Hecker, 9/26/11. Updated measured values for 4 nitrite results from <0.02 to <0.25; and removed the "<" lab flag from 7 records per review by D. Vardy, 10/6/11 & 10/7/11.	C. Kessel	10/7/2011
For the Teck 2009 and 2010 Beach Sediment and 2009 round 1 Surface Water, 1339 undetected results records were updated for the reporting limit, detection limit, and/or measured value per updates received from SGS NC. See the lab report addendums for specific details.	C. Kessel	11/14/2011
For the Teck 2009 fish, and 2010 Round 2 and 3 Surface Water studies, 15 non-detect records measured value and/or detection limit fields updated per review by CAS and Vista. See lab results comments field for specific details.	C. Kessel	11/16/2011

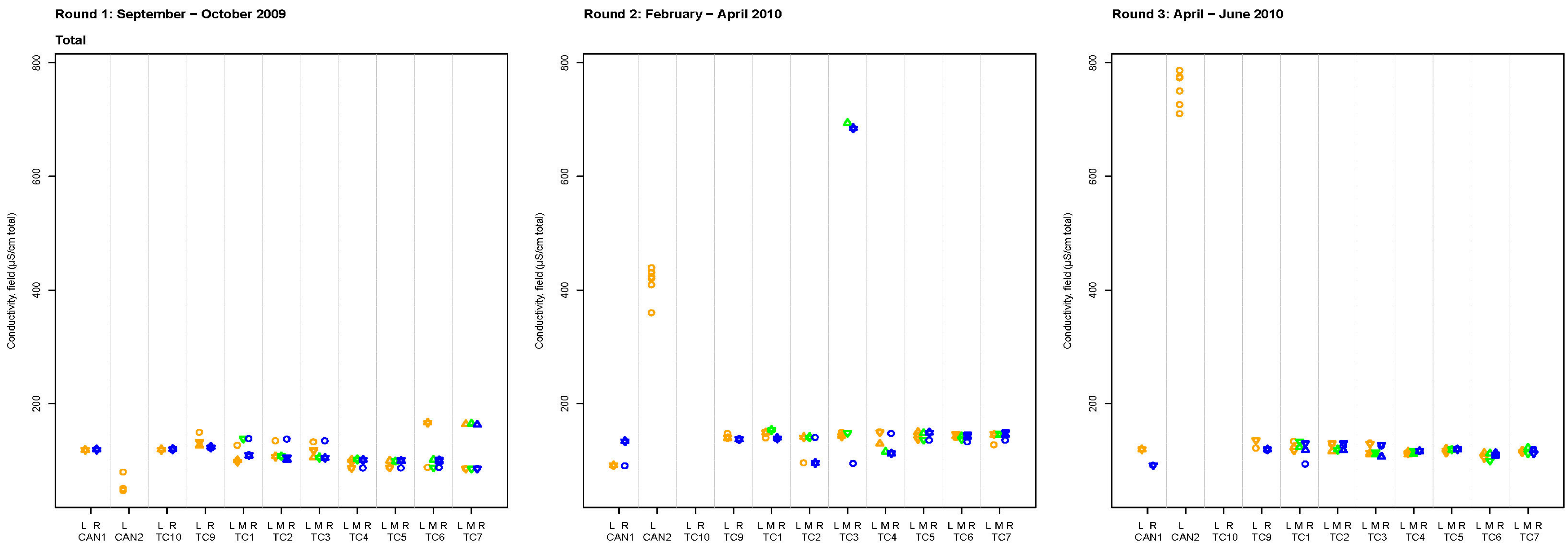
Once the above listed items were addressed and all updates made to the database, the summary shown in Table 3 below was prepared to compare non-detect reporting in the database with requirements of the program QAPPs as listed above in Table 1.

Table 3 – Summary of Non-detect Values Reported from Teck UCR RI/FS Studies

Teck Program	NDs reported at MRL	NDs reported at MDL	NDs not reported at MRL or MDL	Notes - NDs not reported at MRL or MDL	Total count of NDs	QAPP requirement	NDs reported as per QAPP	NDs NOT reported as per QAPP
2009 Beach Sediment	73	1,332	37	1[a], 34[b], 2[e]	1,442			
2010 Beach Sediment	67	2,168	33	28[b], 1[d], 4[e]	2,268			
2011 Beach Sediment	510	14,686	310	220[b], 76[d], 14[e]	15,506			
Beach Sediment Total	650	18,186	380		19,216	ND=MRL	650	18,566
2009 Surface Water Round 1	3,976	26,811	307	2[a], 295[b], 10[e]	31,094			
Non-HRGC/HRMS Data	3,030	15,482	10		18,522	ND=MRL	3,030	15,482
HRGC/HRMS Data	946	11,329	297		12,572	ND=MDL	11,329	946
2010 Surface Water Round 2	11,697	13,794	16	1[b], 15[e]	25,507			
Non-HRGC/HRMS Data	2,077	12,584	15		14,676	ND=MRL	2,077	12,584
HRGC/HRMS Data	9,620	1,210	1		10,831	ND=MDL	1,210	9,620
2010 Surface Water Round 3	11,791	12,951	14	14[e]	24,756			
Non-HRGC/HRMS Data	2,180	11,679	14		13,873	ND=MRL	2,180	11,679
HRGC/HRMS Data	9,611	1,272	--		10,883	ND=MDL	1,272	9,611
Non-HRGC/HRMS Data Total	7,287	39,745	39		47,071	ND=MRL	7,287	39,784
HRGC/HRMS Data Total	20,177	13,811	298		34,286	ND=MDL	13,811	20,475
Surface Water Total	27,464	53,556	337		81,357		21,098	60,259
2009 Fish Total	--	80,221	11	11[b]	80,232	ND=MDL	80,221	11[b]
2010 Sturgeon Sediment Toxicity Total	8,623	14,793	1,947	1,904[c], 43[d]	25,363	ND=MRL	8,623	16,740
All Programs Total	**36,737**	**166,756**	**2,675**		**206,168**		**110,592**	**95,565**

a - U* flag assigned by validator. U* definition: analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
b - EMPC flag assigned by lab or validator. EMPC definition: the detection limit represents the estimated maximum possible concentration if the compound was present.
c - The reported measured value contains the calculated concentration from the DGT probe; see the "comments" field of these records for more details.
d - These records are CAS grain size results where all of the measured values = 0, and there are no detection/reporting/quantification limits for grain size analysis. The validator assigned the "UJ" flag to these records stating "large discrepancies were observed between the results for these particle size fractions in the associated field duplicate analyses".
e - Pace radionuclides non-detect results: The typical environmental term, method detection limit (MDL) is not applicable to radiochemistry as the detection limit is unique to each sample as well as each method. Therefore following a prescribed methodology such as that described in CFR Part 136 Appendix B would not result in the actual detection limit for the actual sample.

Surface Water – Field Conductivity



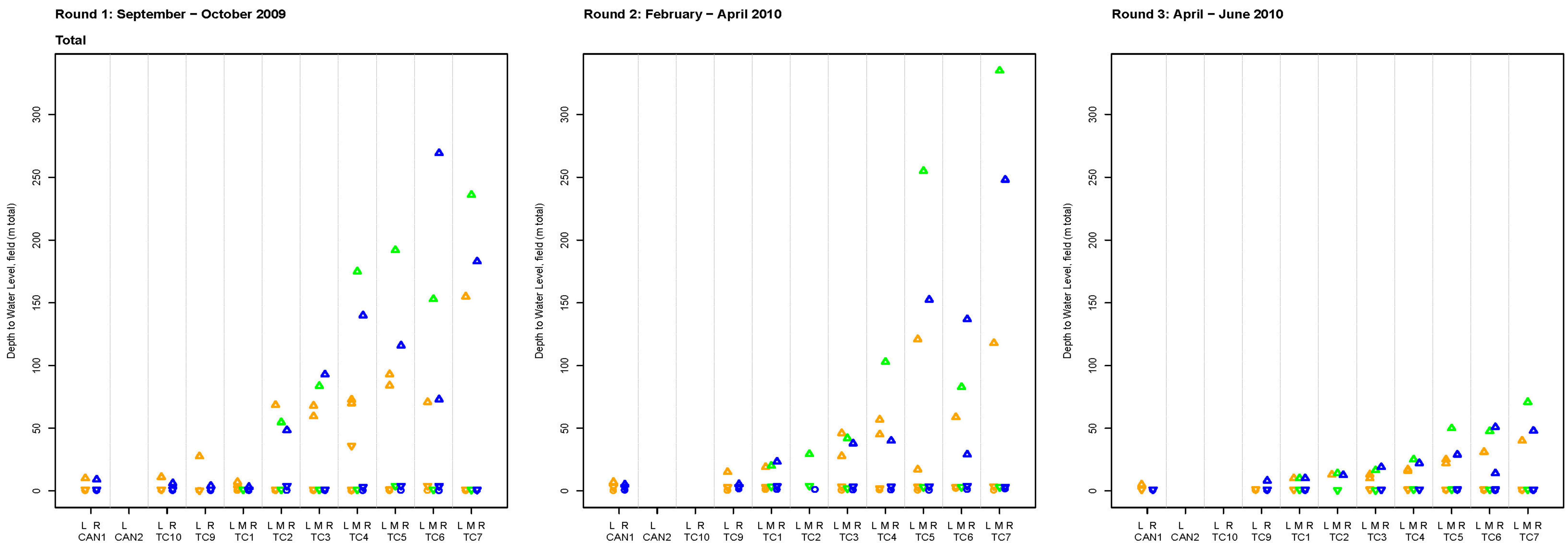
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Field Depth to Water Level



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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DWS (T)	Drinking water standard, EPA taste threshold
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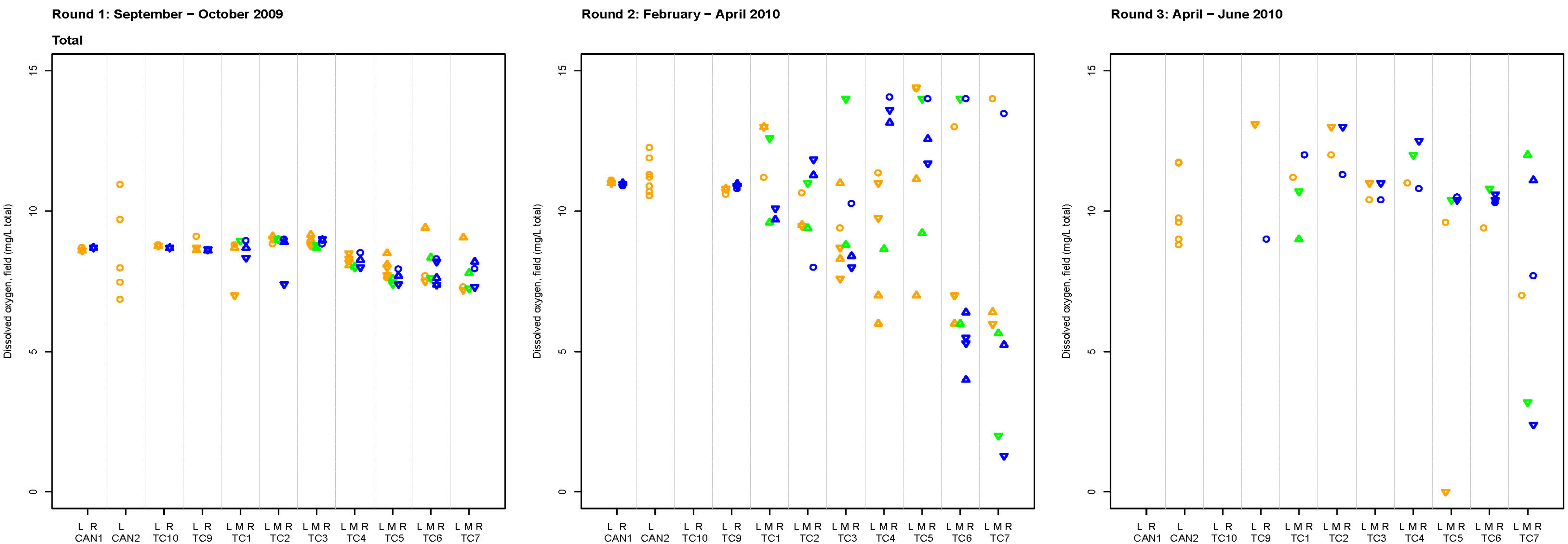
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Field Dissolved Oxygen



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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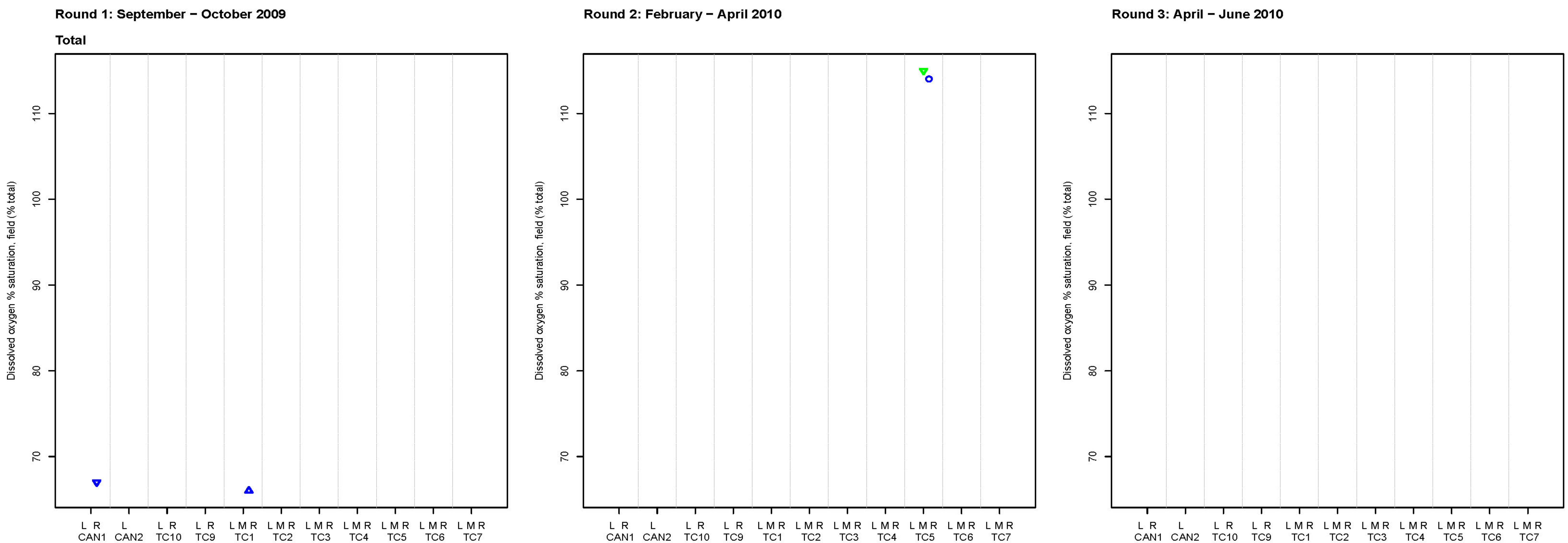
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Field Dissolved Oxygen



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.

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DWS (AL)	Drinking water standard, EPA action level
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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

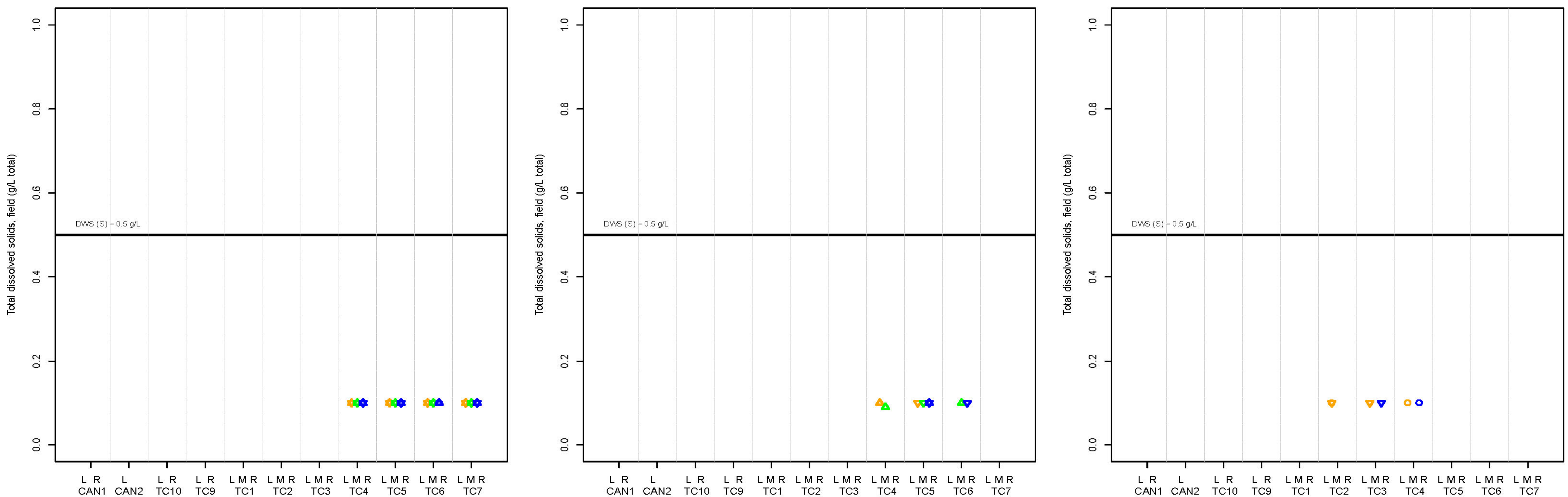
Surface Water − Field Dissolved Solids

Round 1: September − October 2009

Round 2: February − April 2010

Round 3: April − June 2010

Total



LEGEND

▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.

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DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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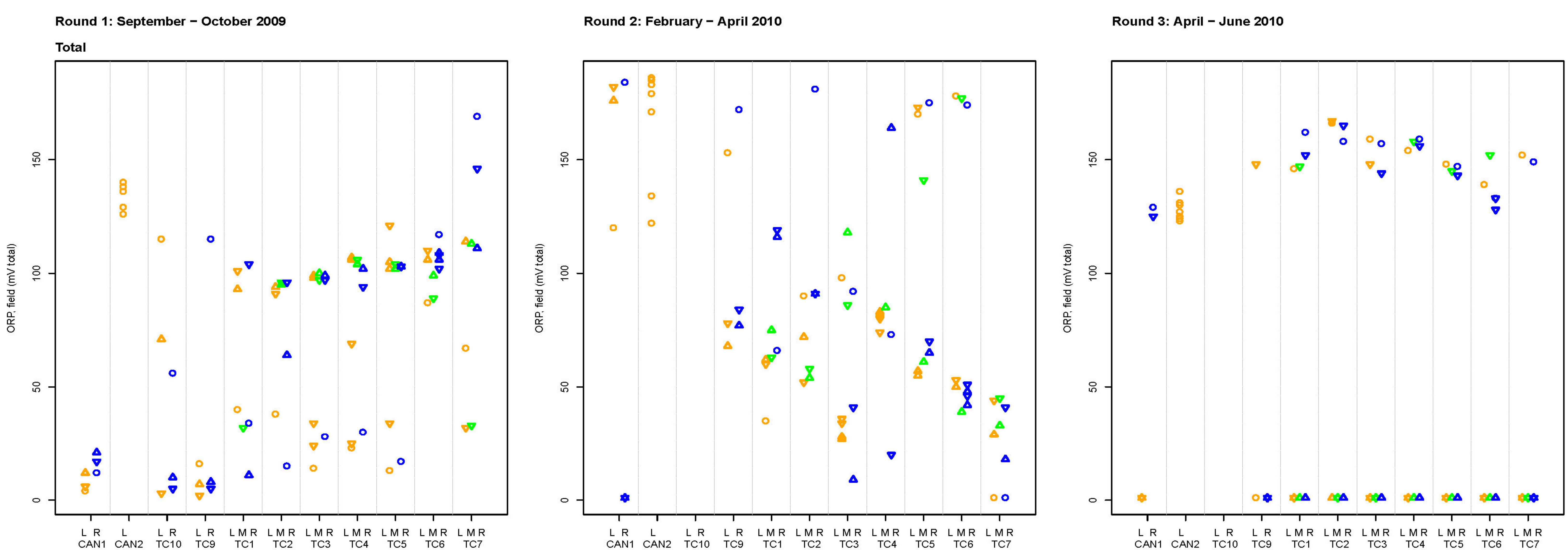
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Field Oxidation Reduction Potential



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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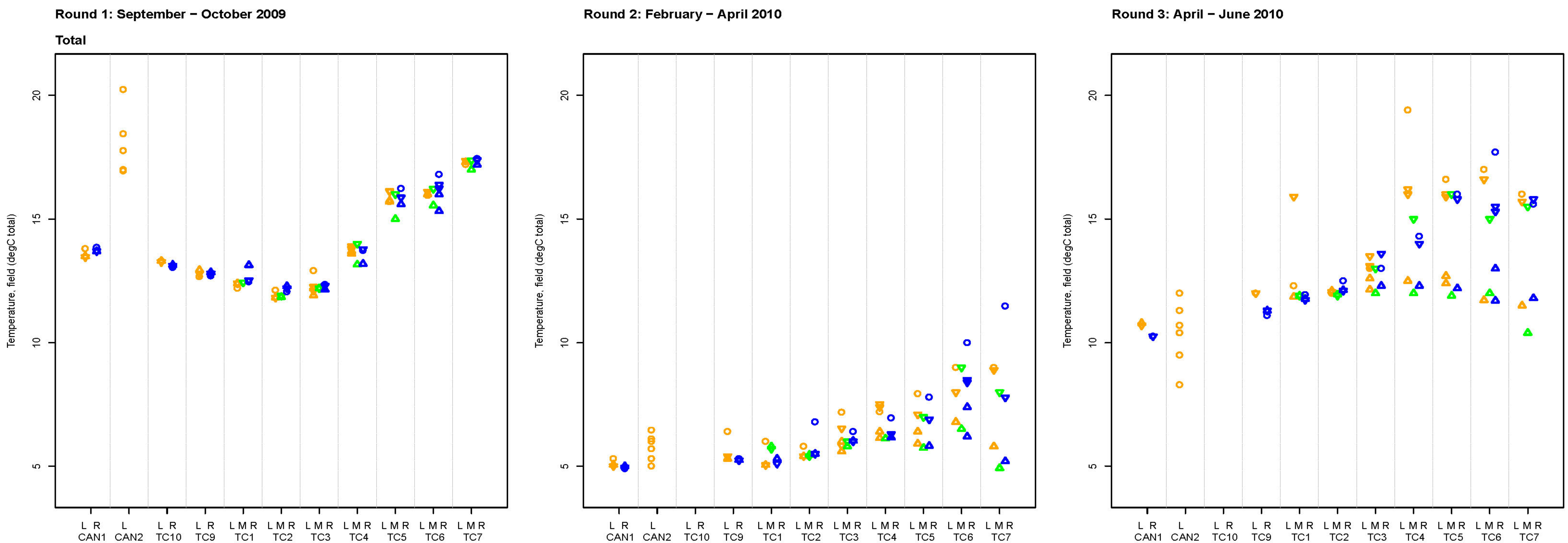
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Field Temperature



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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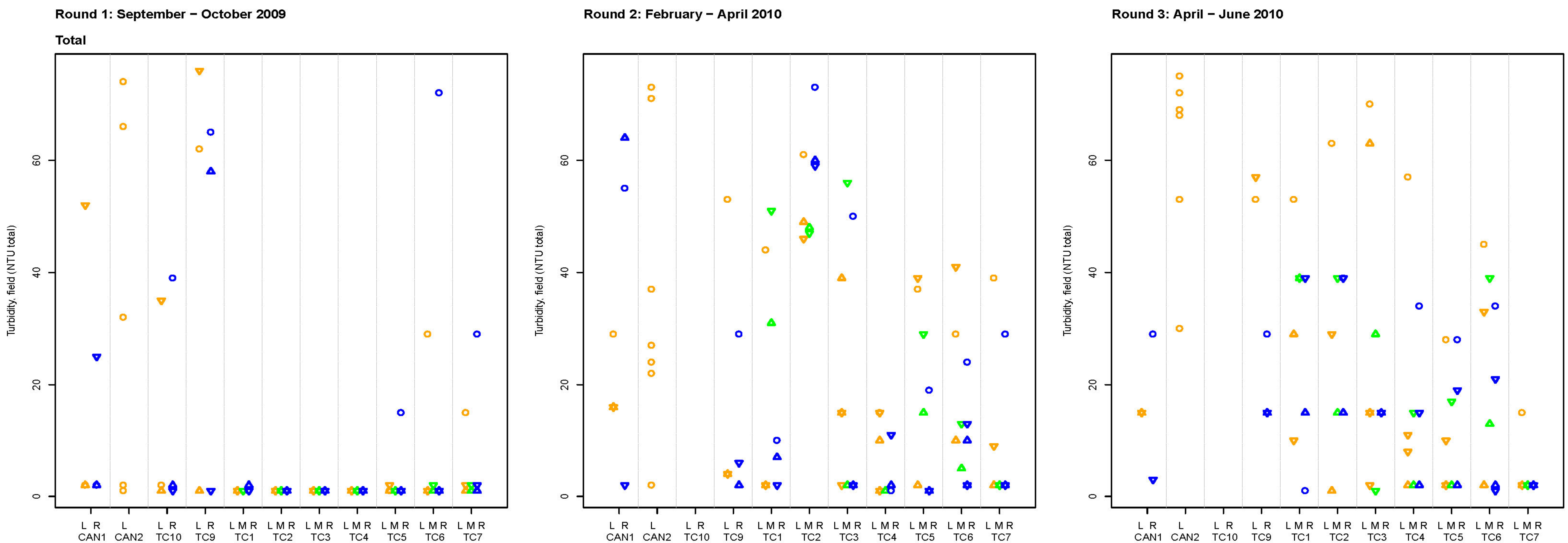
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Field Turbidity



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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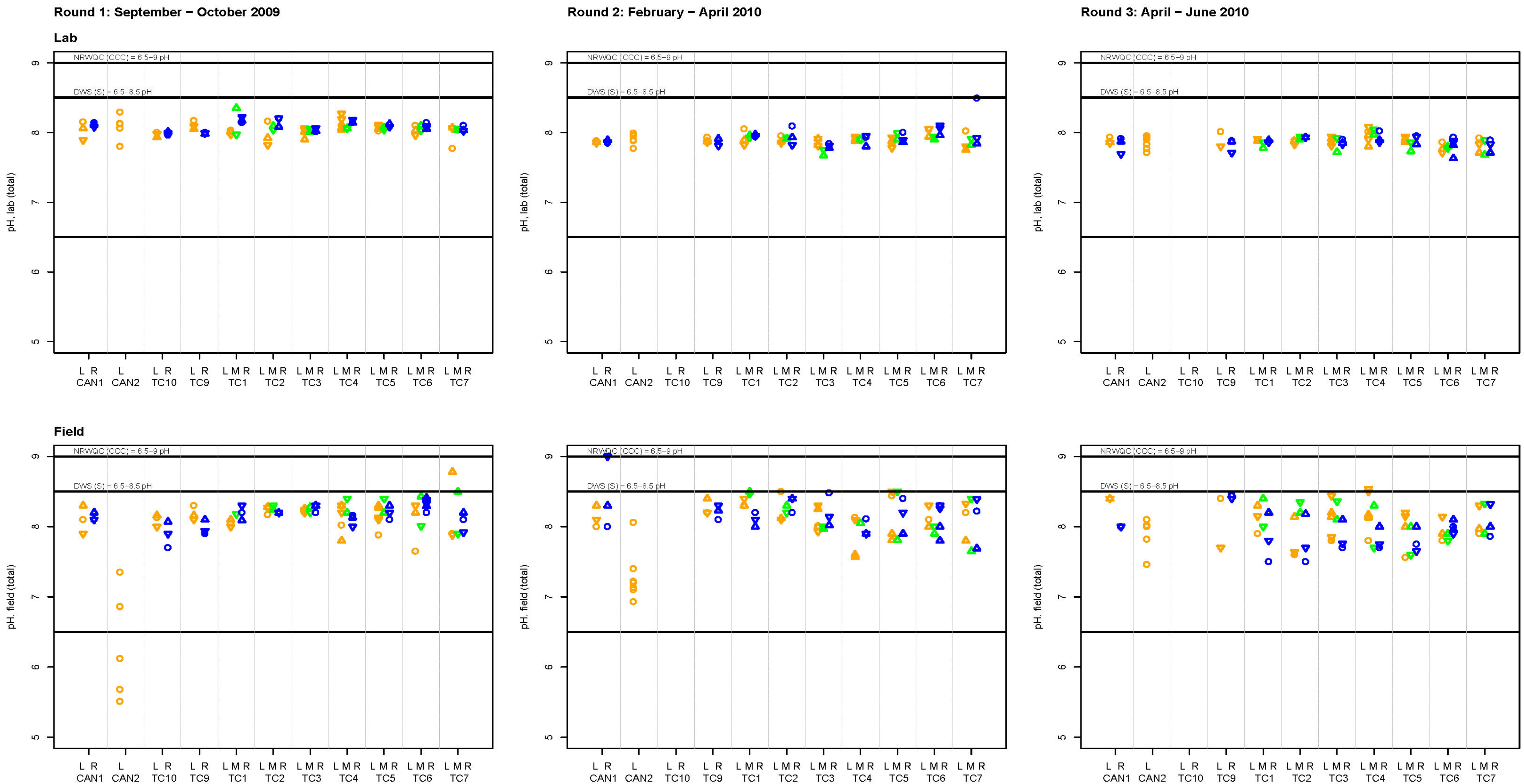
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – pH



LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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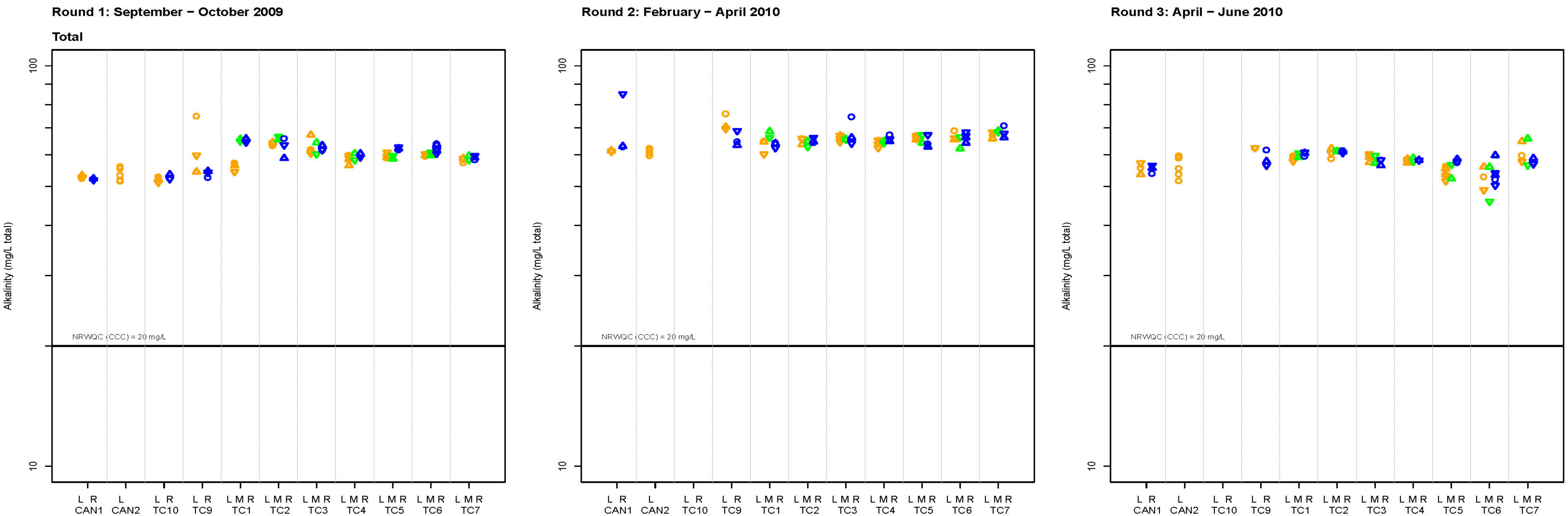
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Alkalinity



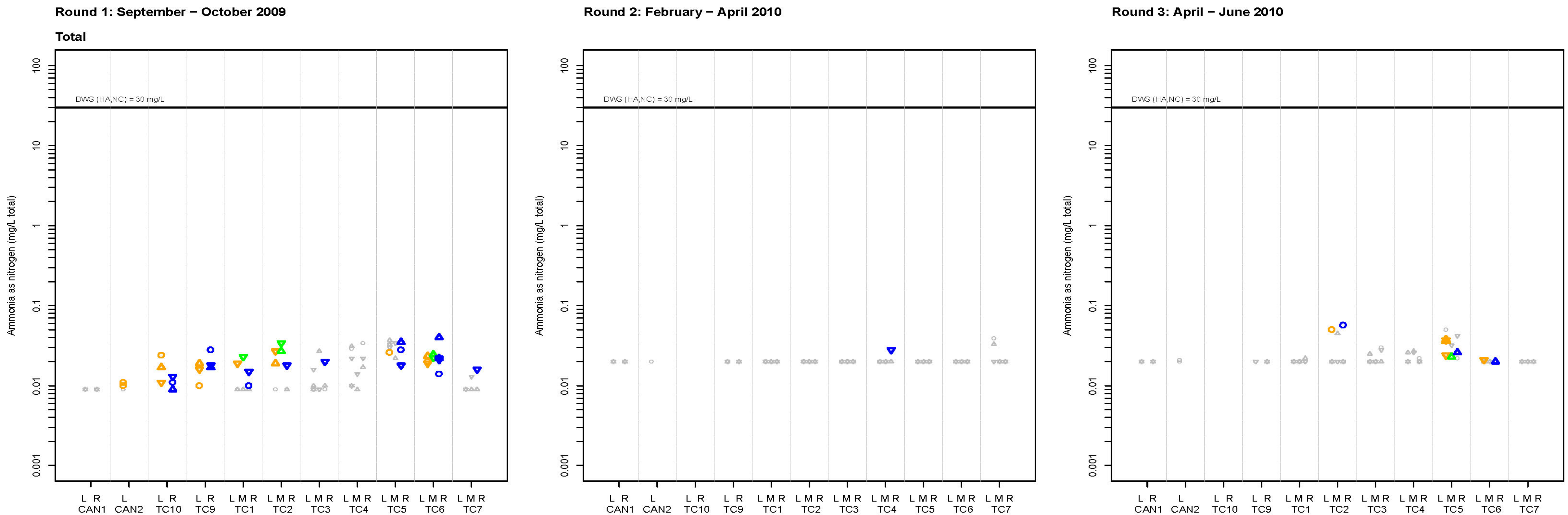
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Ammonia as Nitrogen



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
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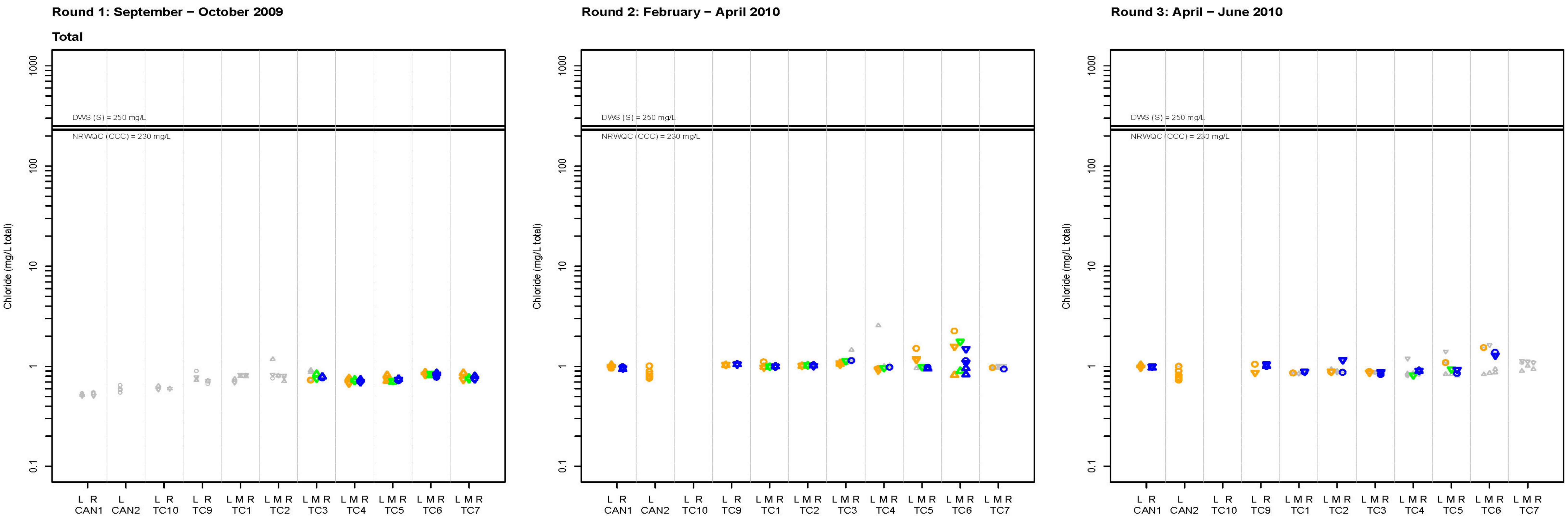
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Chloride



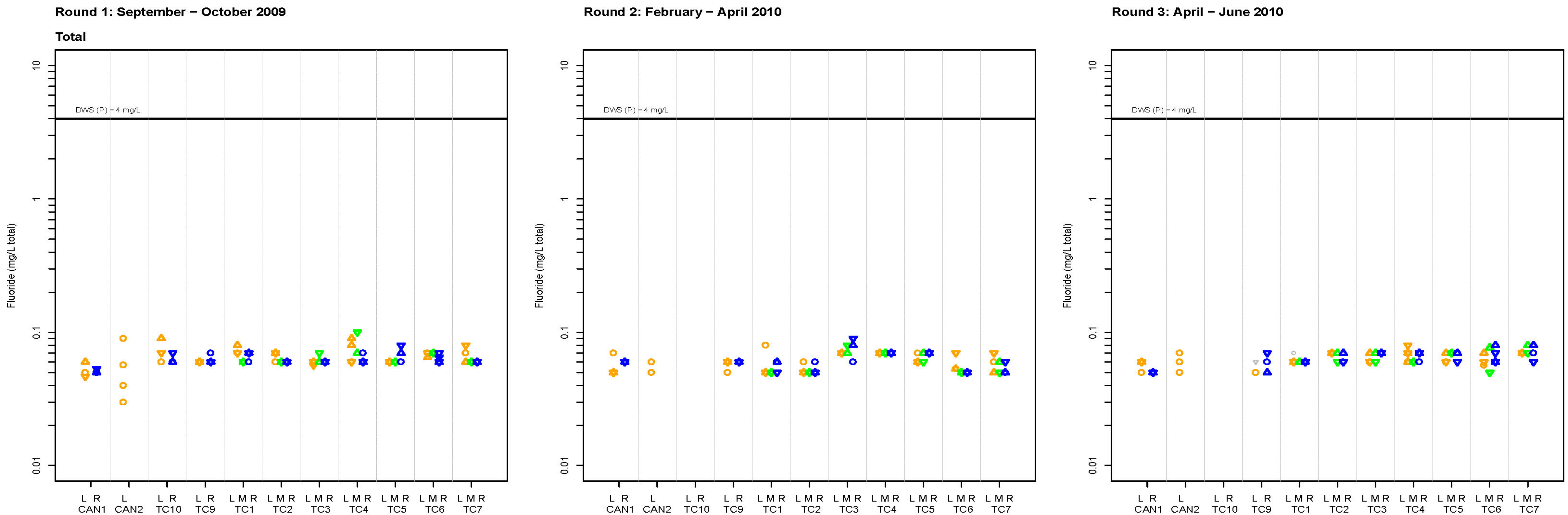
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Fluoride



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

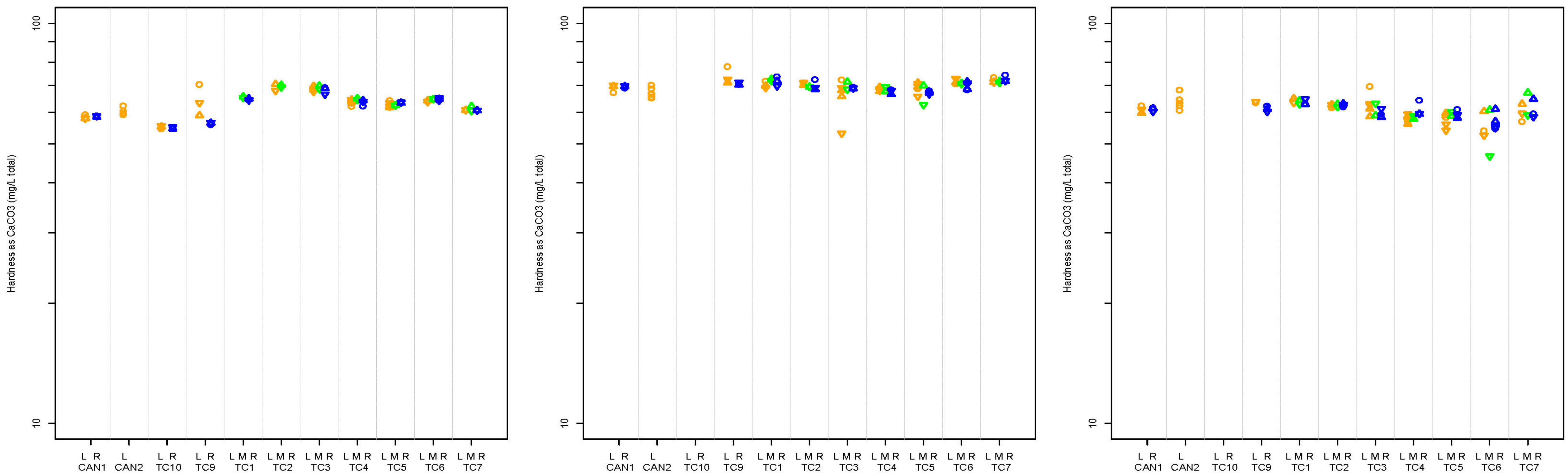
Surface Water – Hardness

Round 1: September – October 2009

Round 2: February – April 2010

Round 3: April – June 2010

Total



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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DWS (AL)	Drinking water standard, EPA action level
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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
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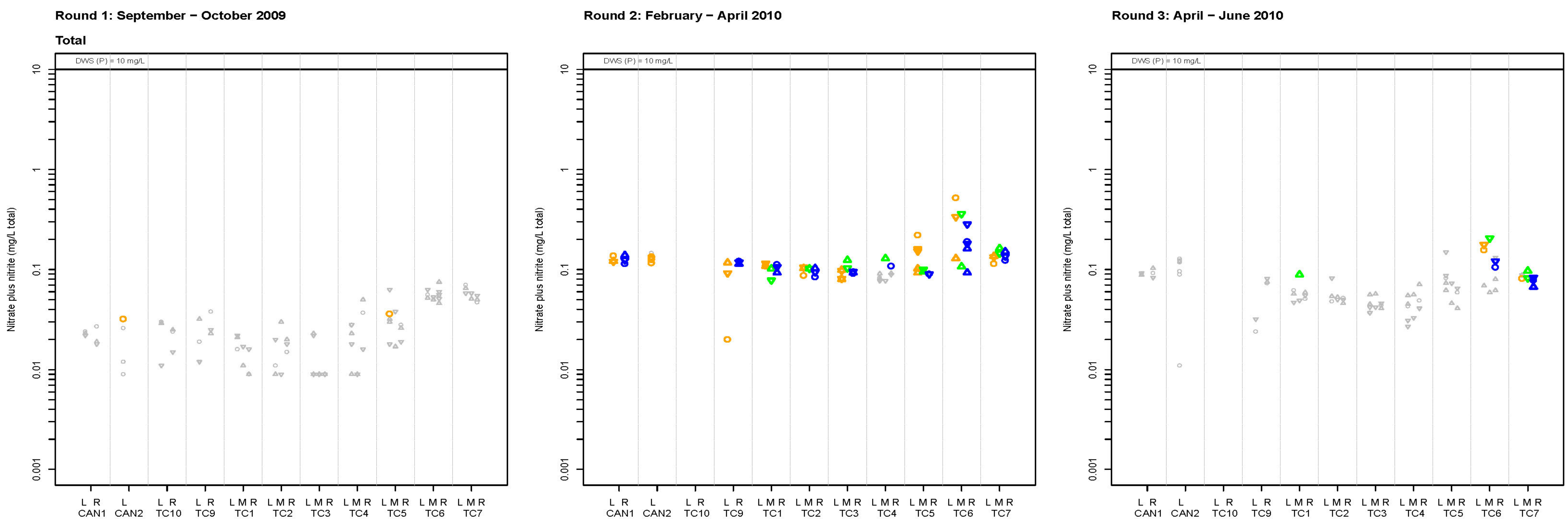
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Nitrate plus Nitrite



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
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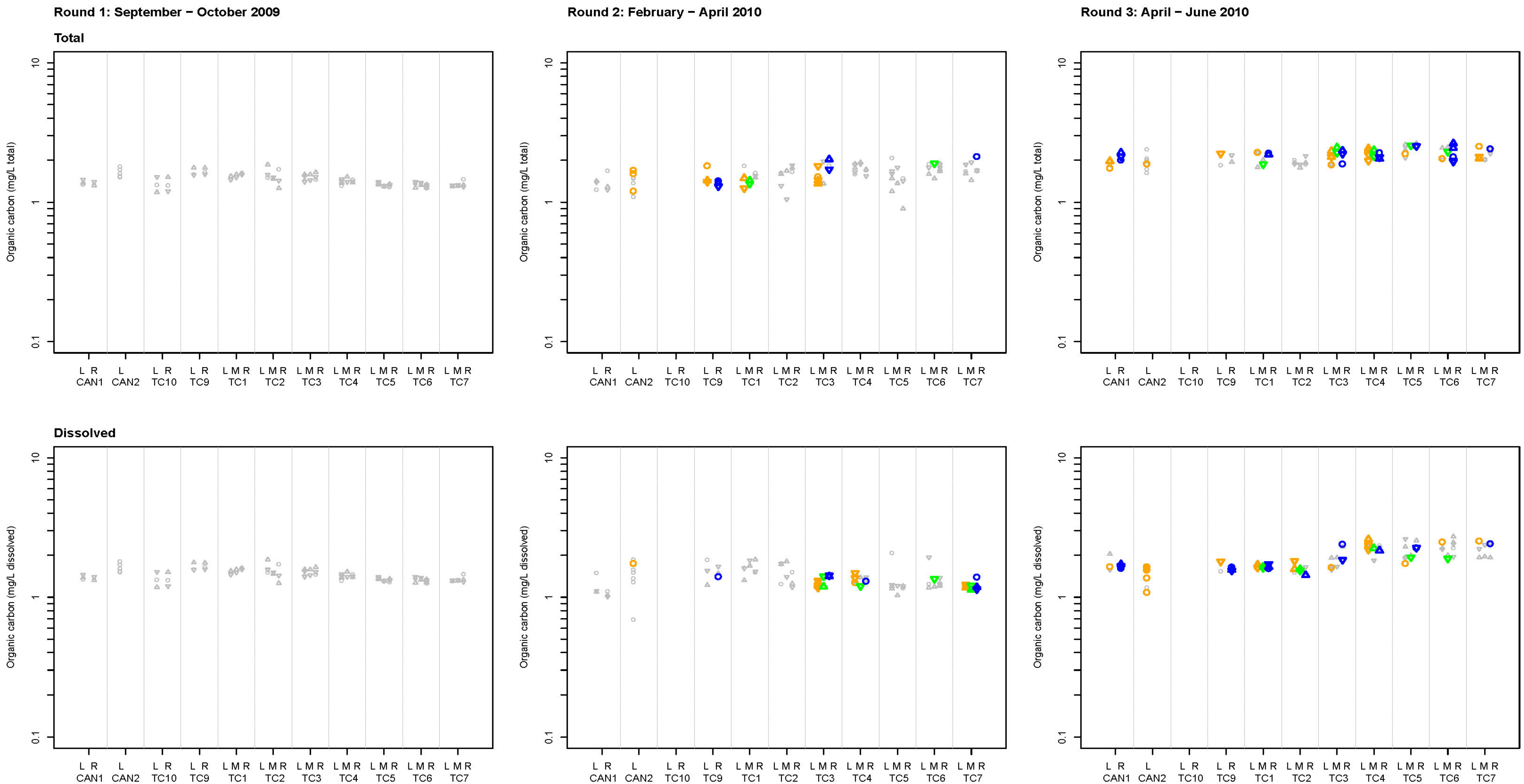
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Organic Carbon



LEGEND

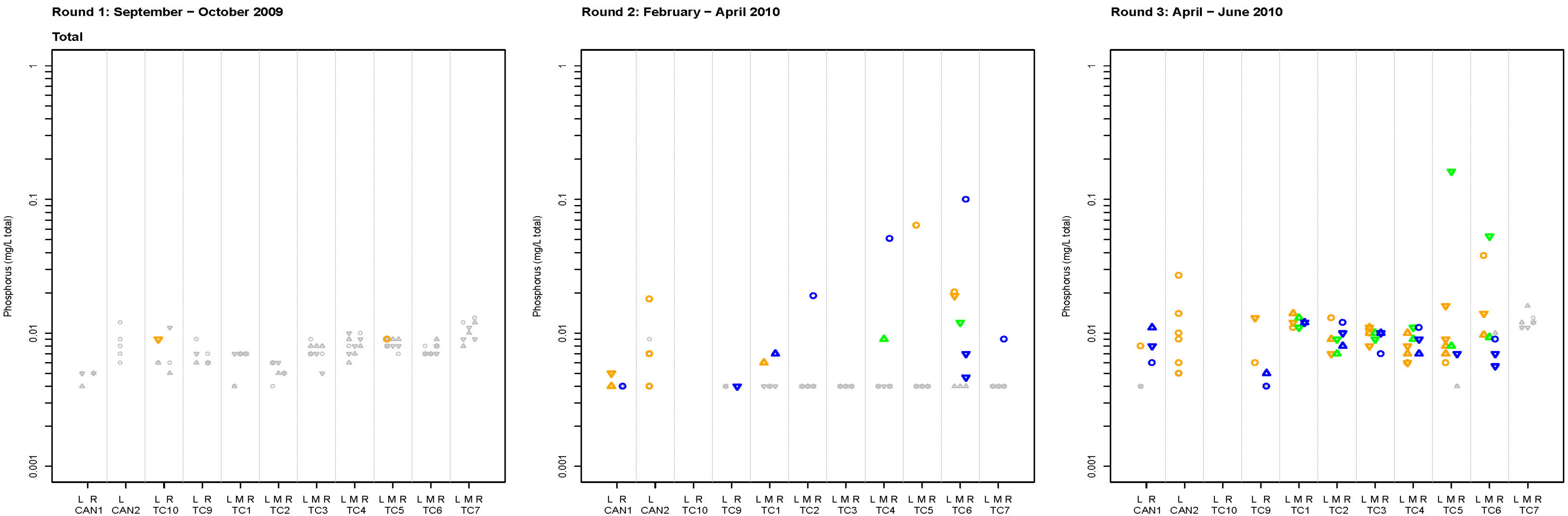
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Phosphorus



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

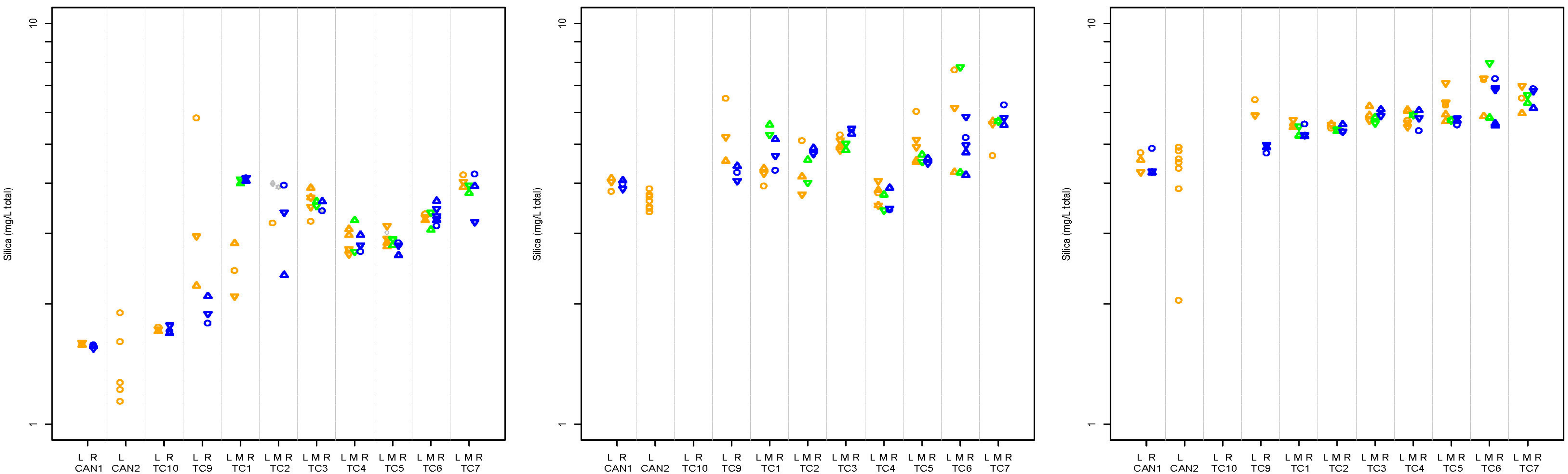
Surface Water – Silica

Round 1: September – October 2009

Total

Round 2: February – April 2010

Round 3: April – June 2010



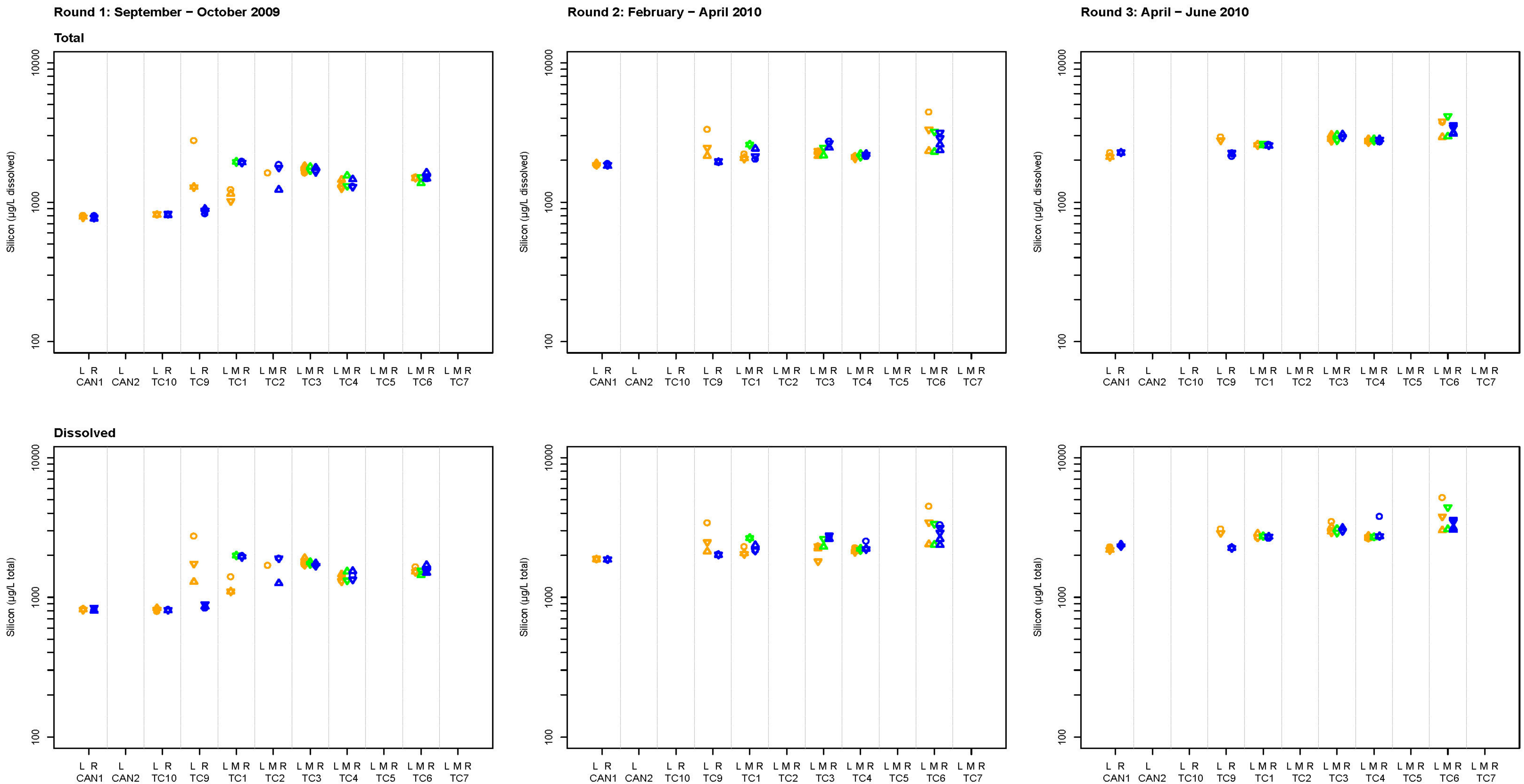
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Silicon



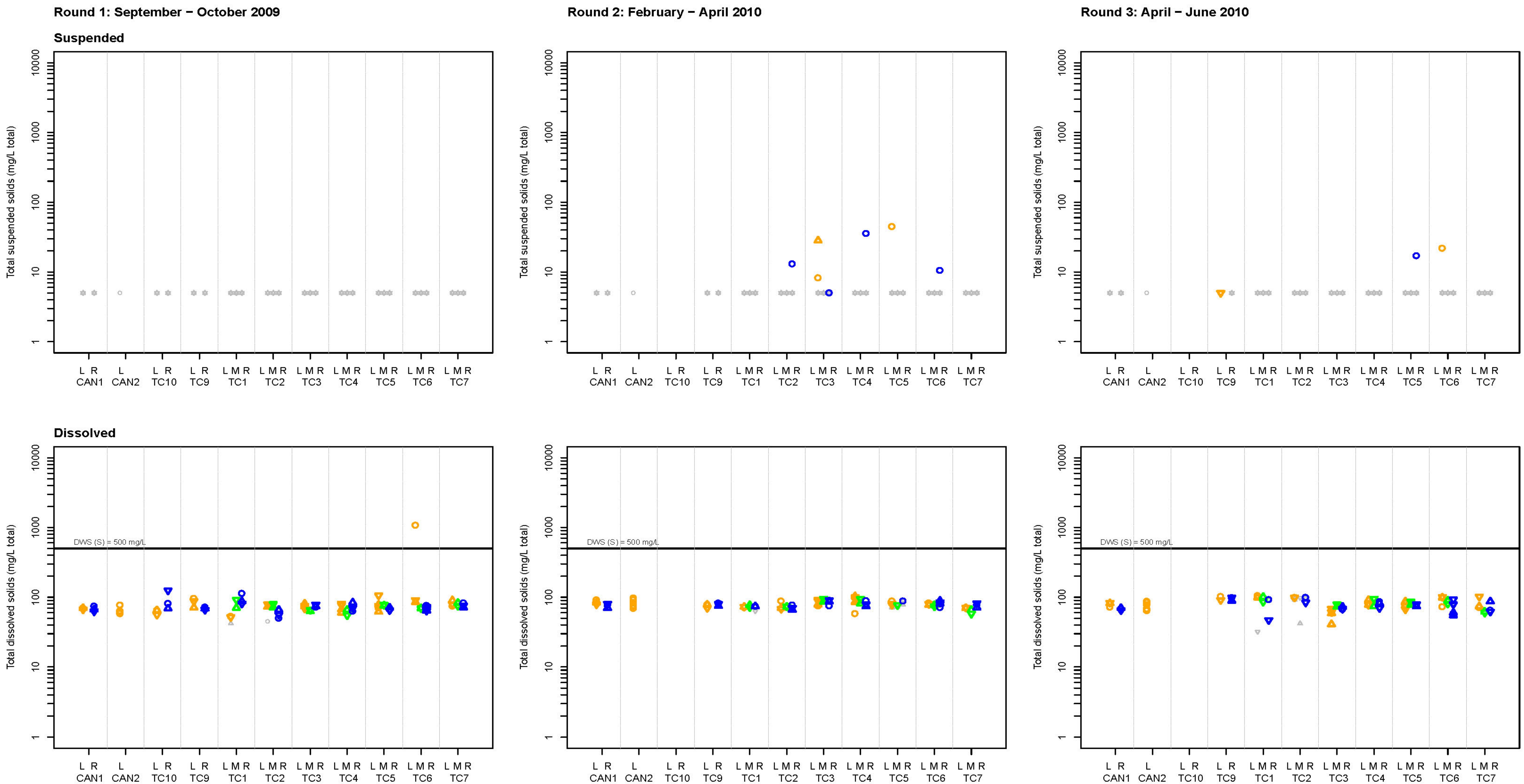
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Total Solids



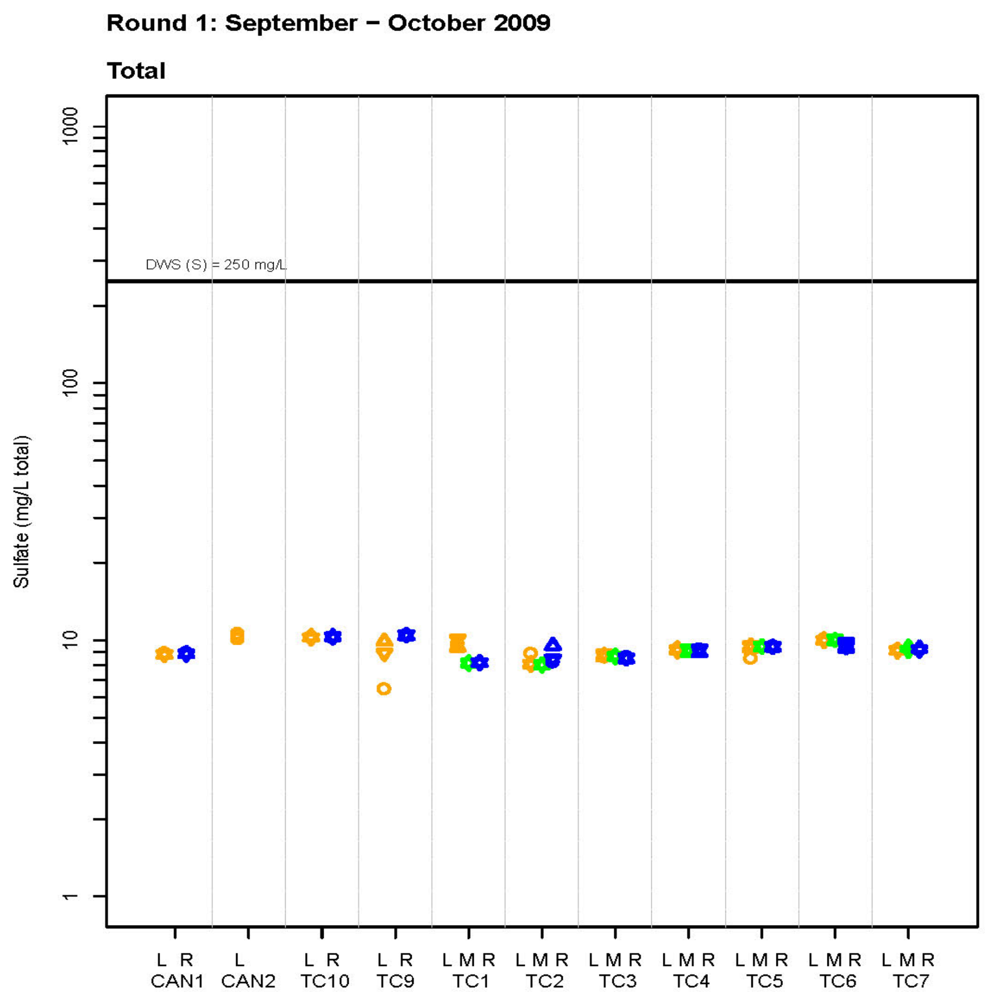
LEGEND

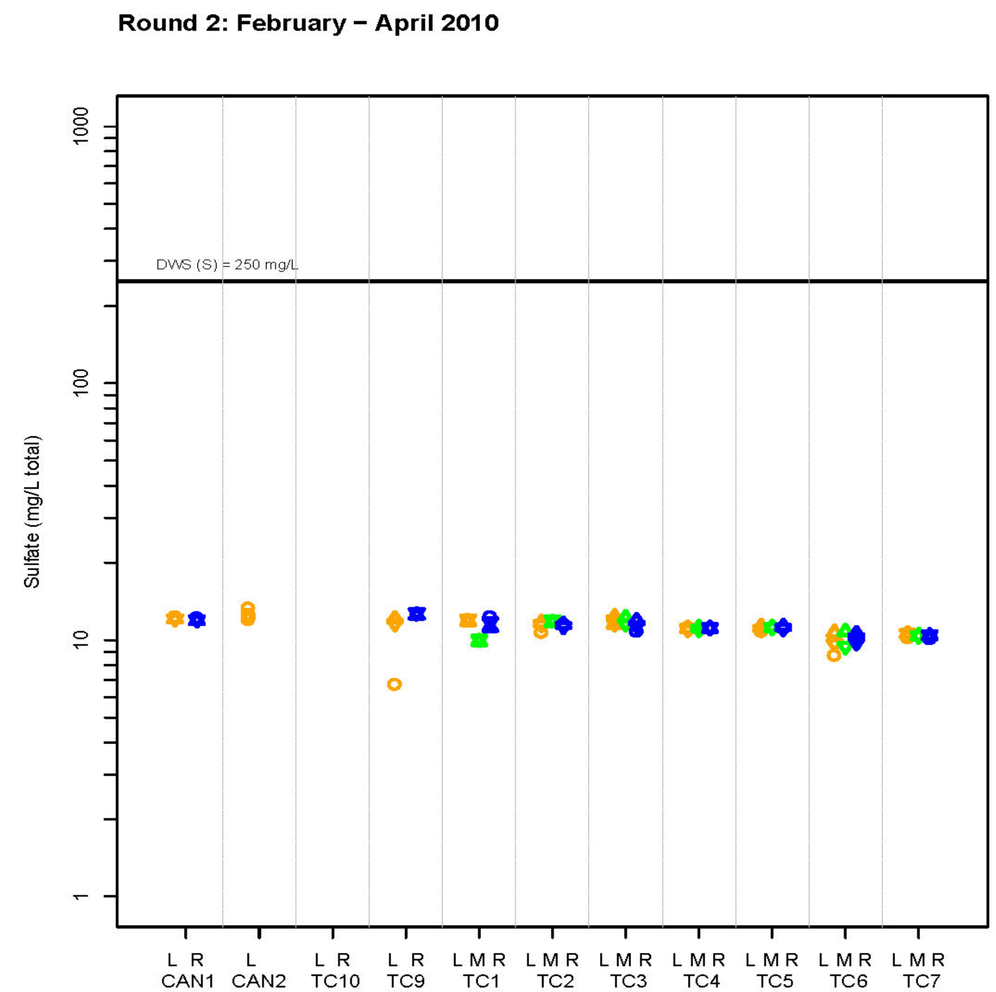
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)
- L = Left bank (orange)
- M = Mid-channel (green)
- R = Right bank (blue)

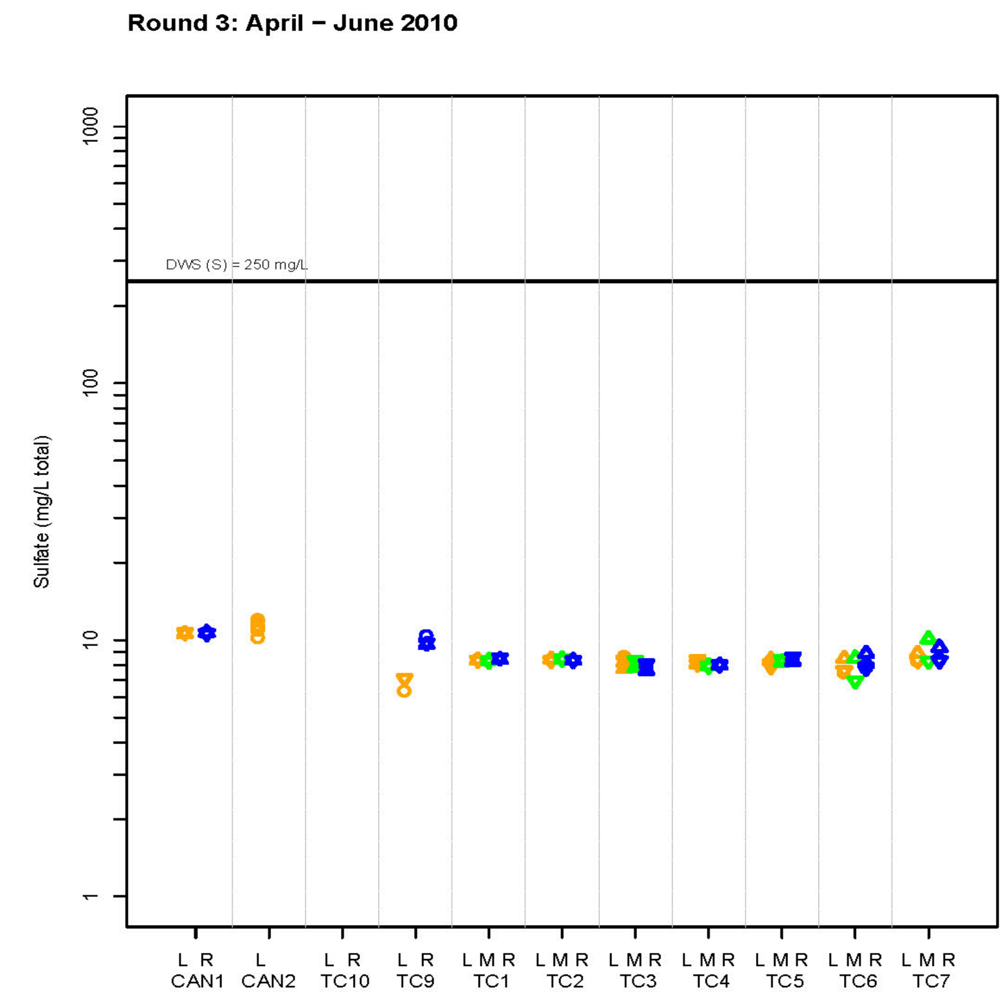
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Sulfate







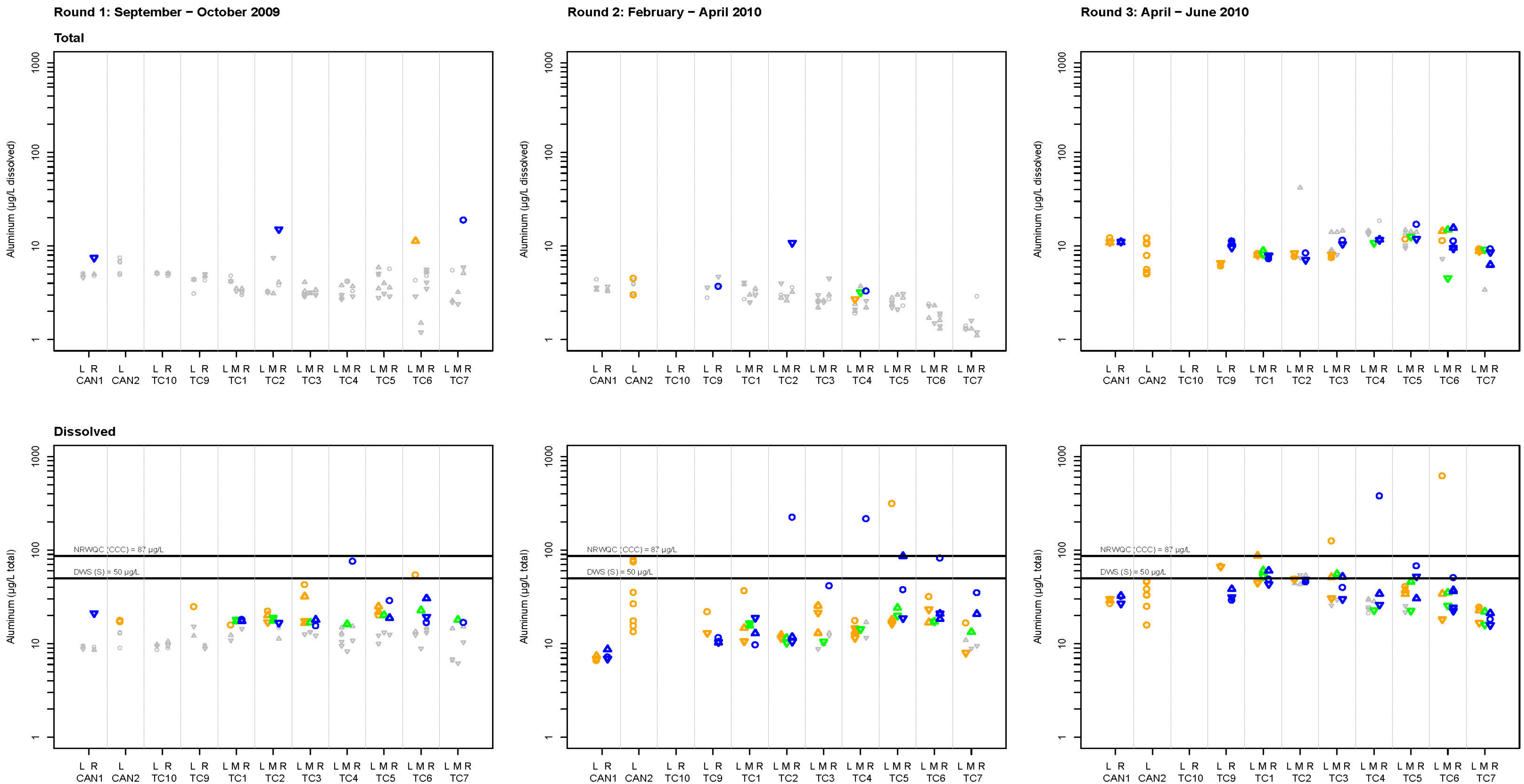
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Aluminum



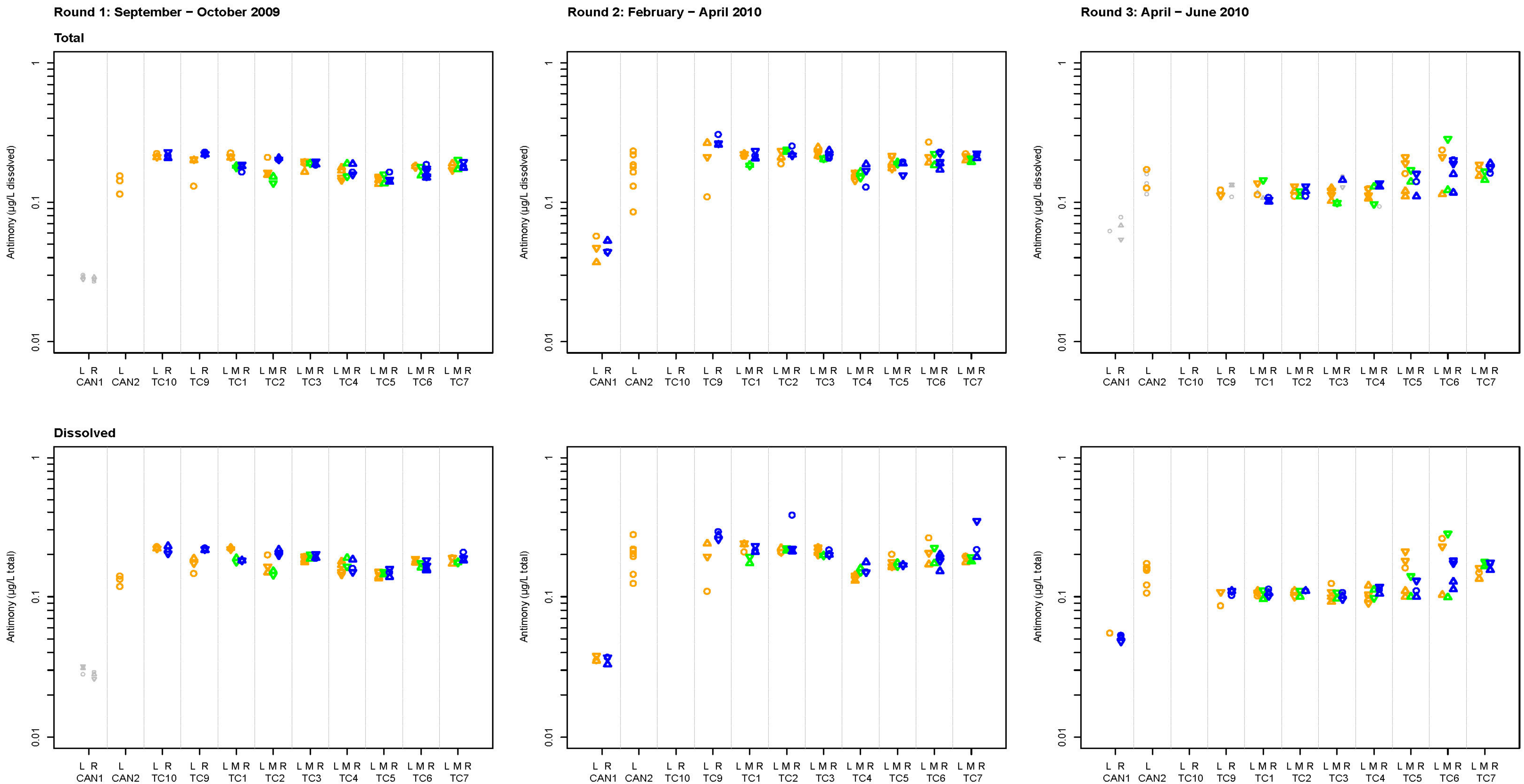
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Antimony



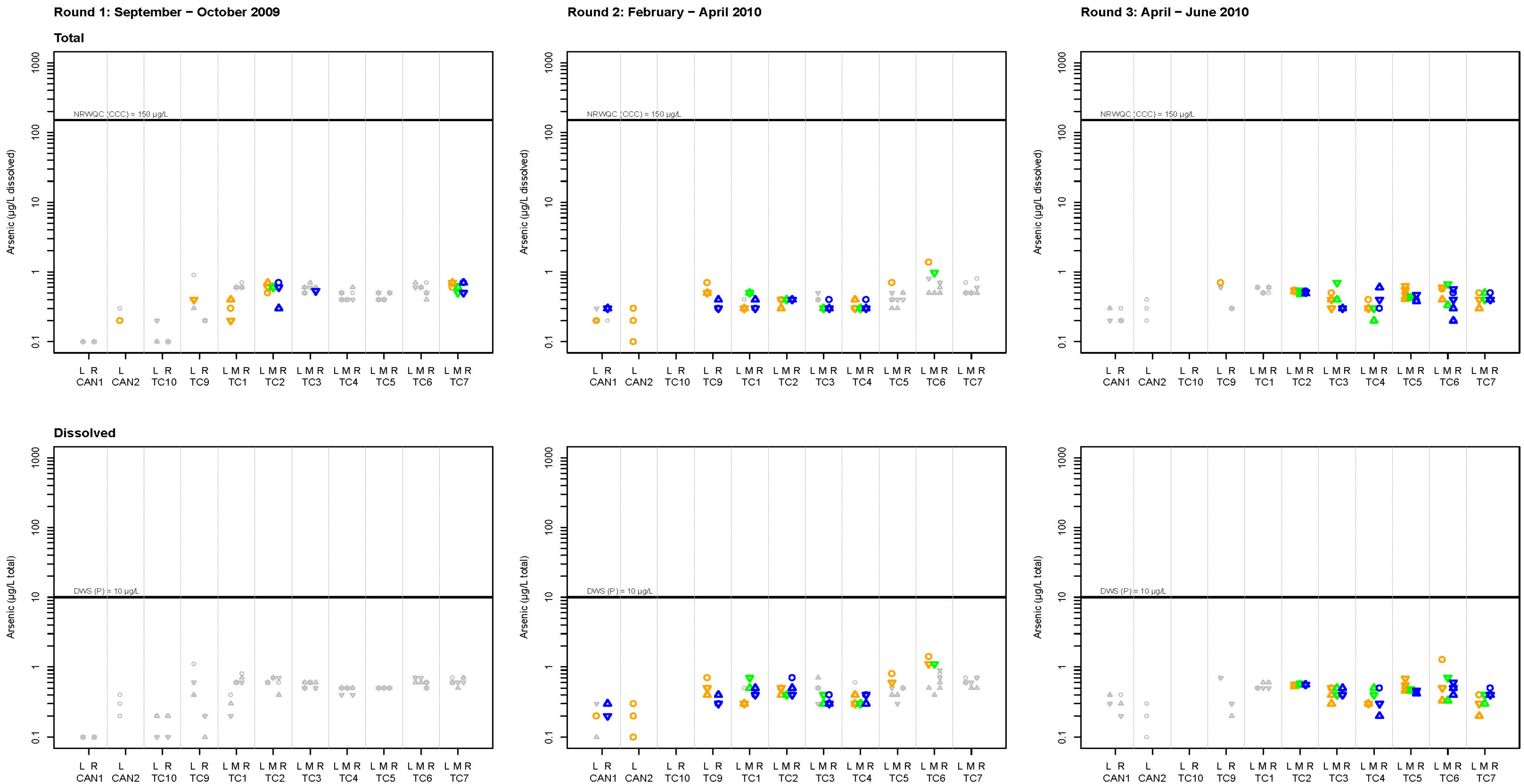
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Arsenic



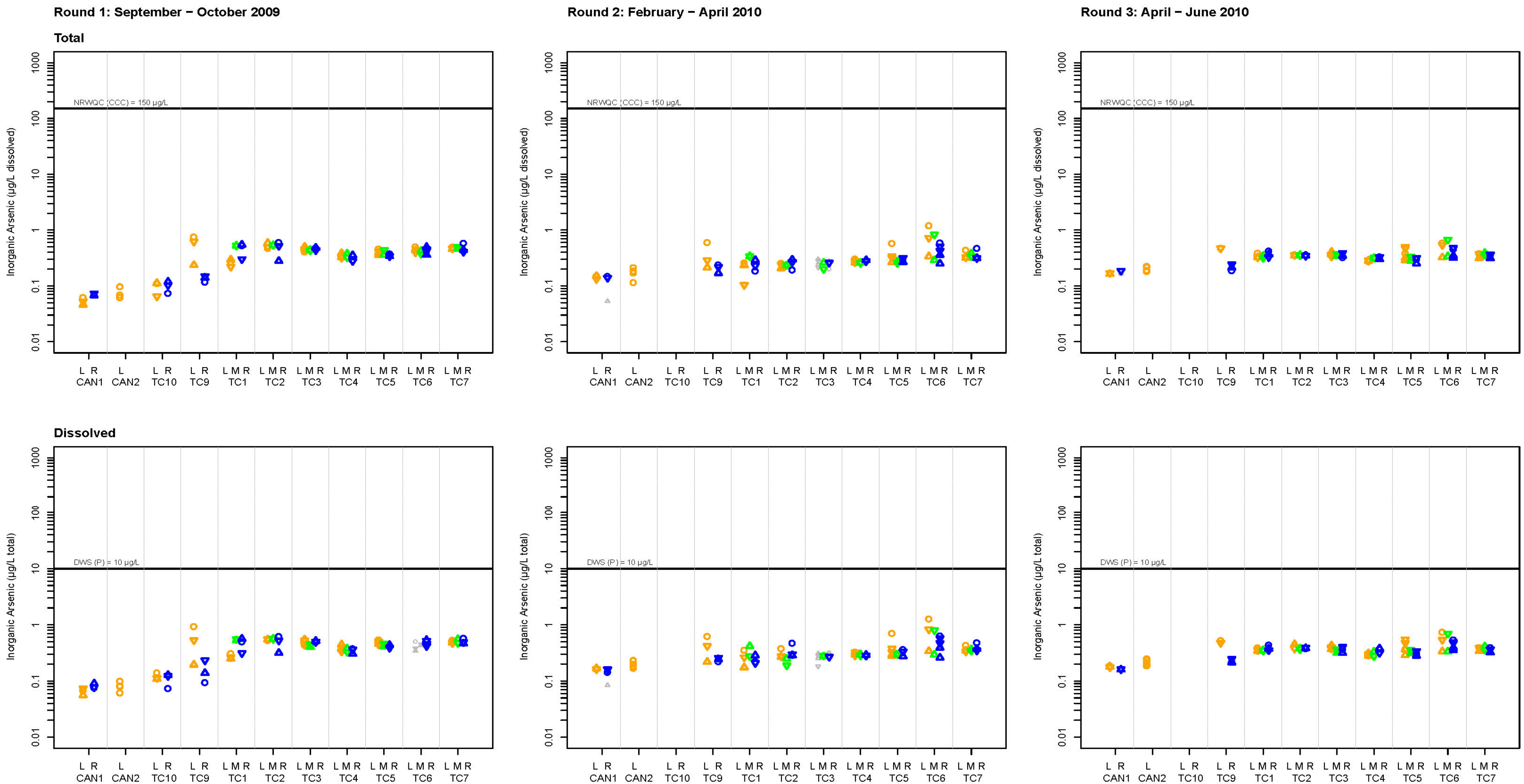
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Inorganic Arsenic



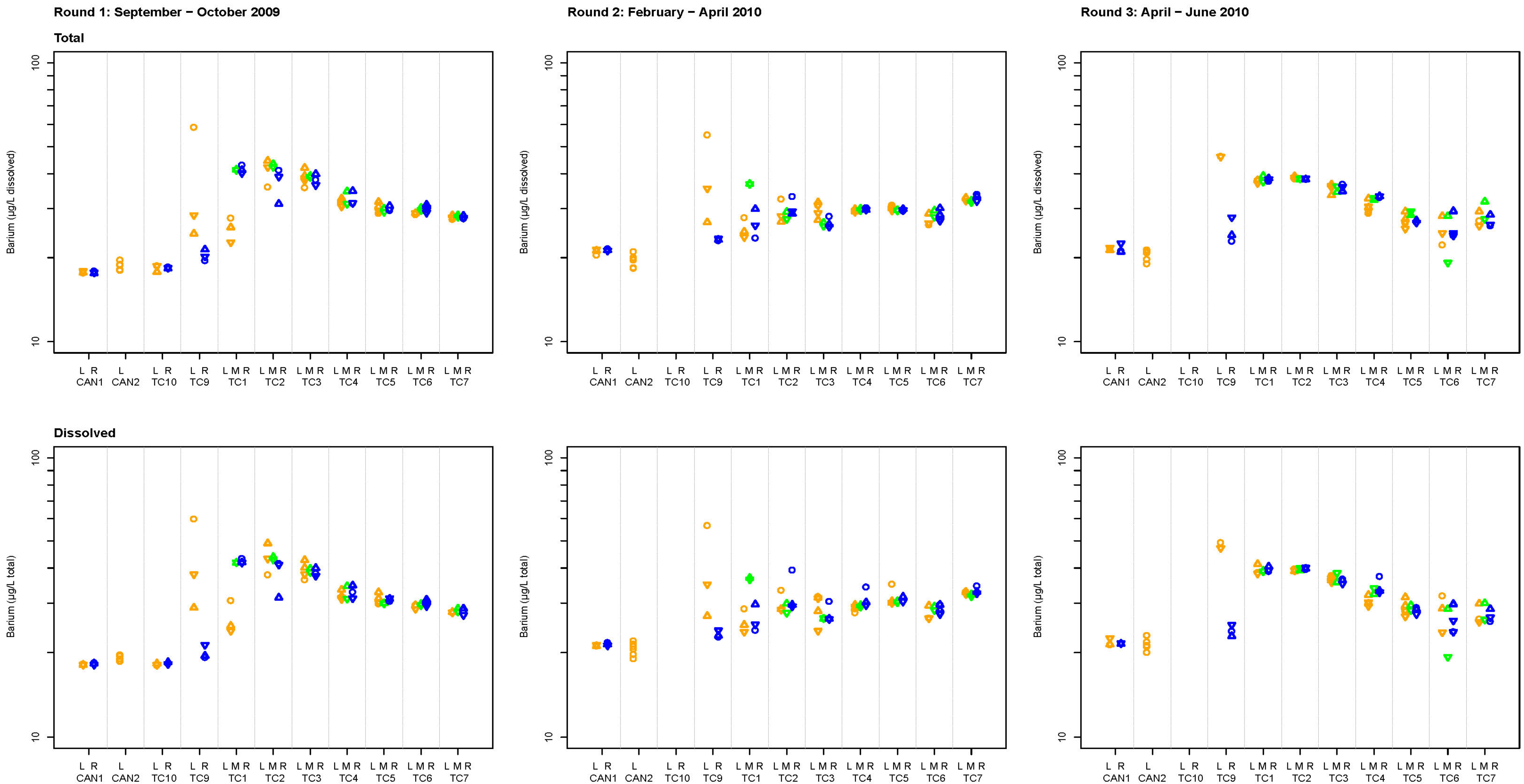
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Barium



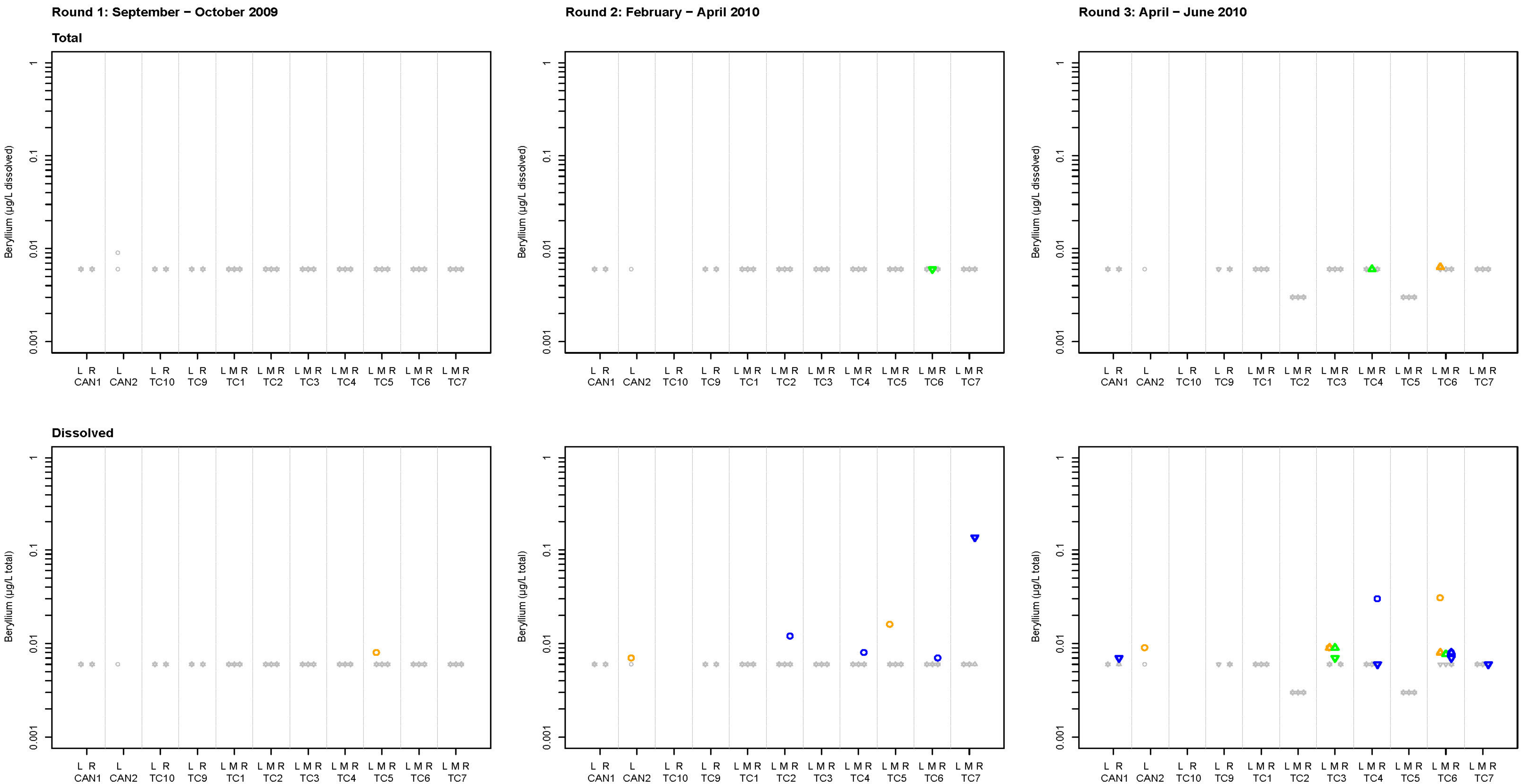
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Beryllium



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

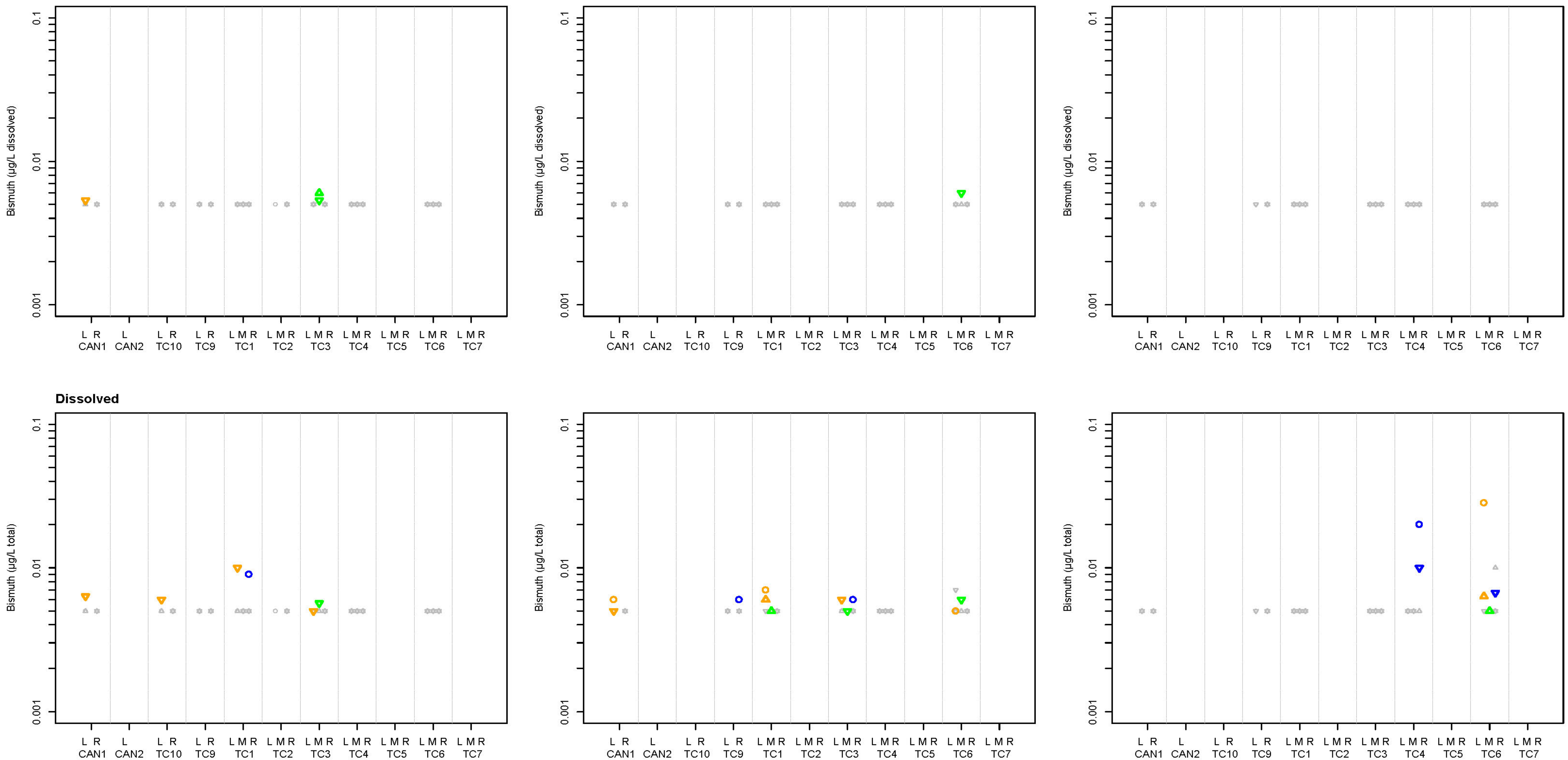
DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Bismuth

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total

Dissolved



LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
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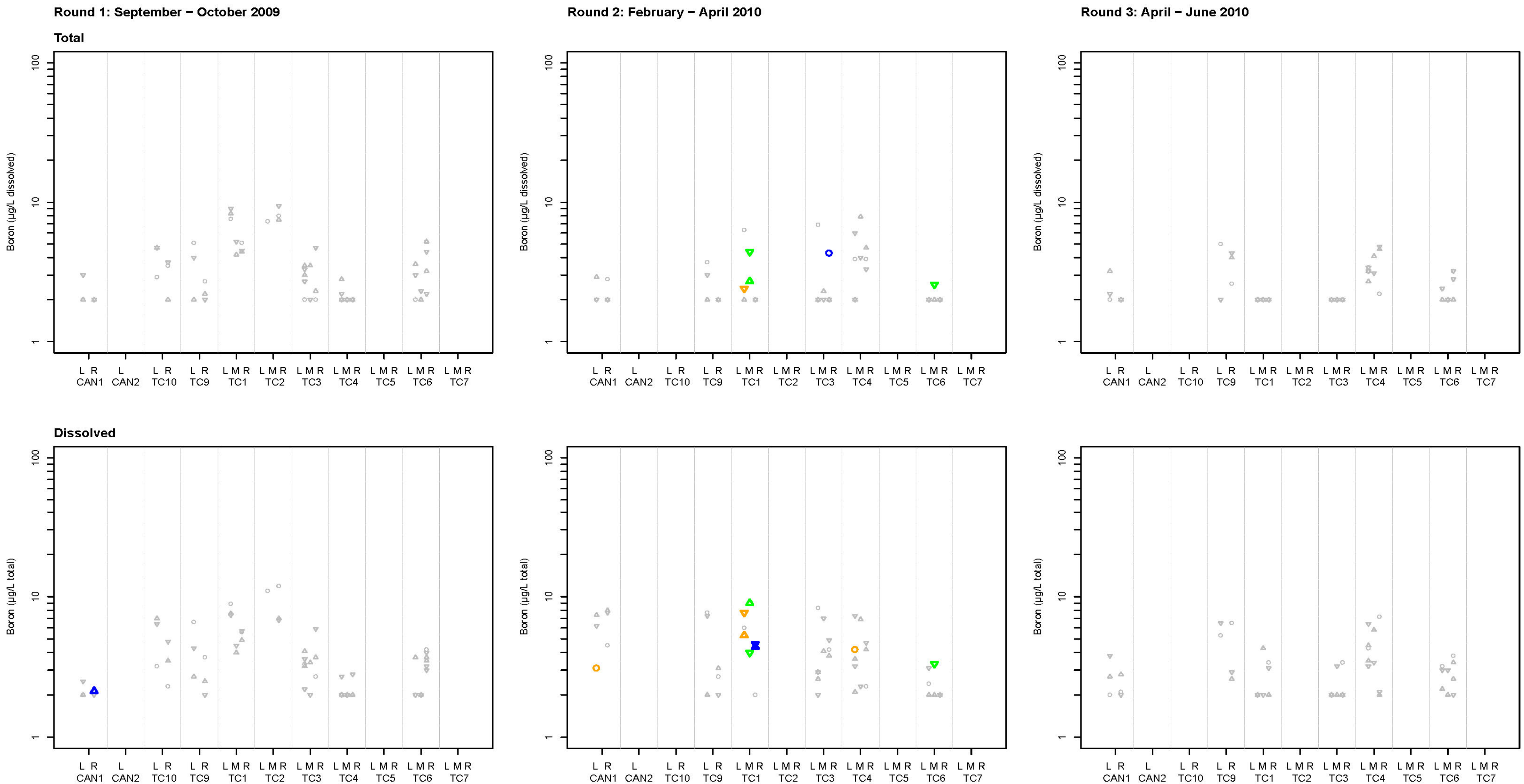
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Boron



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
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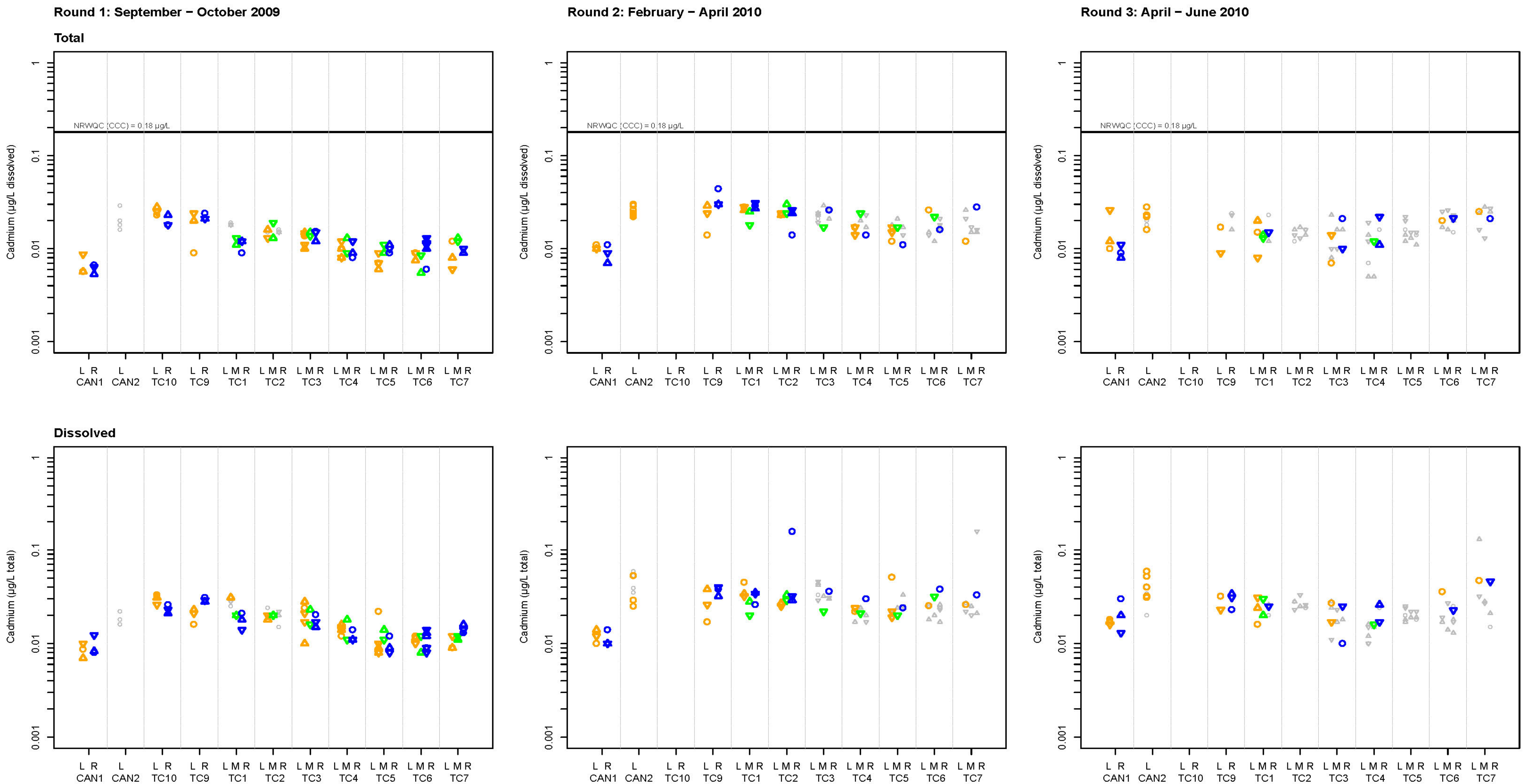
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Cadmium



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
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DWS (AL)	Drinking water standard, EPA action level
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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
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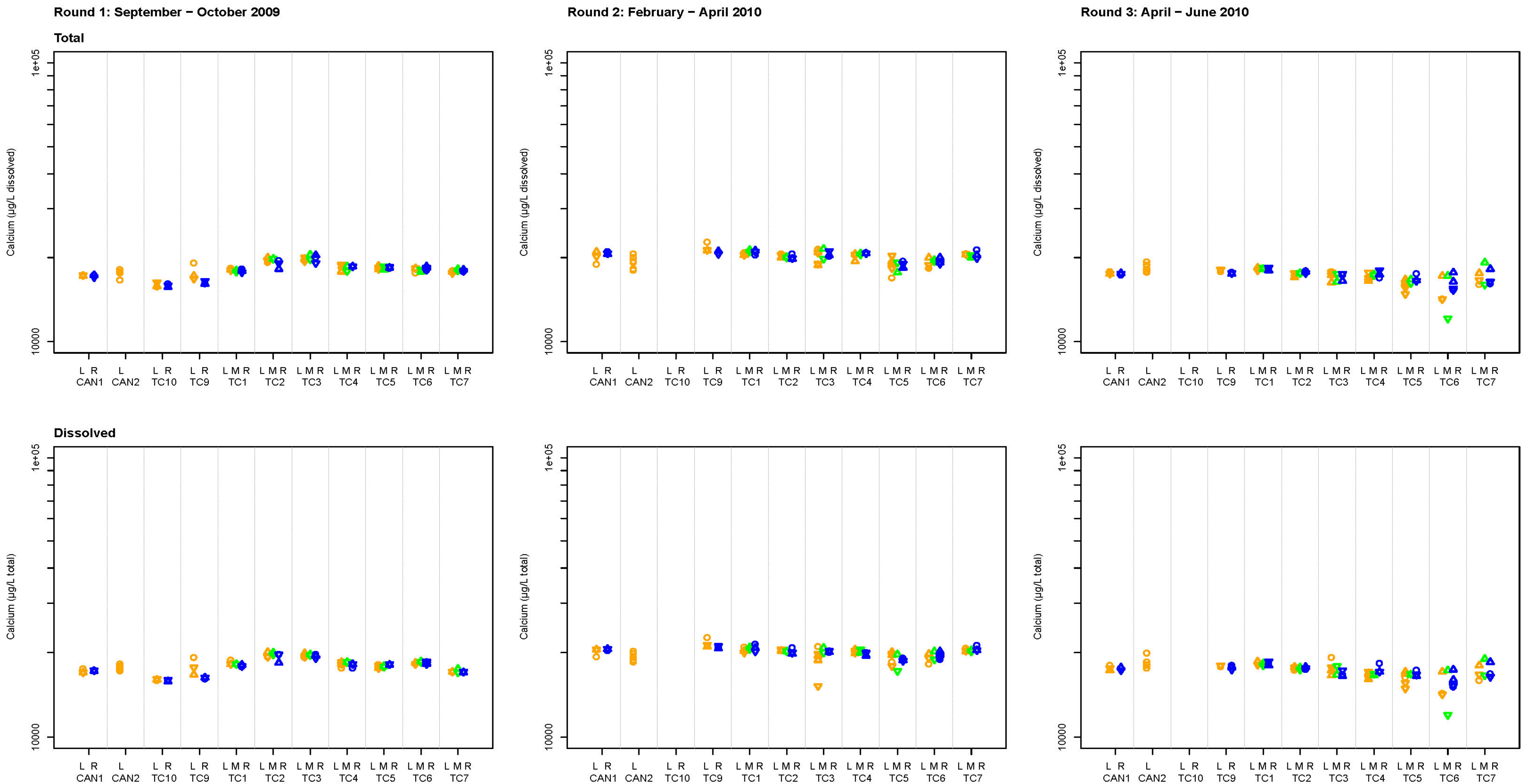
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Calcium



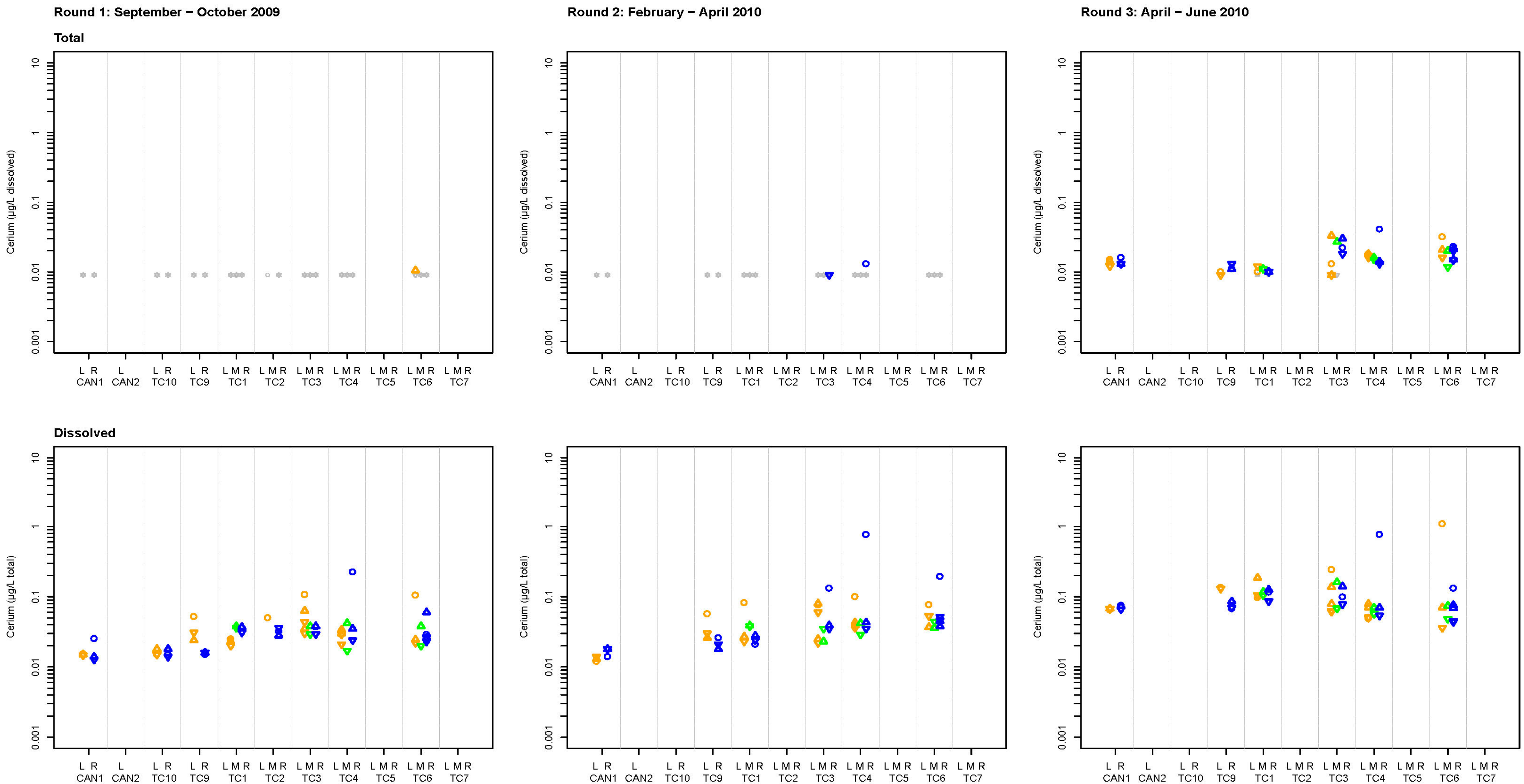
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Cerium



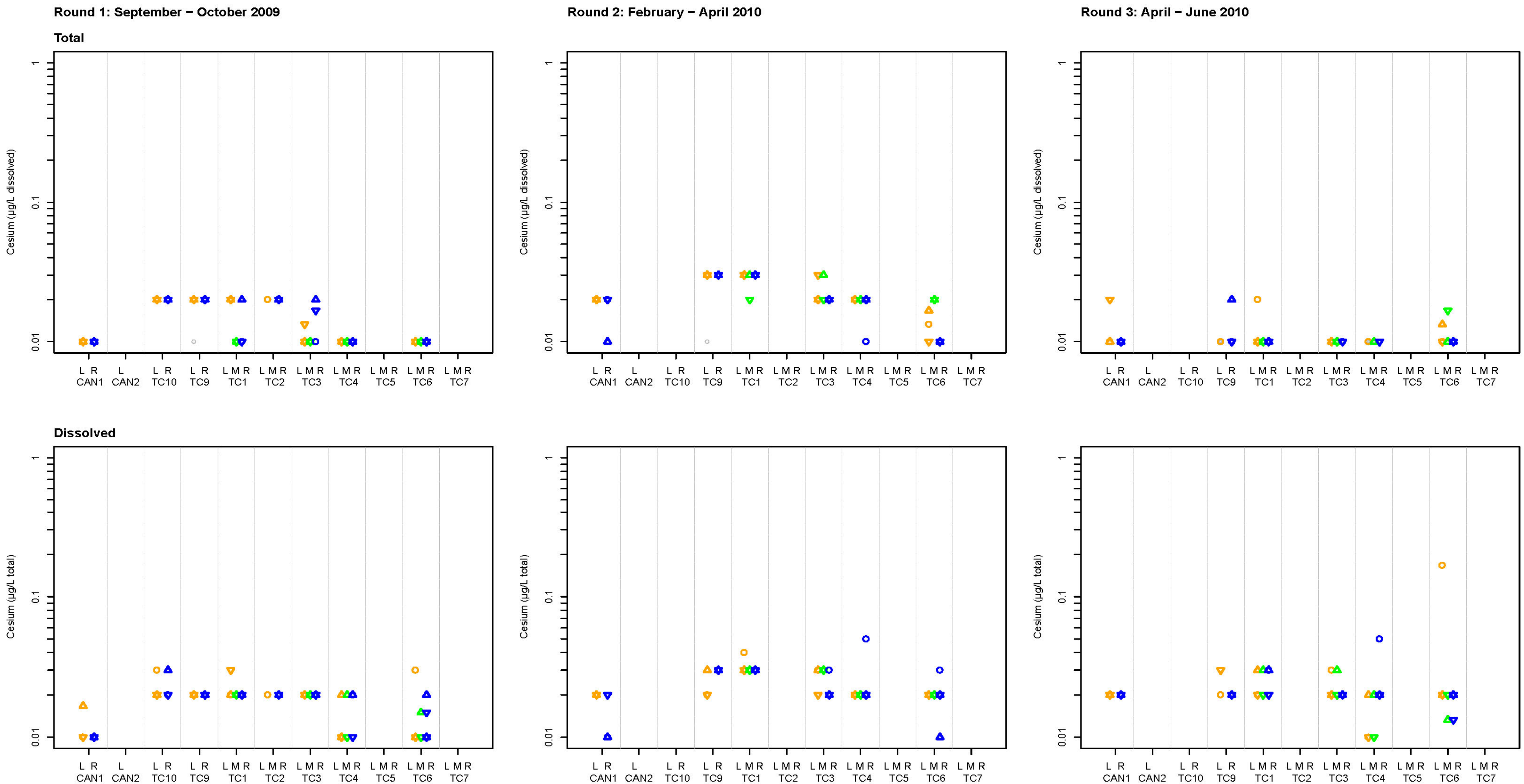
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Cesium



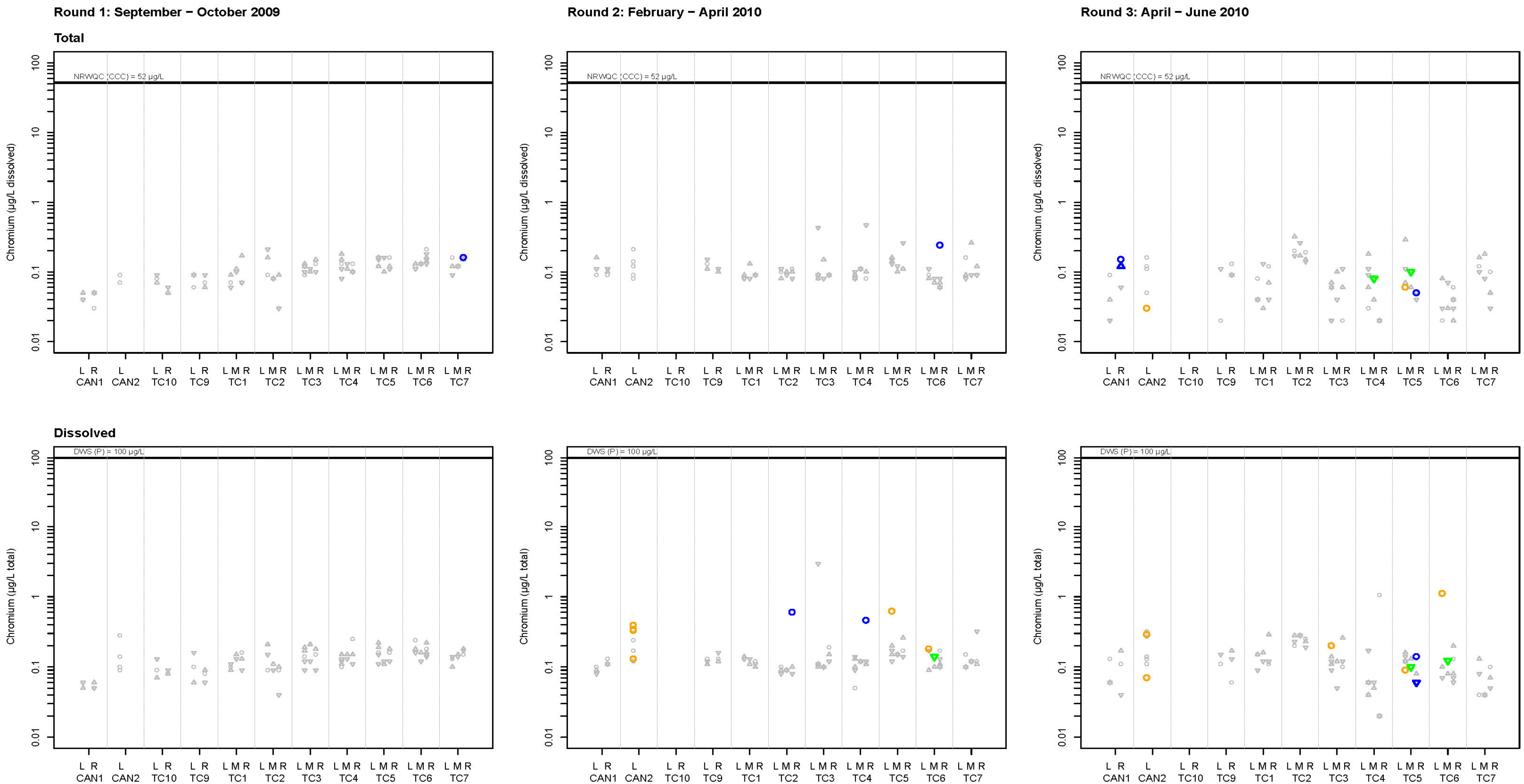
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Chromium



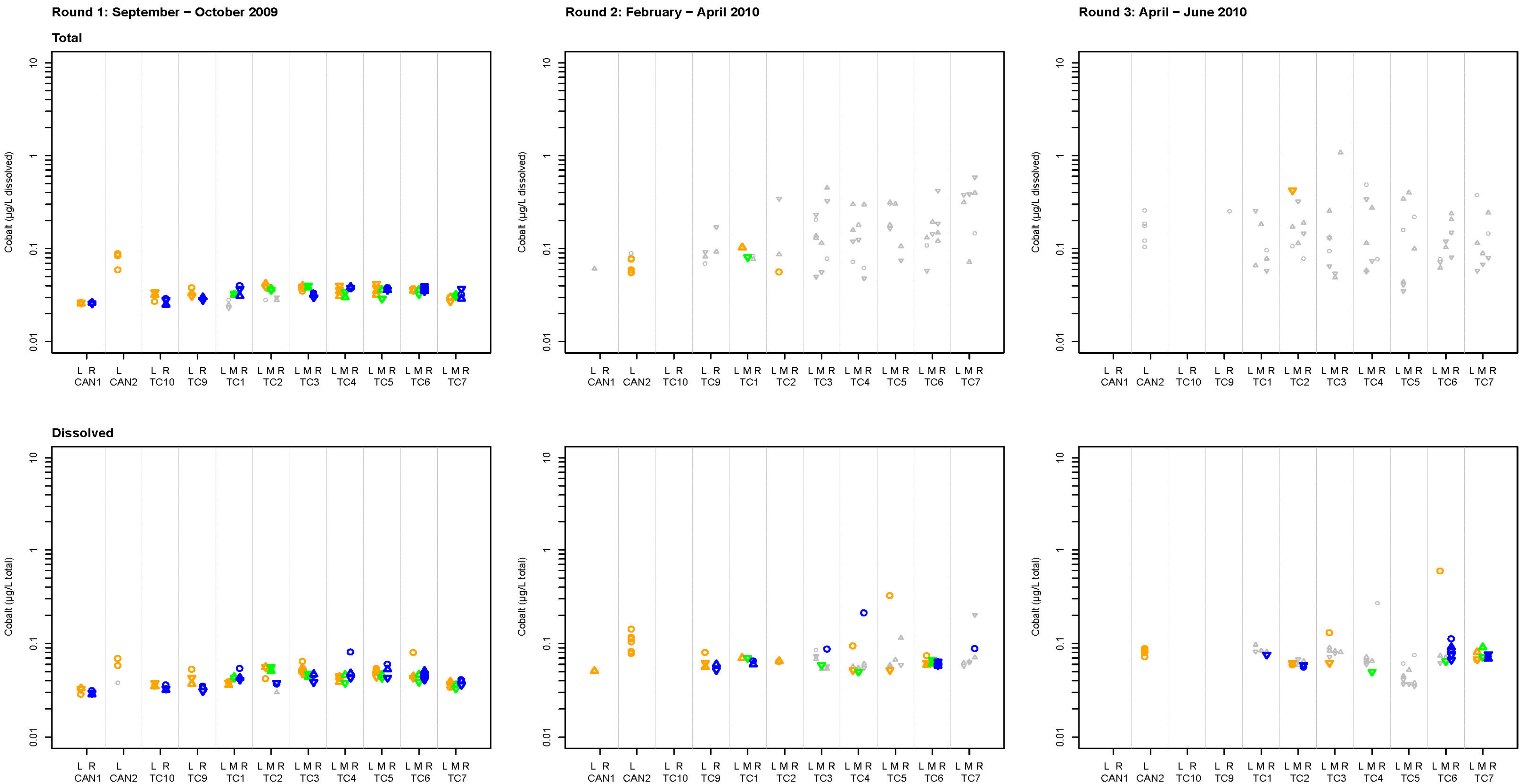
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Cobalt



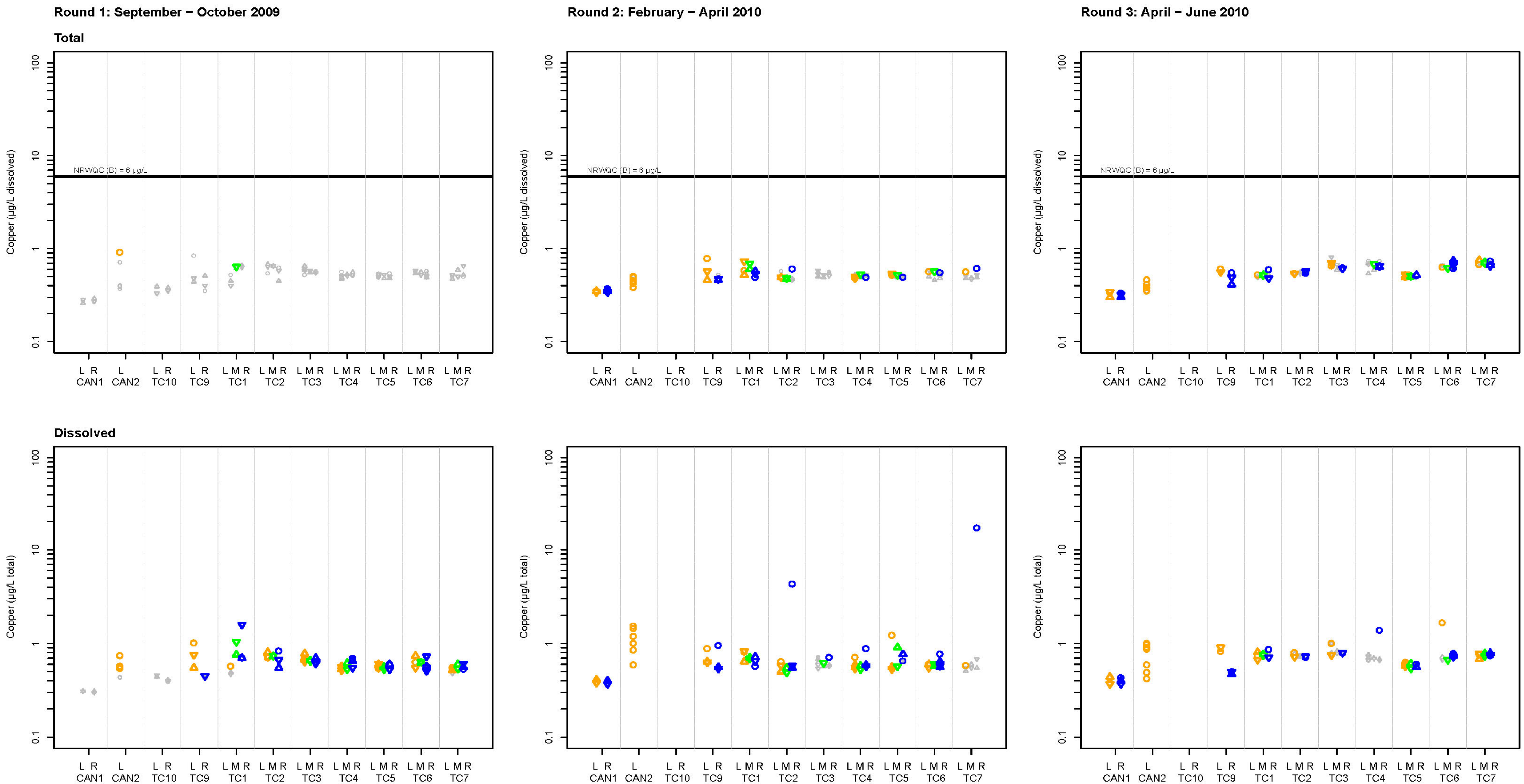
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Copper



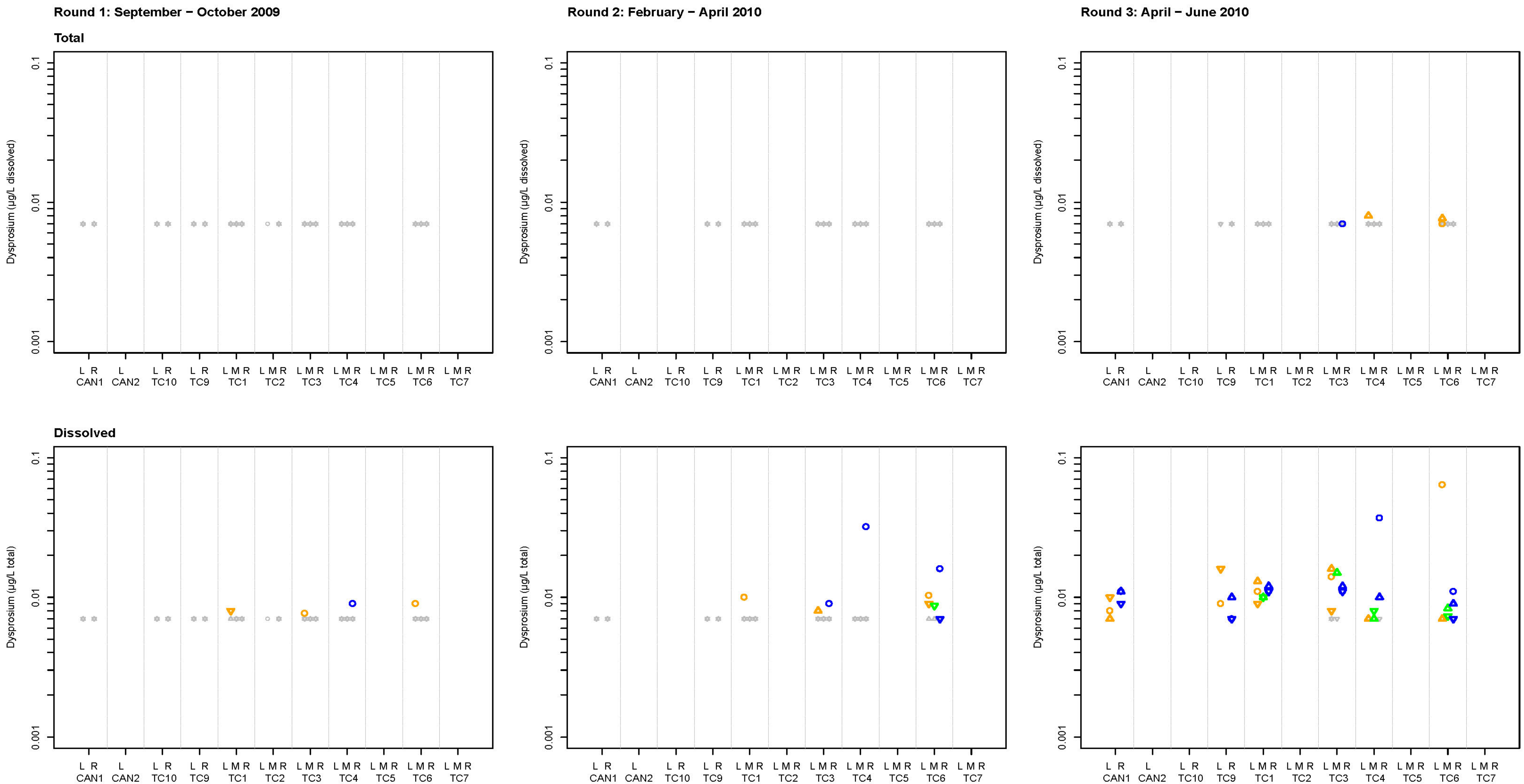
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Dysprosium



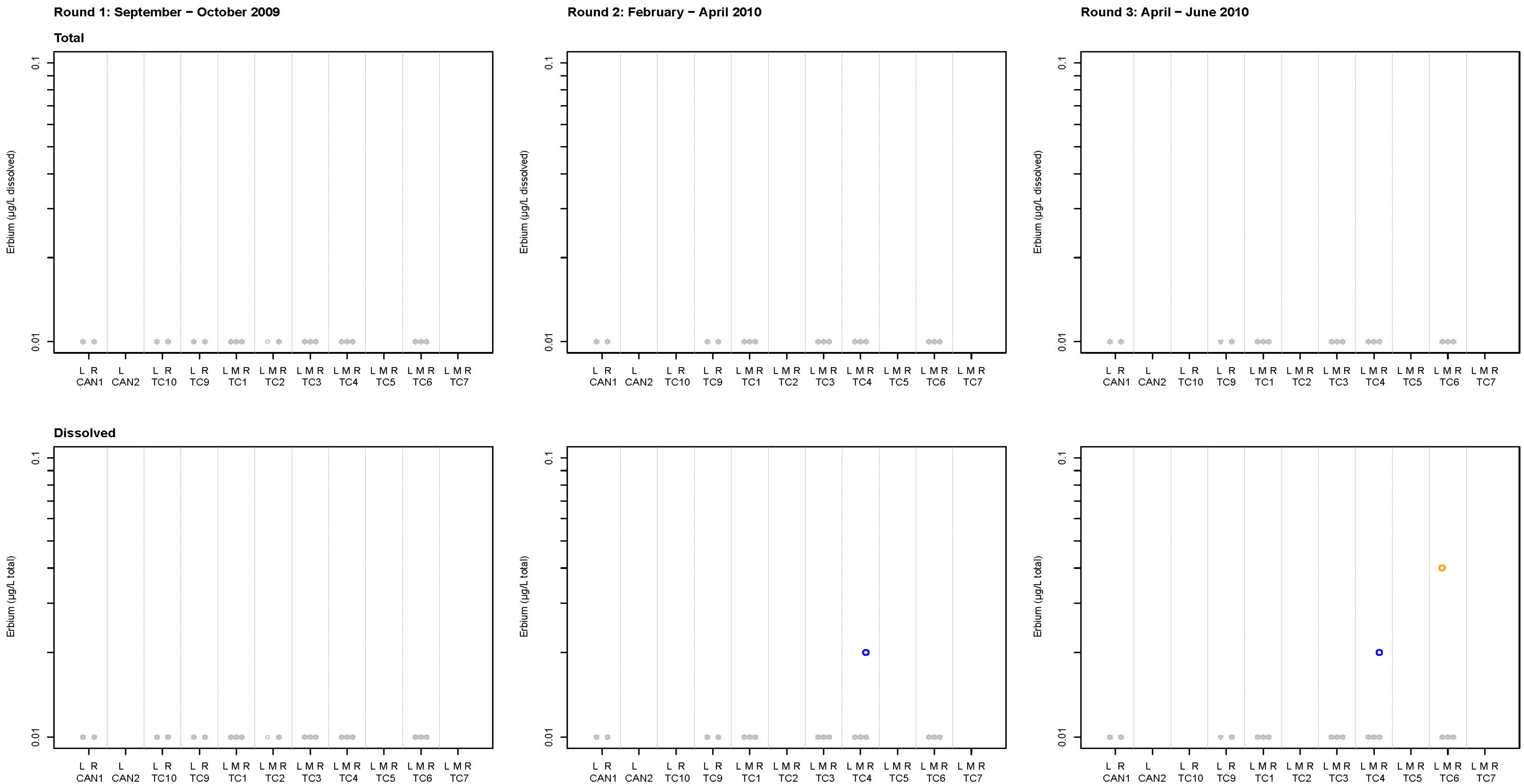
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Erbium

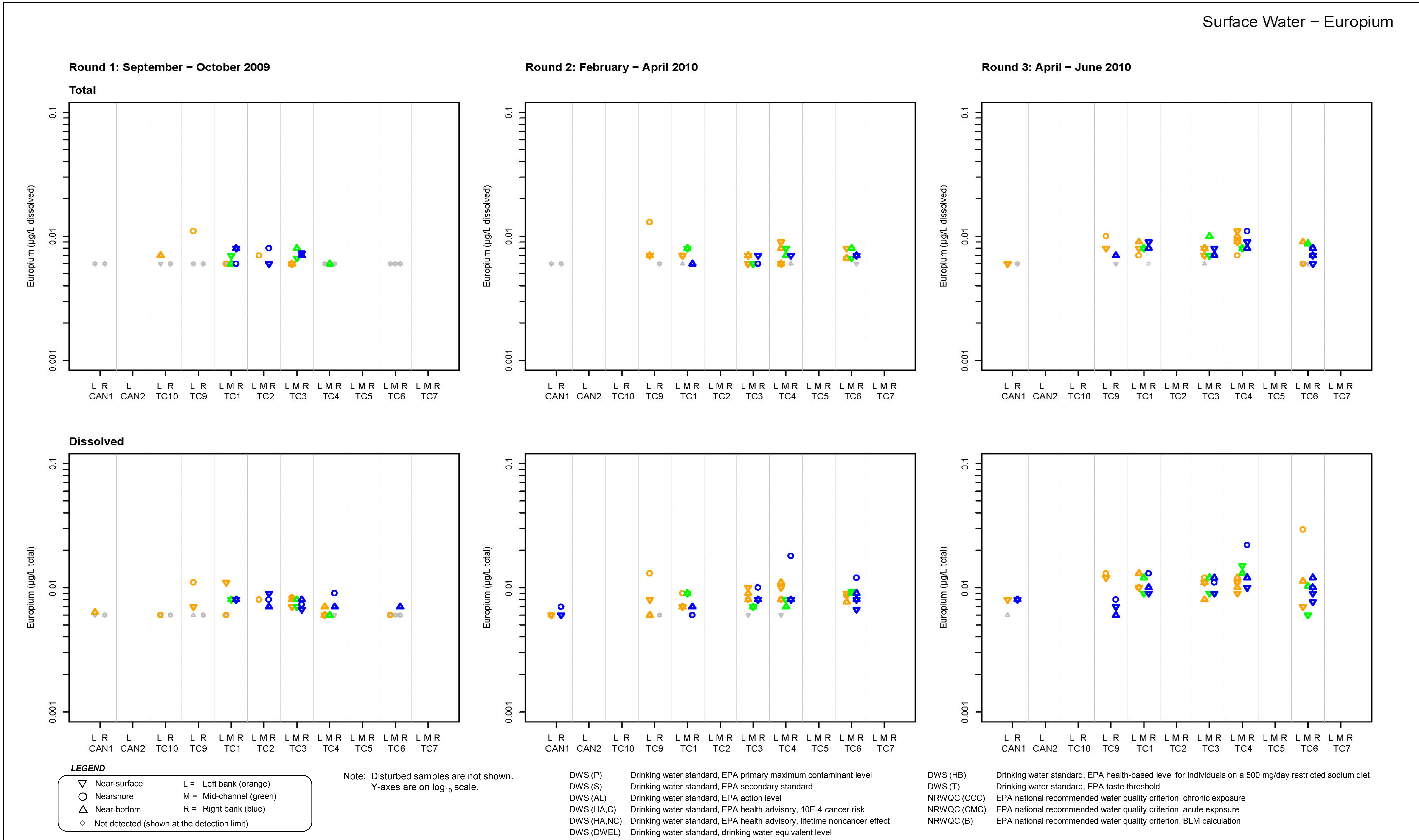


LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

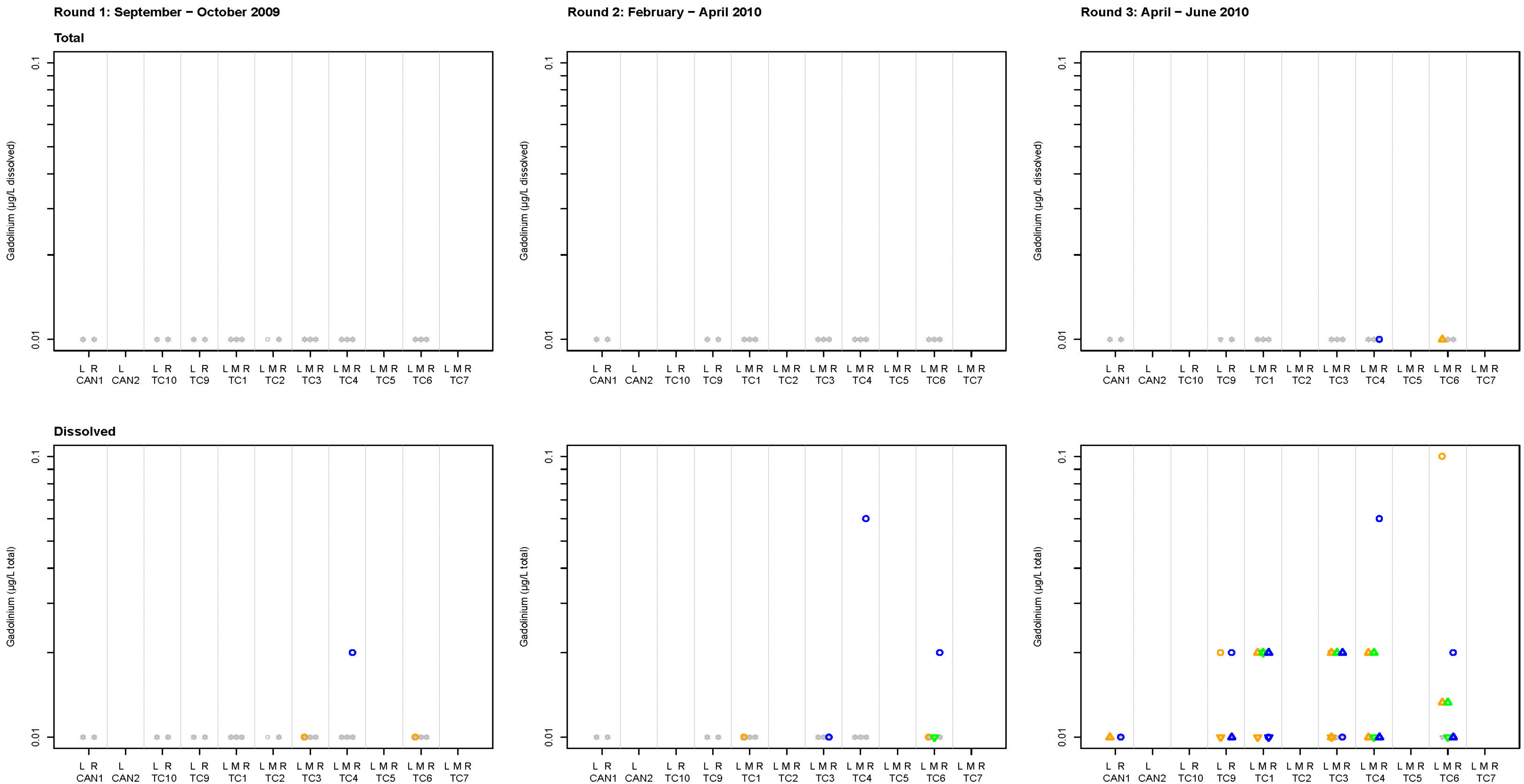
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



Surface Water – Europium
Round 1: September – October 2009
Round 2: February – April 2010
Round 3: April – June 2010
Total
Dissolved
Europium (µg/L dissolved)
Europium (µg/L total)
0.1
0.01
0.001
L R CAN1
L CAN2
L R TC10
L R TC9
L M R TC1
L M R TC2
L M R TC3
L M R TC4
L M R TC5
L M R TC6
L M R TC7
LEGEND
Near-surface
Nearshore
Near-bottom
Not detected (shown at the detection limit)
L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)
Note: Disturbed samples are not shown.
Y-axes are on log10 scale.
DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold
NRWQC (CCC) EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC) EPA national recommended water quality criterion, acute exposure
NRWQC (B) EPA national recommended water quality criterion, BLM calculation

Surface Water – Gadolinium



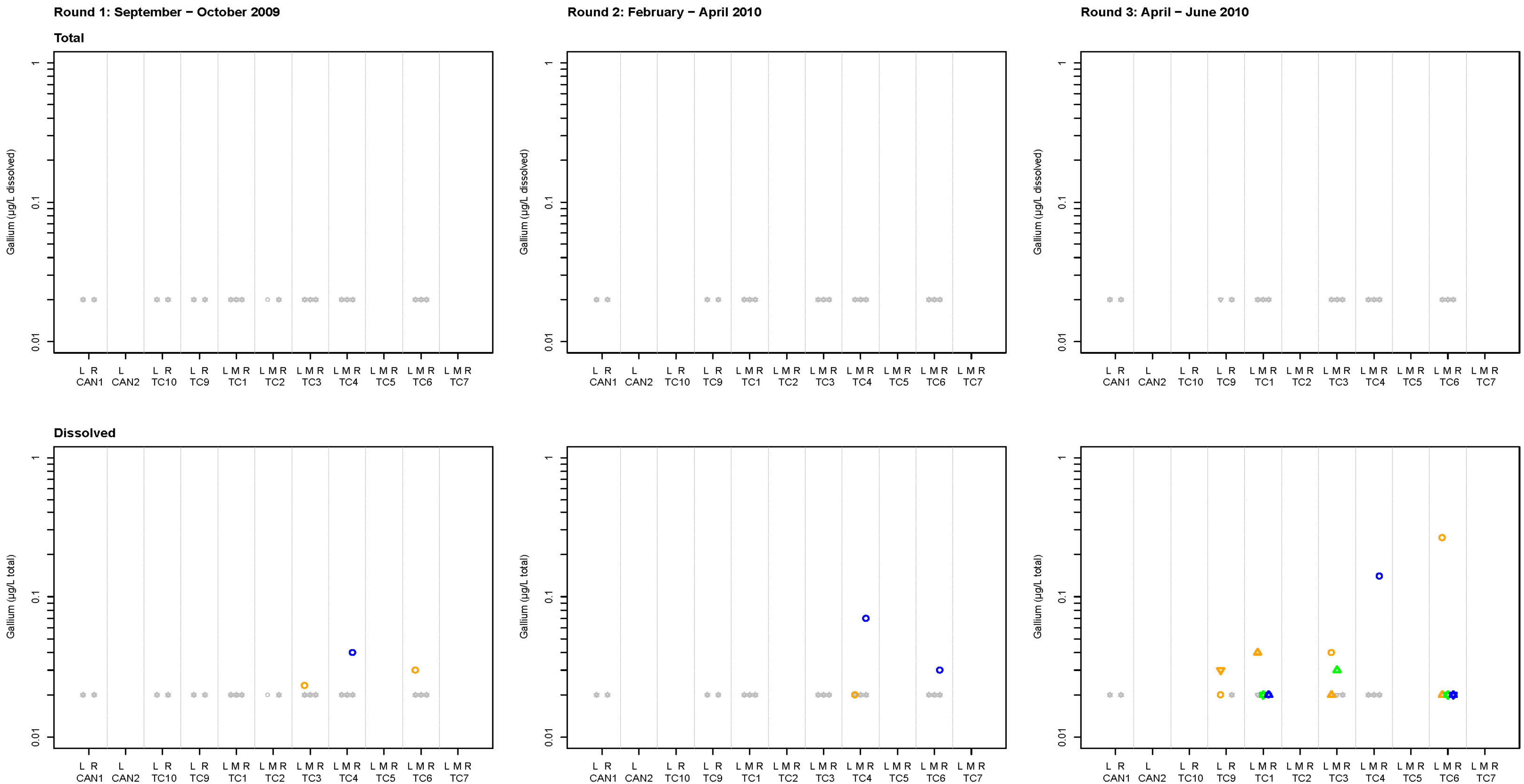
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Gallium



LEGEND

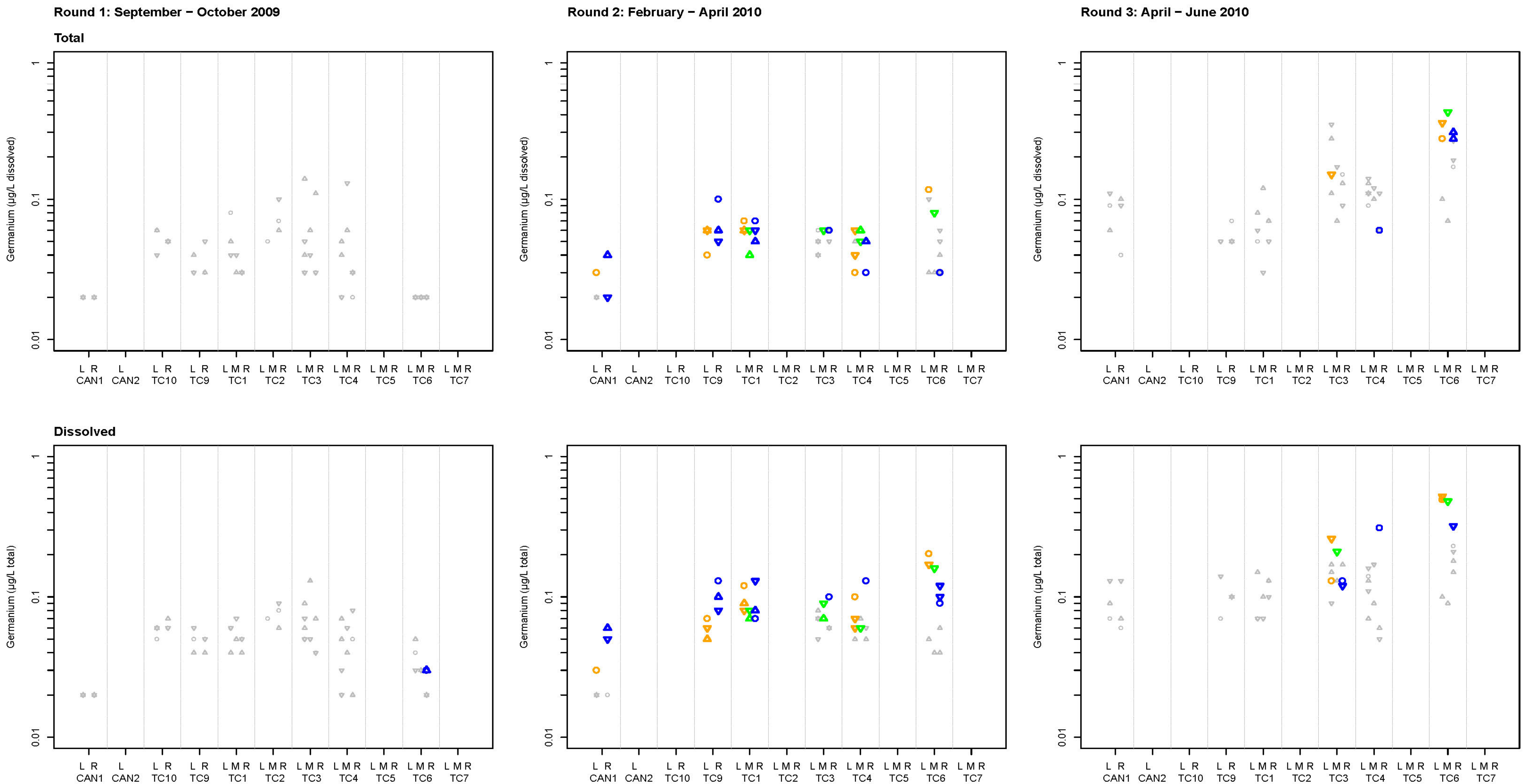
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Germanium



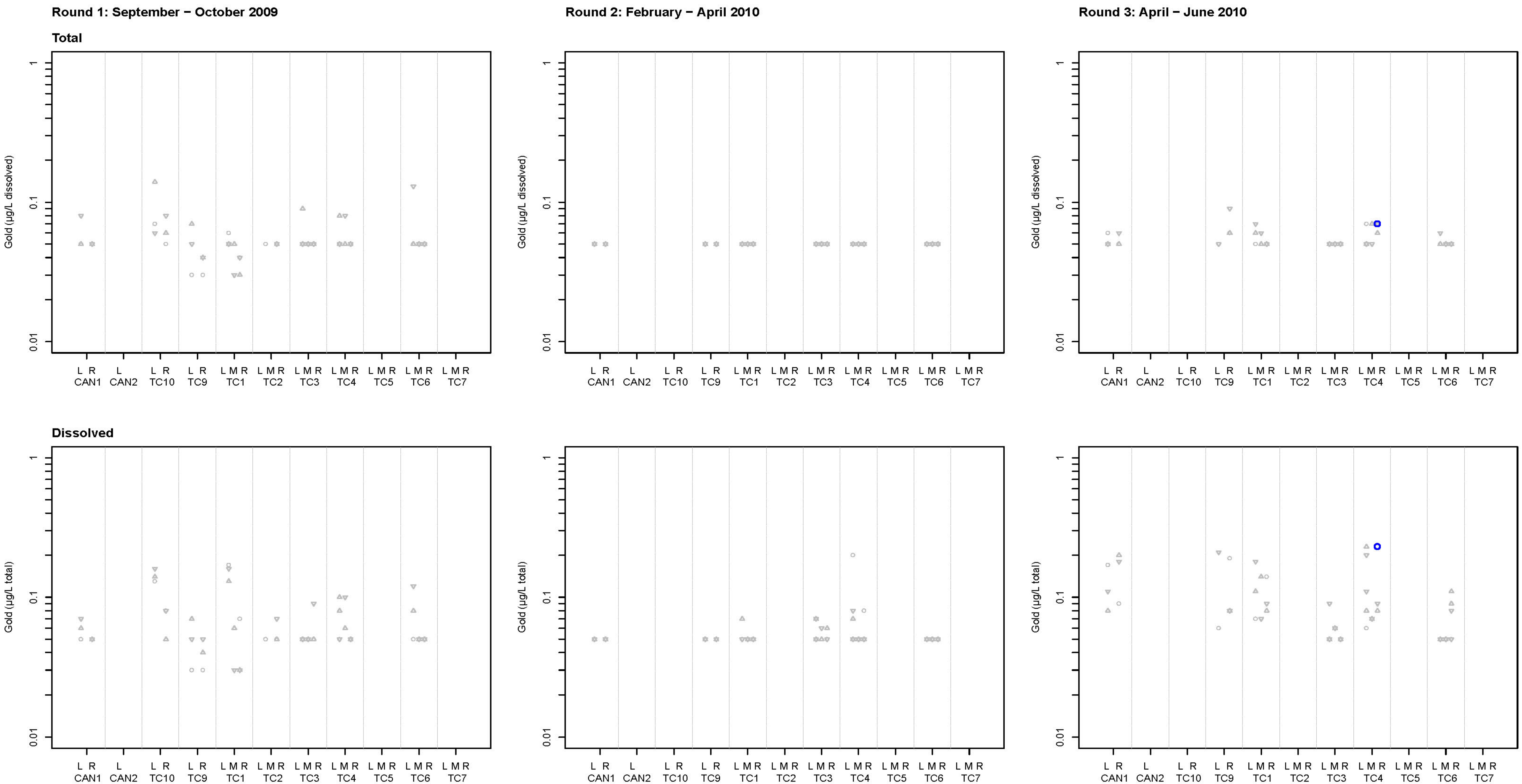
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Gold



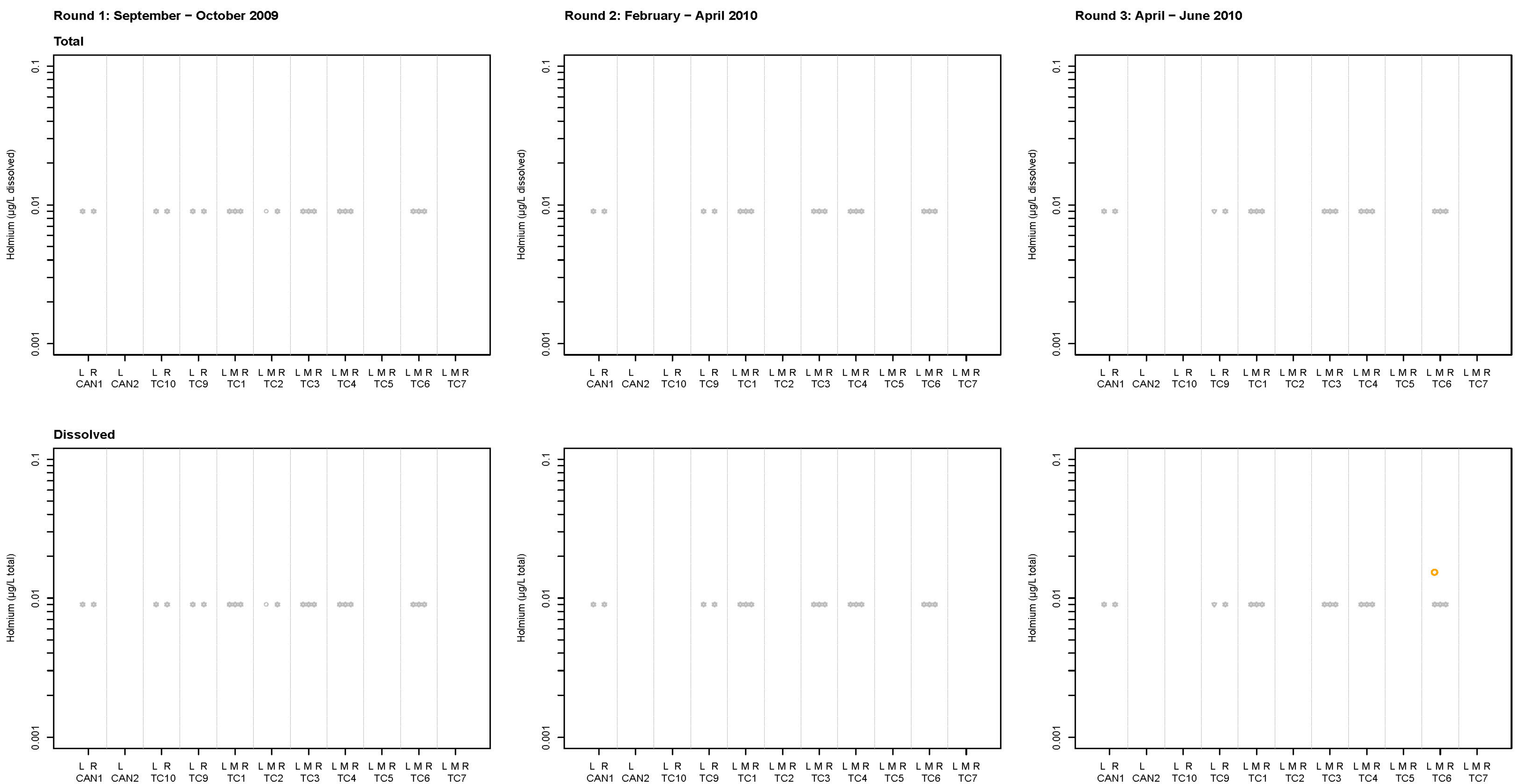
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Holmium



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

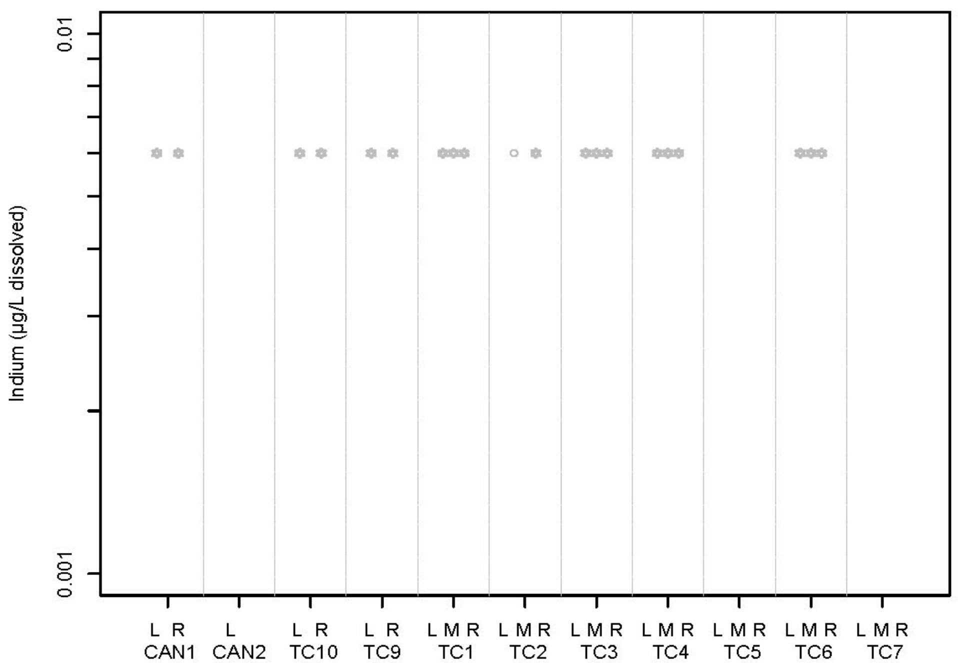
Surface Water – Indium

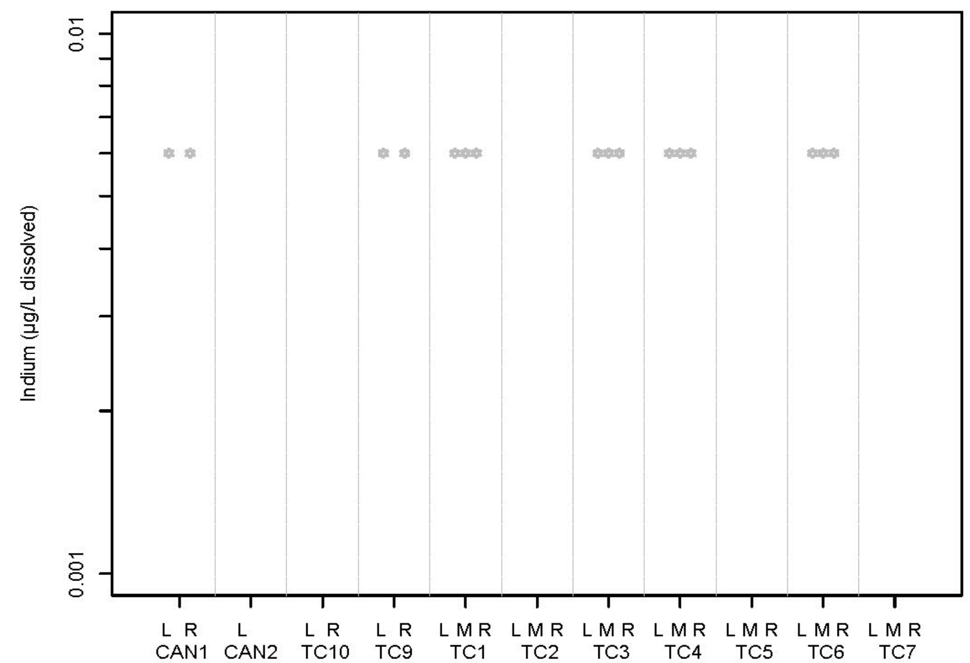
Round 1: September – October 2009

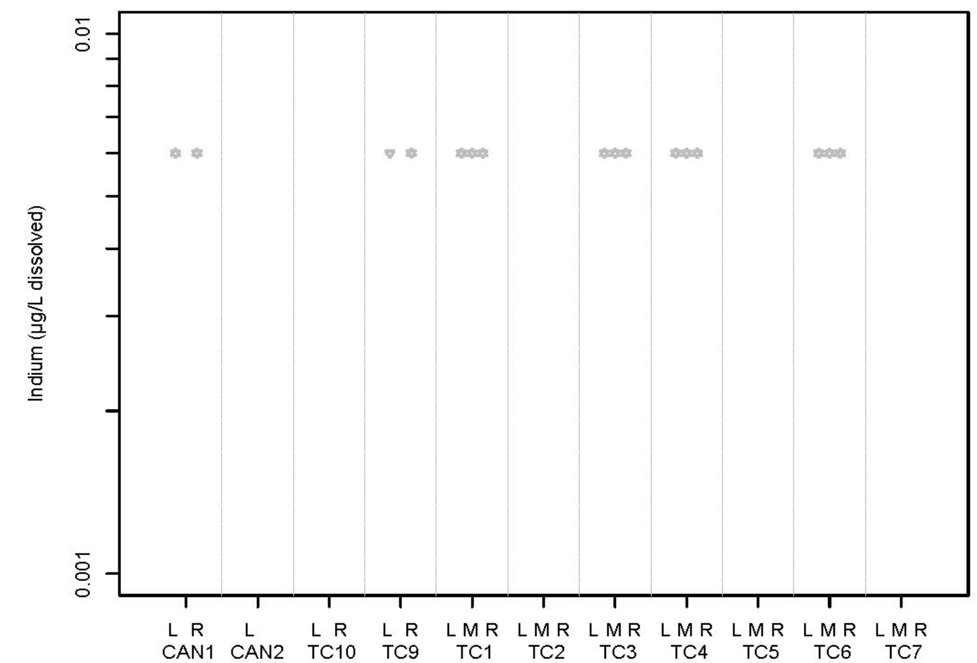
Round 2: February – April 2010

Round 3: April – June 2010

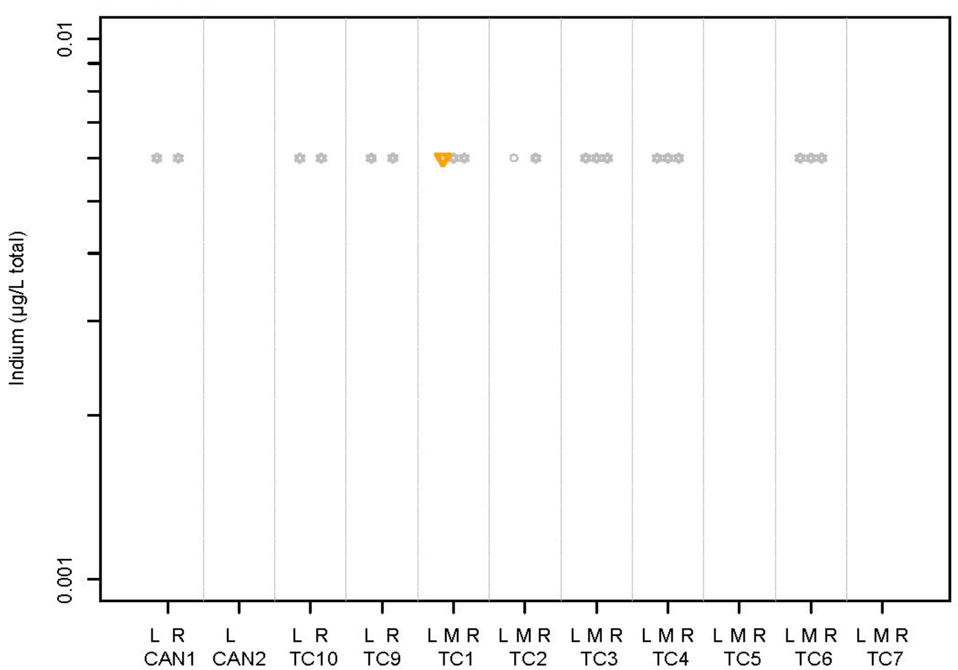
Total

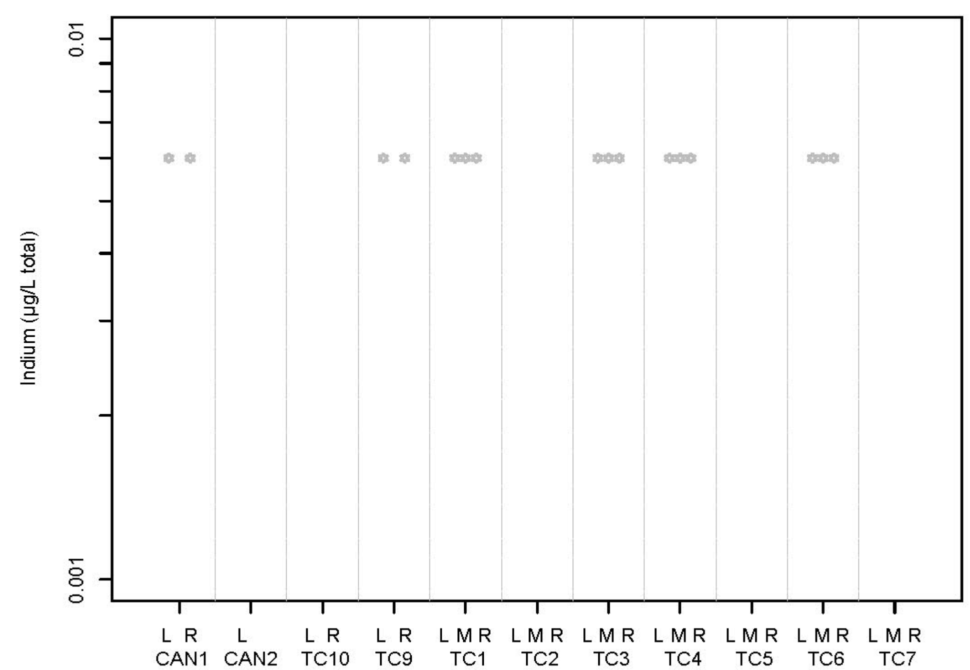


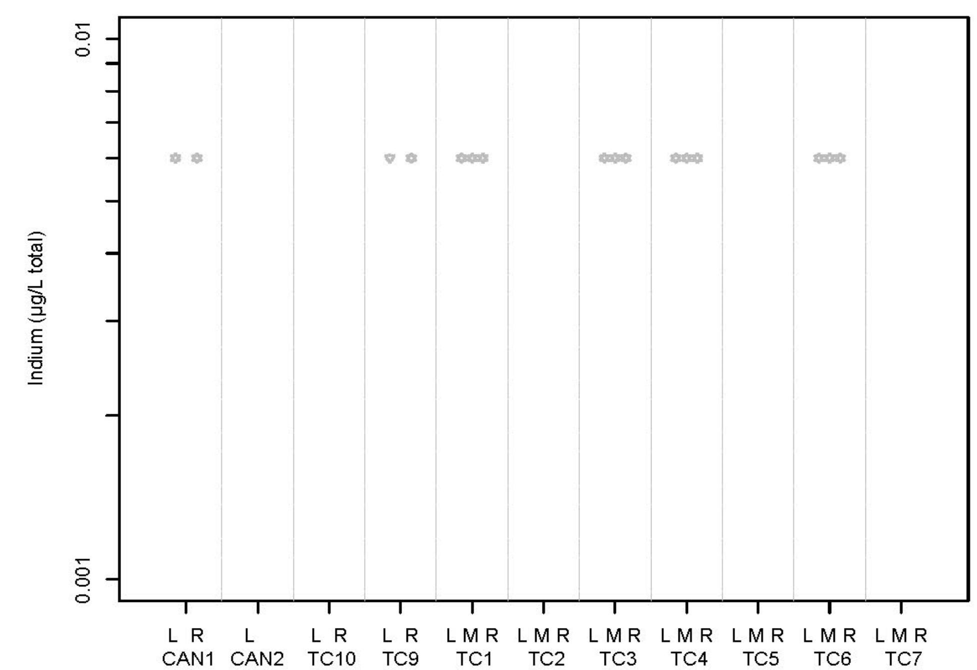




Dissolved







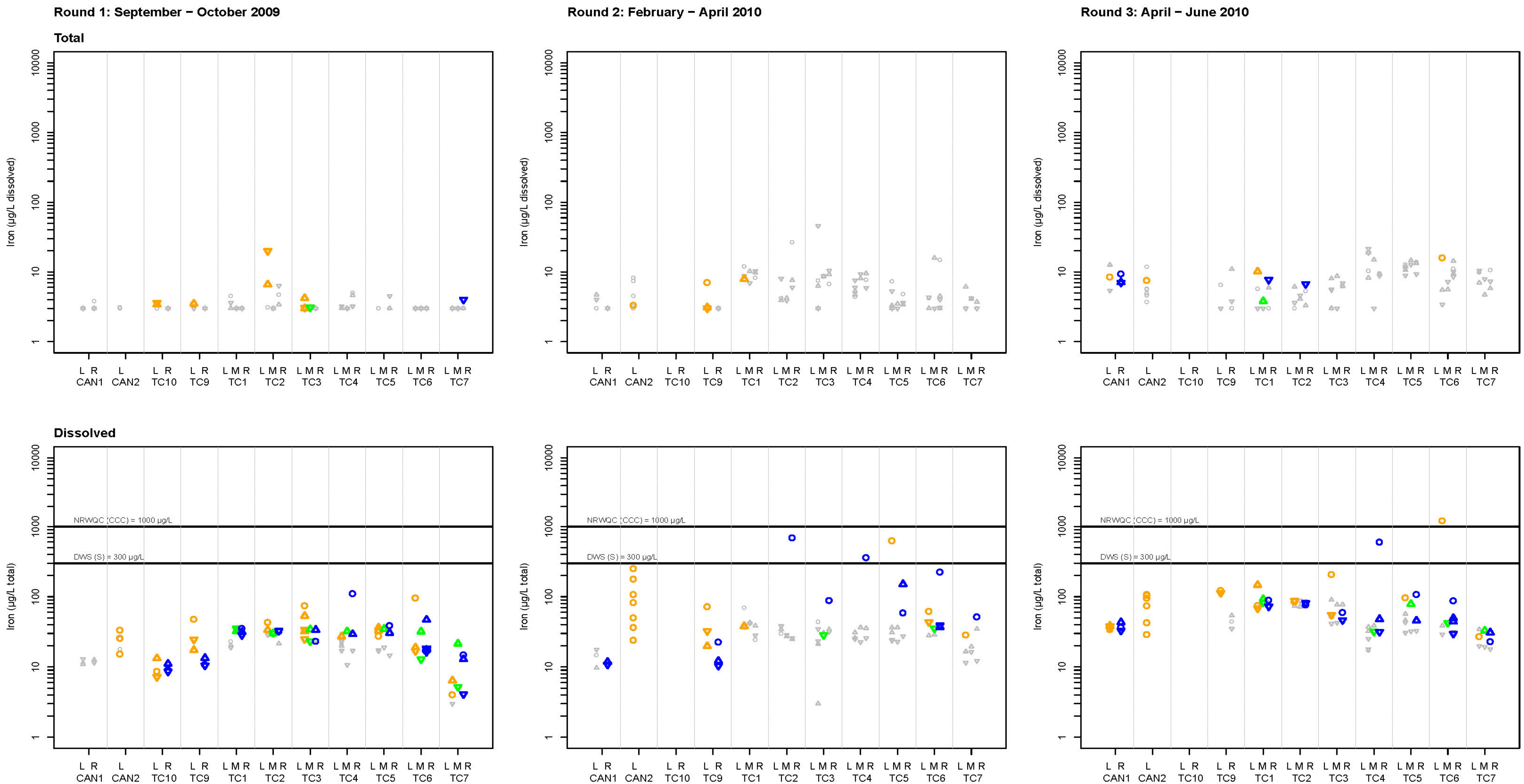
LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)
- L = Left bank (orange)
- M = Mid-channel (green)
- R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Iron



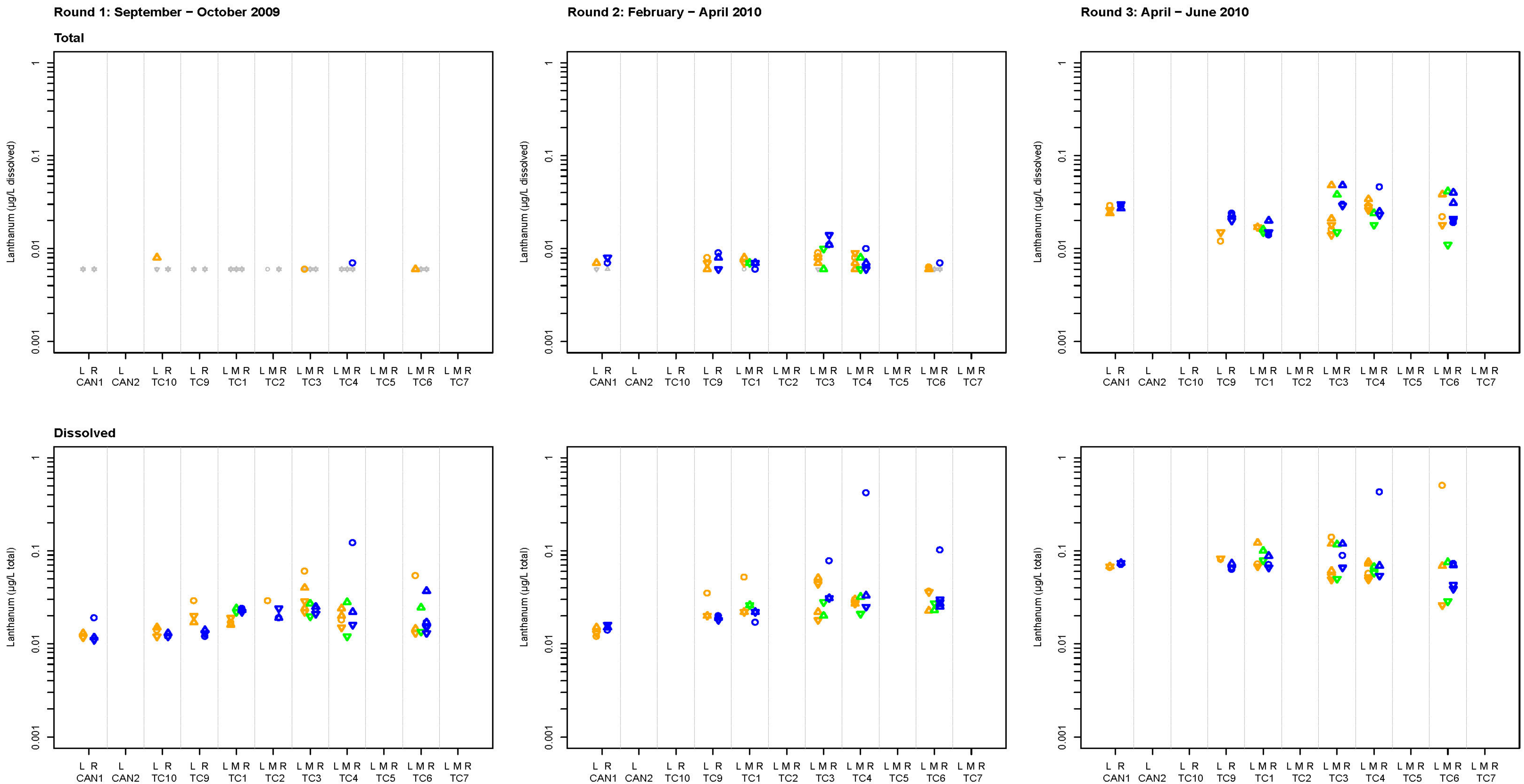
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Lanthanum



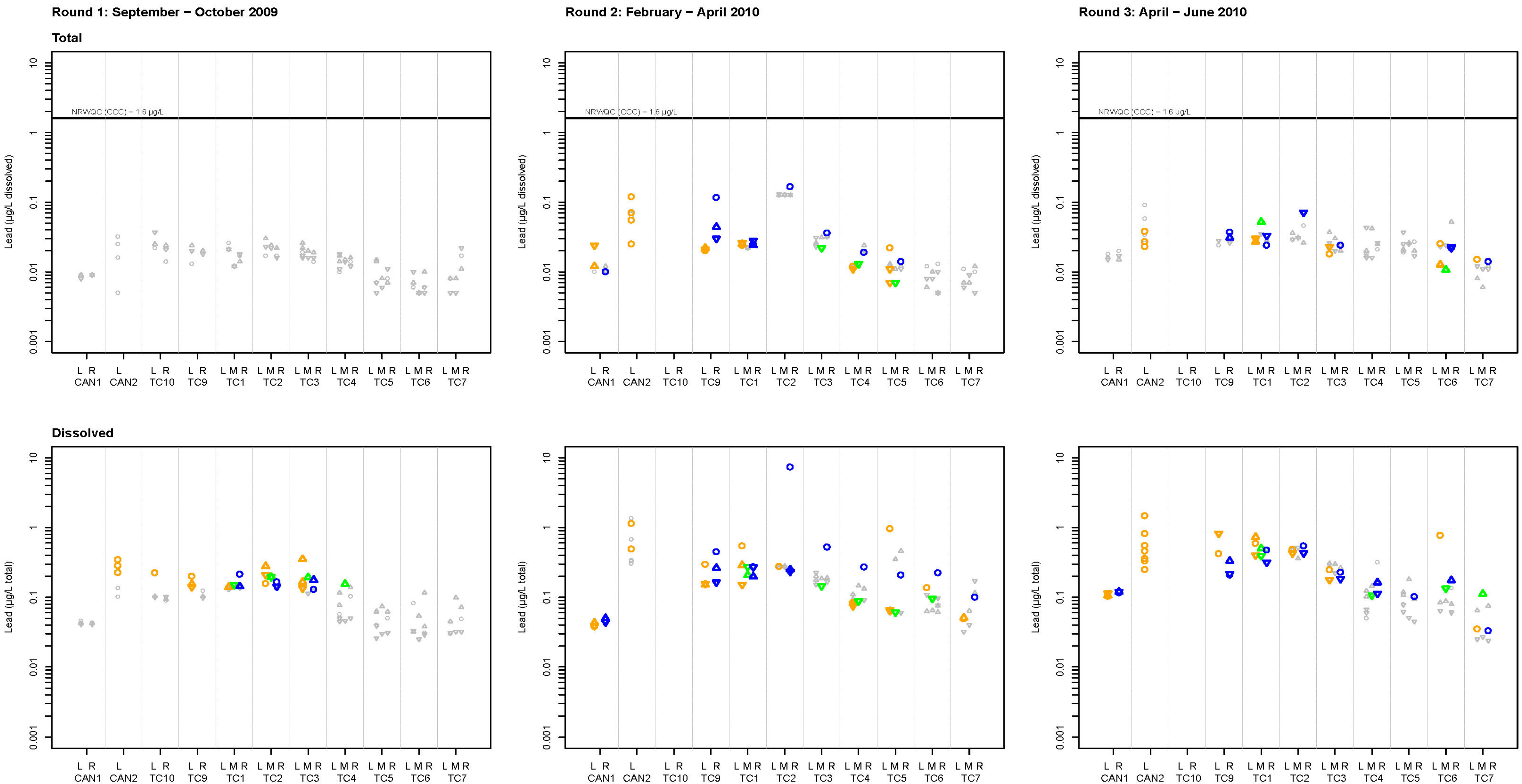
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Lead



LEGEND

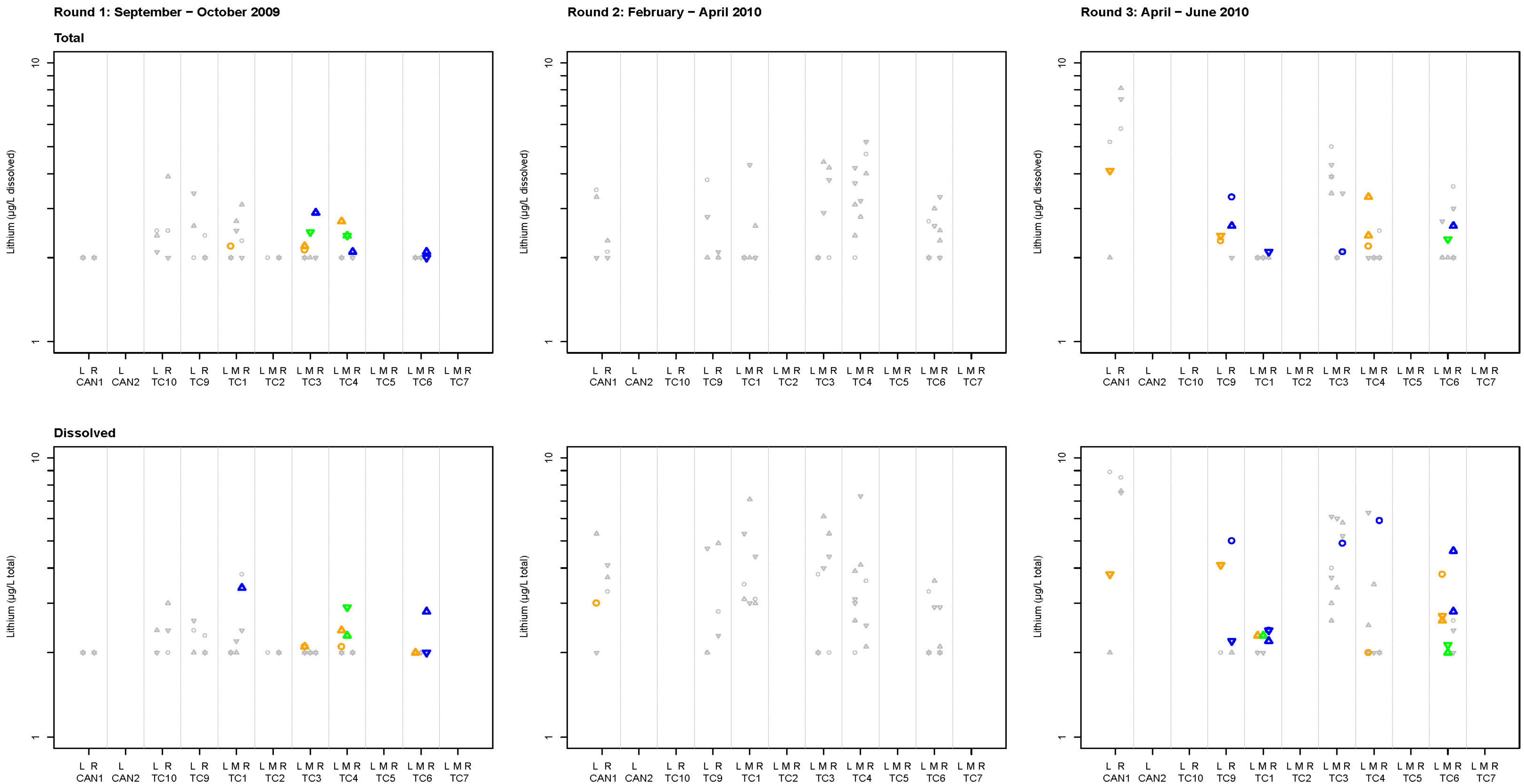
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Lithium

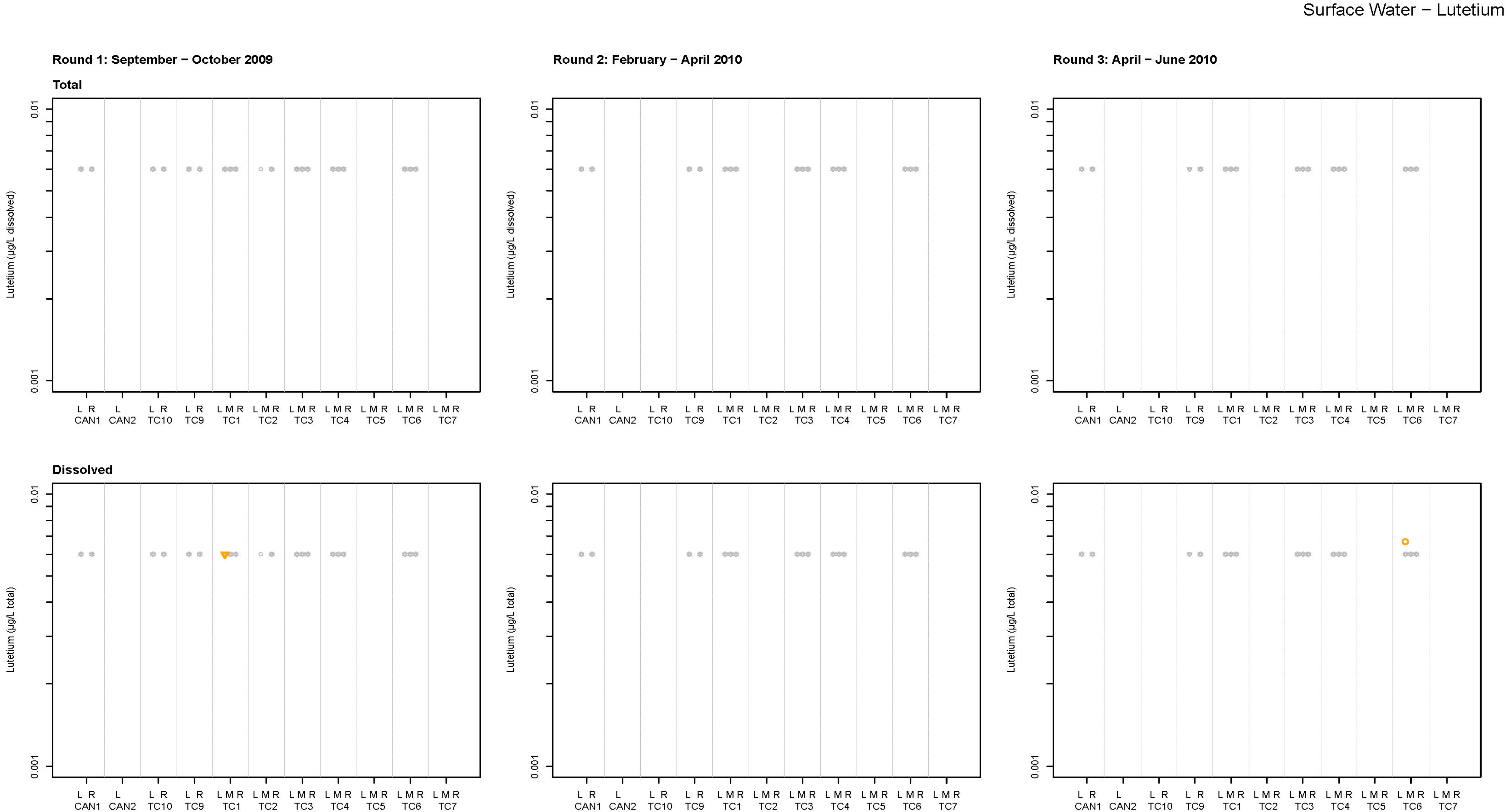


LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)
- L = Left bank (orange)
- M = Mid-channel (green)
- R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

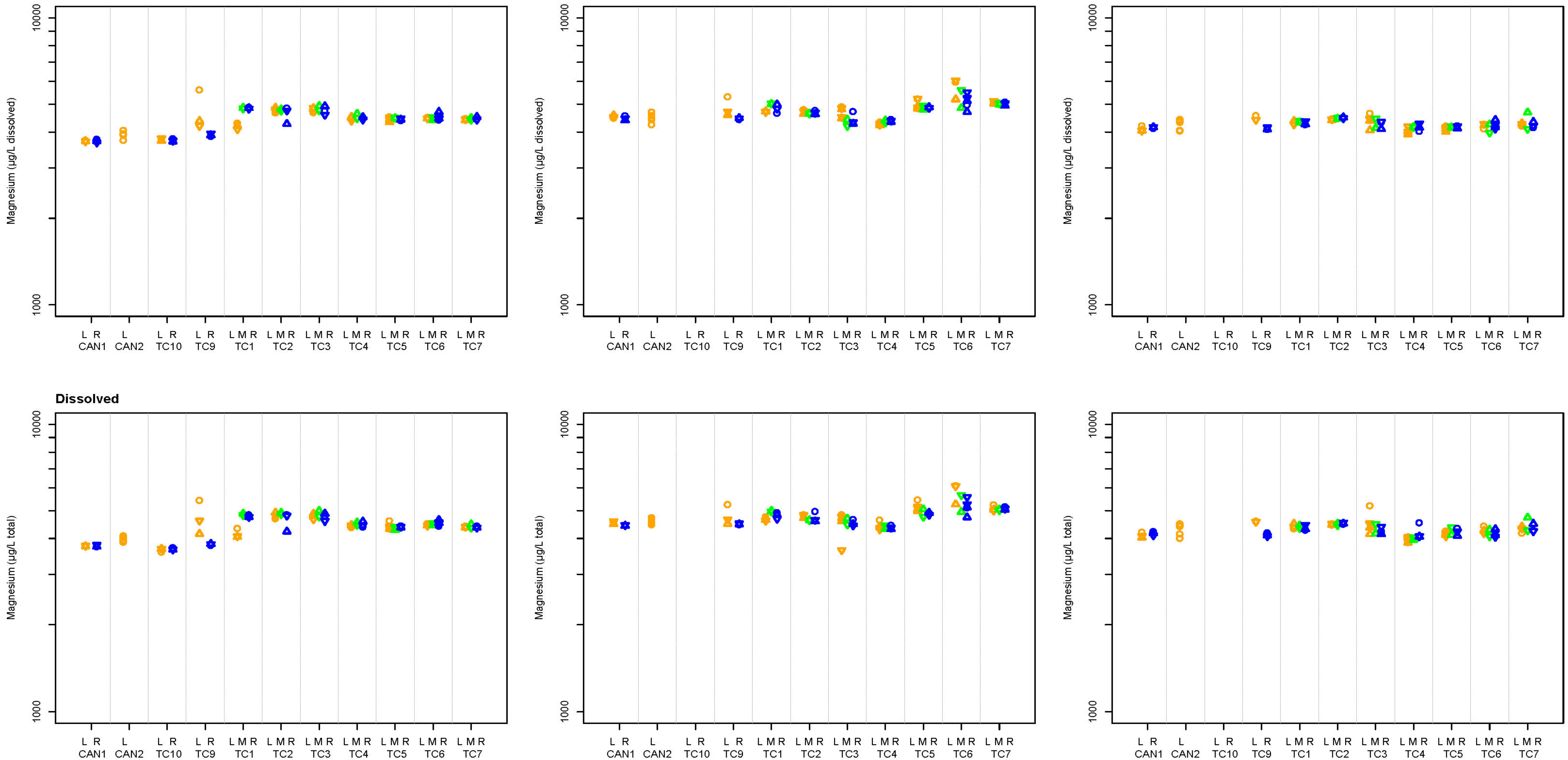
DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Magnesium

Round 1: September – October 2009 | **Round 2: February – April 2010** | **Round 3: April – June 2010**

Total

Dissolved

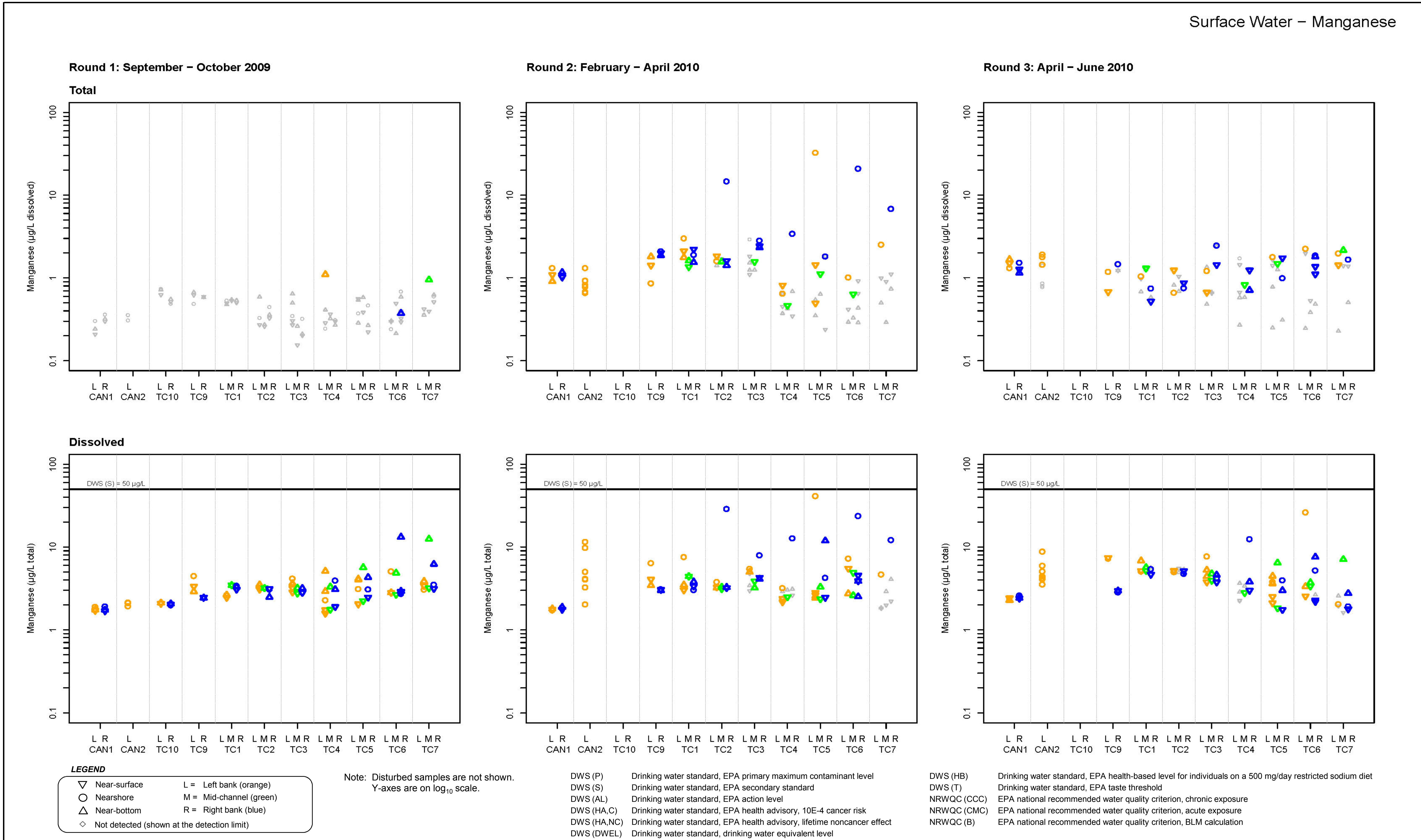


LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

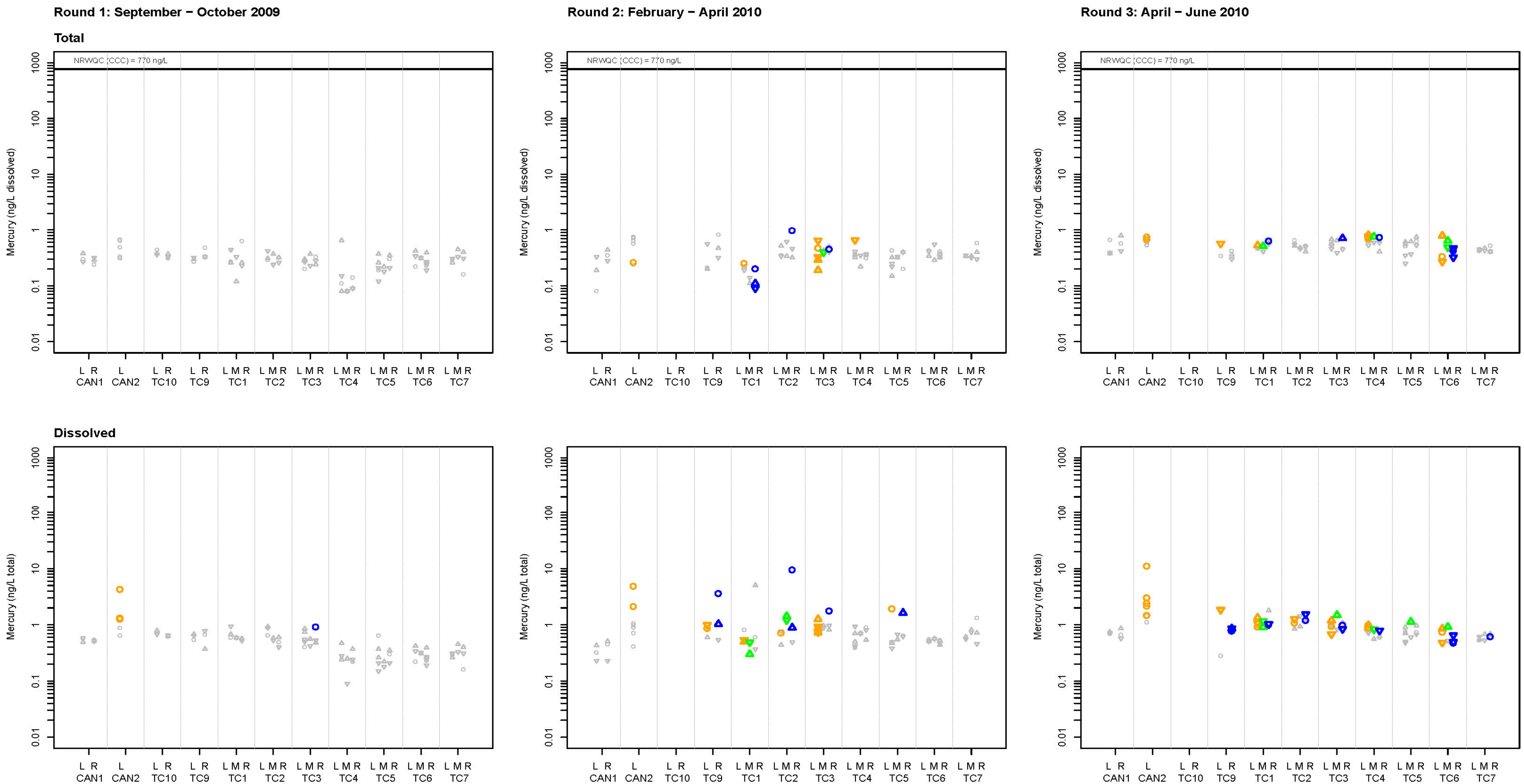
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



Surface Water − Manganese
Round 1: September − October 2009
Round 2: February − April 2010
Round 3: April − June 2010
Total
Dissolved
Manganese (µg/L dissolved)
Manganese (µg/L total)
DWS (S) = 50 µg/L
0.1
1
10
100
L R CAN1
L CAN2
L R TC10
L R TC9
L M R TC1
L M R TC2
L M R TC3
L M R TC4
L M R TC5
L M R TC6
L M R TC7
LEGEND
Near-surface
Nearshore
Near-bottom
Not detected (shown at the detection limit)
L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)
Note: Disturbed samples are not shown.
Y-axes are on log10 scale.
DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold
NRWQC (CCC) EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC) EPA national recommended water quality criterion, acute exposure
NRWQC (B) EPA national recommended water quality criterion, BLM calculation

Surface Water − Mercury



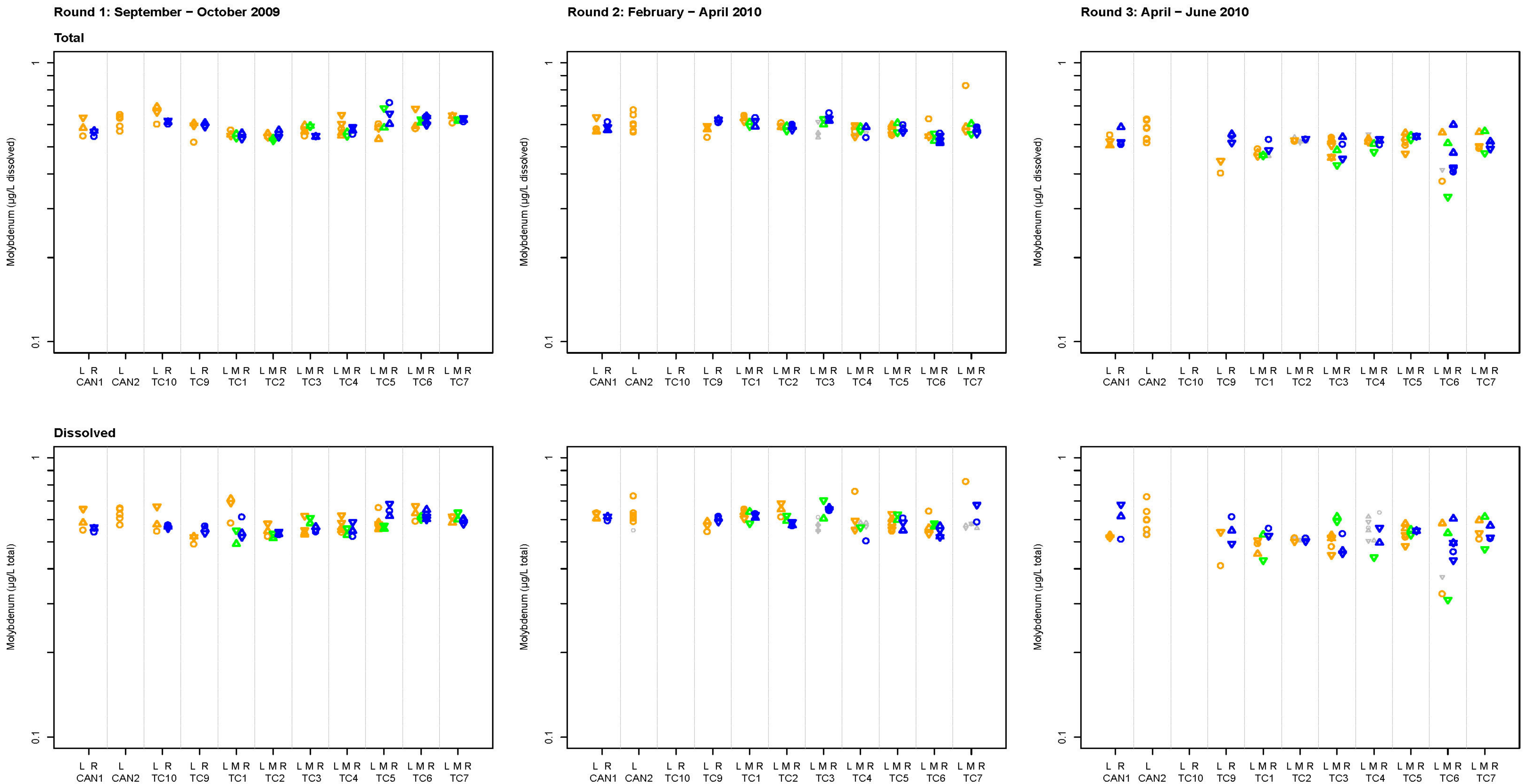
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Molybdenum



LEGEND

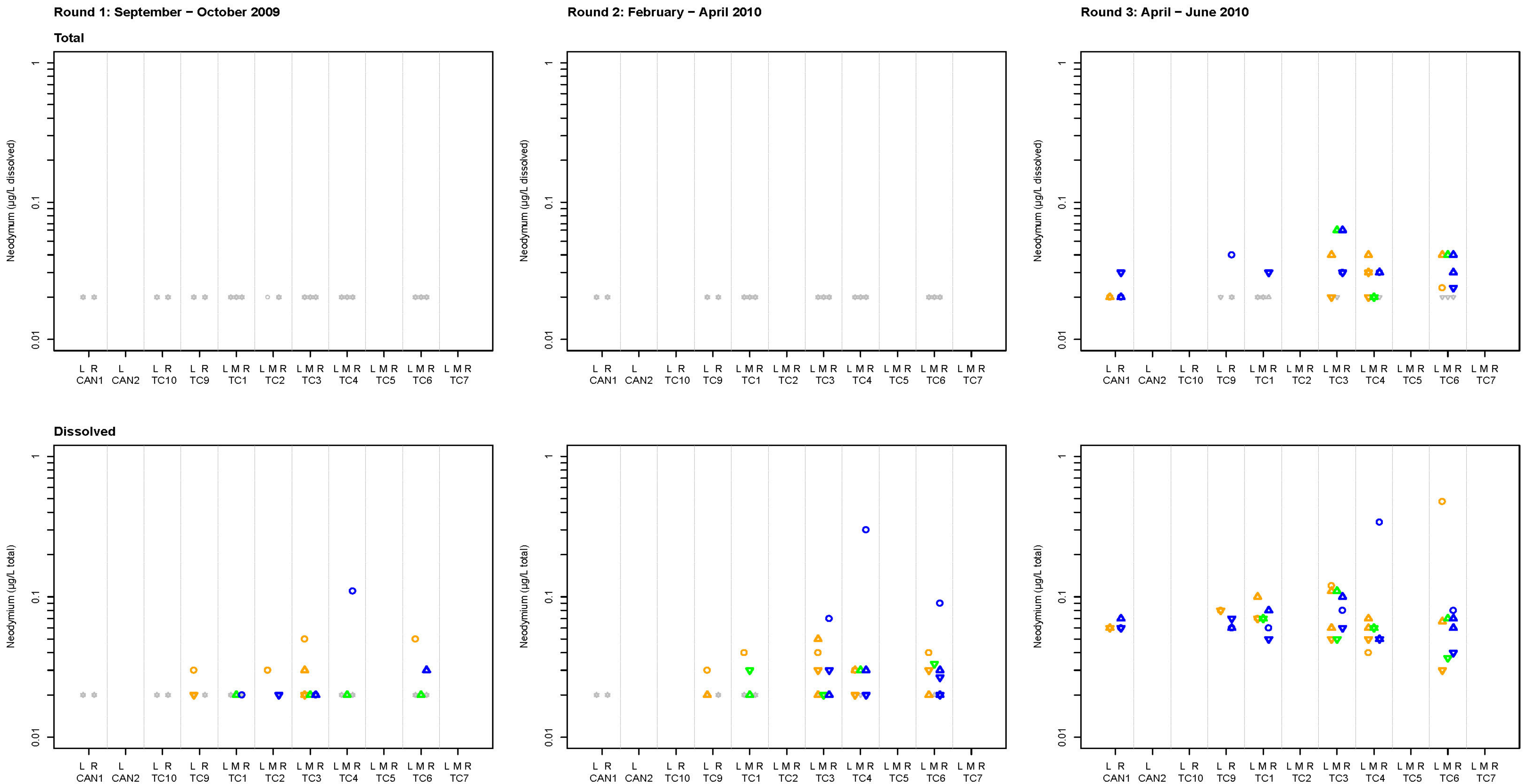
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Neodymium



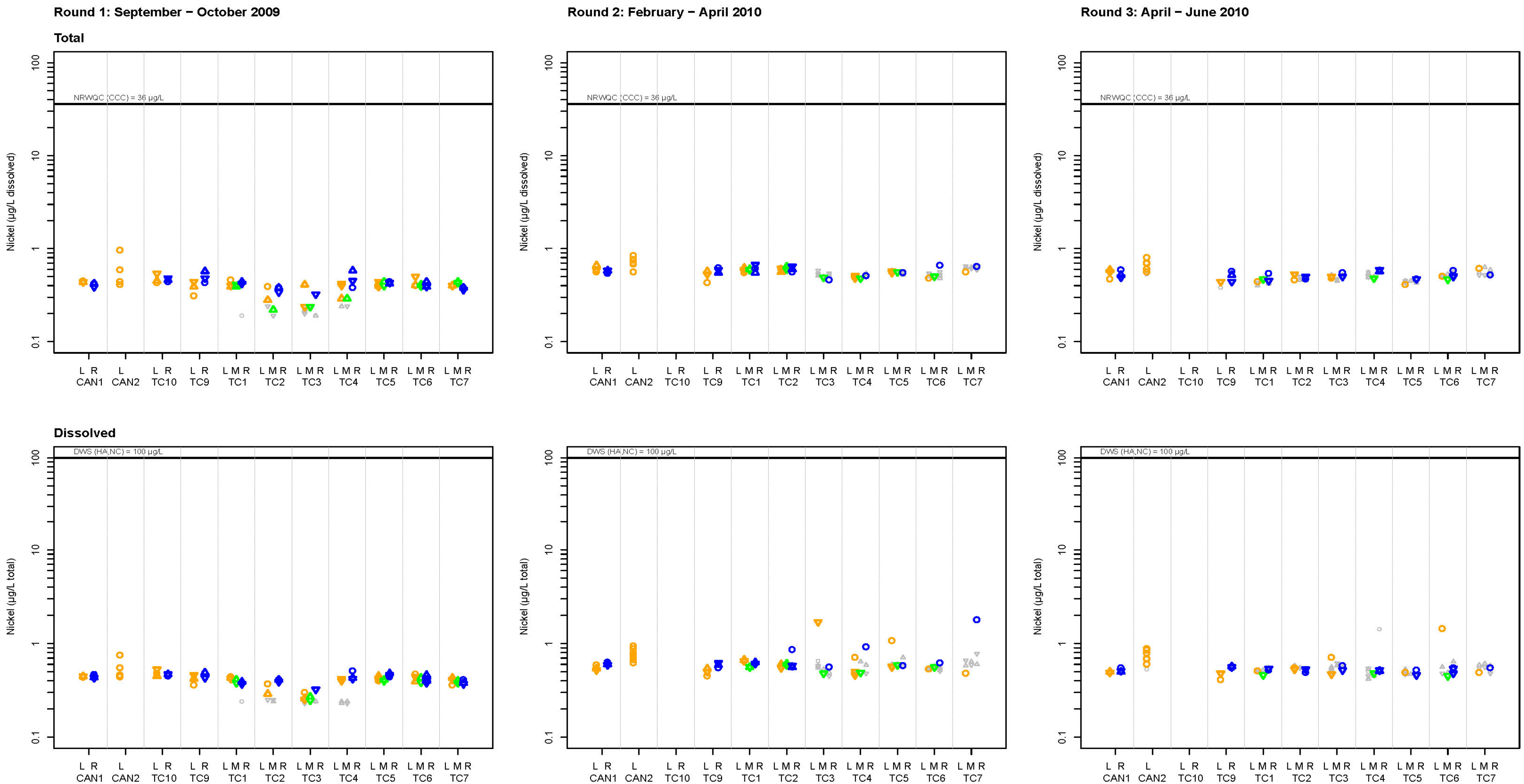
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Nickel



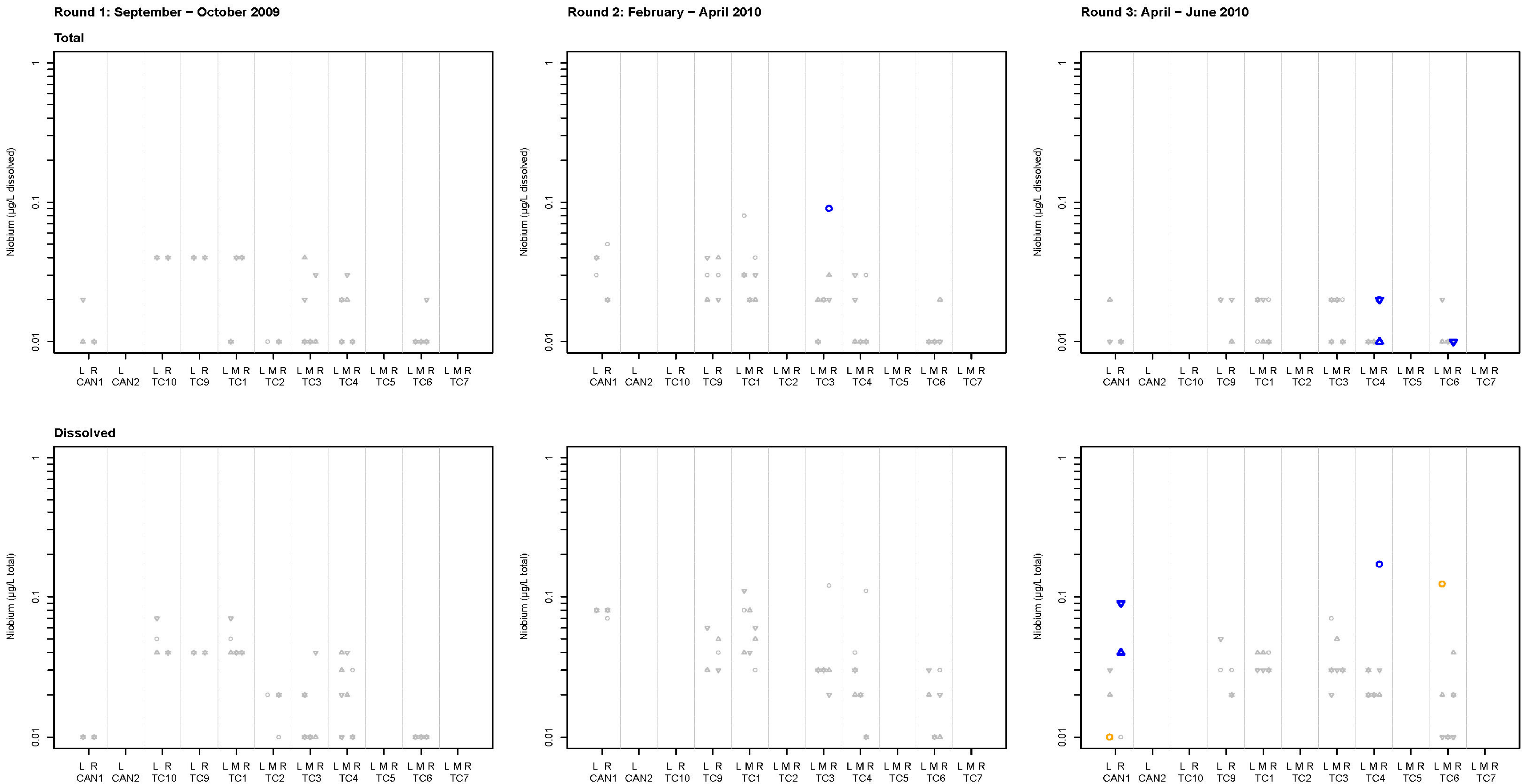
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Niobium



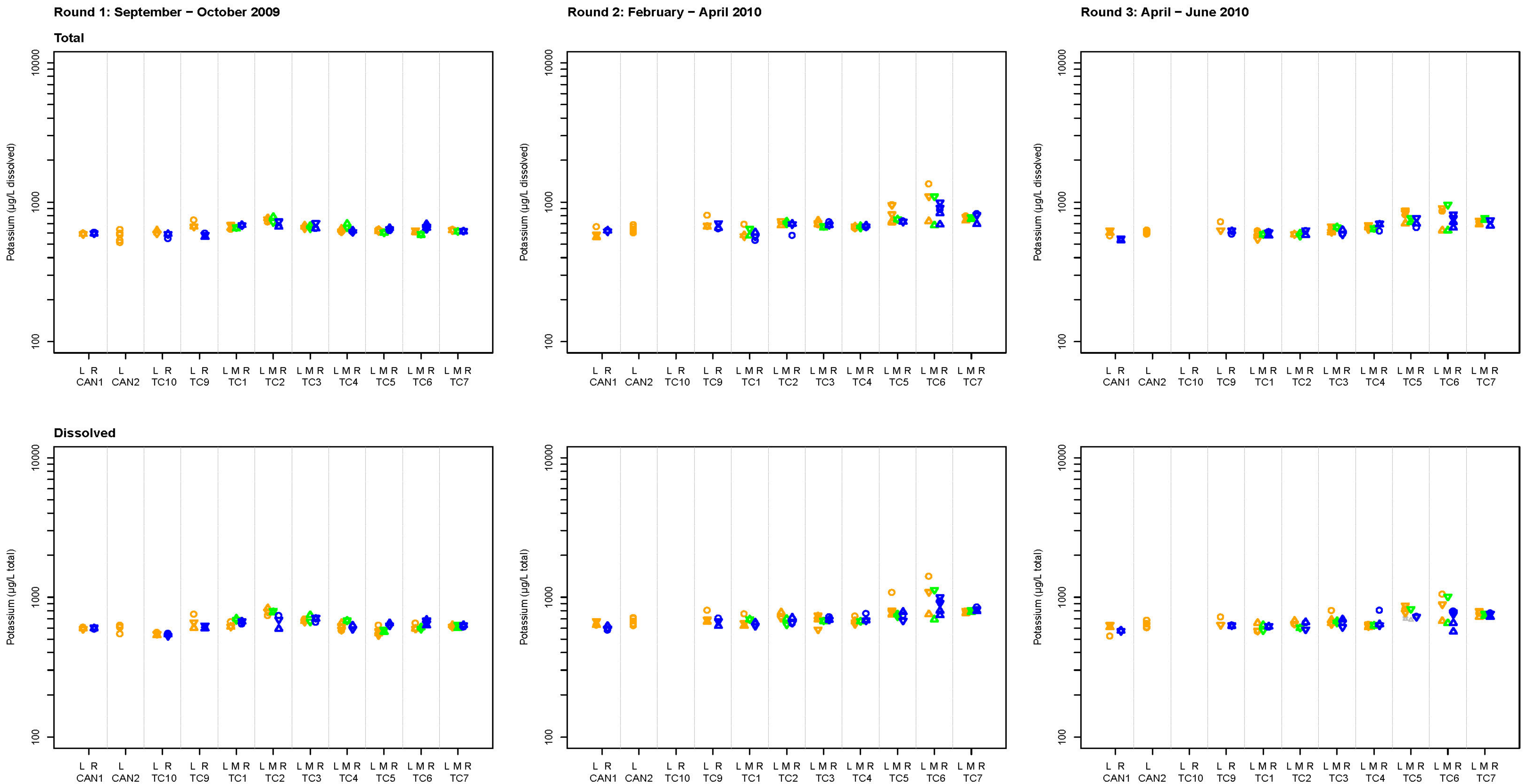
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Potassium



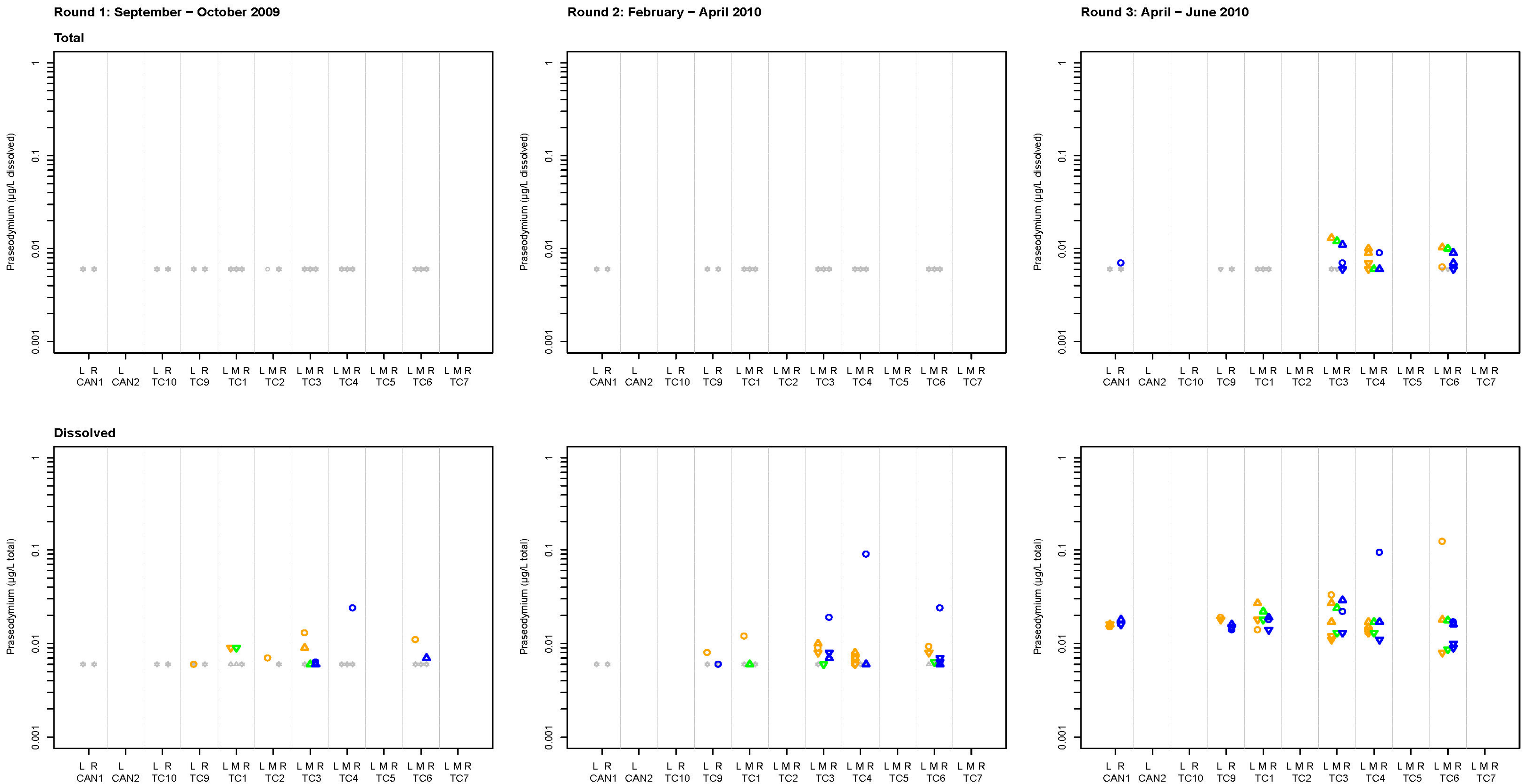
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Praseodymium



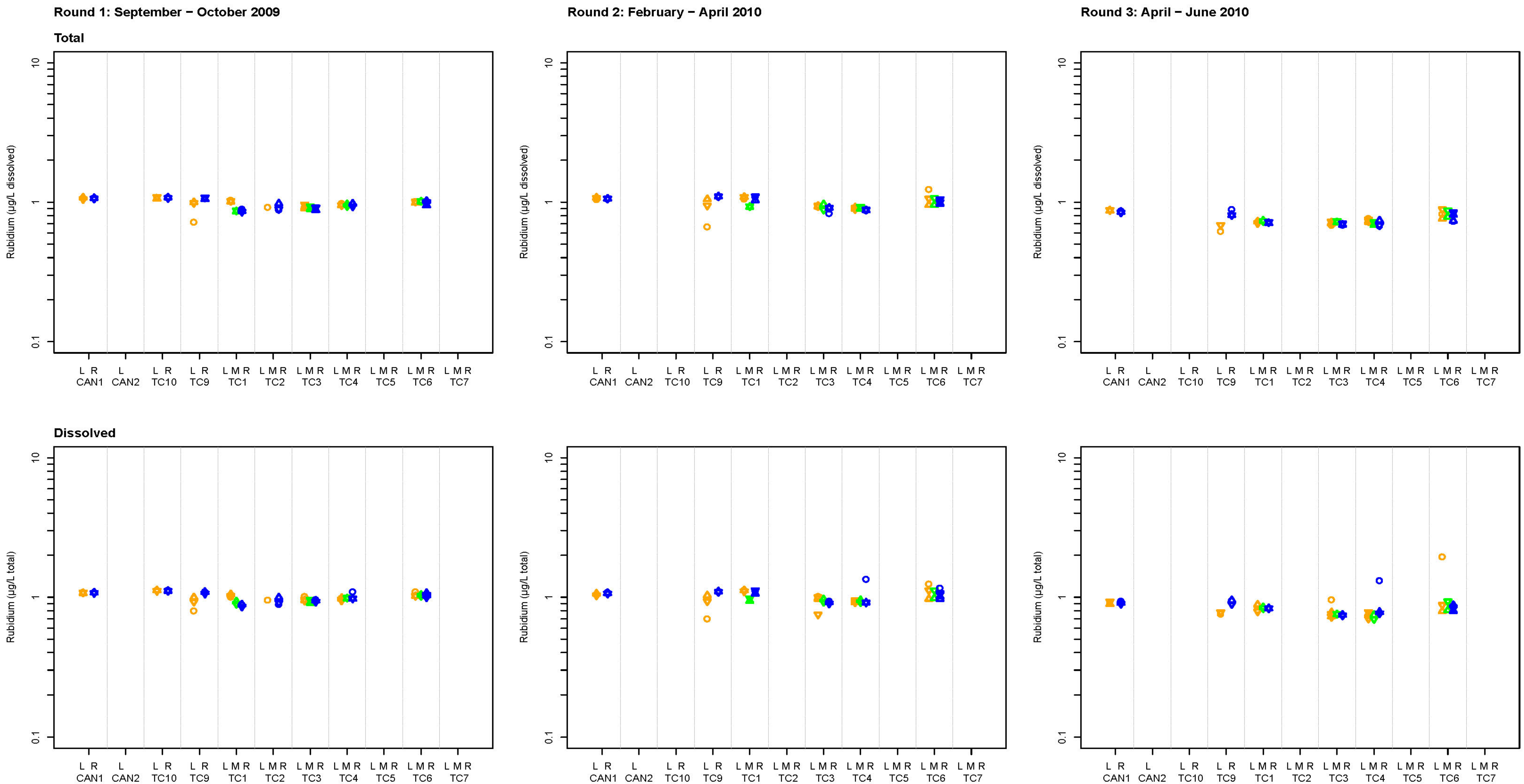
LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Rubidium



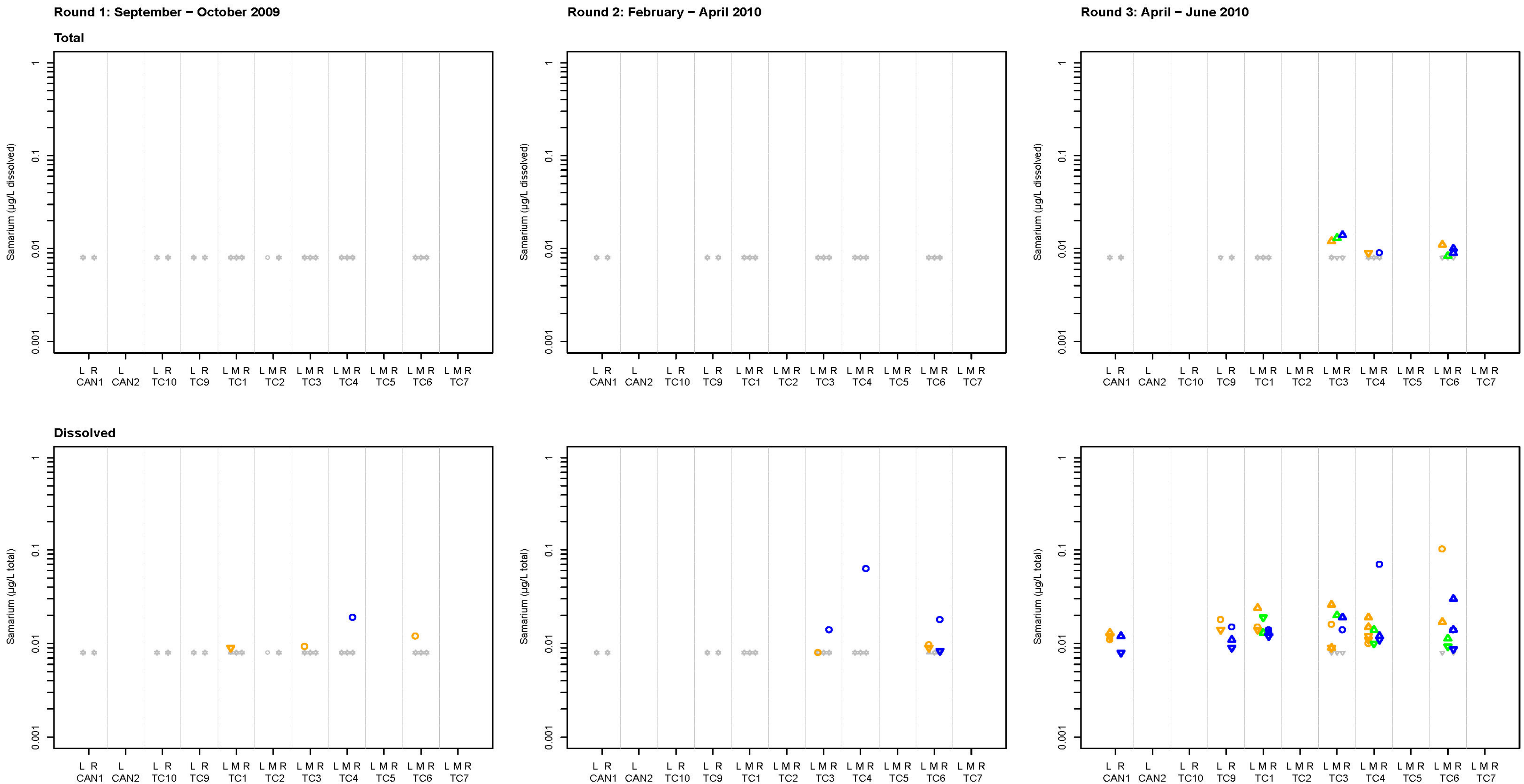
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Samarium



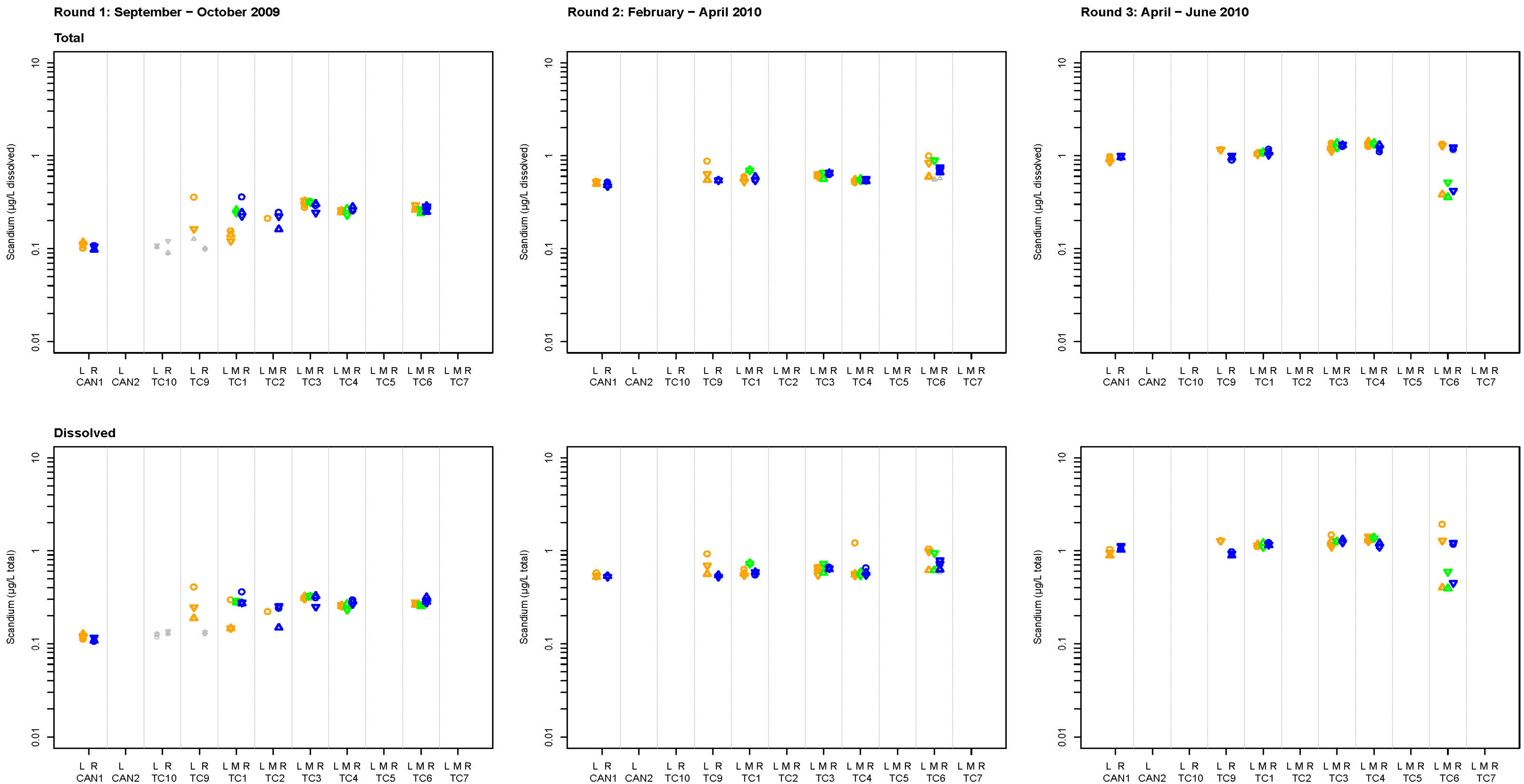
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Scandium



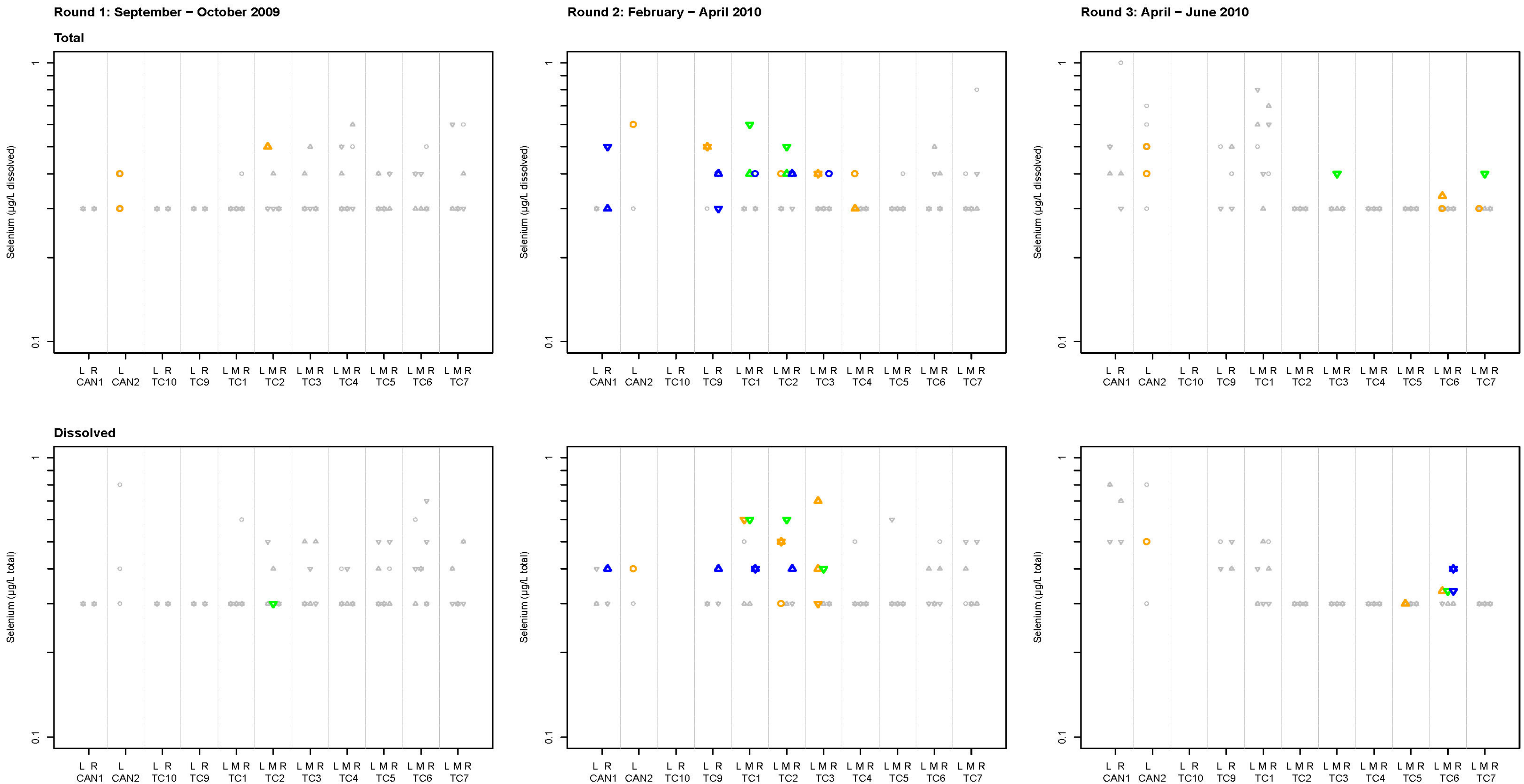
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Selenium



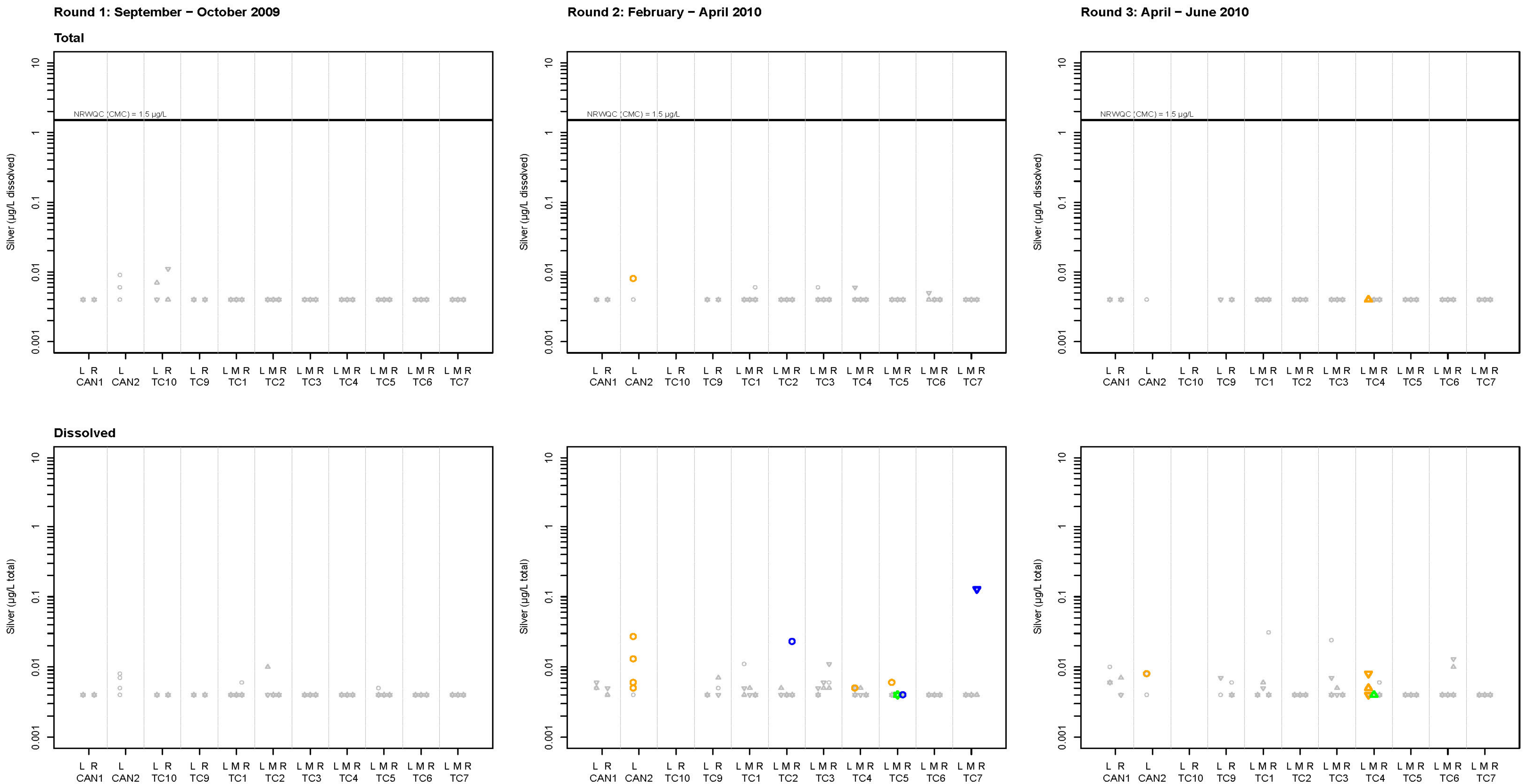
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Silver



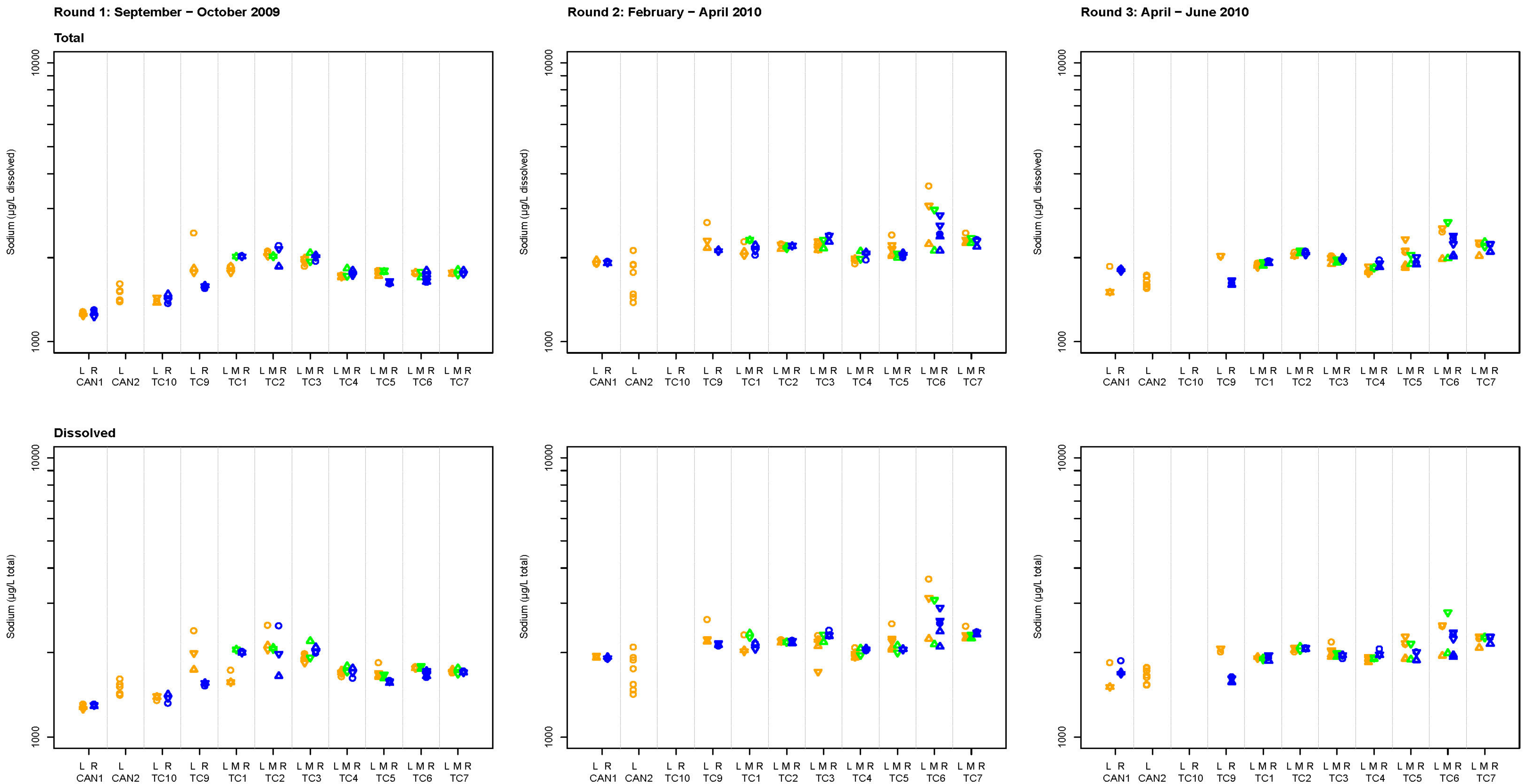
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Sodium



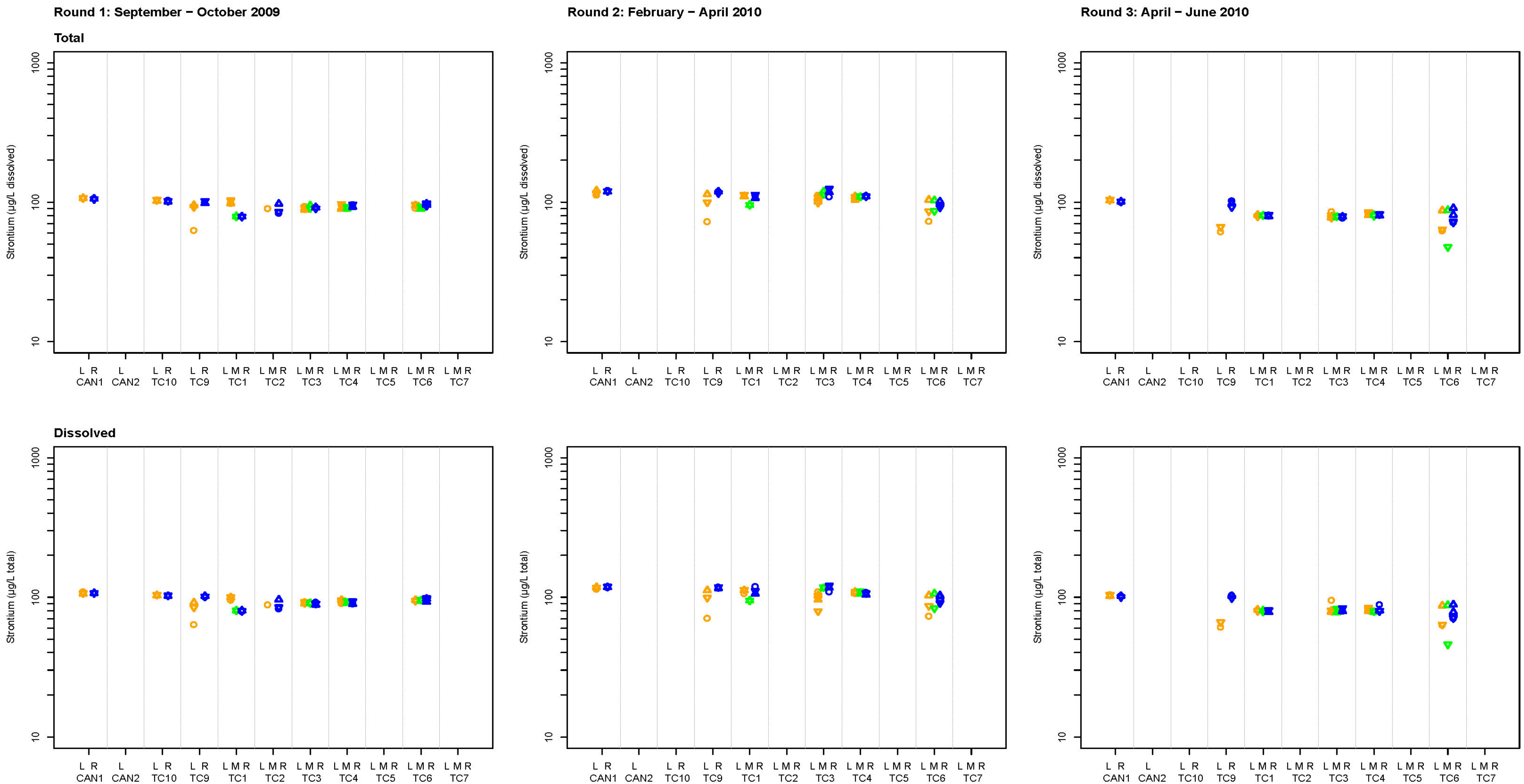
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Strontium



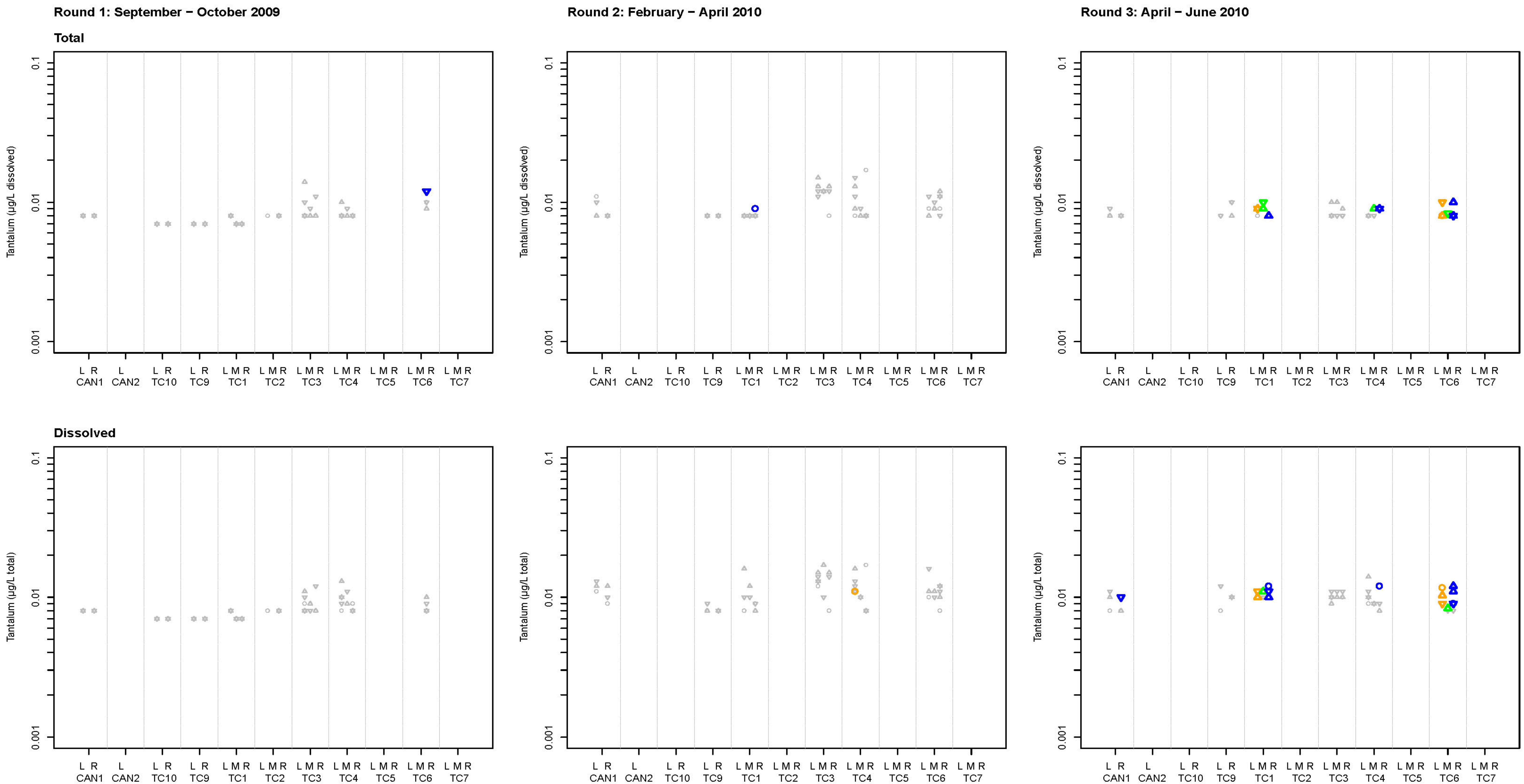
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Tantalum



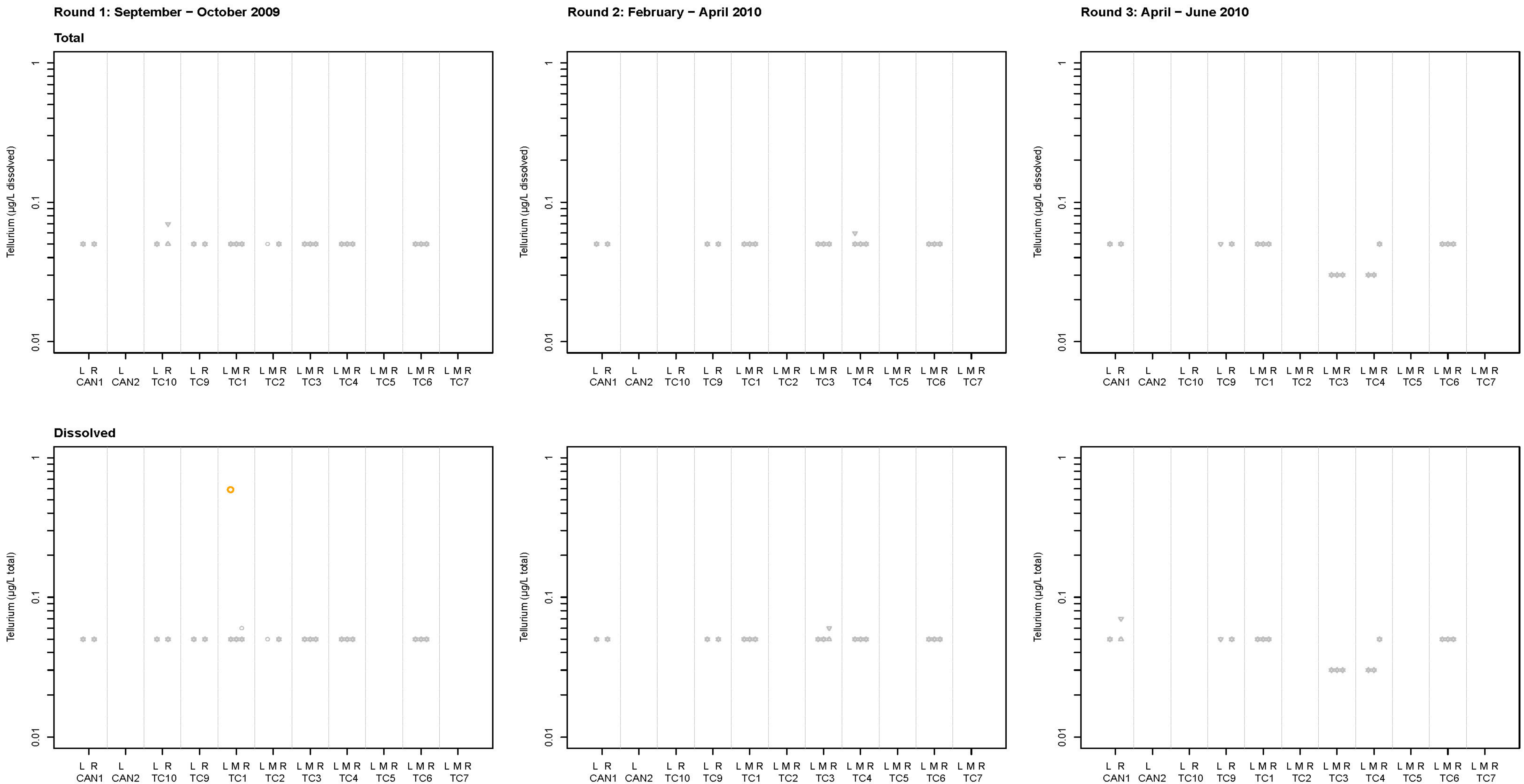
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Tellurium



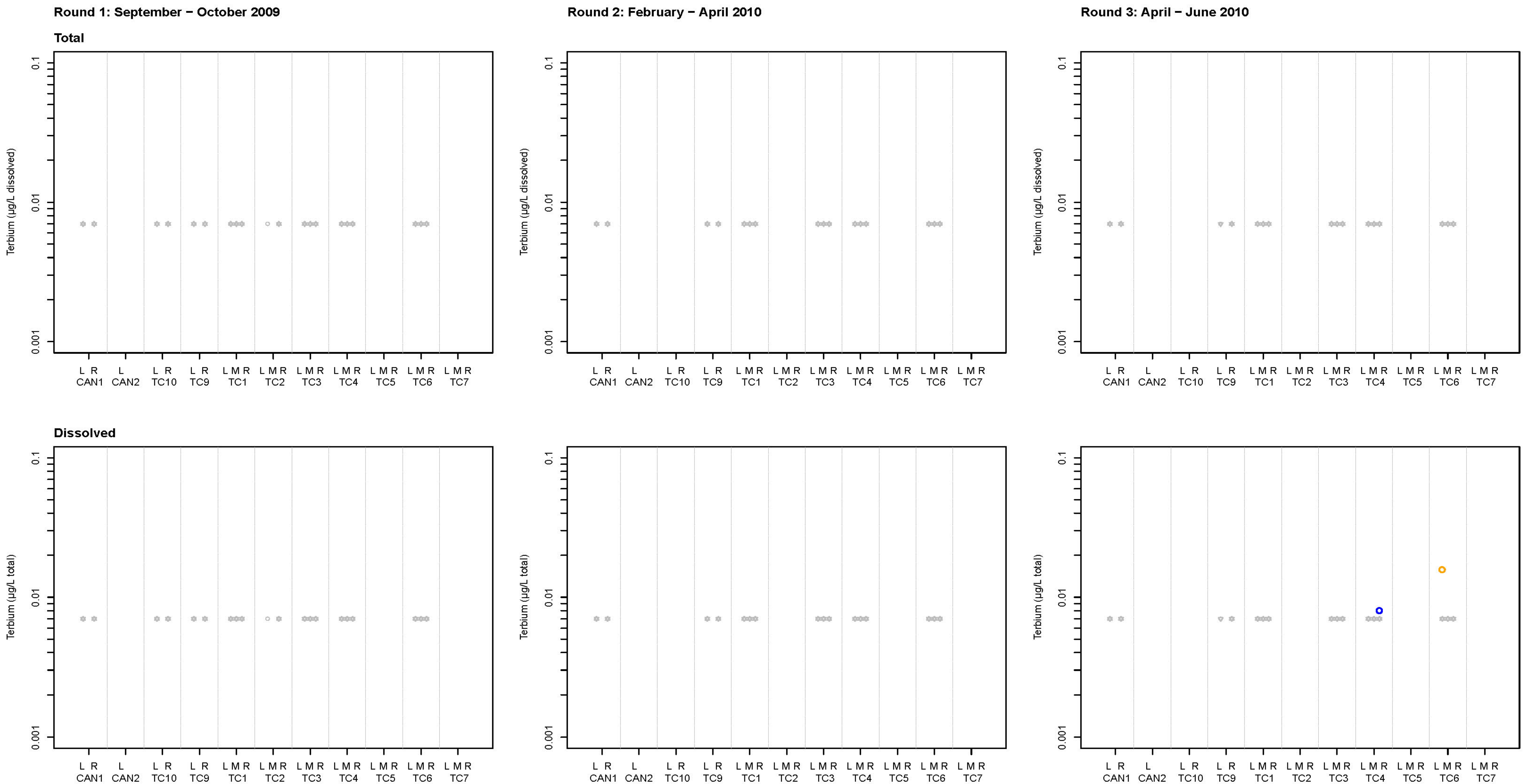
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Terbium



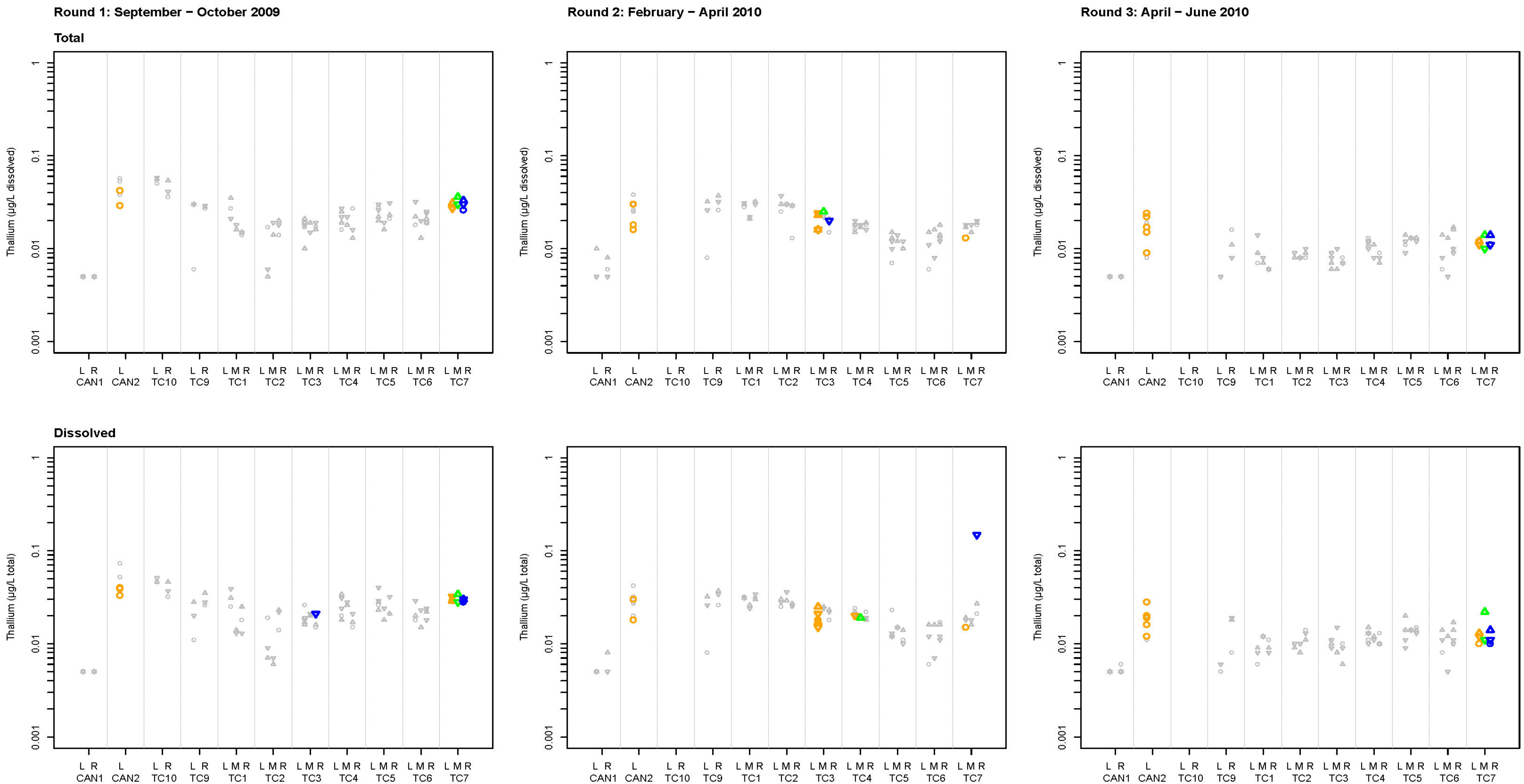
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Thallium



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

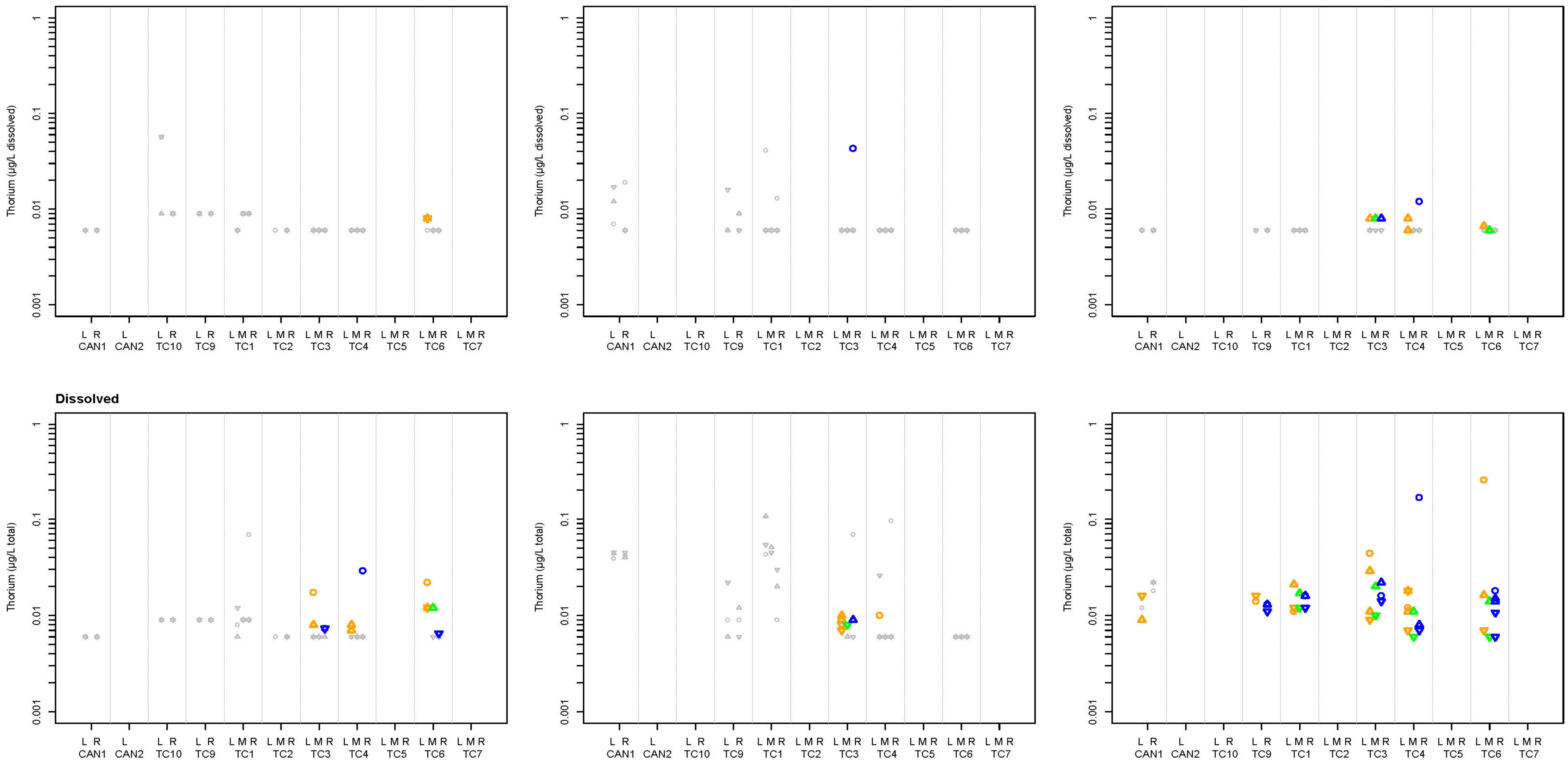
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Thorium

Round 1: September − October 2009 | **Round 2: February − April 2010** | **Round 3: April − June 2010**

Total



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

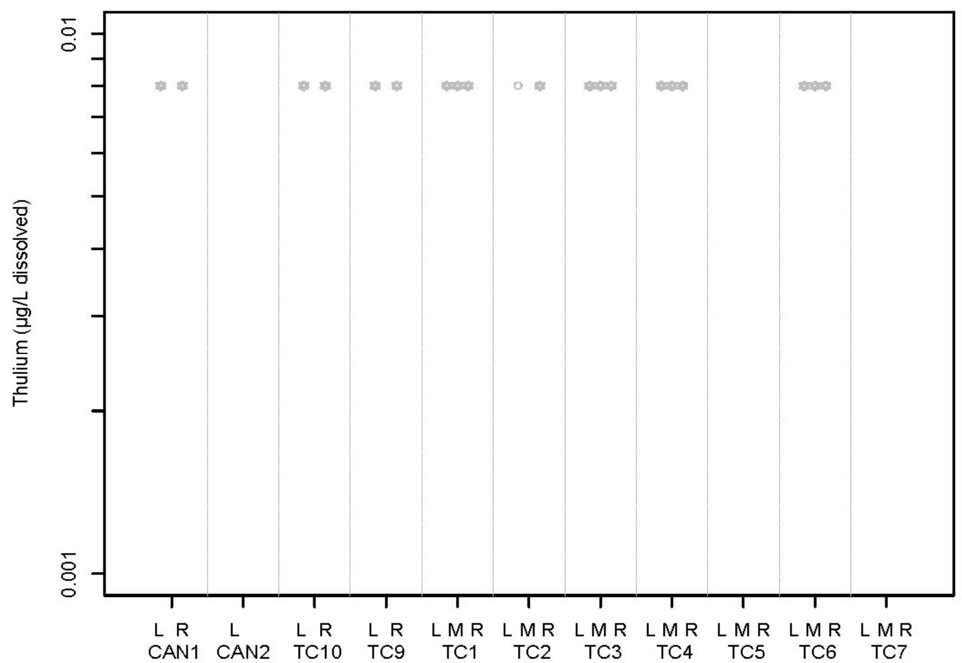
Surface Water − Thulium

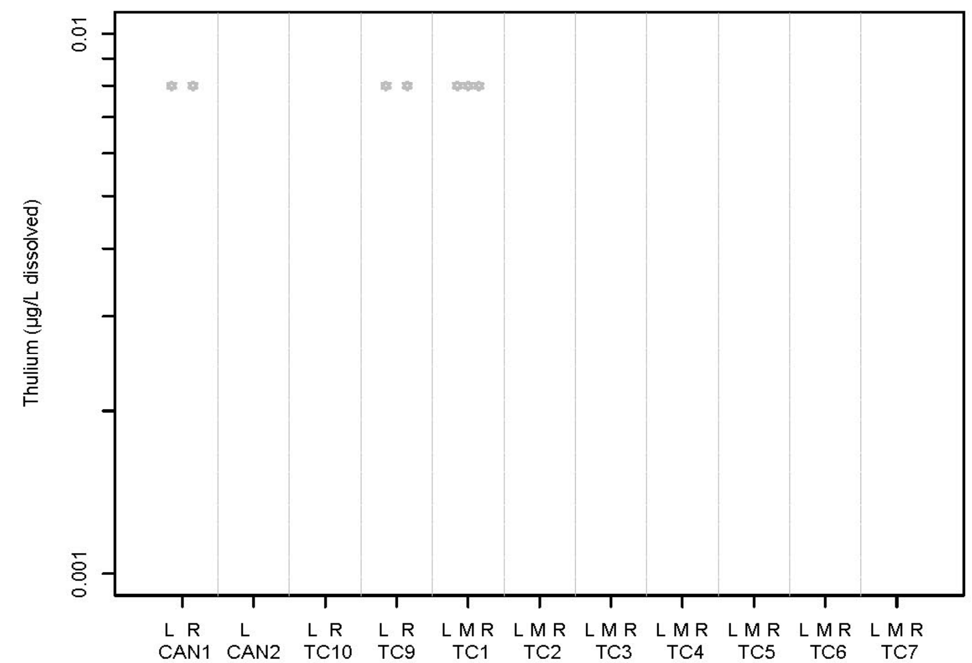
Round 1: September − October 2009

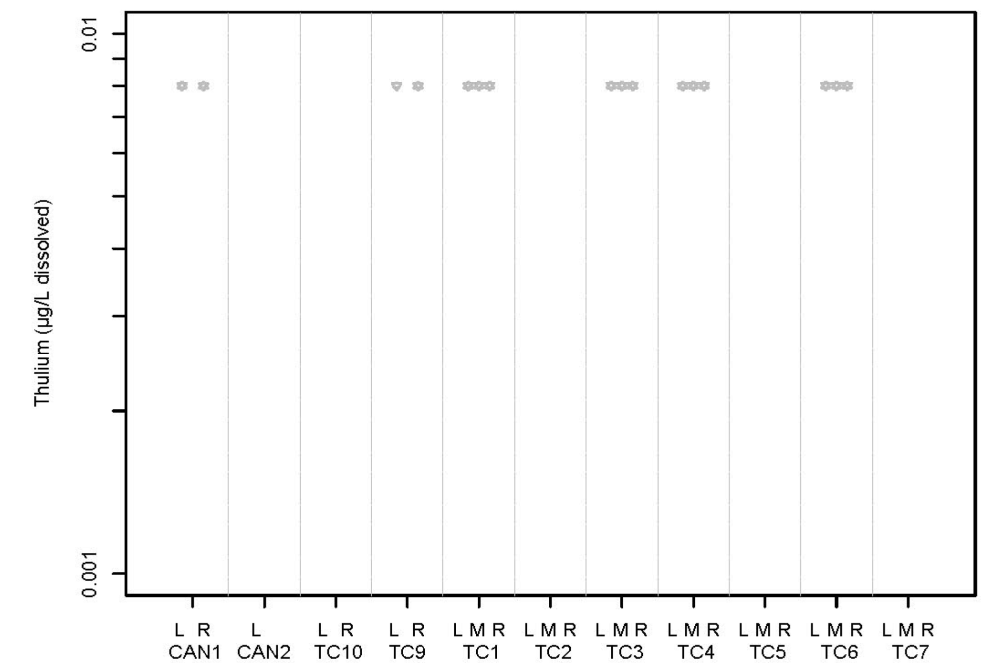
Round 2: February − April 2010

Round 3: April − June 2010

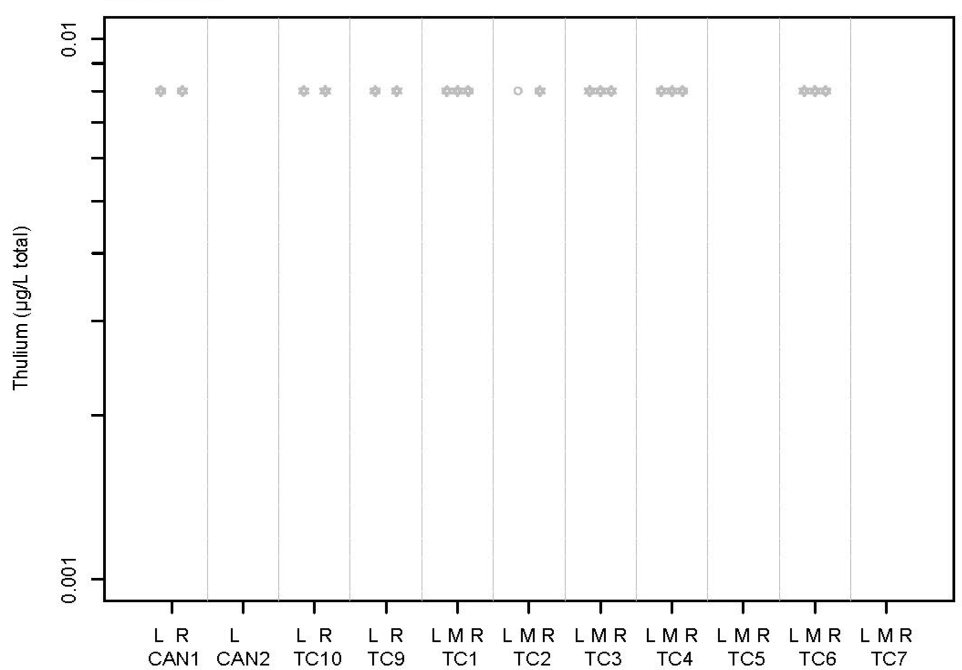
Total

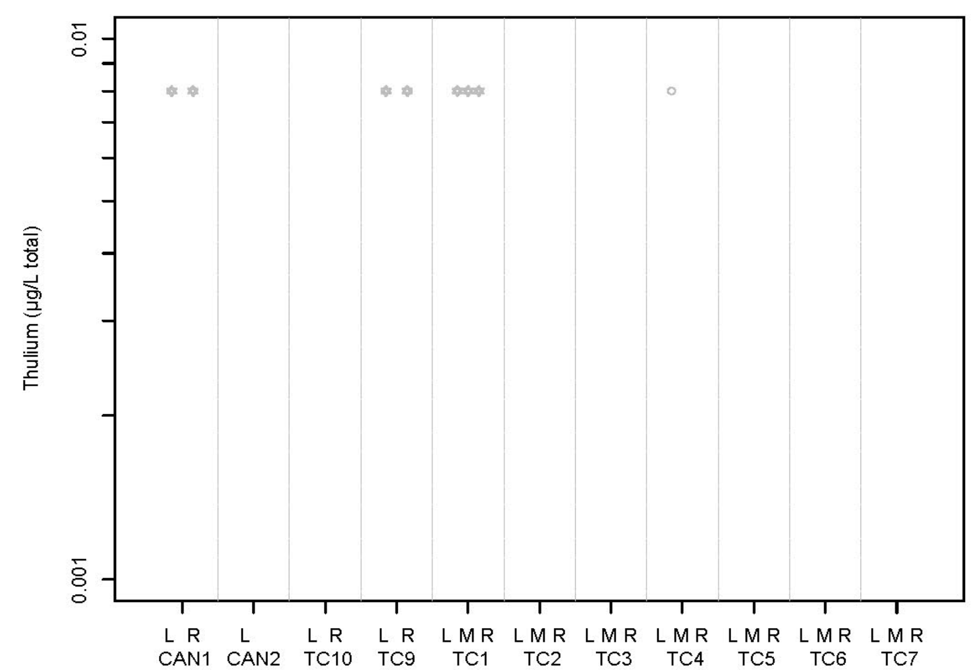


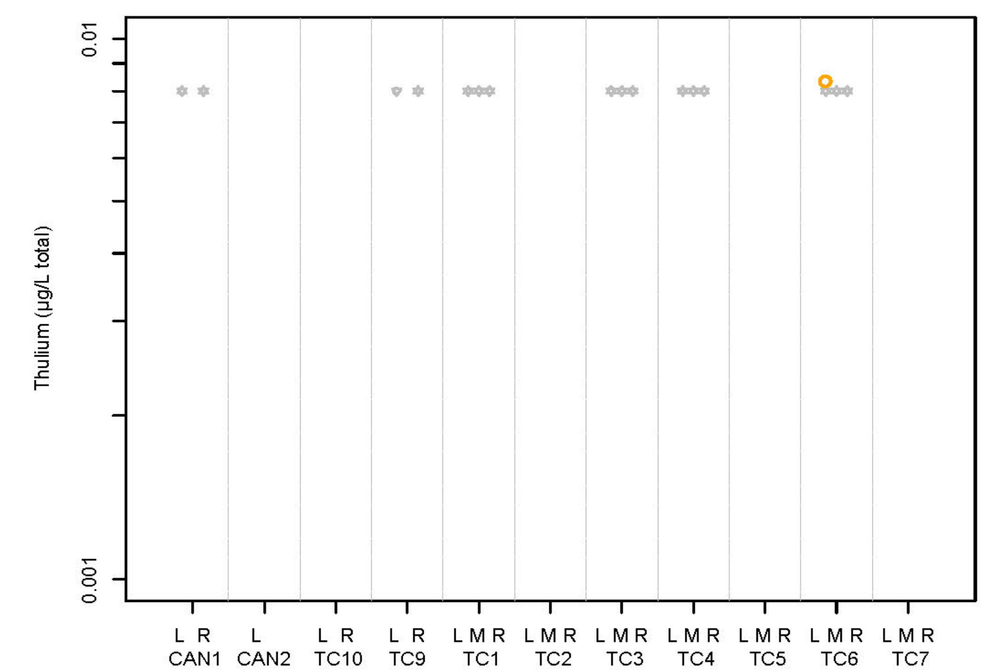




Dissolved







LEGEND

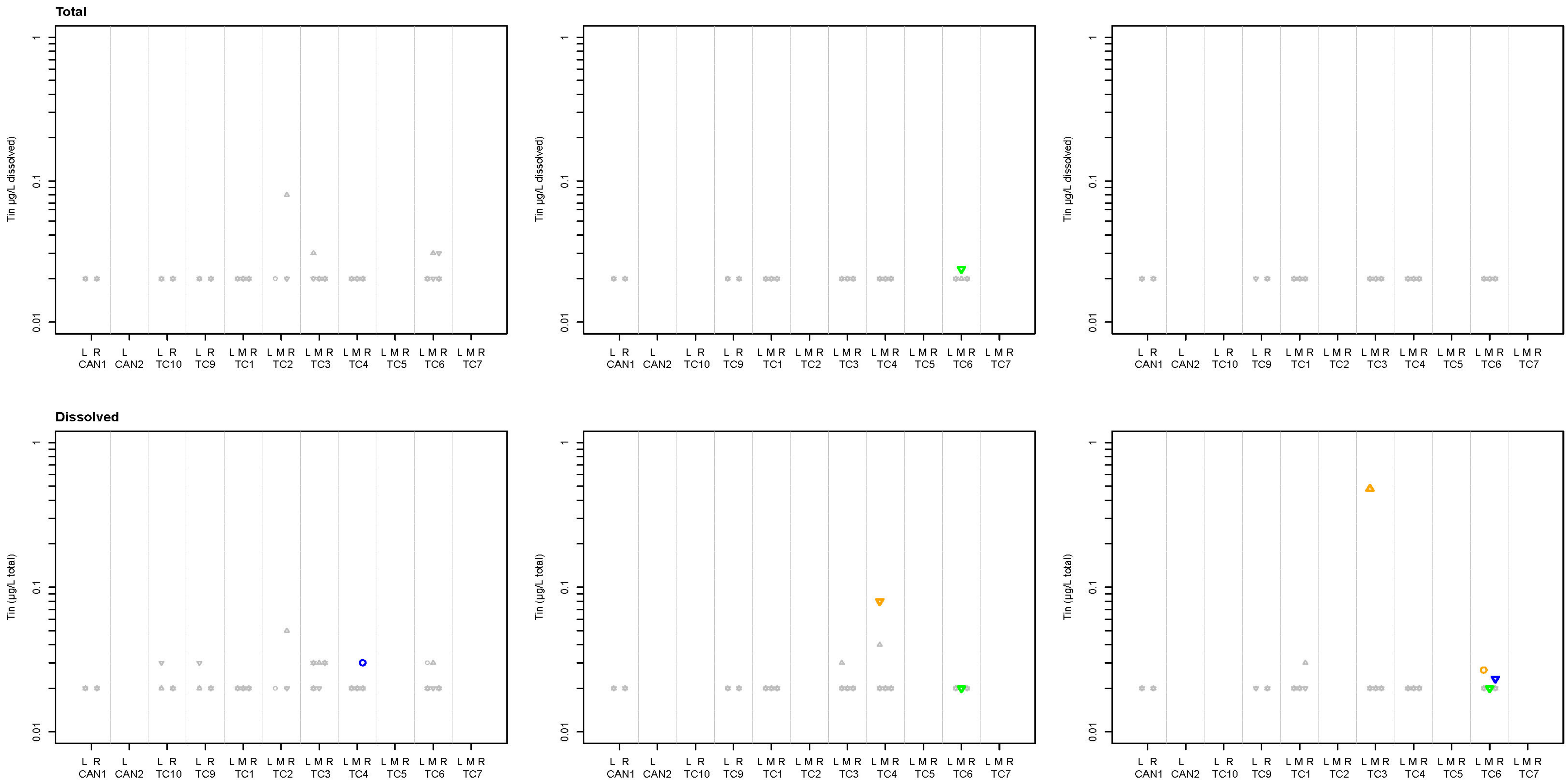
▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Tin

Round 1: September – October 2009 | **Round 2: February – April 2010** | **Round 3: April – June 2010**



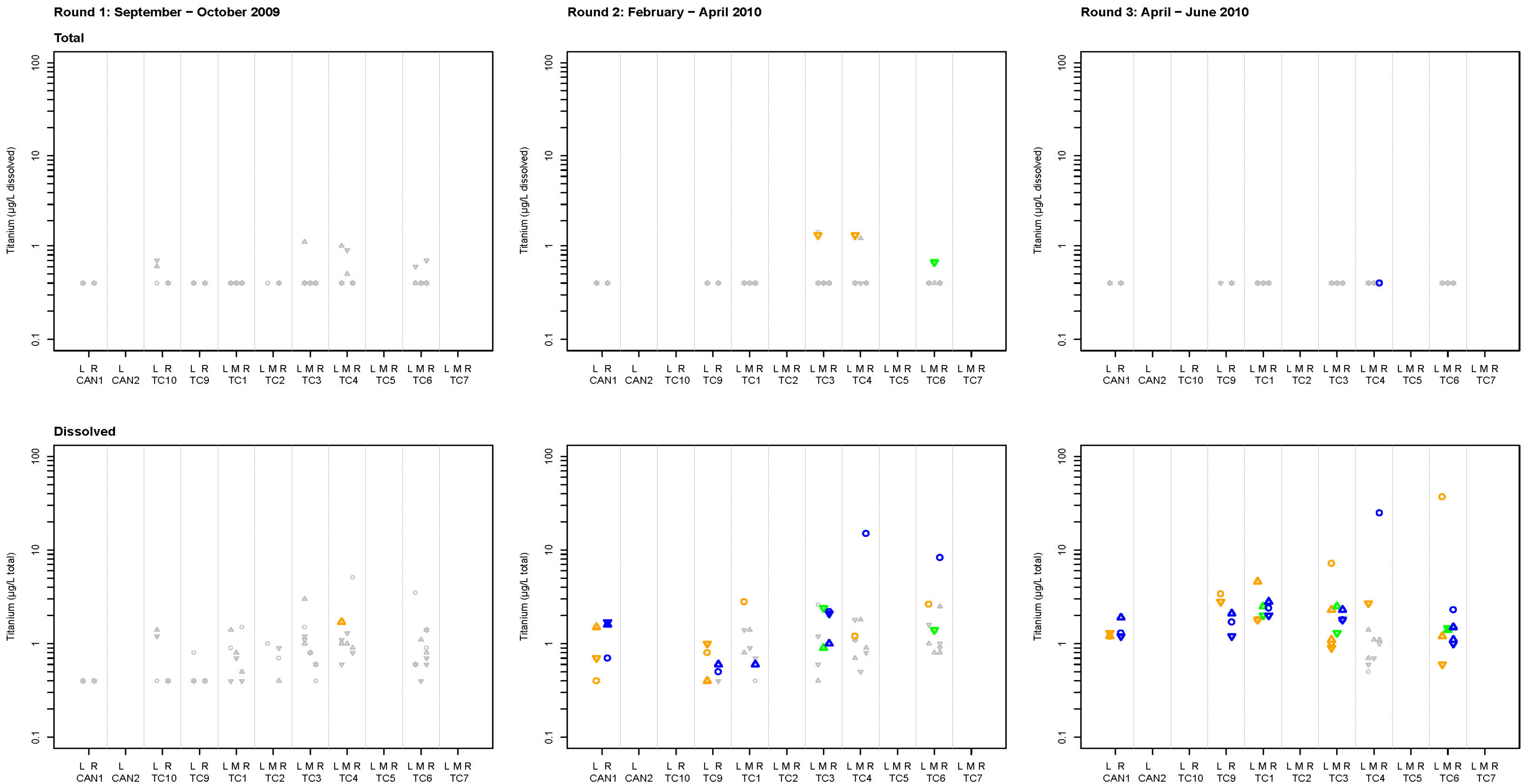
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Titanium



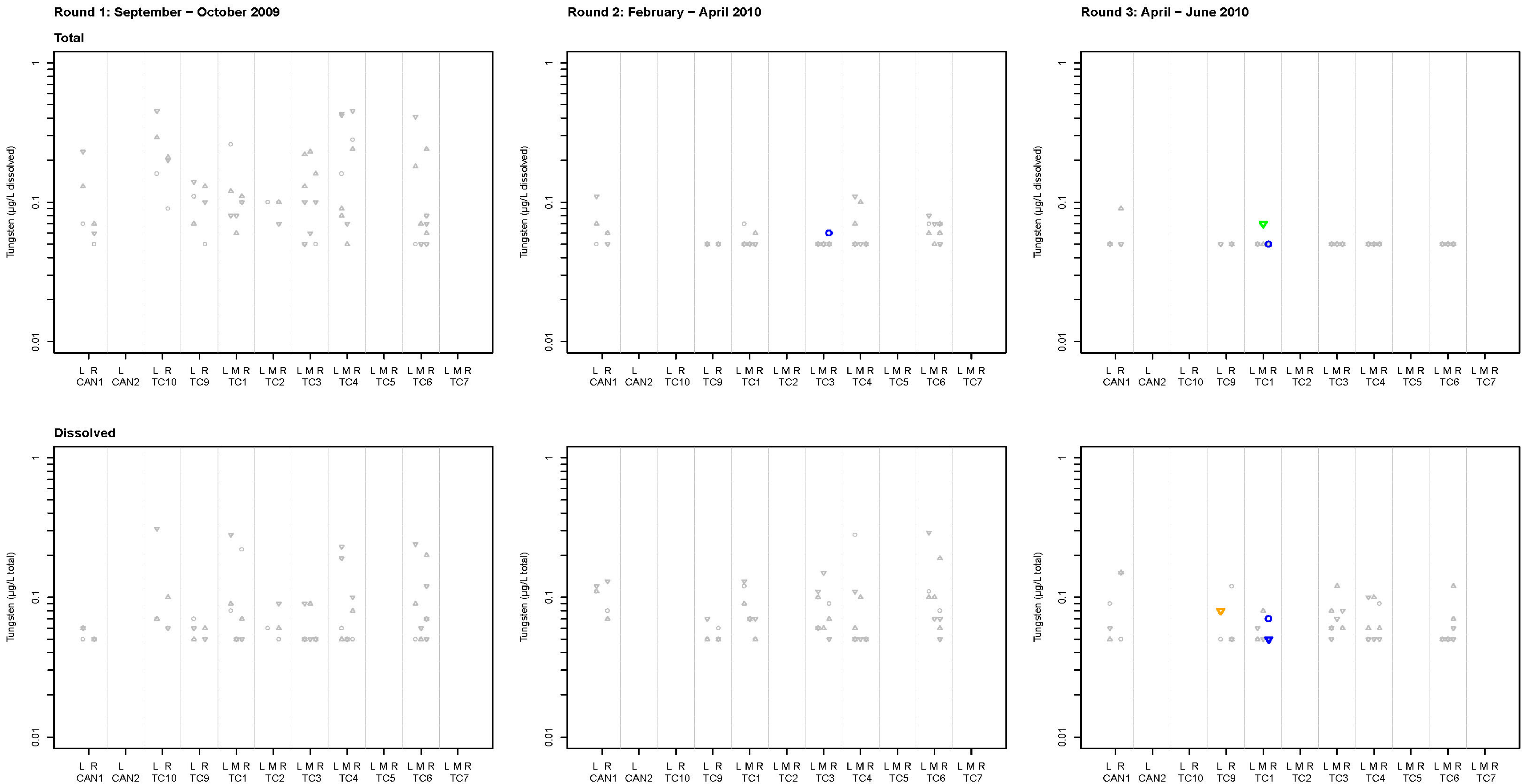
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Tungsten



LEGEND

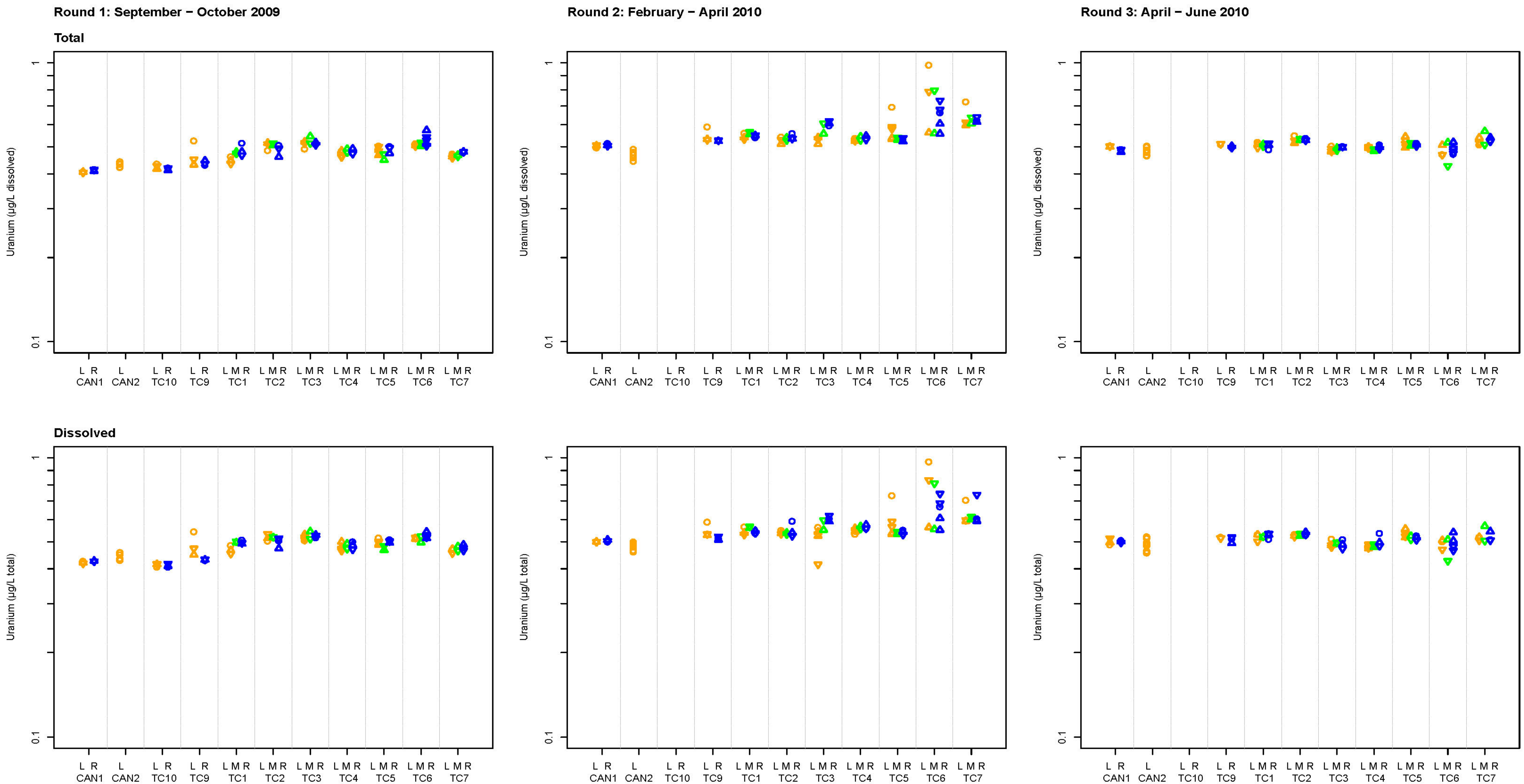
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Uranium



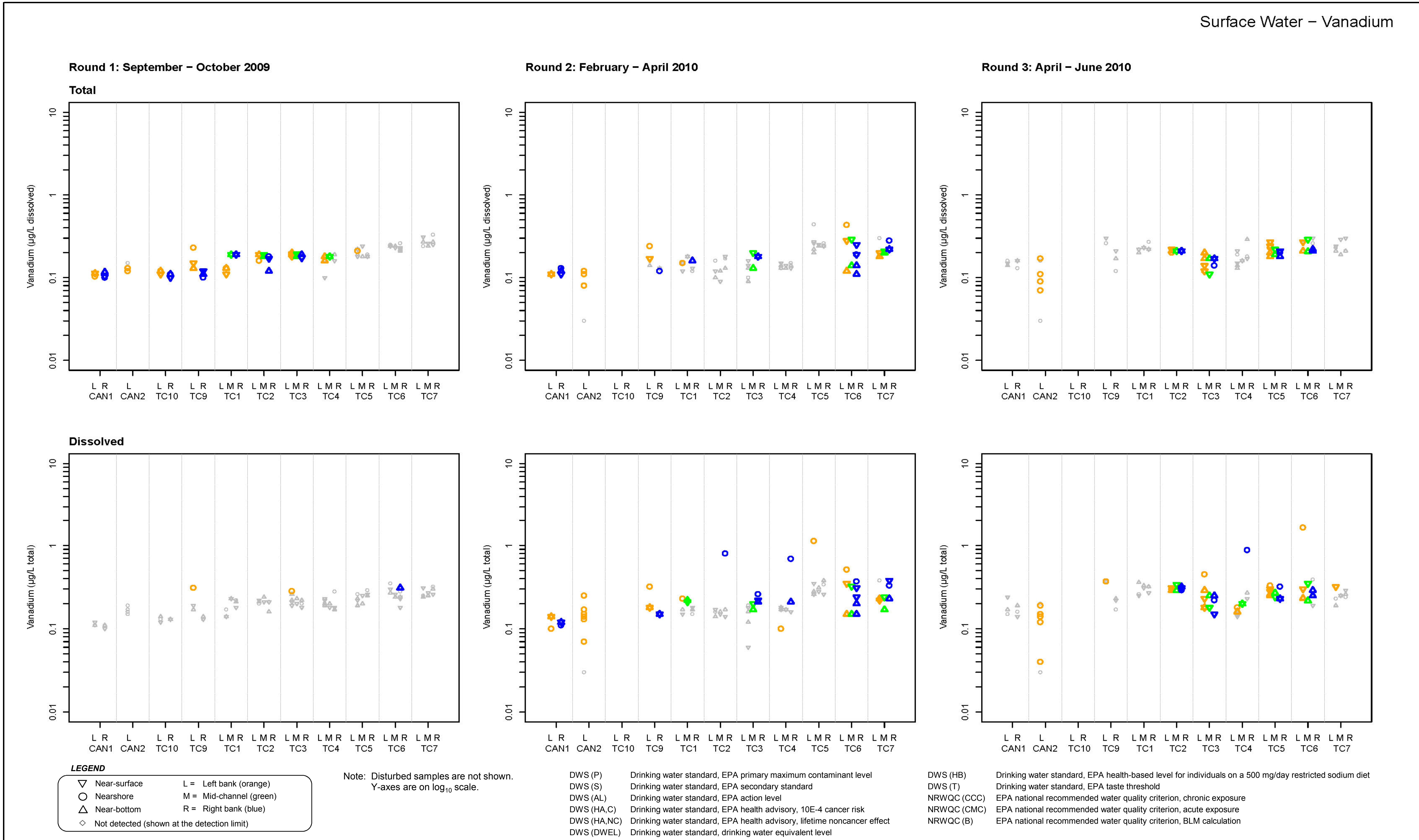
LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

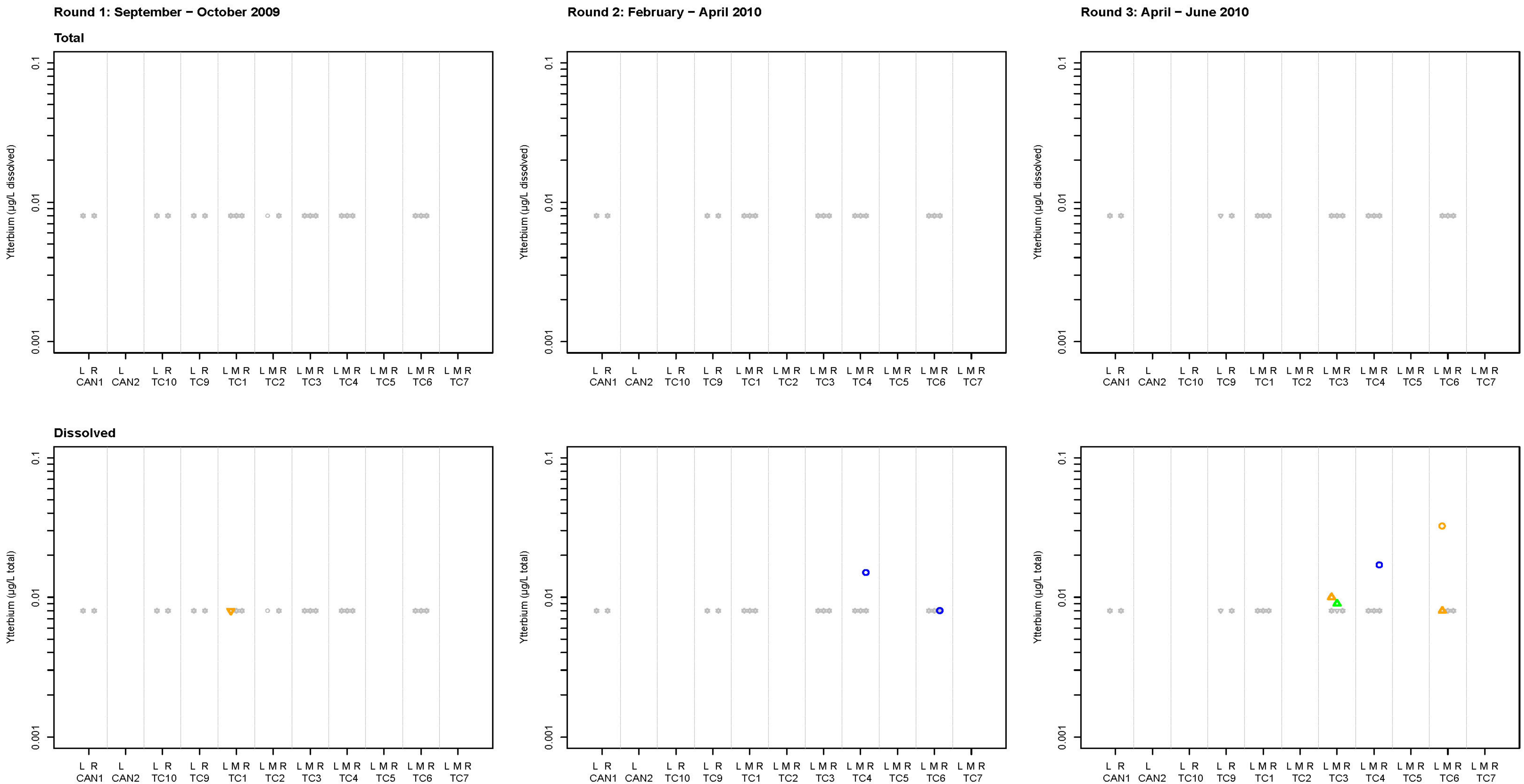
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



Surface Water – Vanadium
Round 1: September – October 2009
Round 2: February – April 2010
Round 3: April – June 2010
Total
Dissolved
Vanadium (µg/L dissolved)
Vanadium (µg/L total)
10
1
0.1
0.01
L R CAN1
L CAN2
L R TC10
L R TC9
L M R TC1
L M R TC2
L M R TC3
L M R TC4
L M R TC5
L M R TC6
L M R TC7
LEGEND
Near-surface
Nearshore
Near-bottom
Not detected (shown at the detection limit)
L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.
DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold
NRWQC (CCC) EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC) EPA national recommended water quality criterion, acute exposure
NRWQC (B) EPA national recommended water quality criterion, BLM calculation

Surface Water − Ytterbium



LEGEND

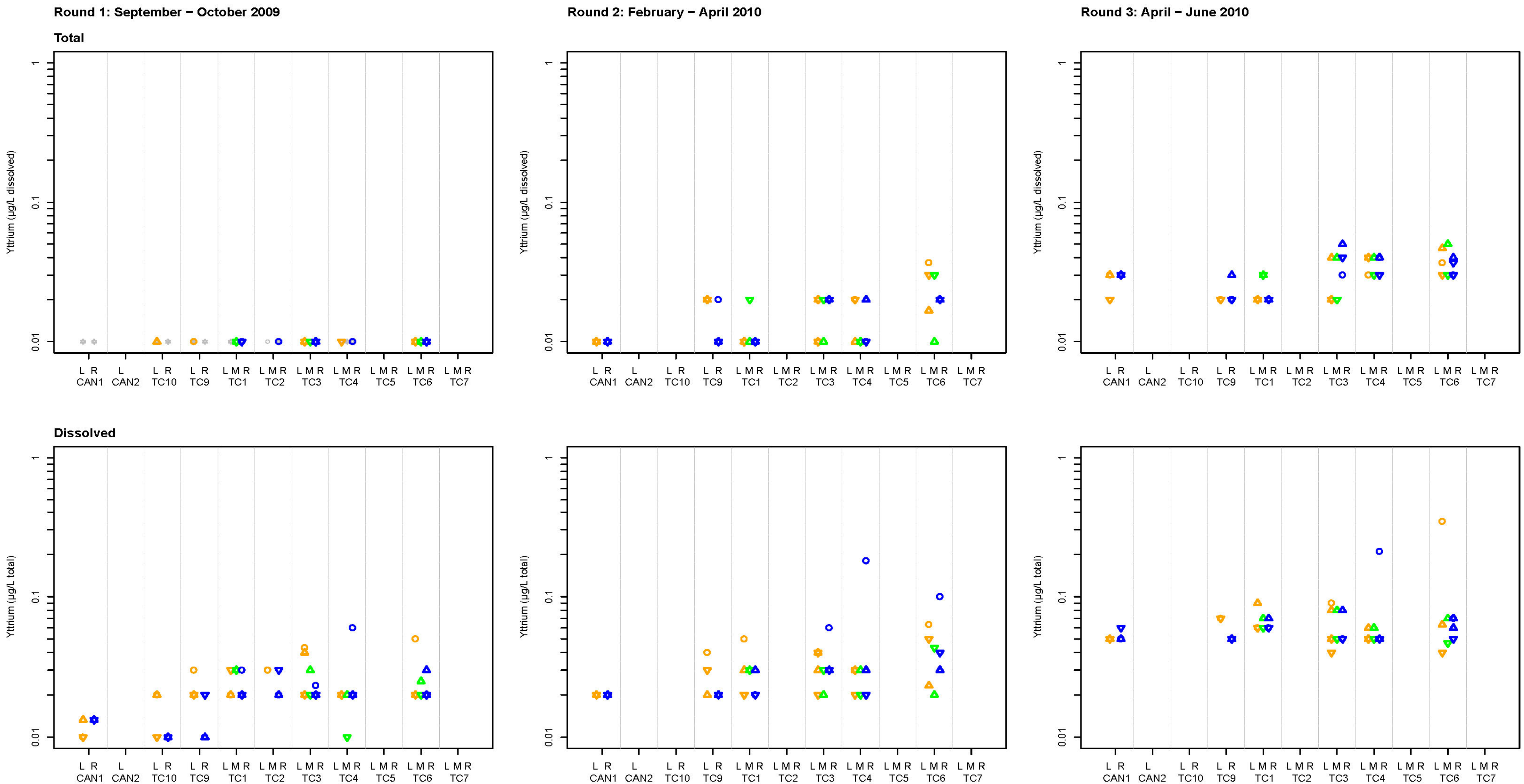
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Yttrium



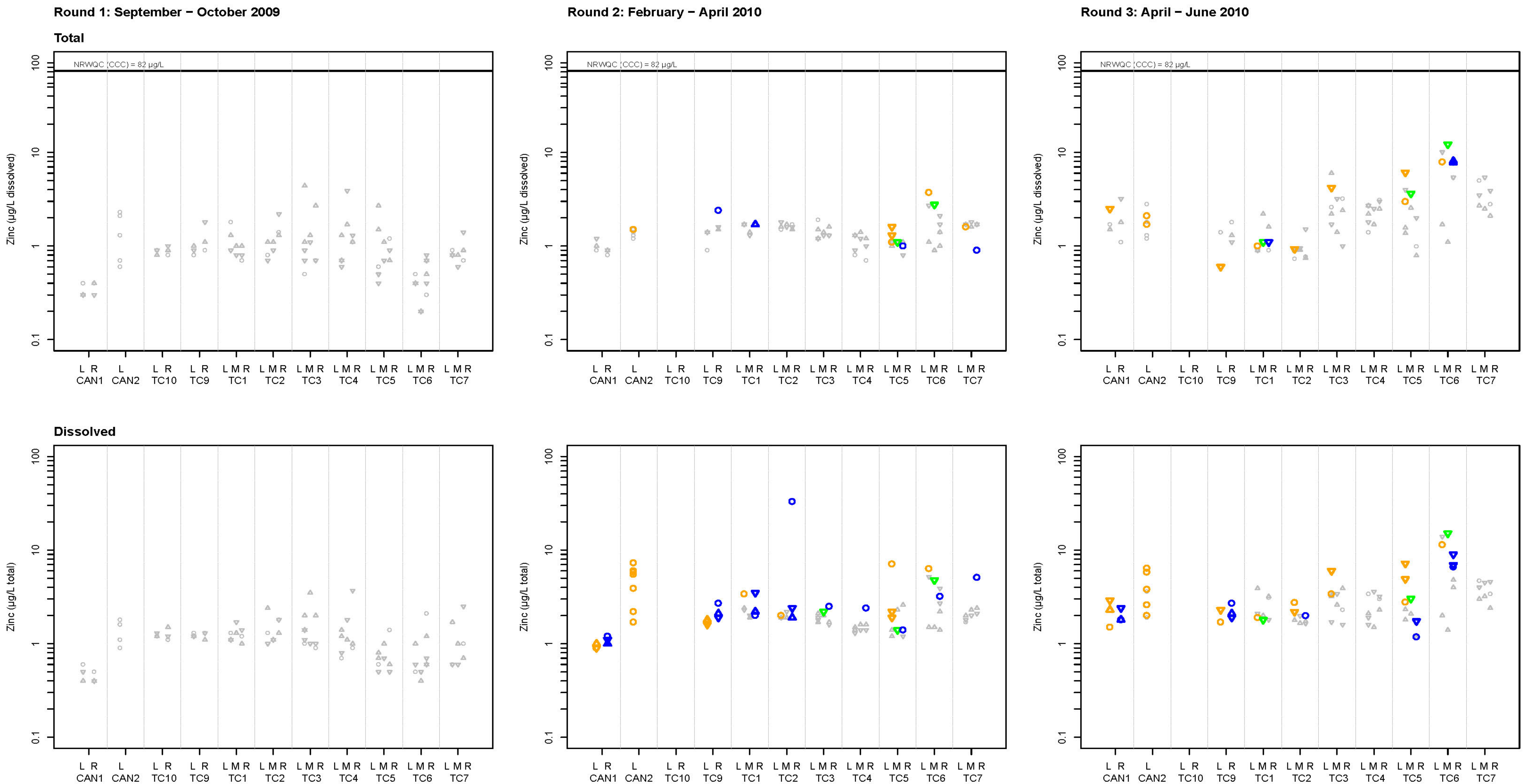
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Zinc

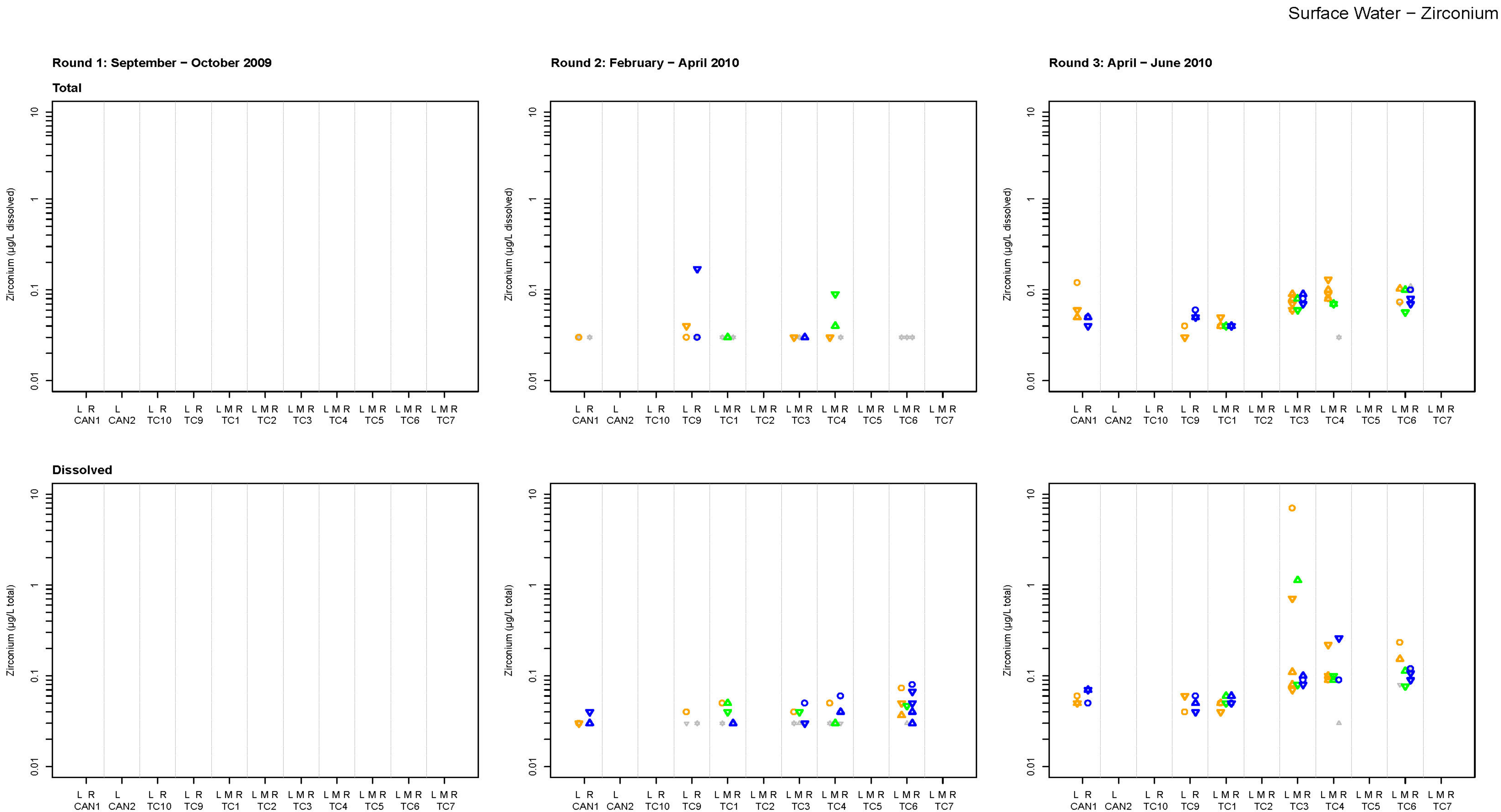


LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



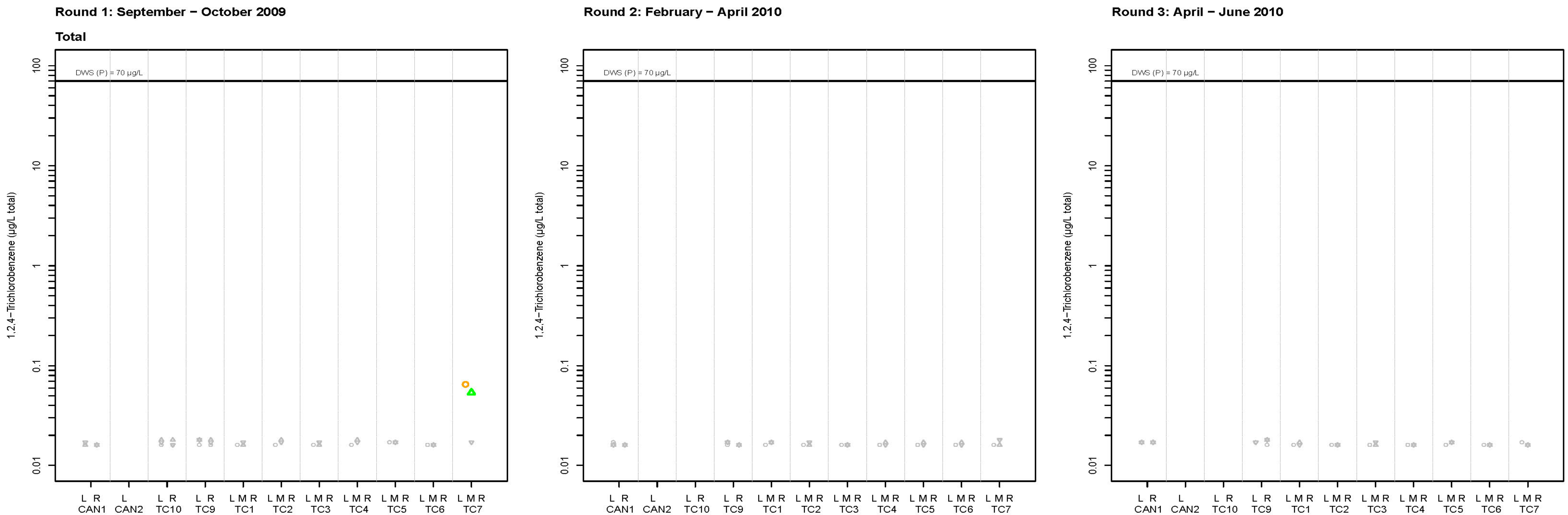
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 1,2,4−Trichlorobenzene



LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

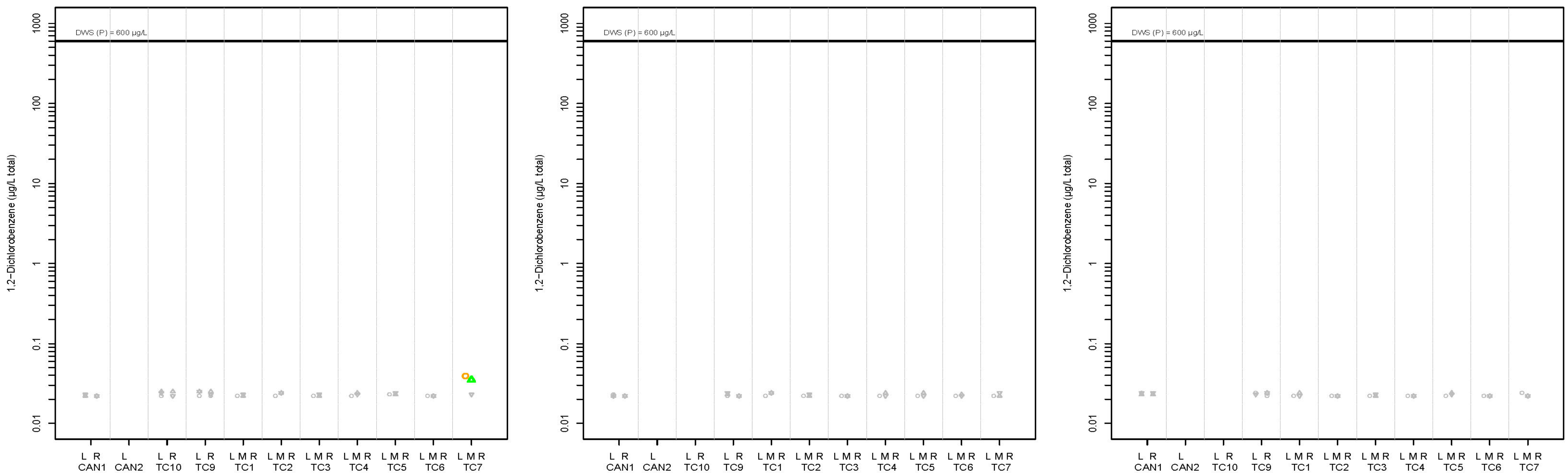
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 1,2−Dichlorobenzene

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



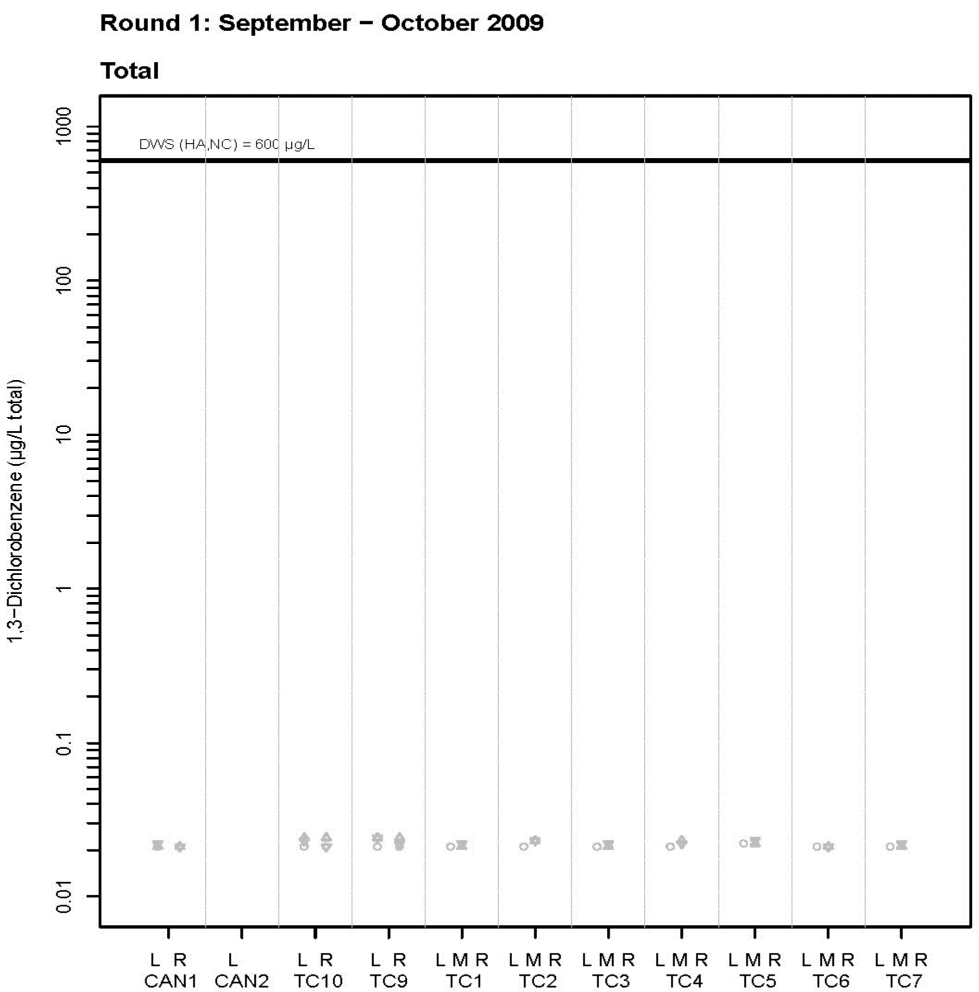
LEGEND

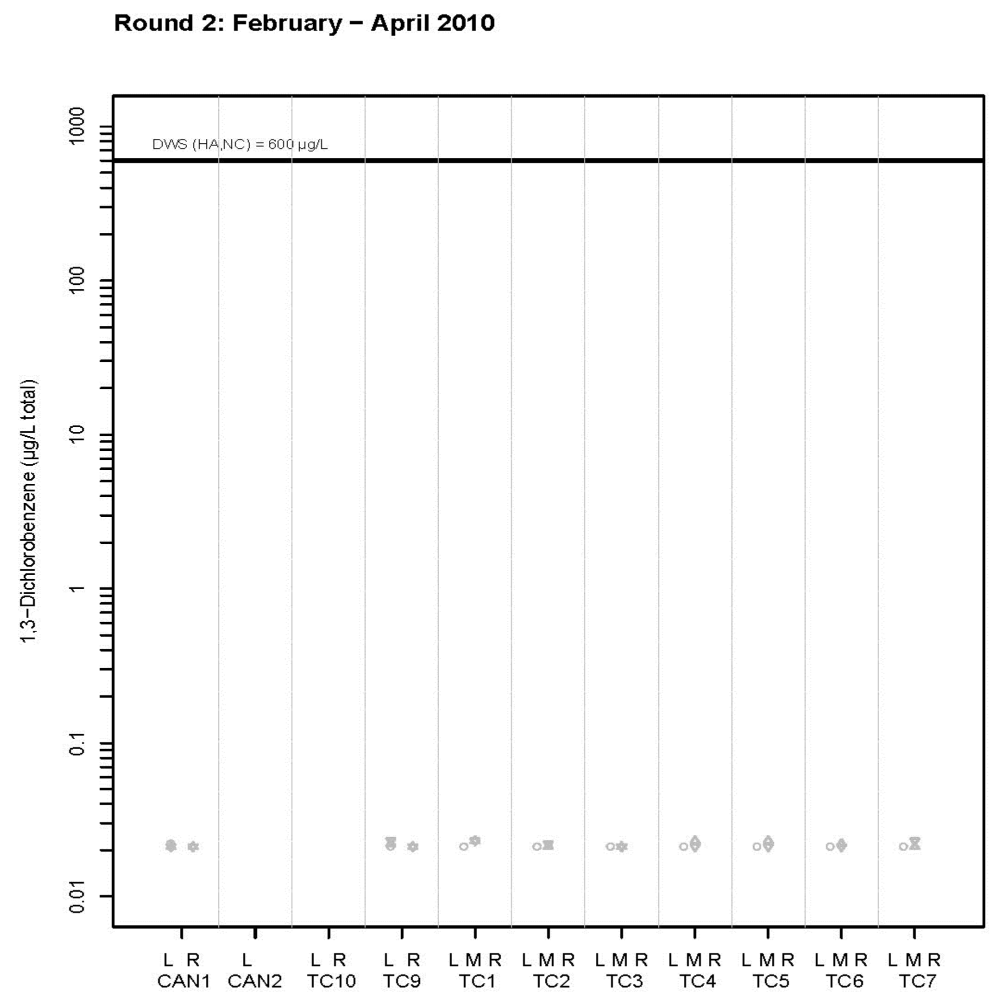
▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

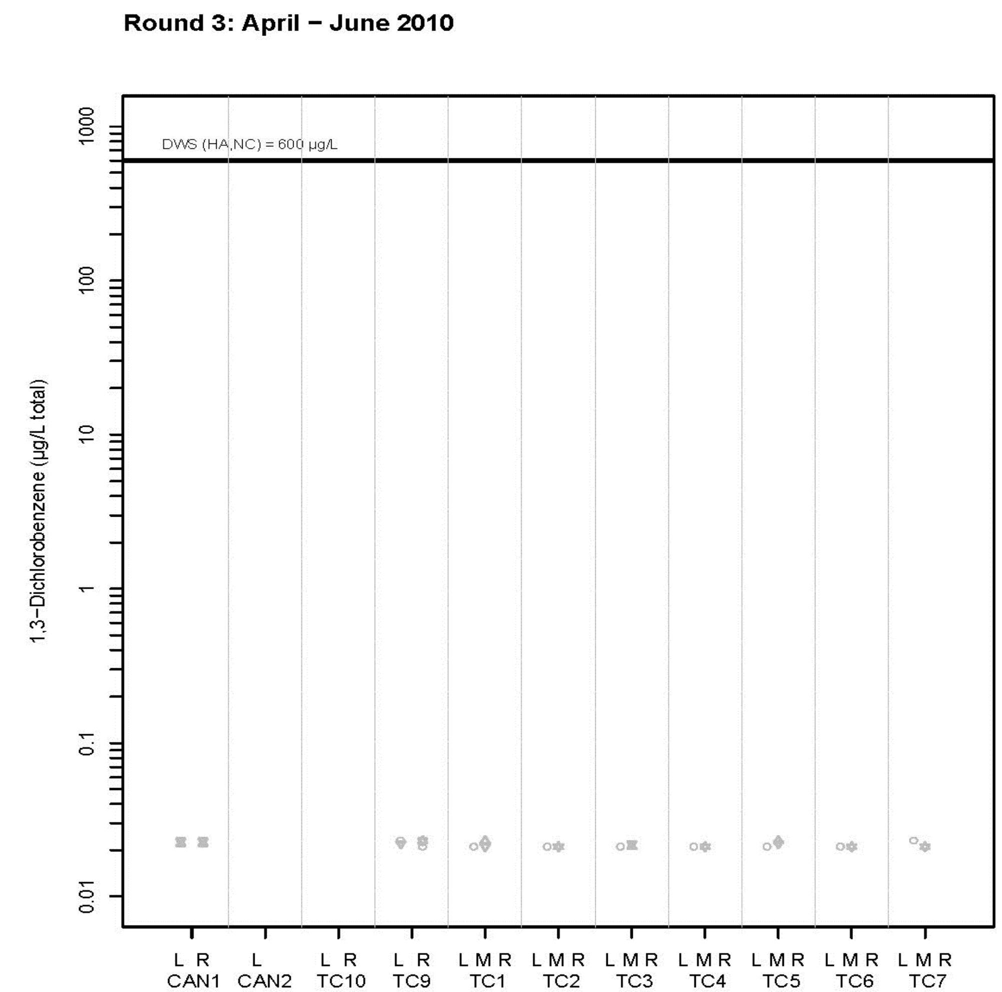
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 1,3−Dichlorobenzene







LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)
- L = Left bank (orange)
- M = Mid-channel (green)
- R = Right bank (blue)

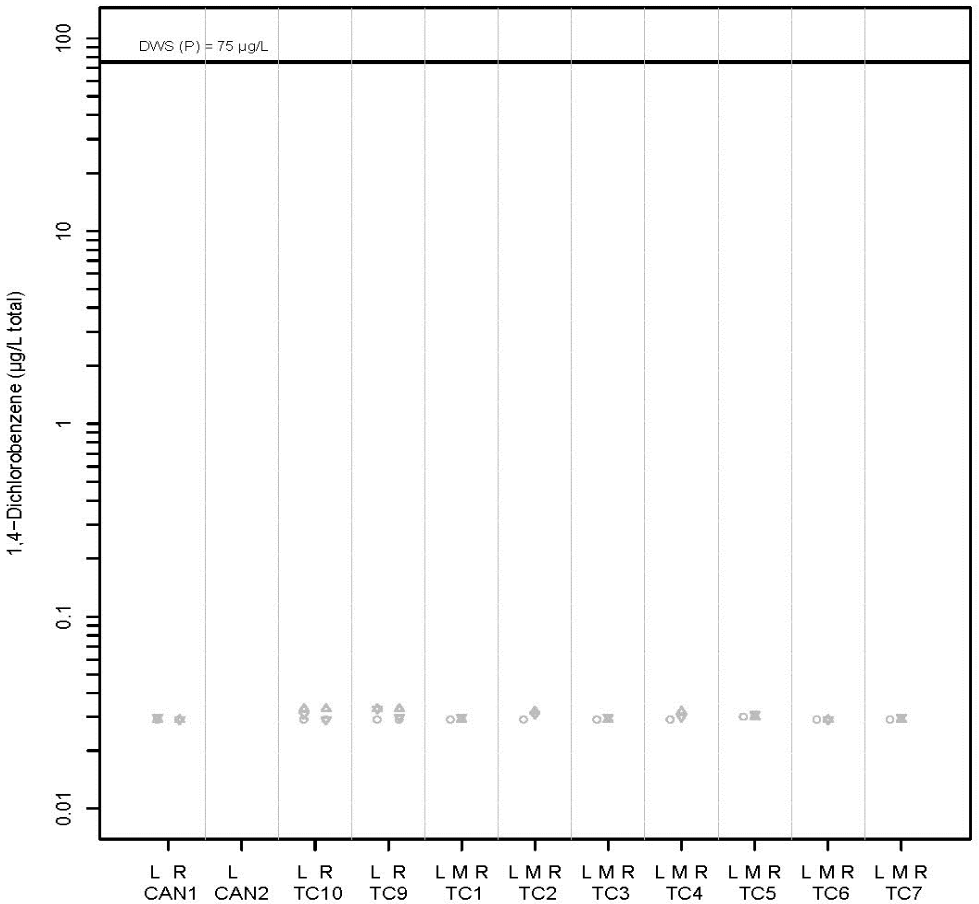
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

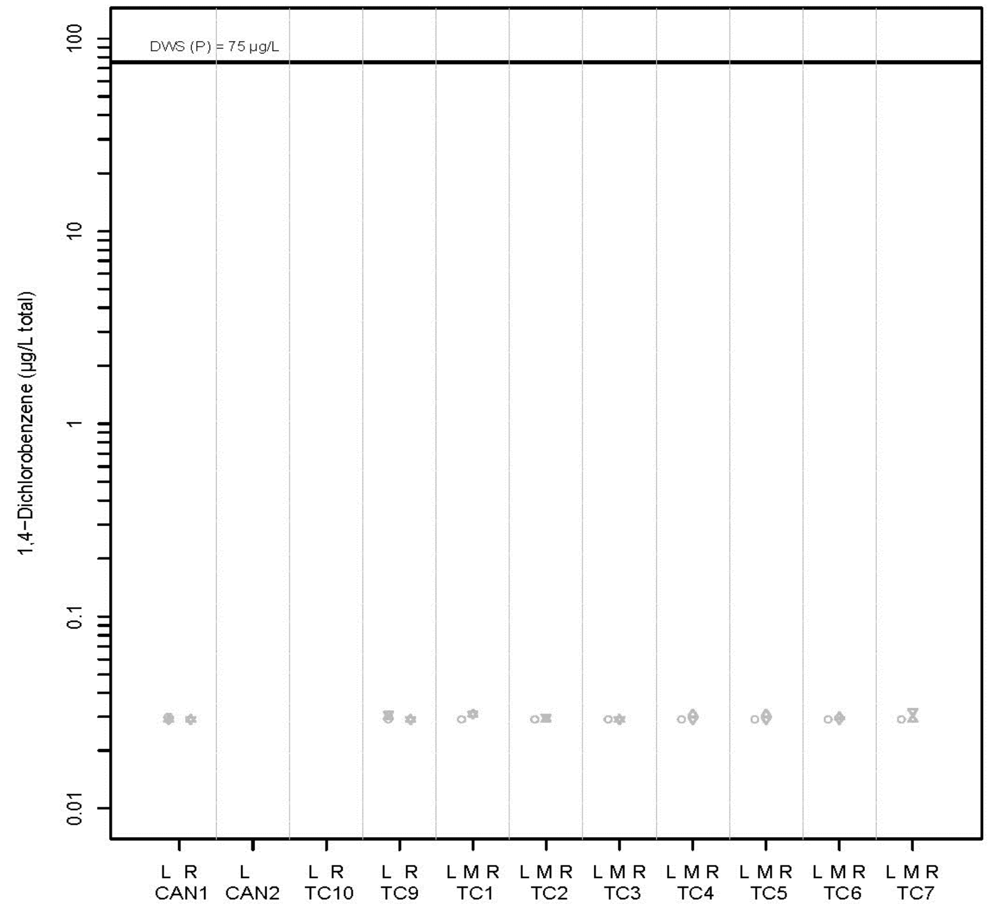
Surface Water − 1,4−Dichlorobenzene

Round 1: September − October 2009

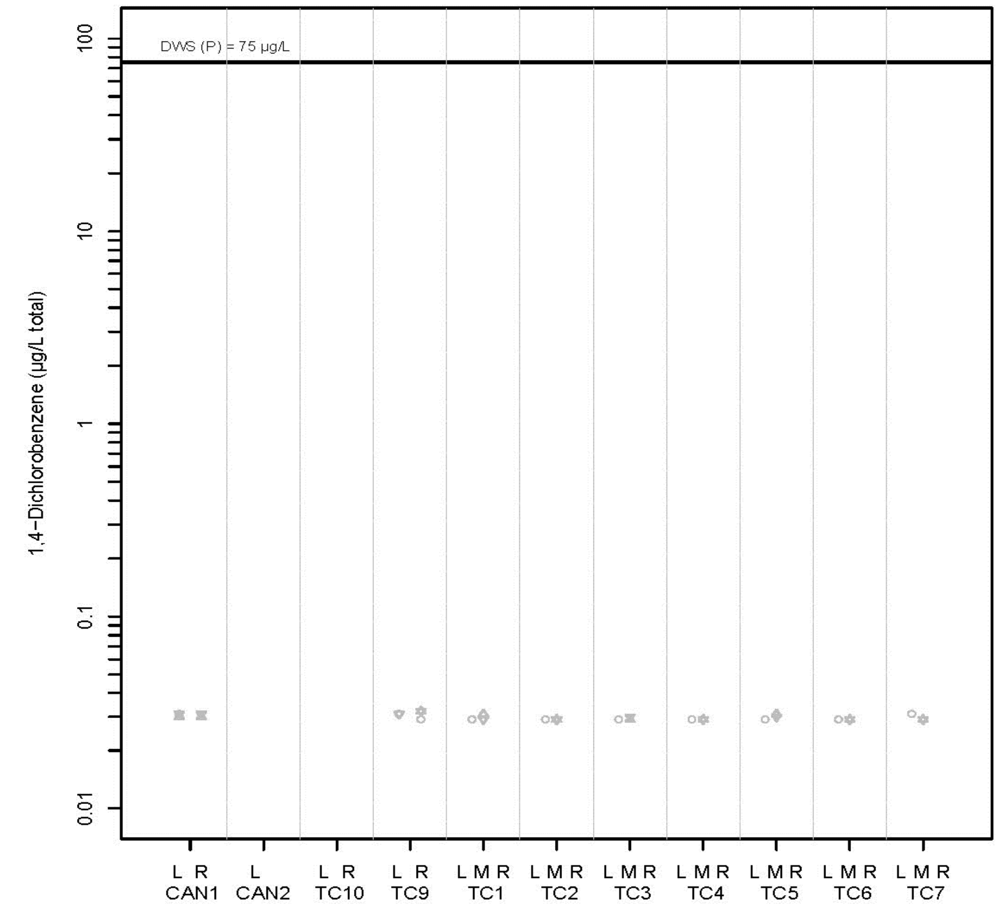
Total



Round 2: February − April 2010



Round 3: April − June 2010



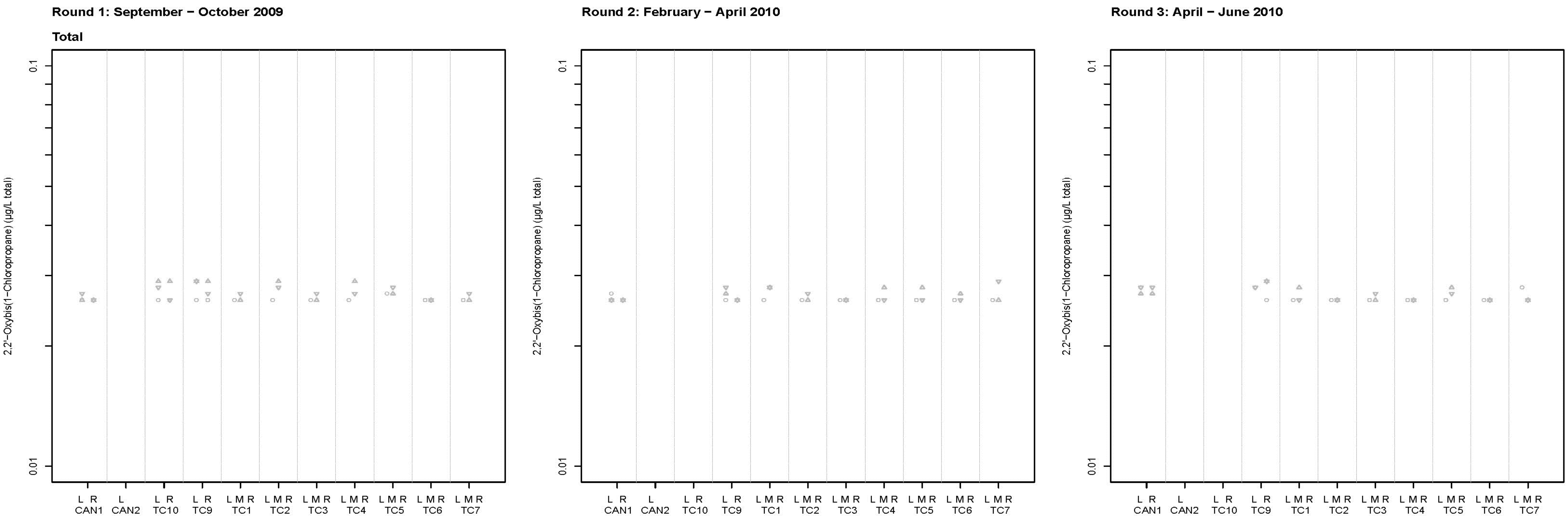
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,2'–Oxybis (1–Chloropropane)



LEGEND

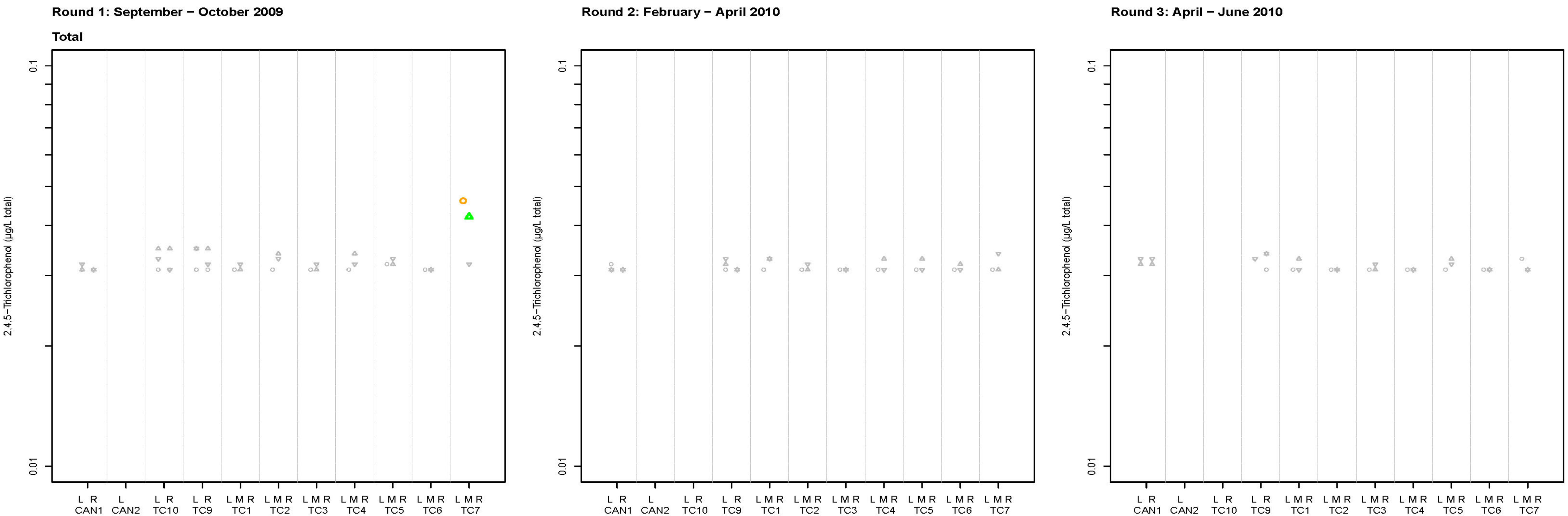
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,4,5-Trichlorophenol



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown. Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

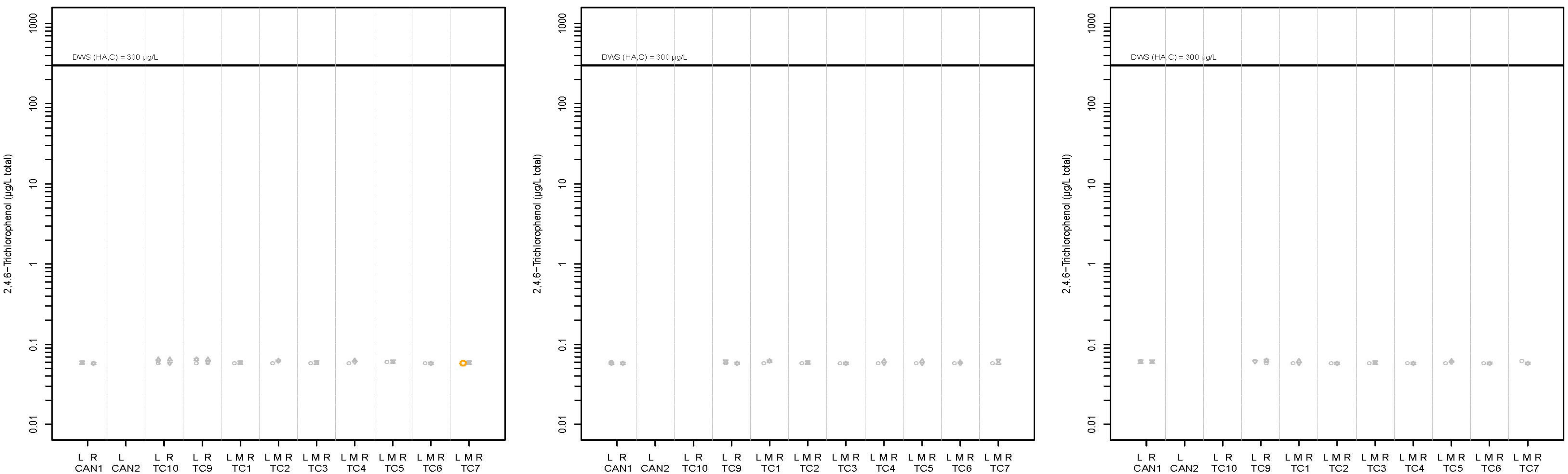
Surface Water − 2,4,6−Trichlorophenol

Round 1: September − October 2009

Round 2: February − April 2010

Round 3: April − June 2010

Total



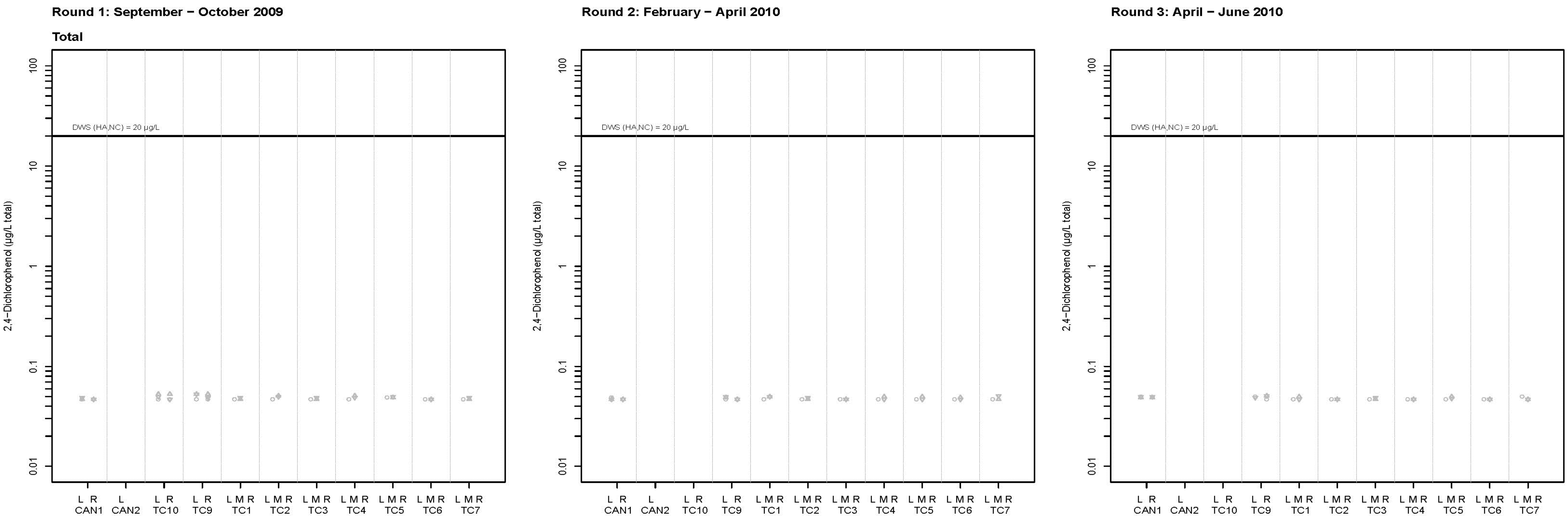
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,4–Dichlorophenol



LEGEND

▽ Near-surface   L = Left bank (orange)
○ Nearshore   M = Mid-channel (green)
△ Near-bottom   R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
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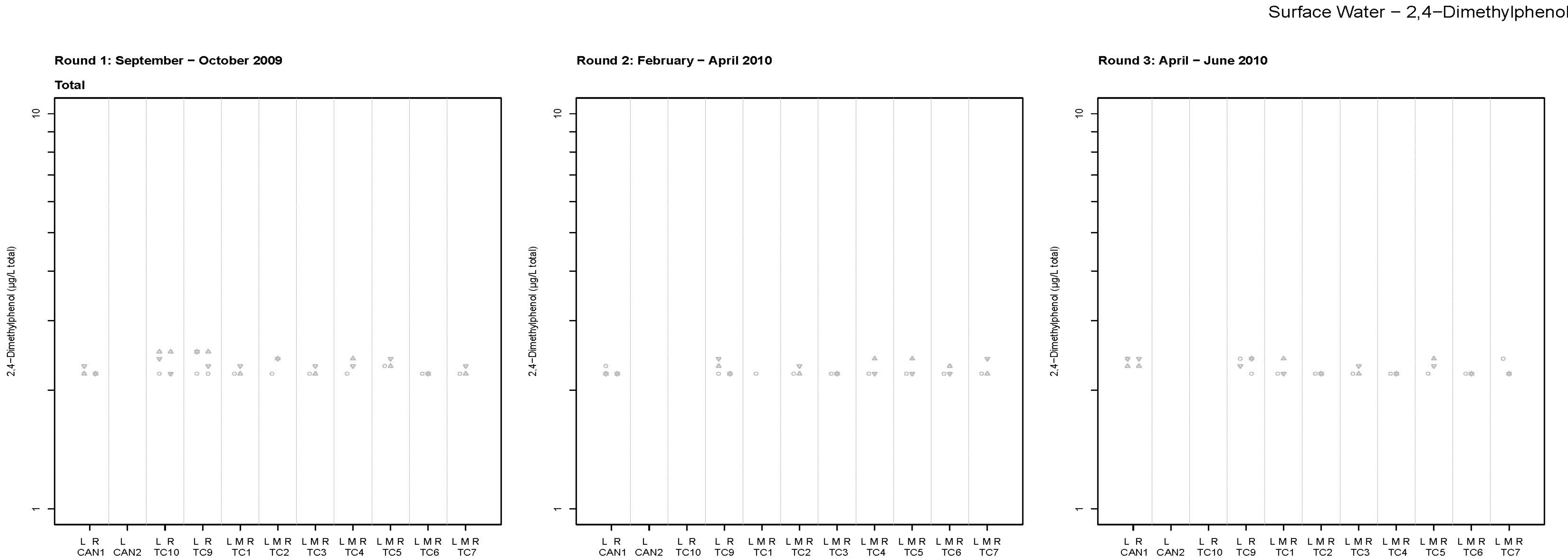
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



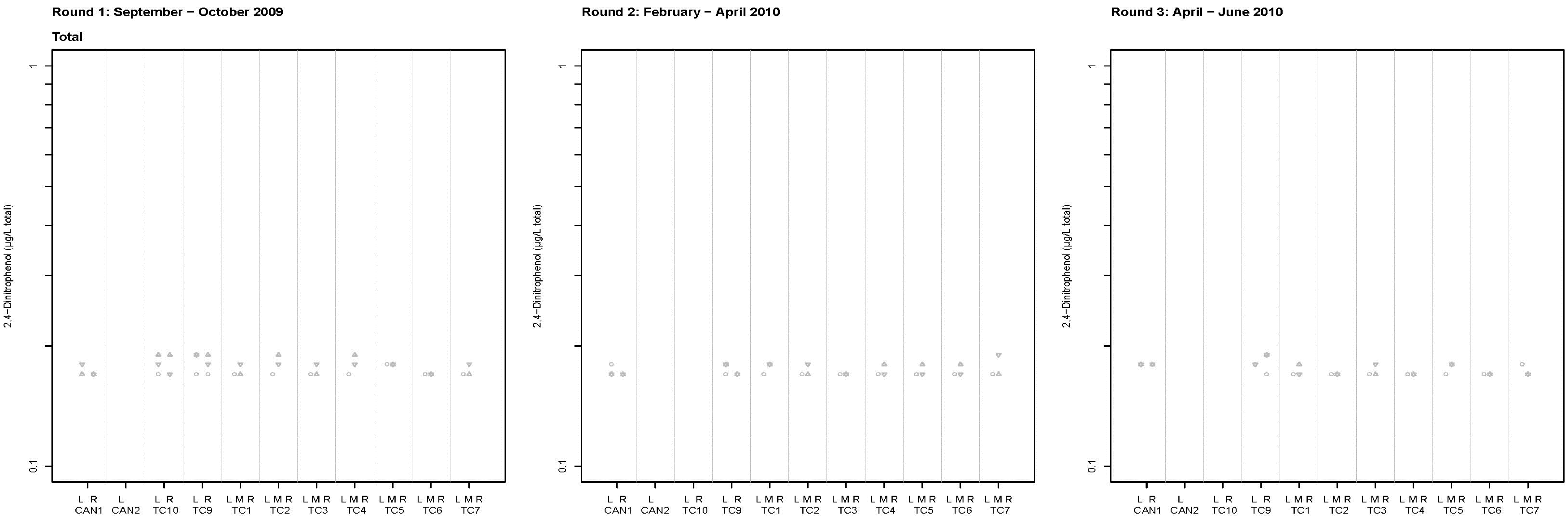
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,4–Dinitrophenol



LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

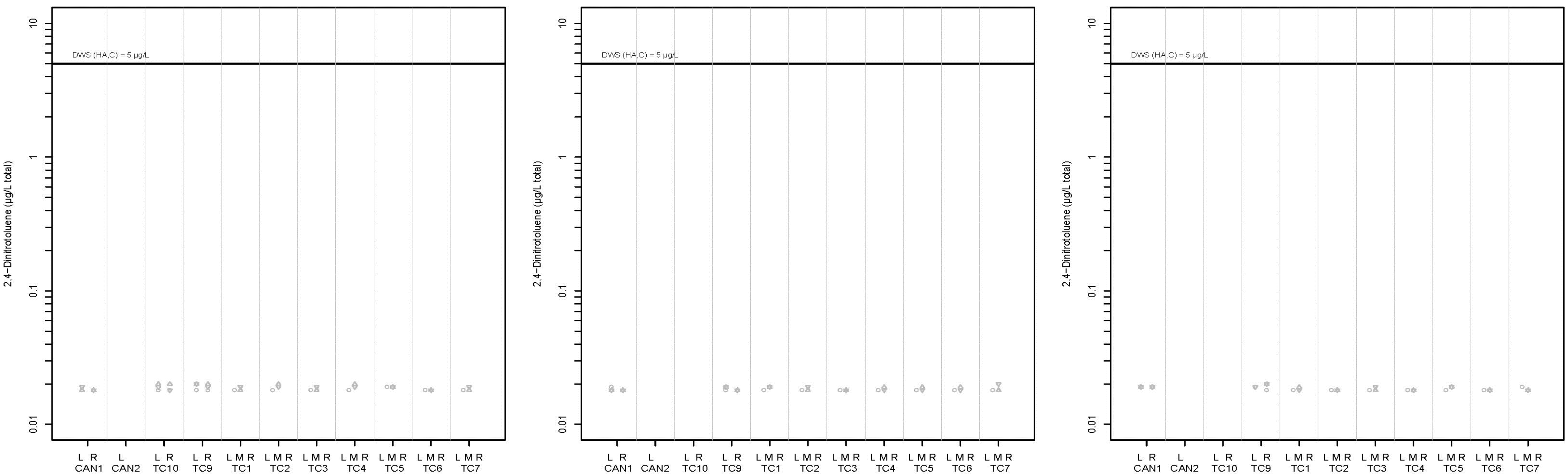
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2,4−Dinitrotoluene

Round 1: September − October 2009 | **Round 2: February − April 2010** | **Round 3: April − June 2010**

Total



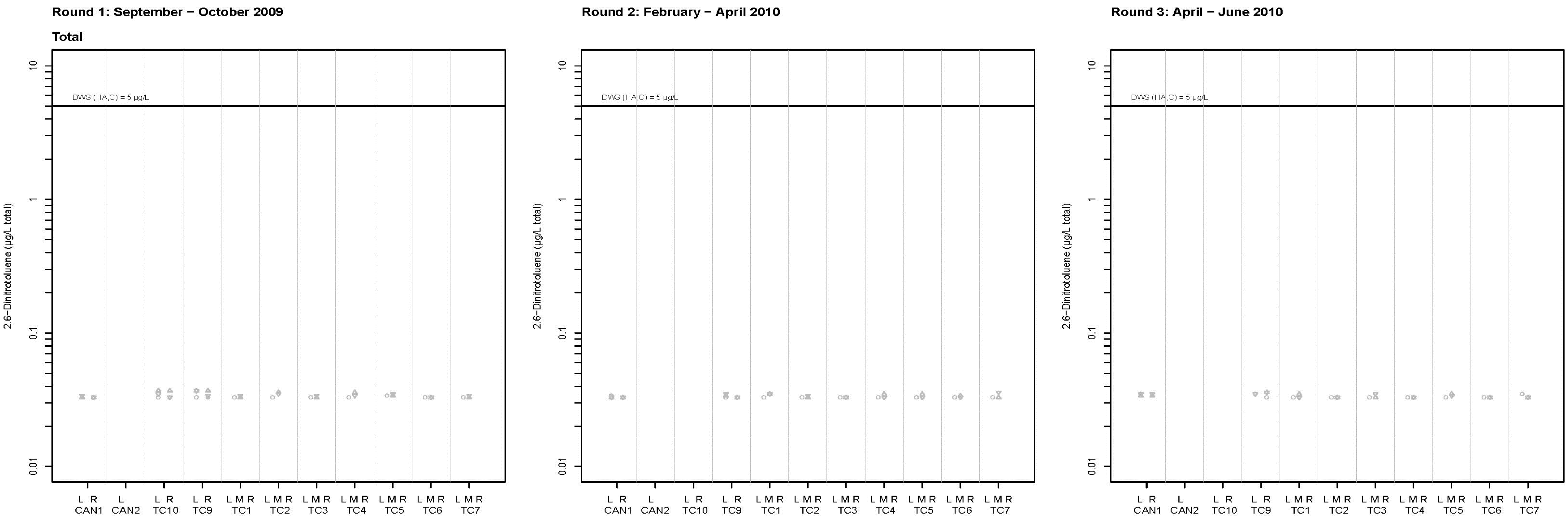
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2,6−Dinitrotoluene



LEGEND

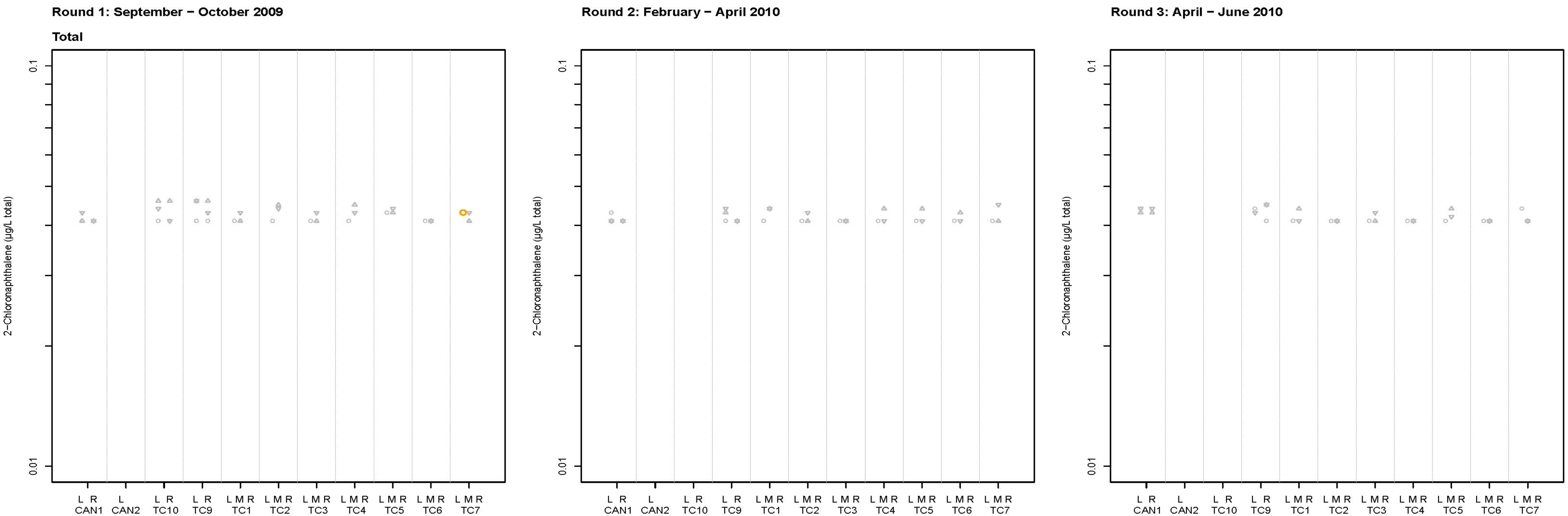
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2–Chloronaphthalene



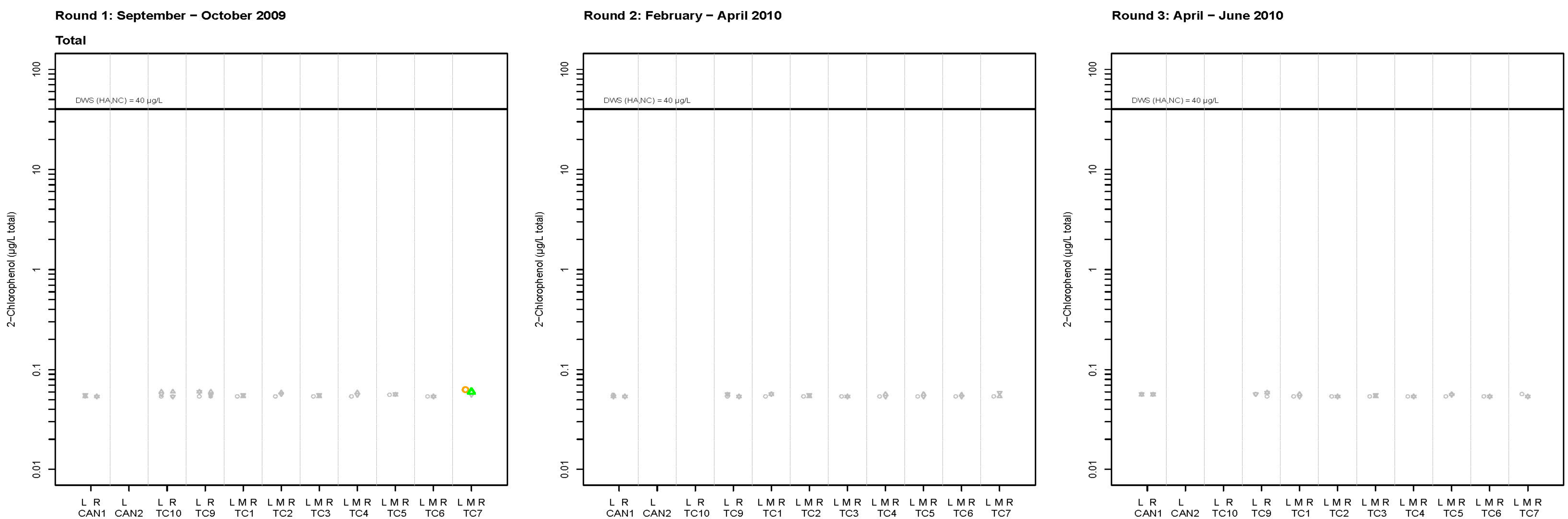
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2−Chlorophenol



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

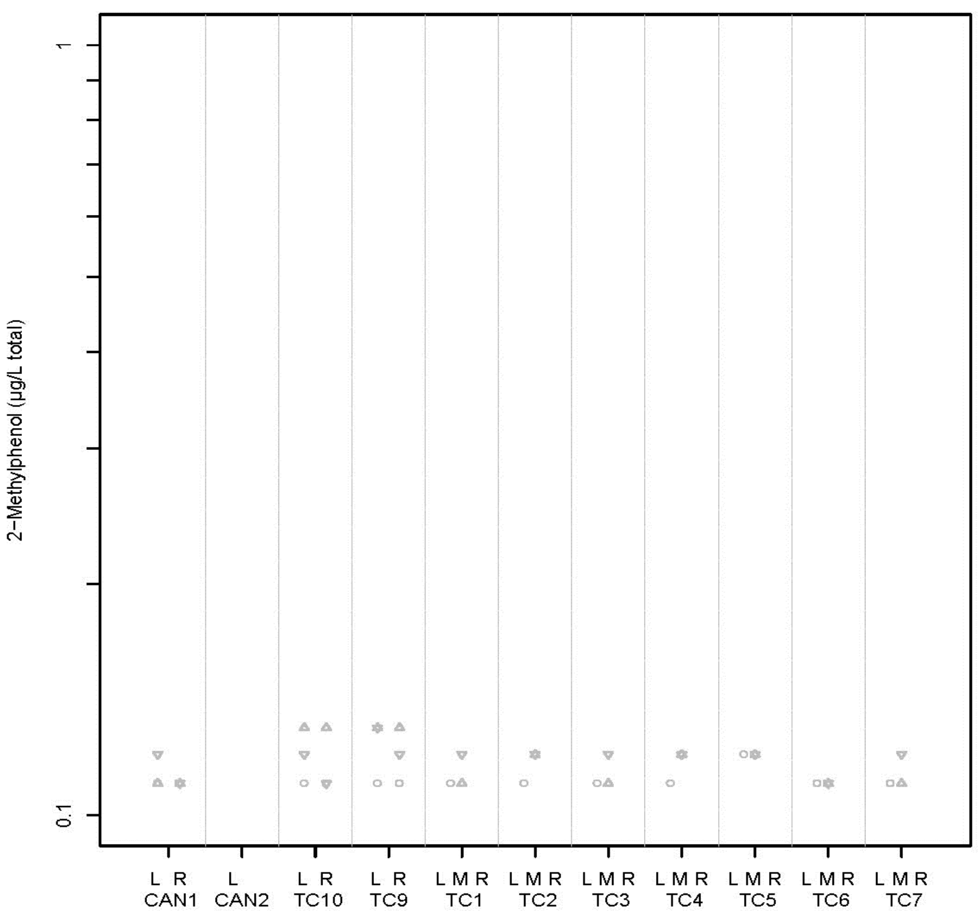
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

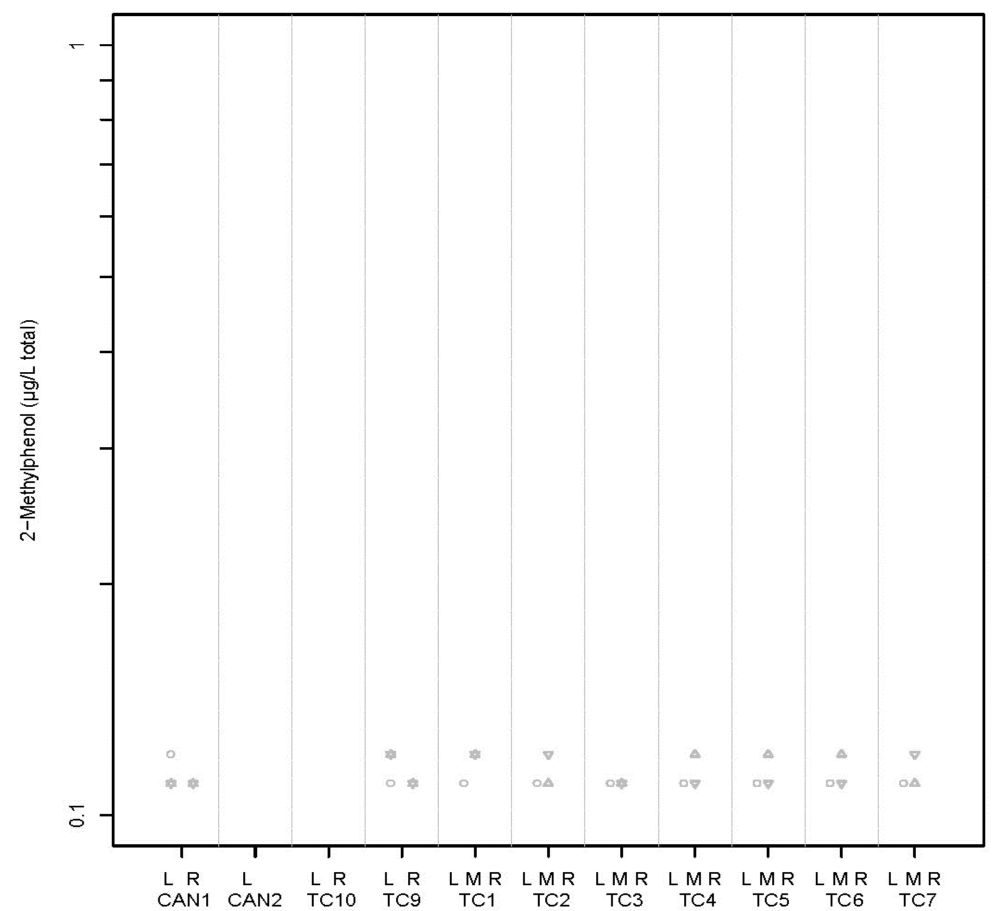
Surface Water – 2–Methylphenol

Round 1: September – October 2009

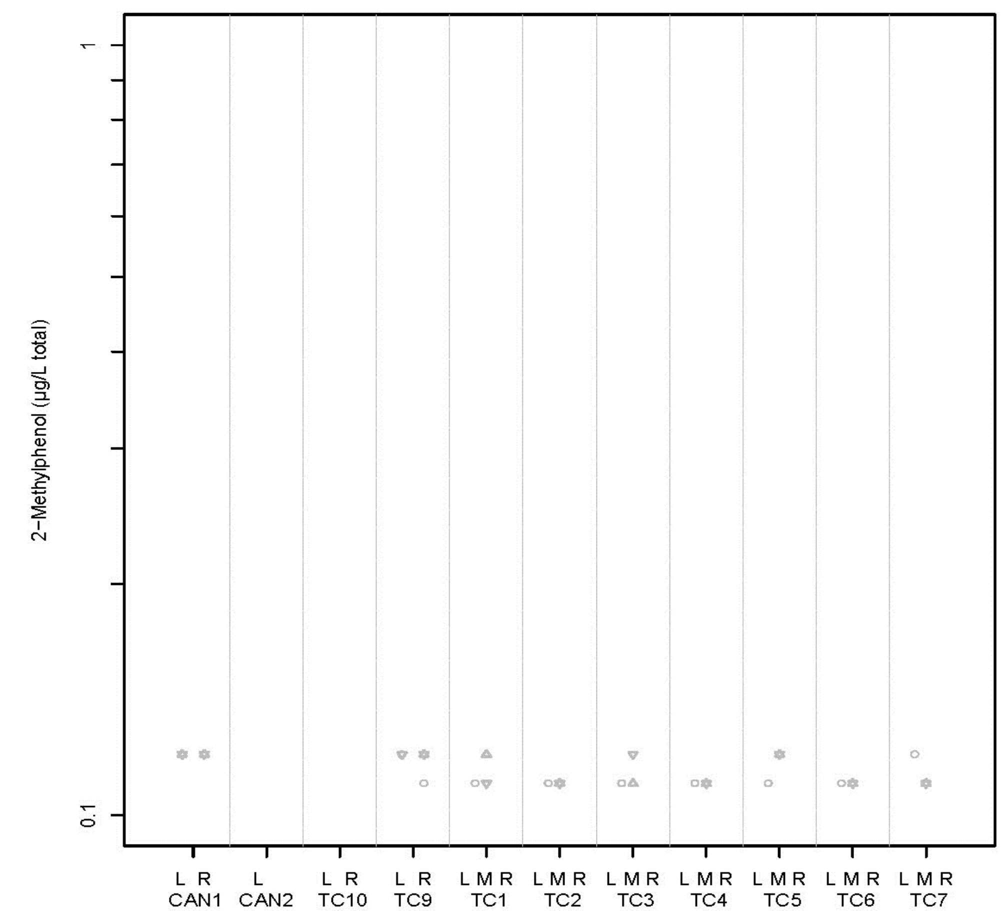
Total



Round 2: February – April 2010



Round 3: April – June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

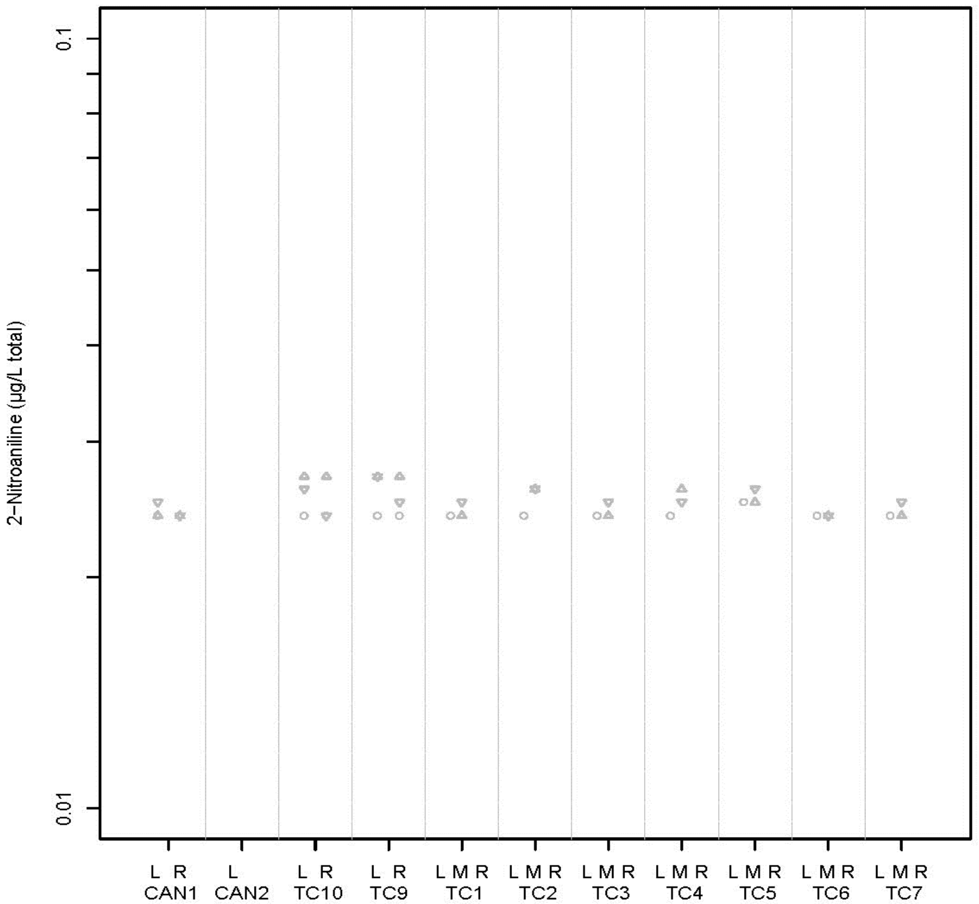
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

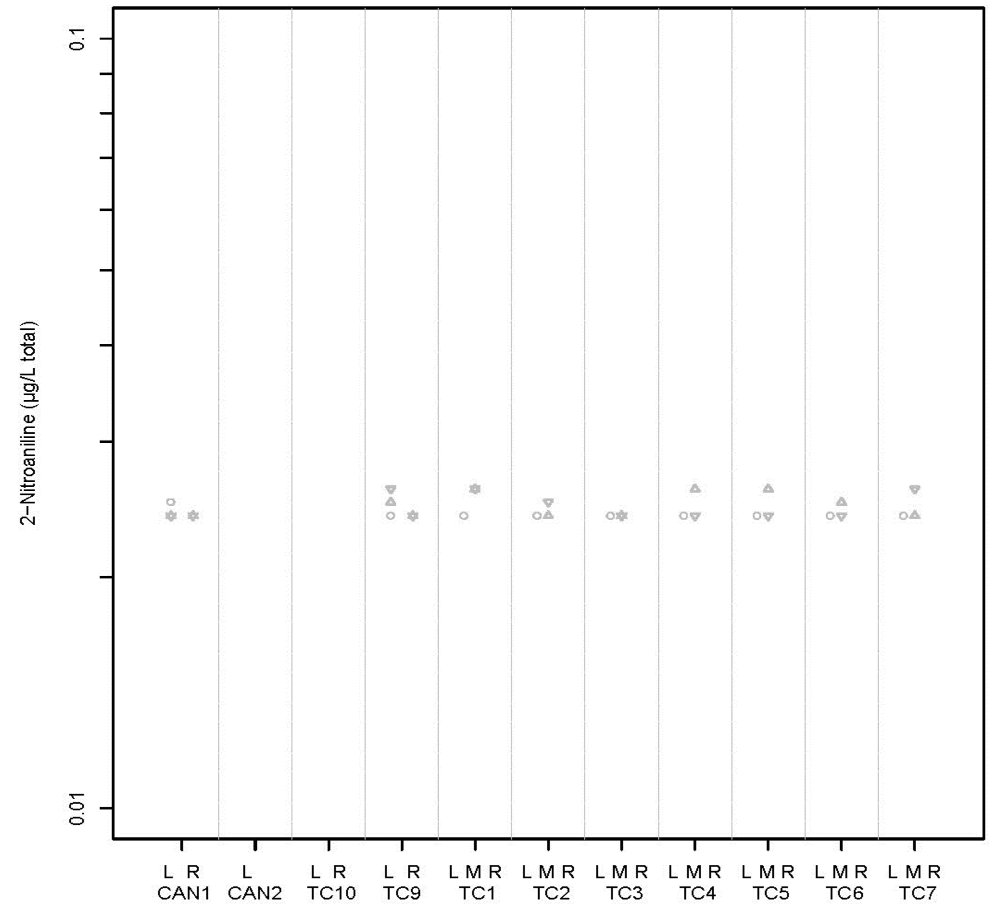
Surface Water − 2−Nitroaniline

Round 1: September − October 2009

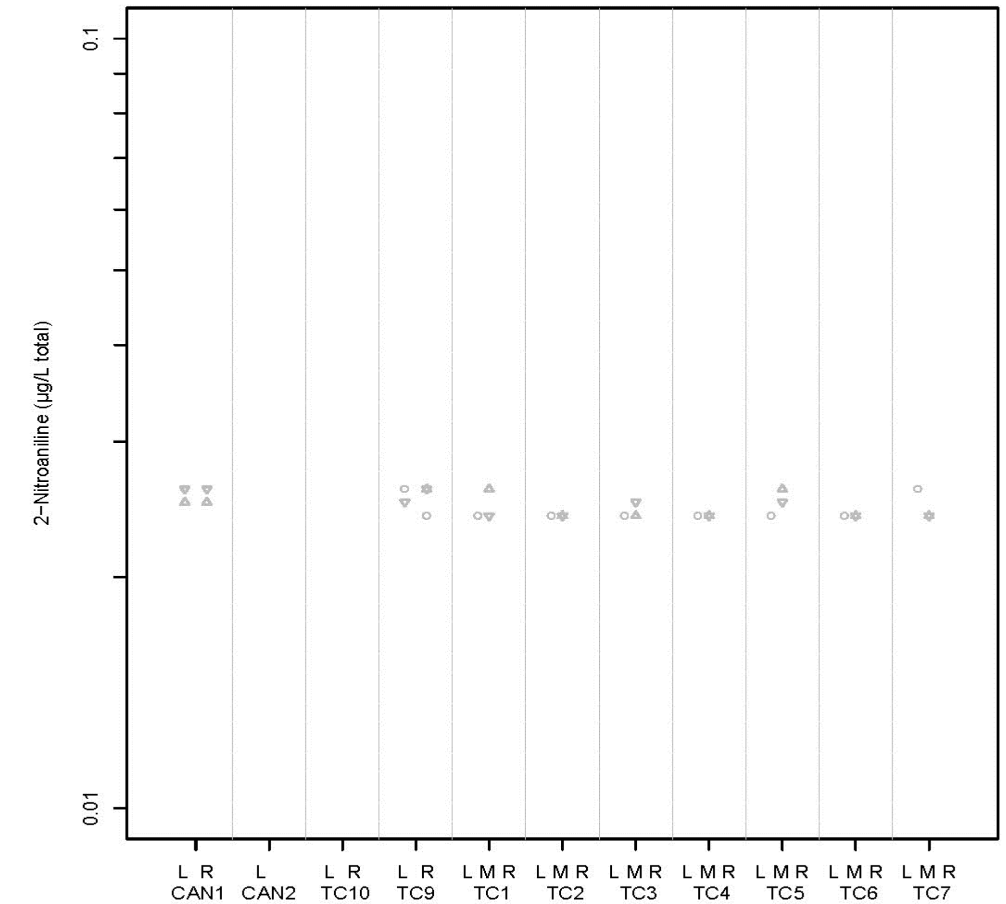
Total



Round 2: February − April 2010



Round 3: April − June 2010



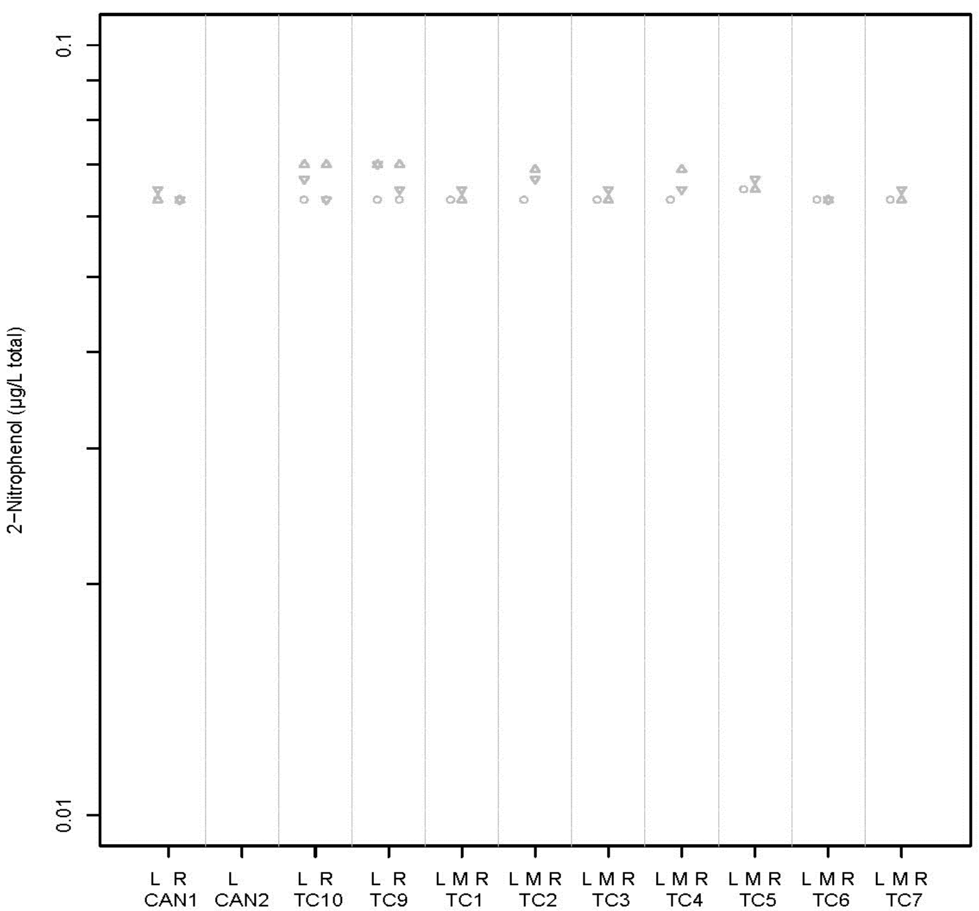
LEGEND

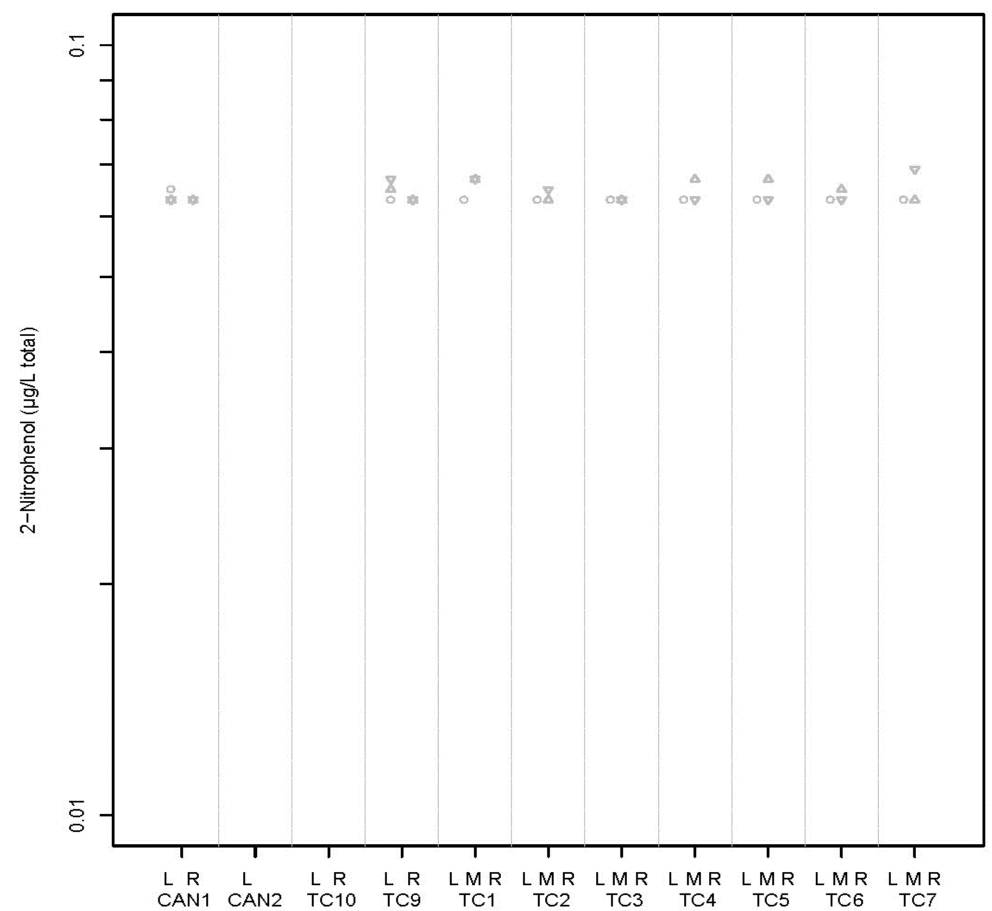
▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

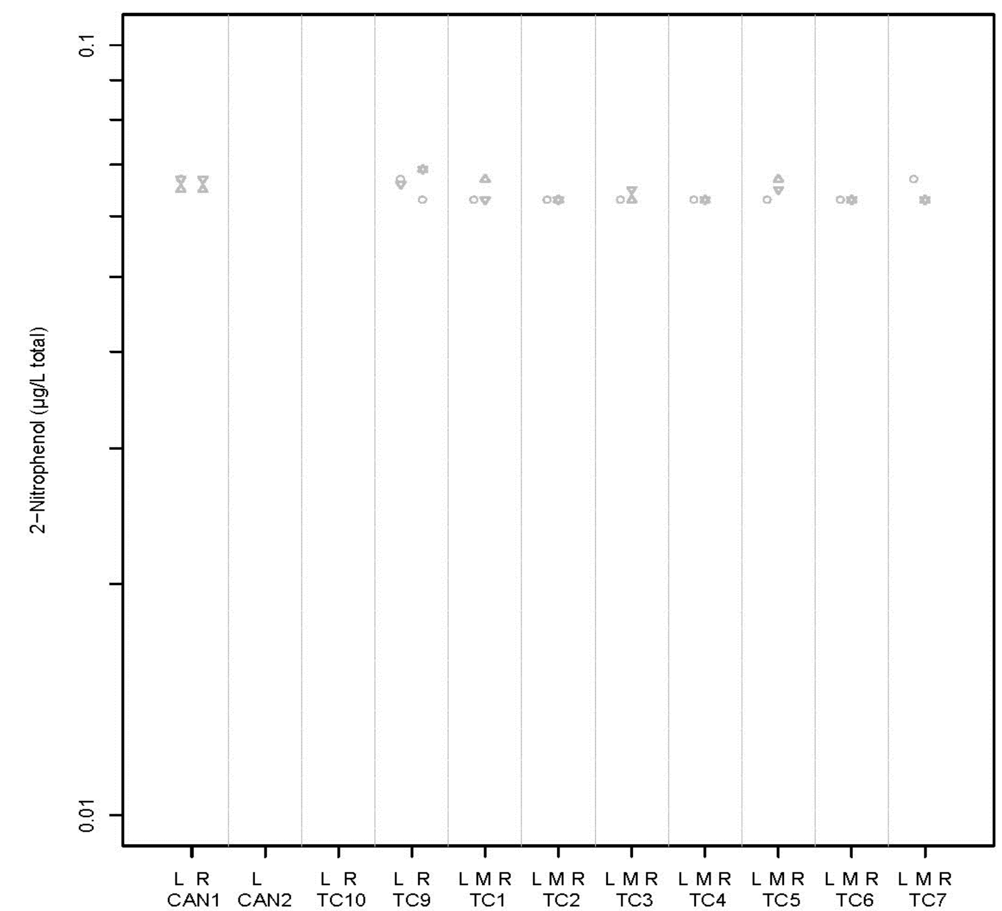
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2−Nitrophenol







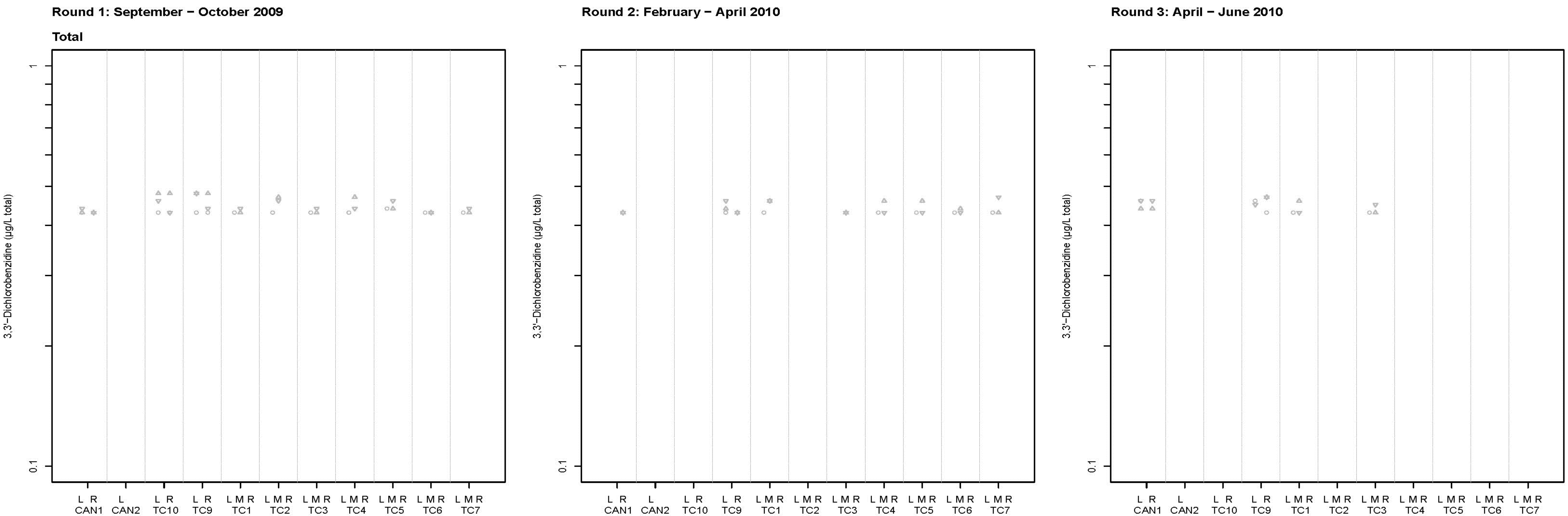
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 3,3'–Dichlorobenzidine



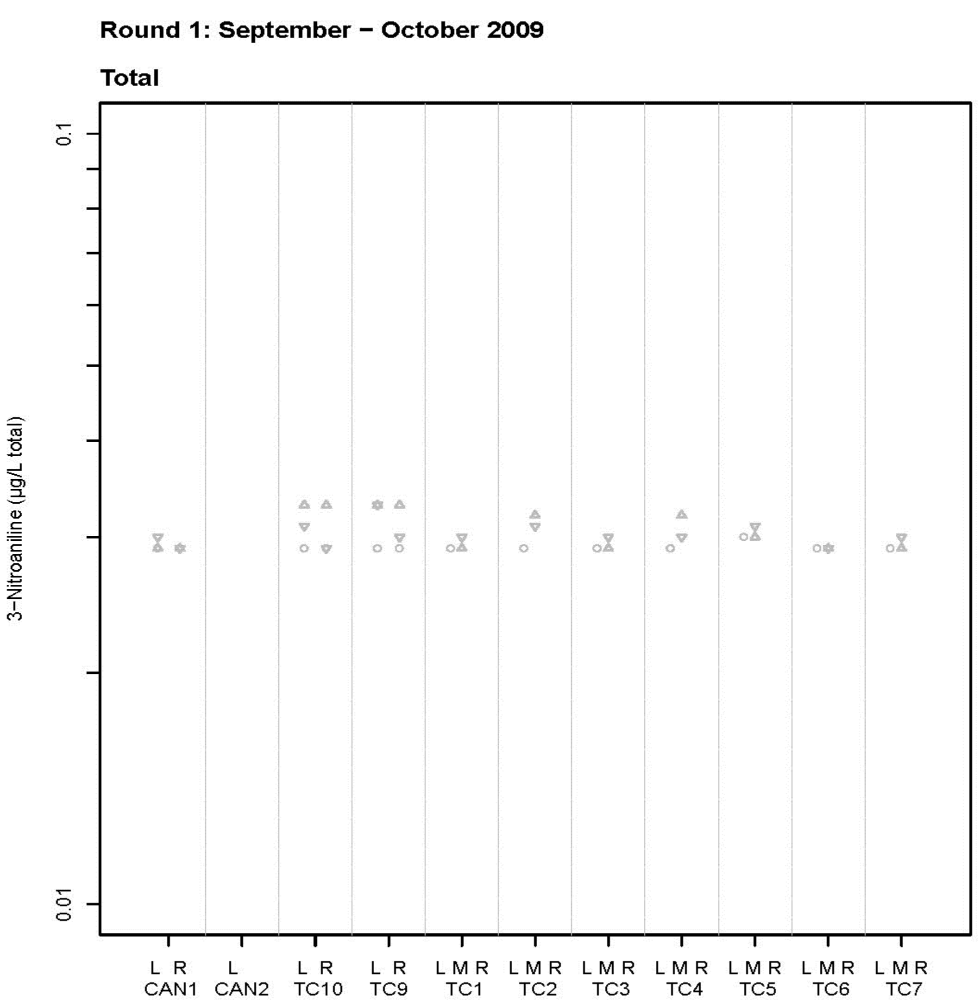
LEGEND

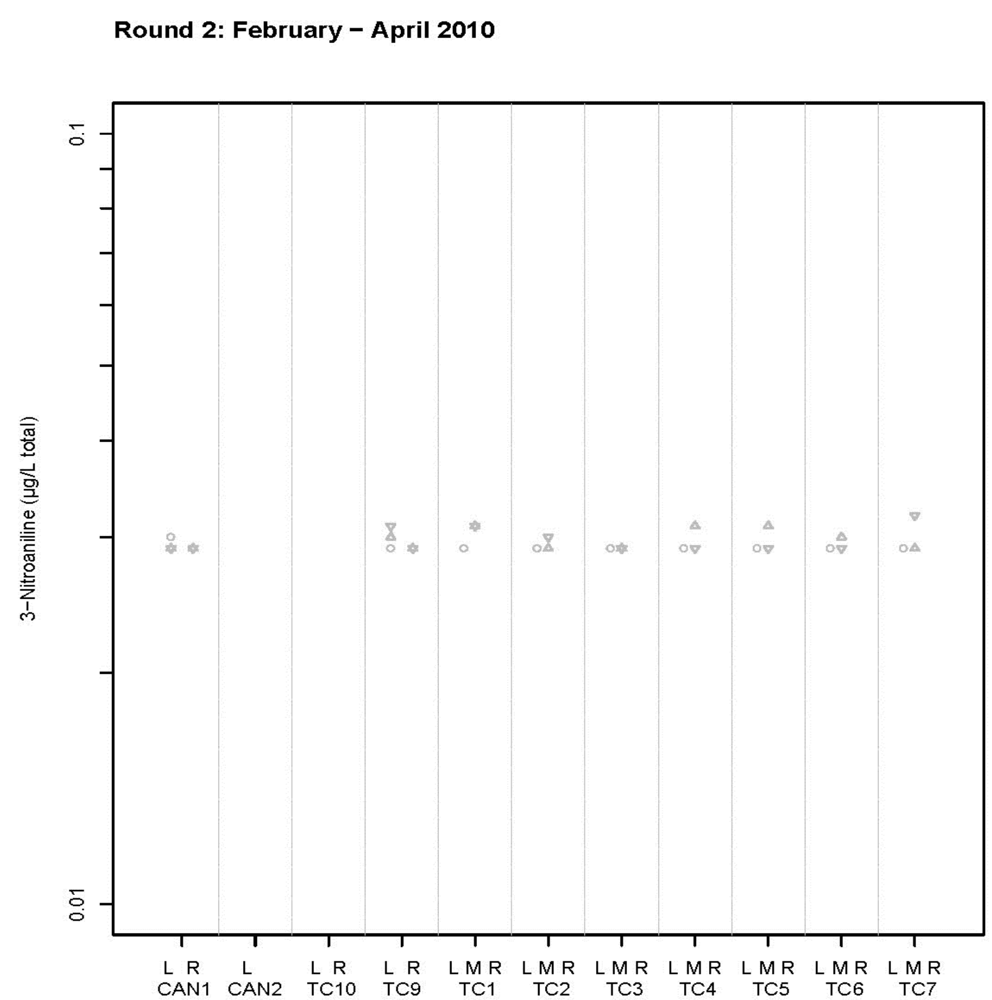
▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

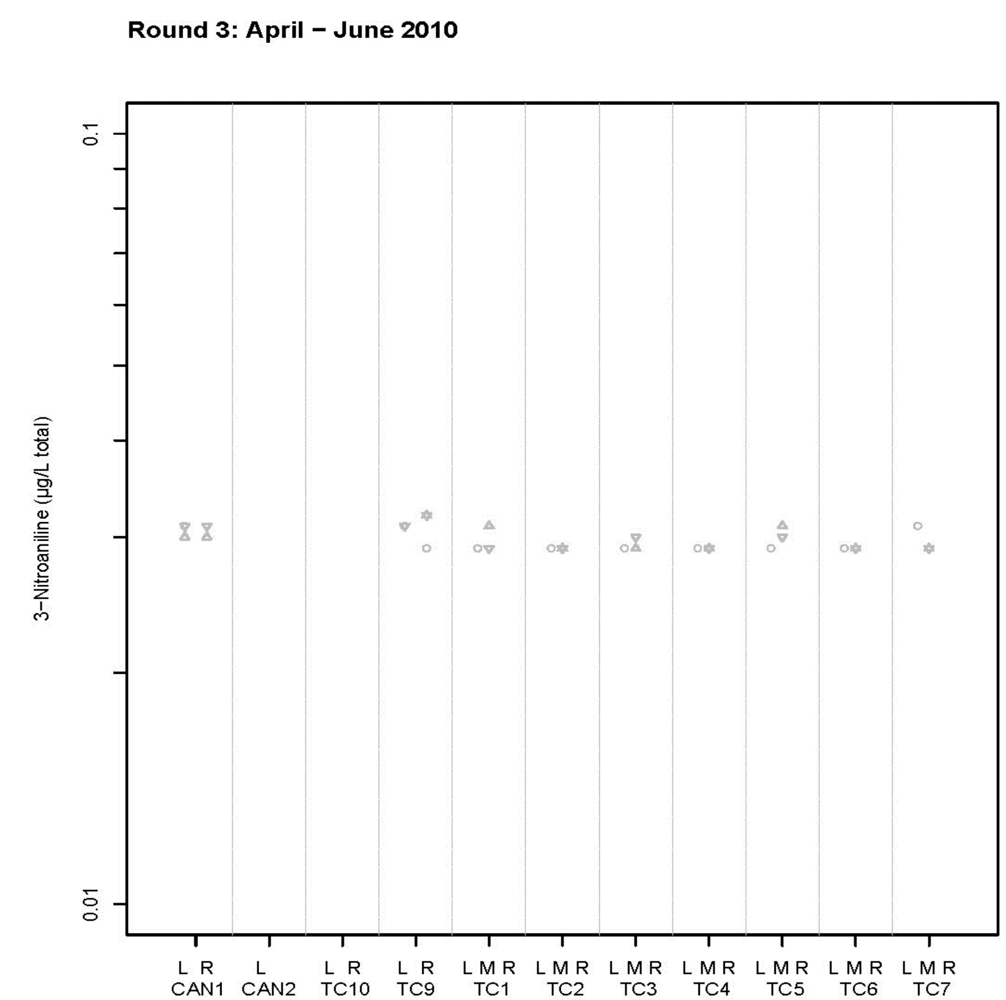
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 3−Nitroaniline







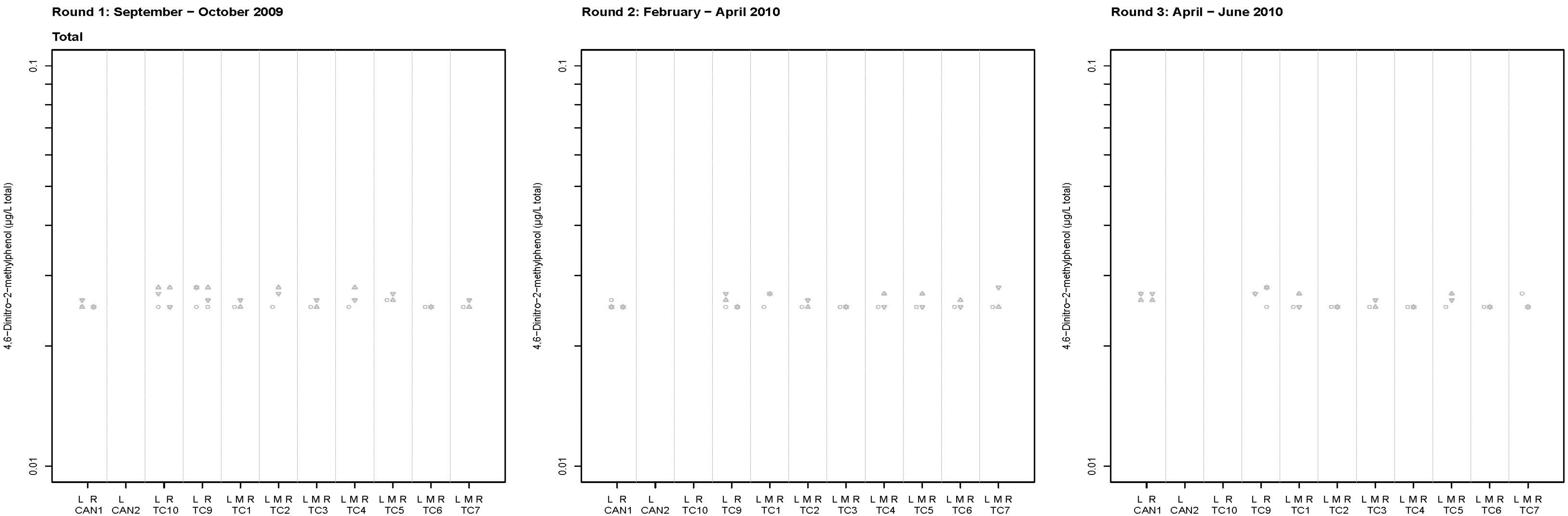
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 4,6–Dinitro–2–methylphenol



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

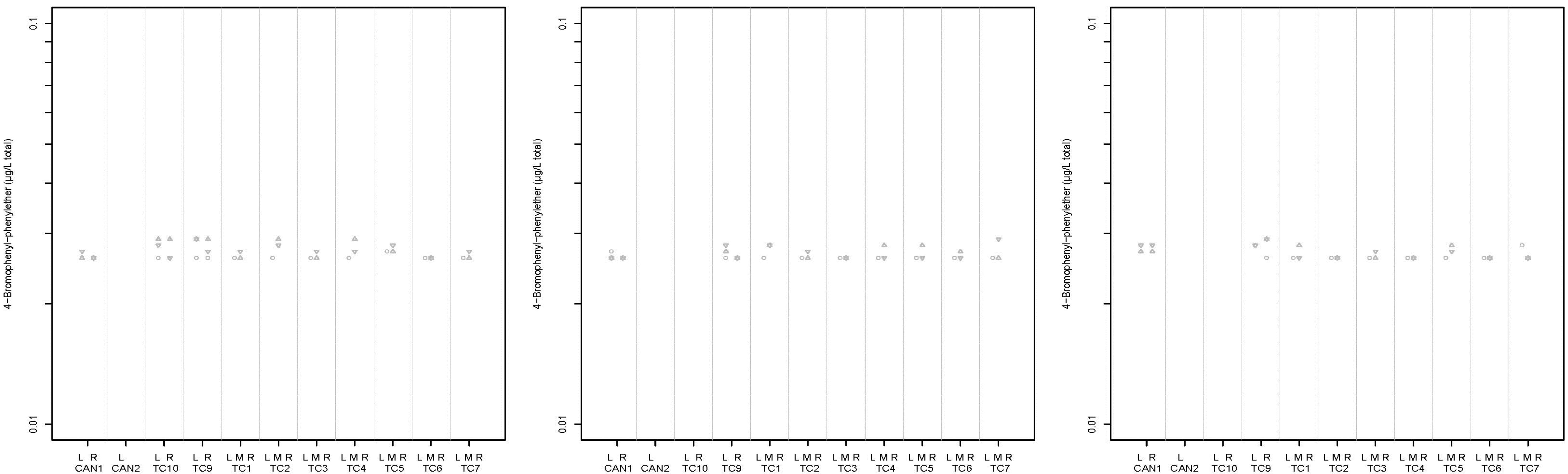
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 4−Bromophenyl−phenylether

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

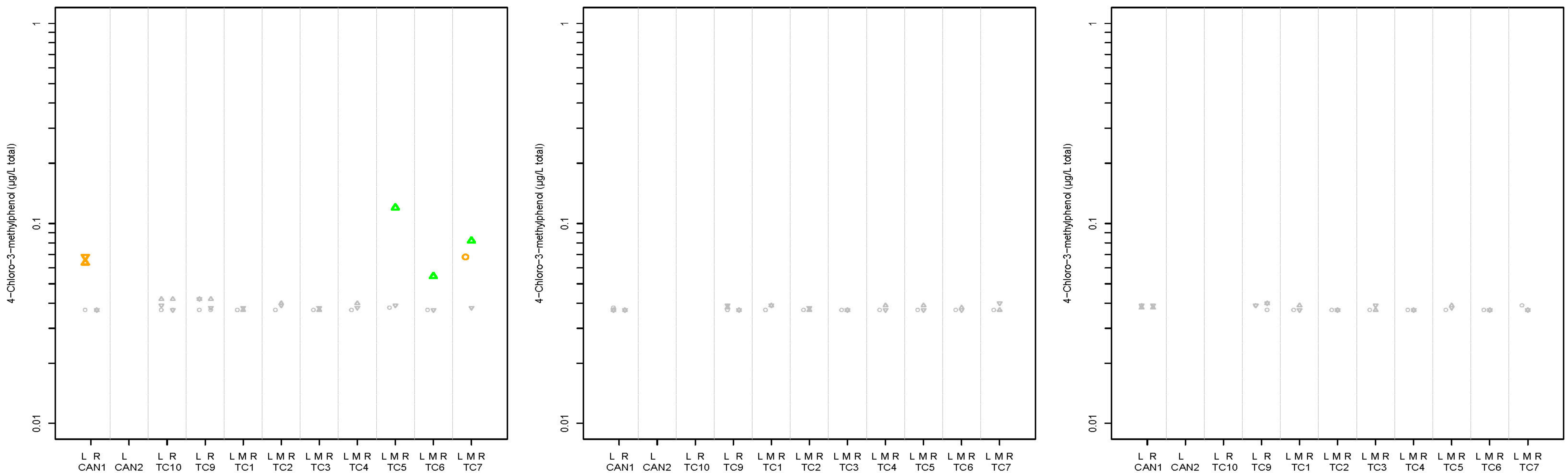
Surface Water – 4–Chloro–3–methylphenol

Round 1: September – October 2009

Round 2: February – April 2010

Round 3: April – June 2010

Total



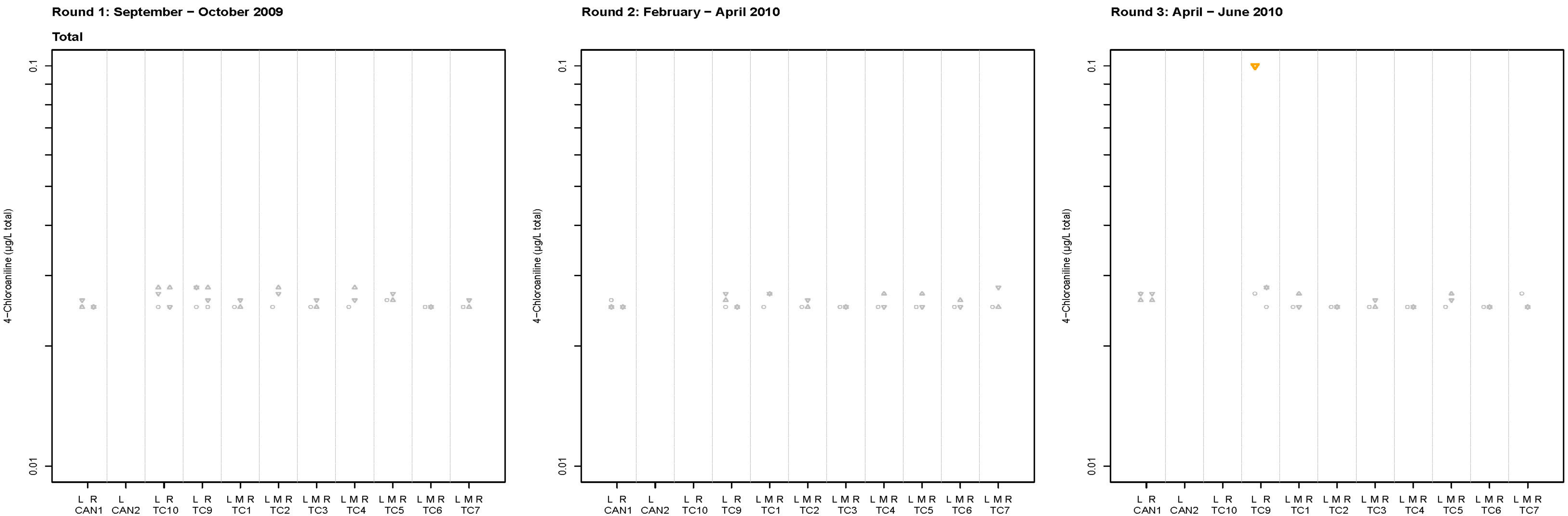
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 4−Chloroaniline



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

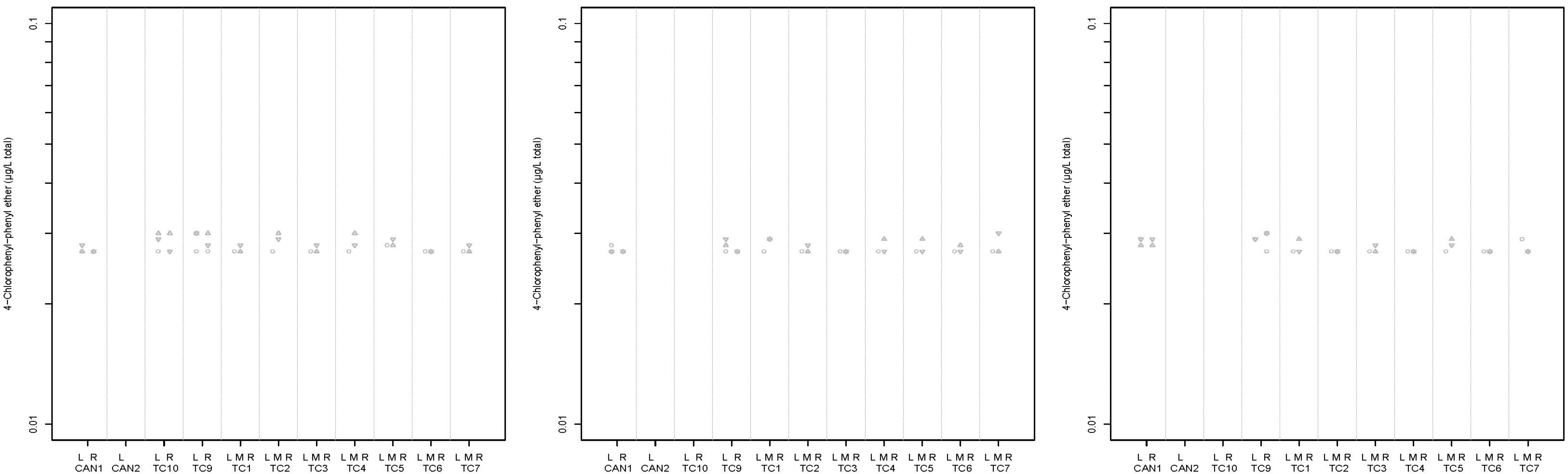
Surface Water − 4−Chlorophenyl−phenyl ether

Round 1: September − October 2009

Round 2: February − April 2010

Round 3: April − June 2010

Total



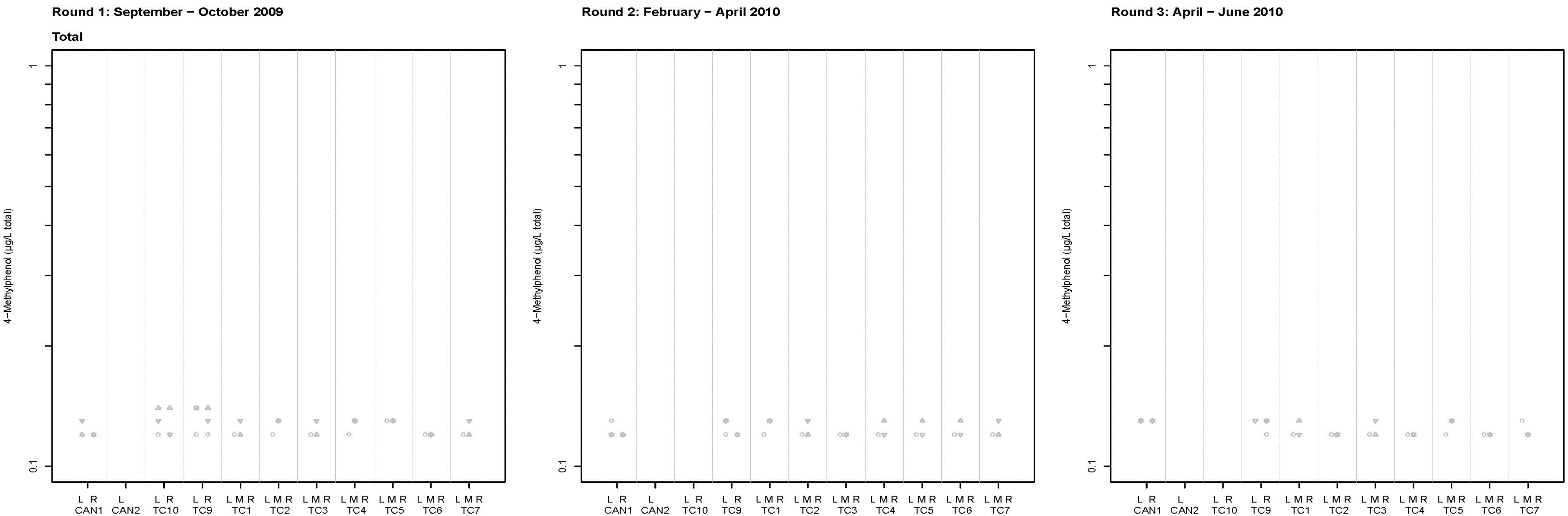
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 4−Methylphenol



LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

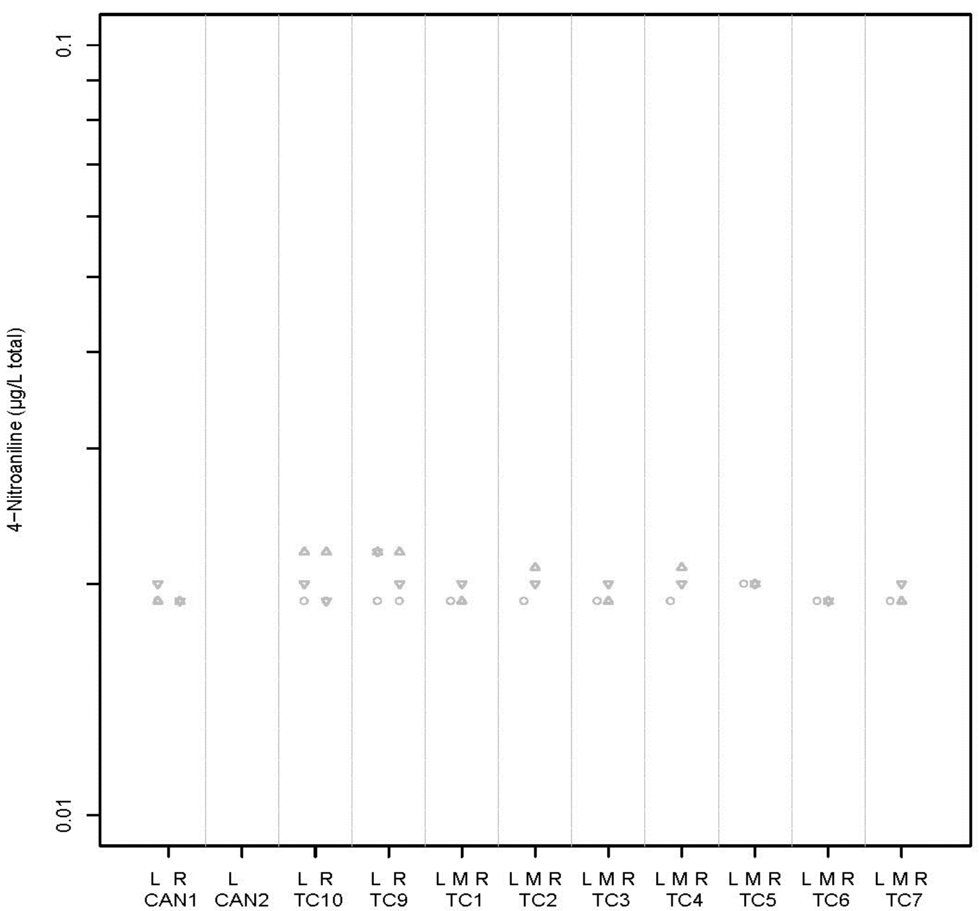
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

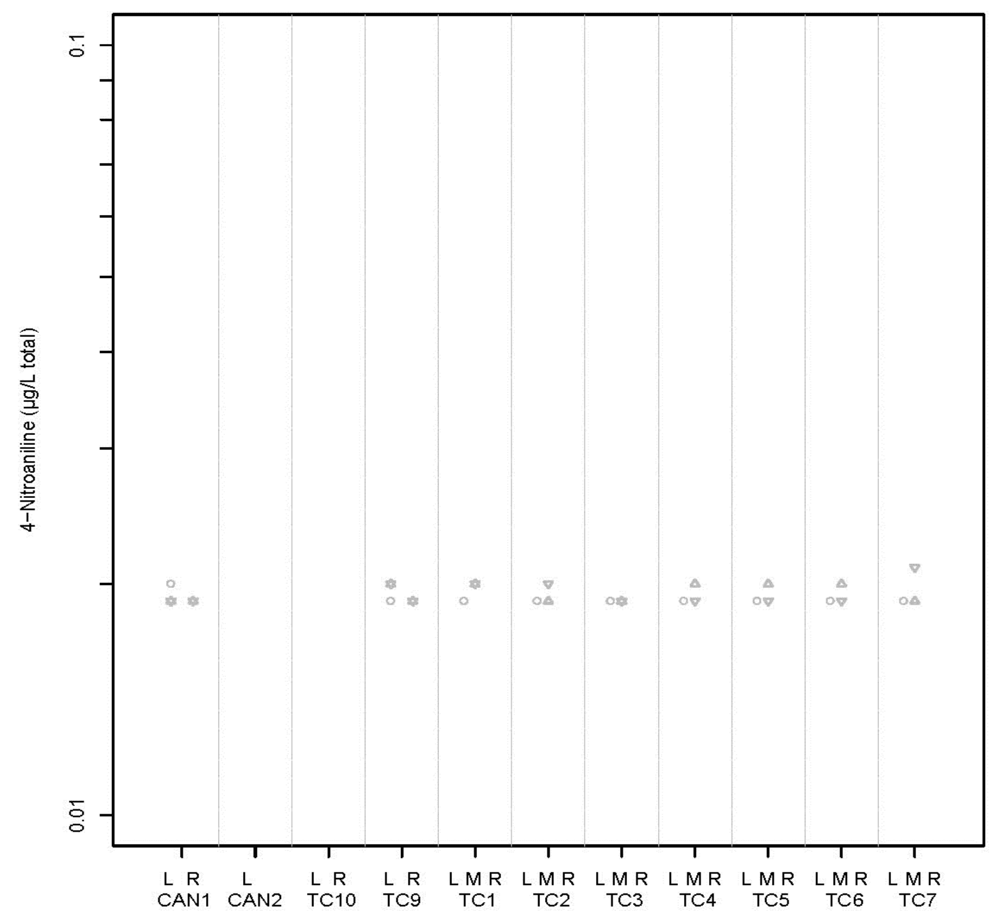
Surface Water − 4−Nitroaniline

Round 1: September − October 2009

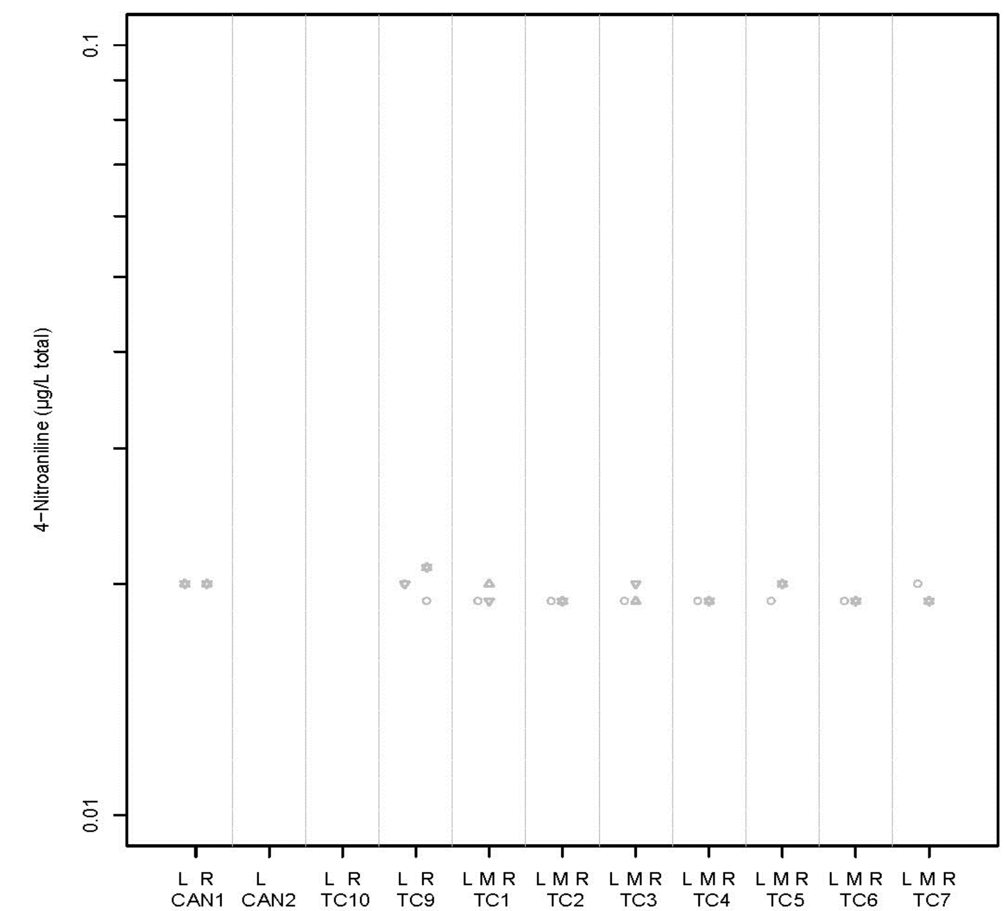
Total



Round 2: February − April 2010



Round 3: April − June 2010



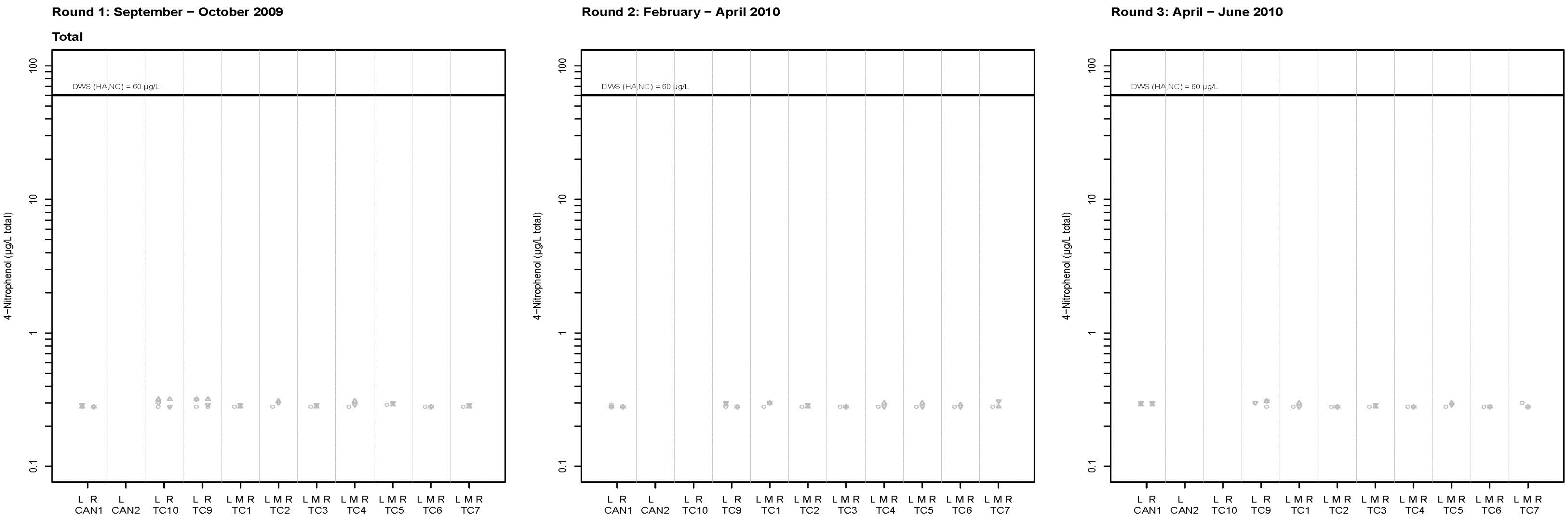
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 4–Nitrophenol



LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

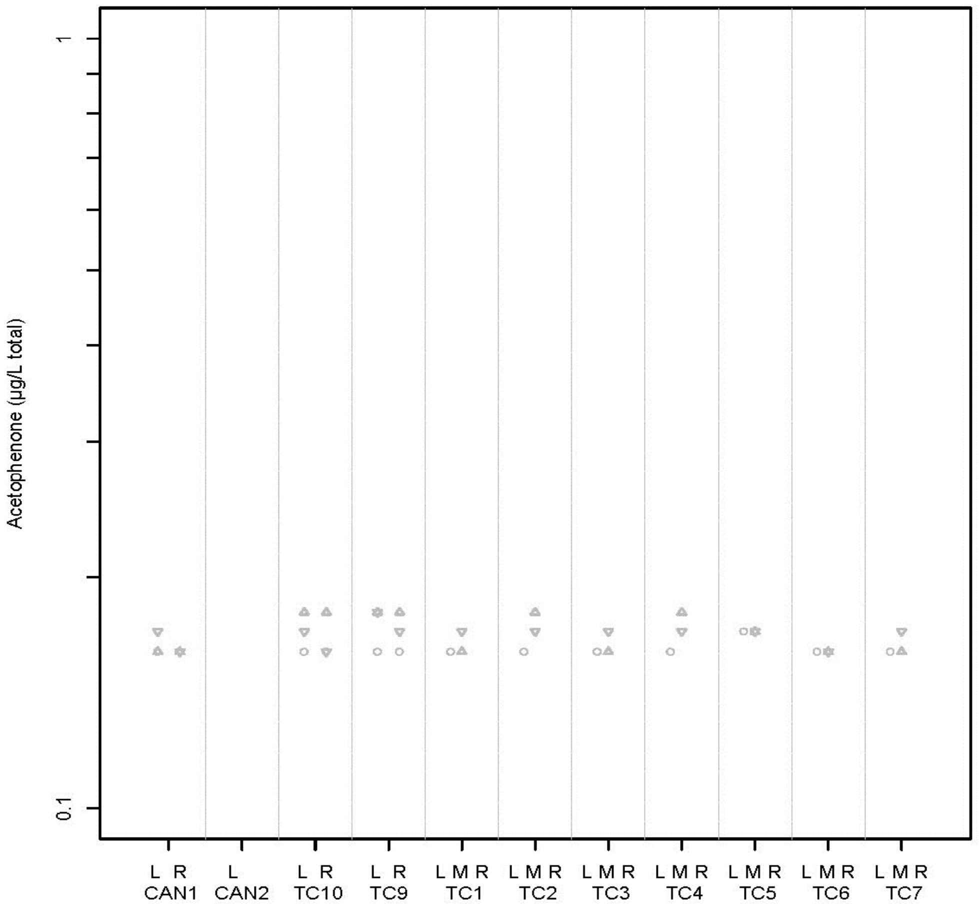
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

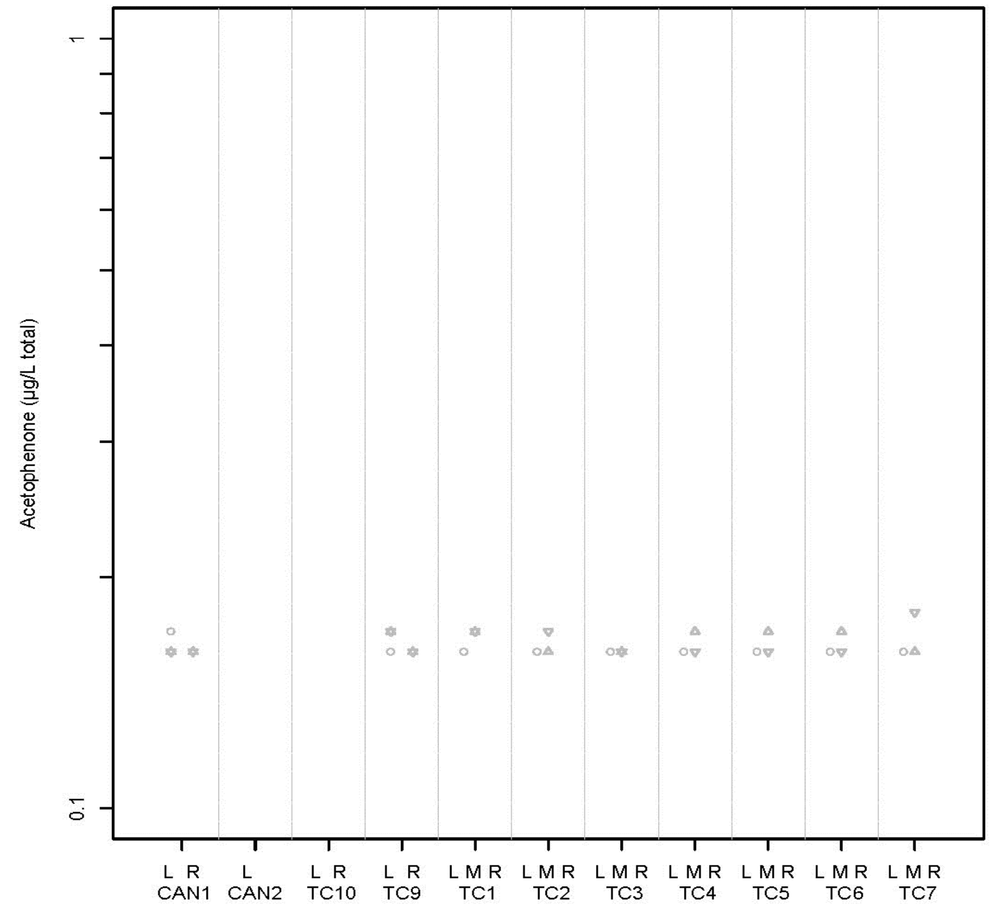
Surface Water – Acetophenone

Round 1: September – October 2009

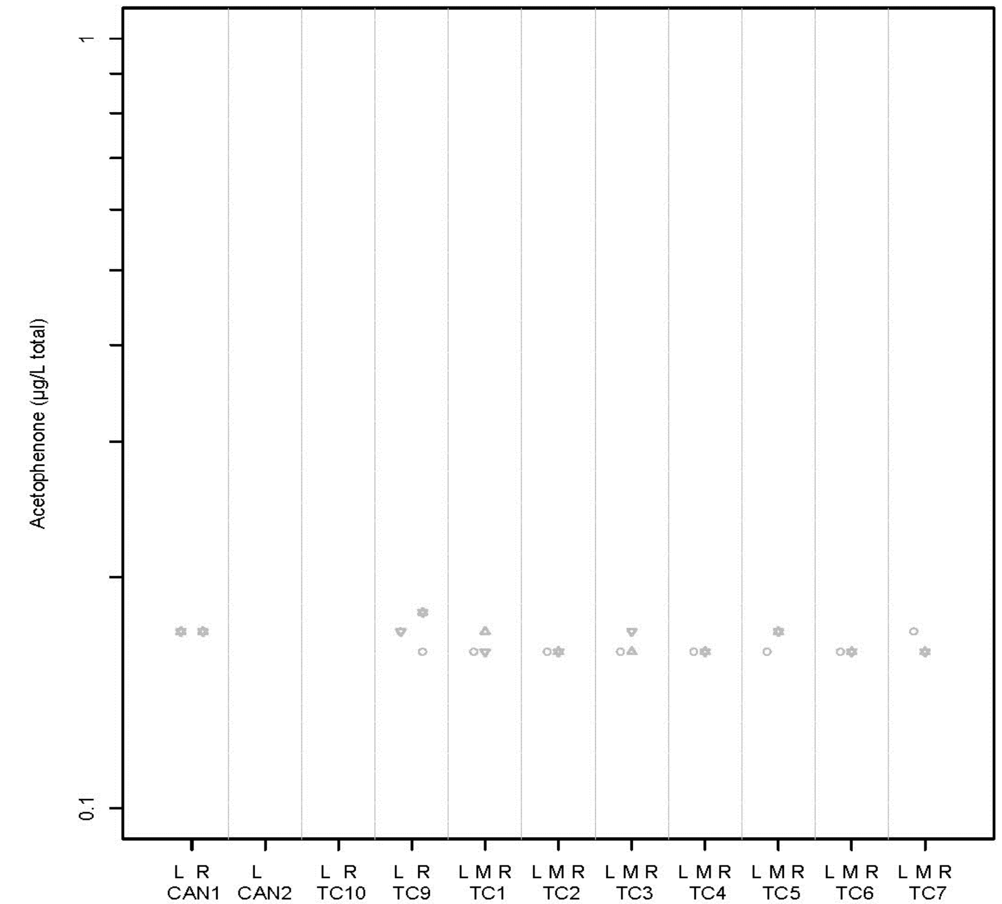
Total



Round 2: February – April 2010



Round 3: April – June 2010



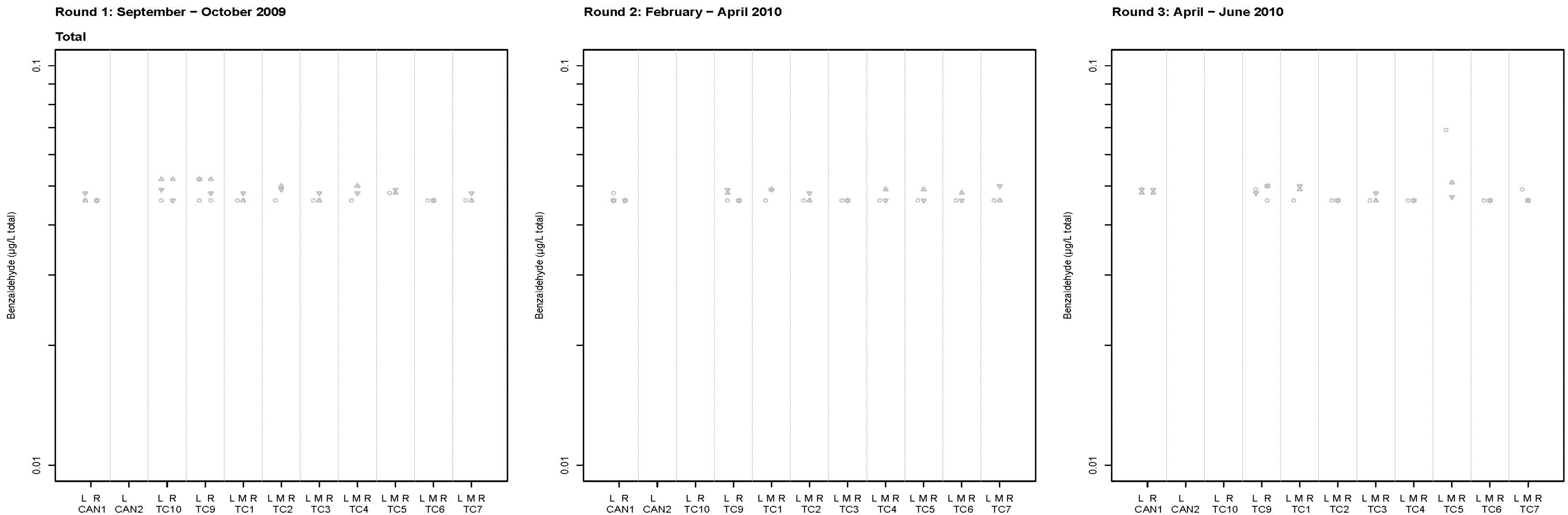
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Benzaldehyde



LEGEND

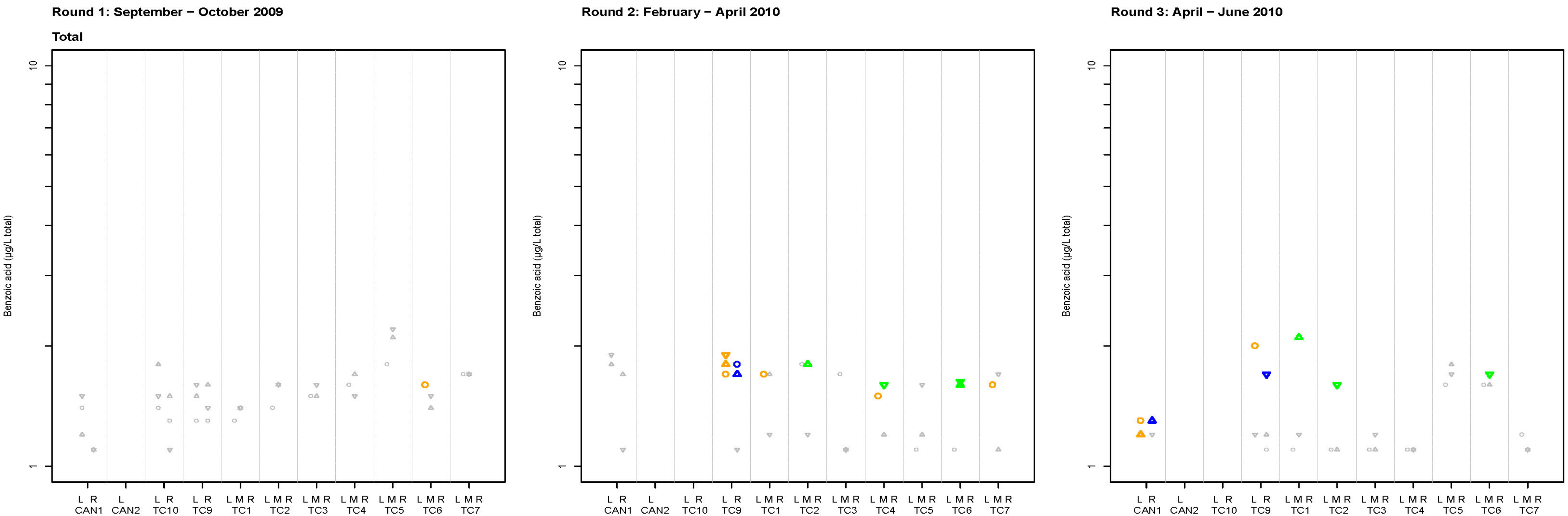
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Benzoic Acid



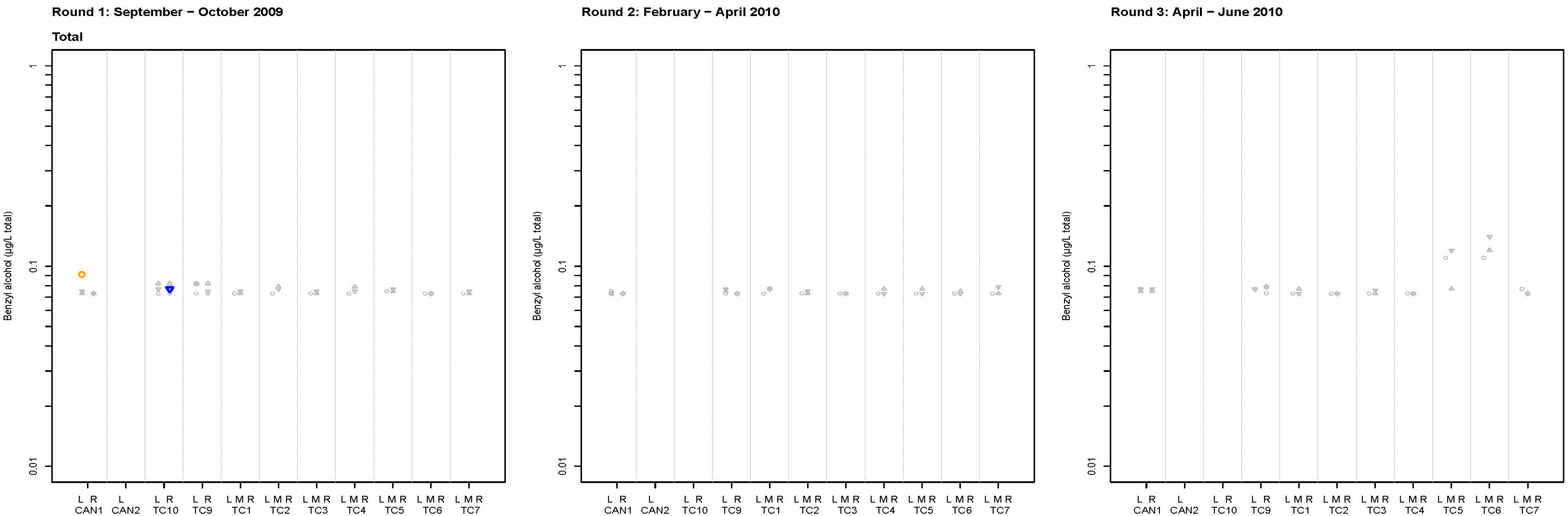
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Benzyl Alcohol



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

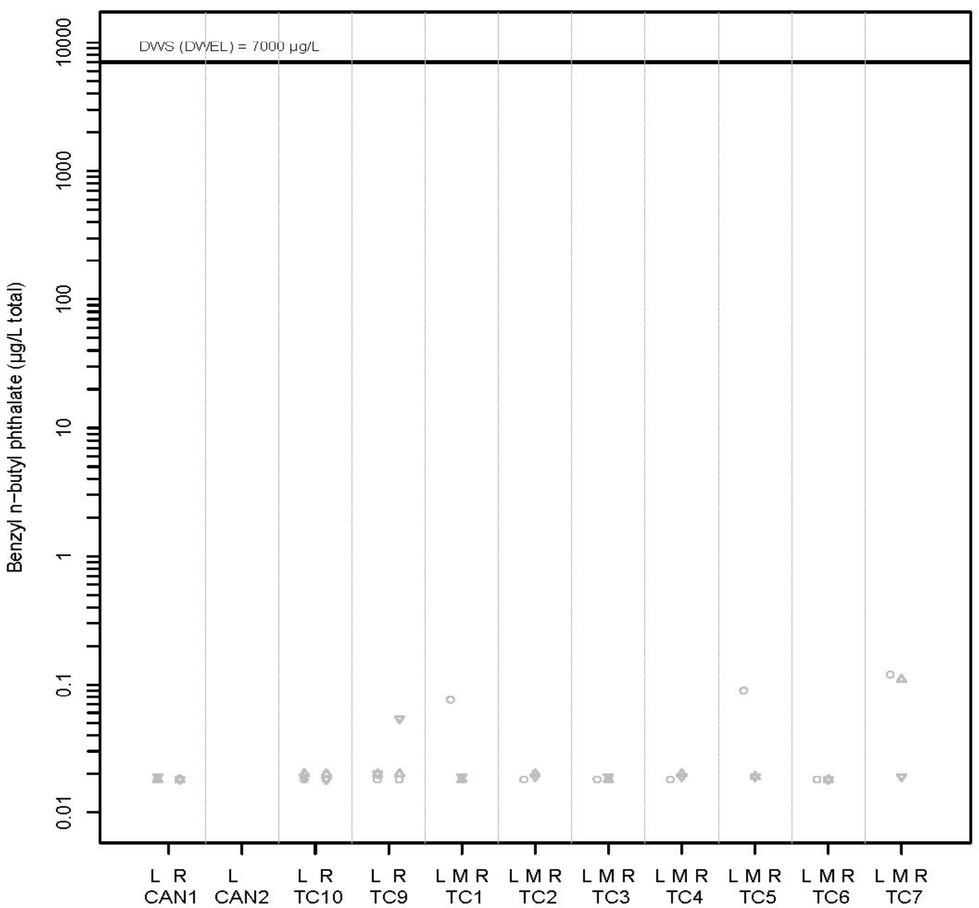
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

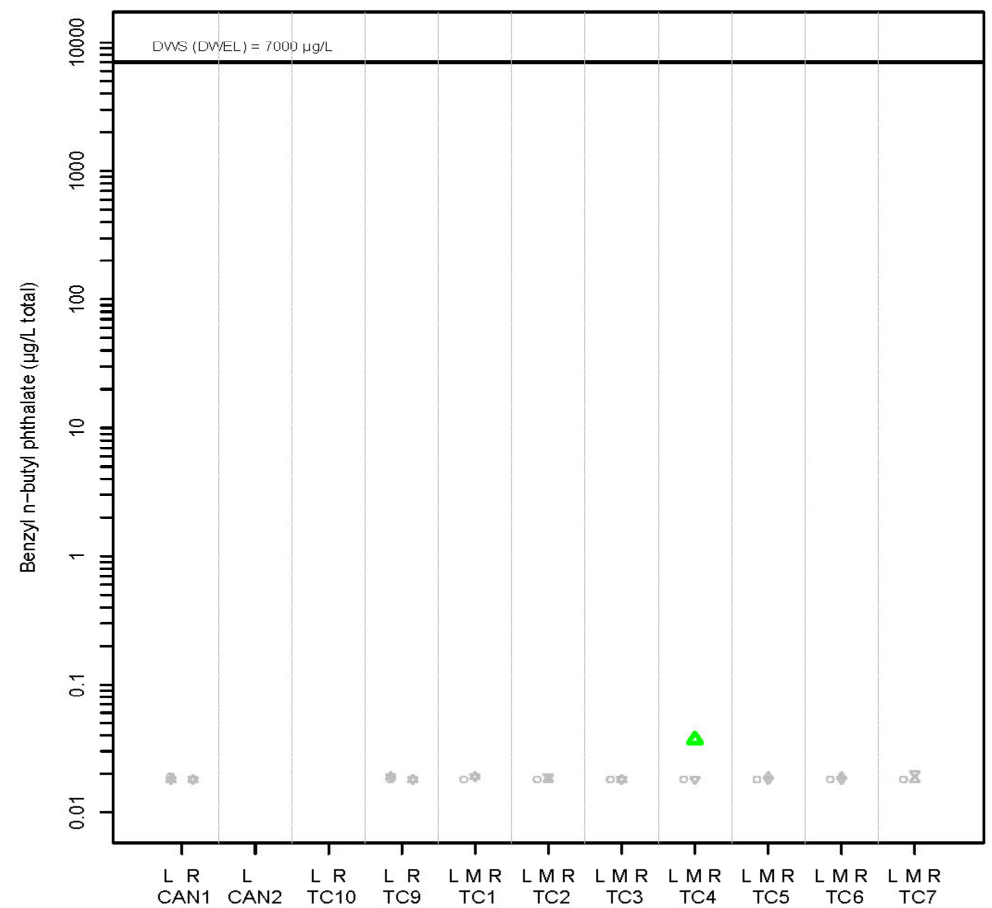
Surface Water – Benzyl n–butyl phthalate

Round 1: September – October 2009

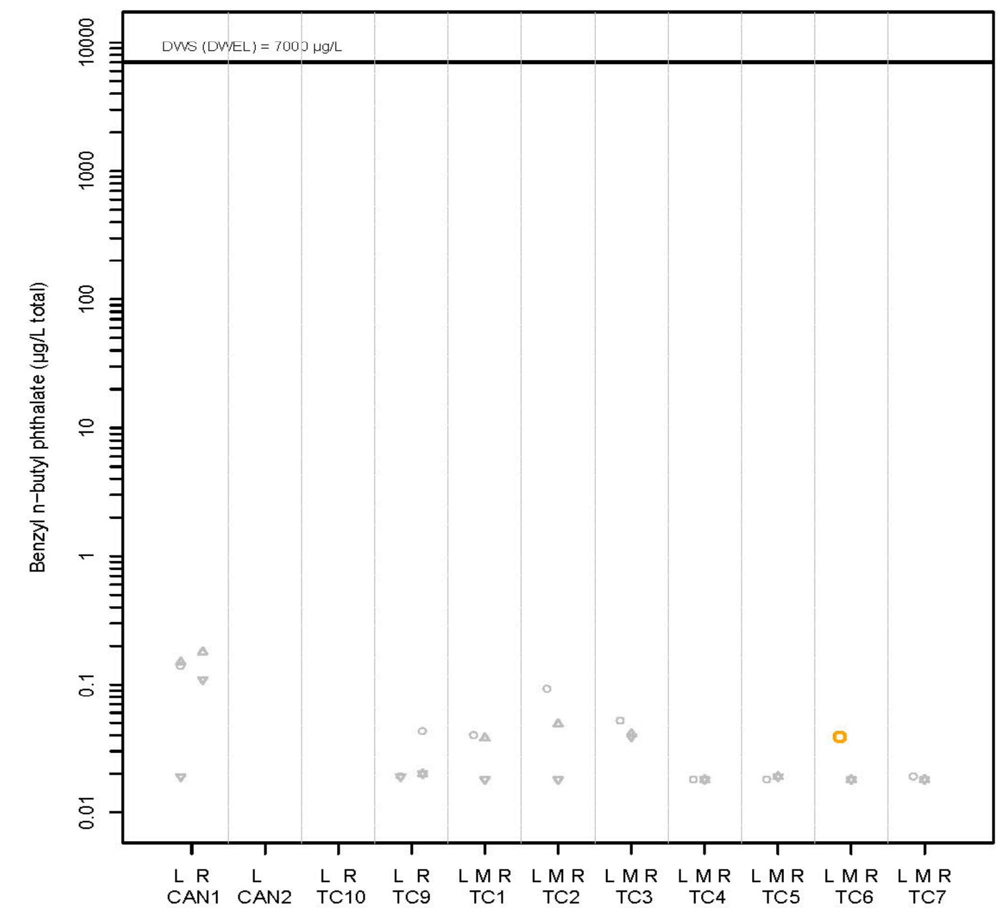
Total



Round 2: February – April 2010



Round 3: April – June 2010



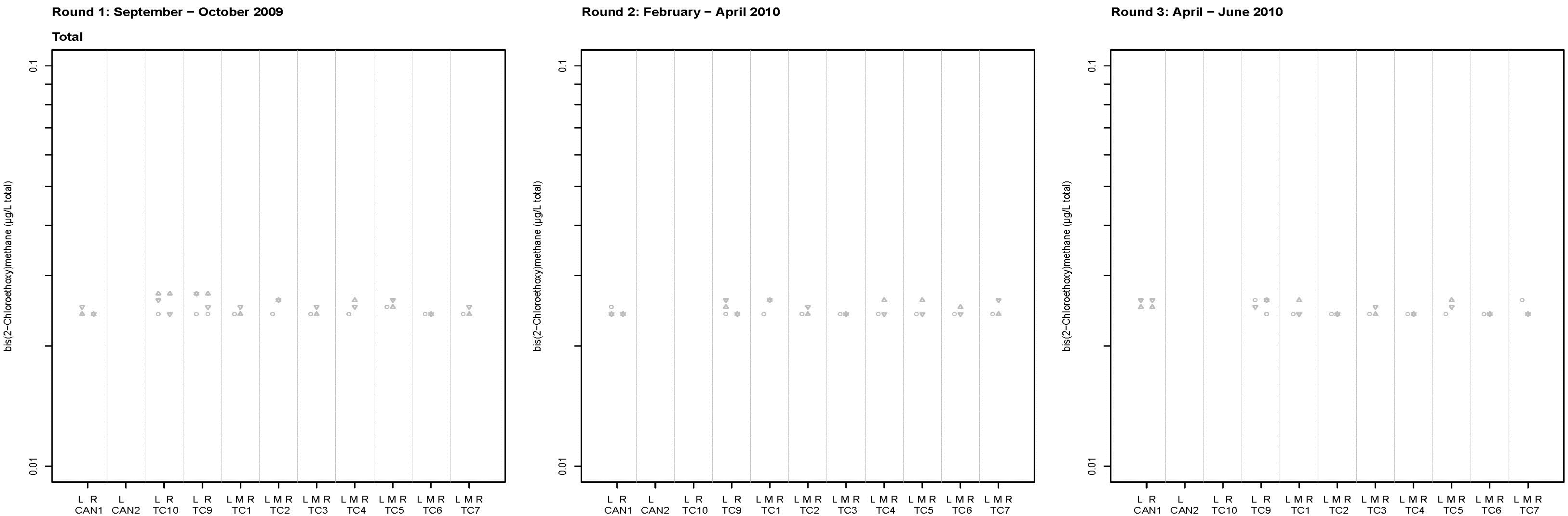
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − bis(2−Chloroethoxy)methane



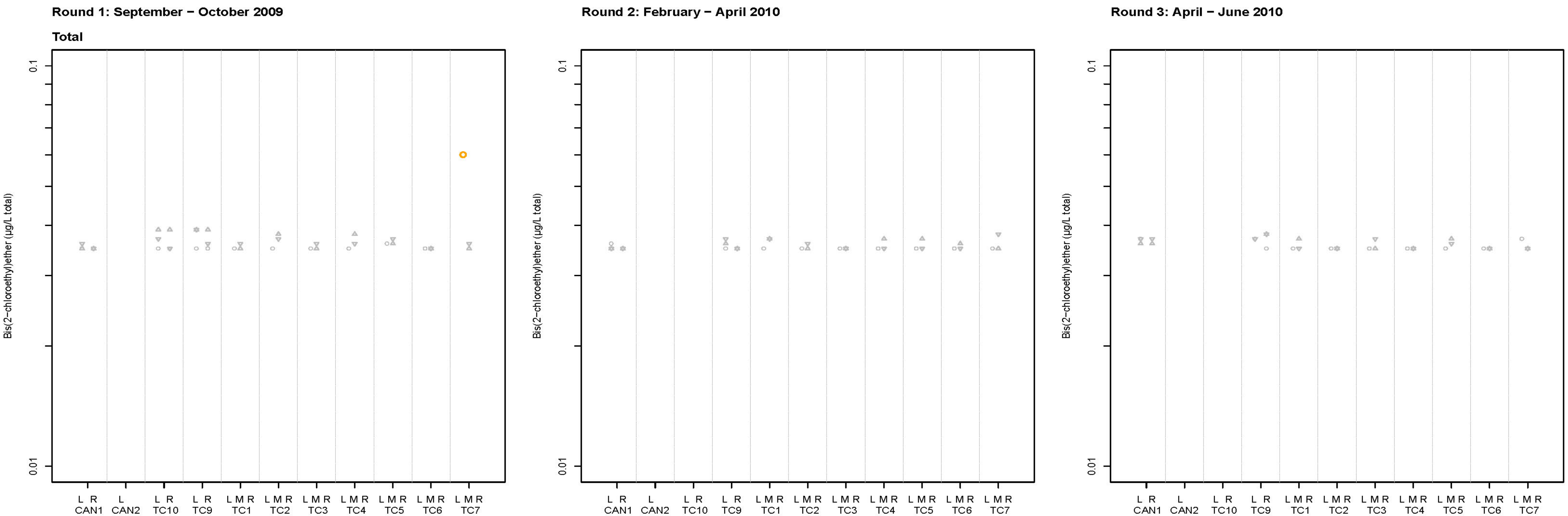
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − bis(2−Chloroethyl)ether



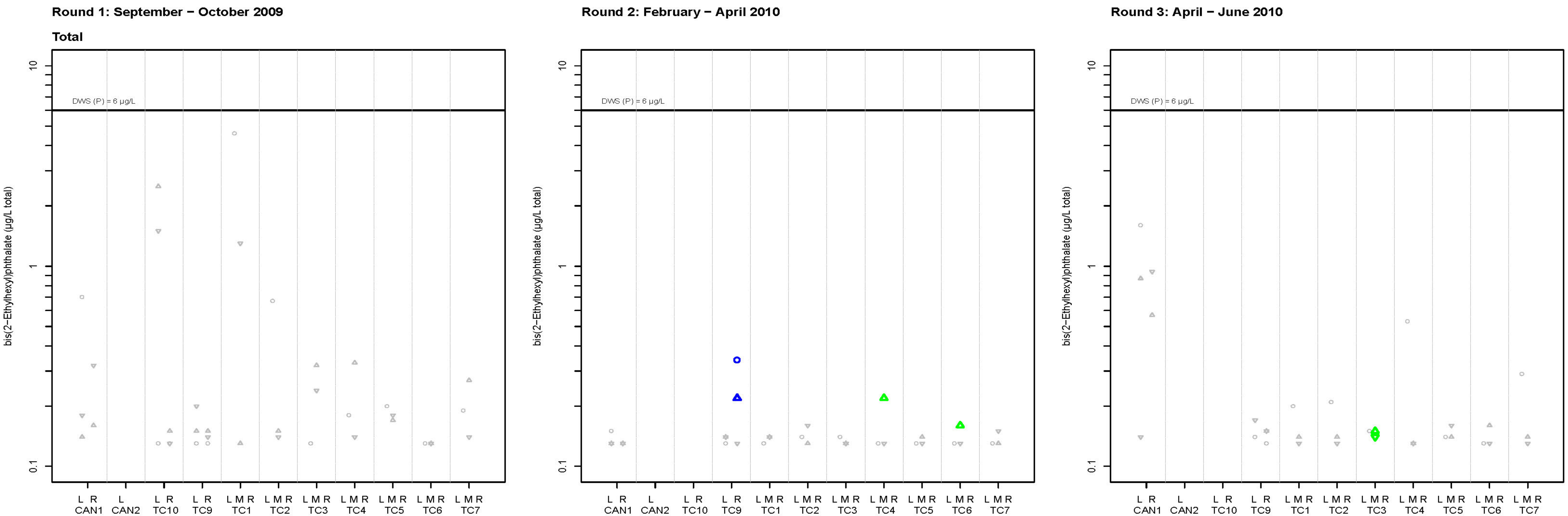
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − bis(2−Ethylhexyl)phthalate



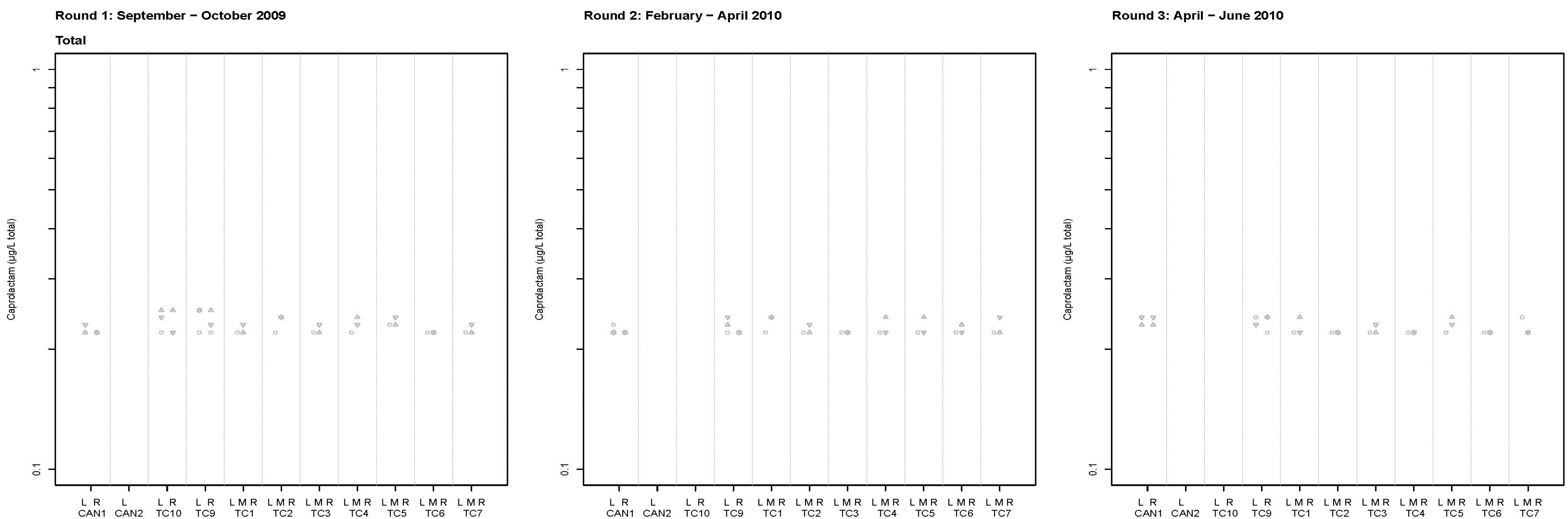
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Caprolactam



LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

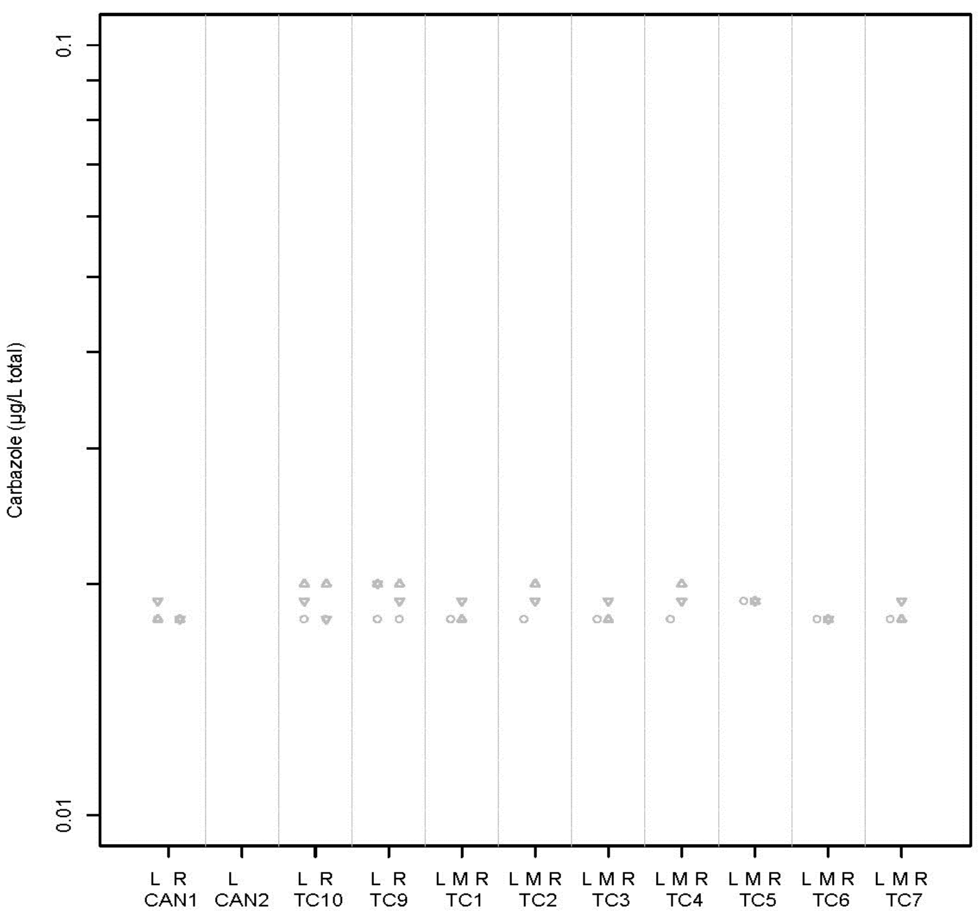
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

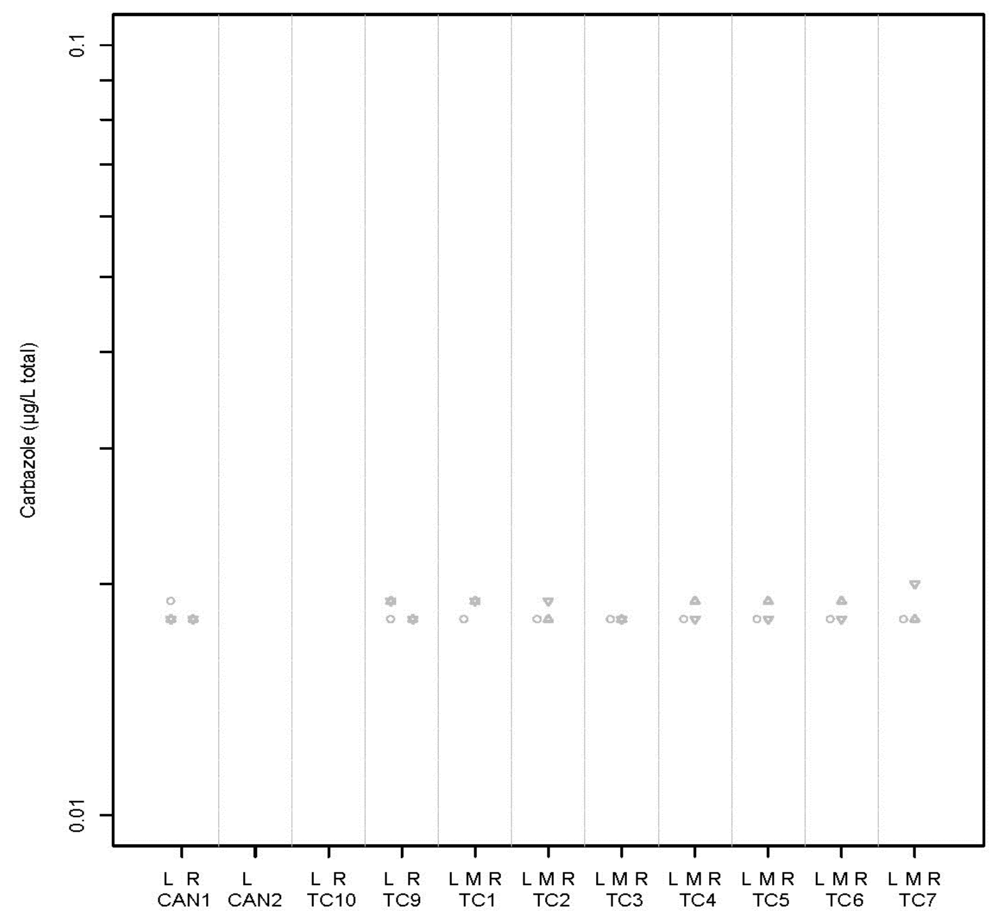
Surface Water – Carbazole

Round 1: September – October 2009

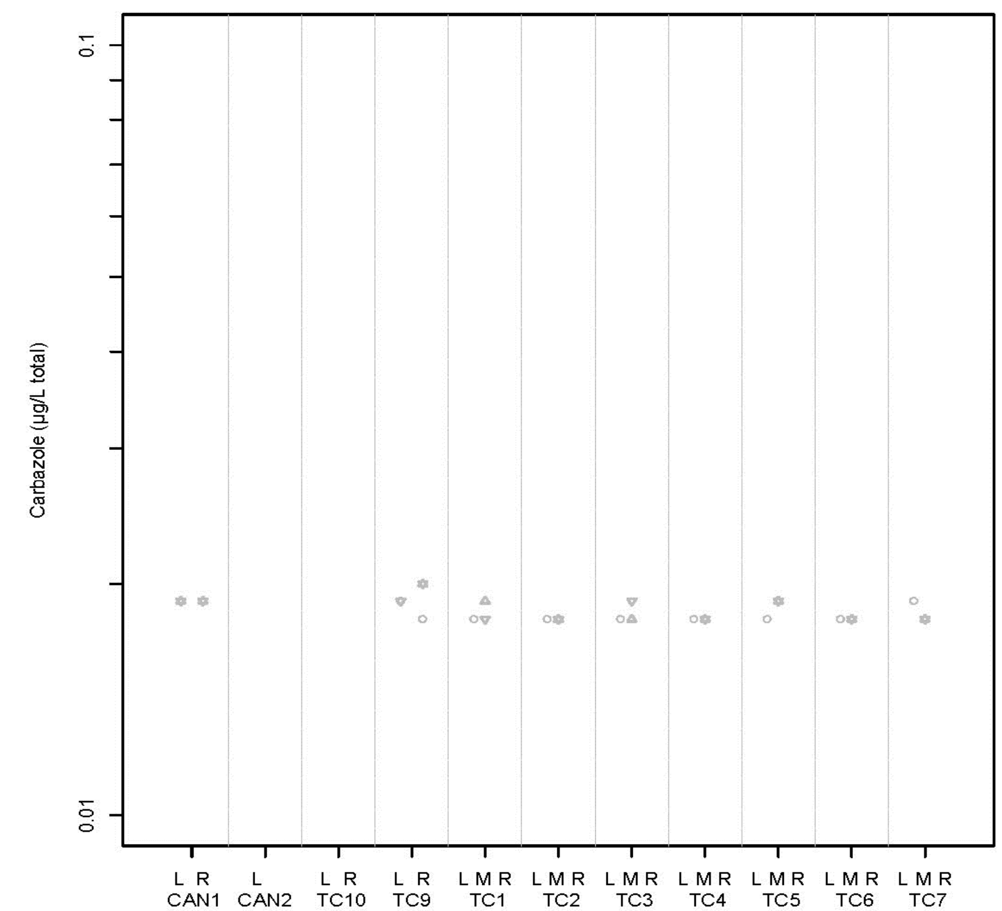
Total



Round 2: February – April 2010



Round 3: April – June 2010



LEGEND

▽ Near-surface — L = Left bank (orange)
○ Nearshore — M = Mid-channel (green)
△ Near-bottom — R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

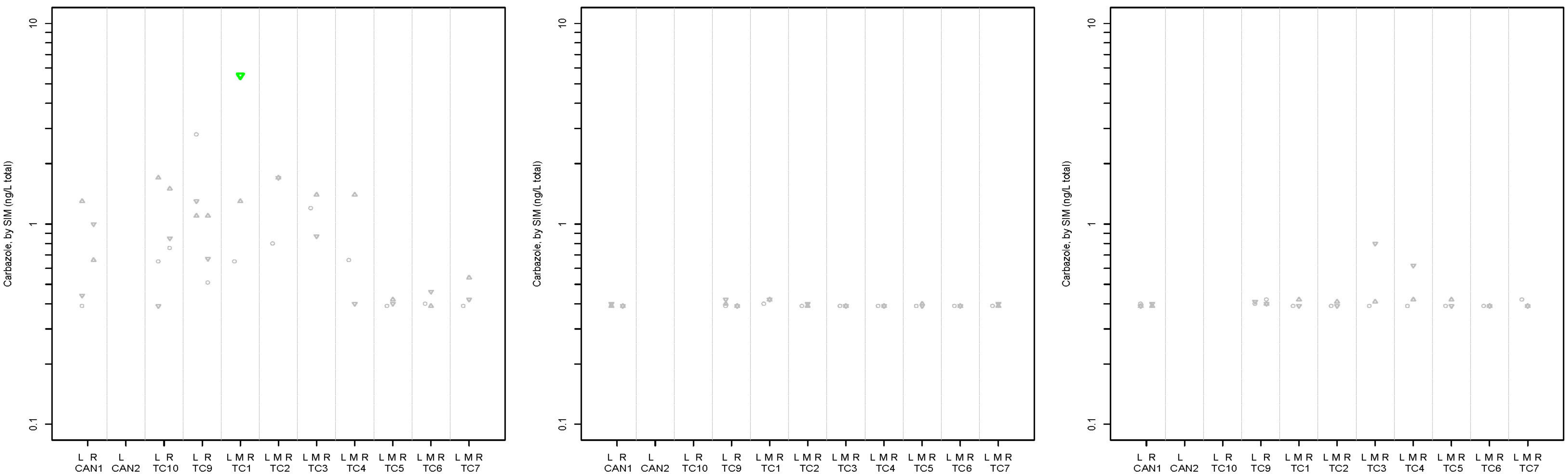
Surface Water – Carbazole by SIM

Round 1: September – October 2009

Round 2: February – April 2010

Round 3: April – June 2010

Total



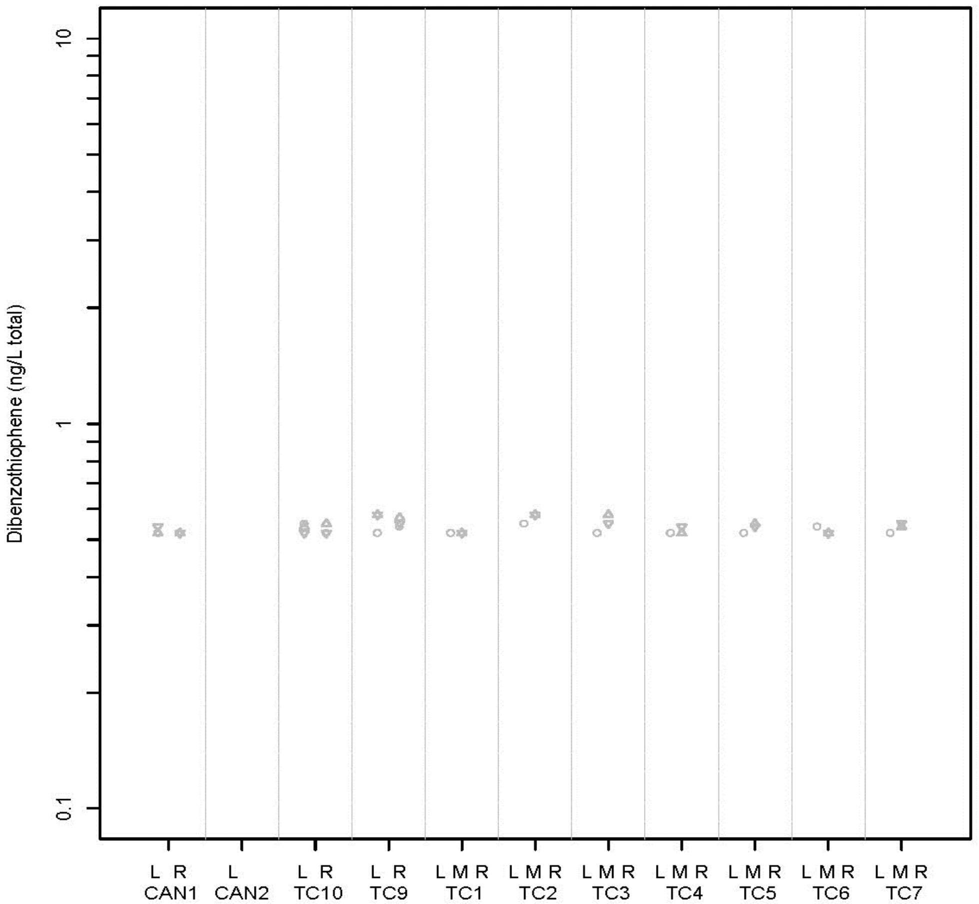
LEGEND

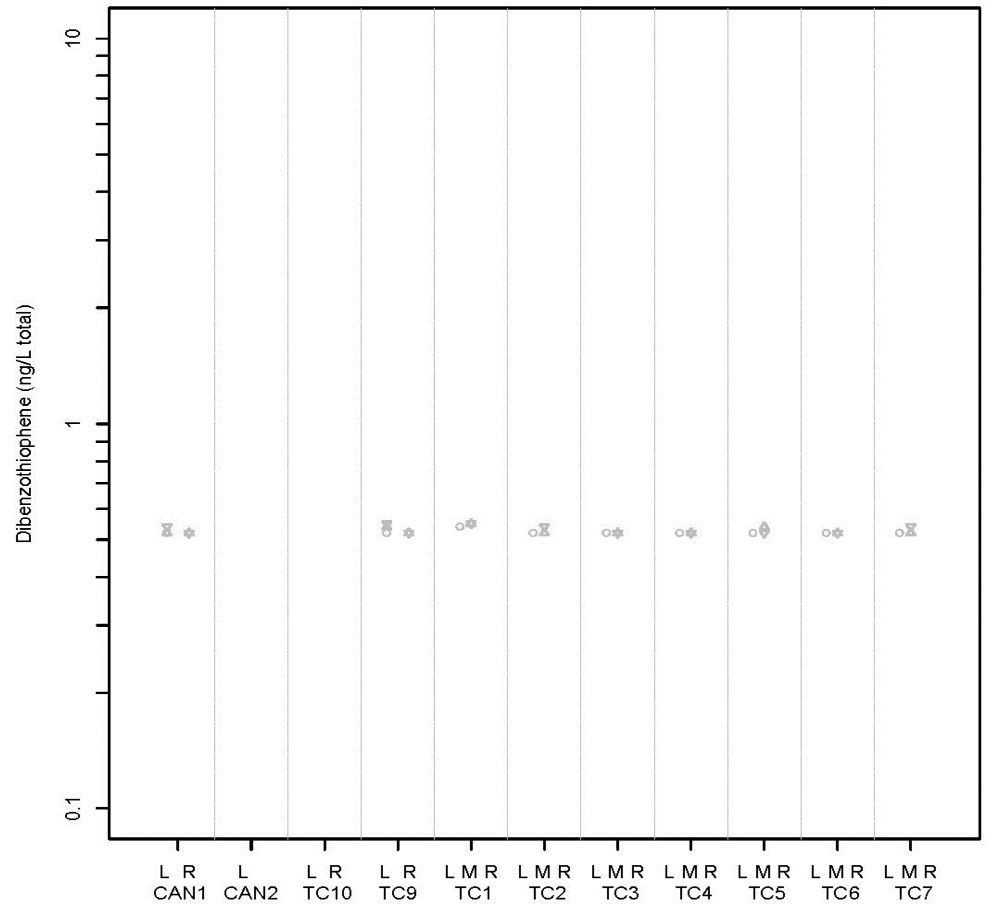
▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

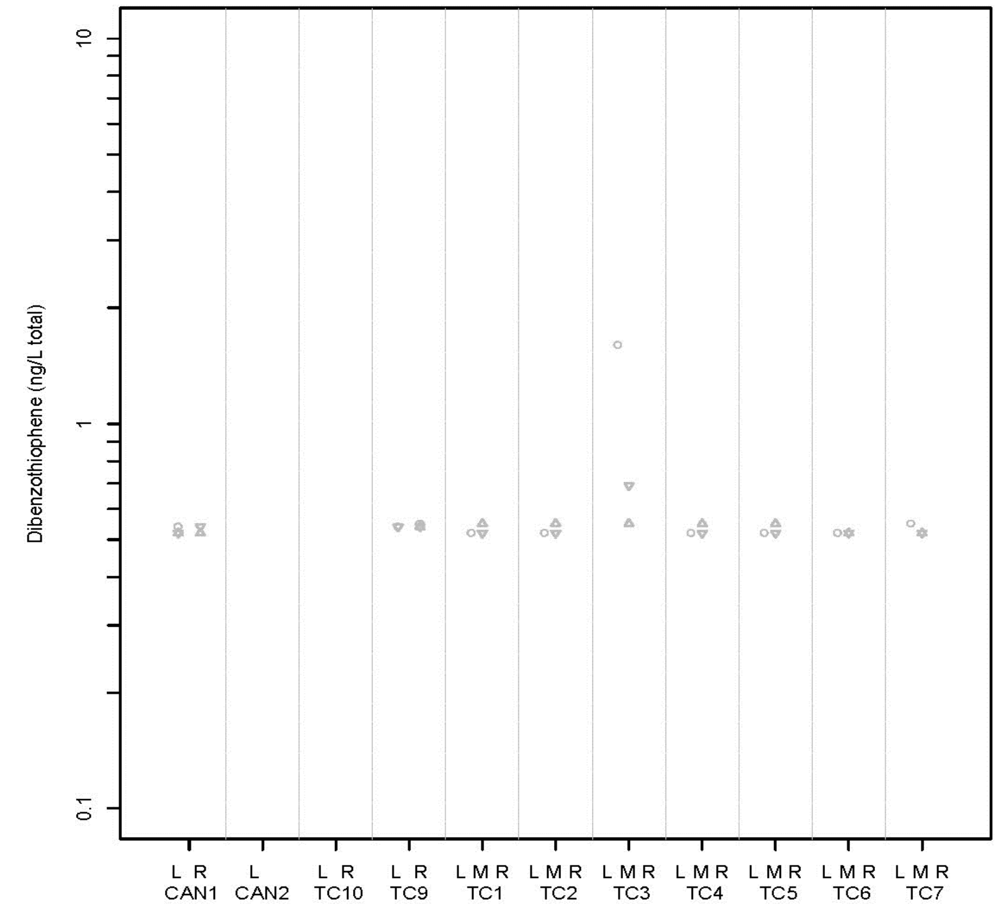
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Dibenzothiophene







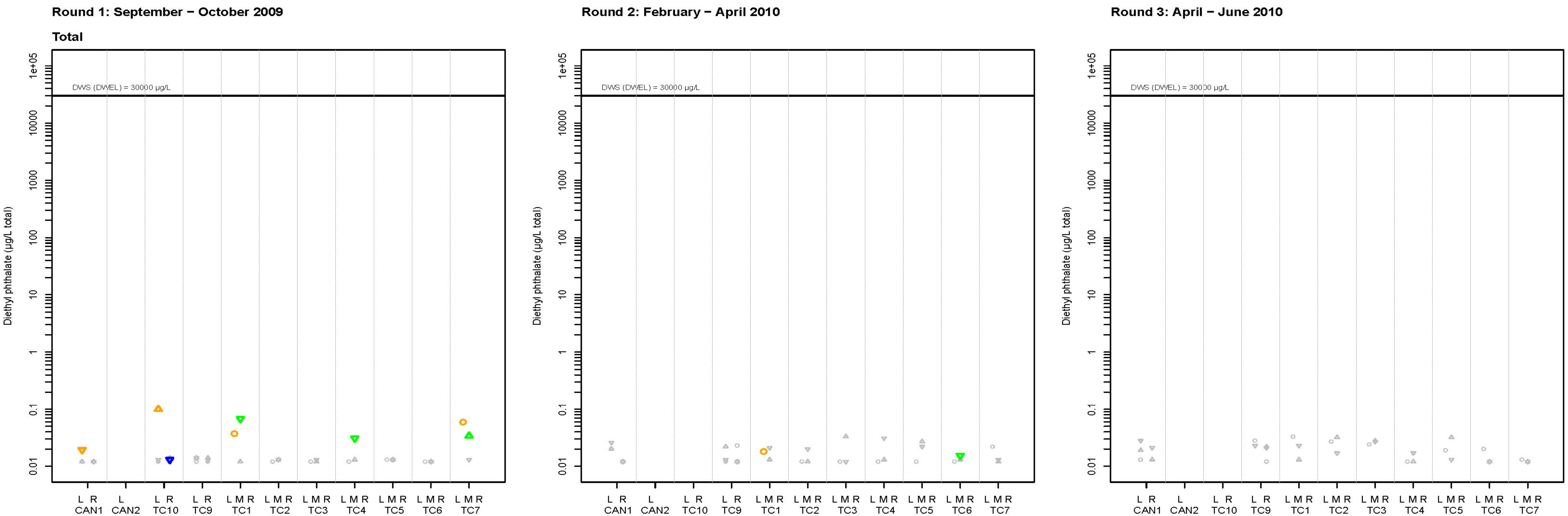
LEGEND

▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Diethyl phthalate



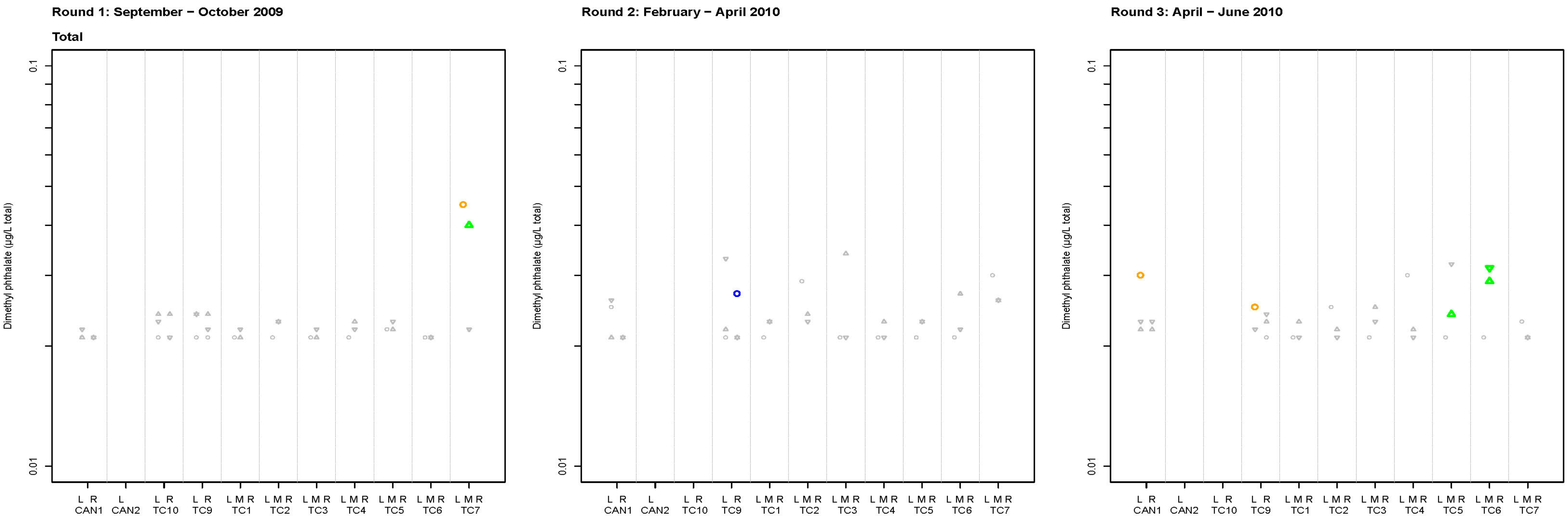
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Dimethyl phthalate



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

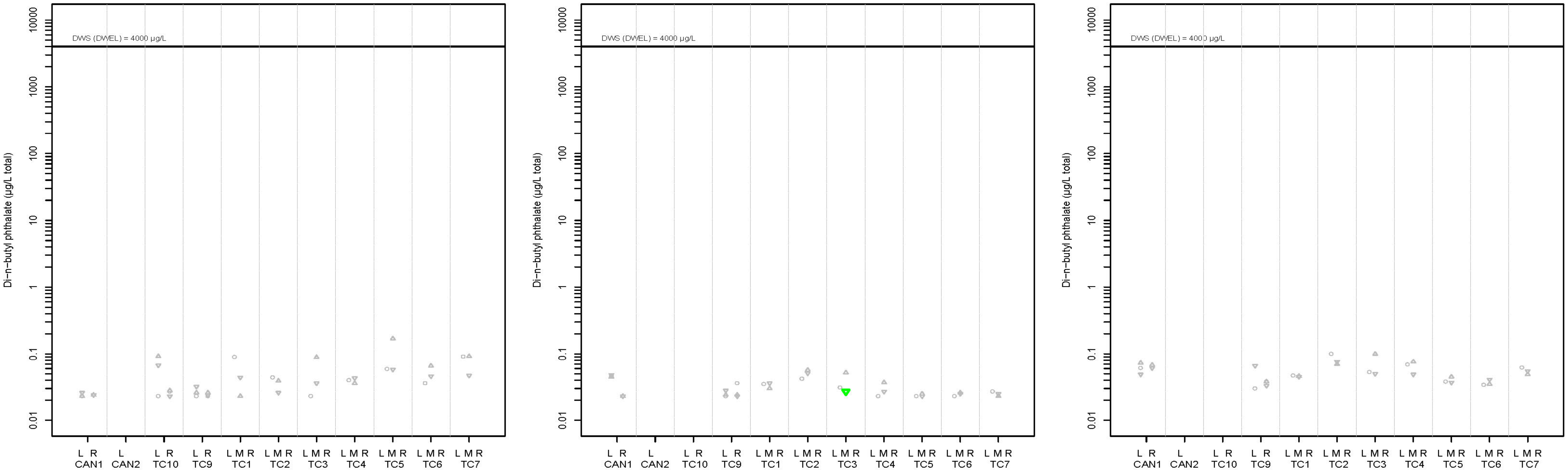
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Di−n−butyl phthalate

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



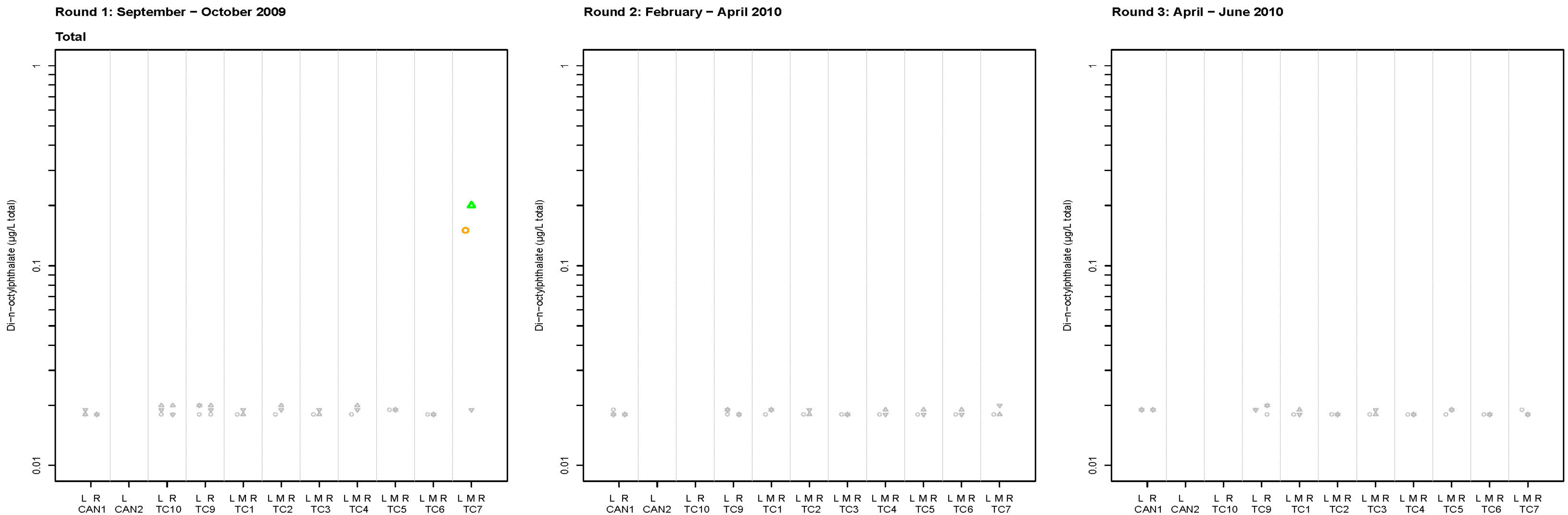
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Di–n–octylphthalate



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
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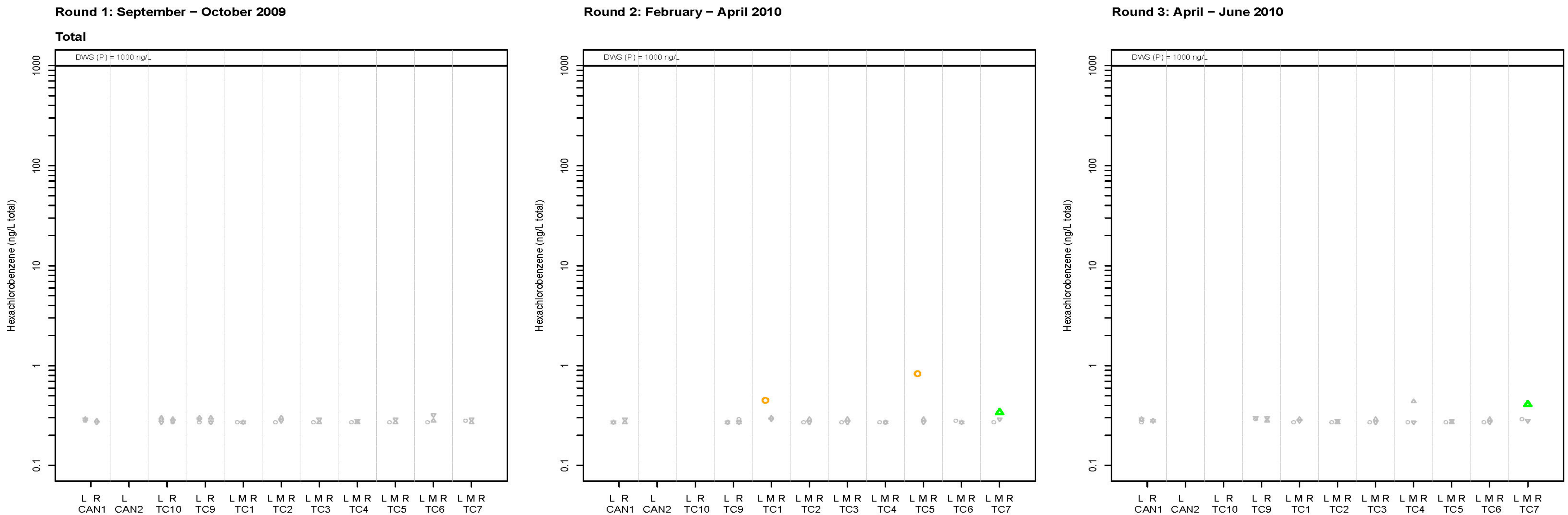
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Hexachlorobenzene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
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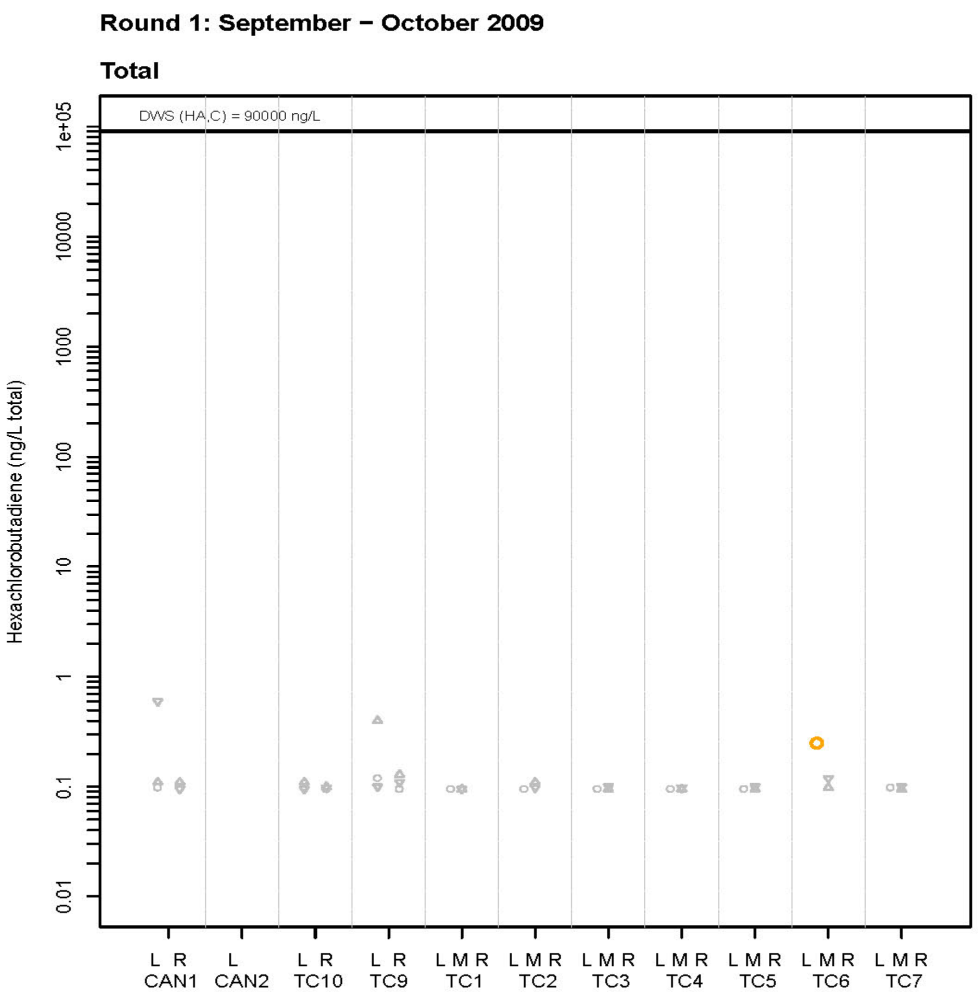
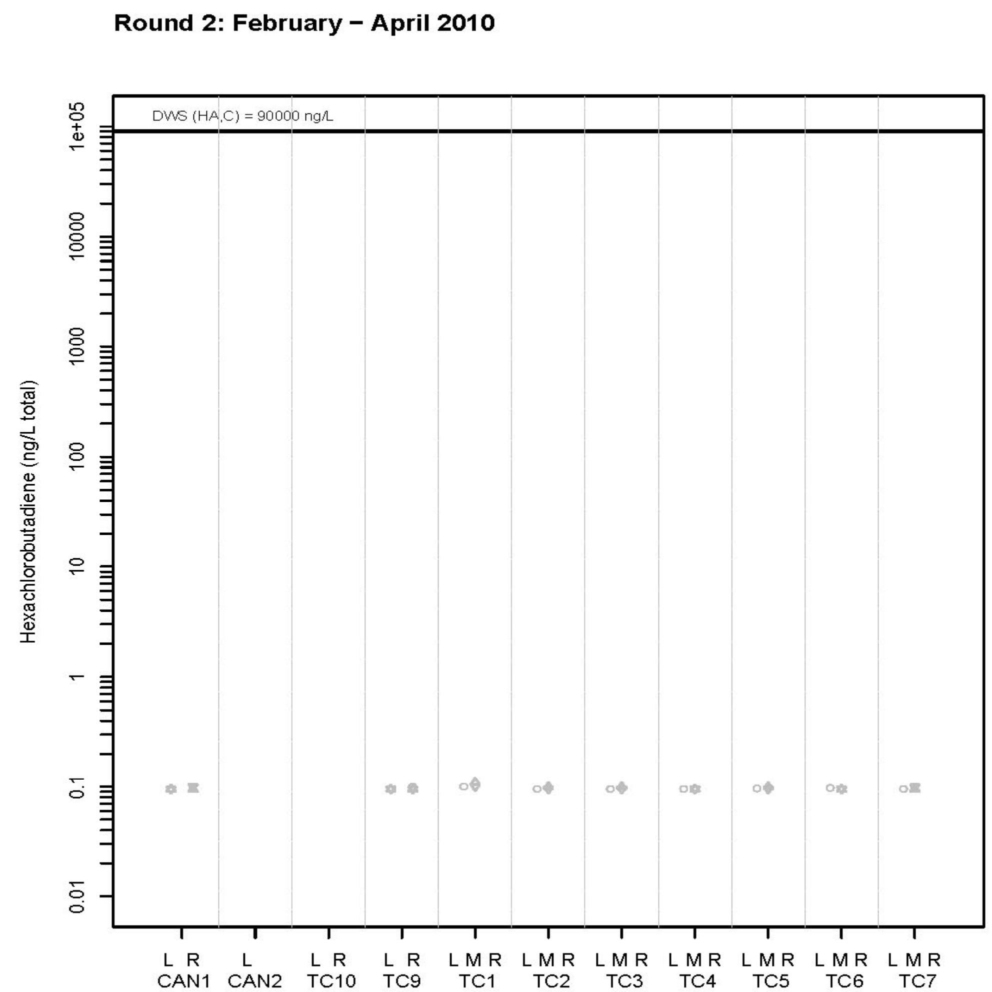
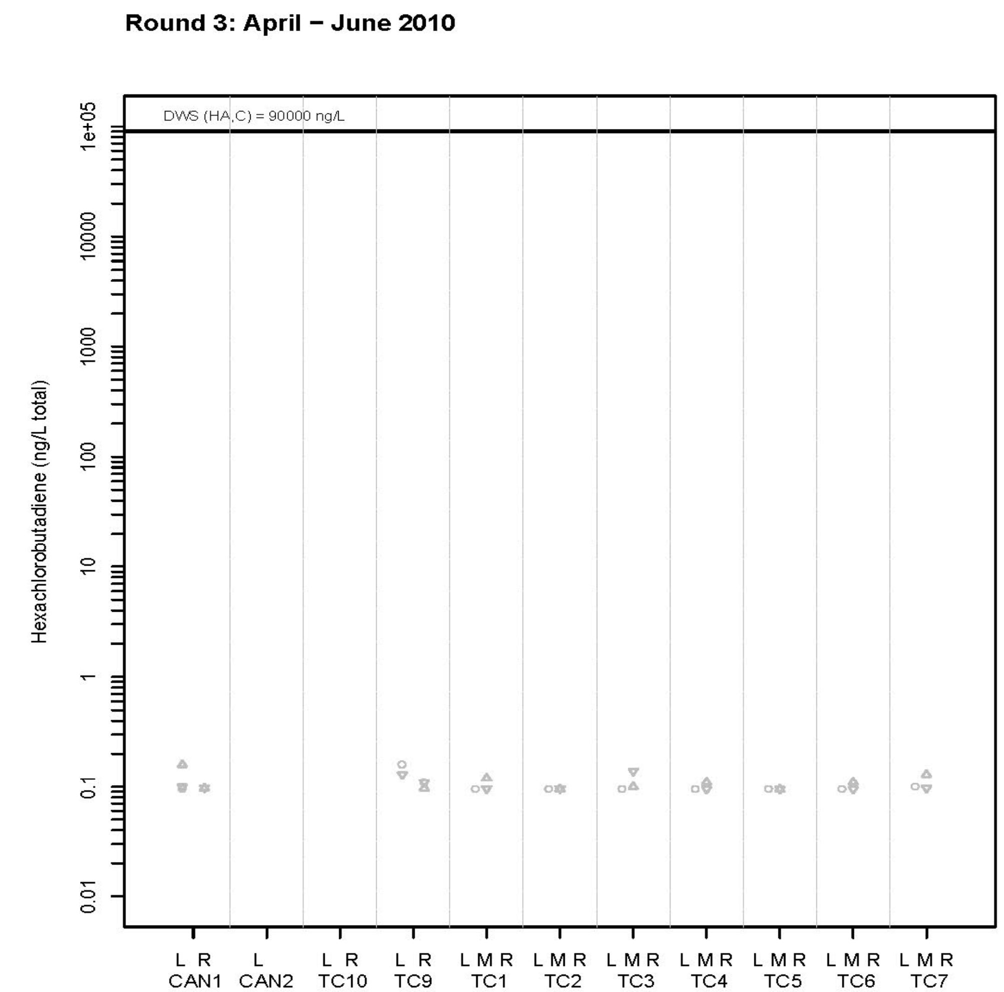
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Hexachlorobutadiene







LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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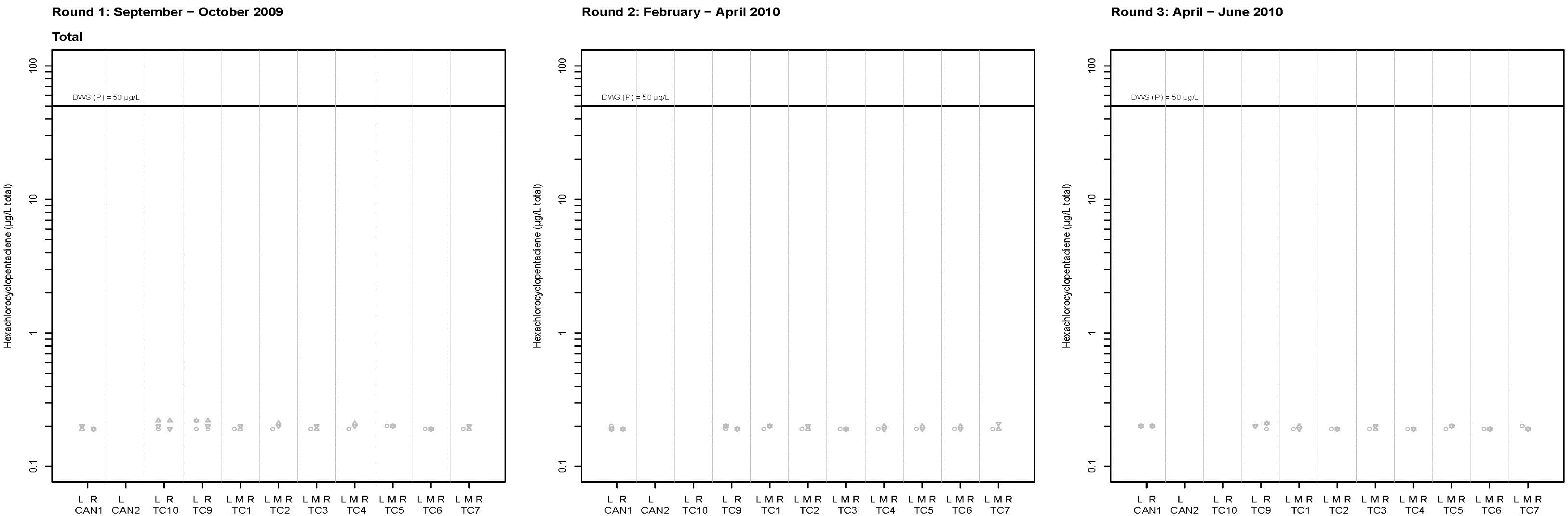
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Hexachlorocyclopentadiene



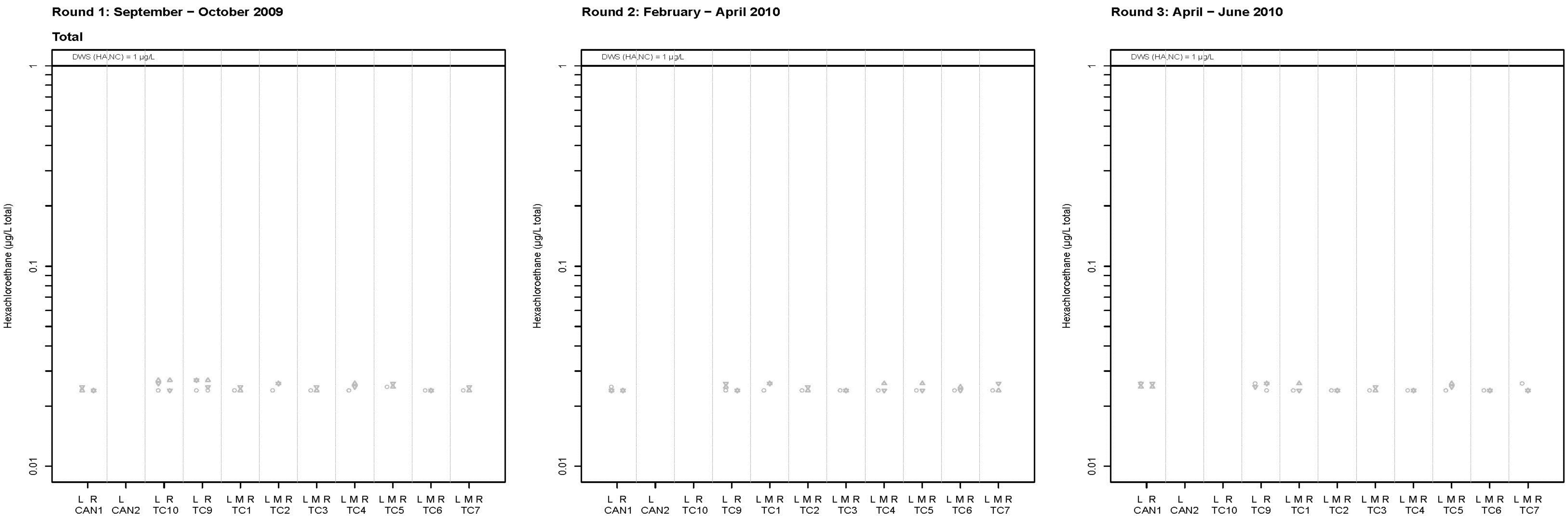
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Hexachloroethane



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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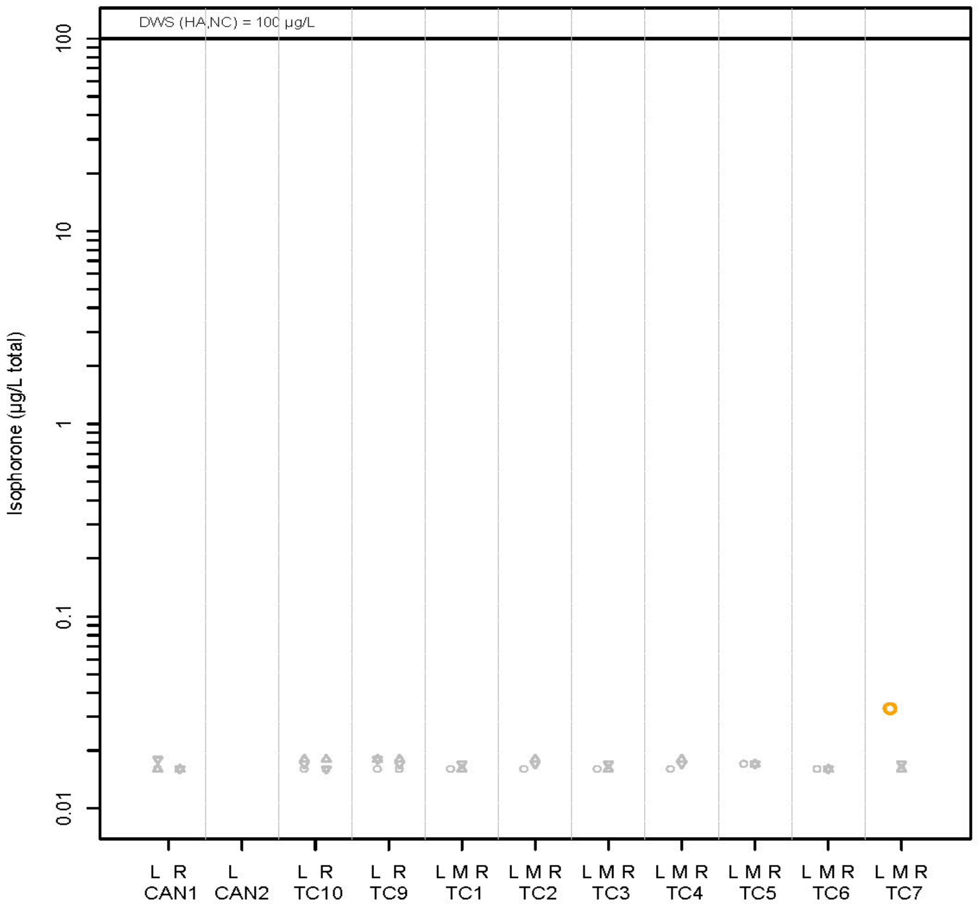
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

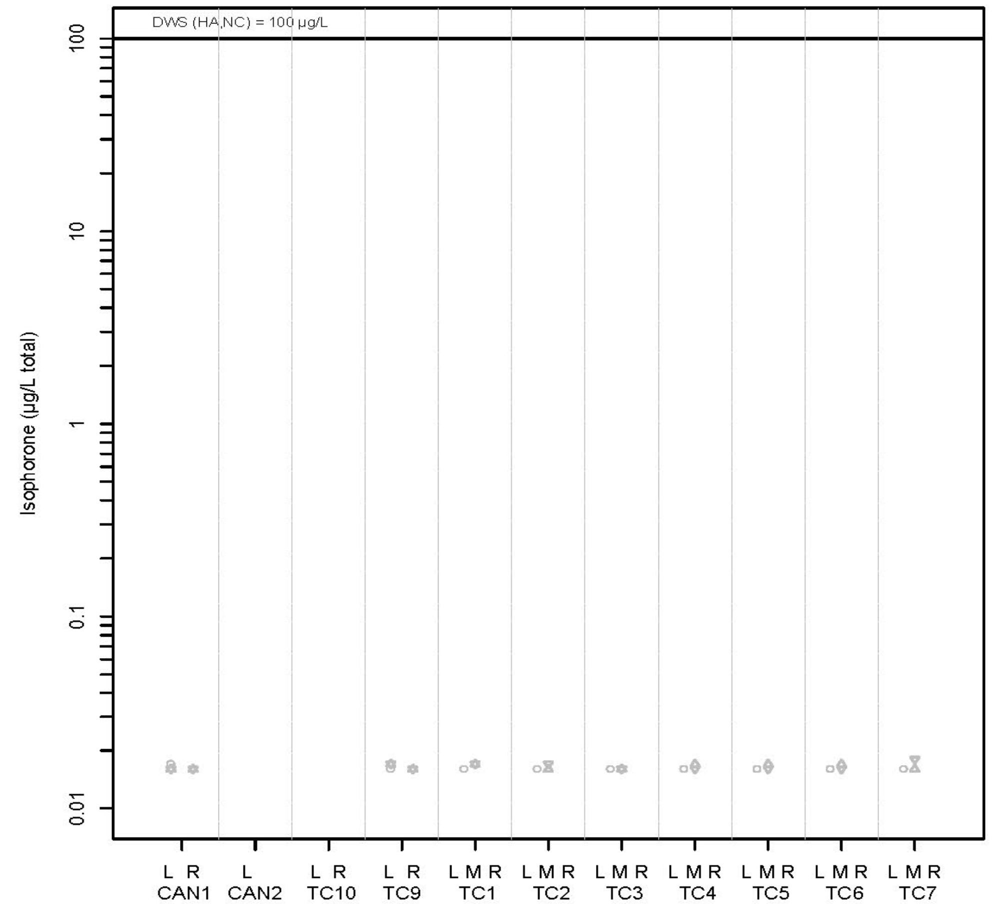
Surface Water – Isophorone

Round 1: September – October 2009

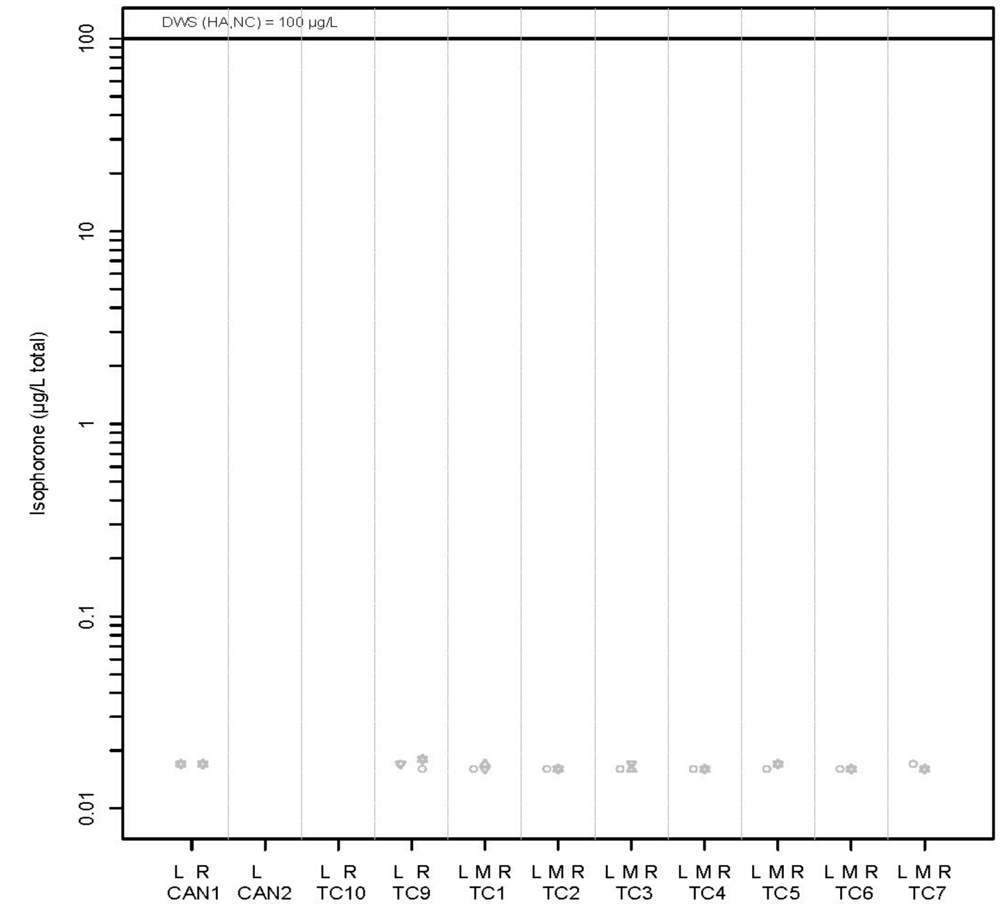
Total



Round 2: February – April 2010



Round 3: April – June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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DWS (AL)	Drinking water standard, EPA action level
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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

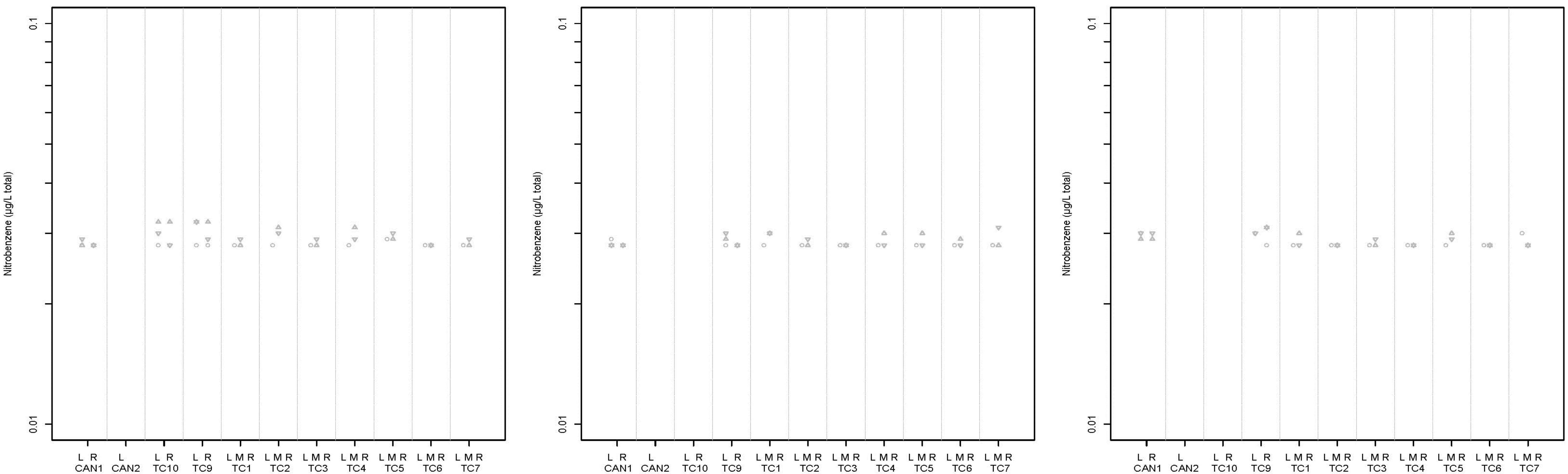
Surface Water − Nitrobenzene

Round 1: September − October 2009

Total

Round 2: February − April 2010

Round 3: April − June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
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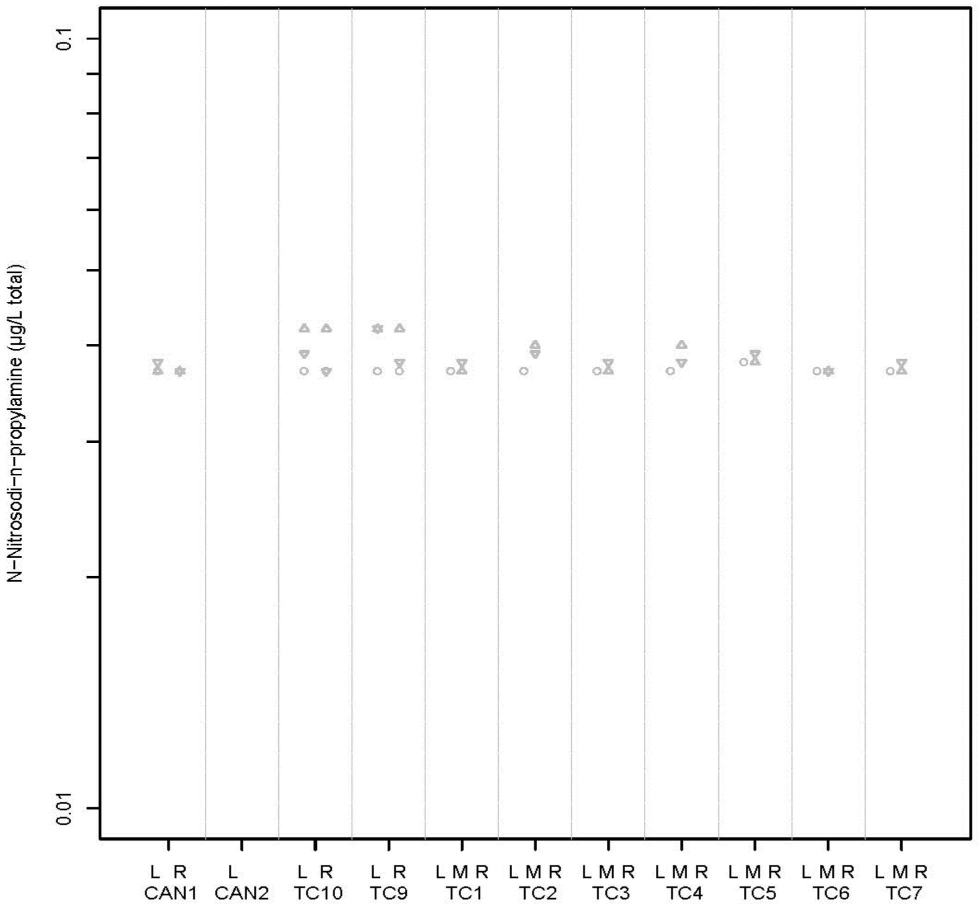
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

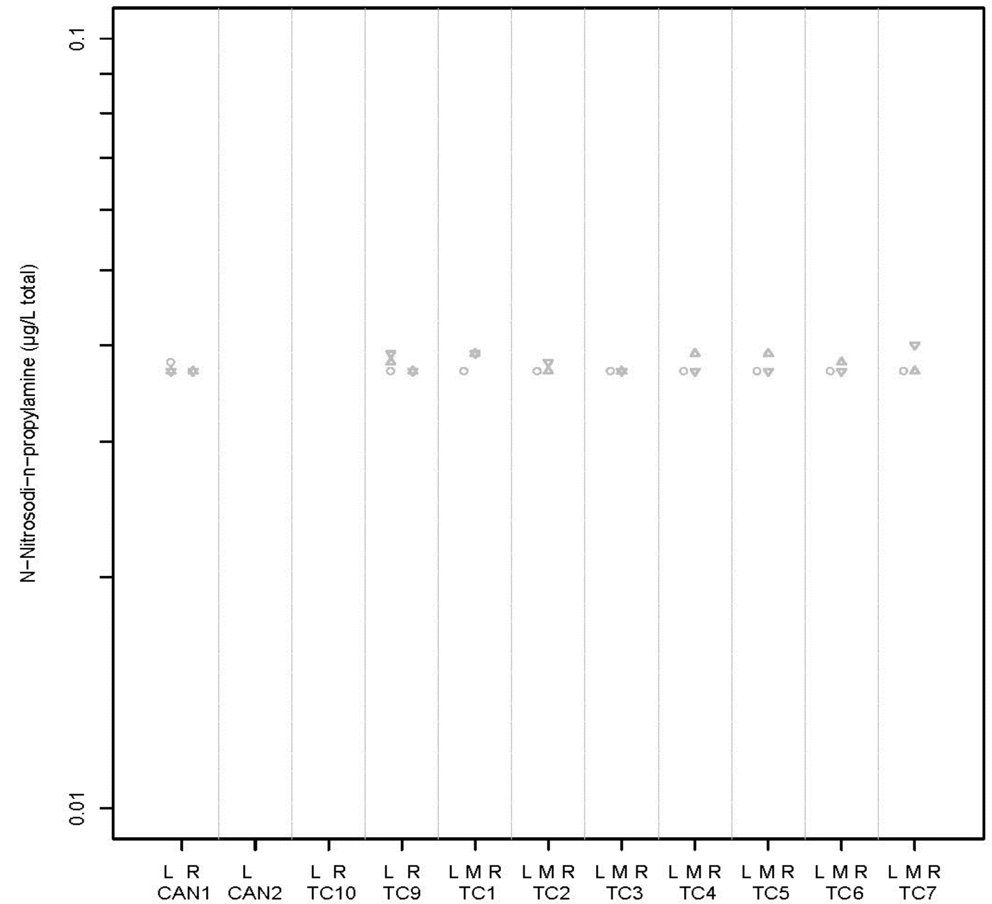
Surface Water − N−Nitrosodi−n−propylamine

Round 1: September − October 2009

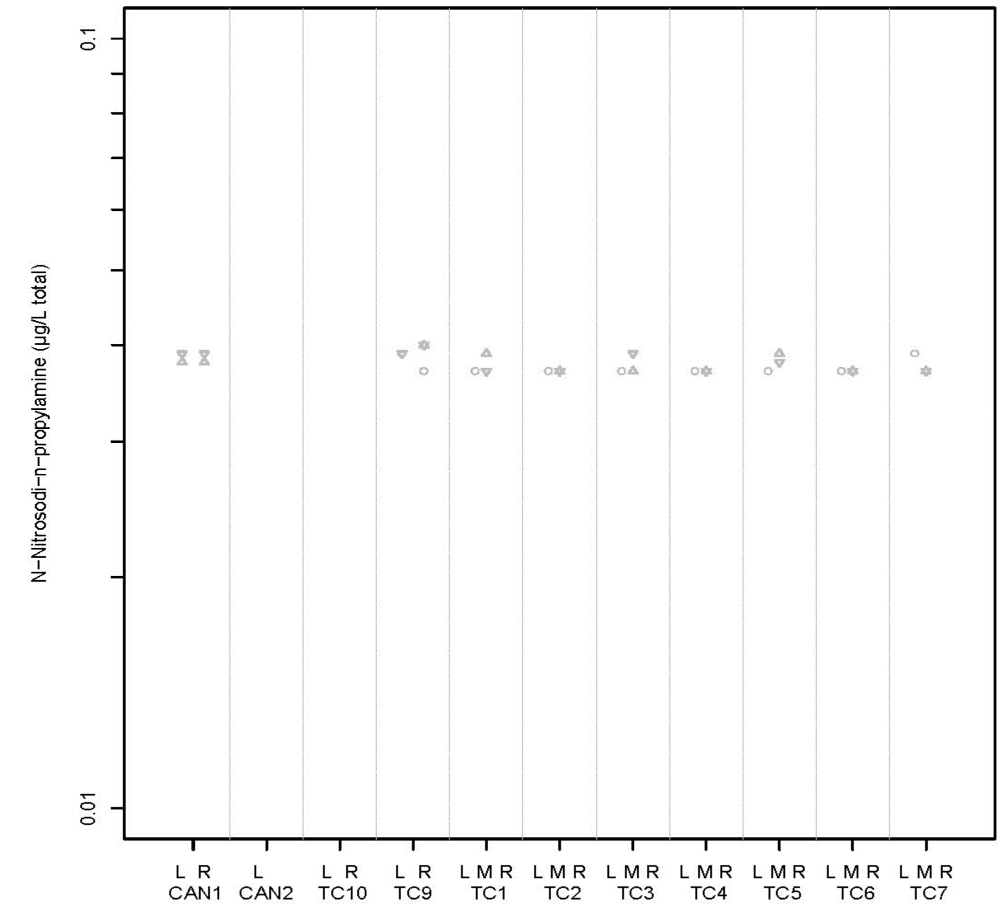
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface   L = Left bank (orange)
○ Nearshore   M = Mid-channel (green)
△ Near-bottom   R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
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NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

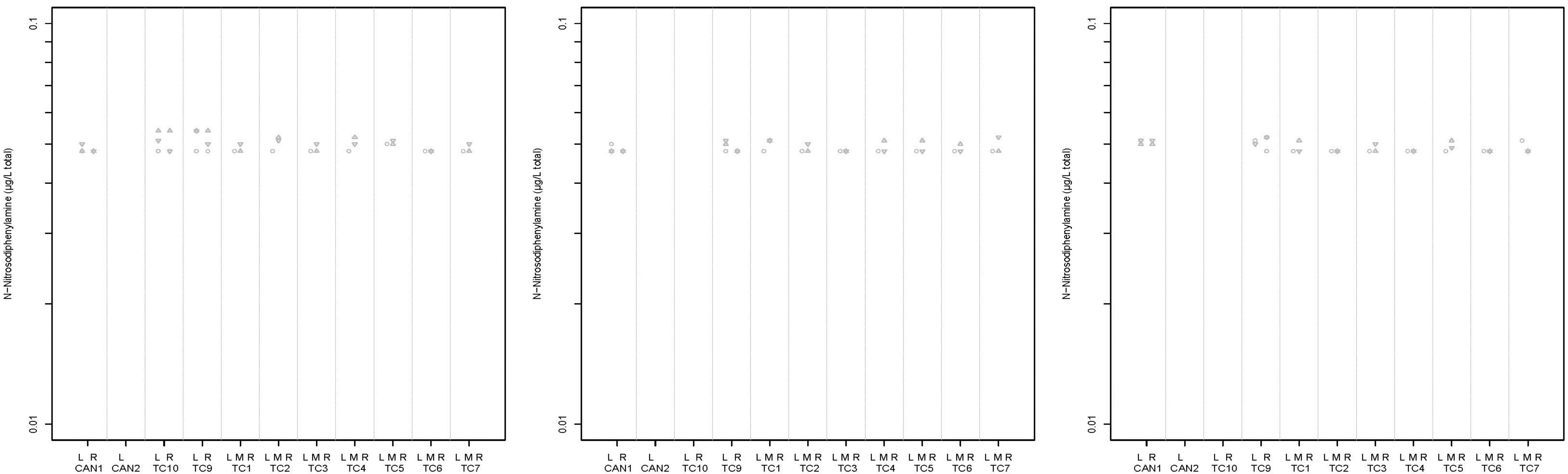
Surface Water − N−Nitrosodiphenylamine

Round 1: September − October 2009

Total

Round 2: February − April 2010

Round 3: April − June 2010



LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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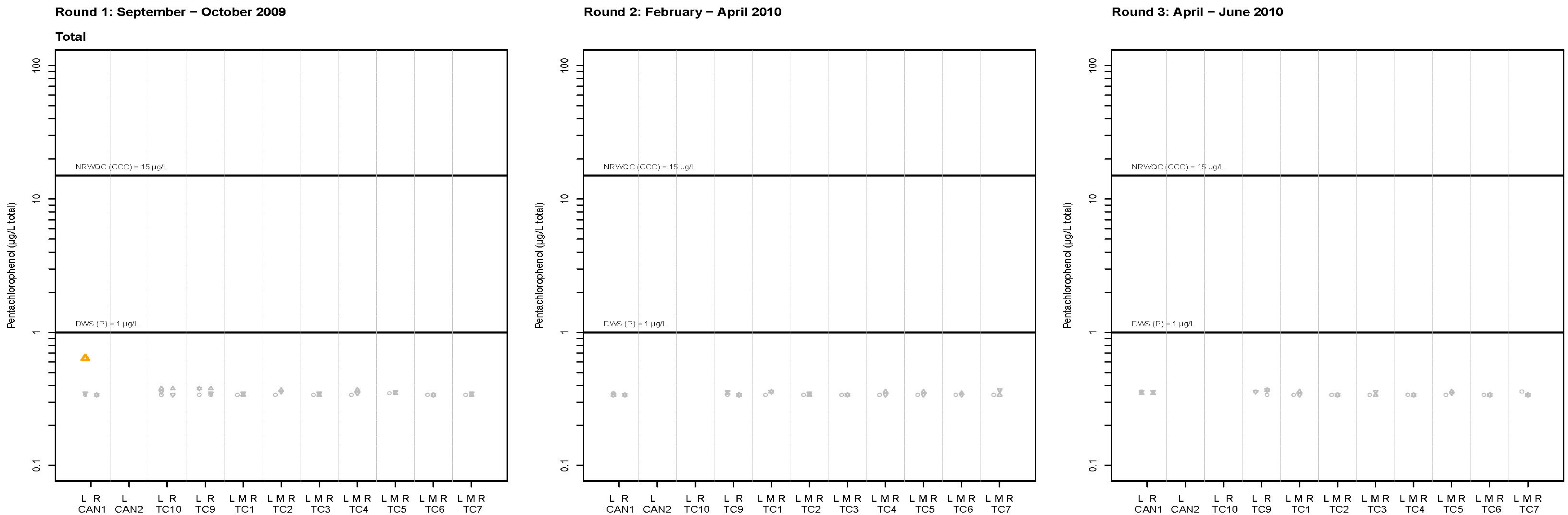
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold
NRWQC (CCC) EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC) EPA national recommended water quality criterion, acute exposure
NRWQC (B) EPA national recommended water quality criterion, BLM calculation

Surface Water – Pentachlorophenol



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
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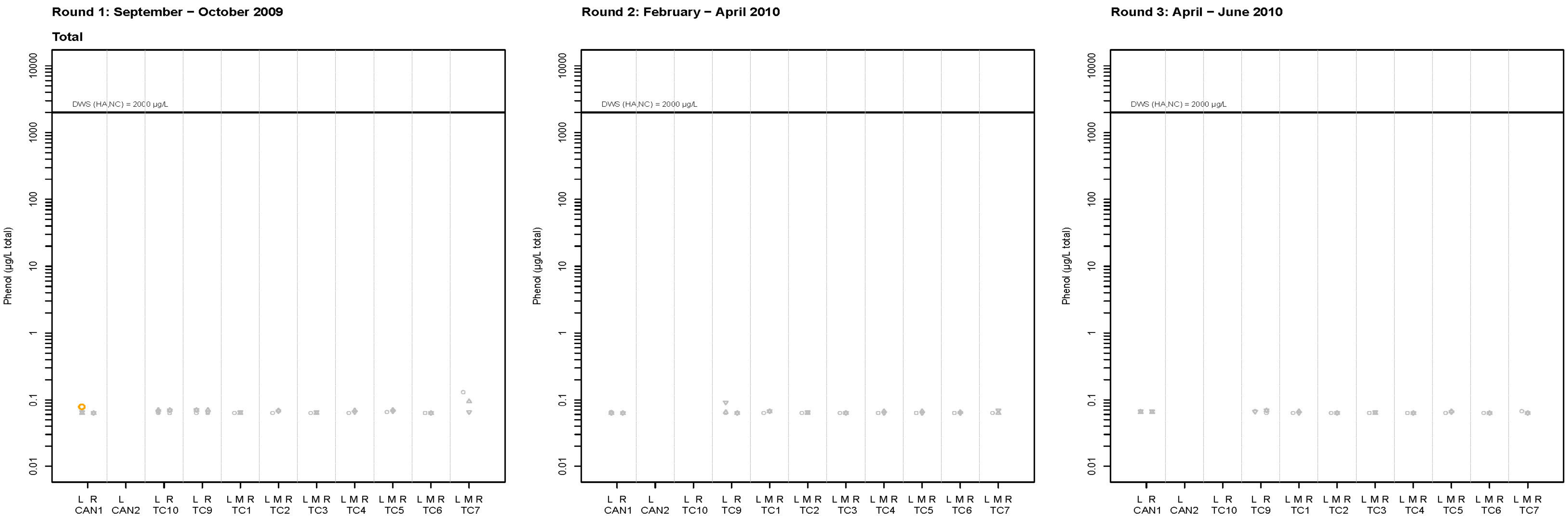
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Phenol



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
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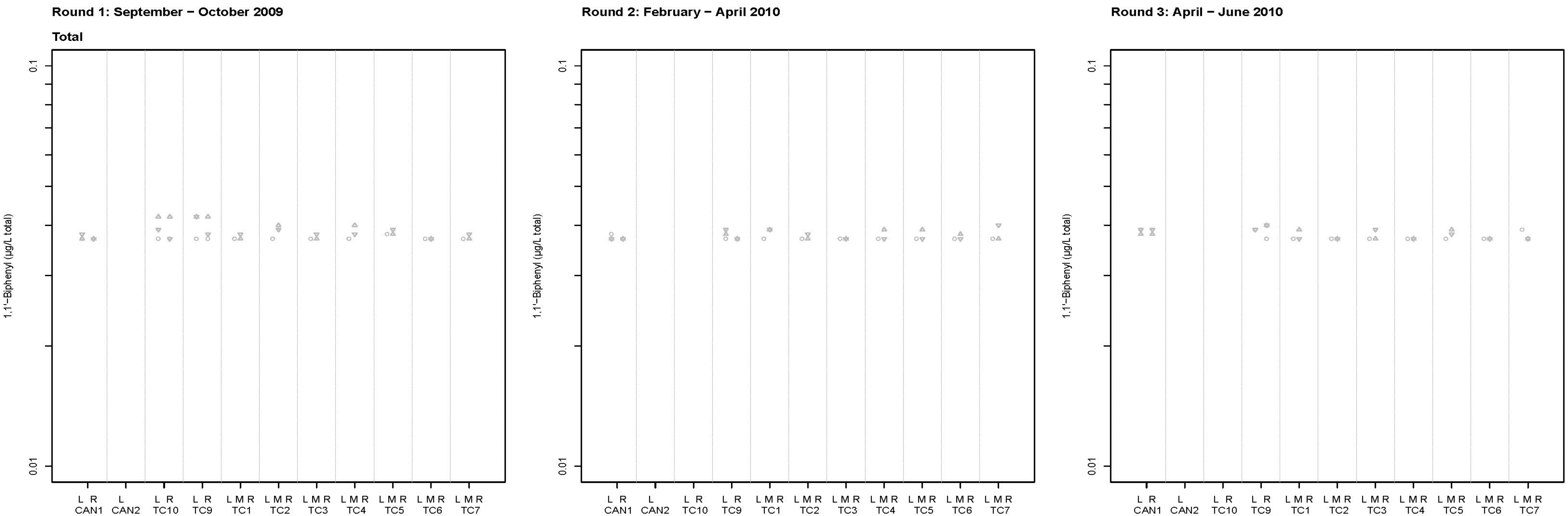
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 1,1'−Biphenyl



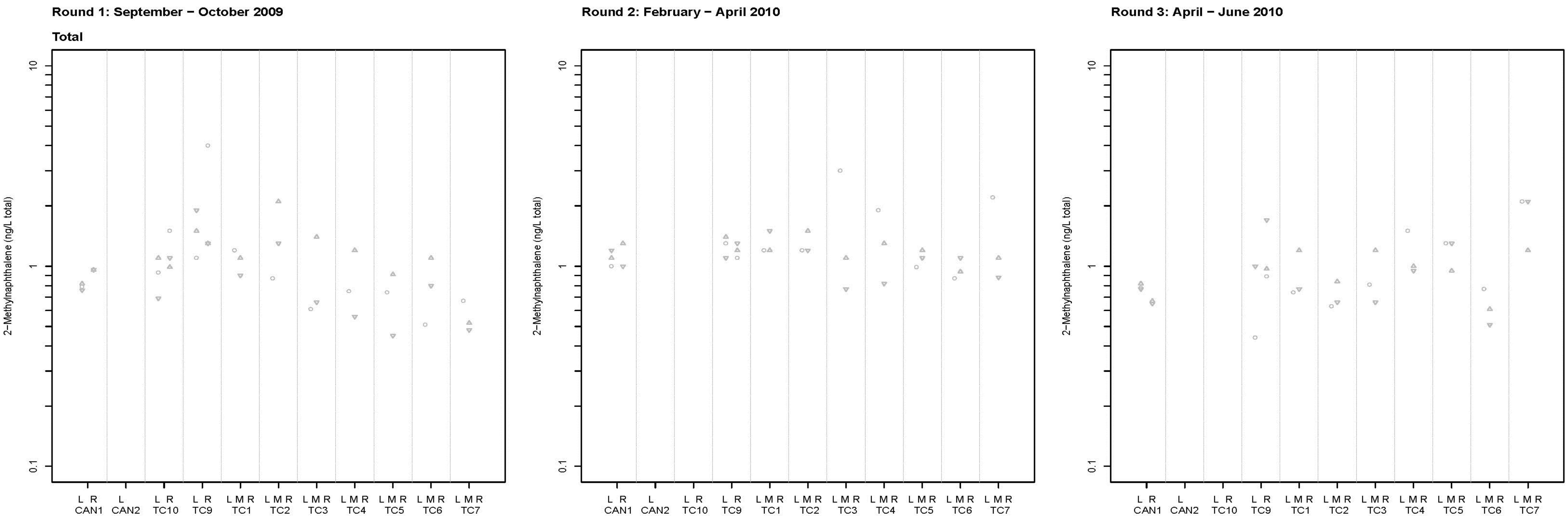
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2−Methylnaphthalene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

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Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
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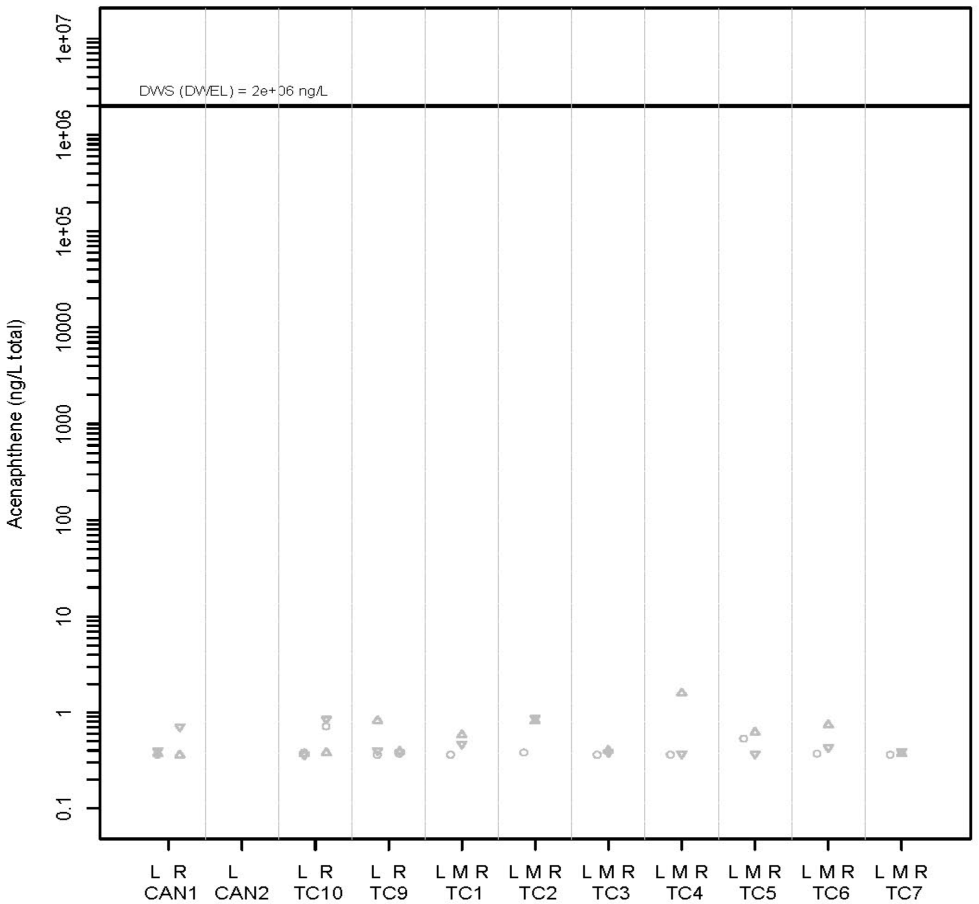
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

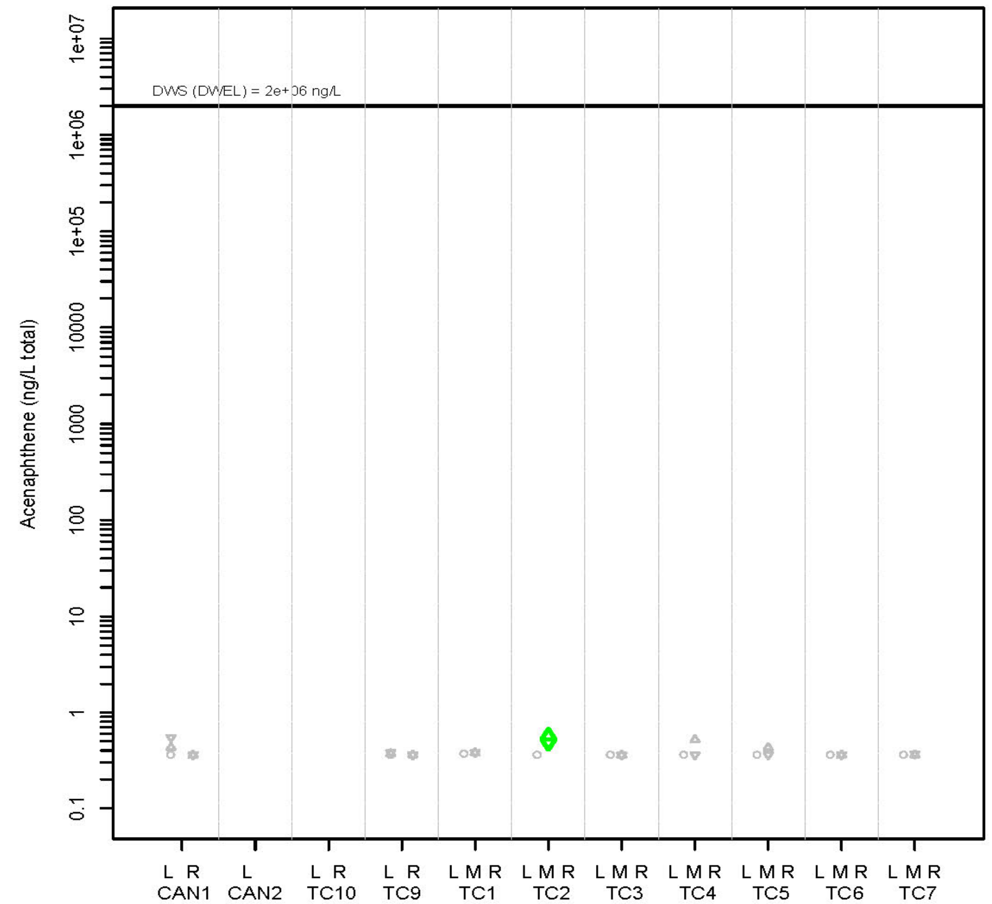
Surface Water − Acenaphthene

Round 1: September − October 2009

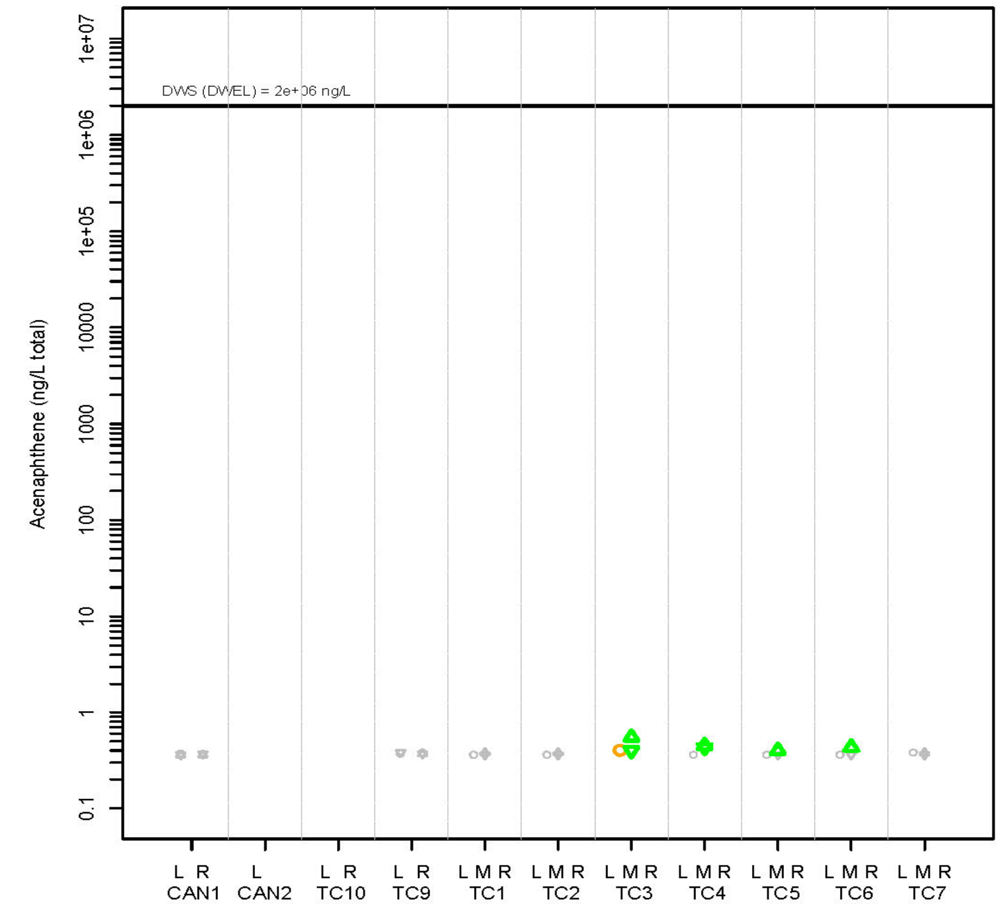
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
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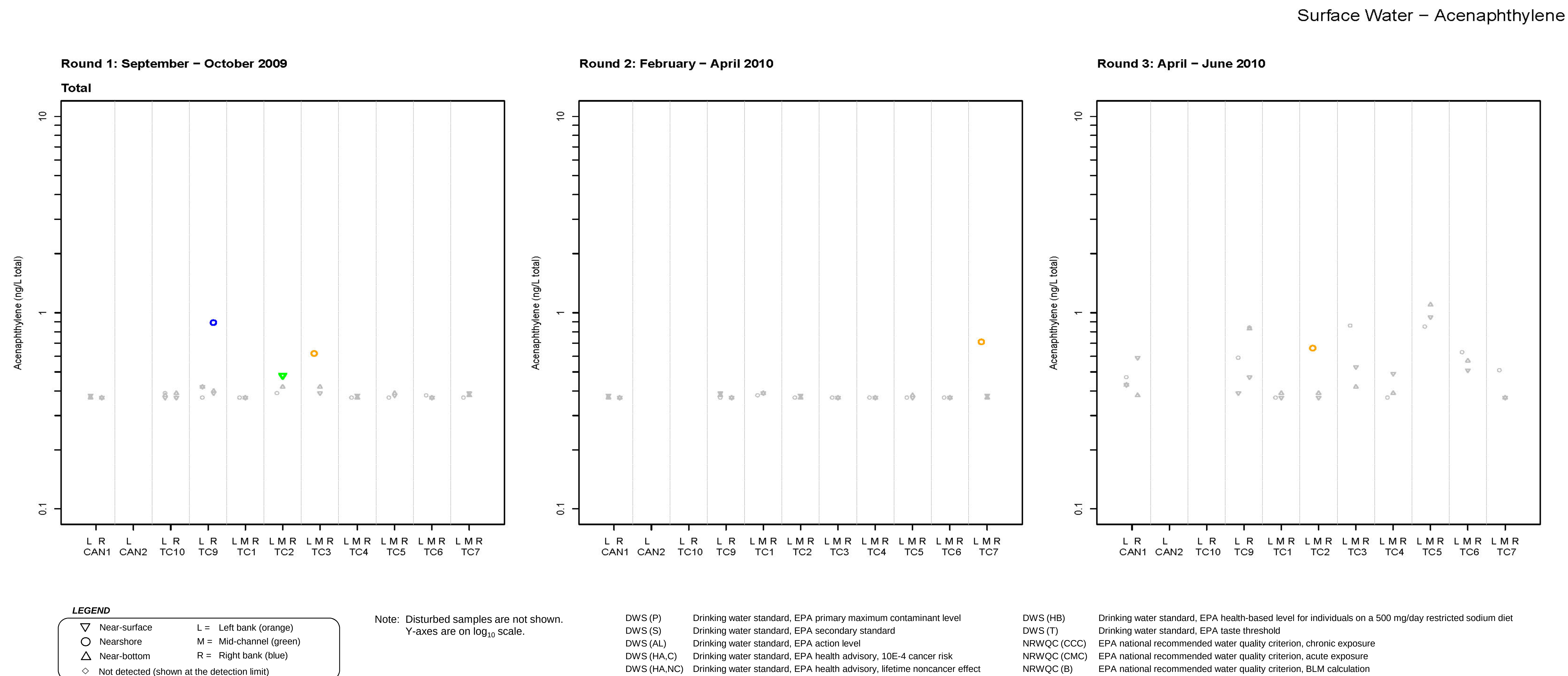
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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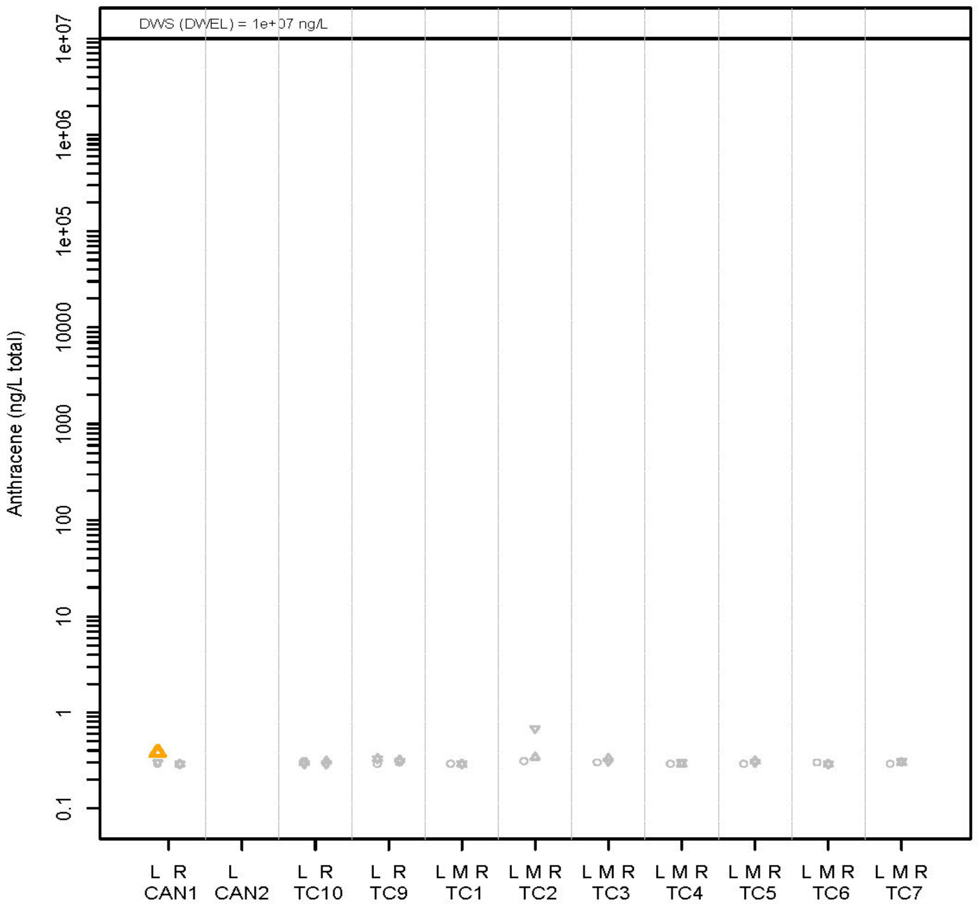
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

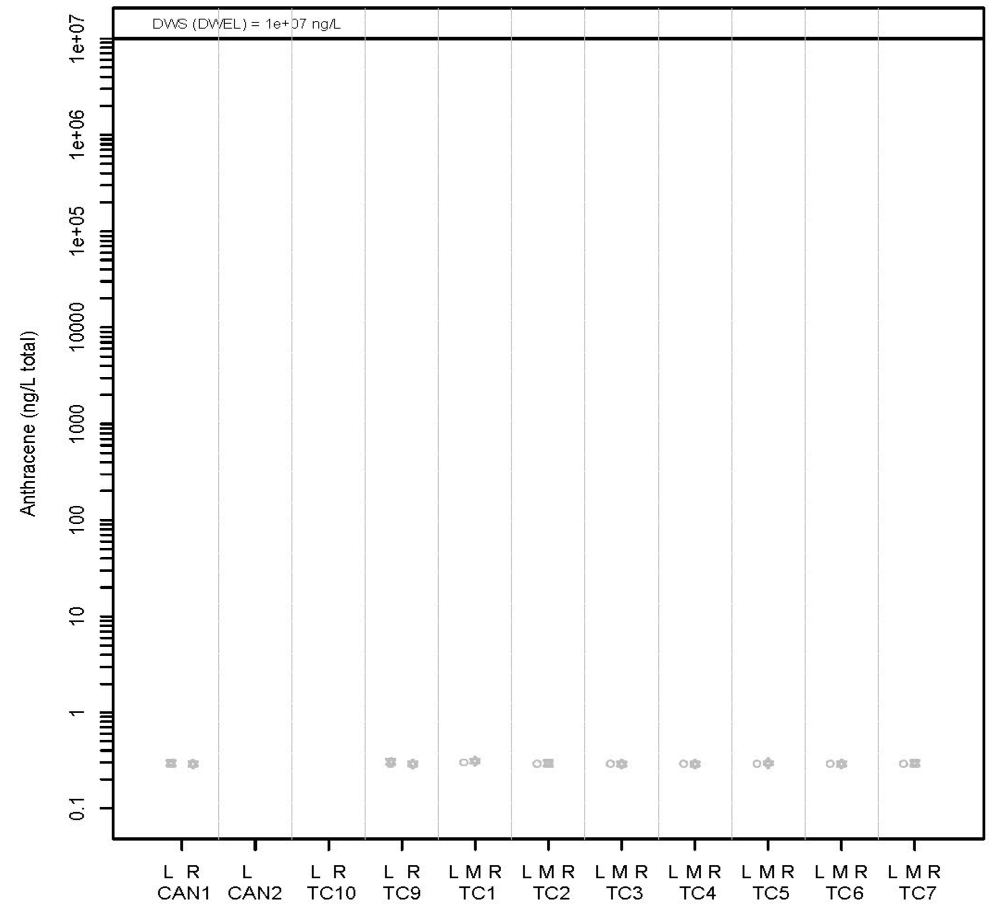
Surface Water − Anthracene

Round 1: September − October 2009

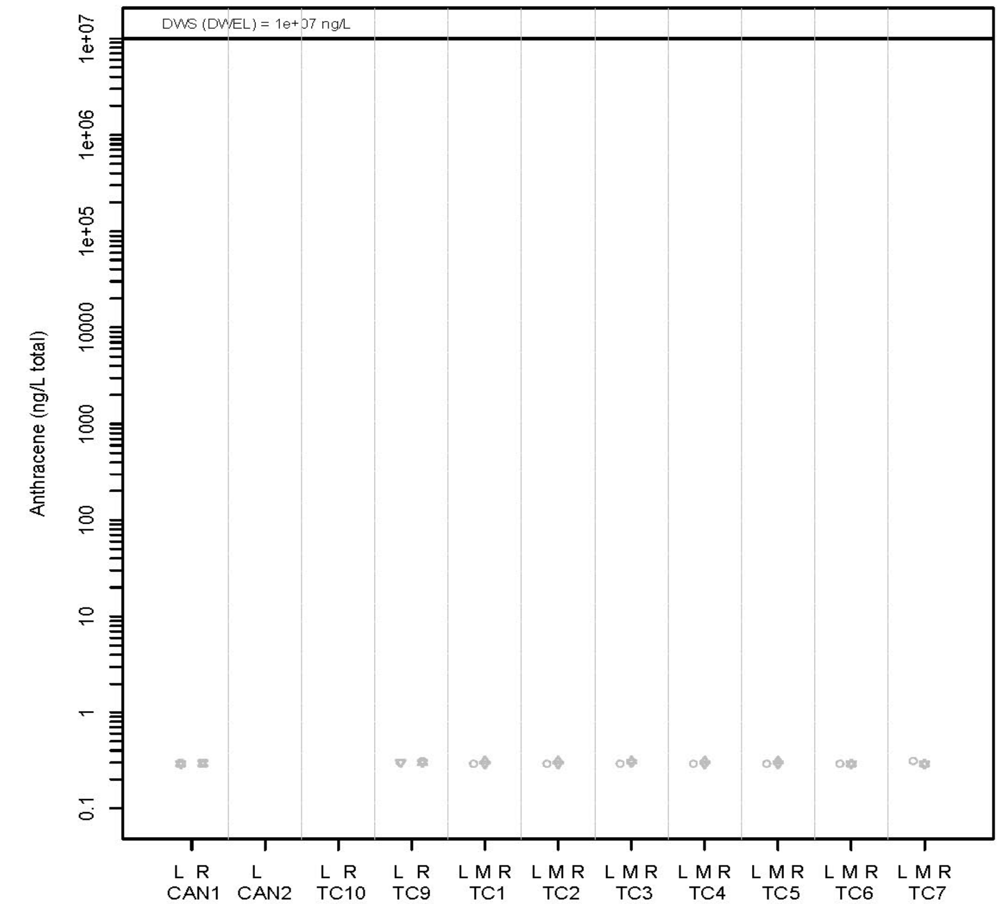
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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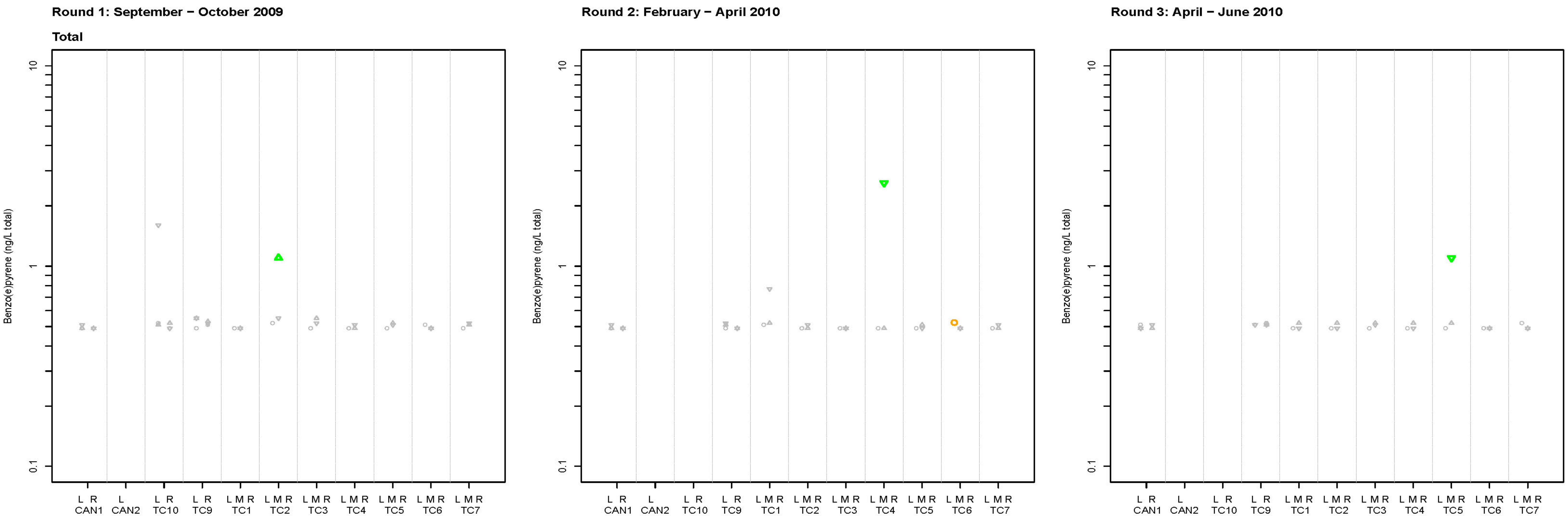
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Benzo(e)pyrene



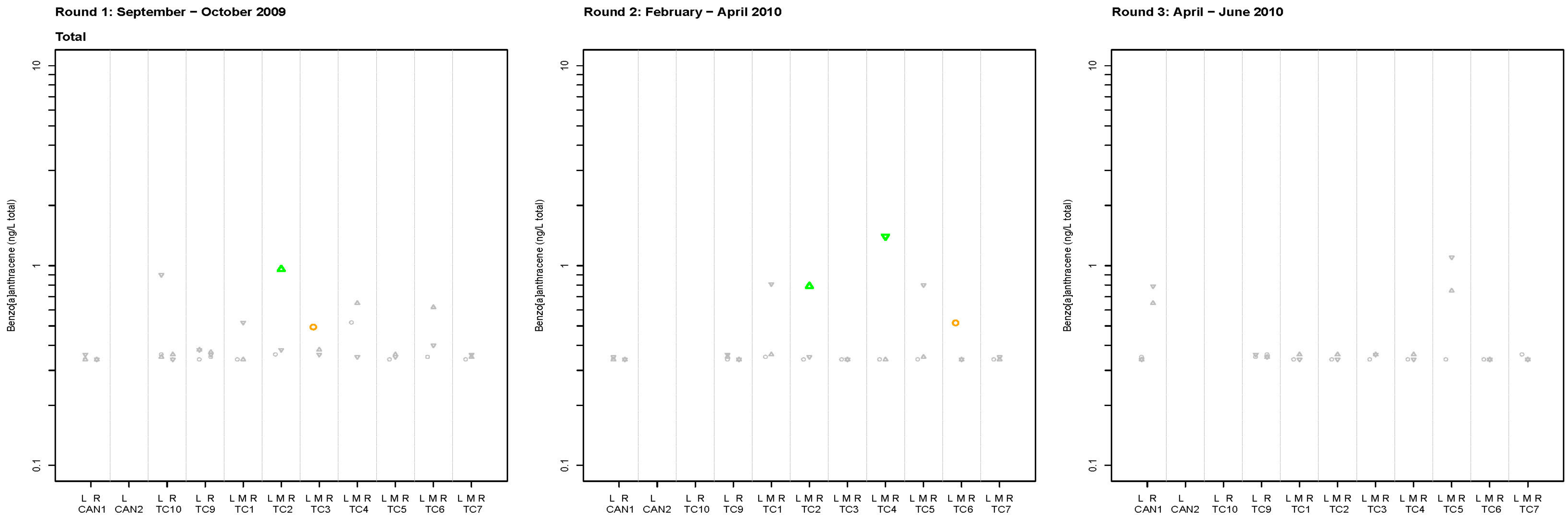
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Benzo[a]anthracene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

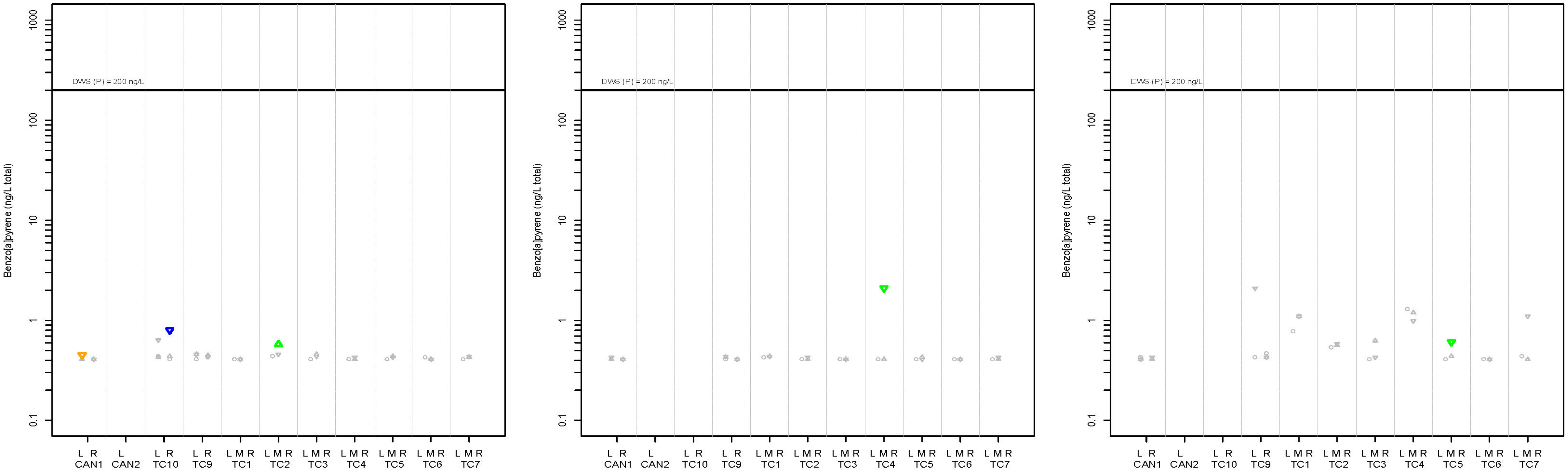
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Benzo[a]pyrene

Round 1: September – October 2009 | **Round 2: February – April 2010** | **Round 3: April – June 2010**

Total



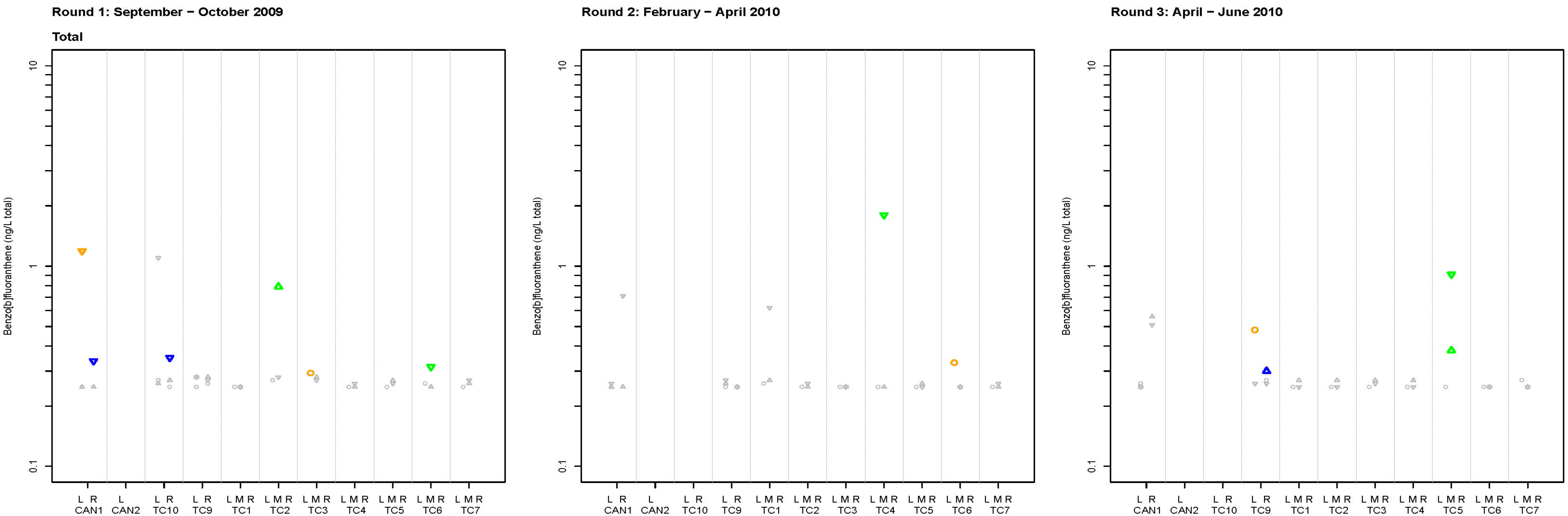
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Benzo[b]fluoranthene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

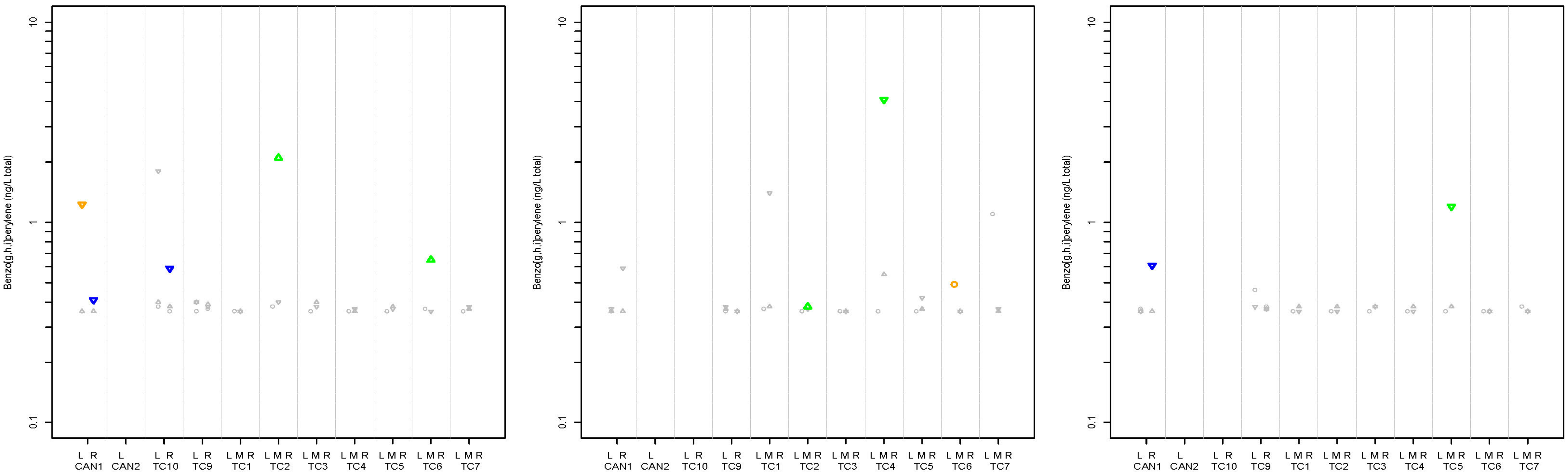
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Benzo[g,h,i]perylene

Round 1: September – October 2009 **Round 2: February – April 2010** **Round 3: April – June 2010**

Total



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

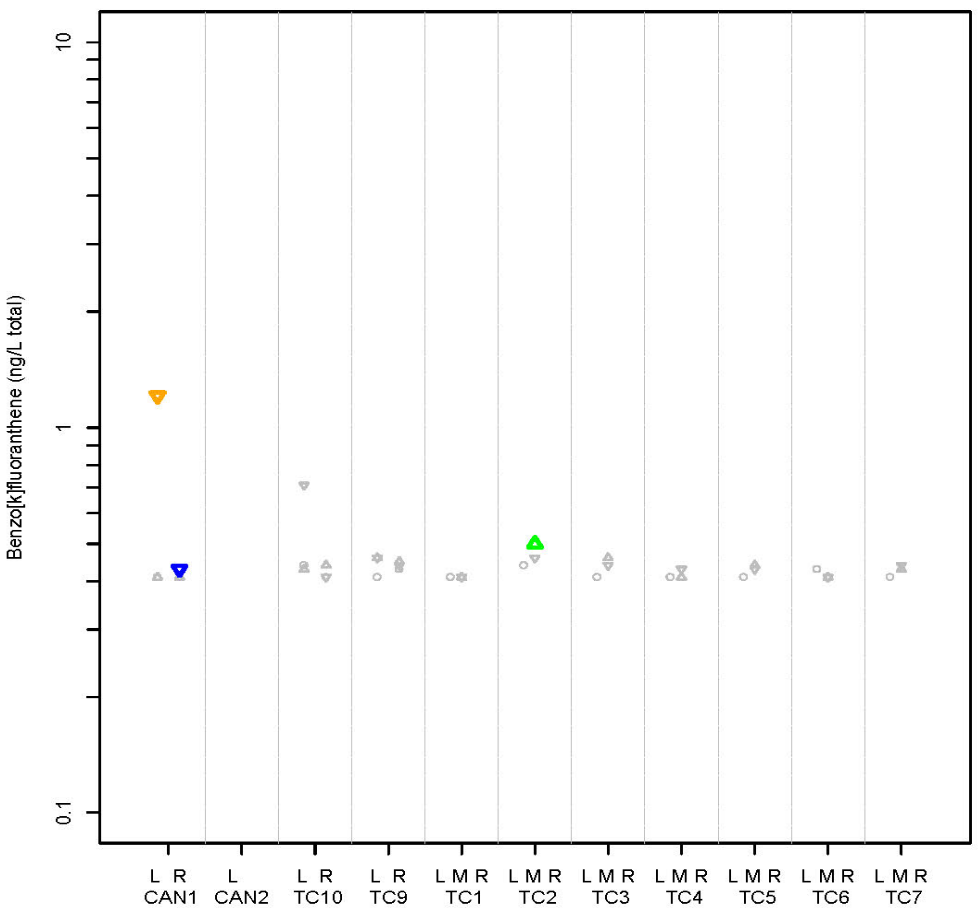
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

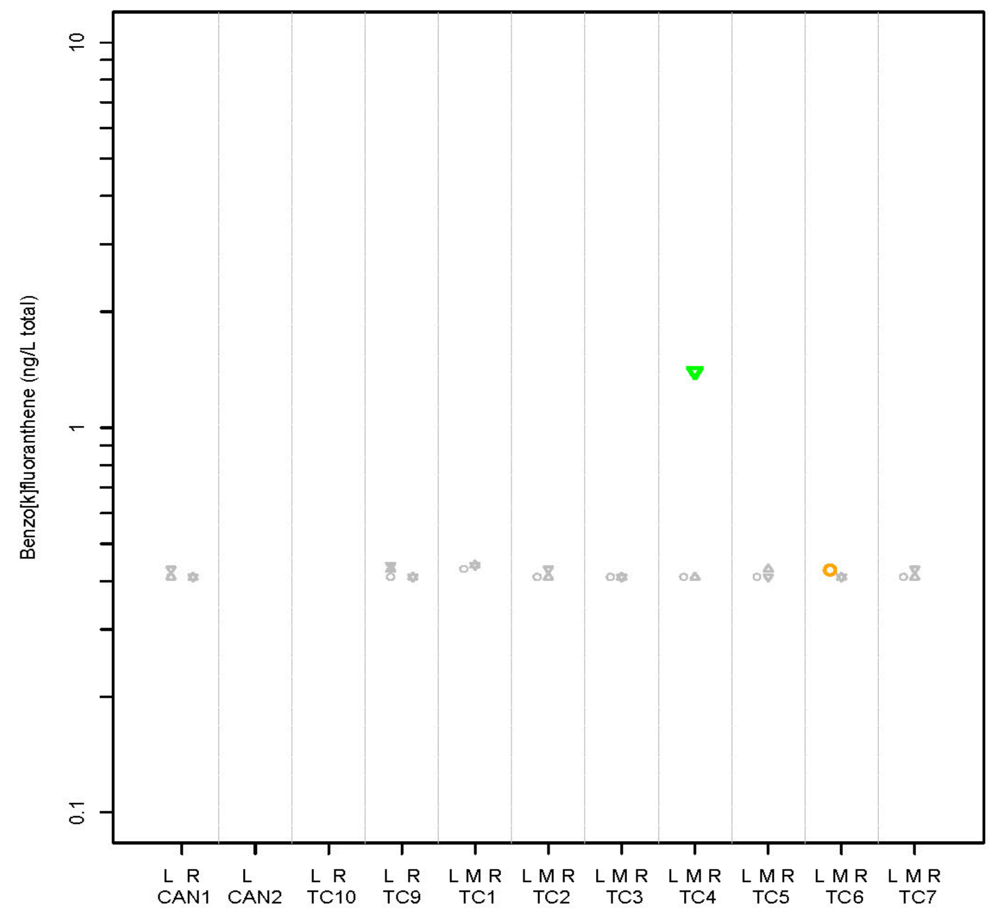
Surface Water − Benzo[k]fluoranthene

Round 1: September − October 2009

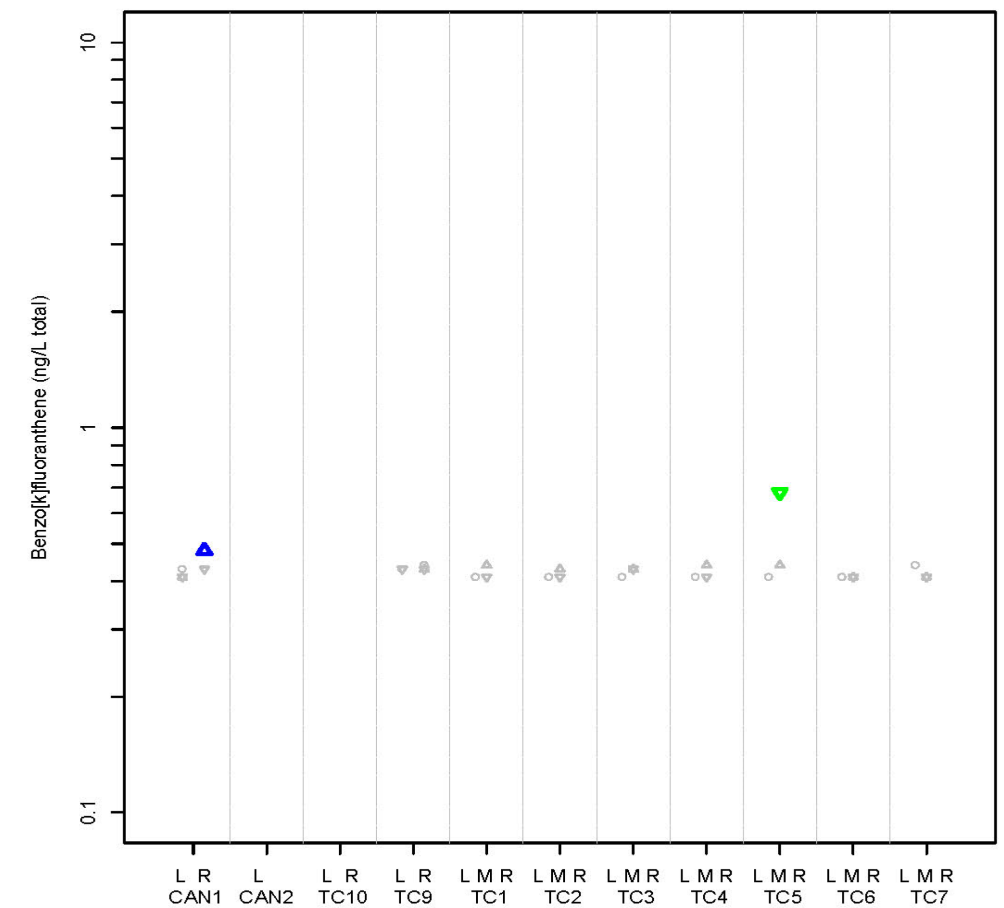
Total



Round 2: February − April 2010



Round 3: April − June 2010



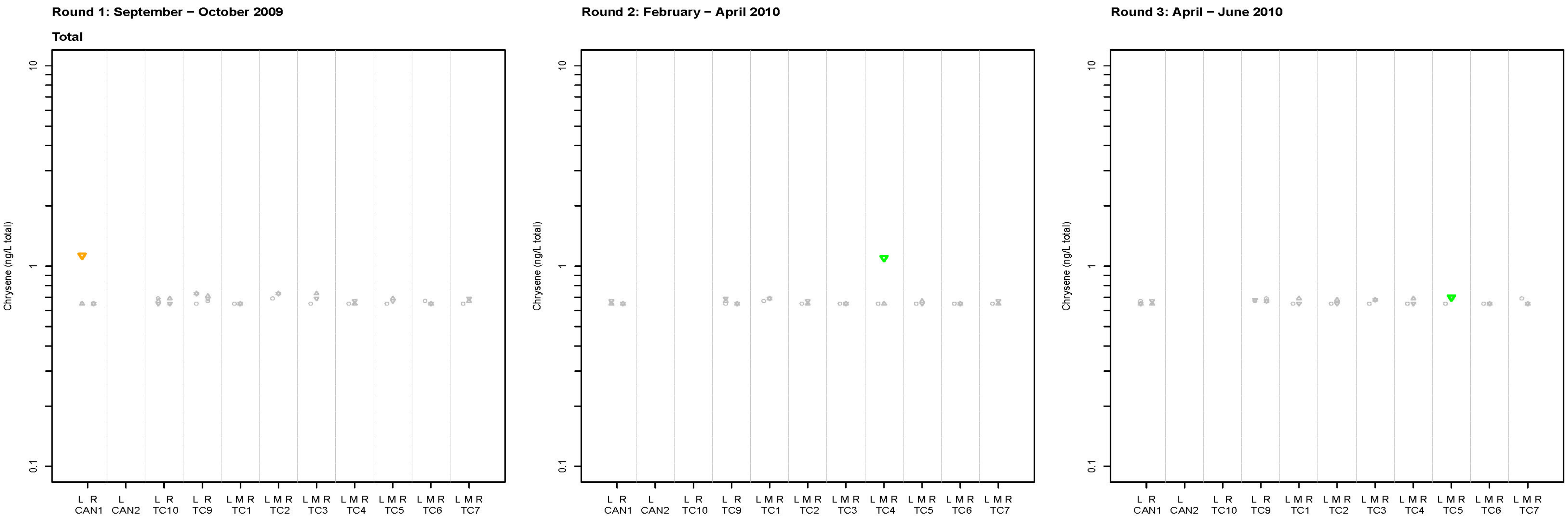
LEGEND

▽ Near-surface — L = Left bank (orange)
○ Nearshore — M = Mid-channel (green)
△ Near-bottom — R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Chrysene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

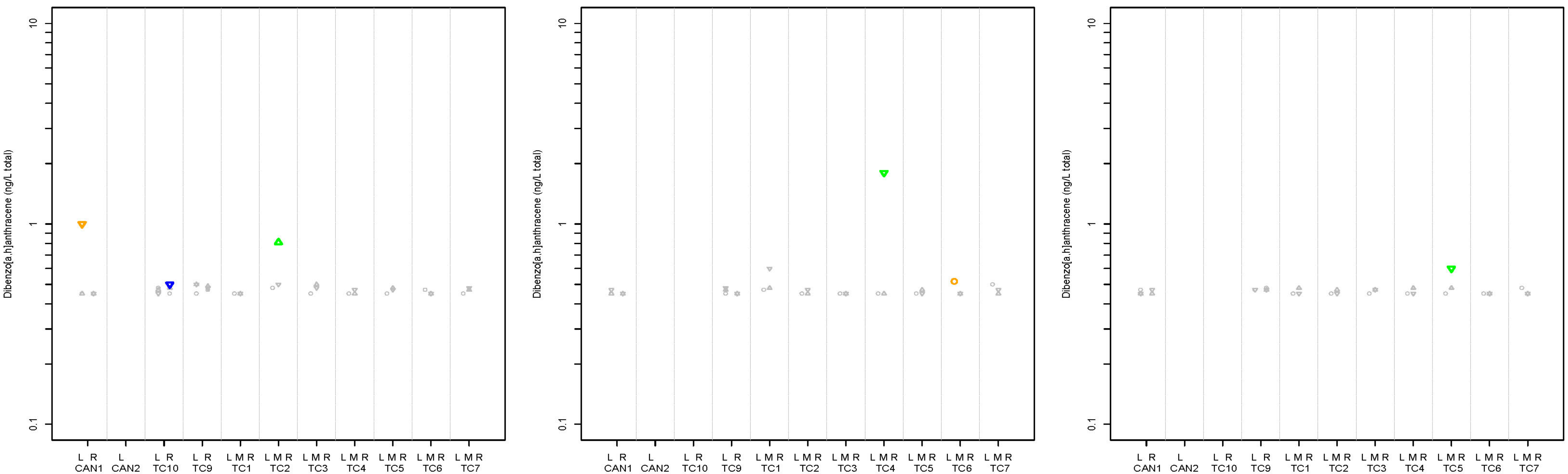
Surface Water – Dibenzo[a,h]anthracene

Round 1: September – October 2009

Round 2: February – April 2010

Round 3: April – June 2010

Total



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

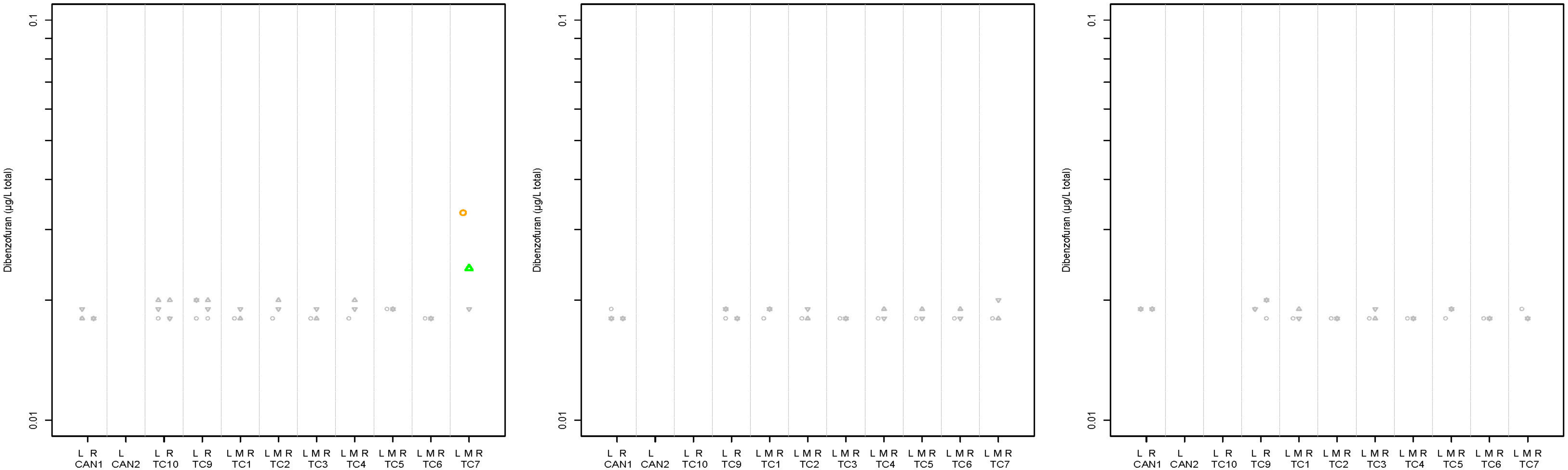
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Dibenzofuran

Round 1: September – October 2009 **Round 2: February – April 2010** **Round 3: April – June 2010**

Total



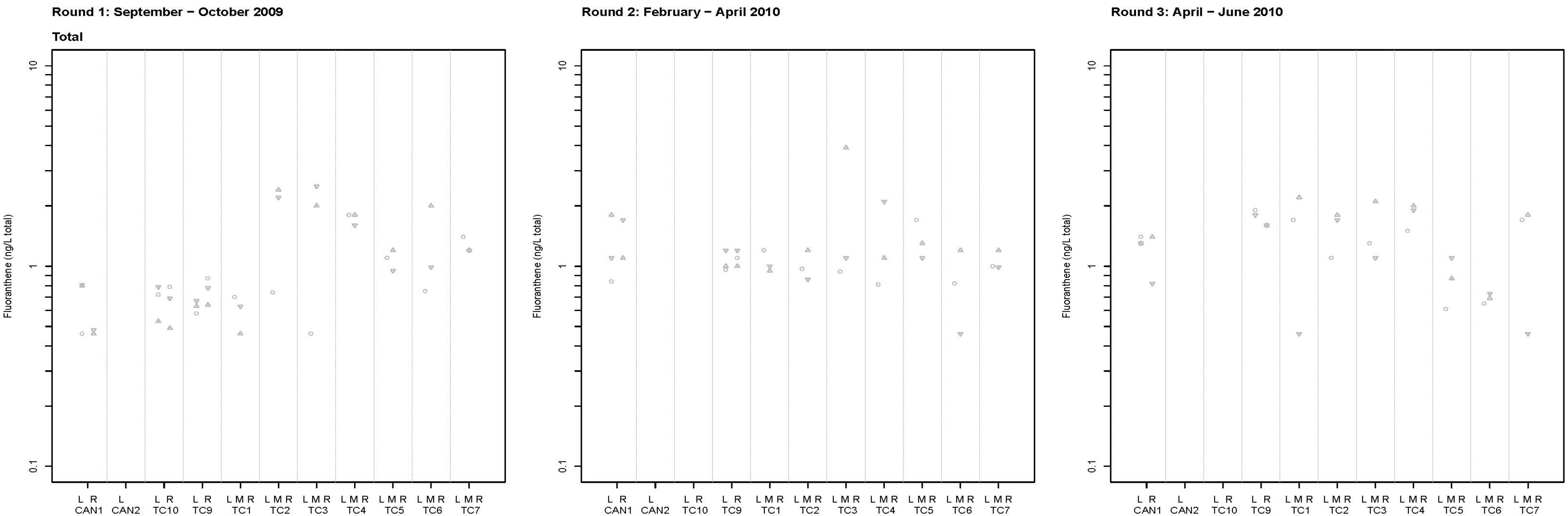
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Fluoranthene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

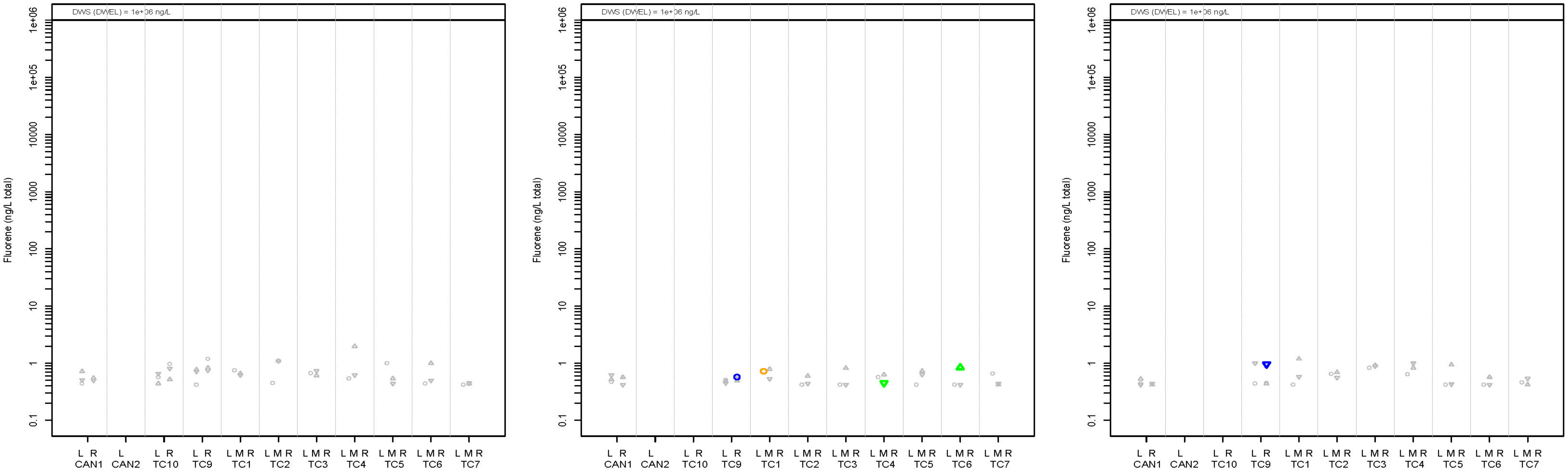
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Fluorene

Round 1: September – October 2009 **Round 2: February – April 2010** **Round 3: April – June 2010**

Total



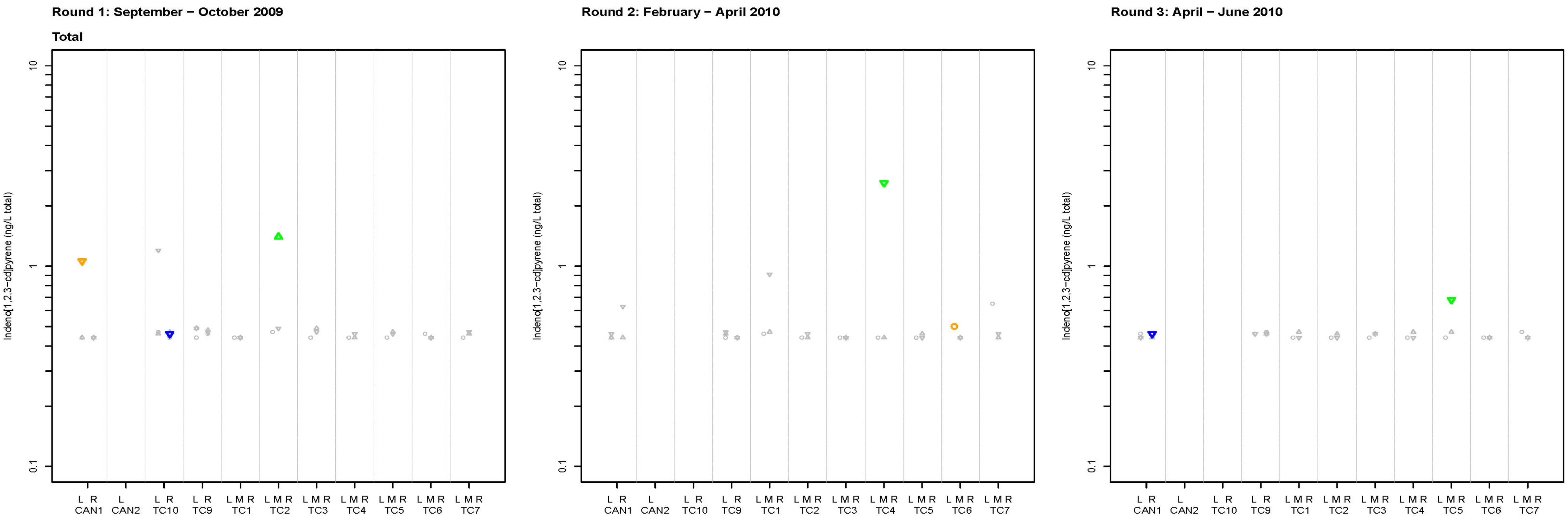
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Indeno[1,2,3-cd]pyrene



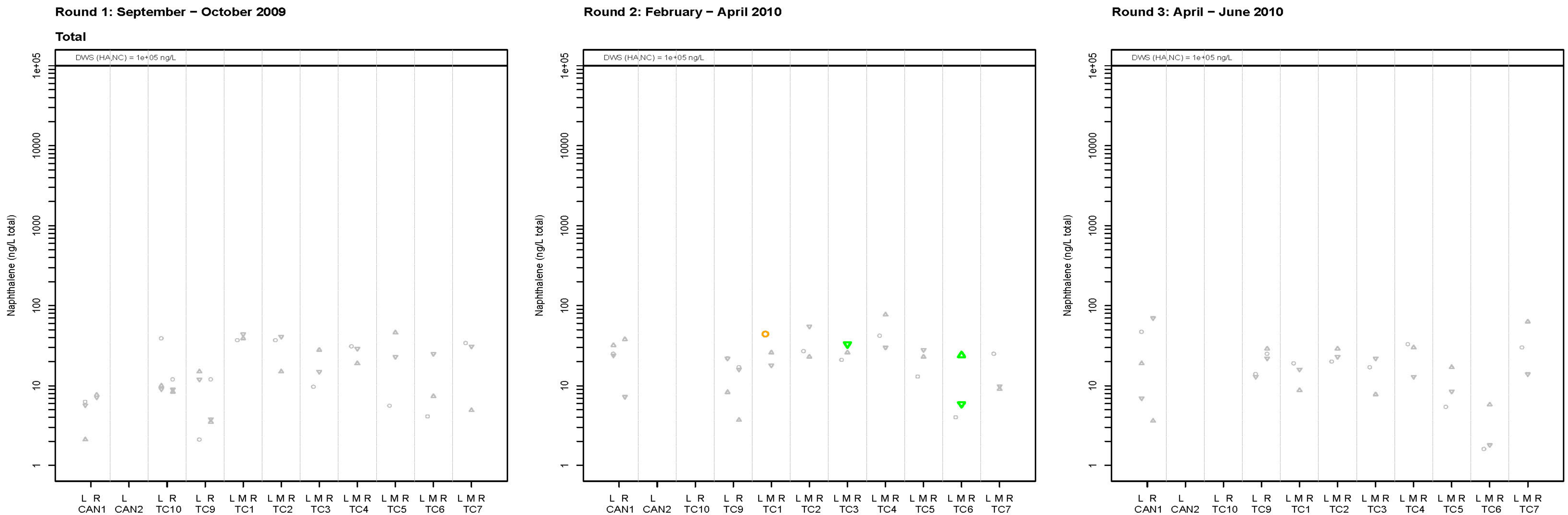
LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Naphthalene



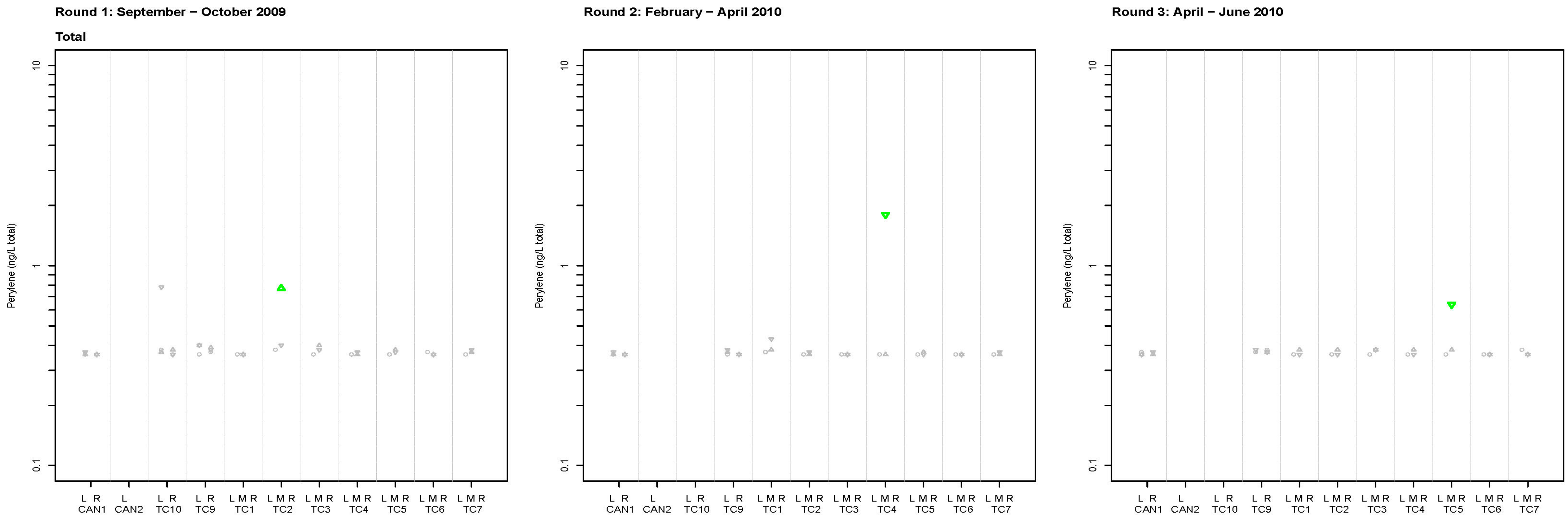
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Perylene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

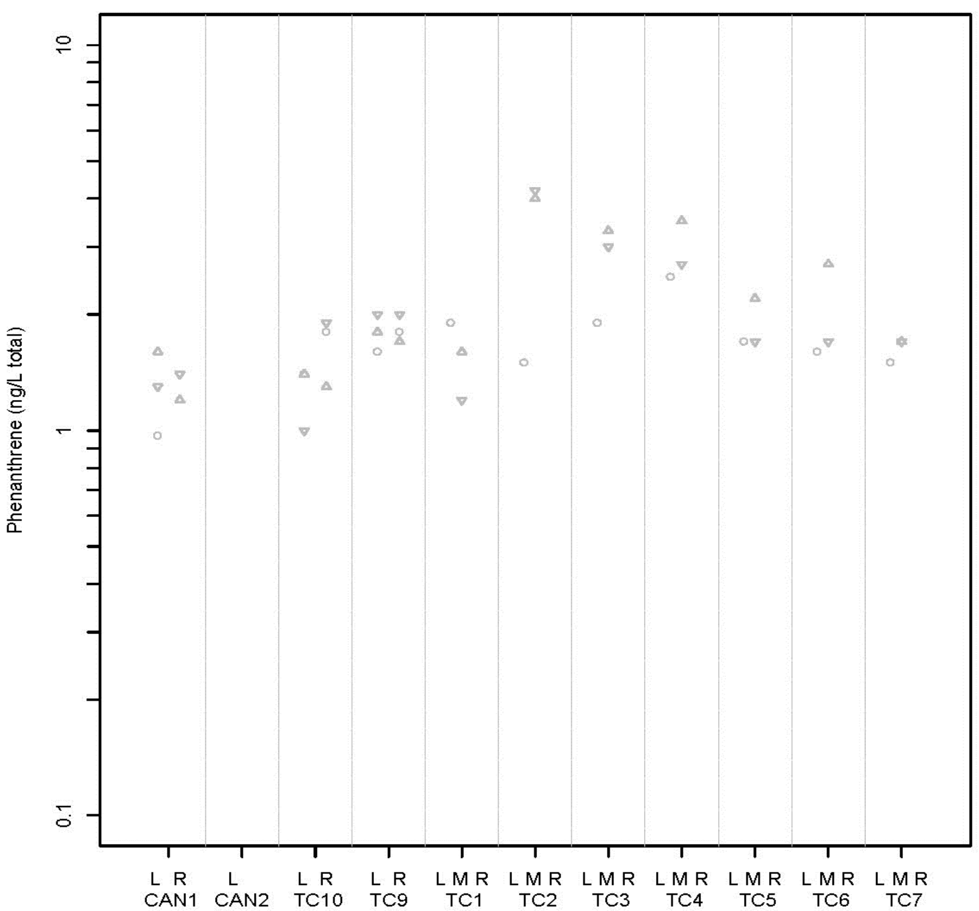
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

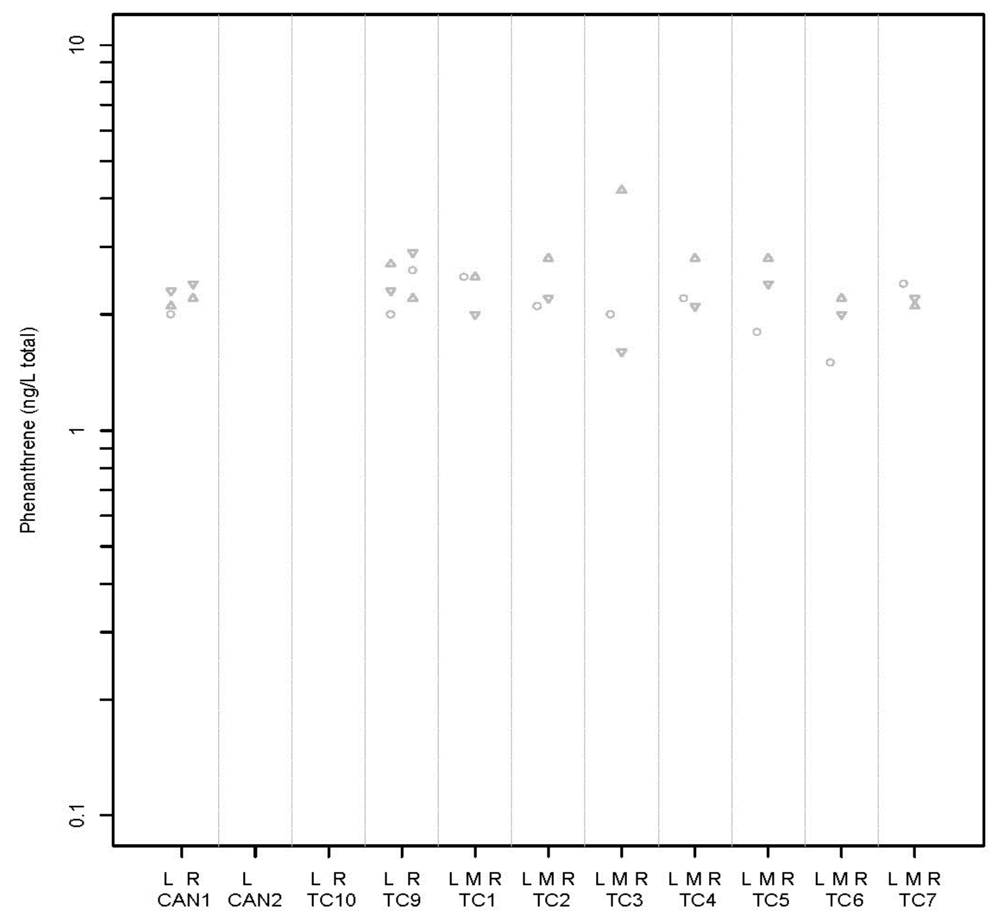
Surface Water − Phenanthrene

Round 1: September − October 2009

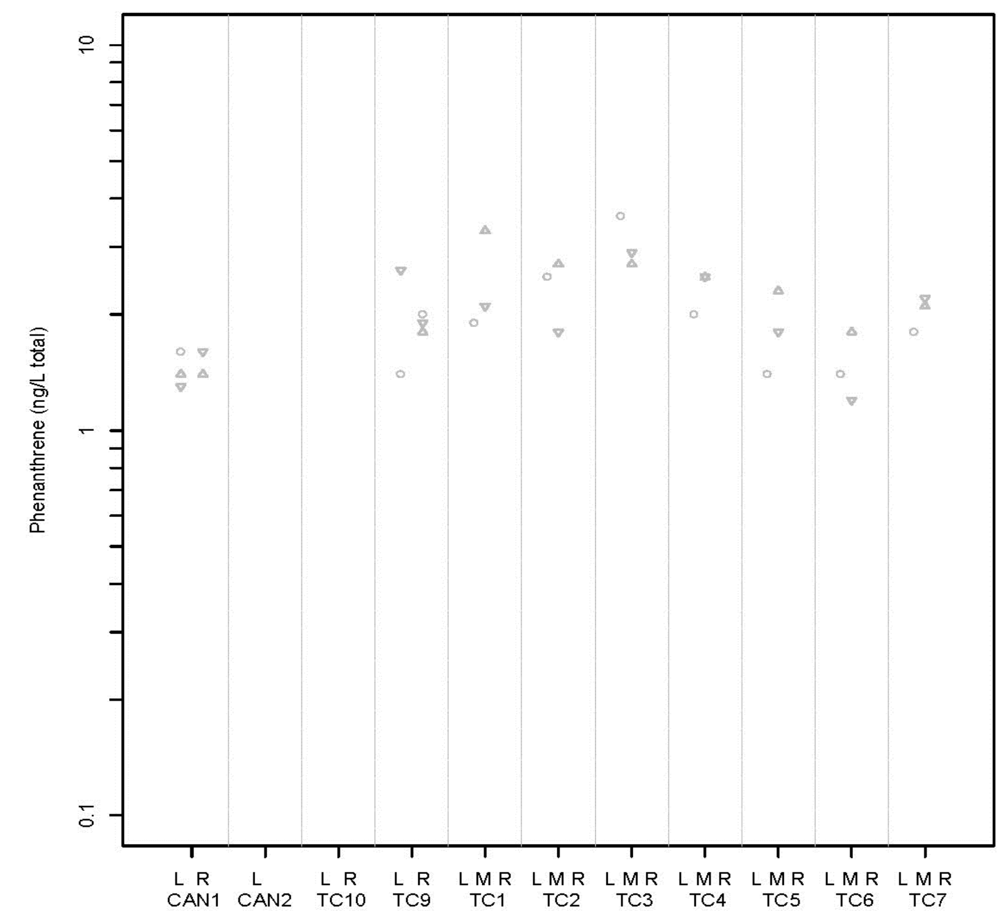
Total



Round 2: February − April 2010



Round 3: April − June 2010



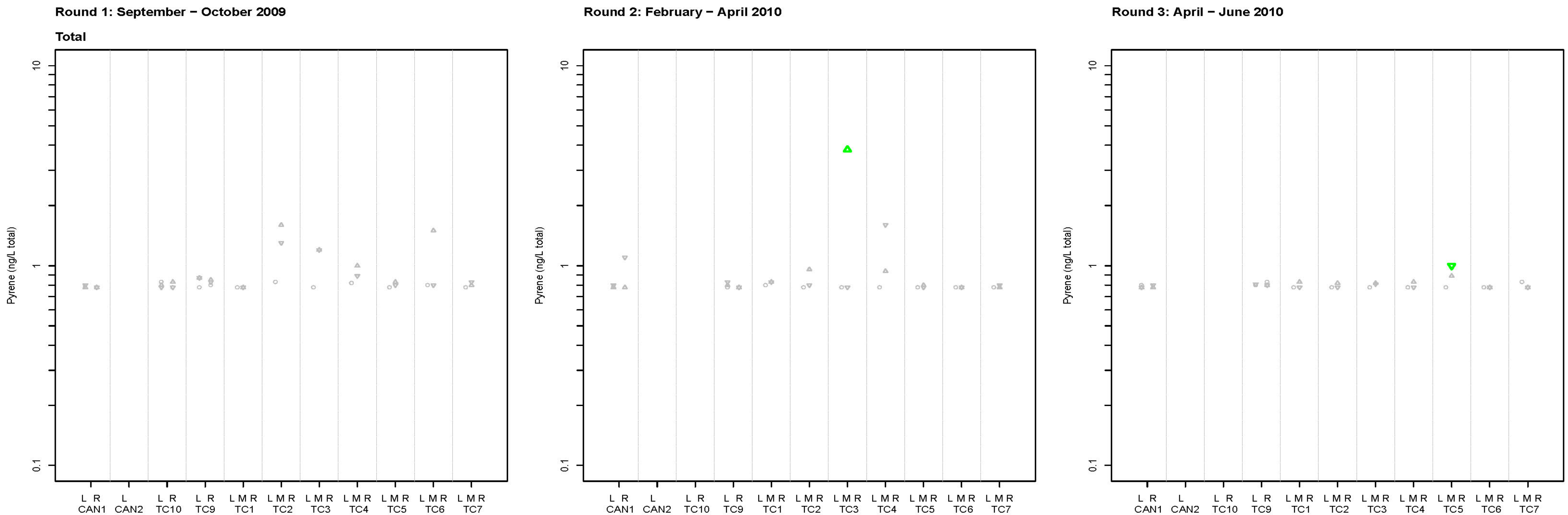
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Pyrene



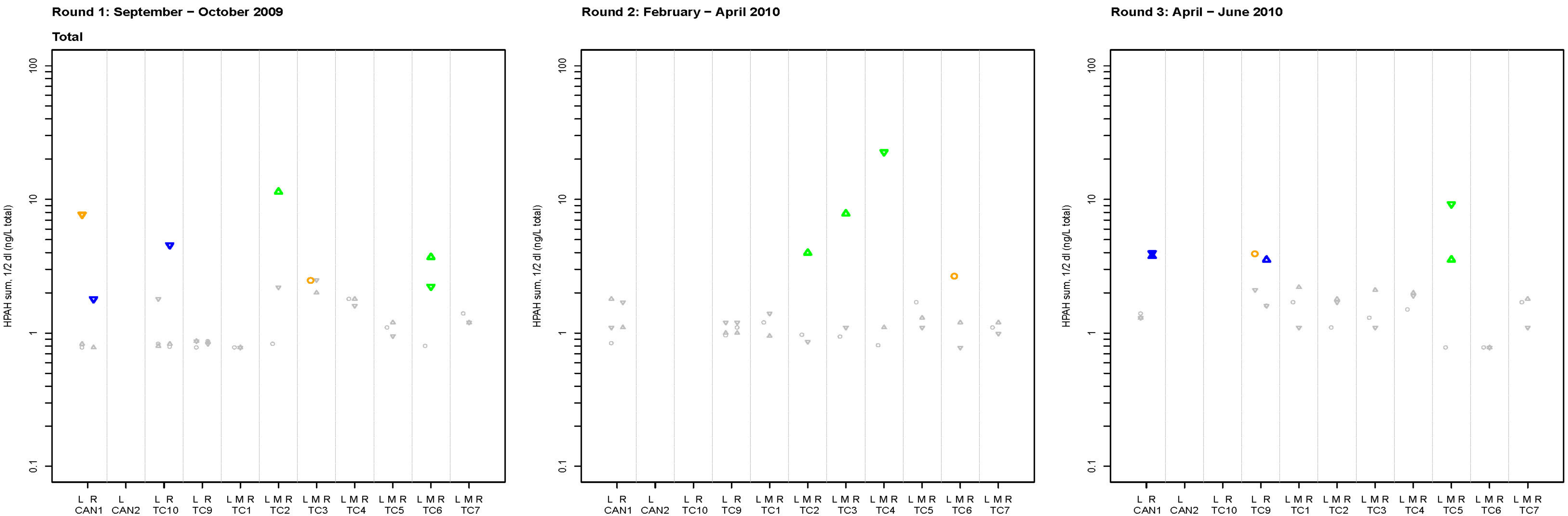
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Sum of HPAH



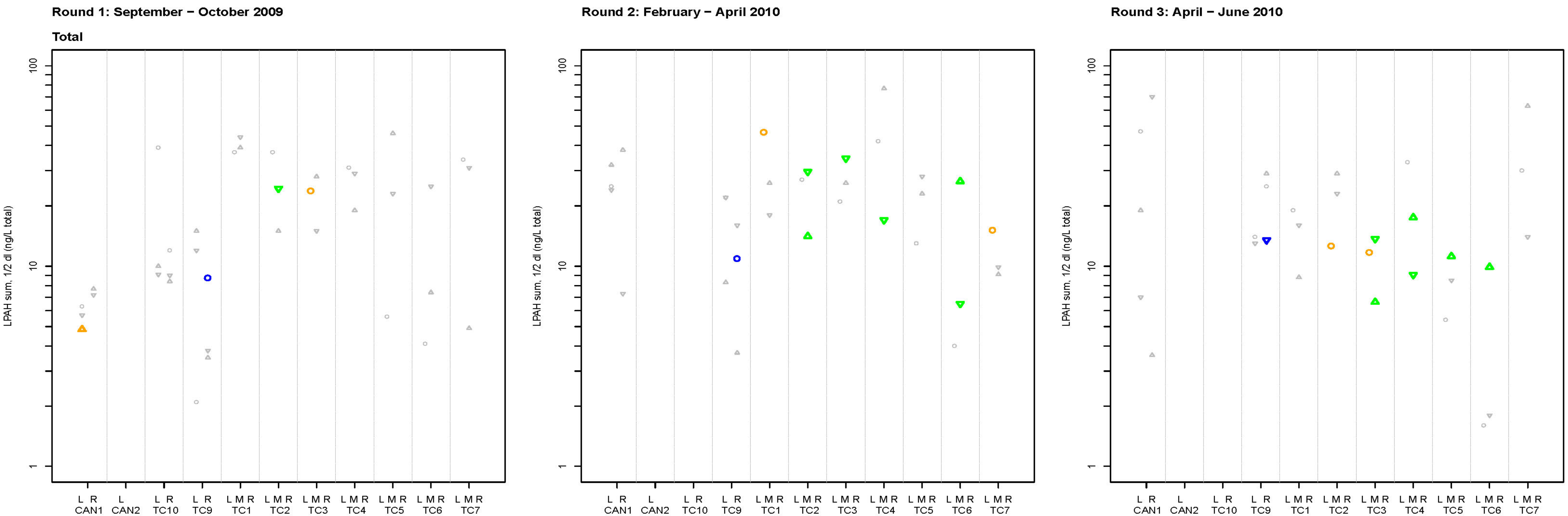
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Sum of LPAH



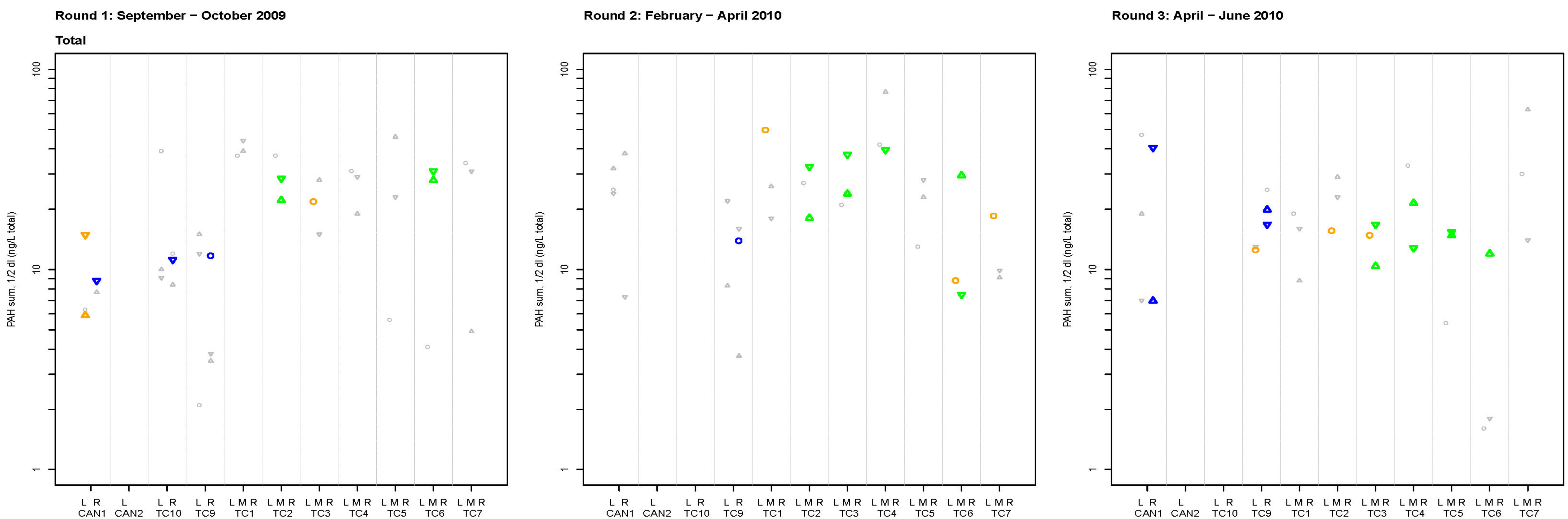
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Sum of PAH



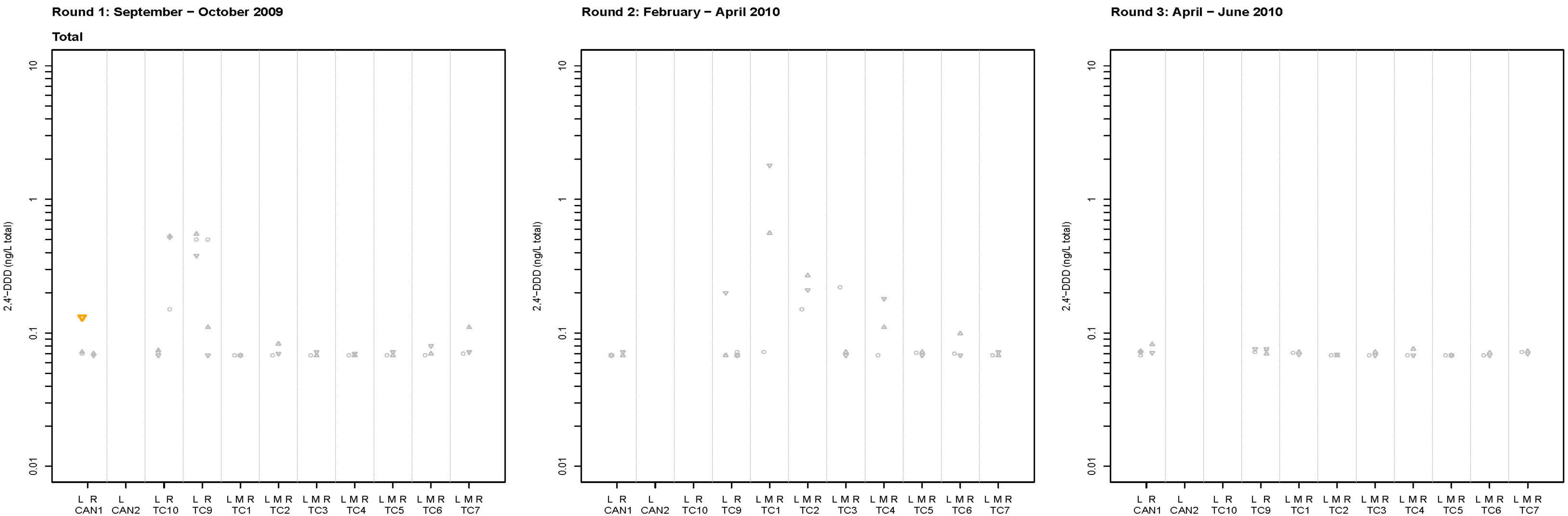
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2,4'−DDD



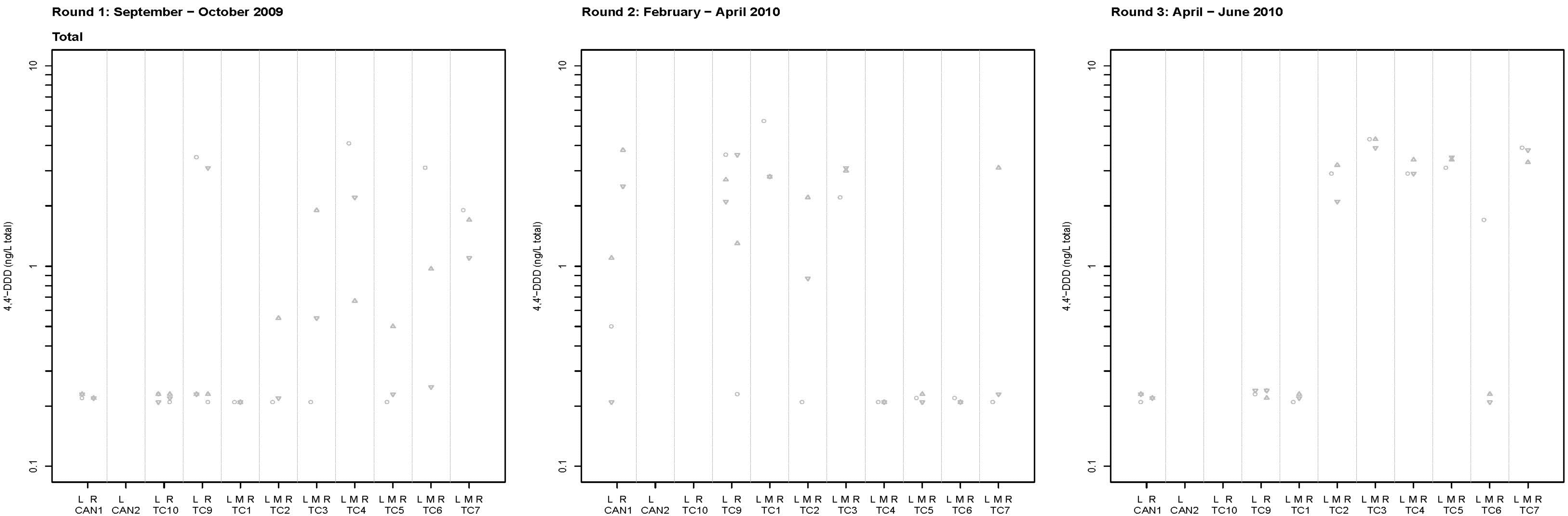
LEGEND

▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 4,4'–DDD



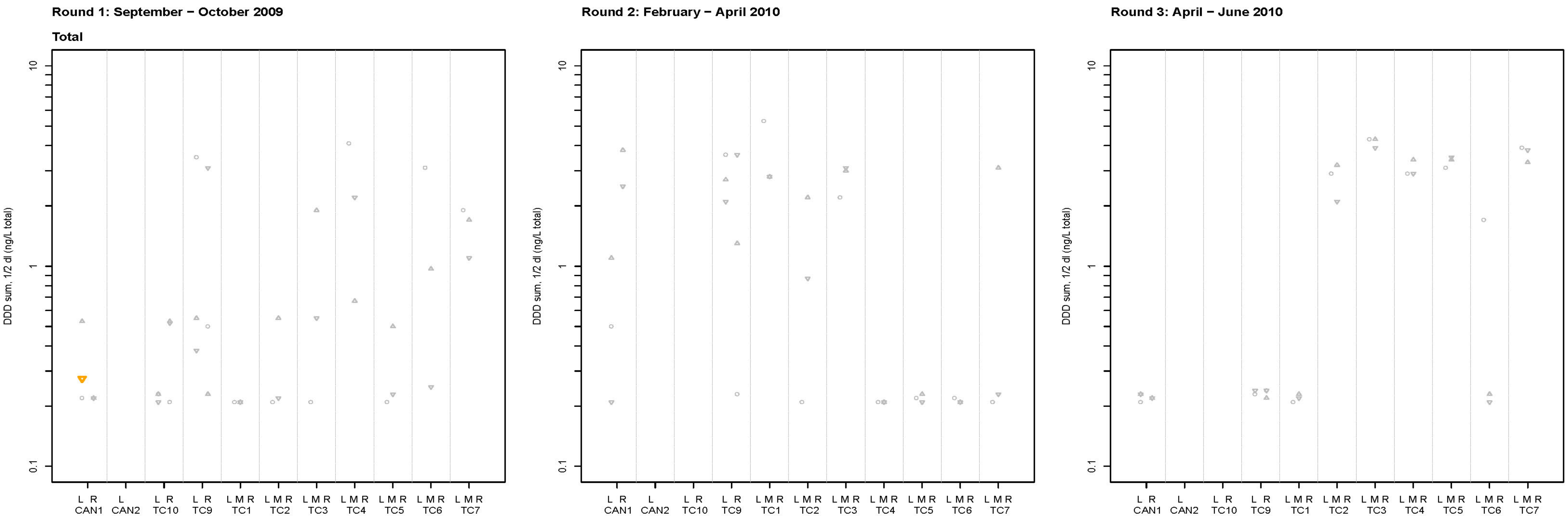
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Sum of DDD



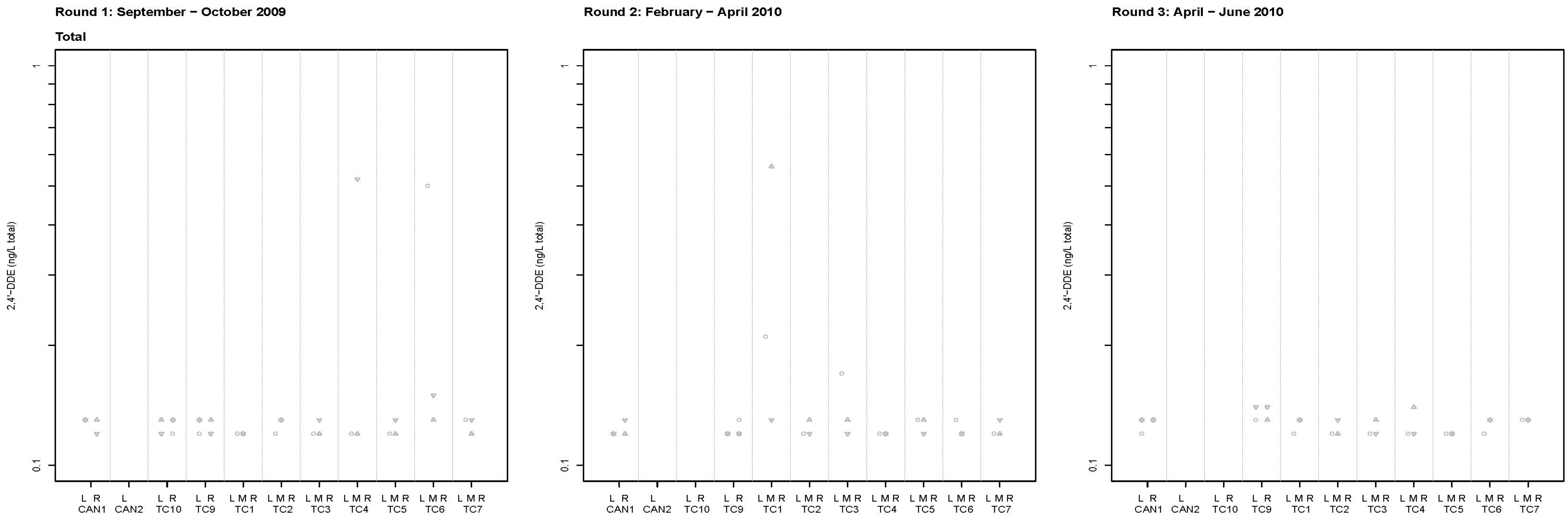
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,4'–DDE



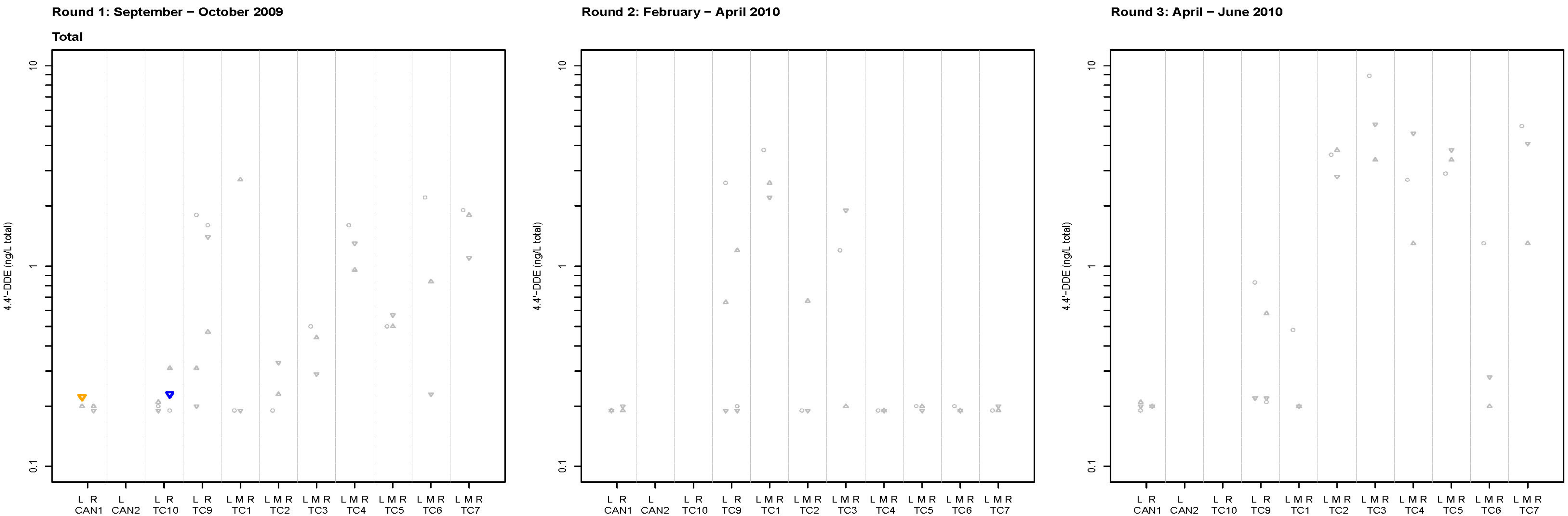
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 4,4'−DDE



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

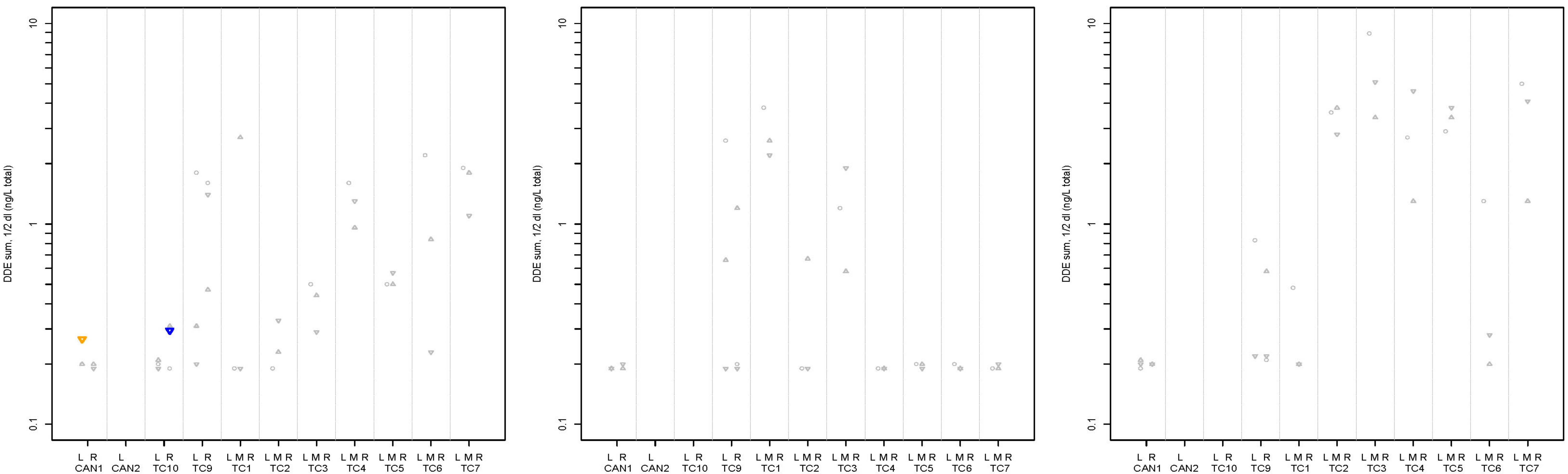
Surface Water − Sum of DDE

Round 1: September − October 2009

Round 2: February − April 2010

Round 3: April − June 2010

Total



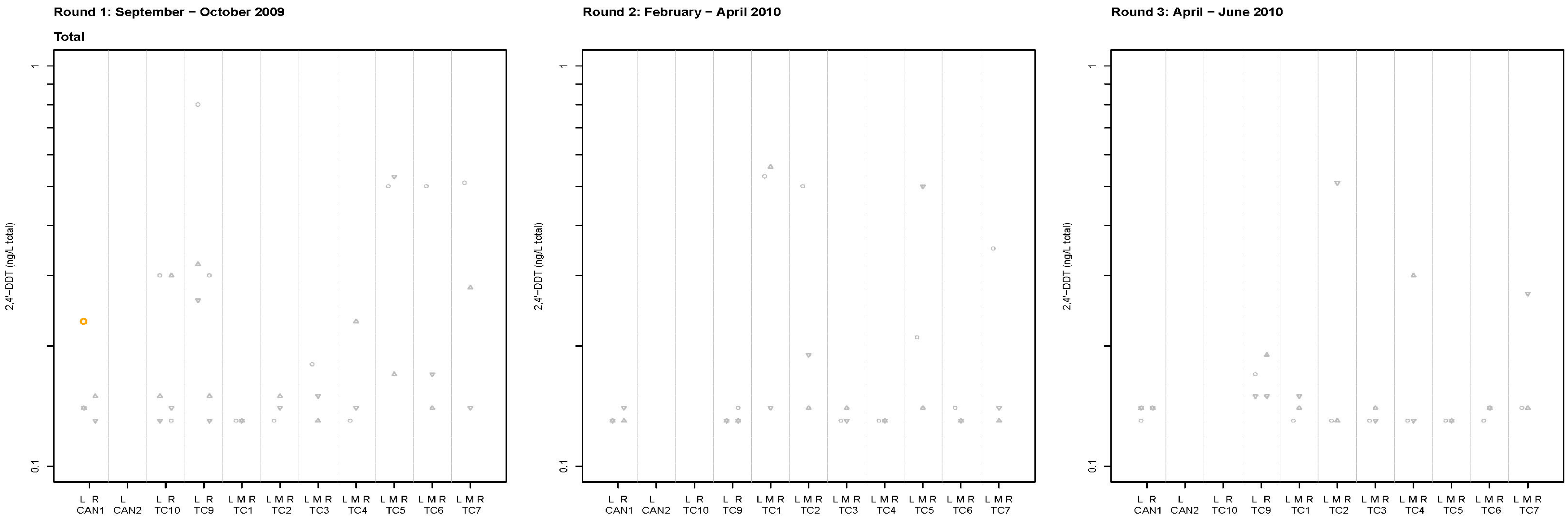
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,4'–DDT



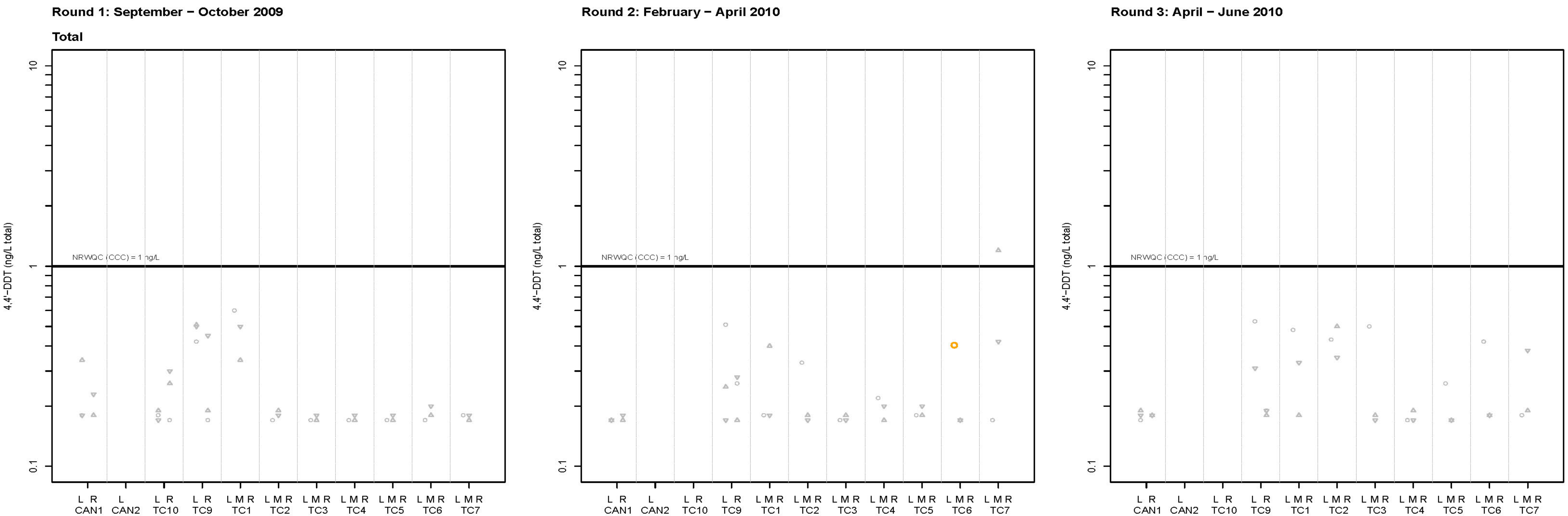
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 4,4'–DDT



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

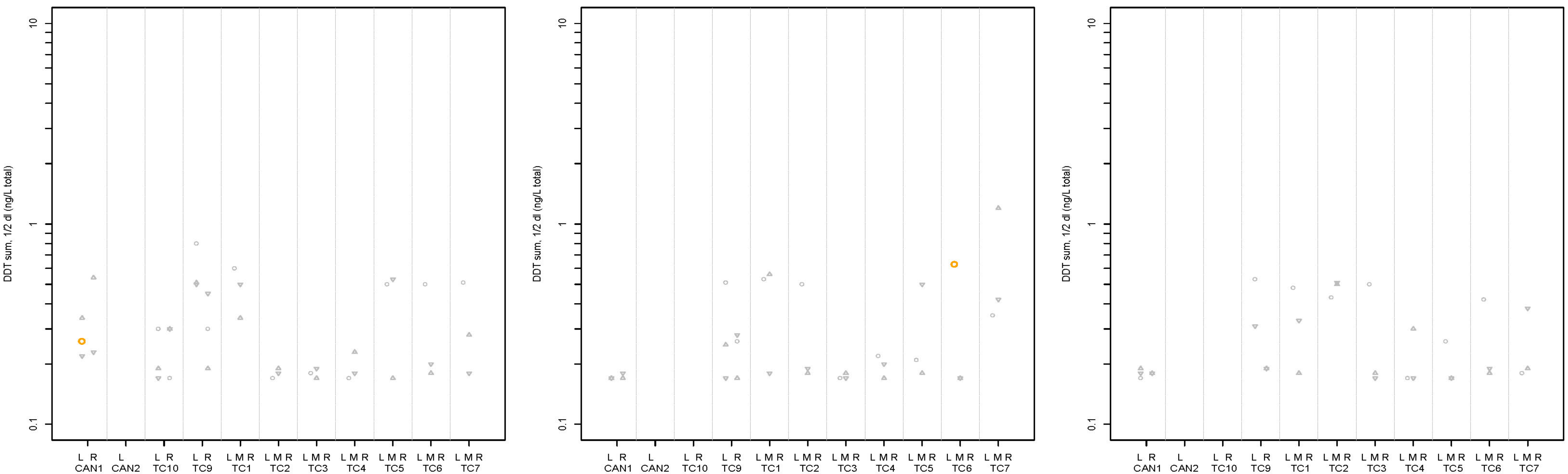
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Sum of DDT

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

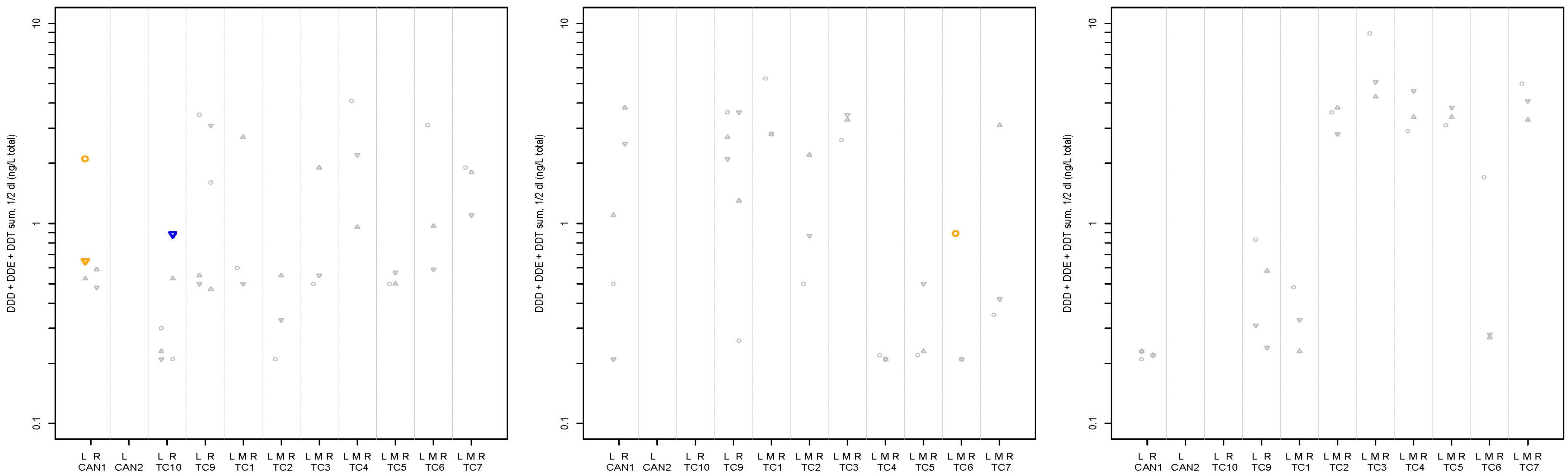
Surface Water − Sum of DDD, DDE, and DDT

Round 1: September − October 2009

Round 2: February − April 2010

Round 3: April − June 2010

Total



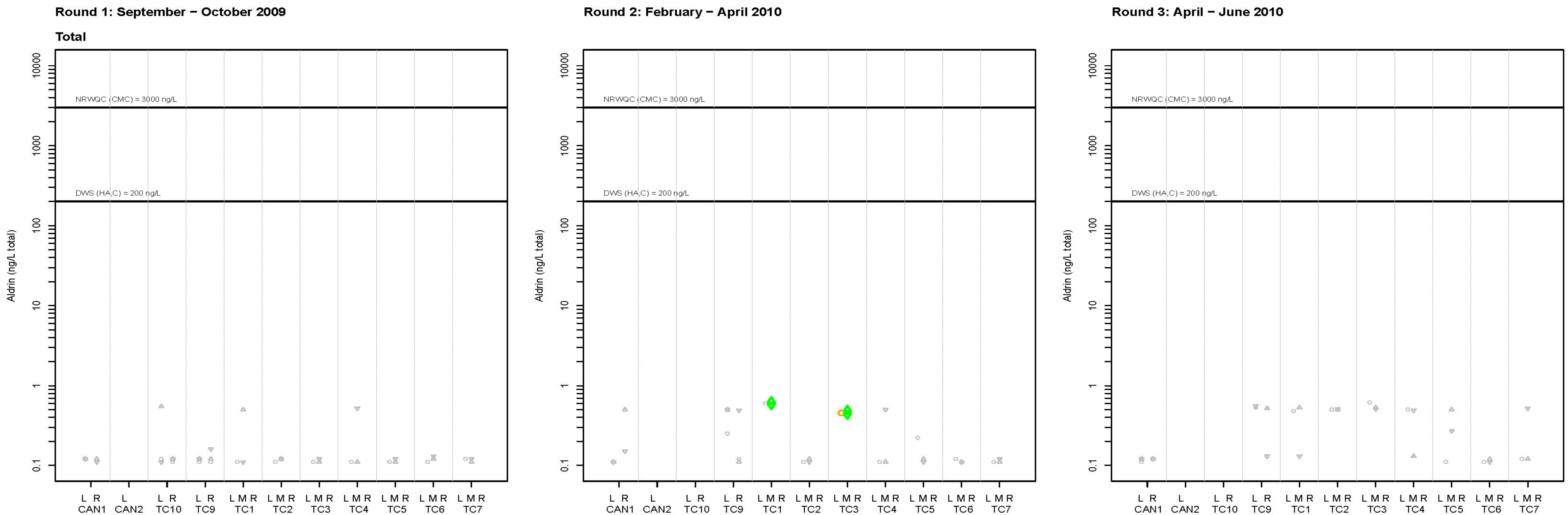
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Aldrin



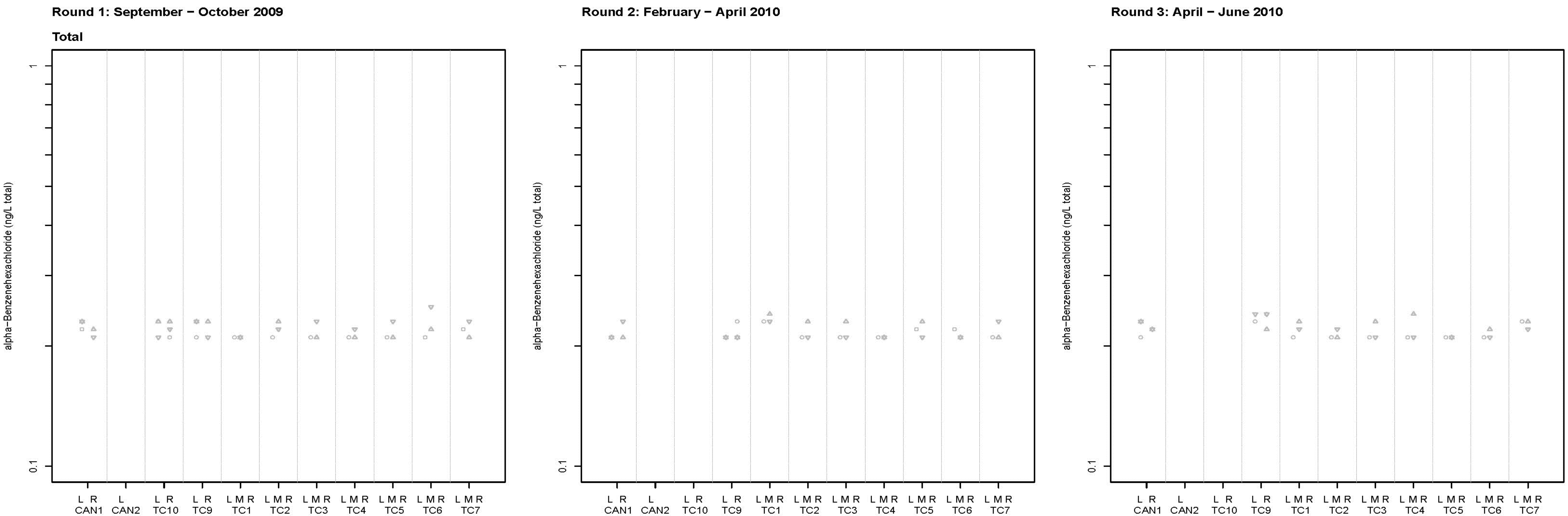
LEGEND

Near-surface	L = Left bank (orange)
Nearshore	M = Mid-channel (green)
Near-bottom	R = Right bank (blue)
Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − alpha−Benzenehexachloride



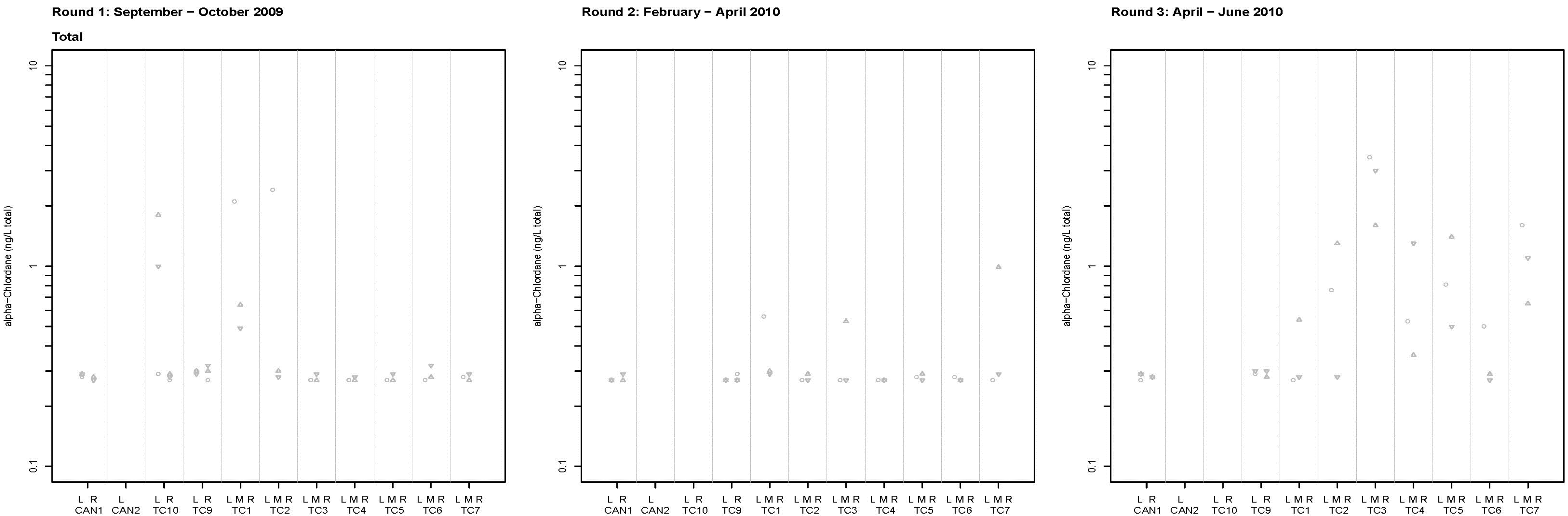
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − alpha−Chlordane



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

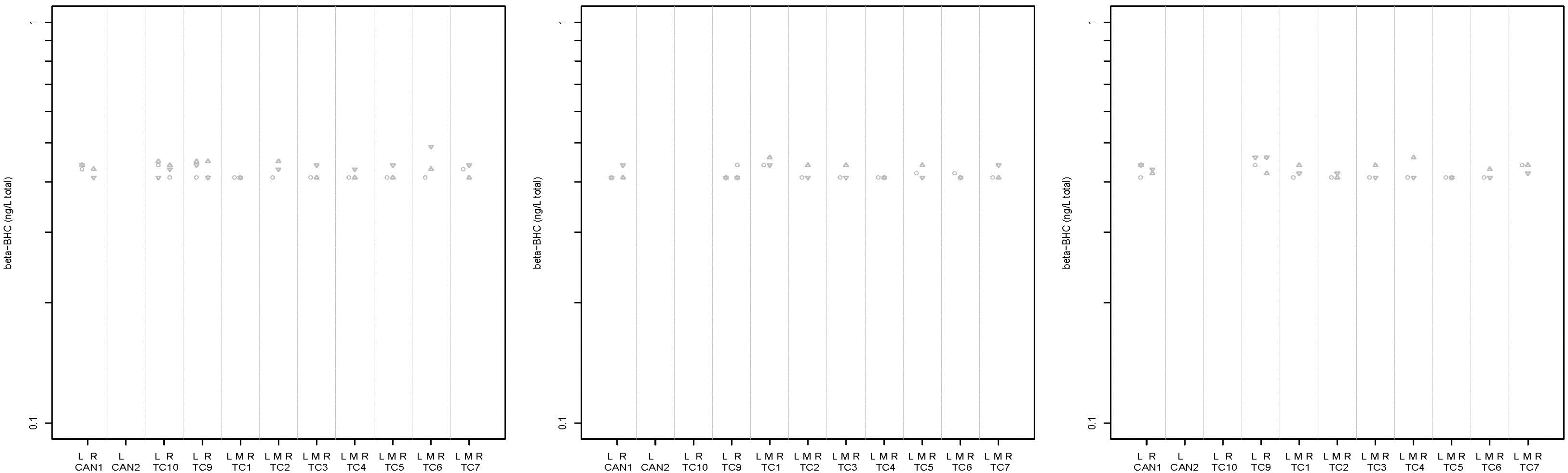
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − beta−BHC

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



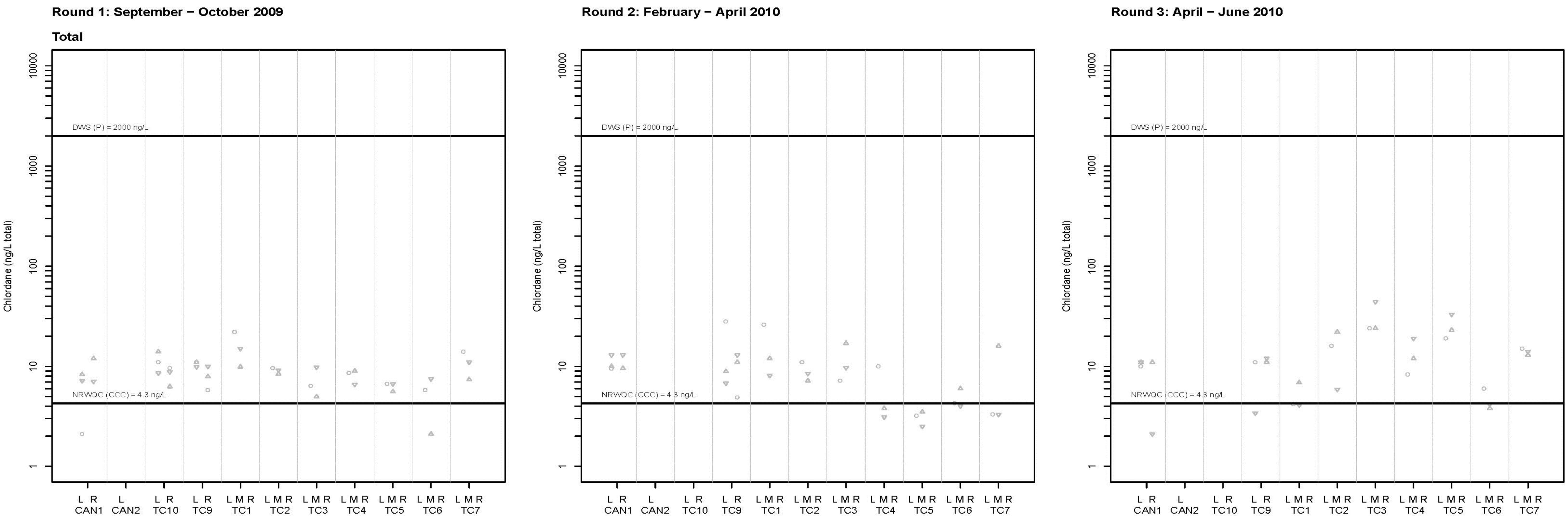
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Chlordane



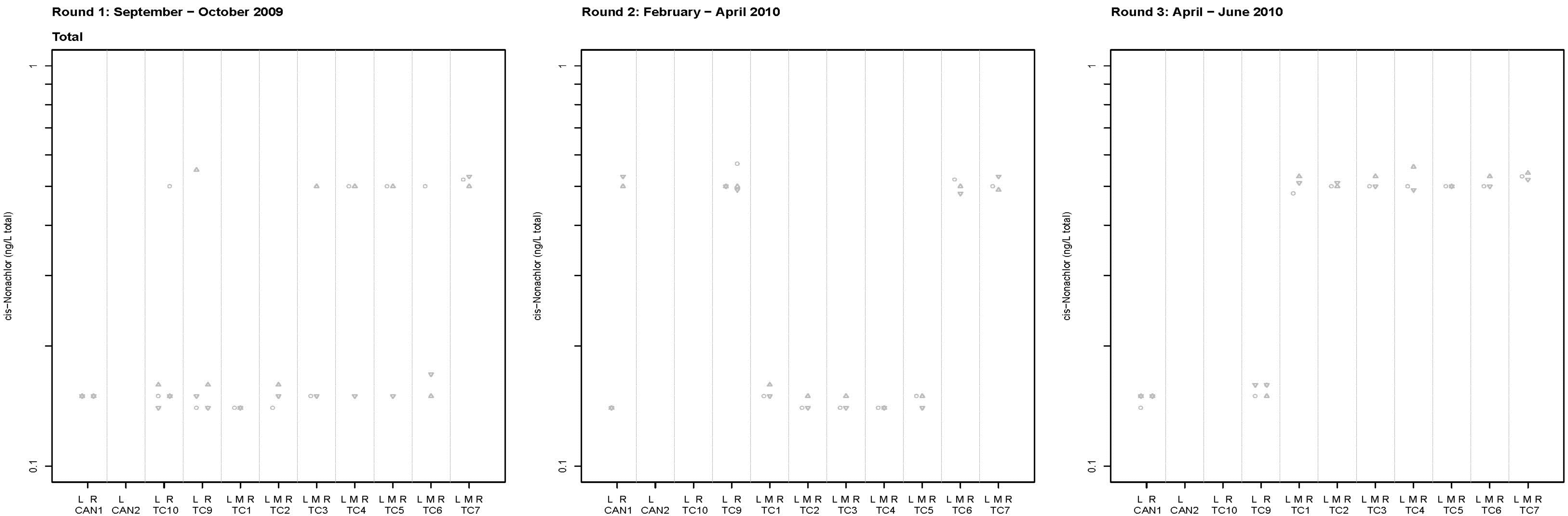
LEGEND

▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − cis−Nonachlor



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
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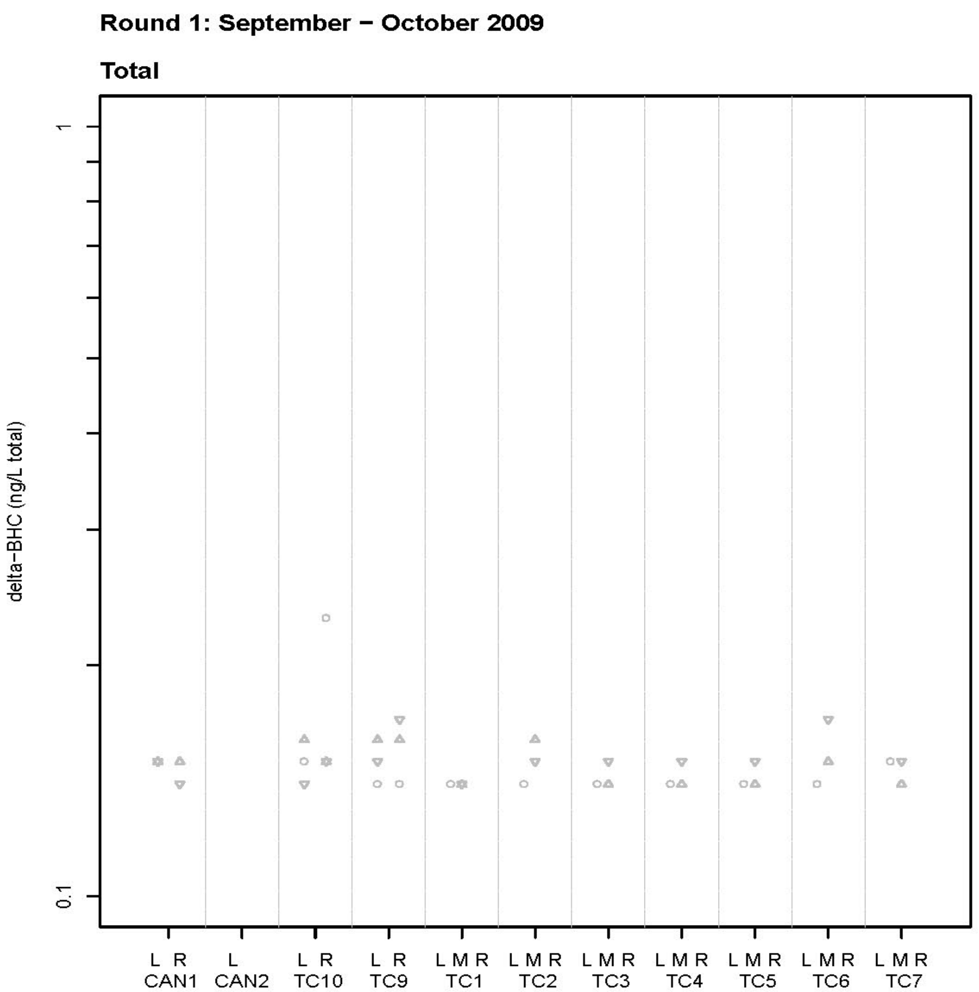
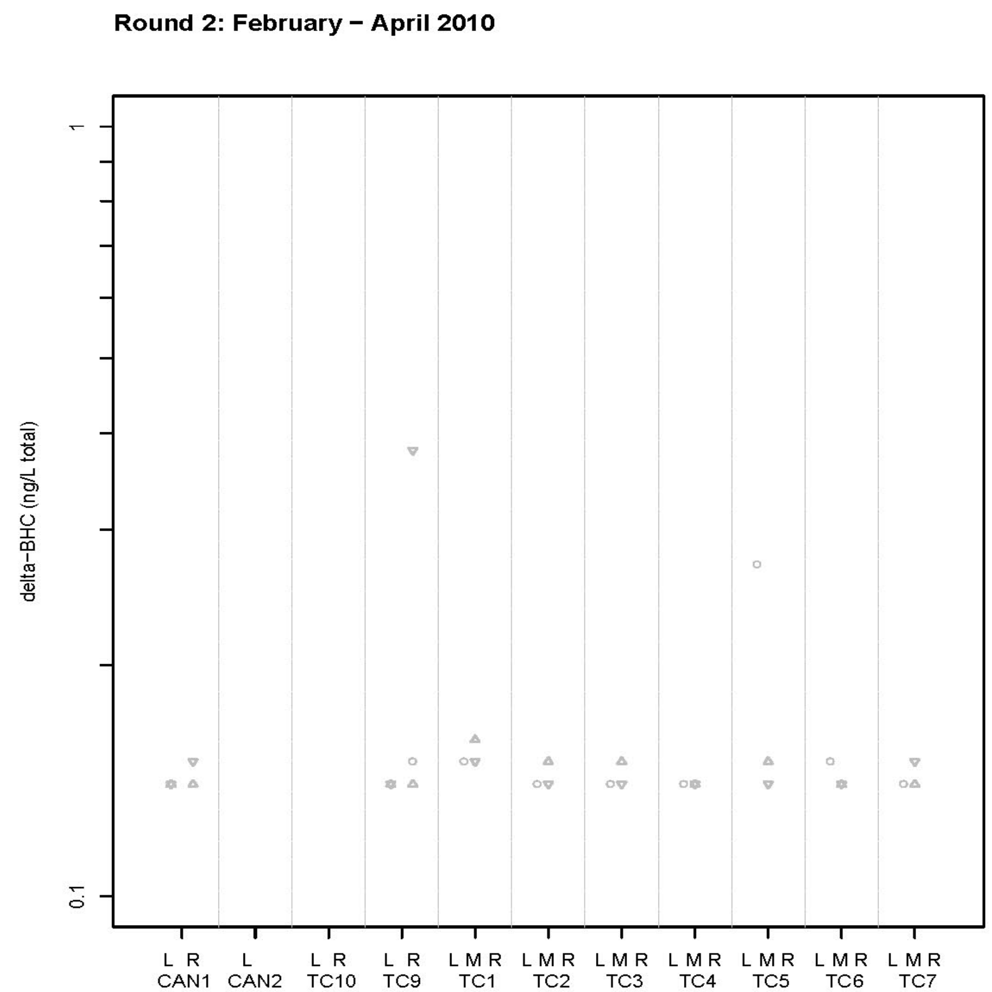
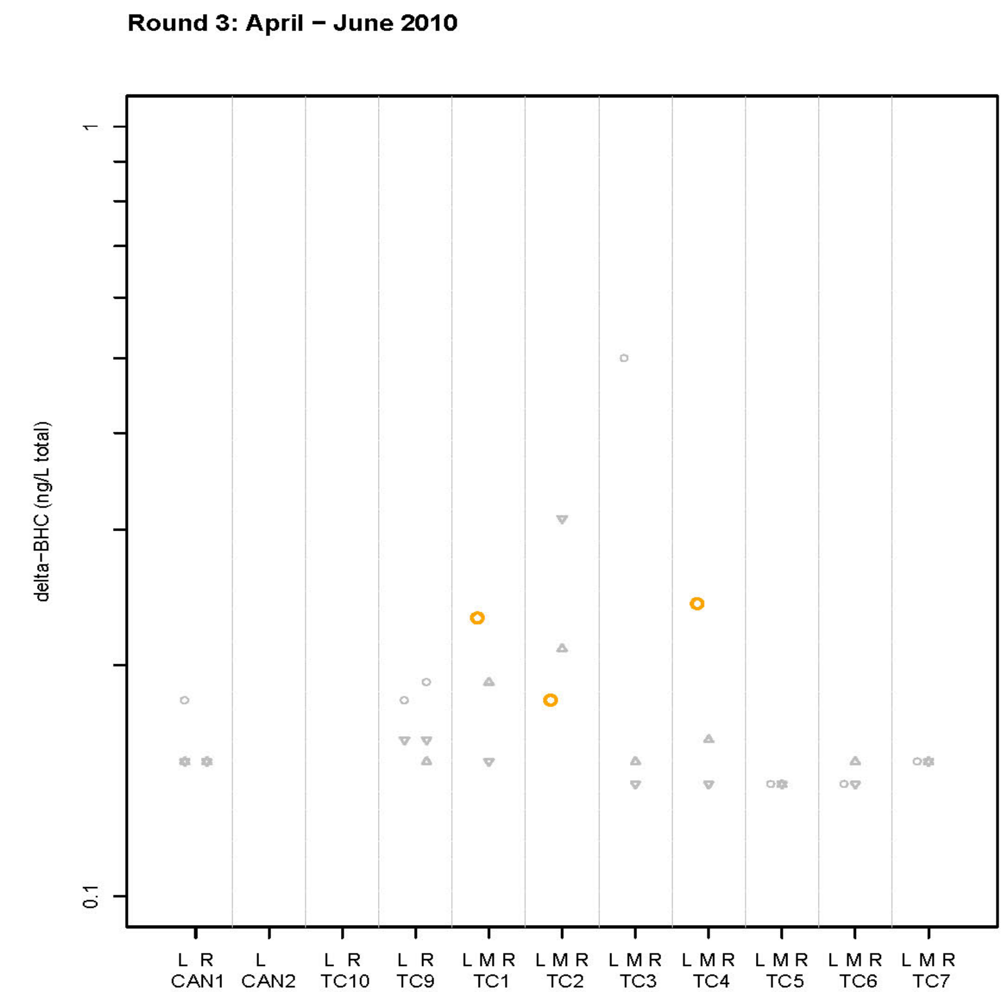
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − delta−BHC







LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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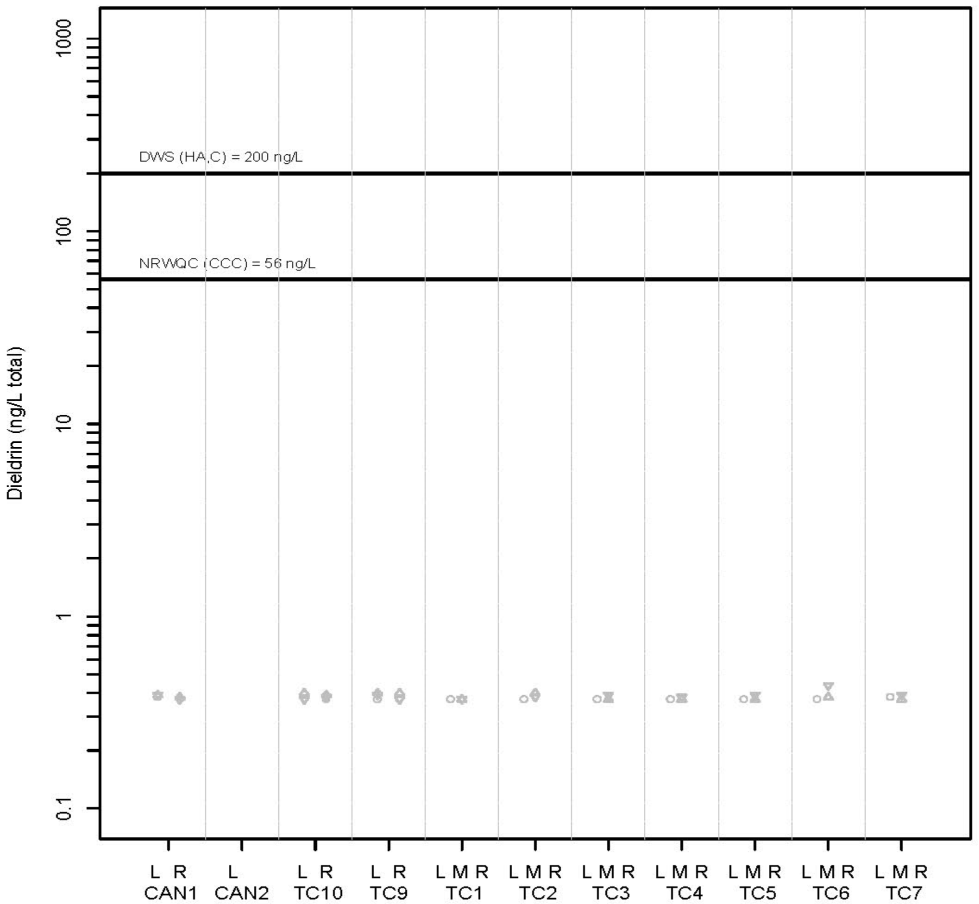
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

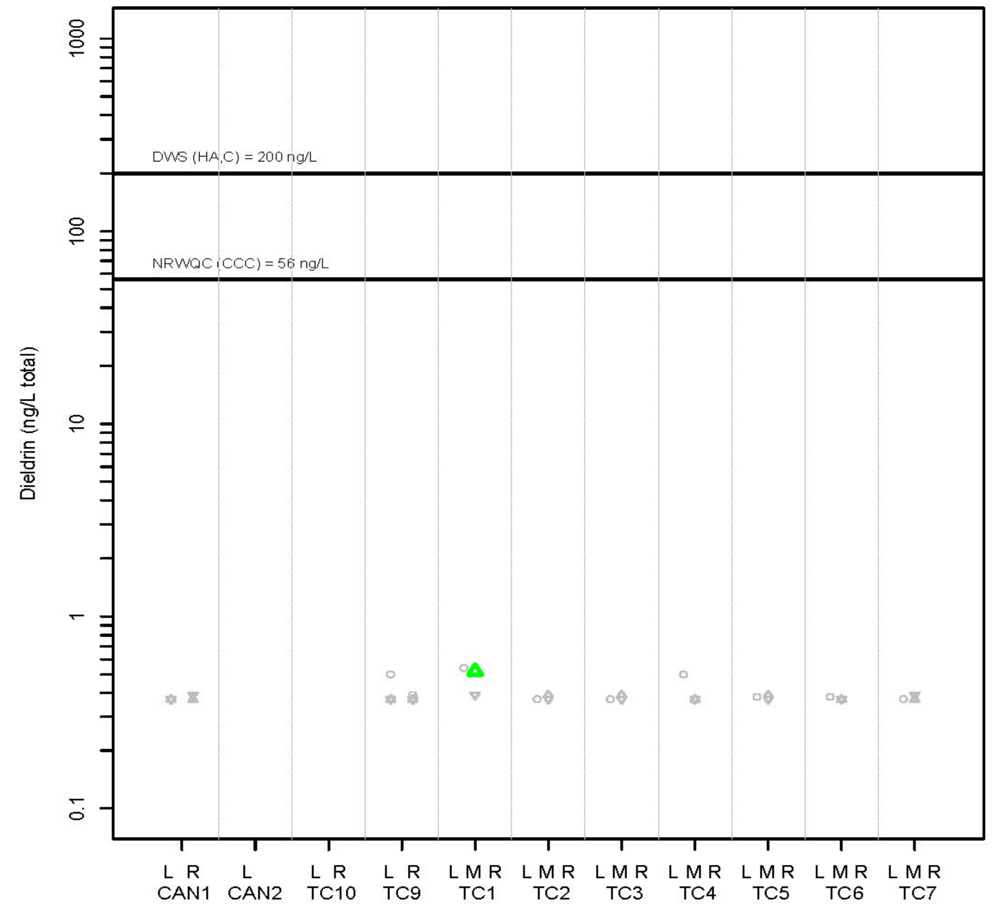
Surface Water – Dieldrin

Round 1: September – October 2009

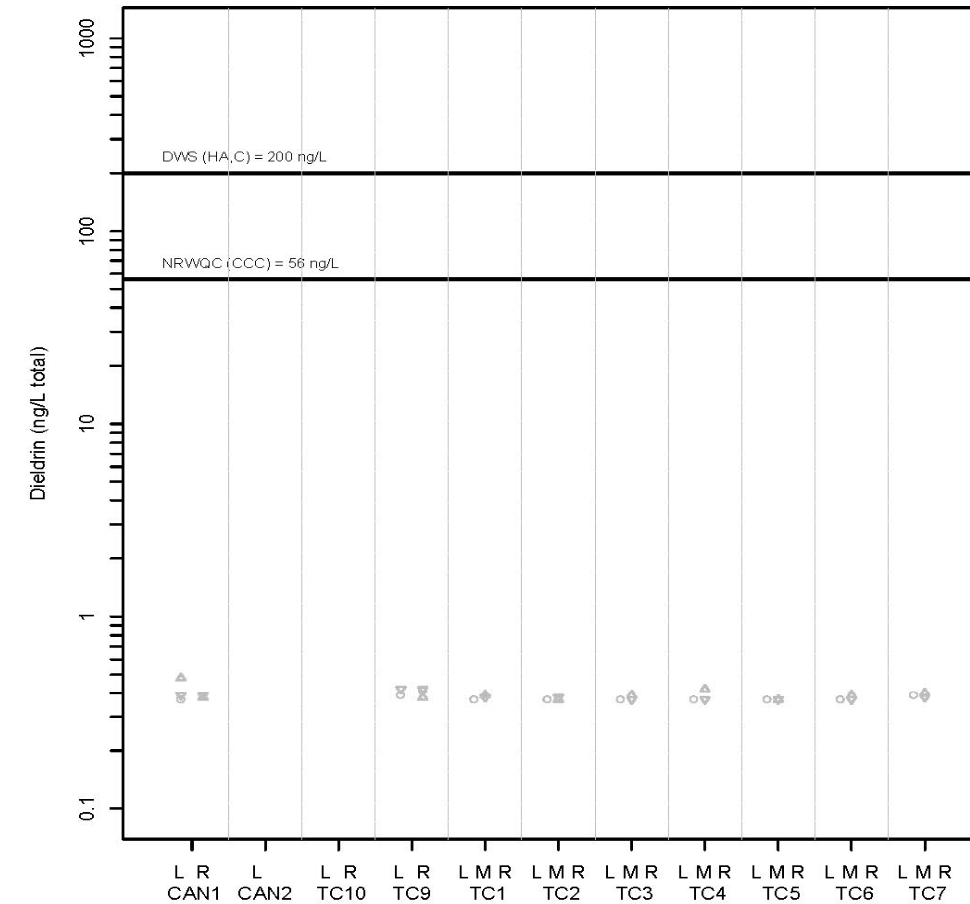
Total



Round 2: February – April 2010



Round 3: April – June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

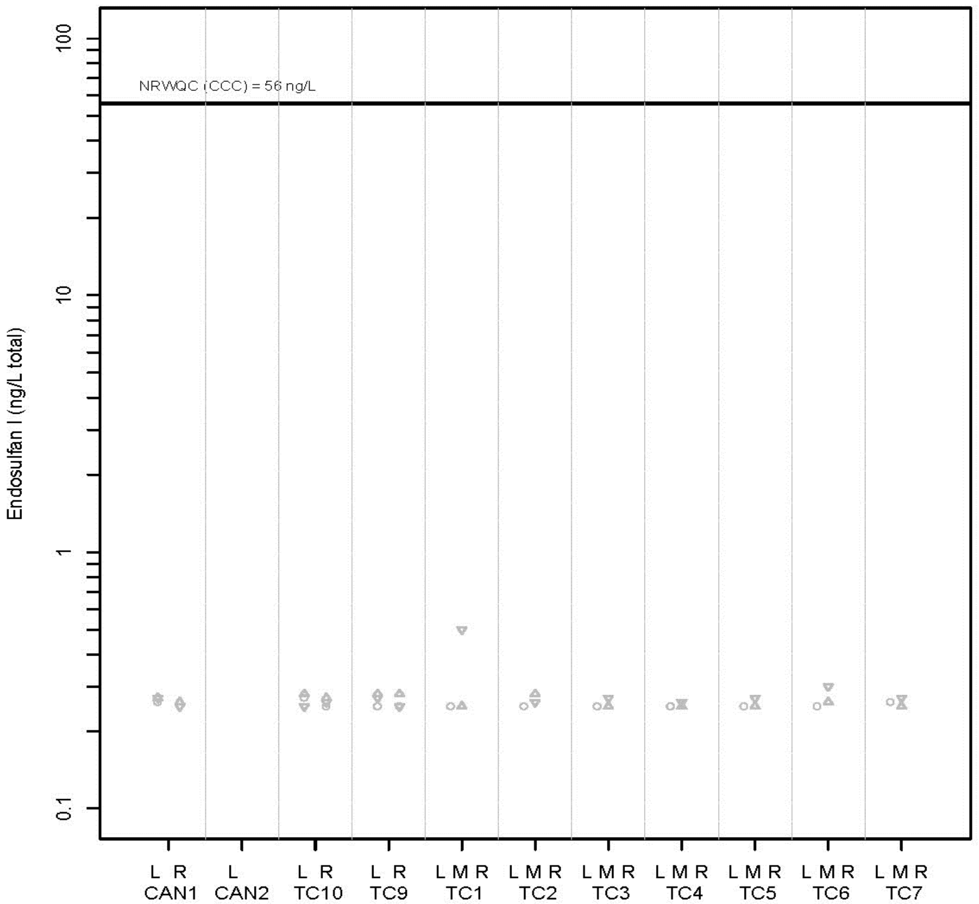
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

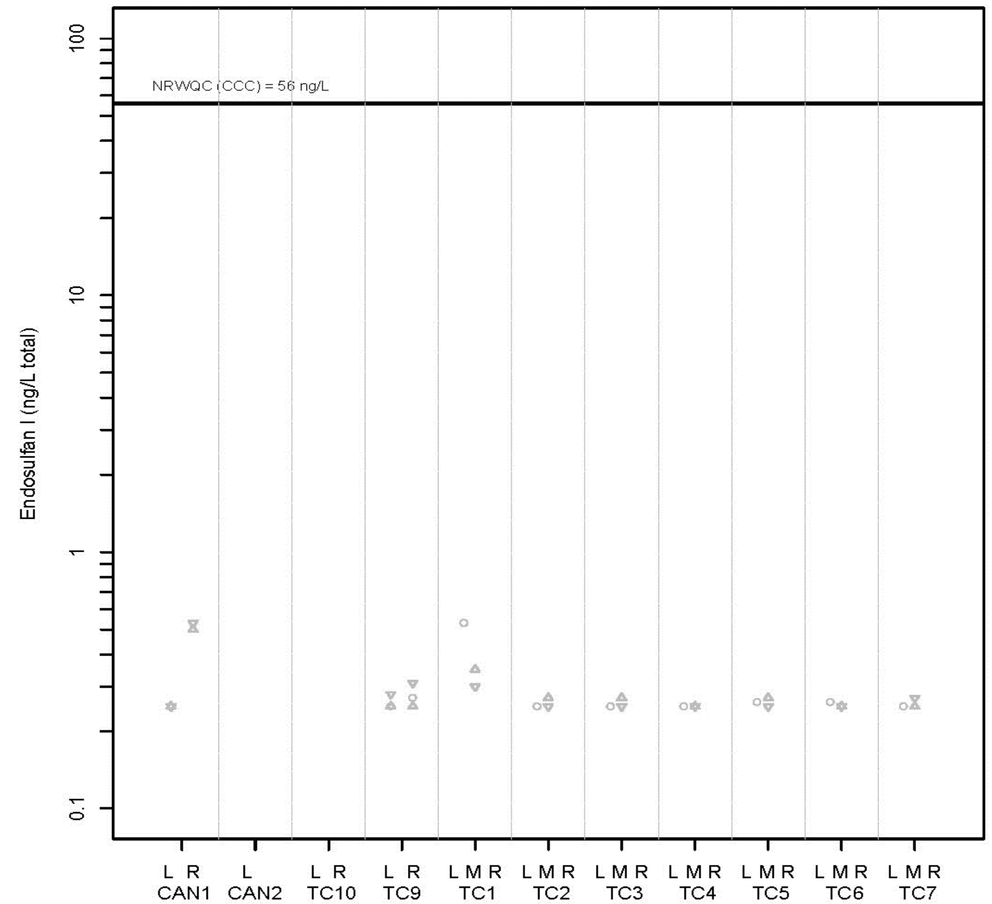
Surface Water – Endosulfan I

Round 1: September – October 2009

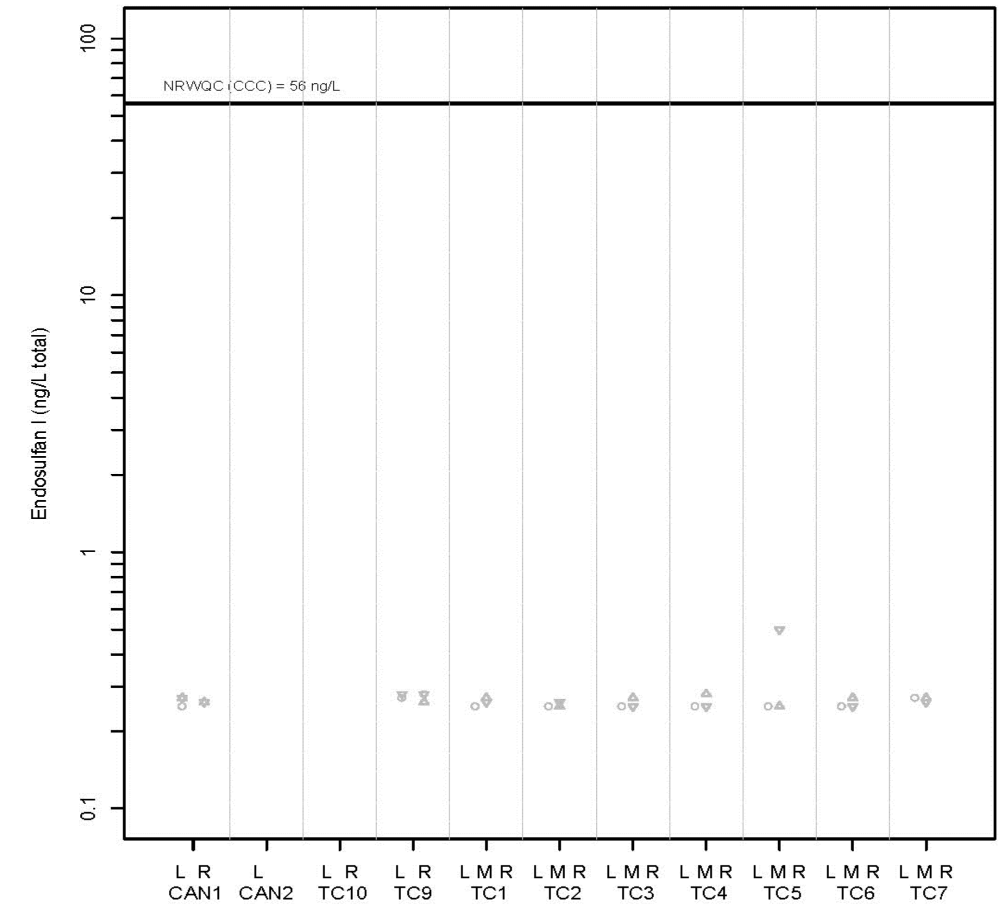
Total



Round 2: February – April 2010



Round 3: April – June 2010



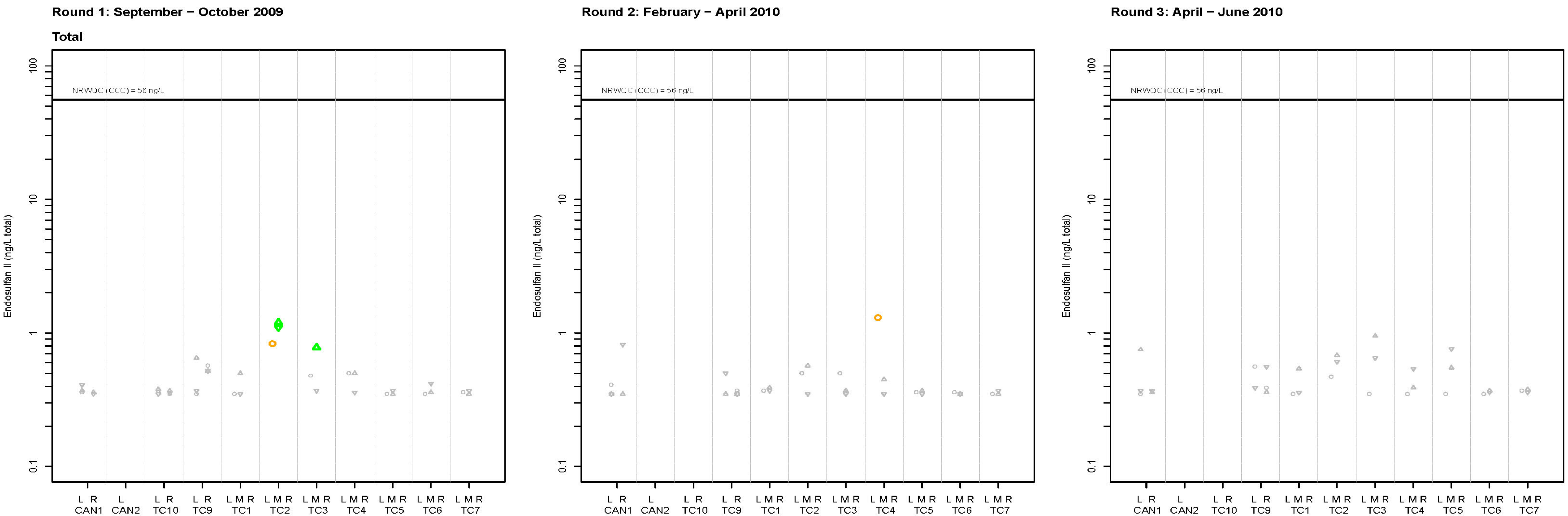
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Endosulfan II



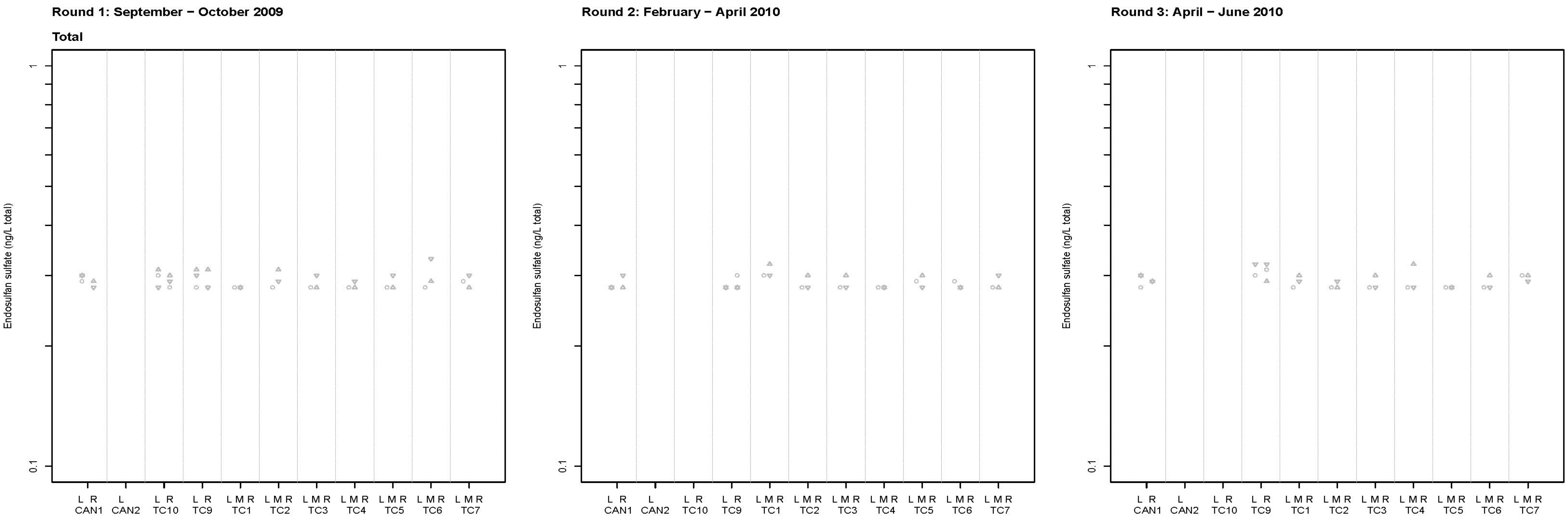
LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Endosulfan Sulfate



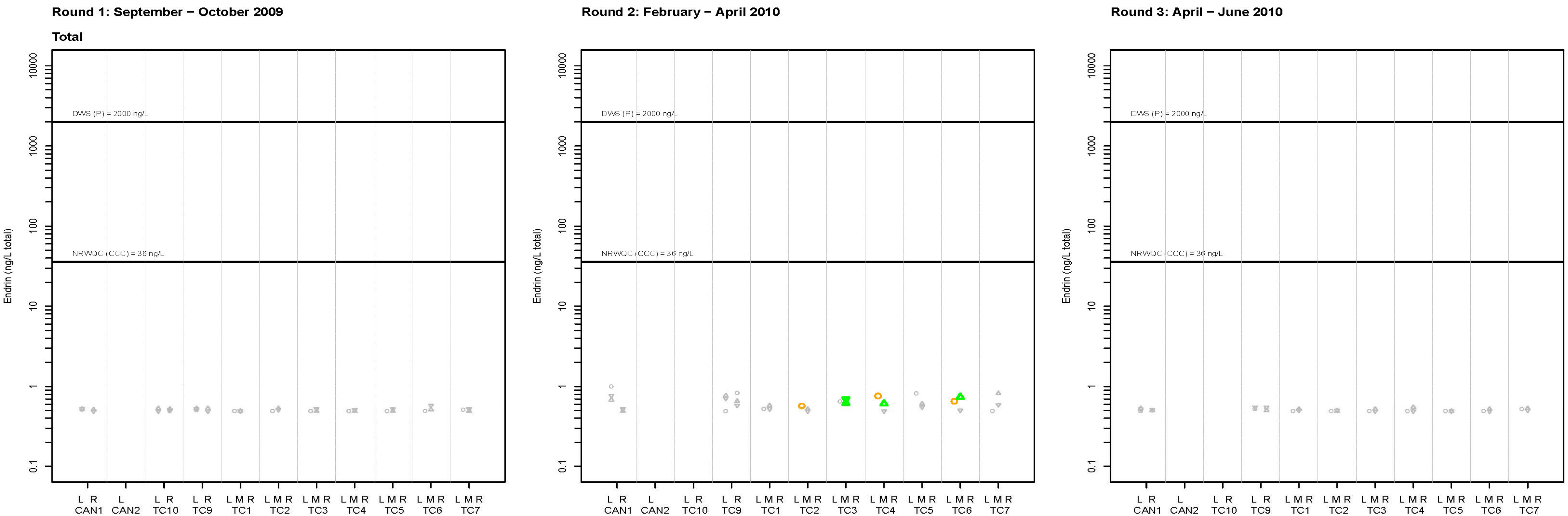
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Endrin

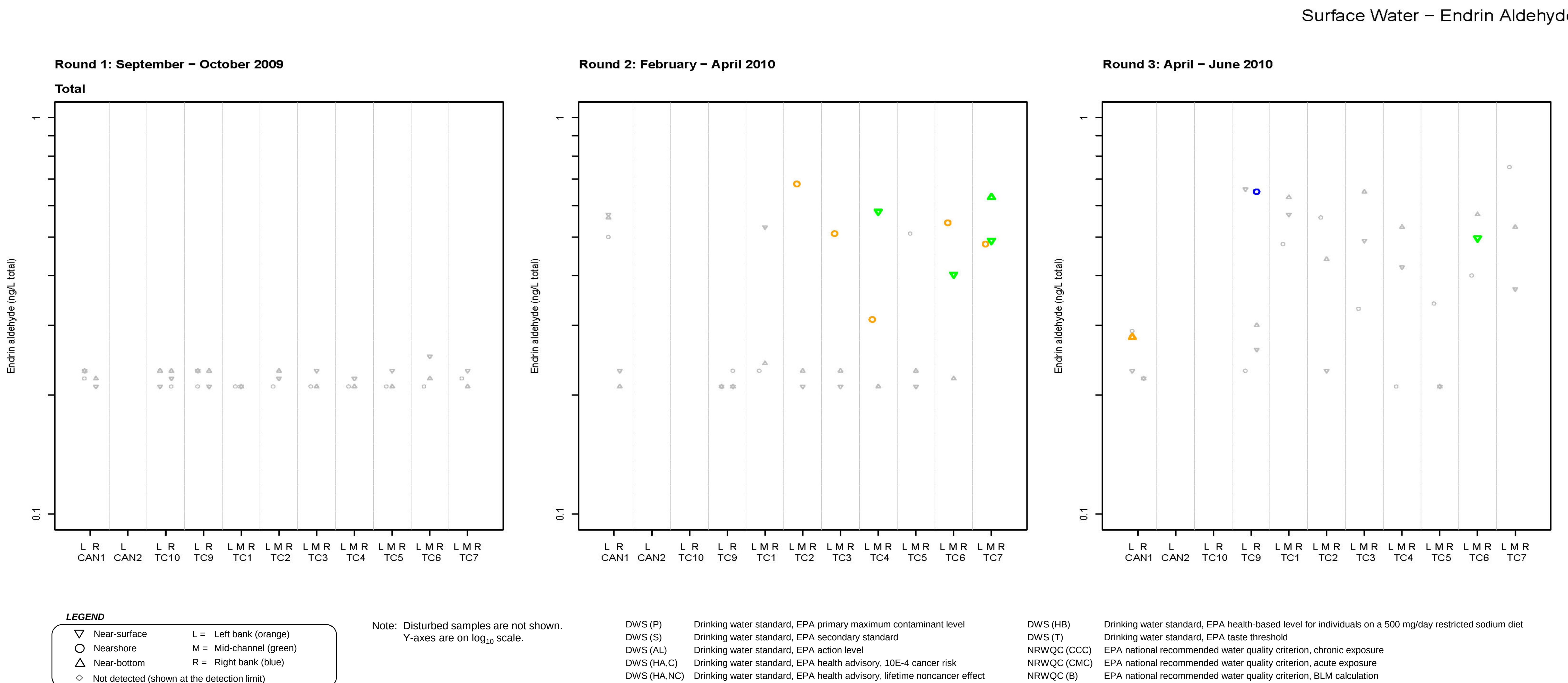


LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

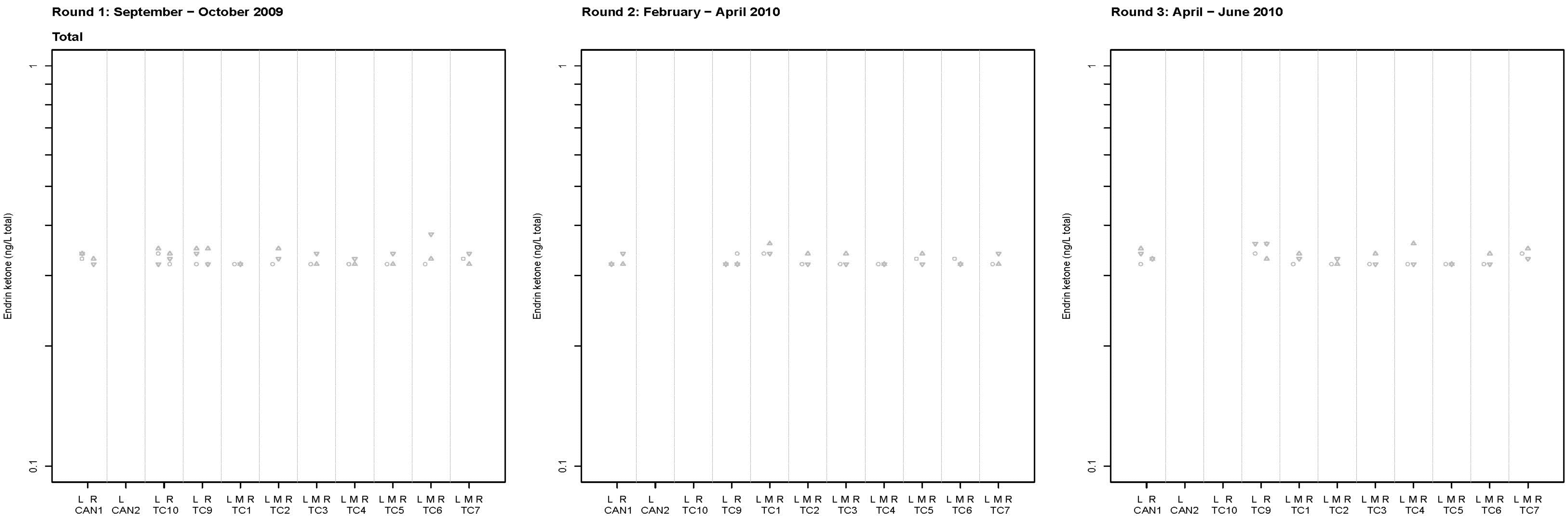
DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Endrin Ketone



LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

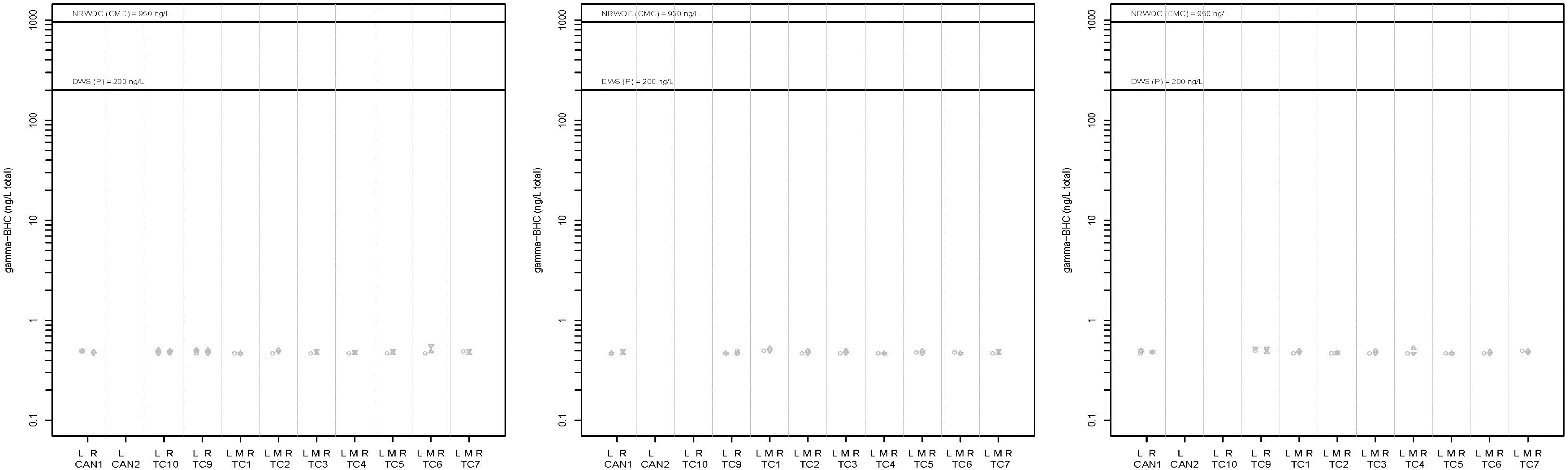
Surface Water − gamma−BHC

Round 1: September − October 2009

Total

Round 2: February − April 2010

Round 3: April − June 2010



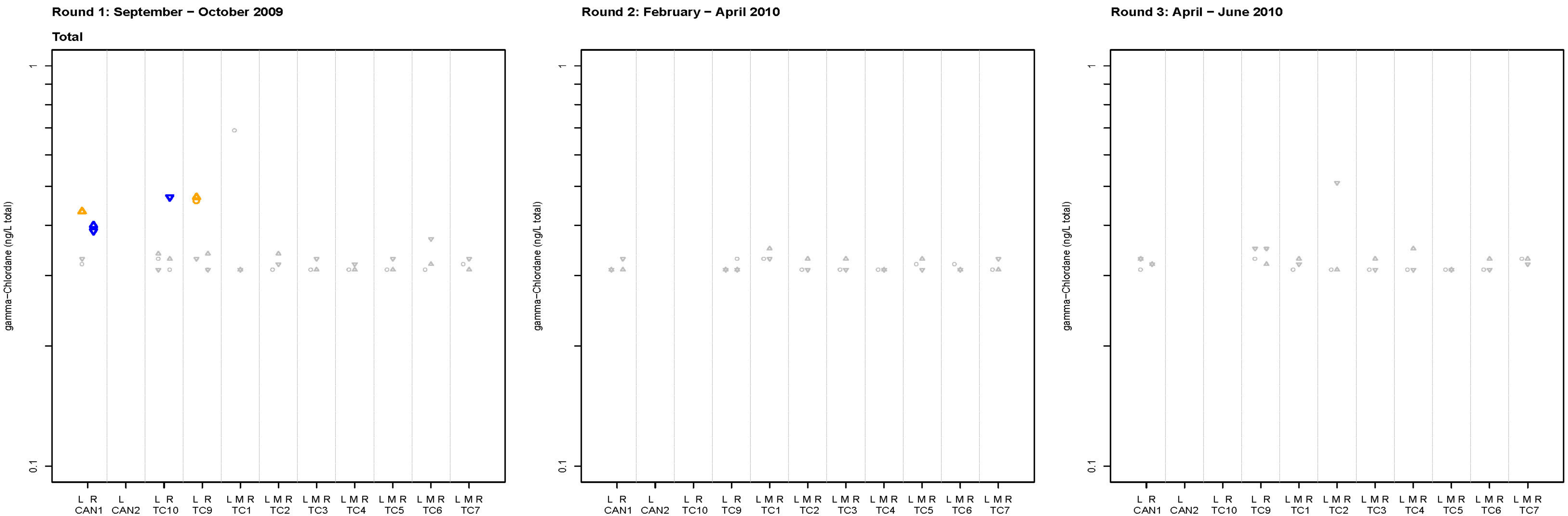
LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – gamma–Chlordane



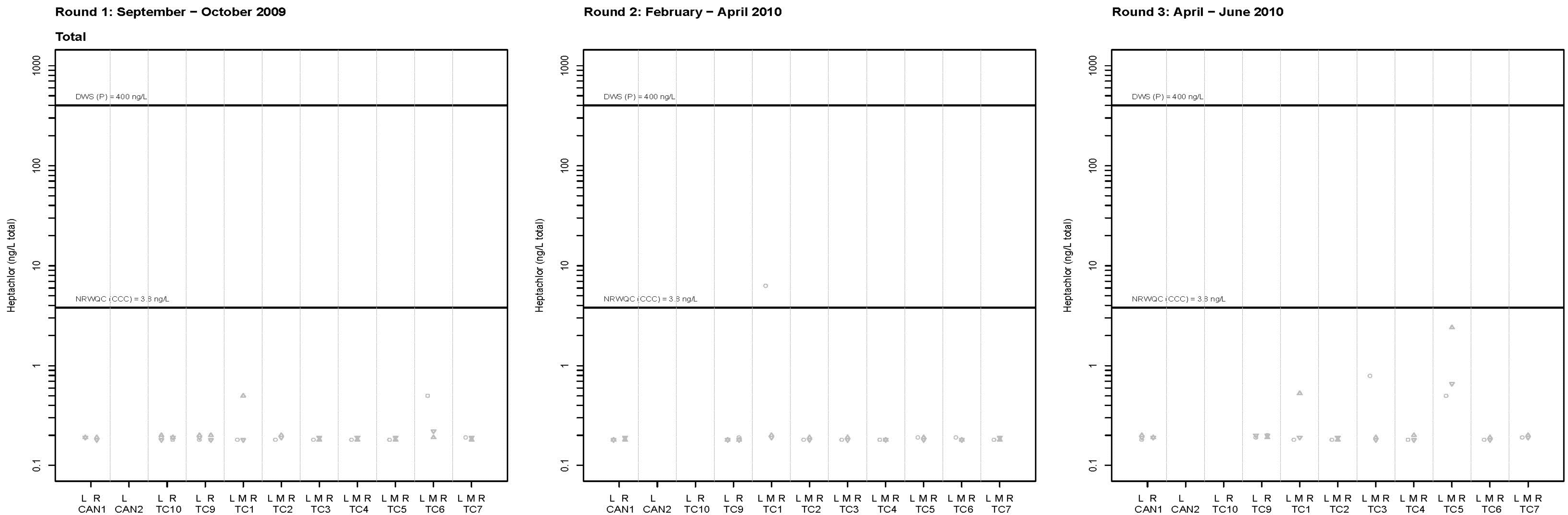
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Heptachlor



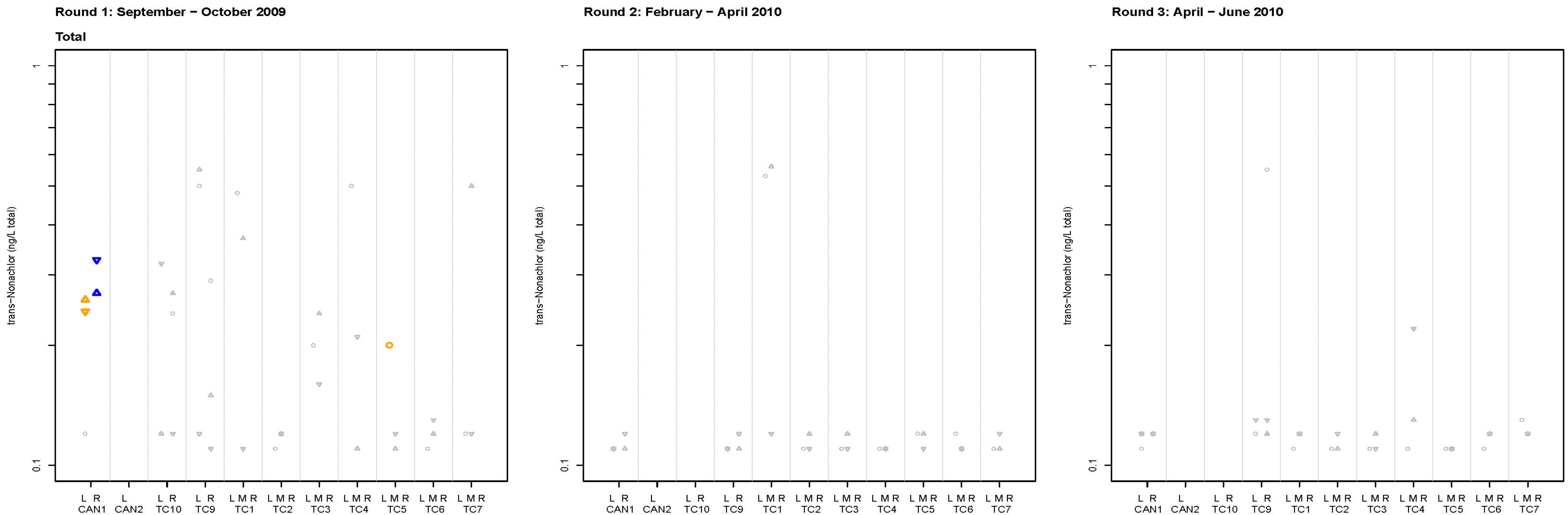
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − trans−Nonachlor



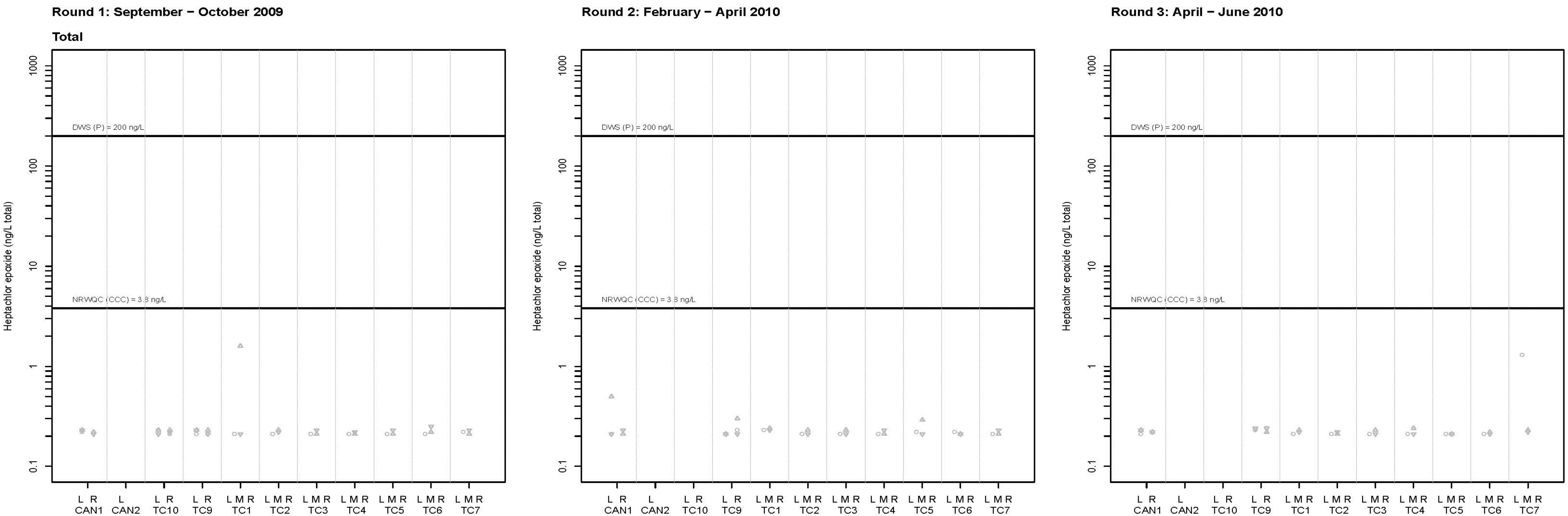
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Heptachlor Epoxide



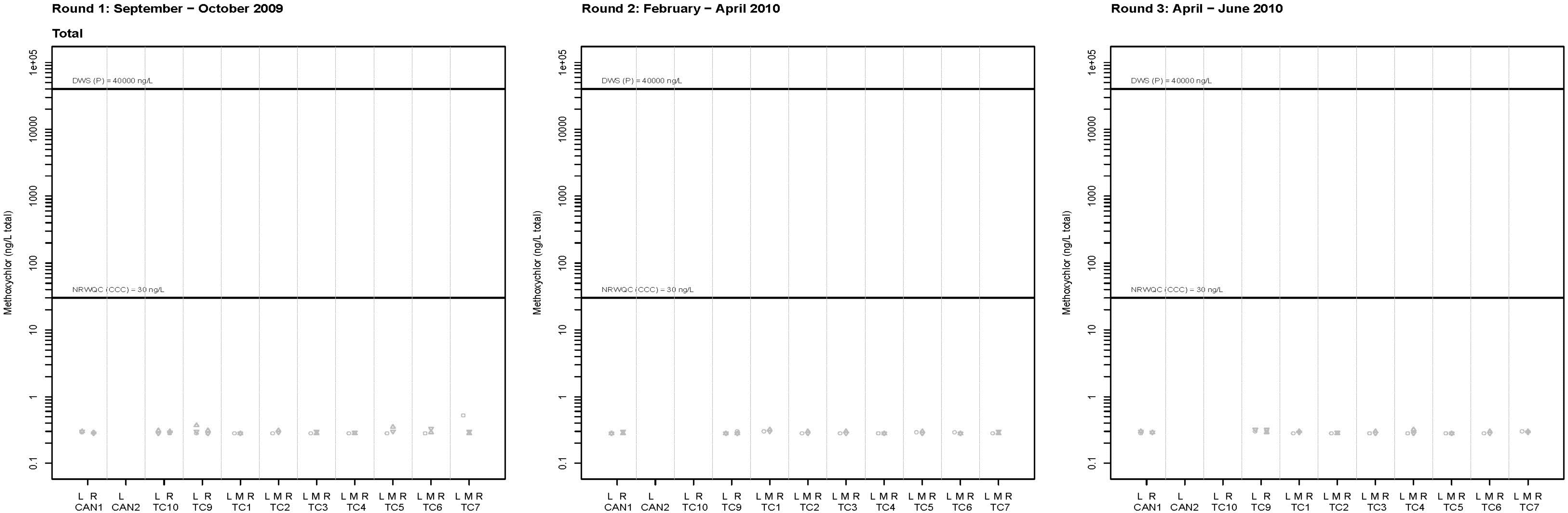
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Methoxychlor



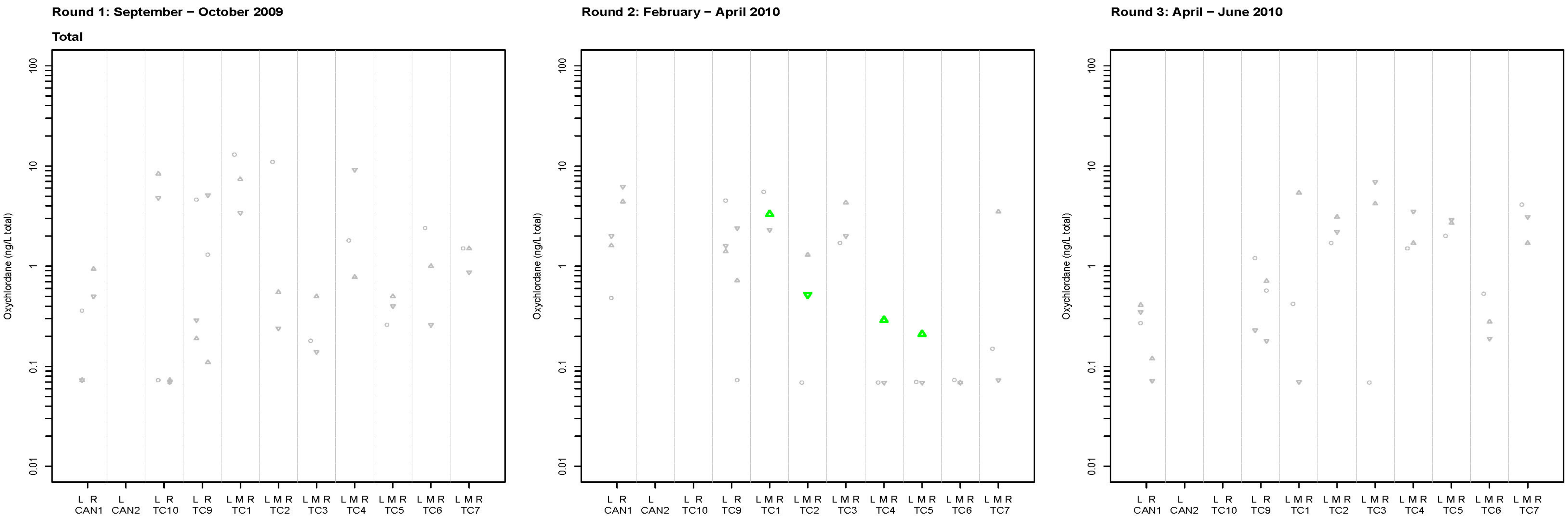
LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)
- L = Left bank (orange)
- M = Mid-channel (green)
- R = Right bank (blue)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Oxychlordane



LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

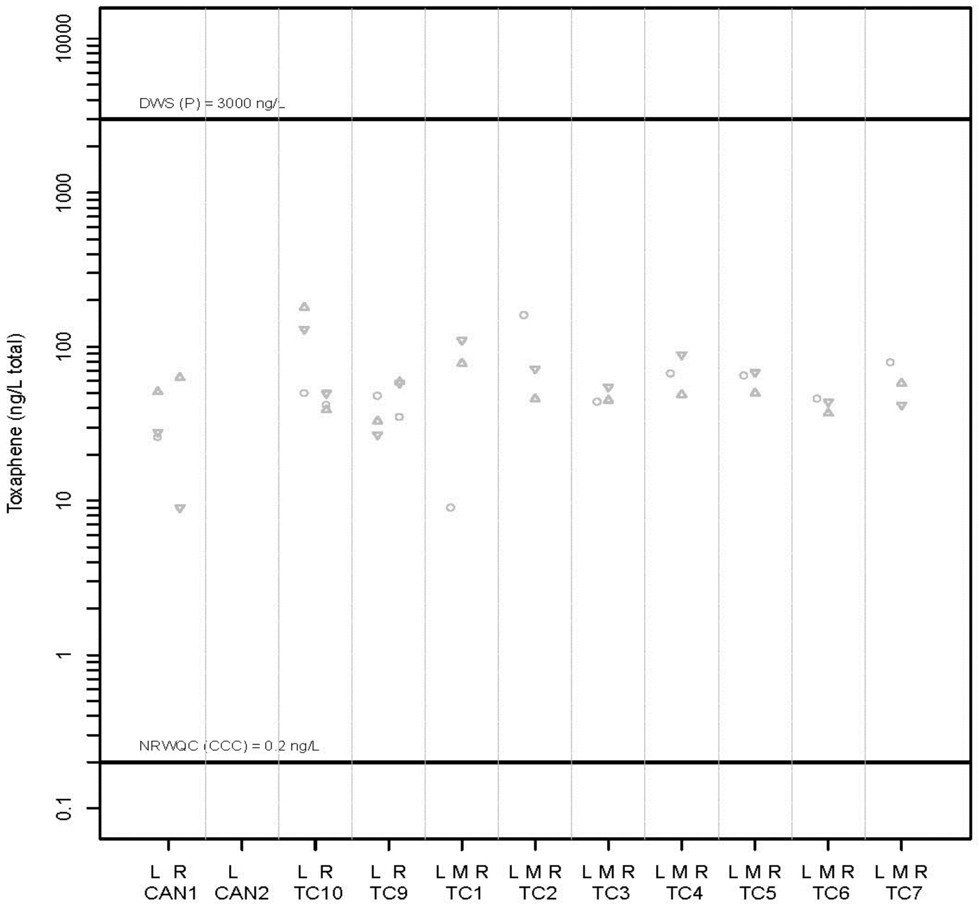
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

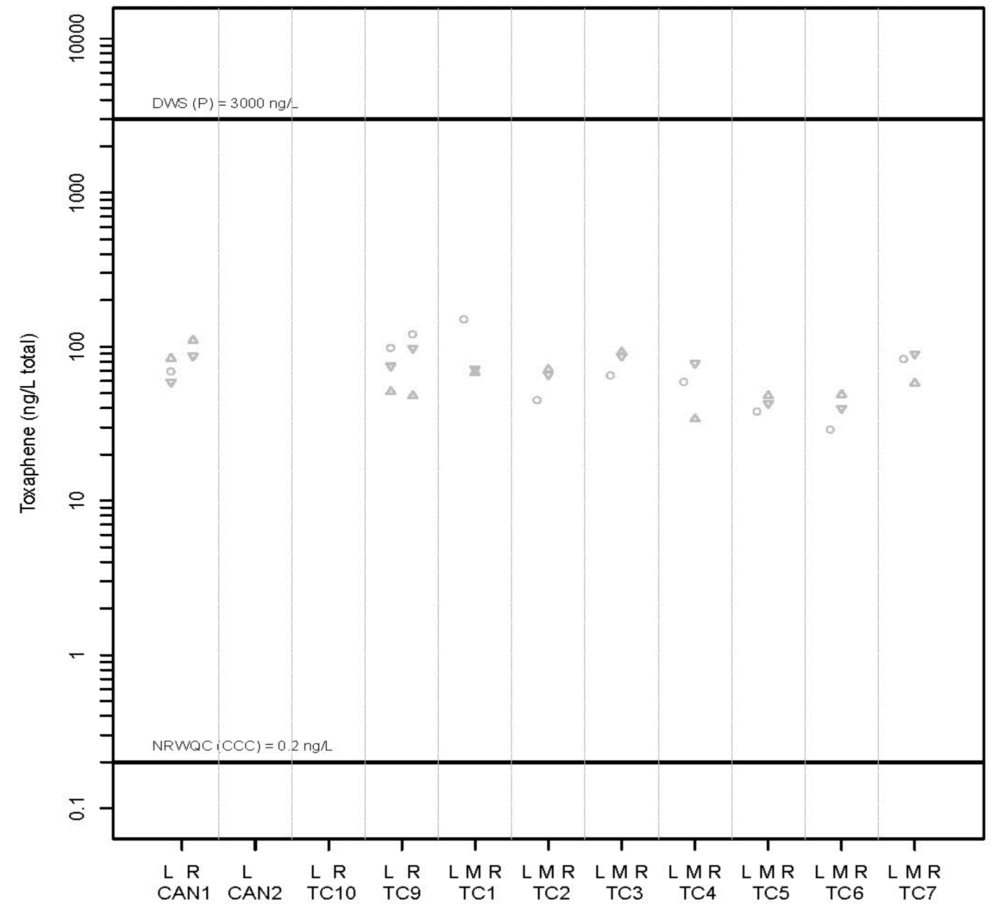
Surface Water – Toxaphene

Round 1: September – October 2009

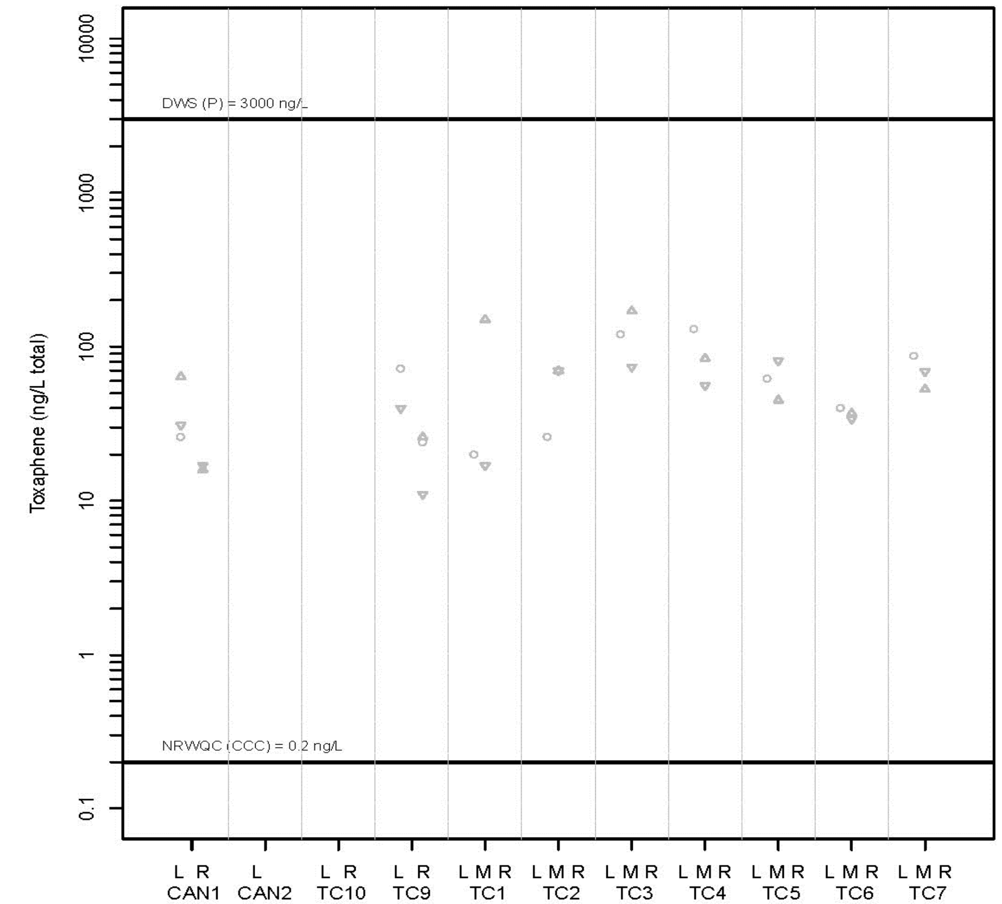
Total



Round 2: February – April 2010



Round 3: April – June 2010



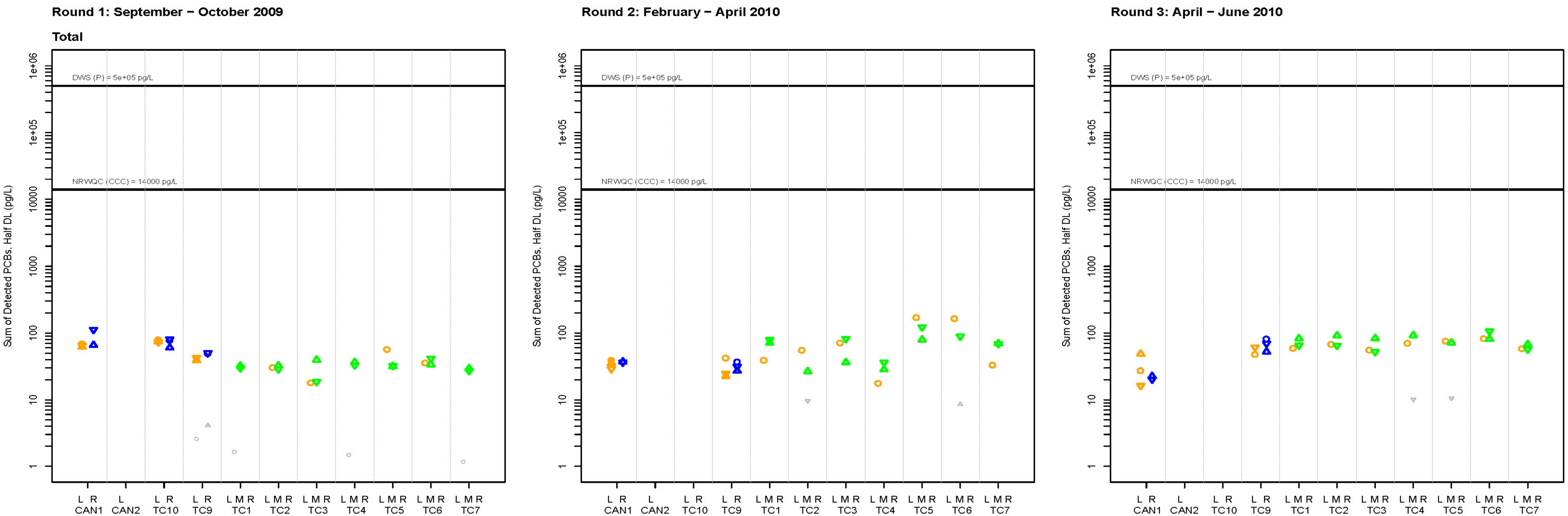
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Sum of Detected PCBs, Half DL



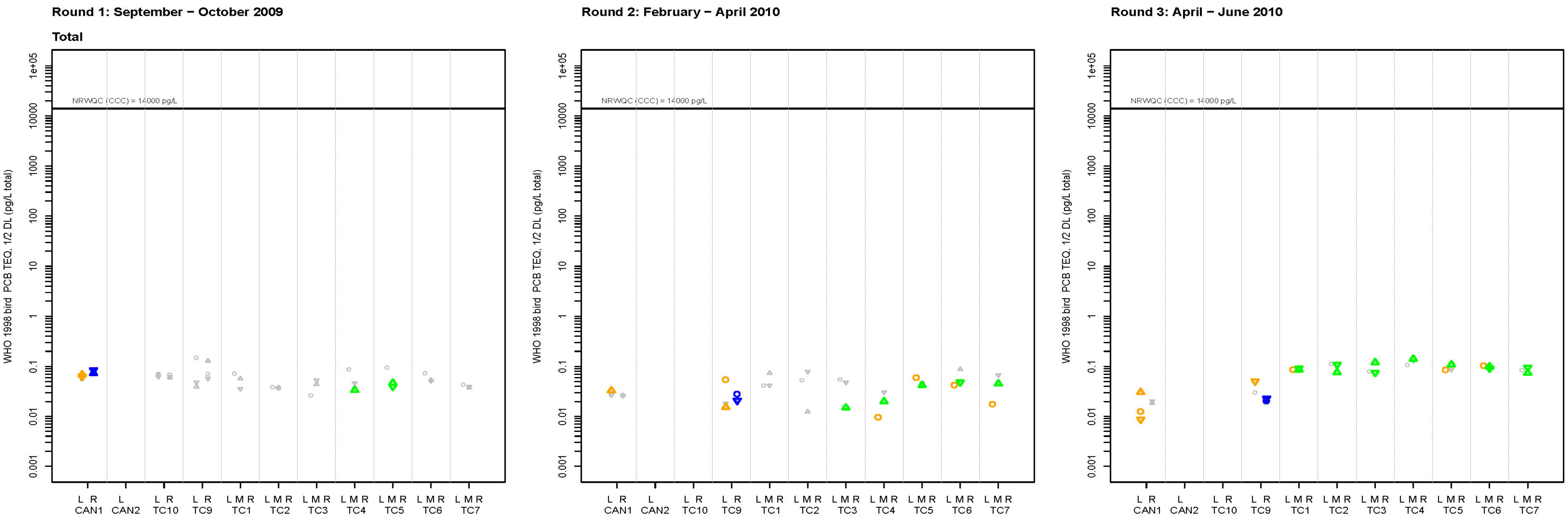
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – PCB TEQ, Birds



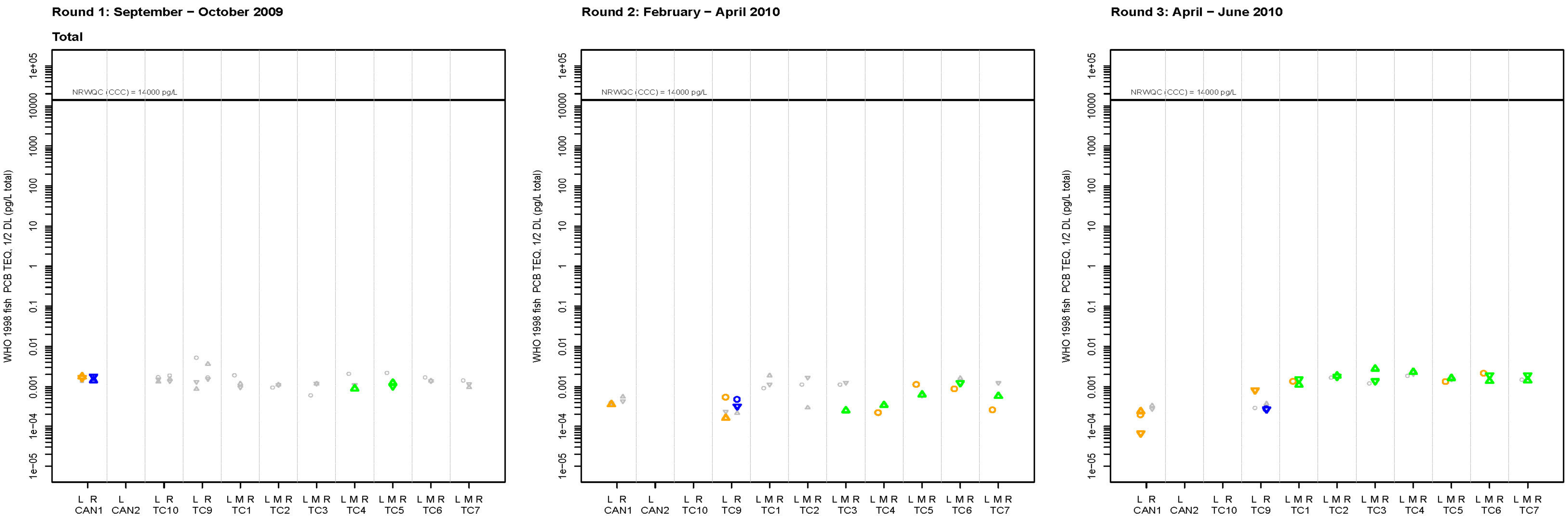
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – PCB TEQ, Fish



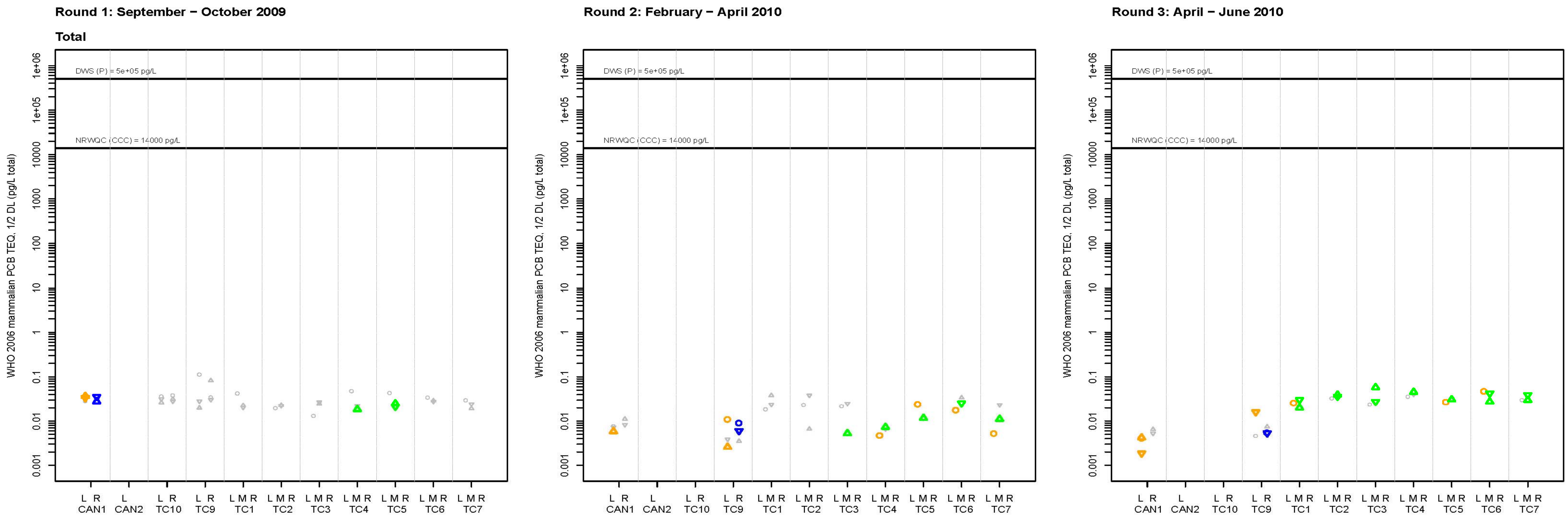
LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – PCB TEQ, Mammals

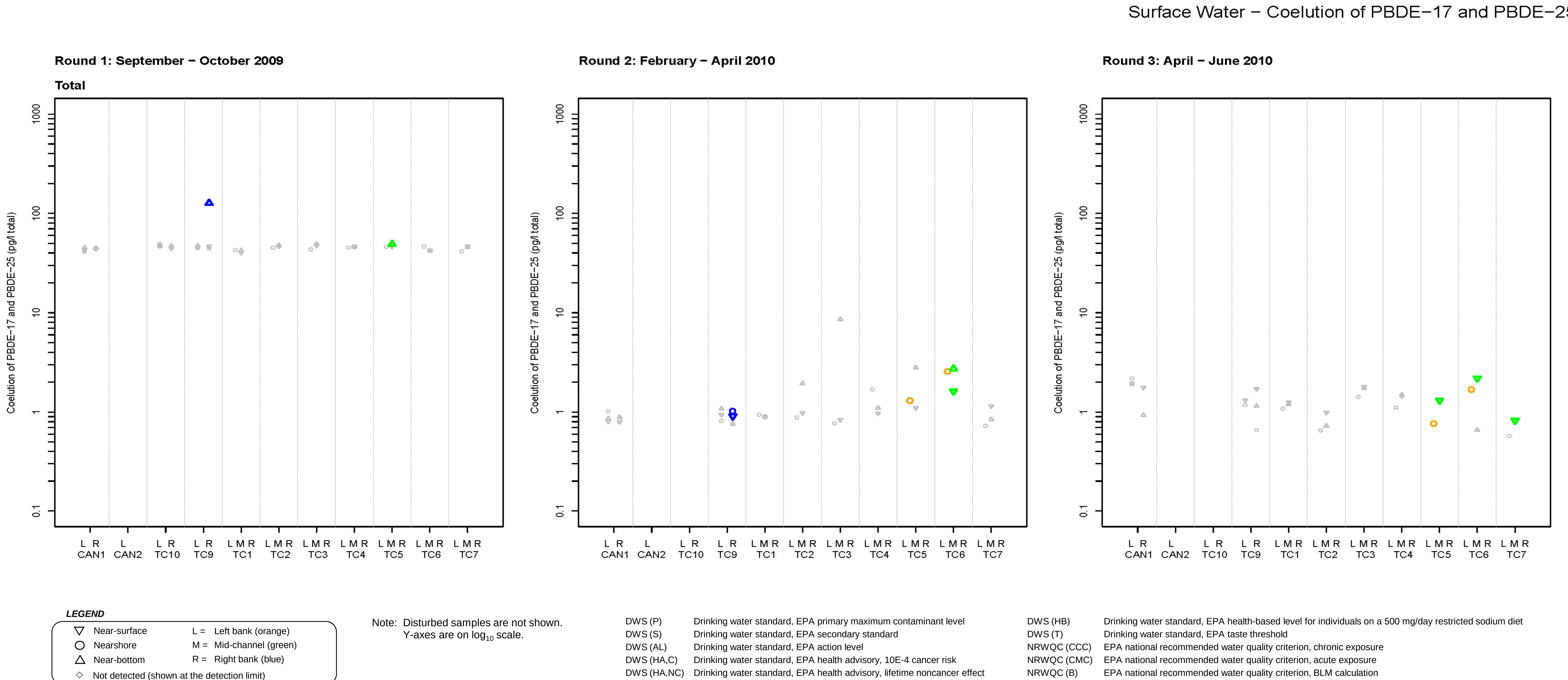


LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

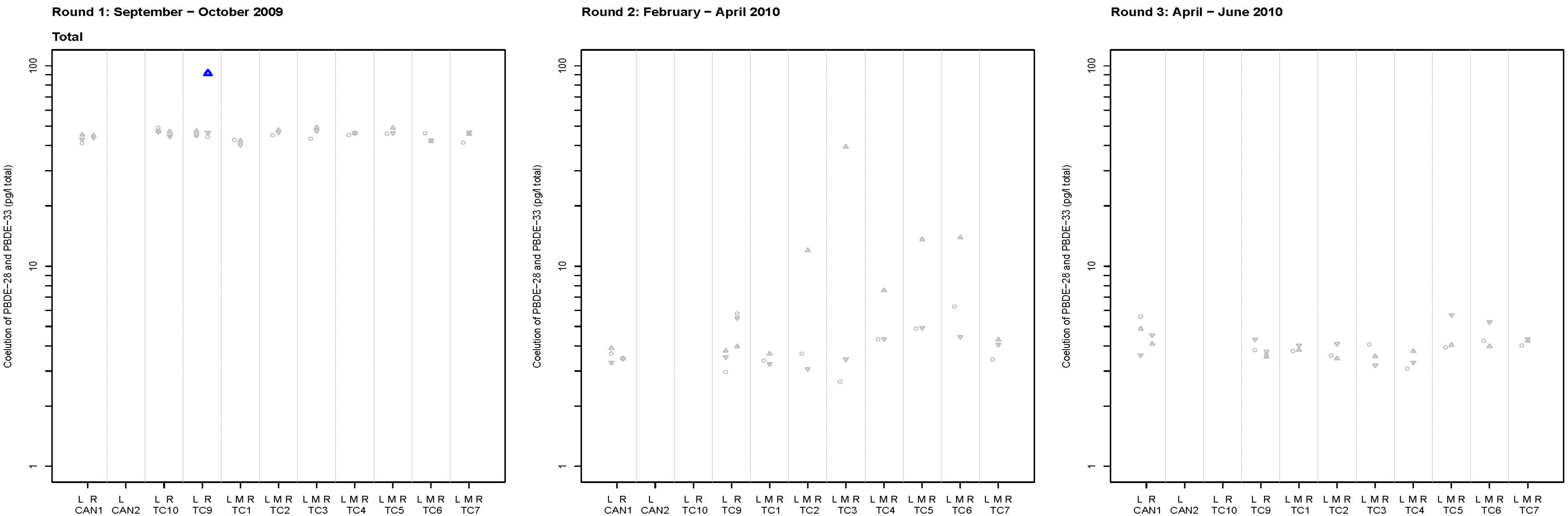
DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Coelution of PBDE−28 and PBDE−33



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

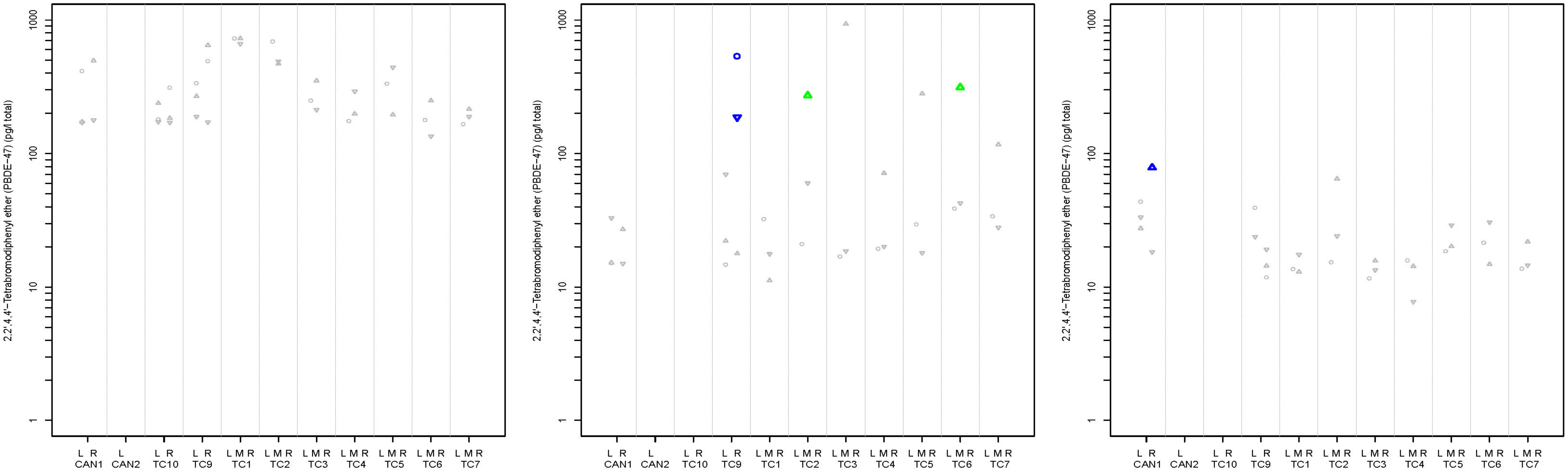
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,2',4,4'–Tetrabromodiphenyl ether (PBDE–47)

Round 1: September – October 2009 | **Round 2: February – April 2010** | **Round 3: April – June 2010**

Total

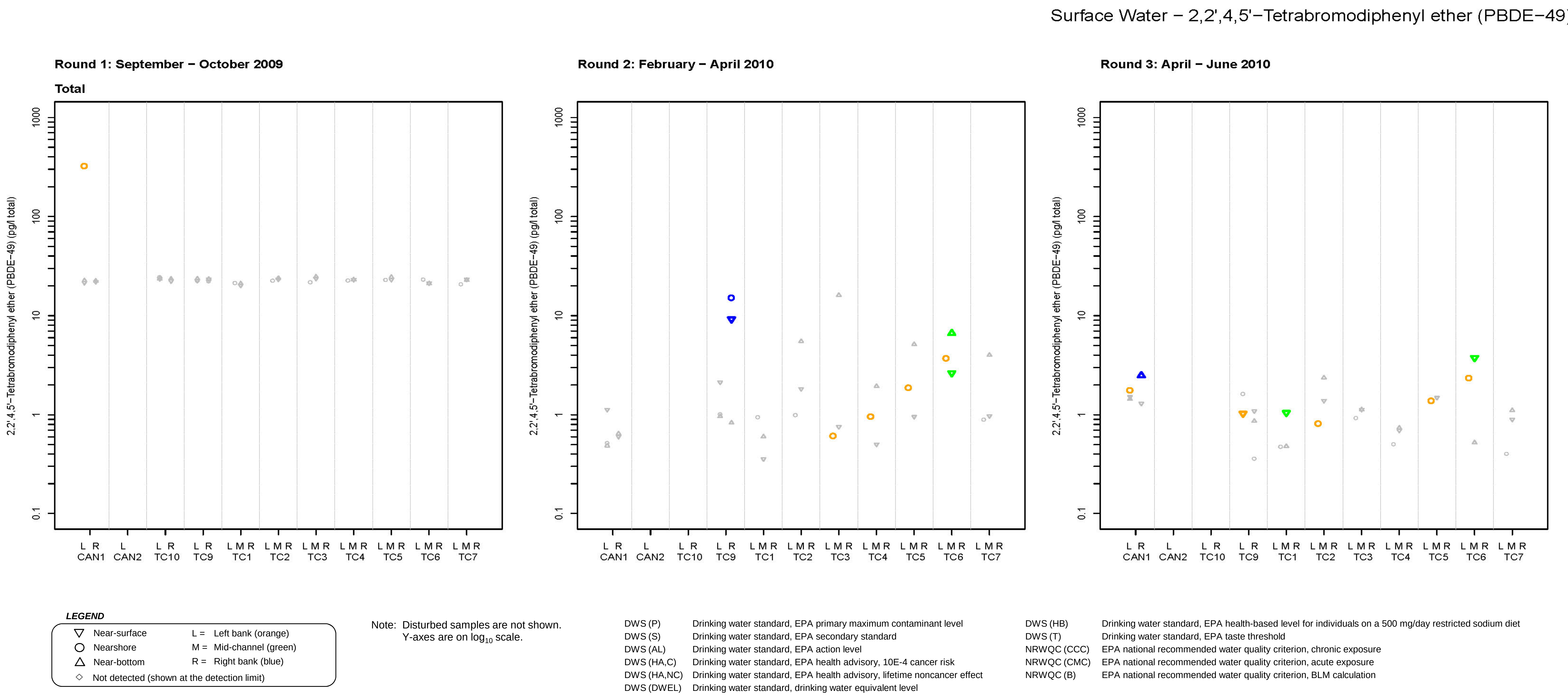


LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

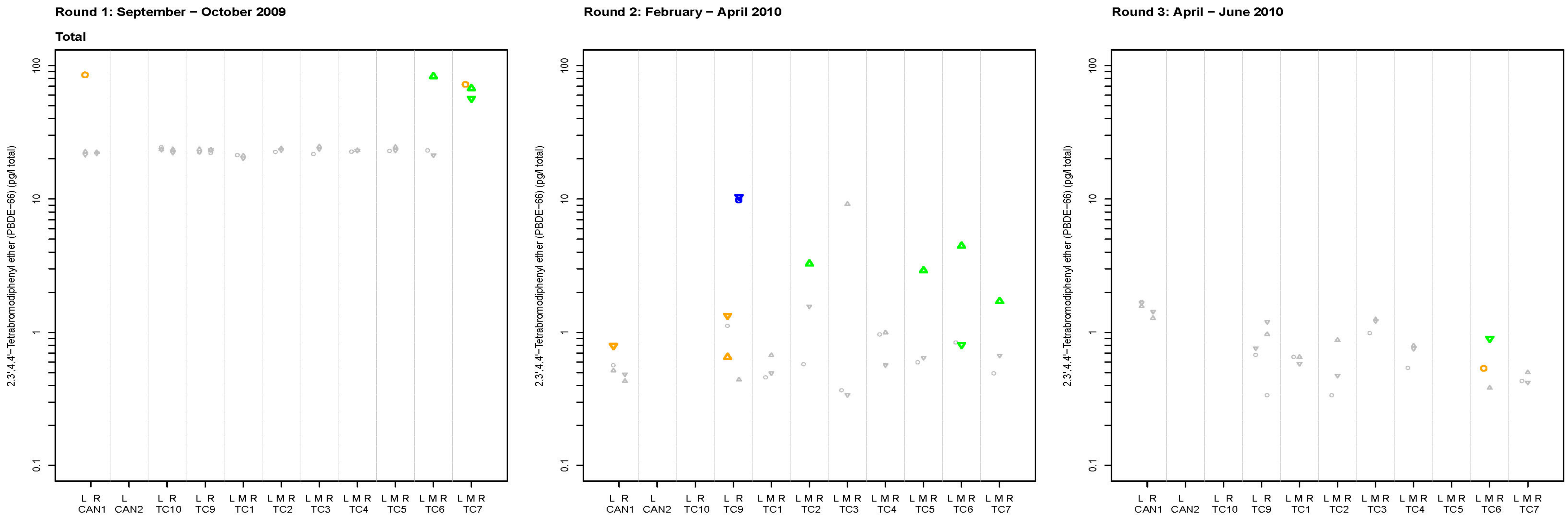
DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation



Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,3',4,4'–Tetrabromodiphenyl ether (PBDE–66)



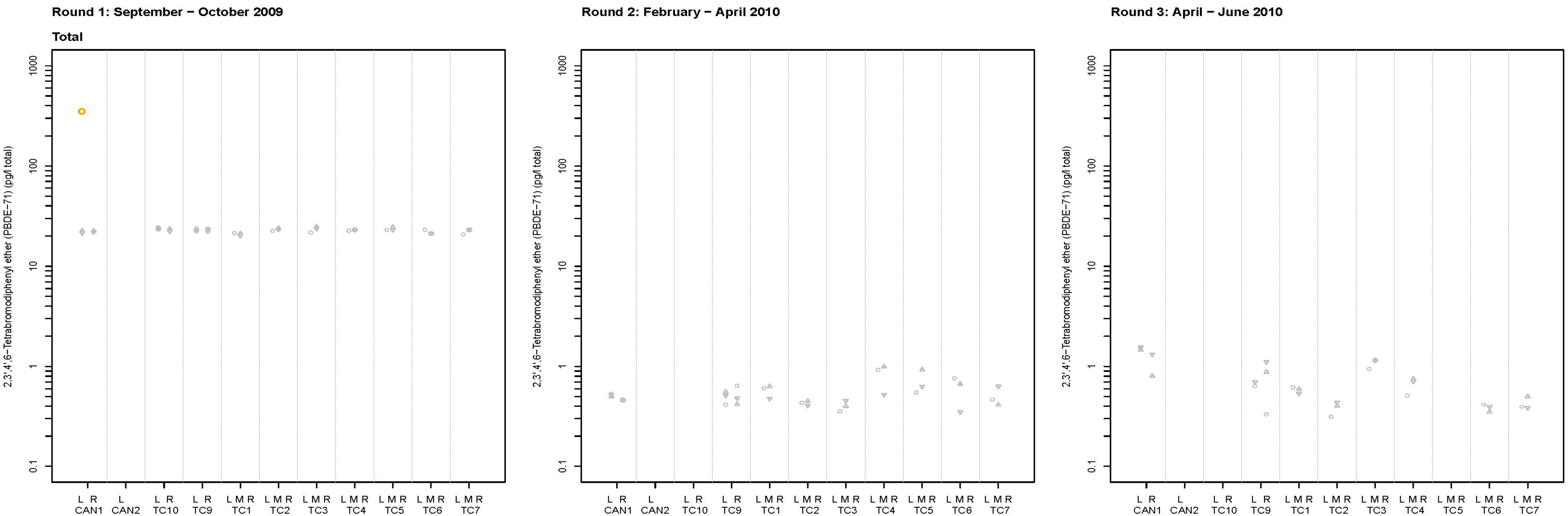
LEGEND

▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,3',4',6–Tetrabromodiphenyl ether (PBDE–71)



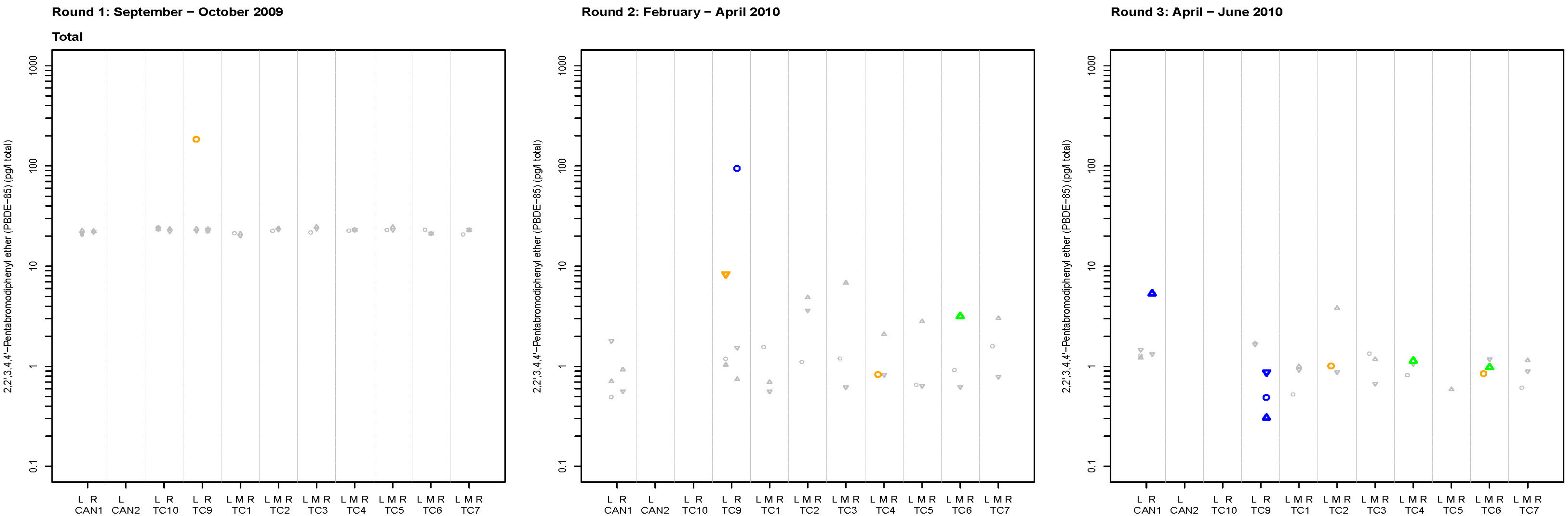
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,2',3,4,4'–Pentabromodiphenyl ether (PBDE–85)



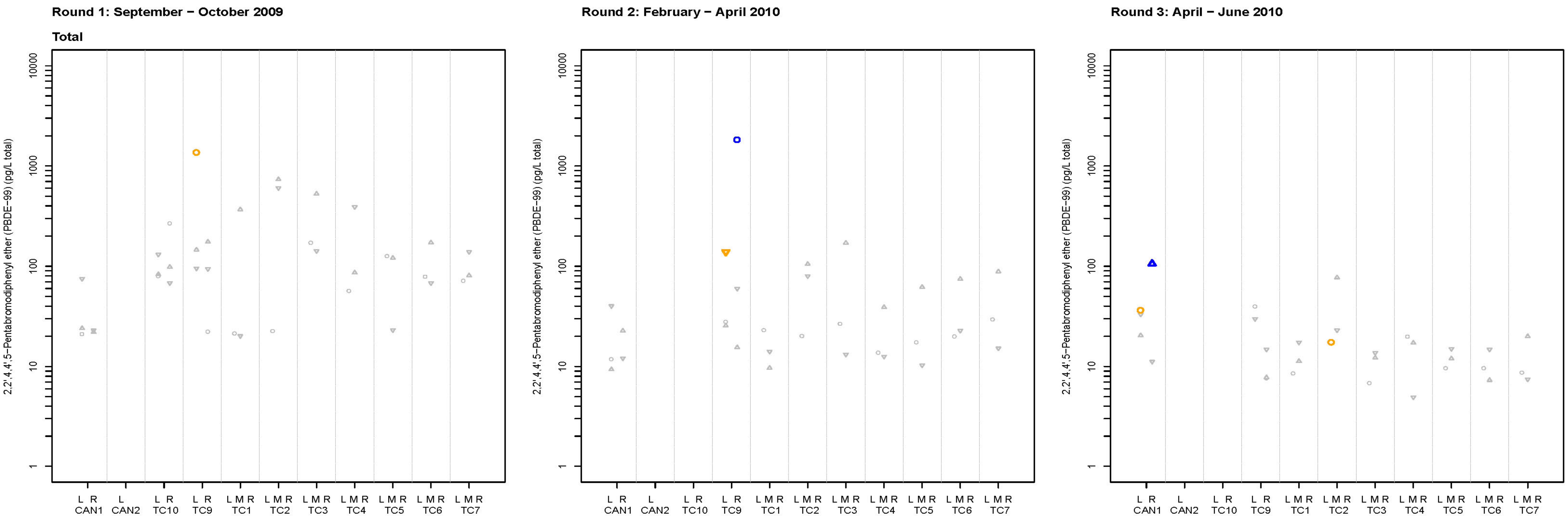
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2,2',4,4',5−Pentabromodiphenyl ether (PBDE−99)



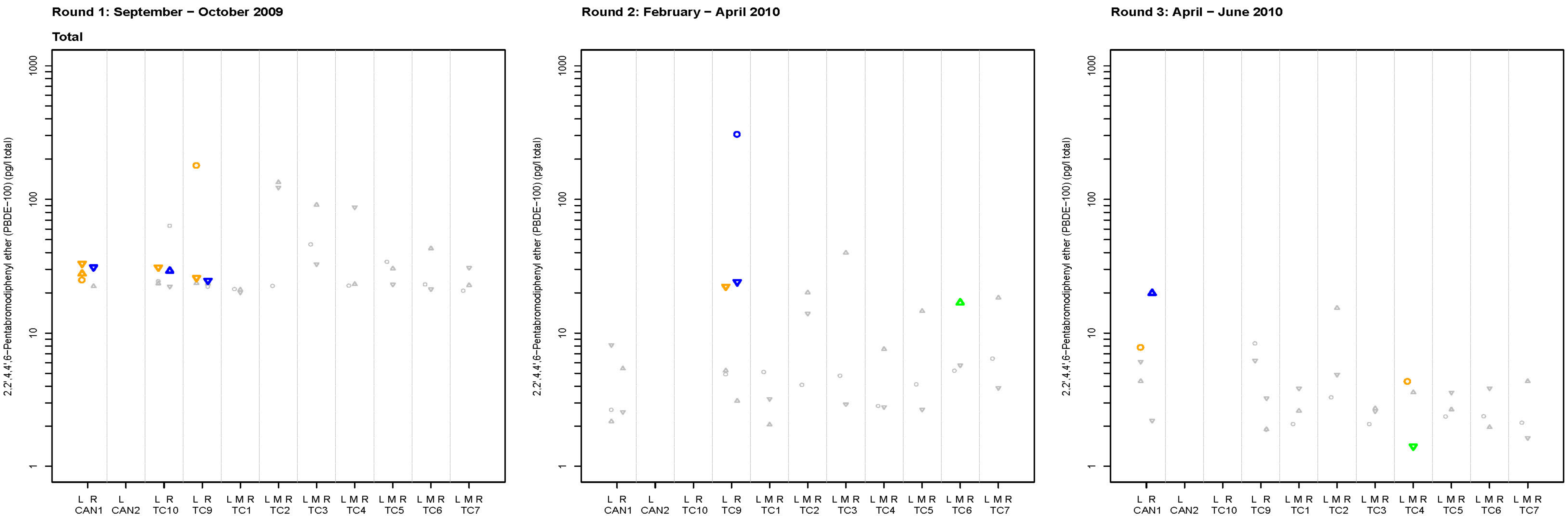
LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,2',4,4',6–Pentabromodiphenyl ether (PBDE–100)



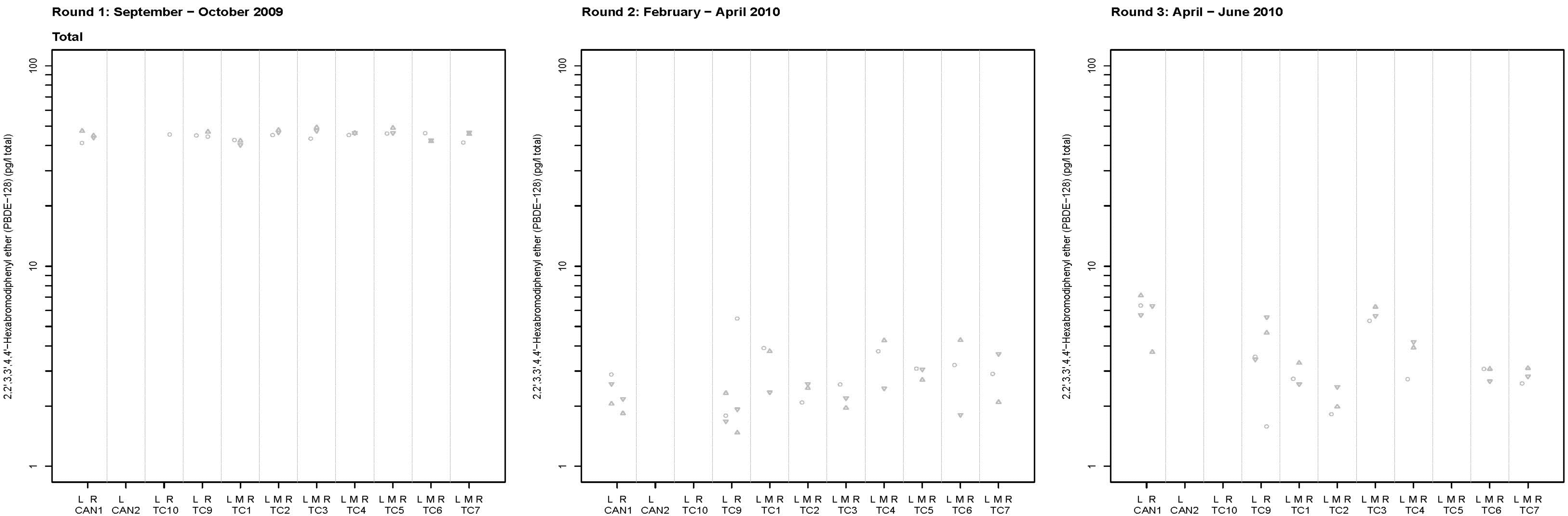
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2,2',3,3',4,4'−Hexabromodiphenyl ether (PBDE−128)



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

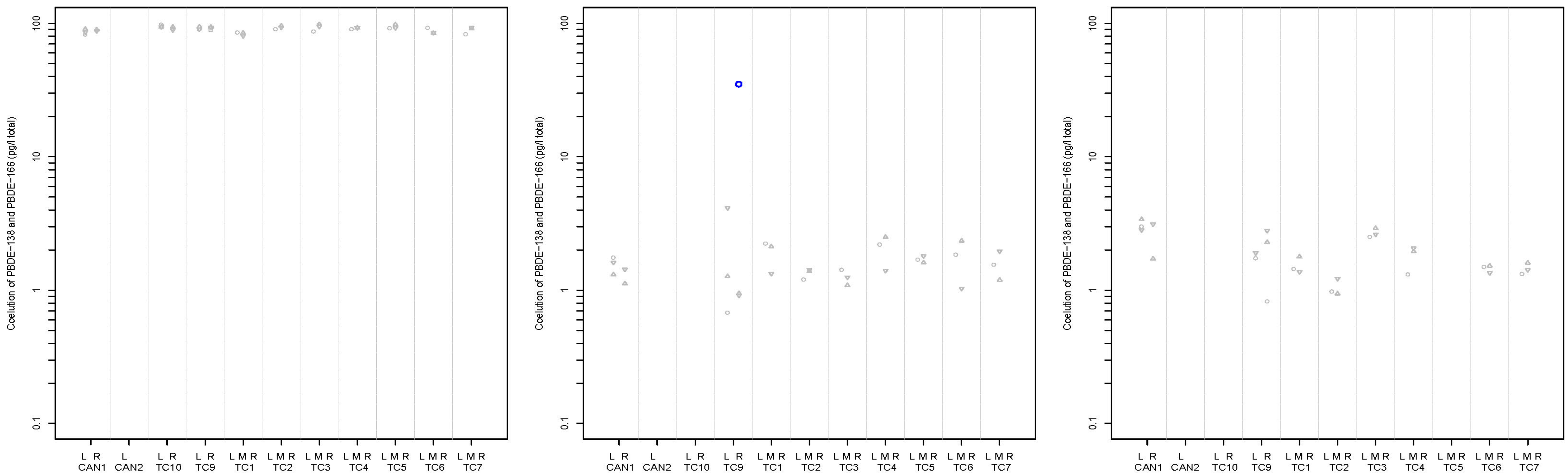
Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Coelution of PBDE−138 and PBDE−166

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



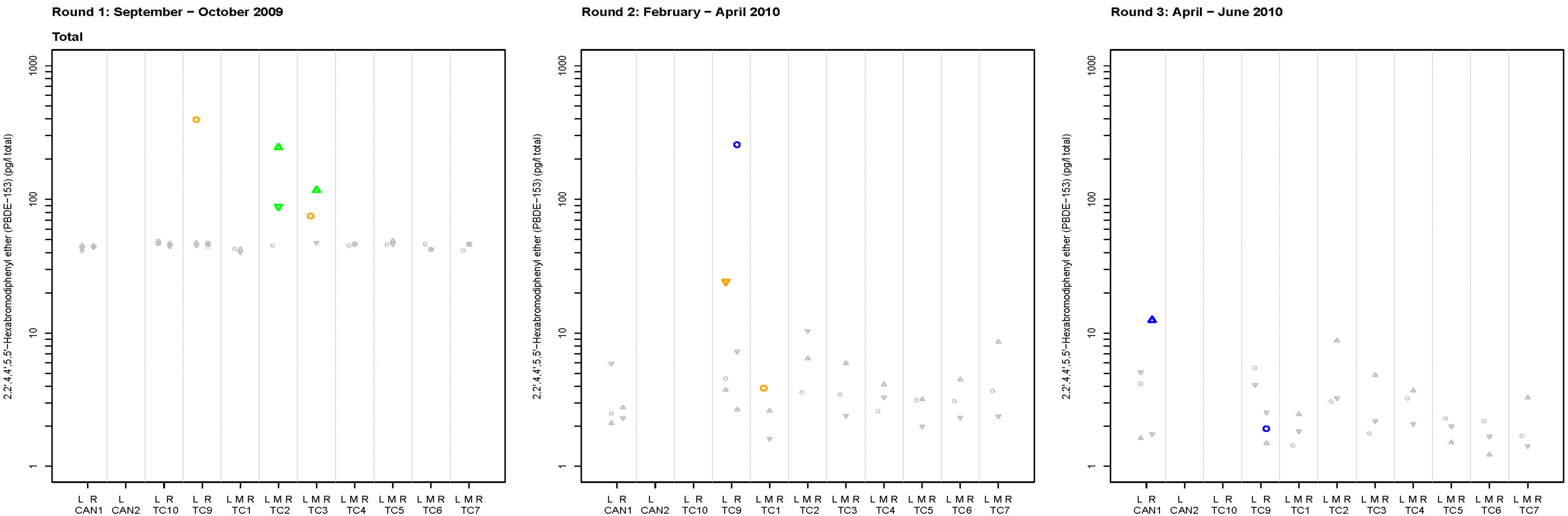
LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2,2',4,4',5,5'−Hexabromodiphenyl ether (PBDE−153)

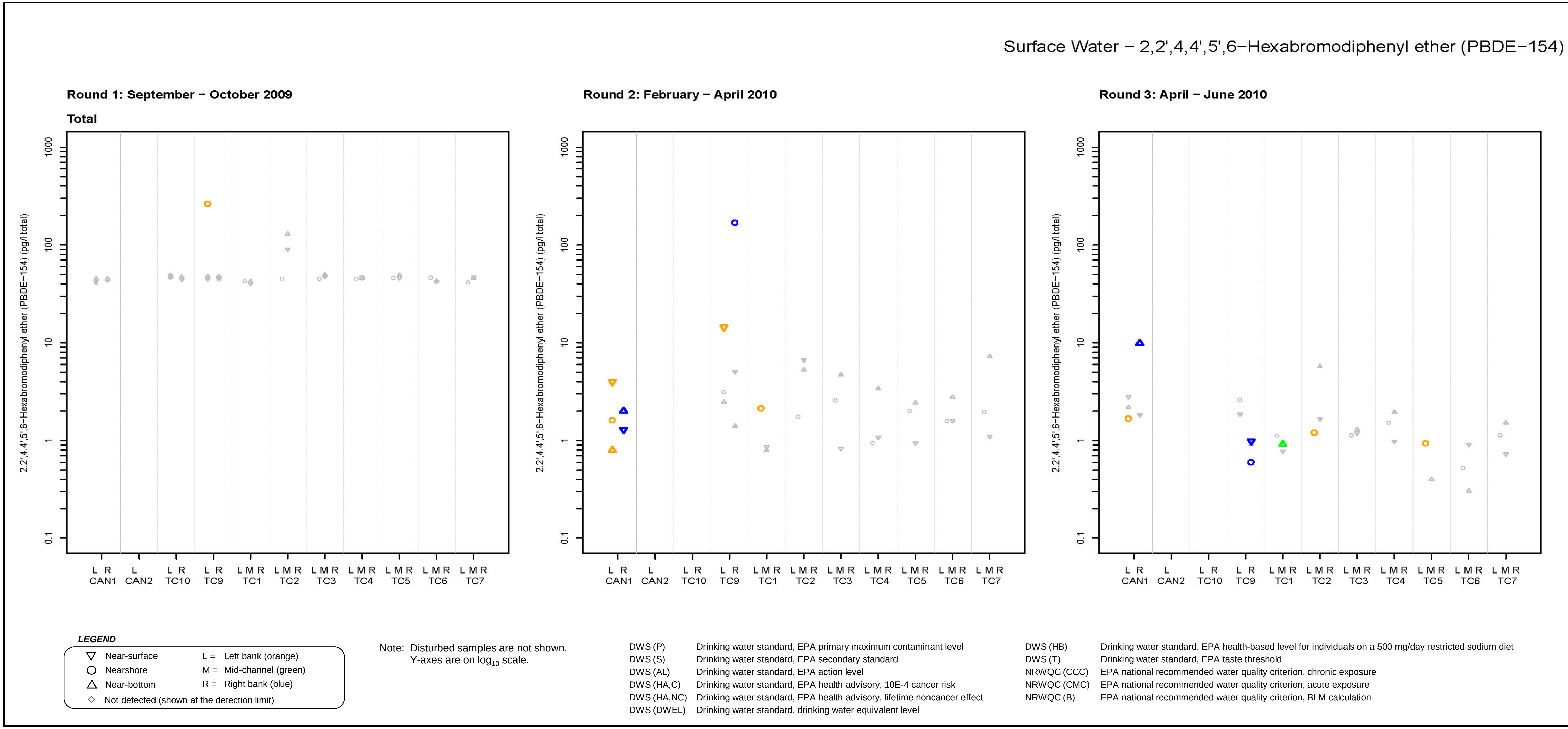


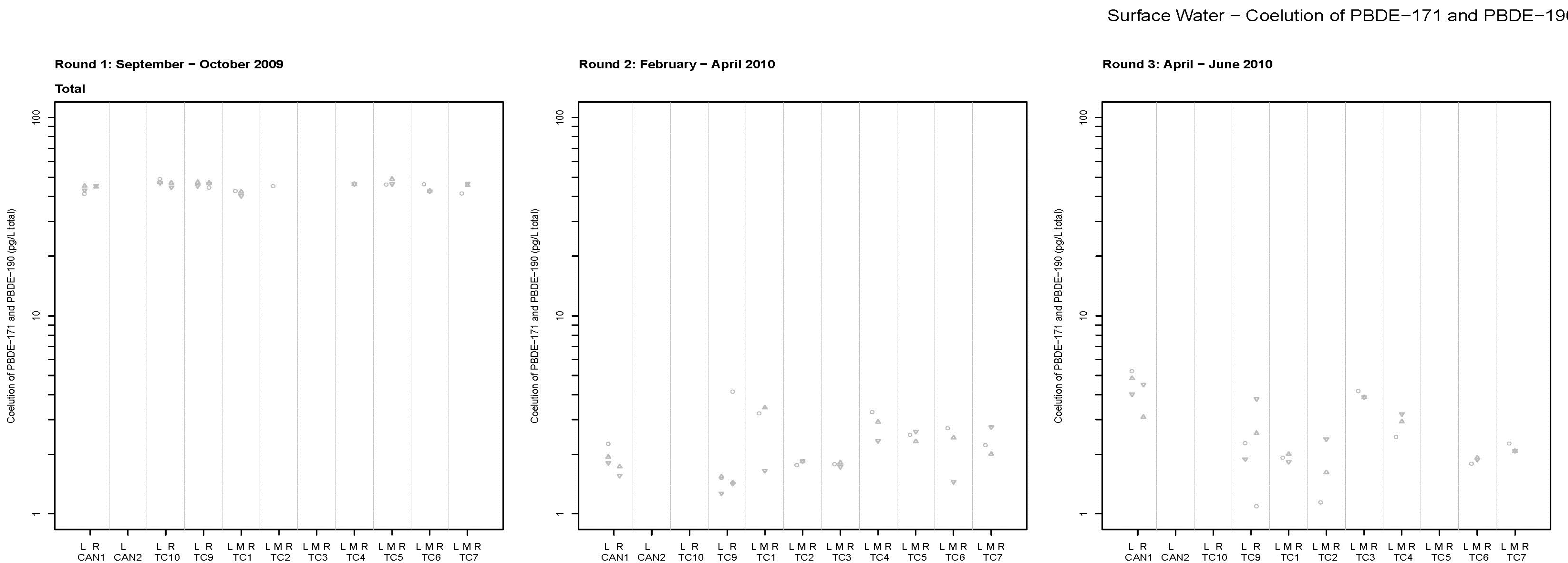
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation


Surface Water − 2,2',4,4',5',6−Hexabromodiphenyl ether (PBDE−154)
Round 1: September − October 2009
Total
Round 2: February − April 2010
Round 3: April − June 2010
2,2',4,4',5',6−Hexabromodiphenyl ether (PBDE−154) (pg/l total)
0.1
1
10
100
1000
L R CAN1
L CAN2
L R TC10
L R TC9
L M R TC1
L M R TC2
L M R TC3
L M R TC4
L M R TC5
L M R TC6
L M R TC7
LEGEND
Near-surface
Nearshore
Near-bottom
Not detected (shown at the detection limit)
L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)
Note: Disturbed samples are not shown.
Y-axes are on log10 scale.
DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold
NRWQC (CCC) EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC) EPA national recommended water quality criterion, acute exposure
NRWQC (B) EPA national recommended water quality criterion, BLM calculation



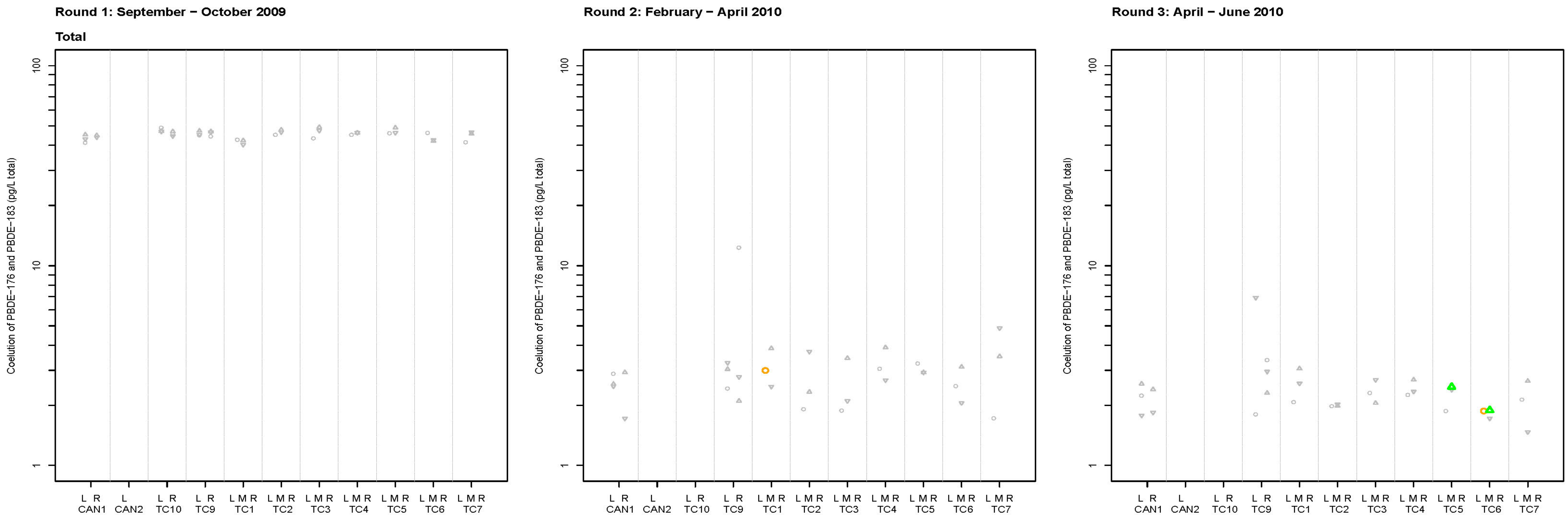
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Coelution of PBDE−176 and PBDE−183



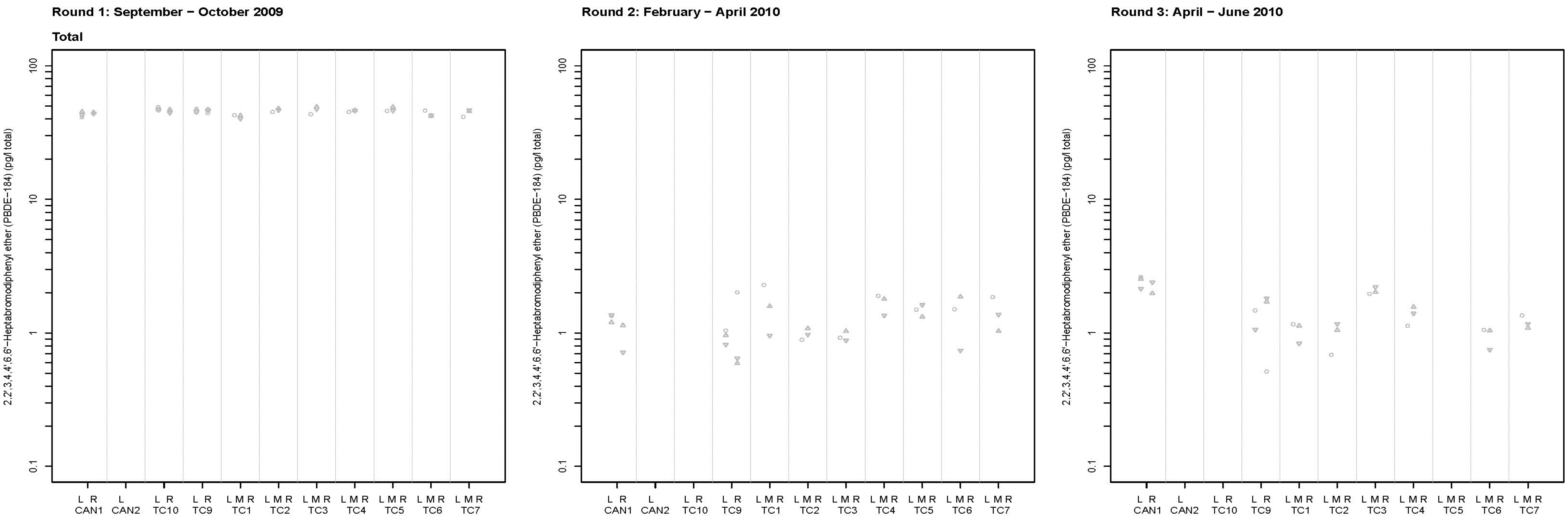
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2,2',3,4,4',6,6'−Heptabromodiphenyl ether (PBDE−184)



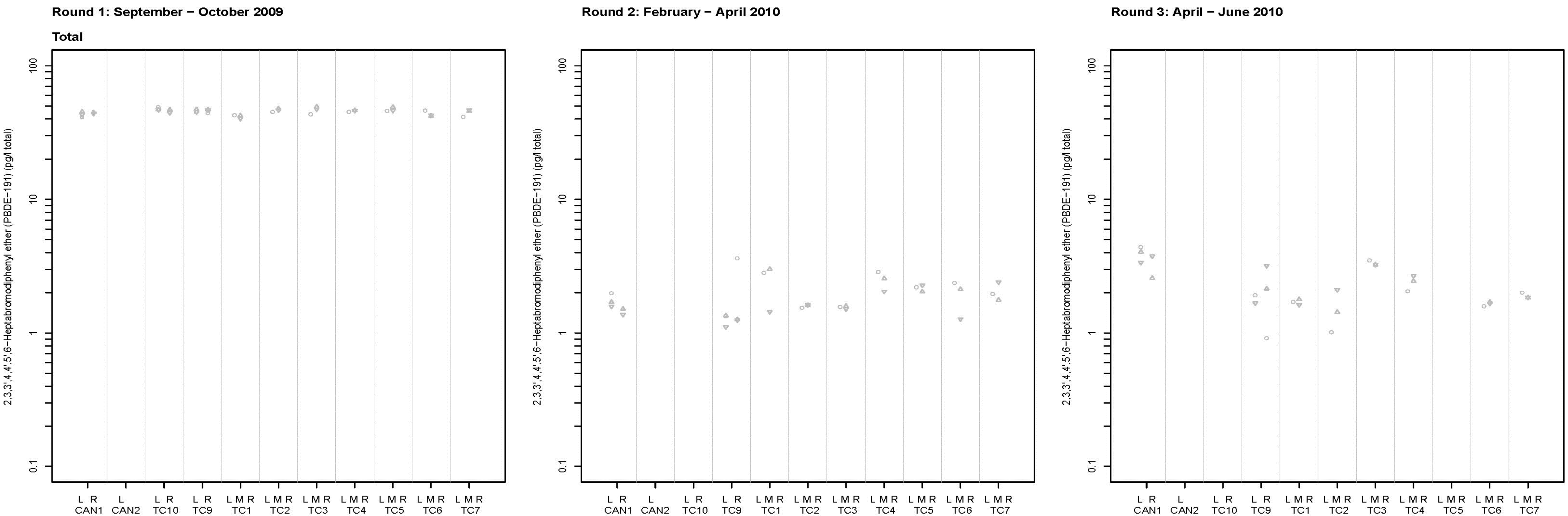
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − 2,3,3',4,4',5',6−Heptabromodiphenyl ether (PBDE−191)



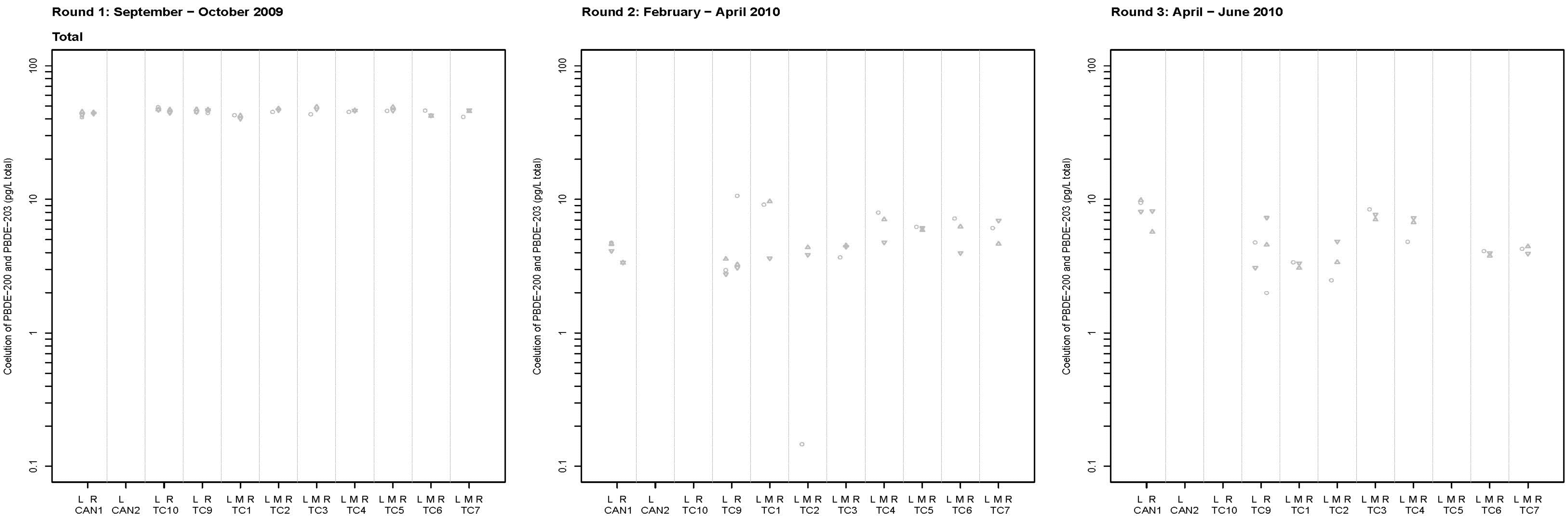
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Coelution of PBDE−200 and PBDE−203



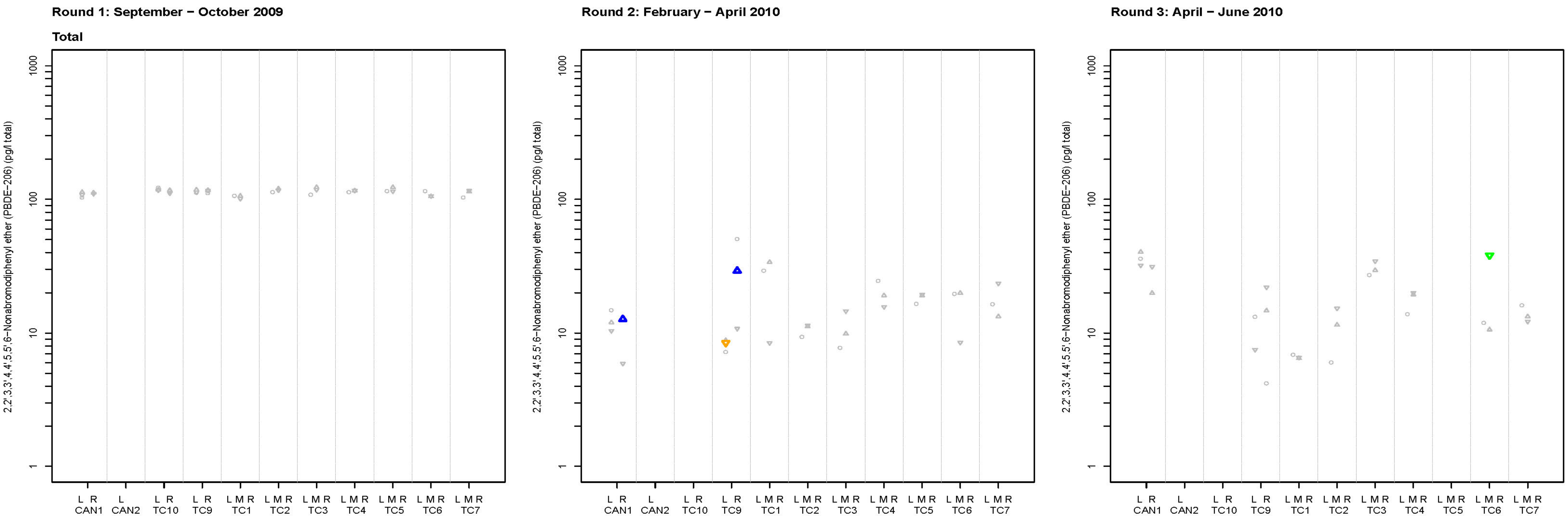
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – 2,2',3,3',4,4',5,5',6–Nonabromodiphenyl ether (PBDE–206)



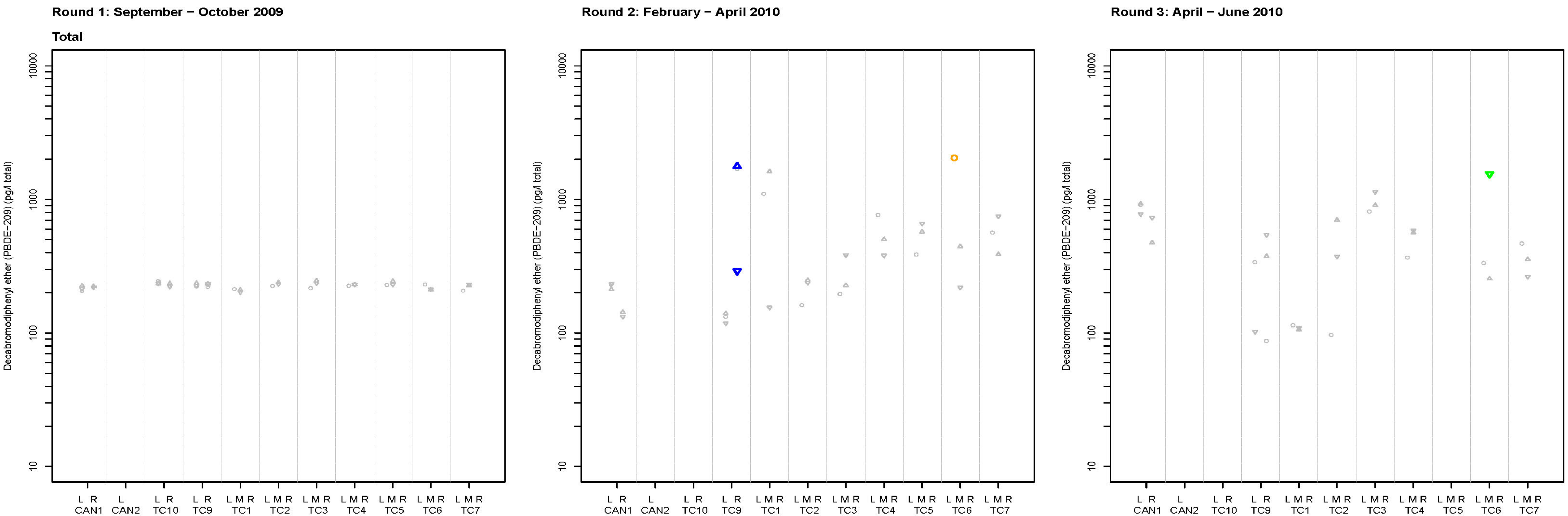
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water − Decabromodiphenyl ether (PBDE−209)



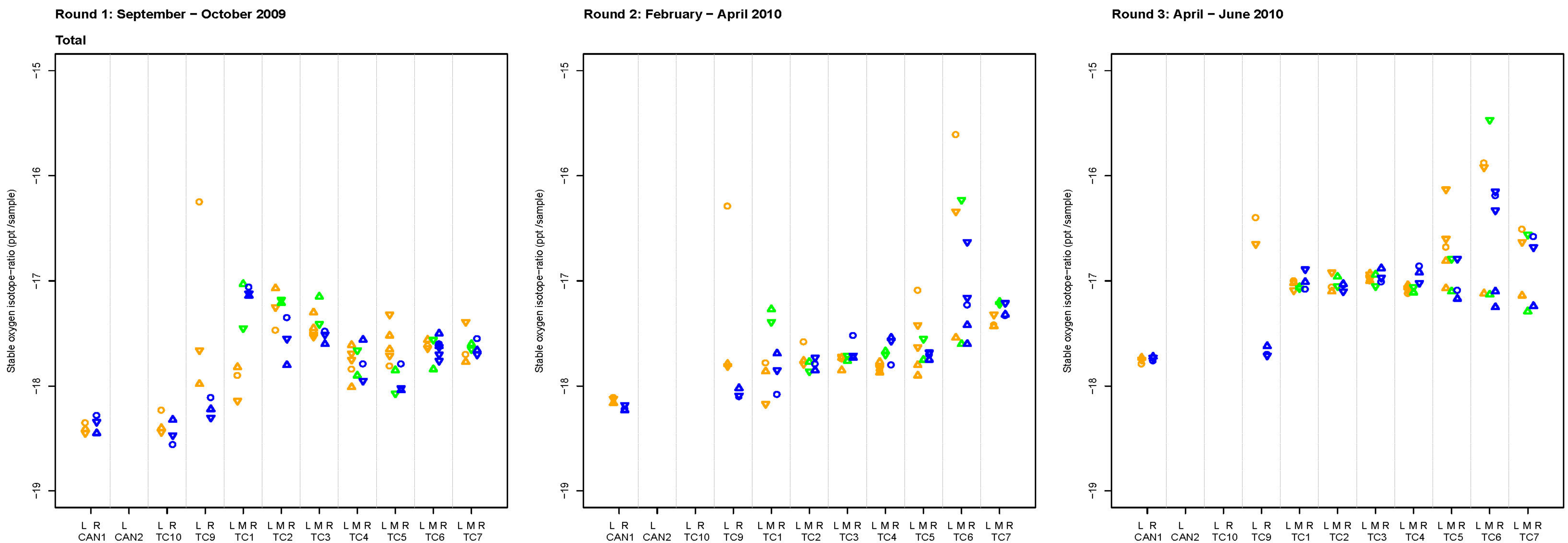
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Stable Oxygen Isotope–Ratio



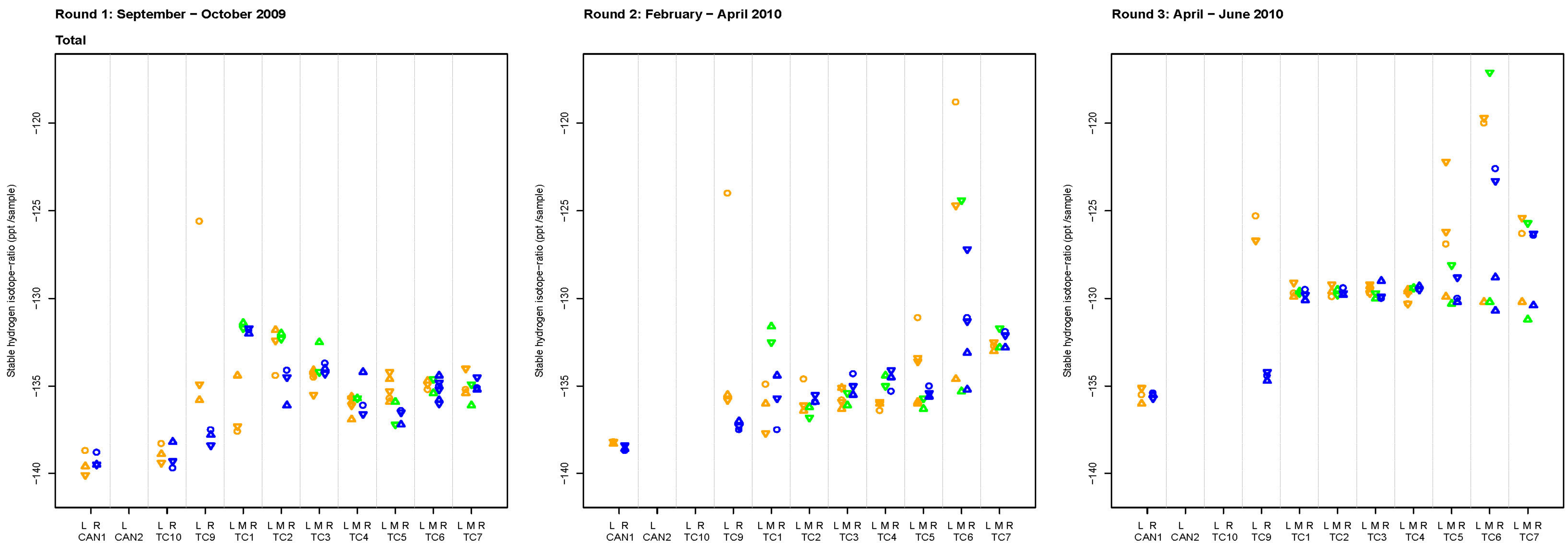
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

Surface Water – Stable Hydrogen Isotope–Ratio



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold
NRWQC (CCC)	EPA national recommended water quality criterion, chronic exposure
NRWQC (CMC)	EPA national recommended water quality criterion, acute exposure
NRWQC (B)	EPA national recommended water quality criterion, BLM calculation

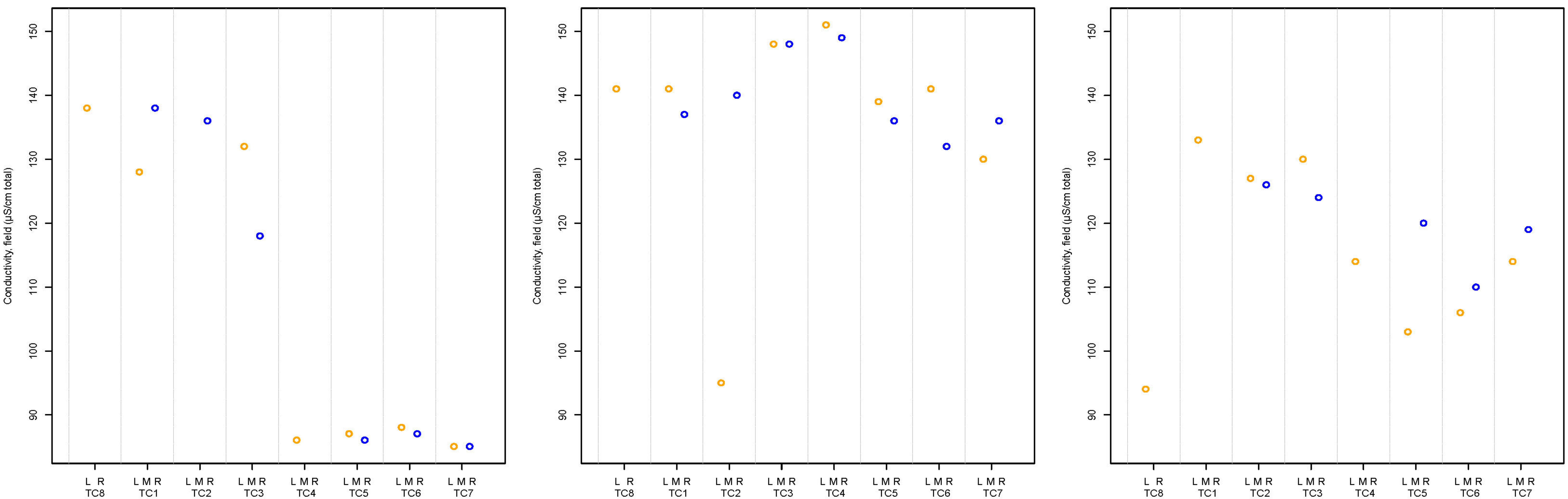
Disturbed Surface Water – Field Conductivity

Round 1: September – October 2009

Round 2: February – April 2010

Round 3: April – June 2010

Total



LEGEND

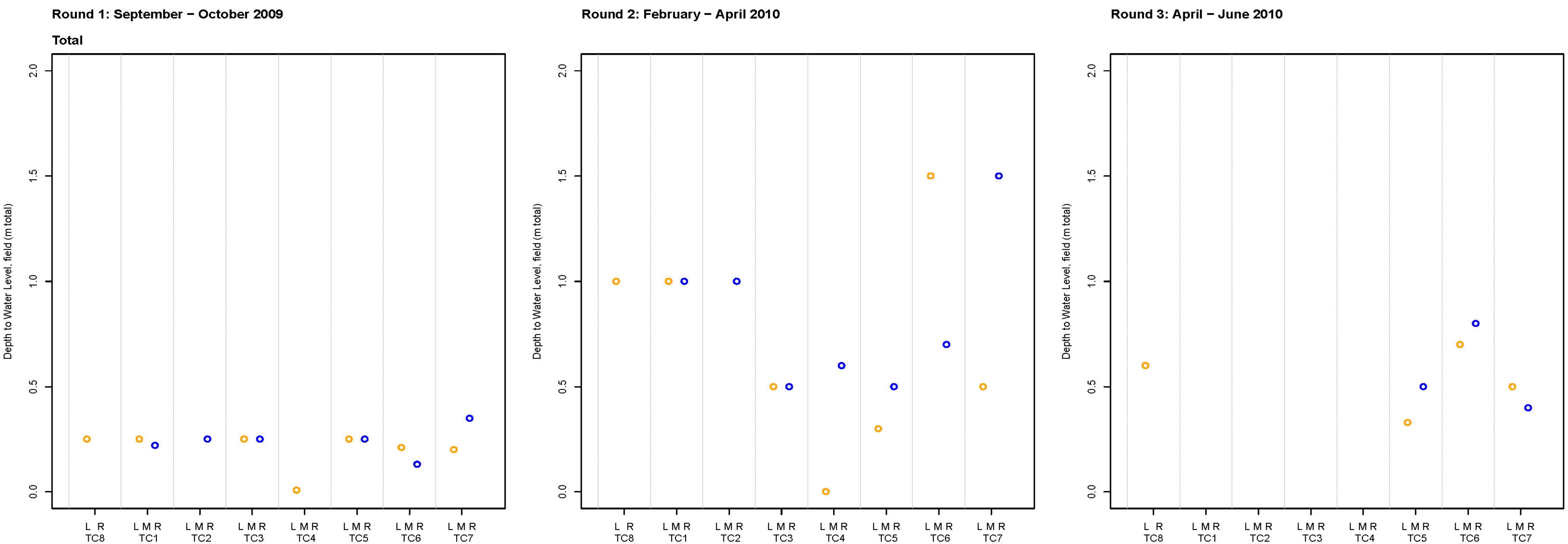
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Field Depth to Water Level



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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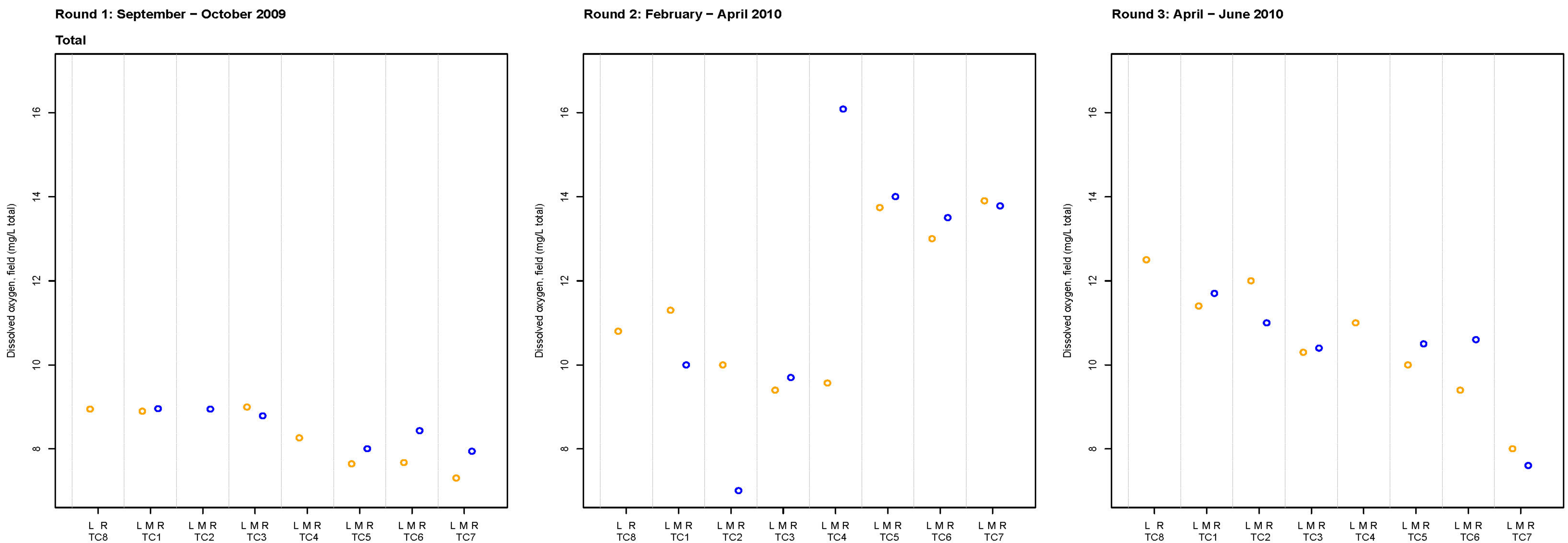
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Field Dissolved Oxygen



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

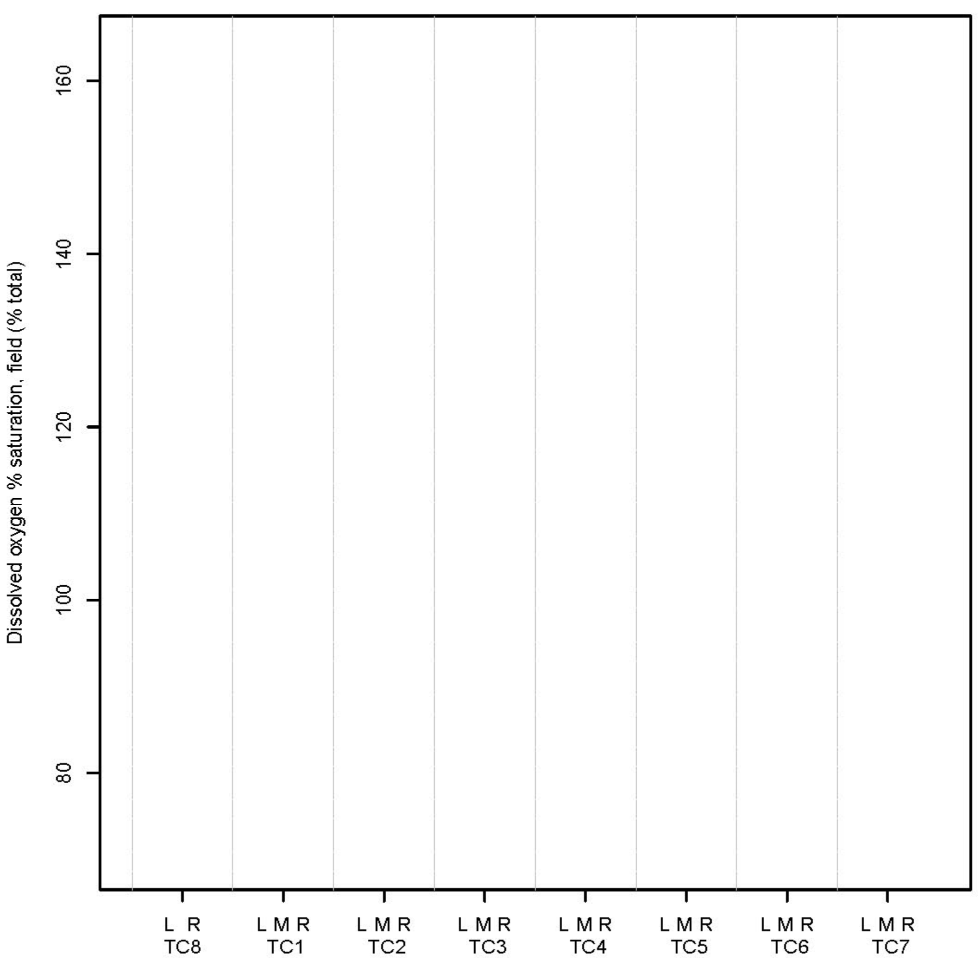
Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

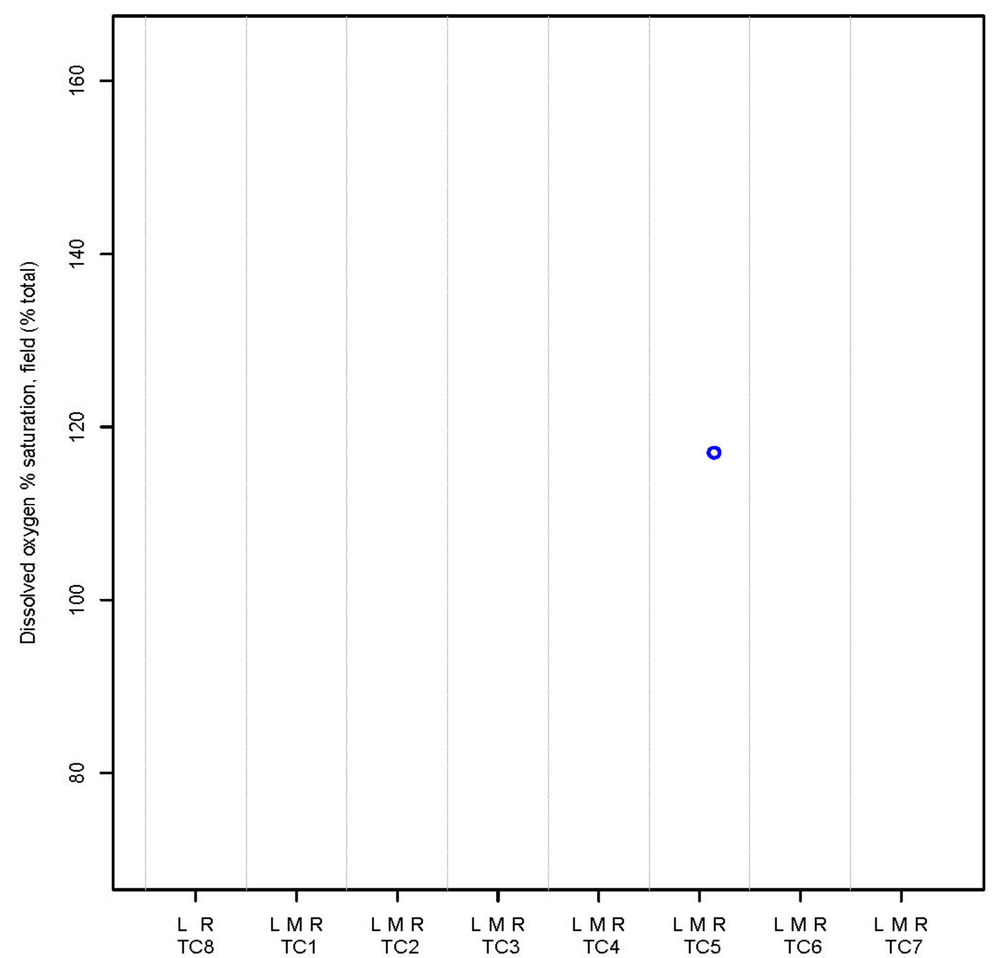
Disturbed Surface Water − Field Dissolved Oxygen

Round 1: September − October 2009

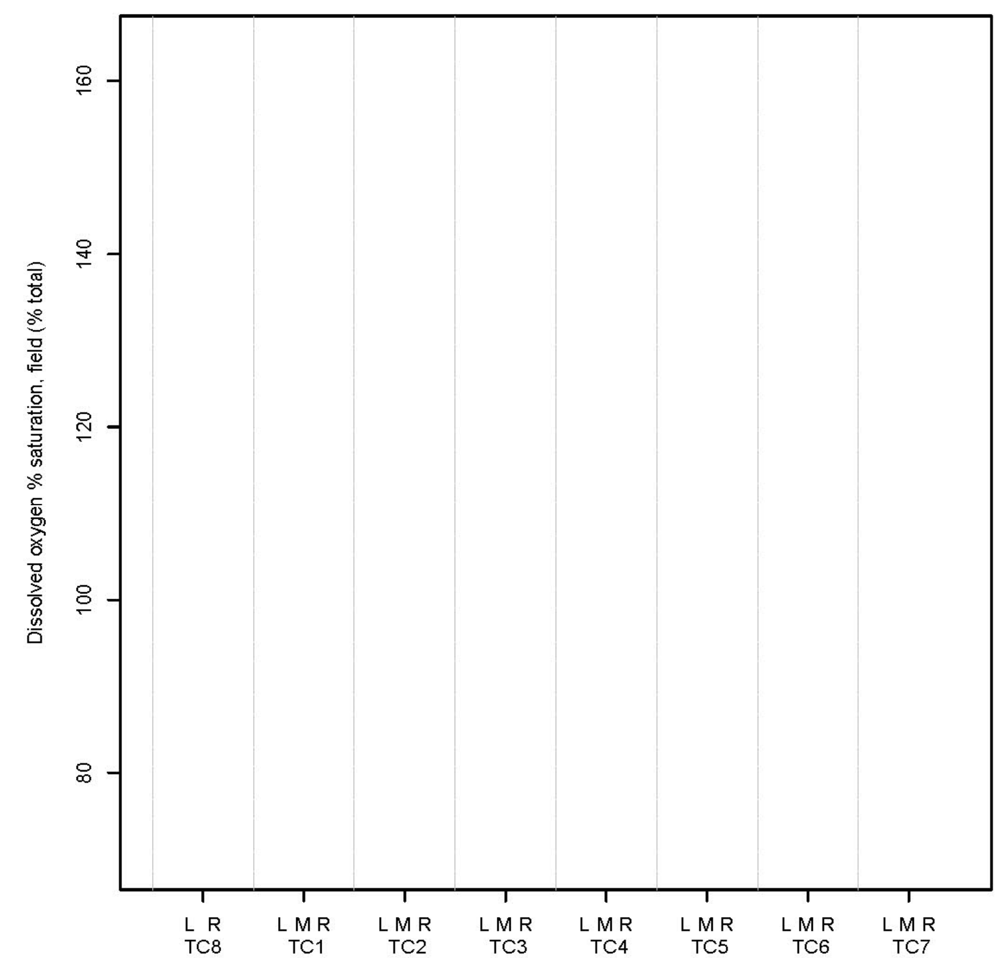
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

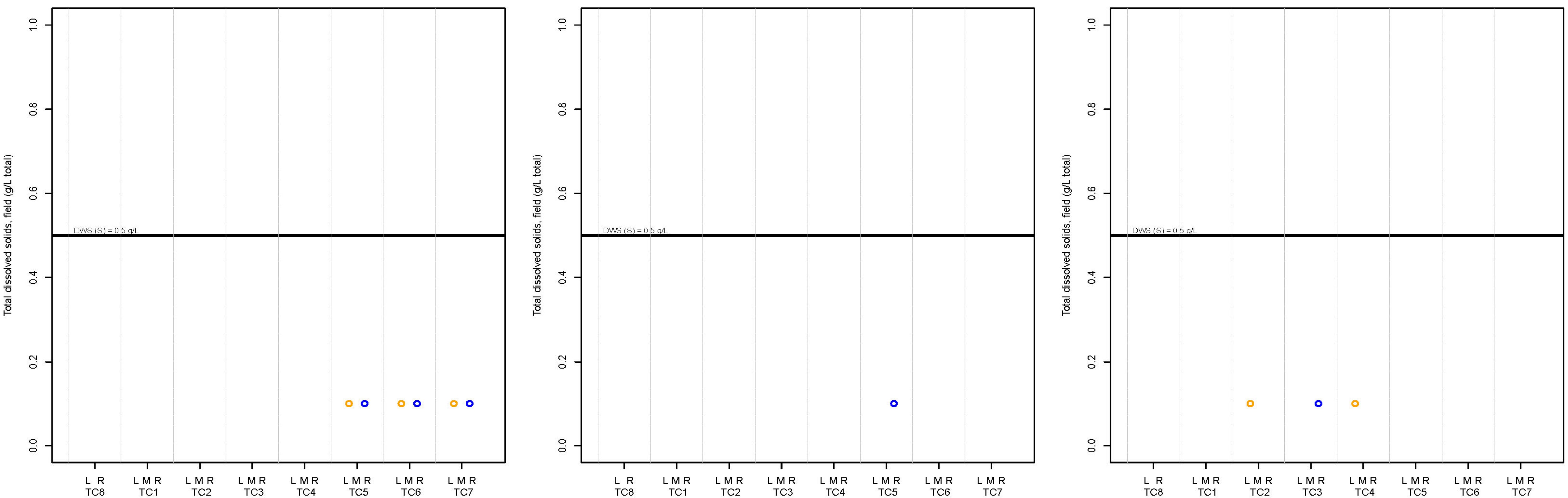
Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Field Dissolved Solids

Round 1: September – October 2009 **Round 2: February – April 2010** **Round 3: April – June 2010**

Total



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

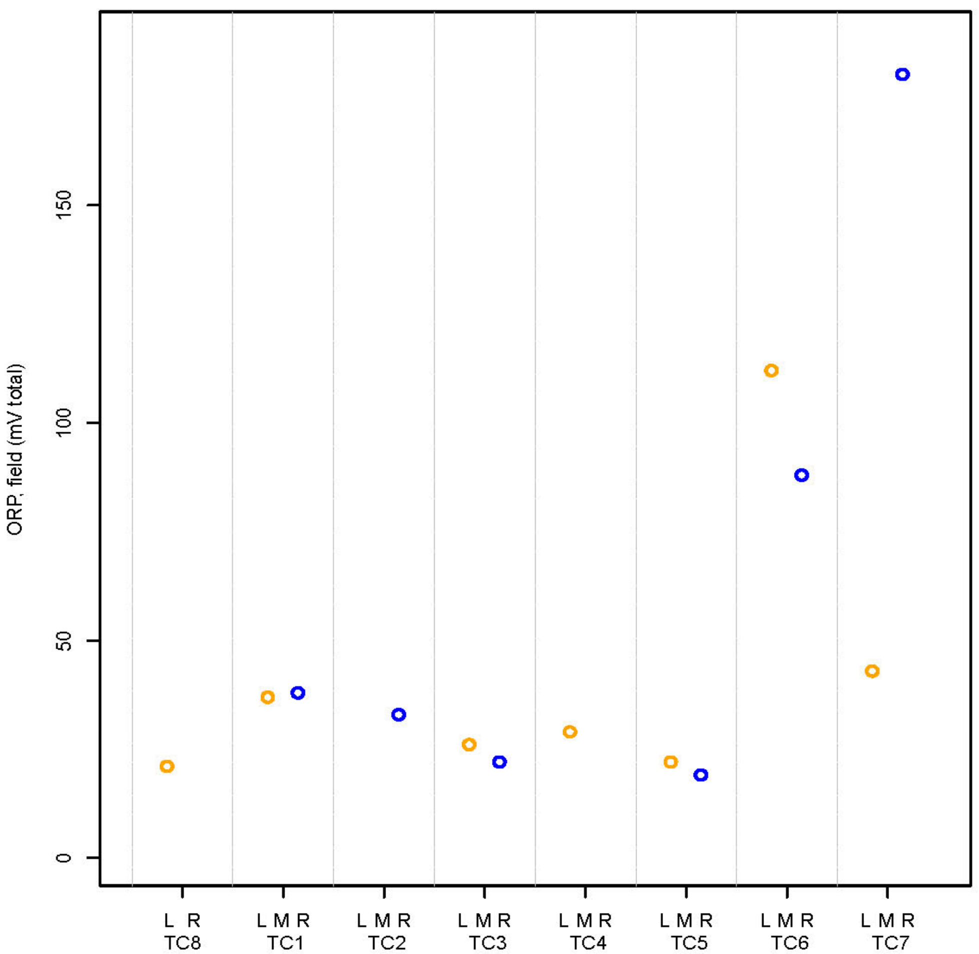
Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

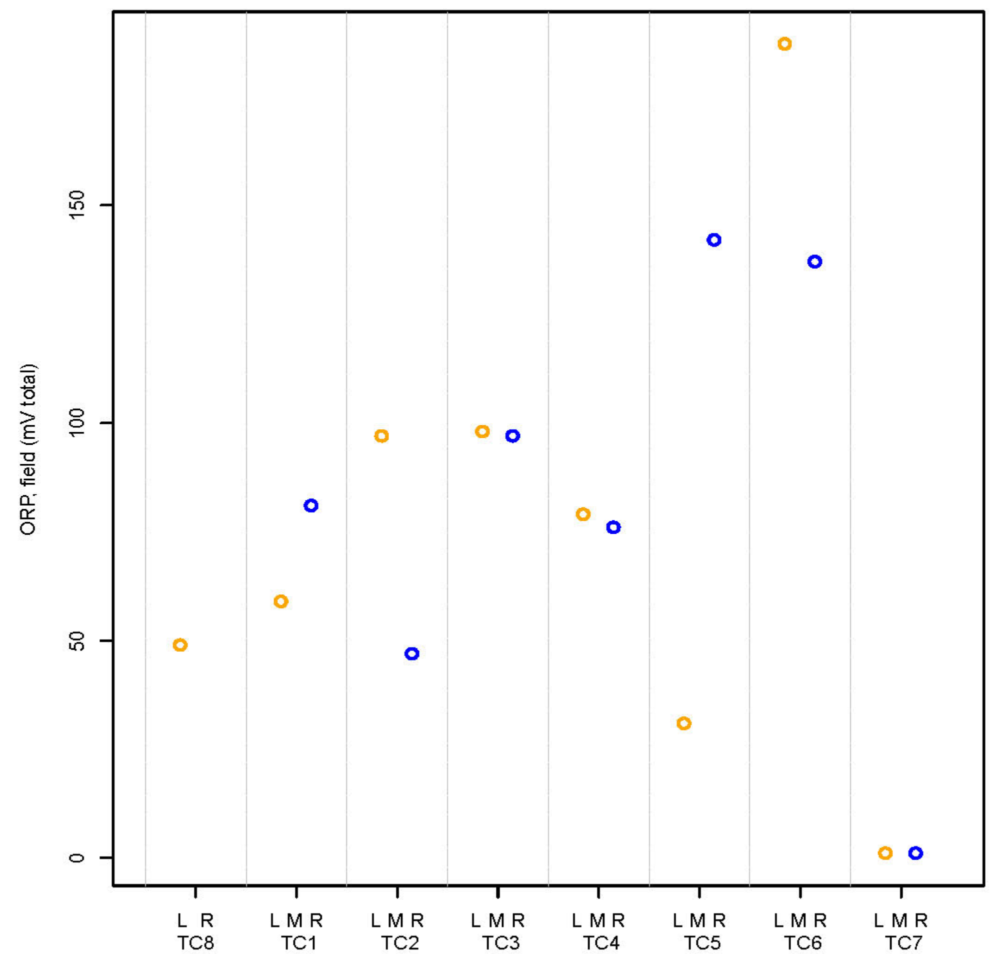
Disturbed Surface Water − Field Oxidation Reduction Potential

Round 1: September − October 2009

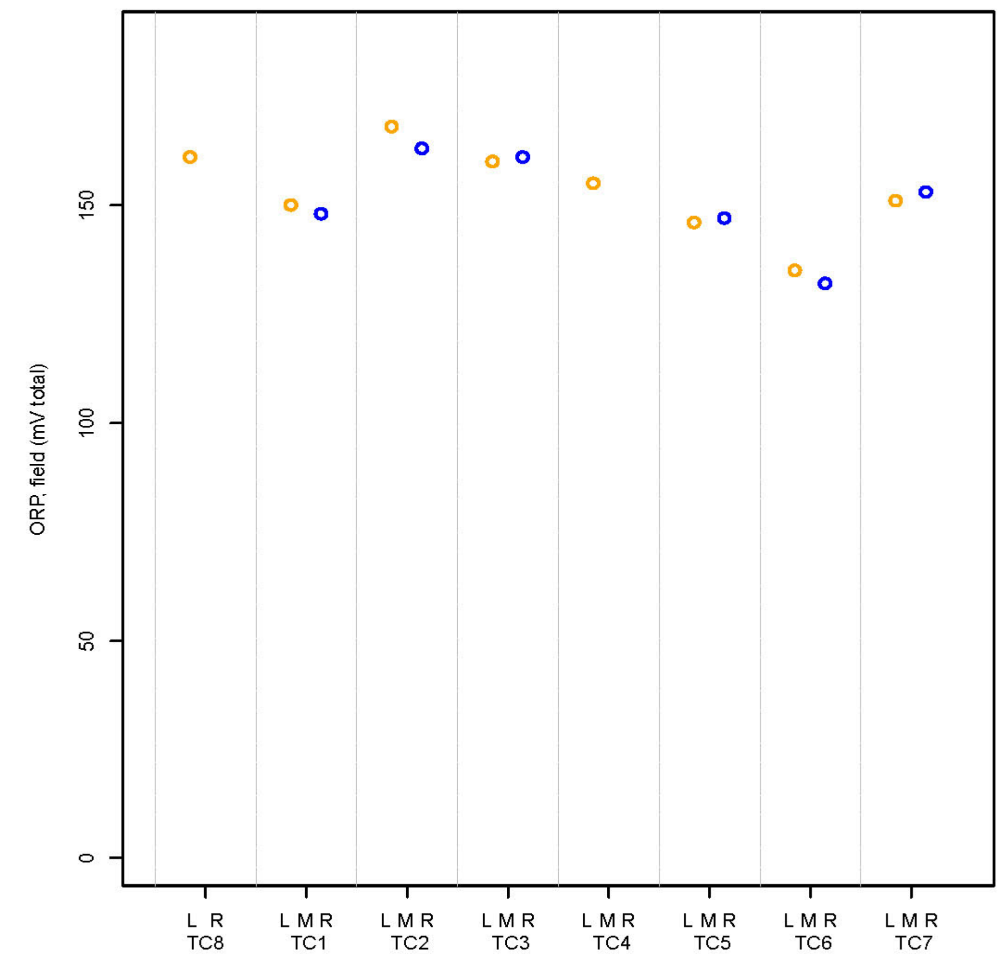
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

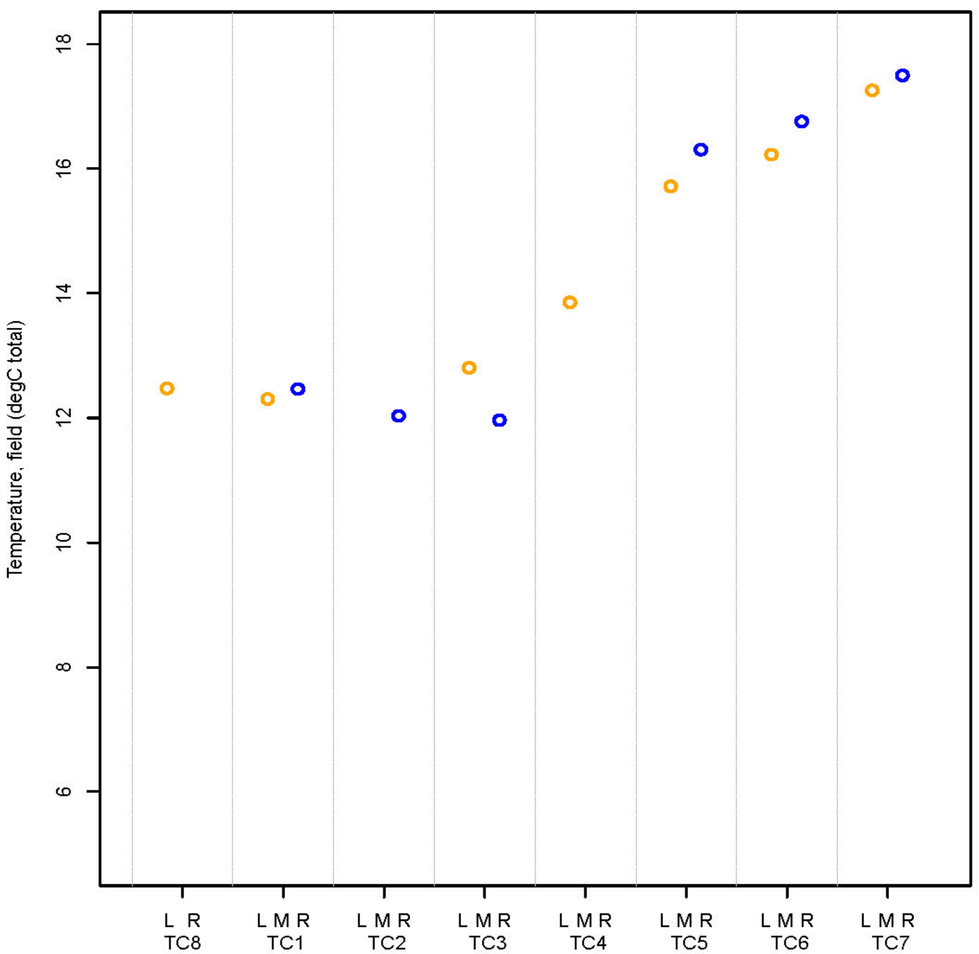
Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

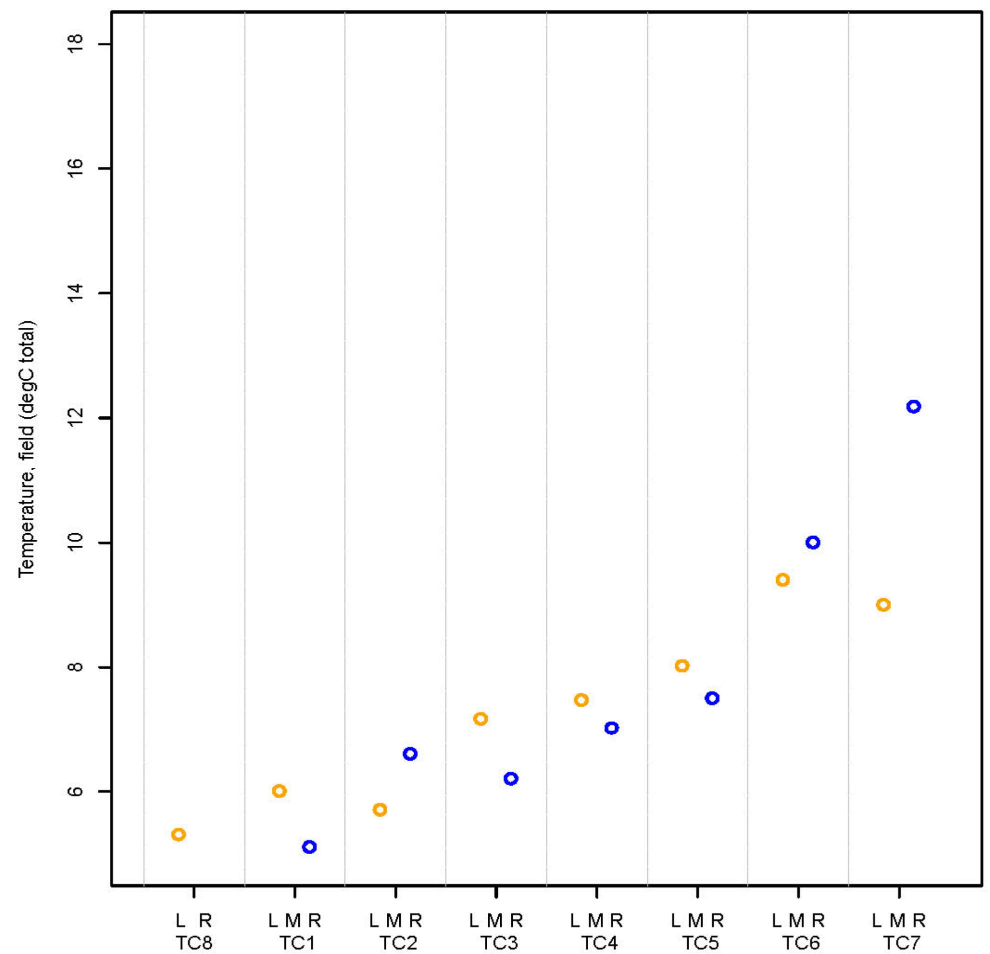
Disturbed Surface Water – Field Temperature

Round 1: September – October 2009

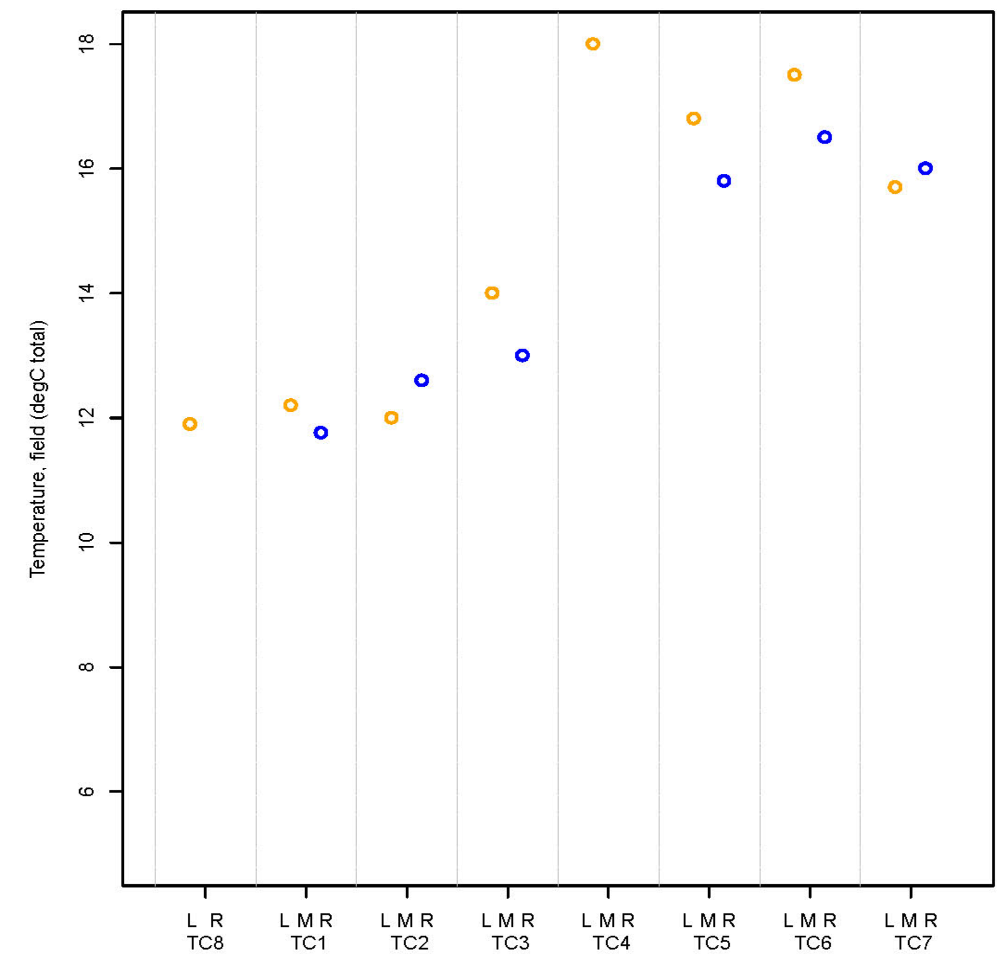
Total



Round 2: February – April 2010



Round 3: April – June 2010



LEGEND

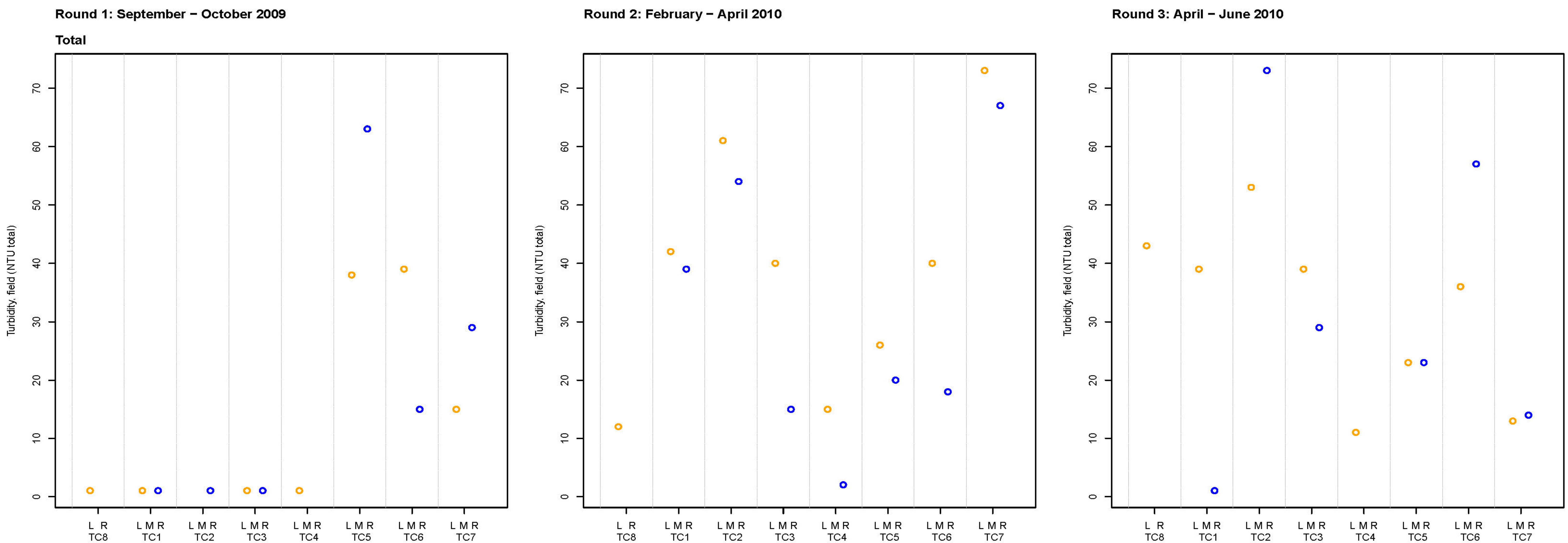
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Field Turbidity



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

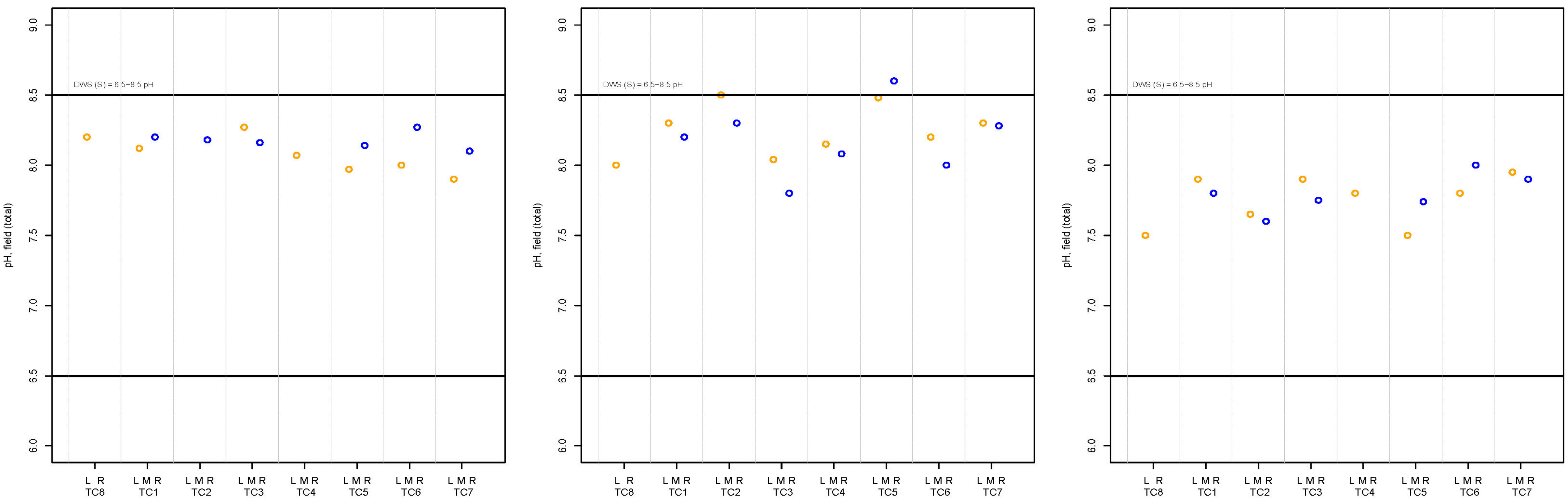
Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Field pH

Round 1: September – October 2009 | **Round 2: February – April 2010** | **Round 3: April – June 2010**

Total



LEGEND

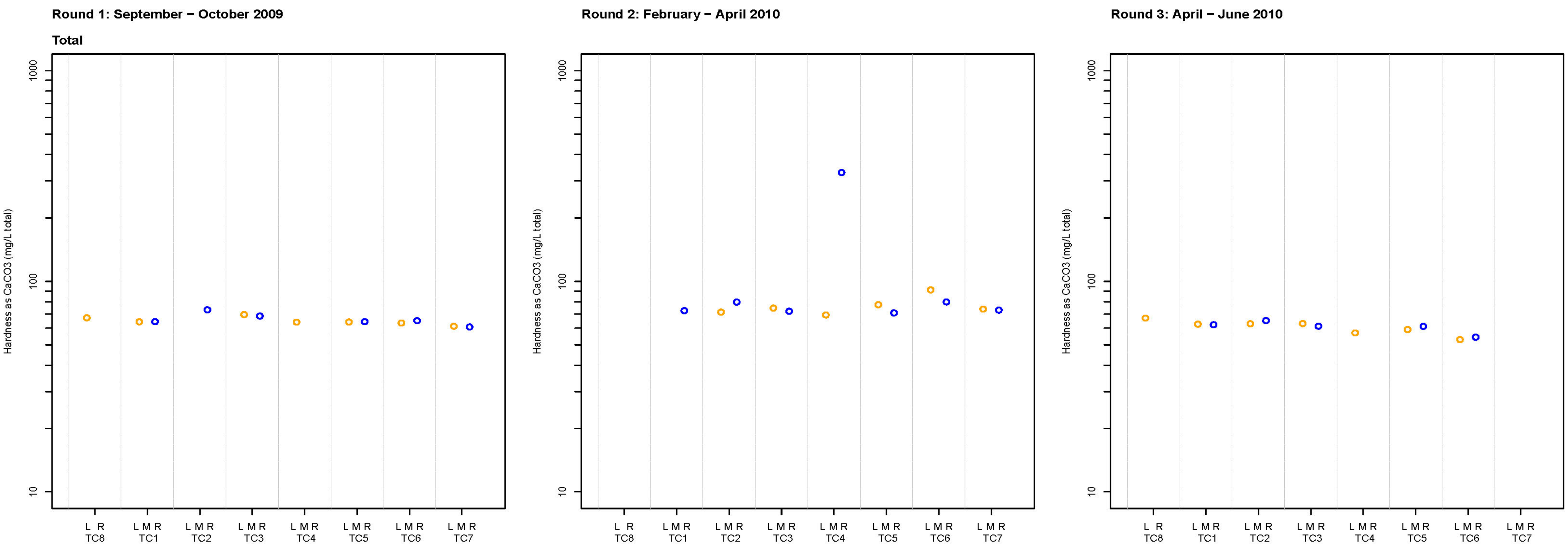
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Hardness



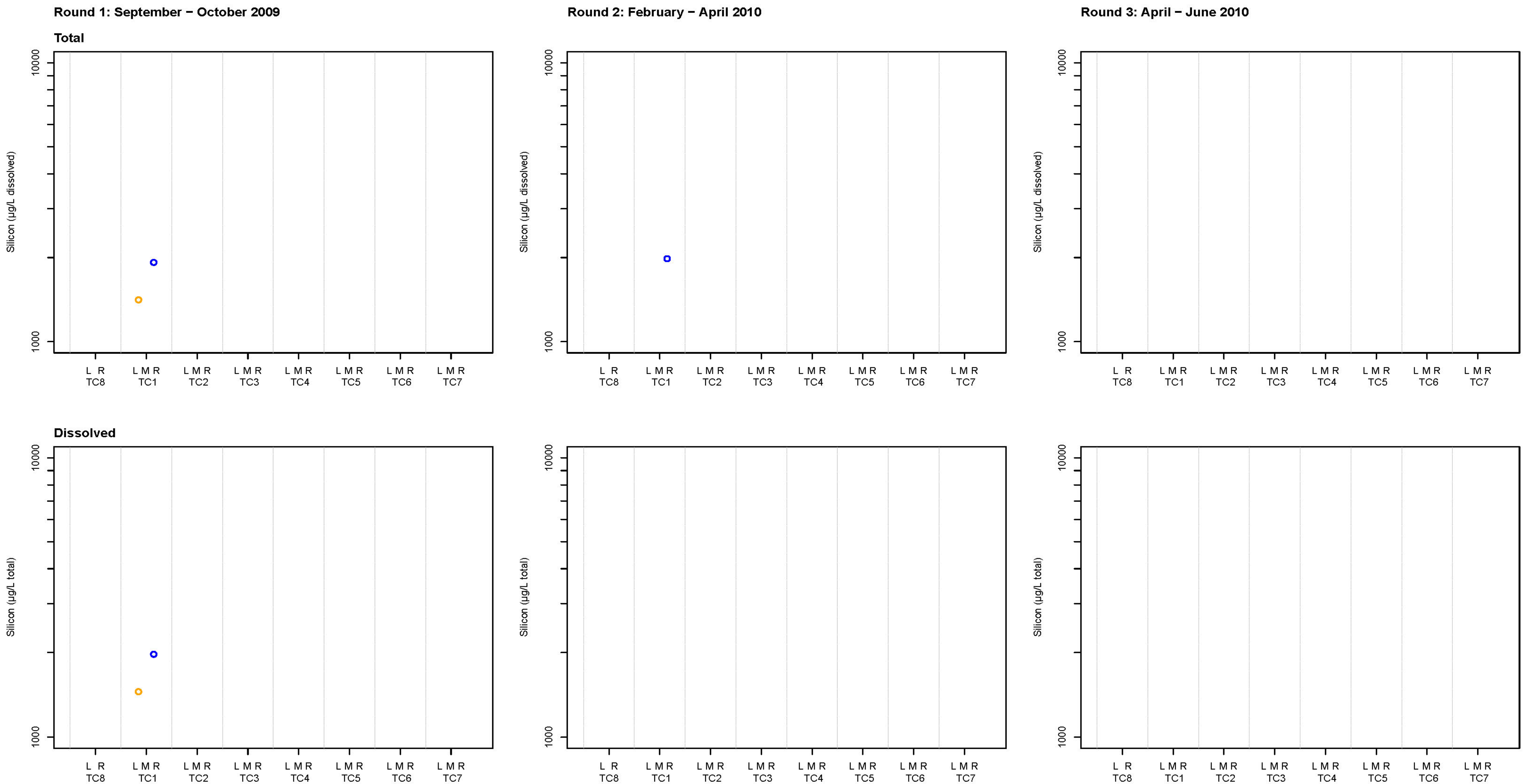
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Silicon



LEGEND

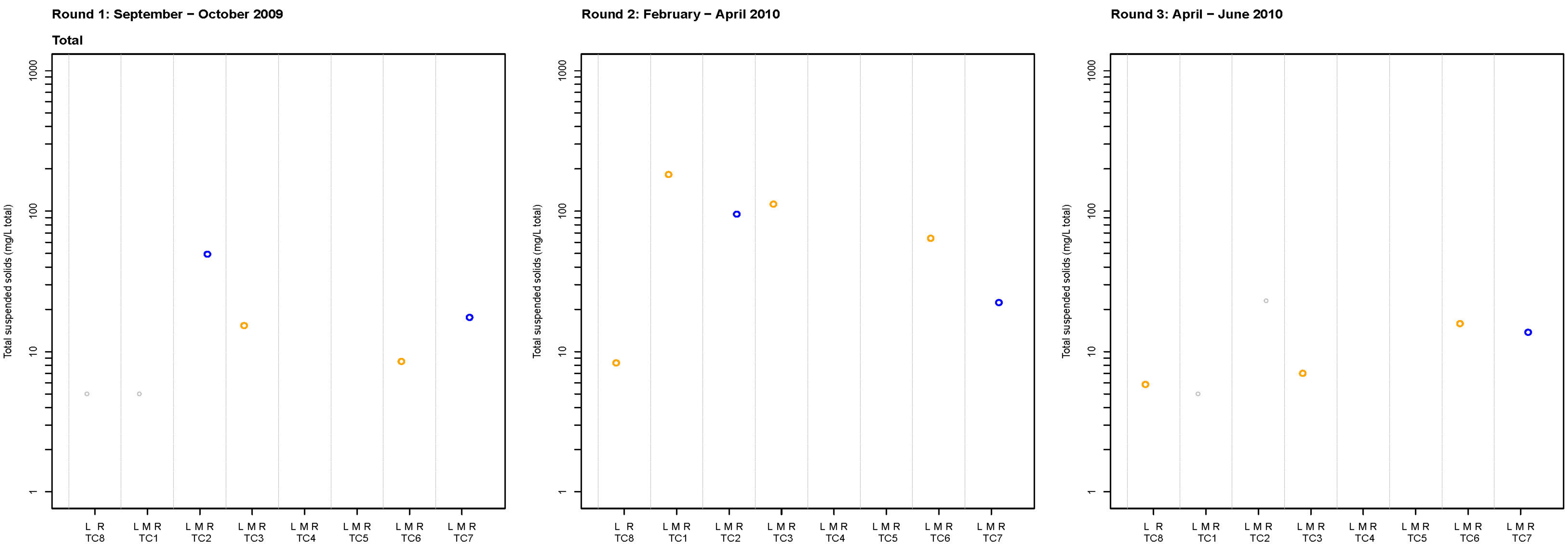
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Total Solids



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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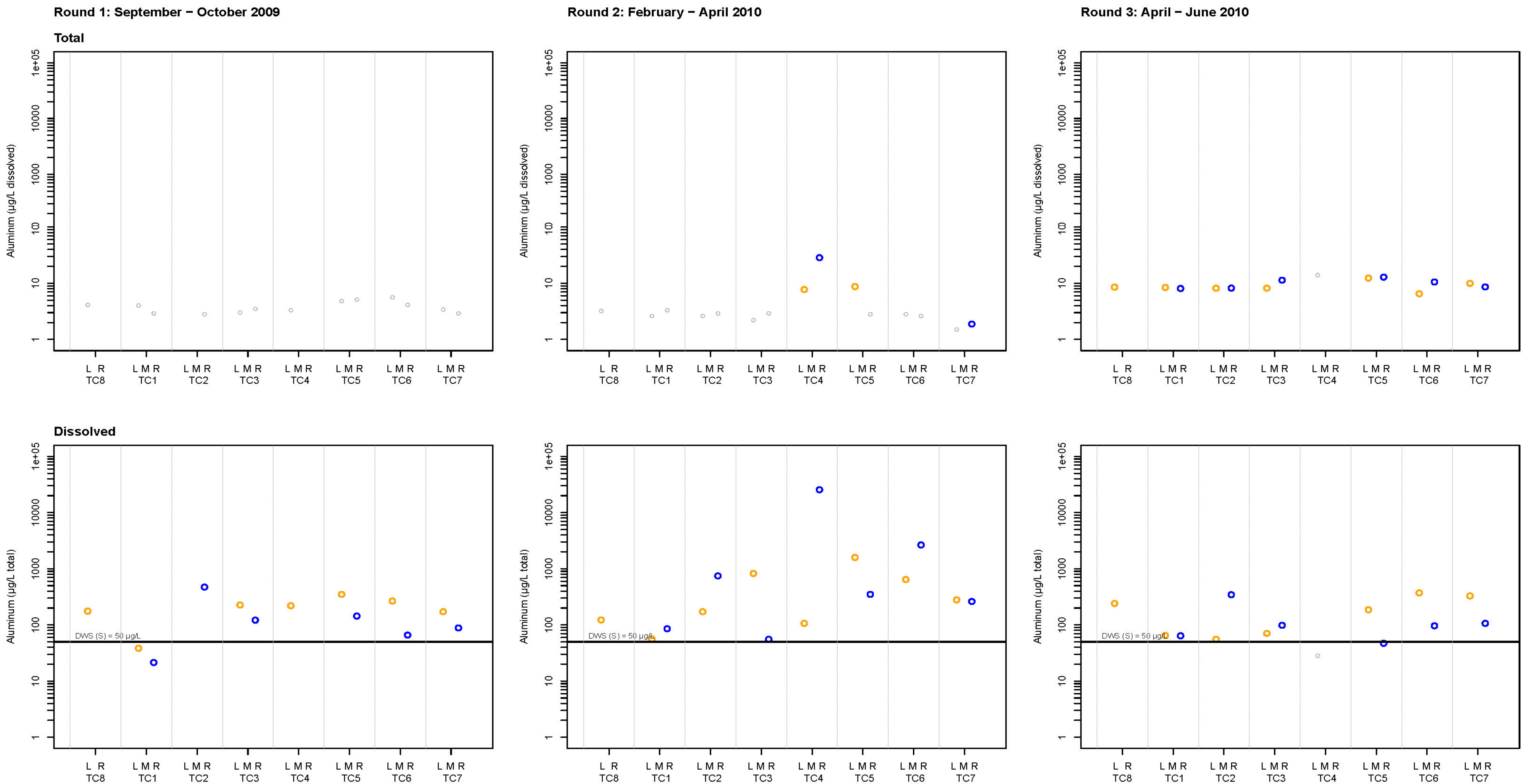
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Aluminum



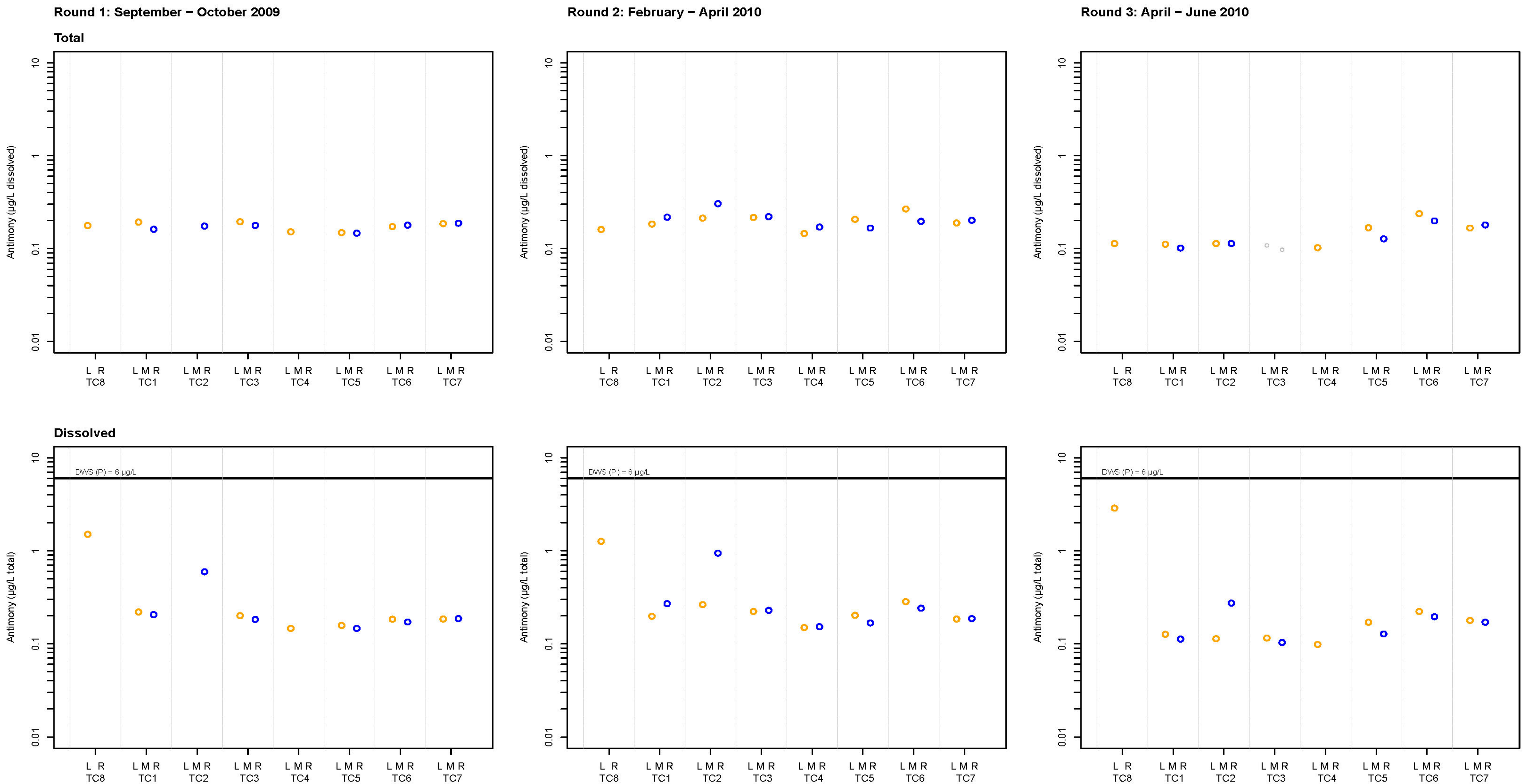
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Antimony



LEGEND

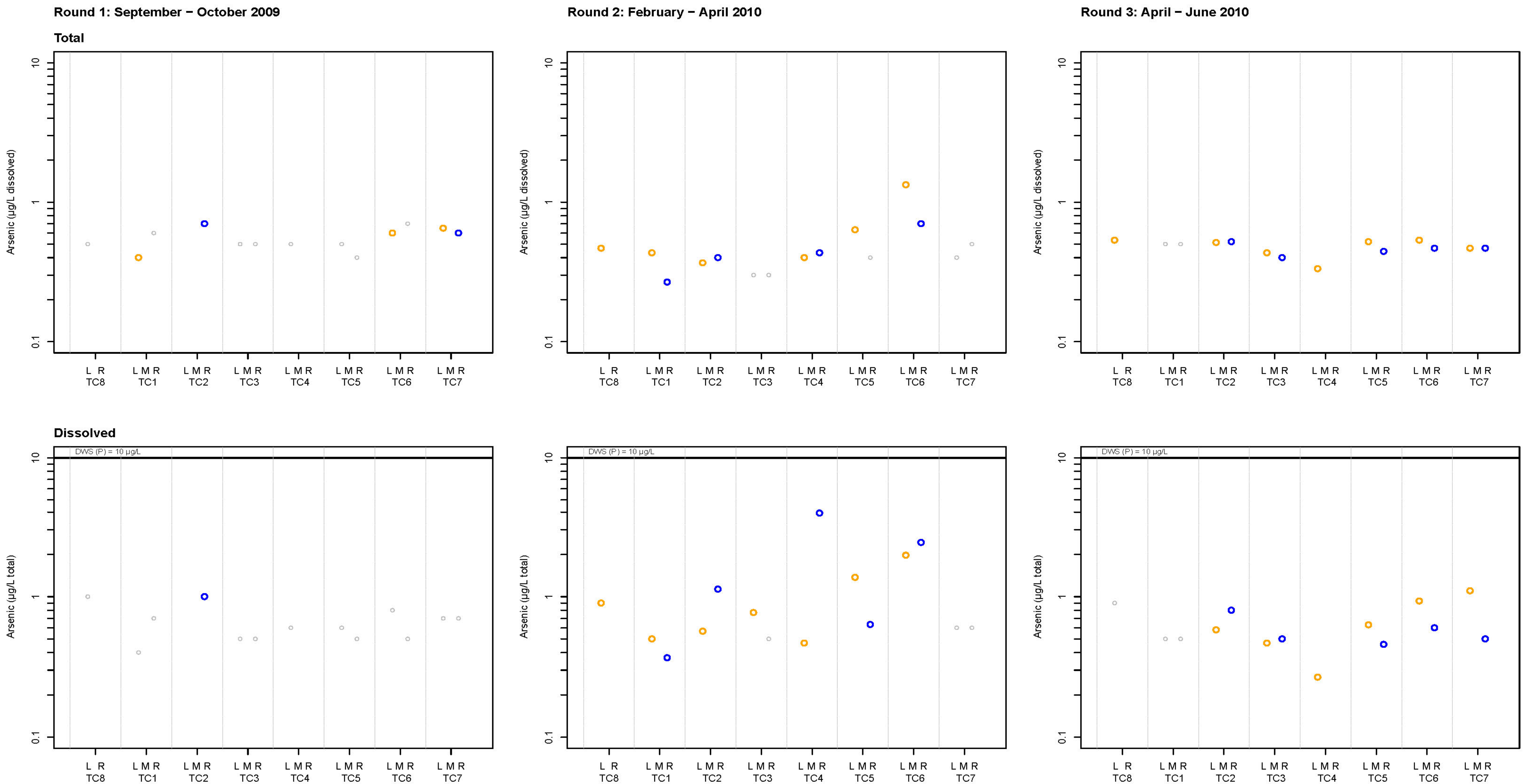
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Arsenic



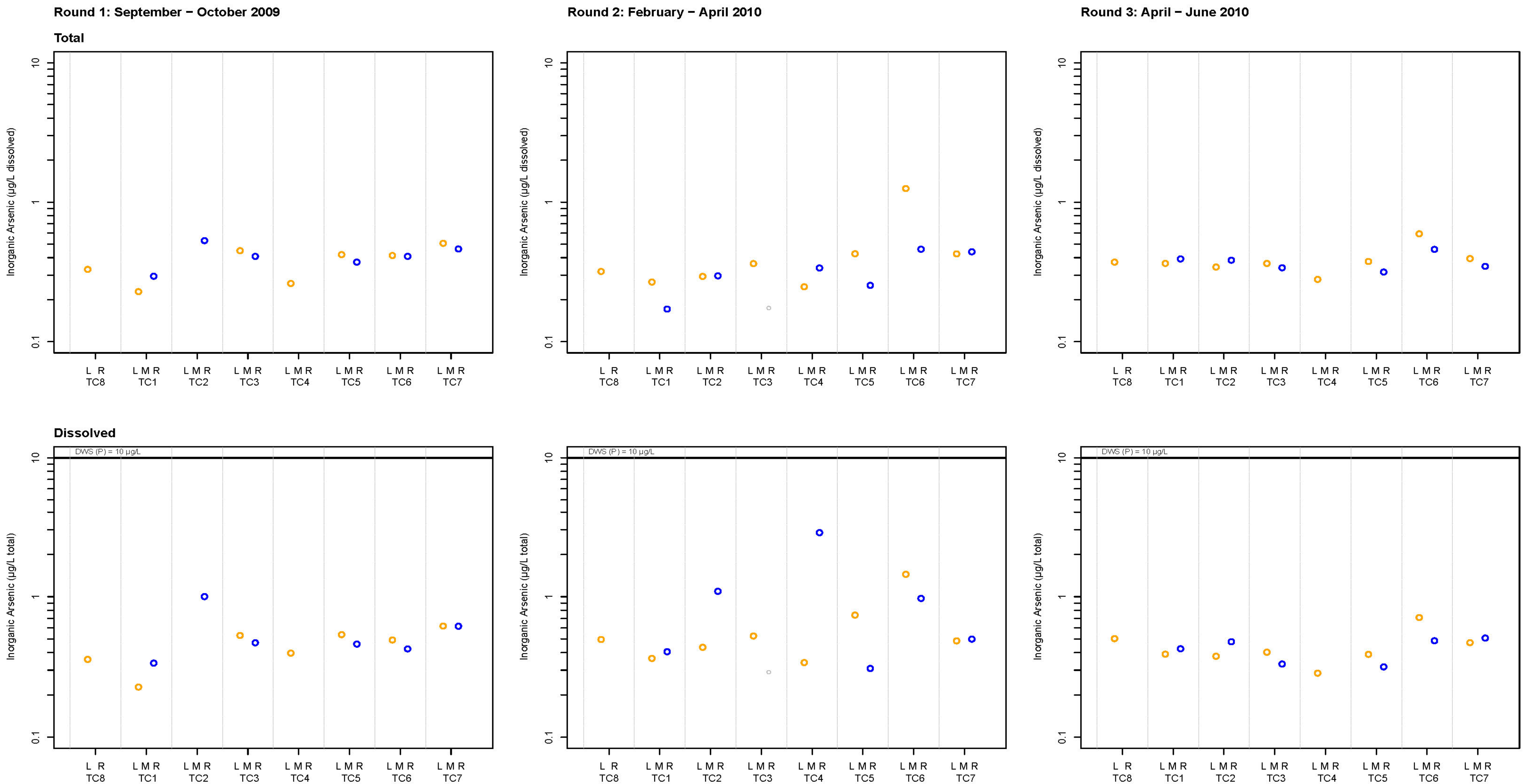
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Inorganic Arsenic



LEGEND

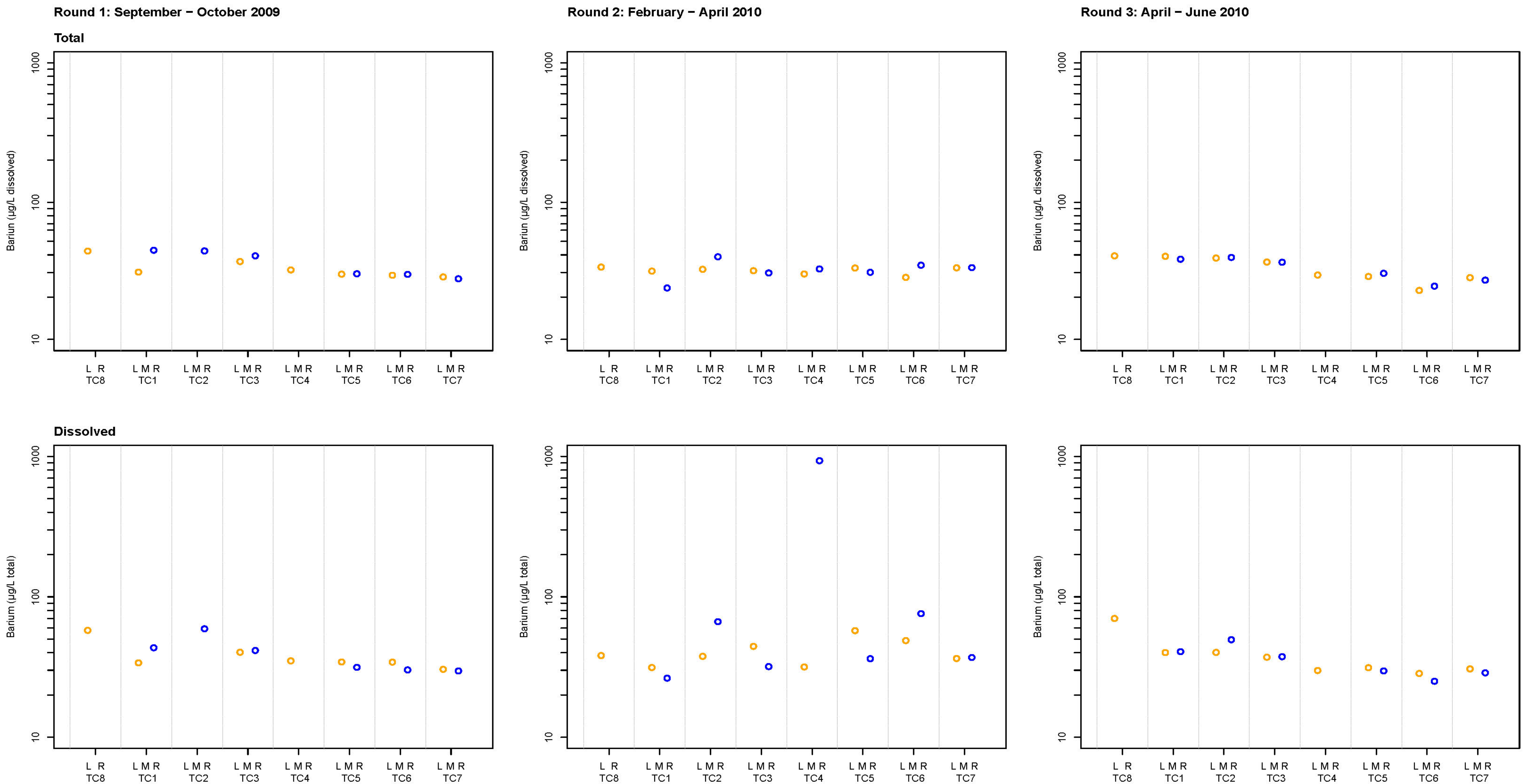
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Barium



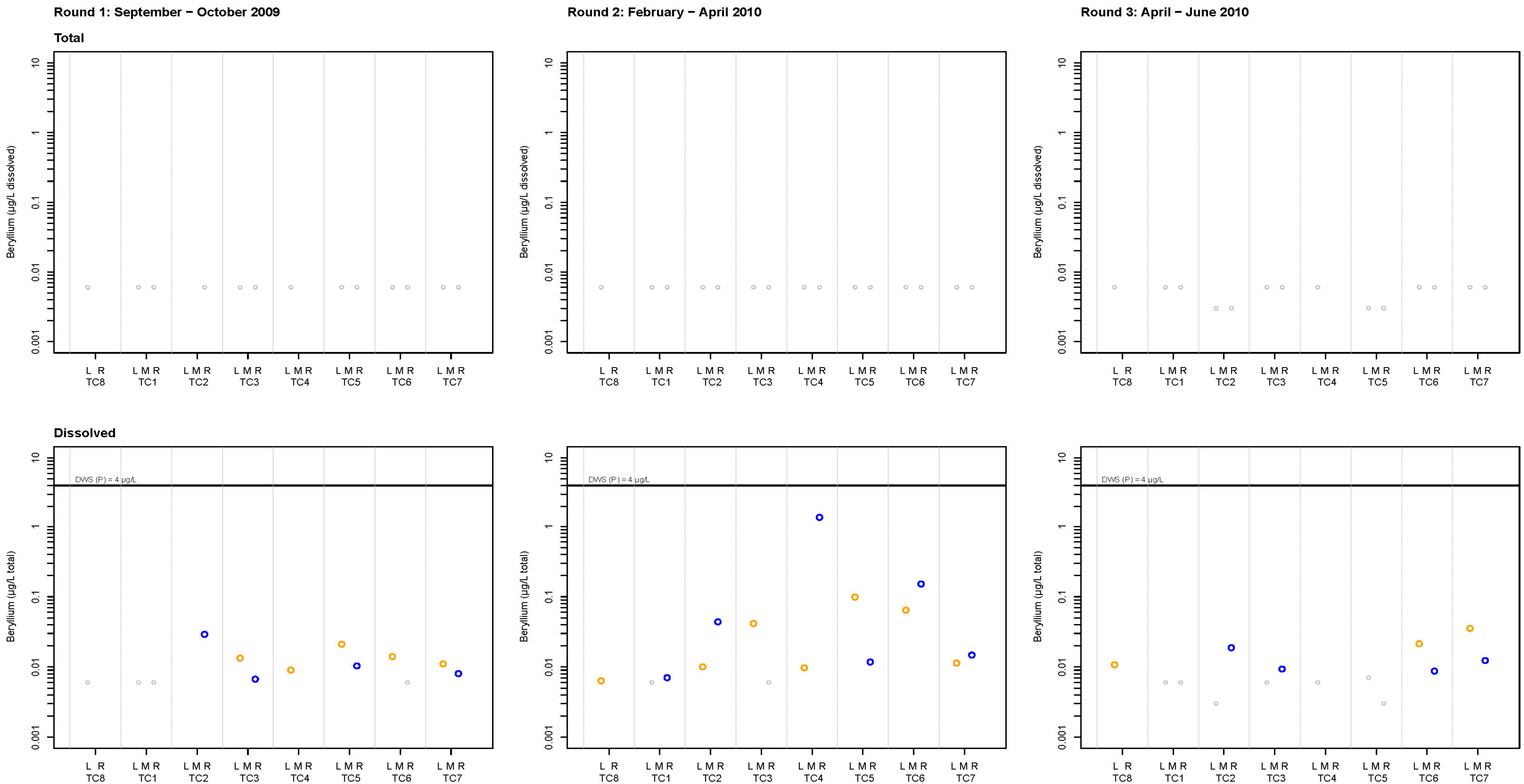
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Beryllium



LEGEND

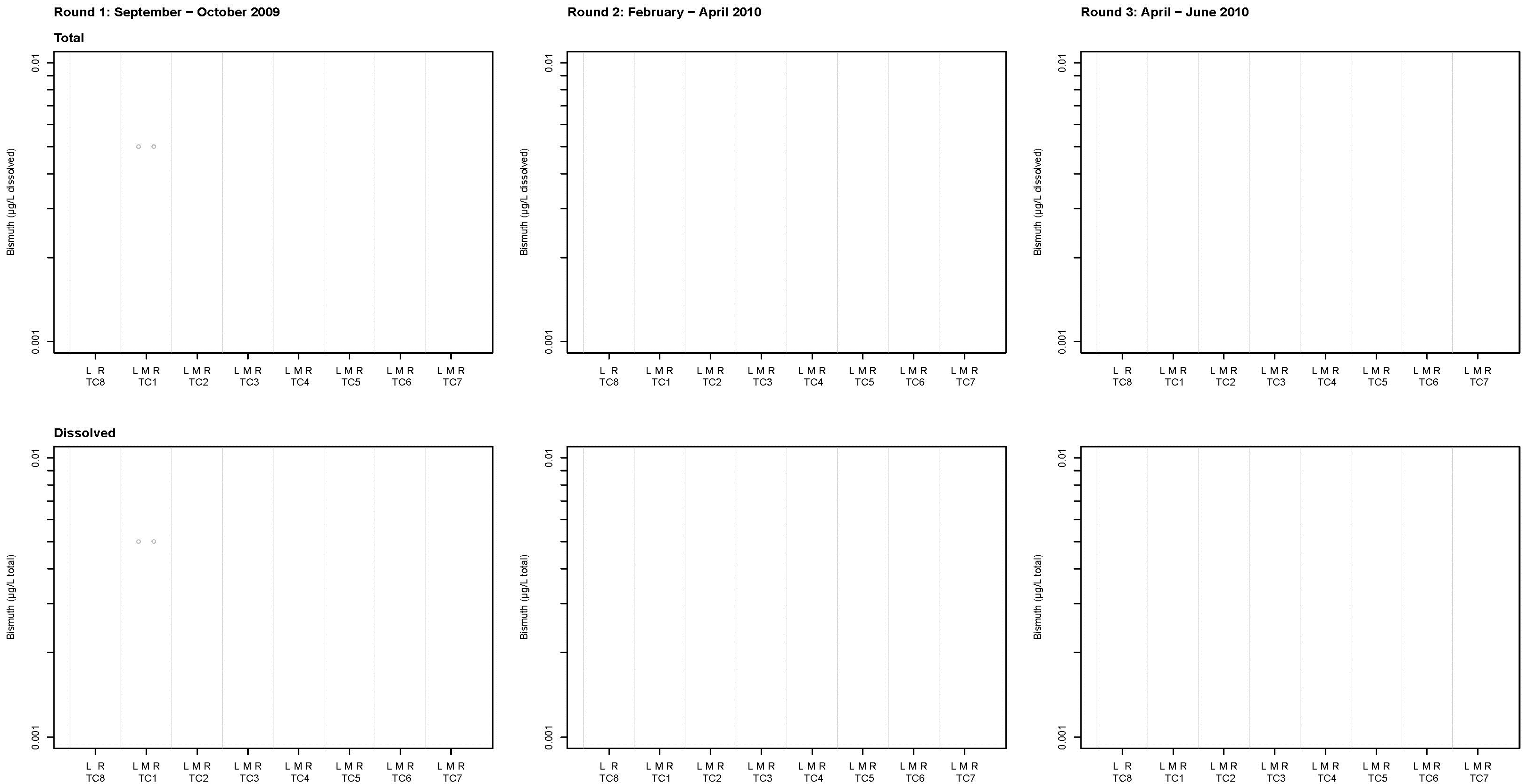
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water − Bismuth



LEGEND

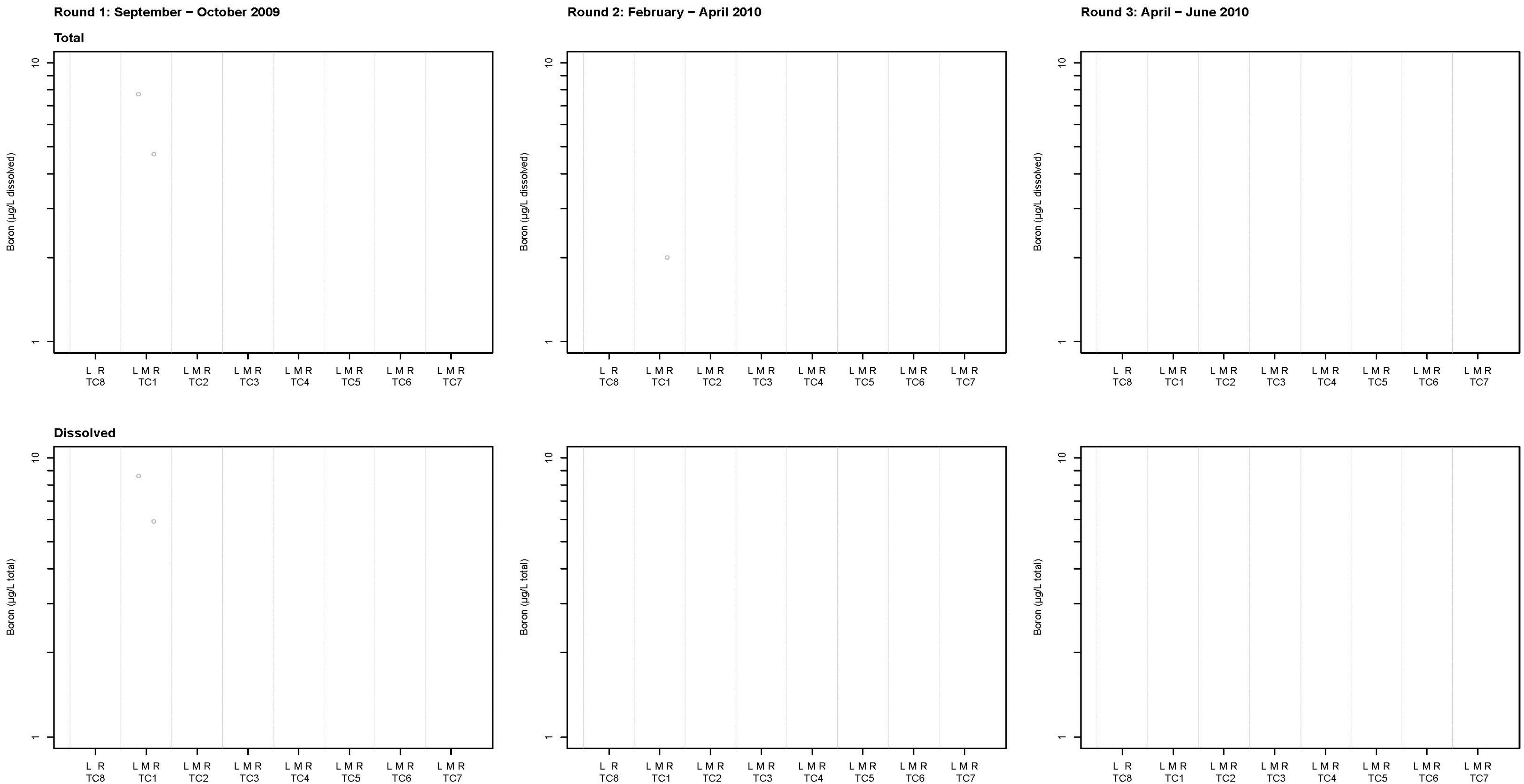
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Boron



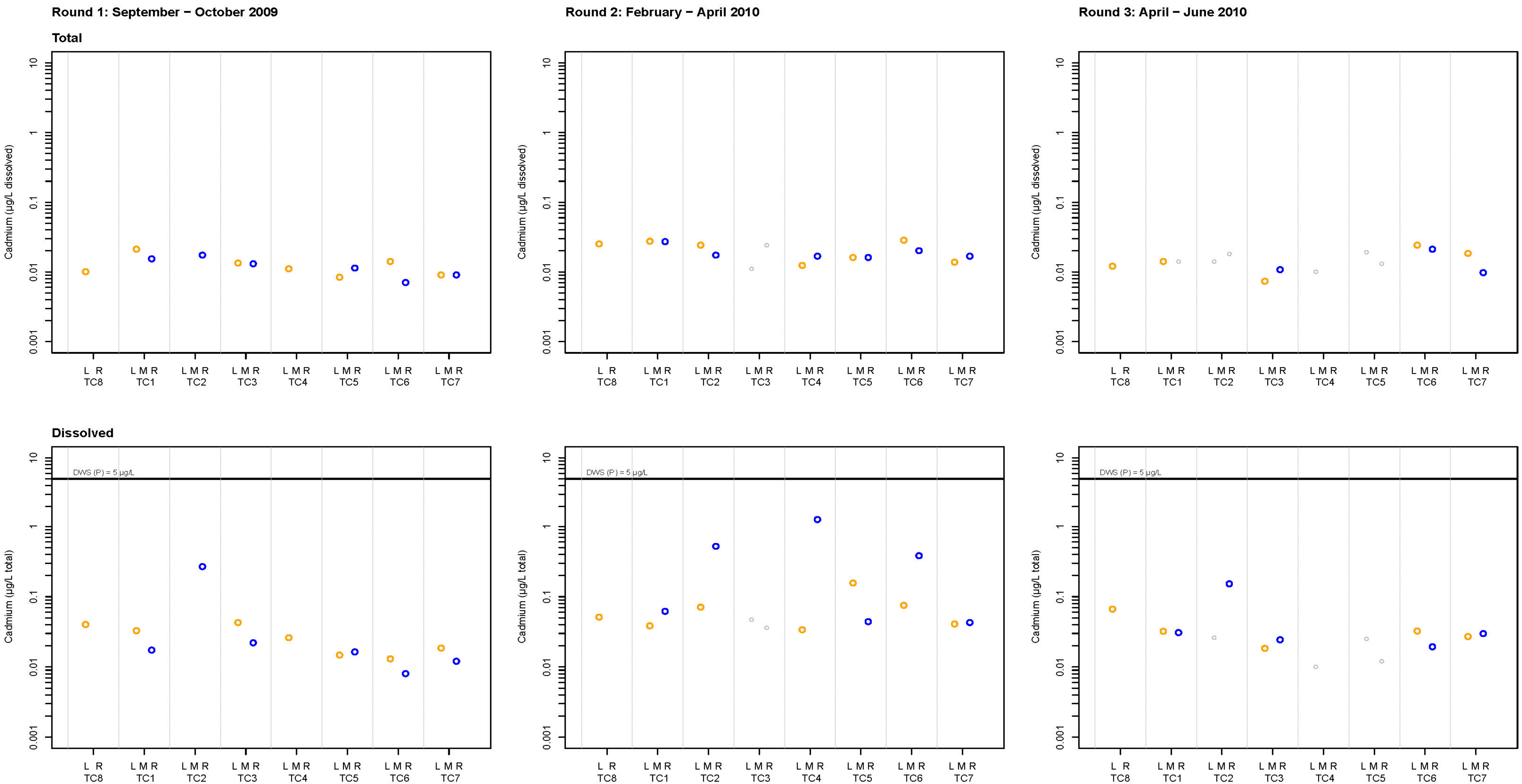
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Cadmium



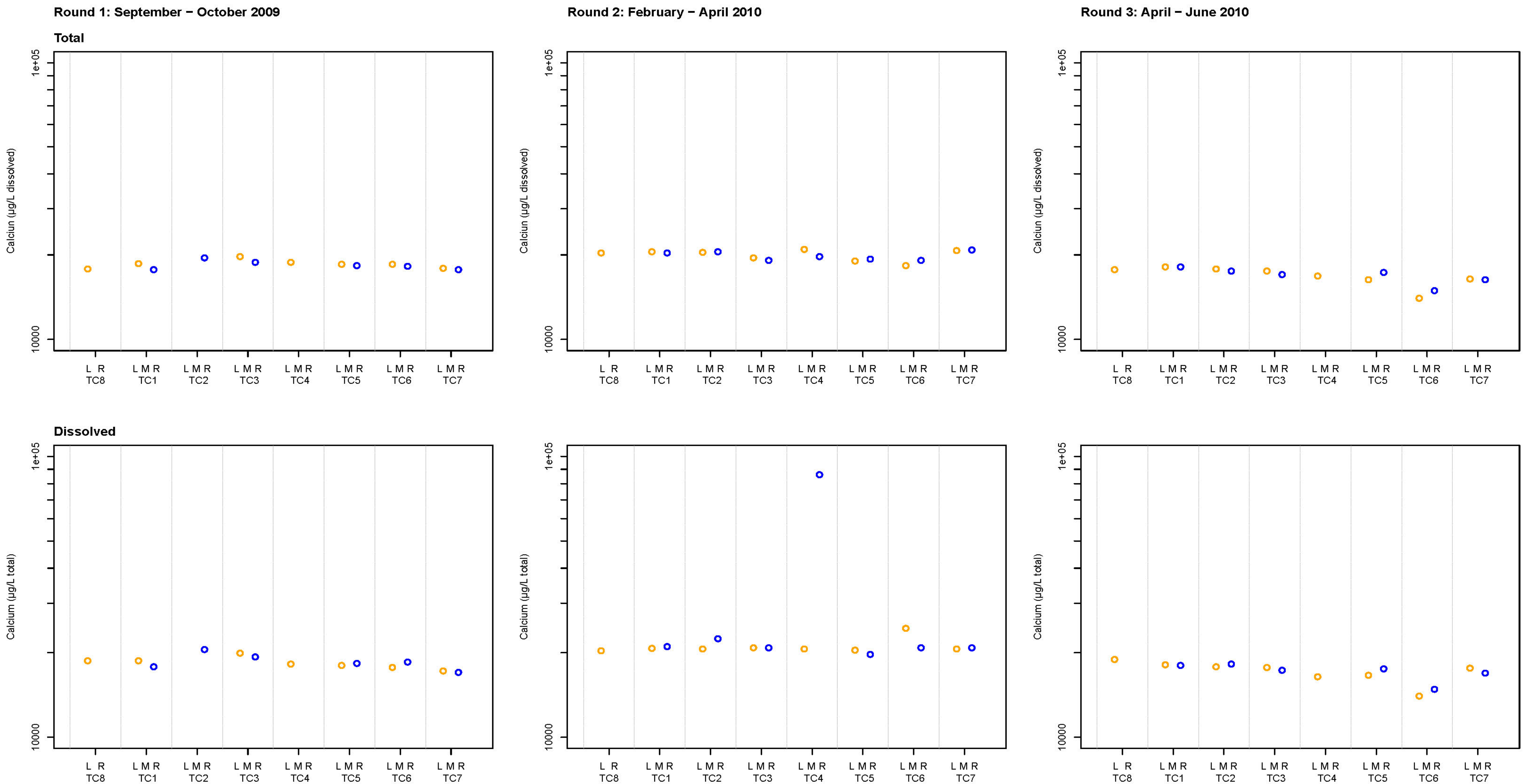
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Calcium



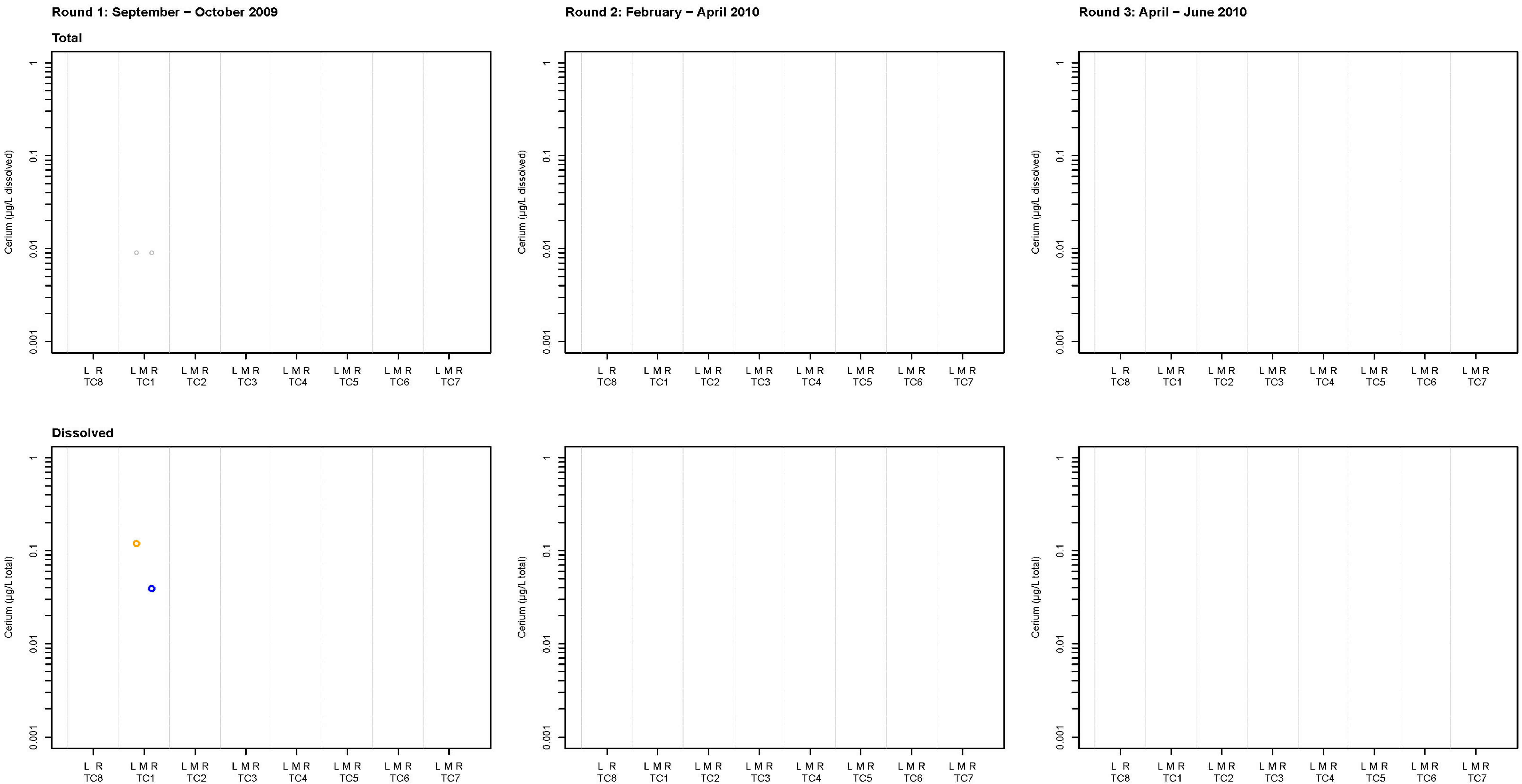
LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water – Cerium



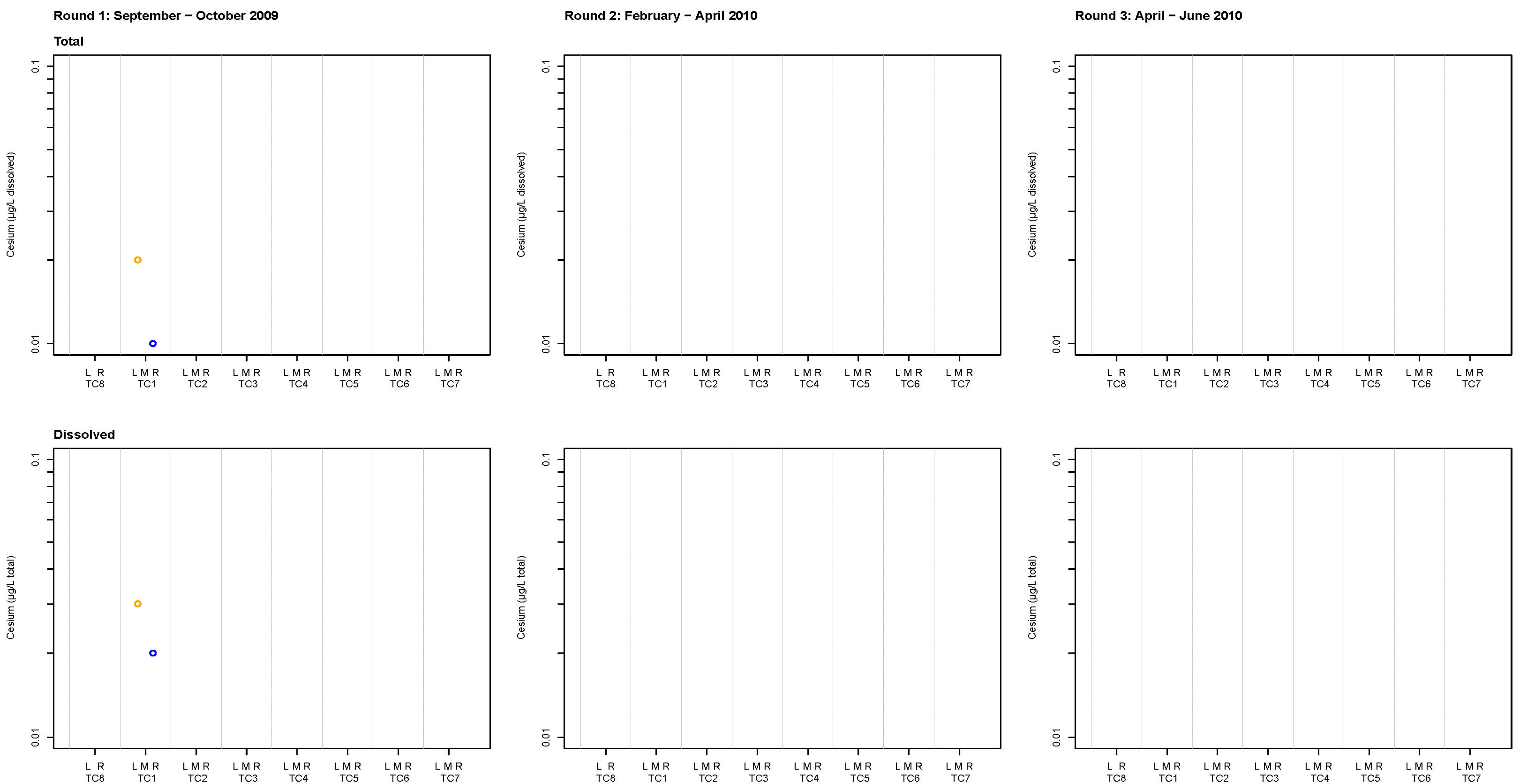
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Cesium



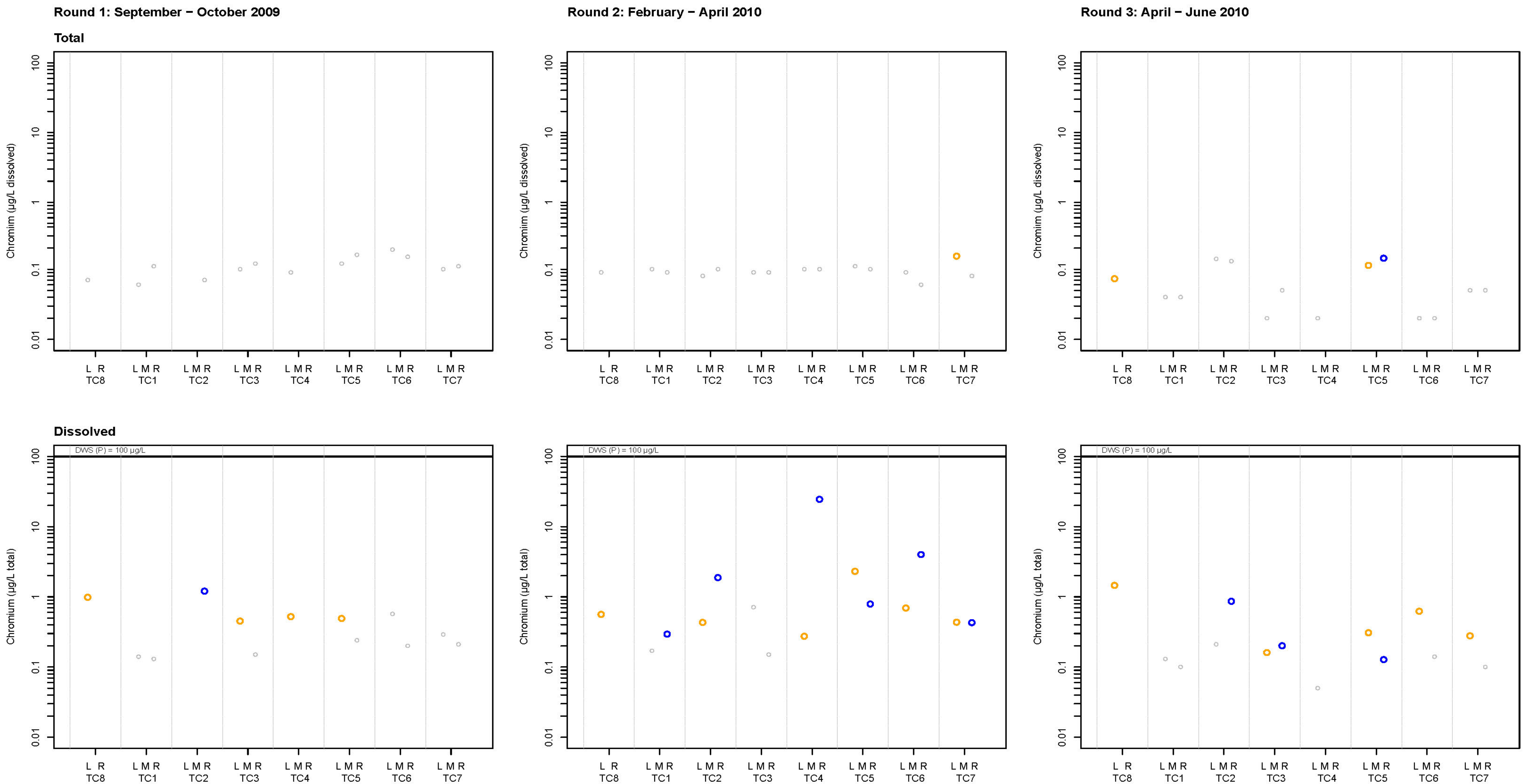
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Chromium

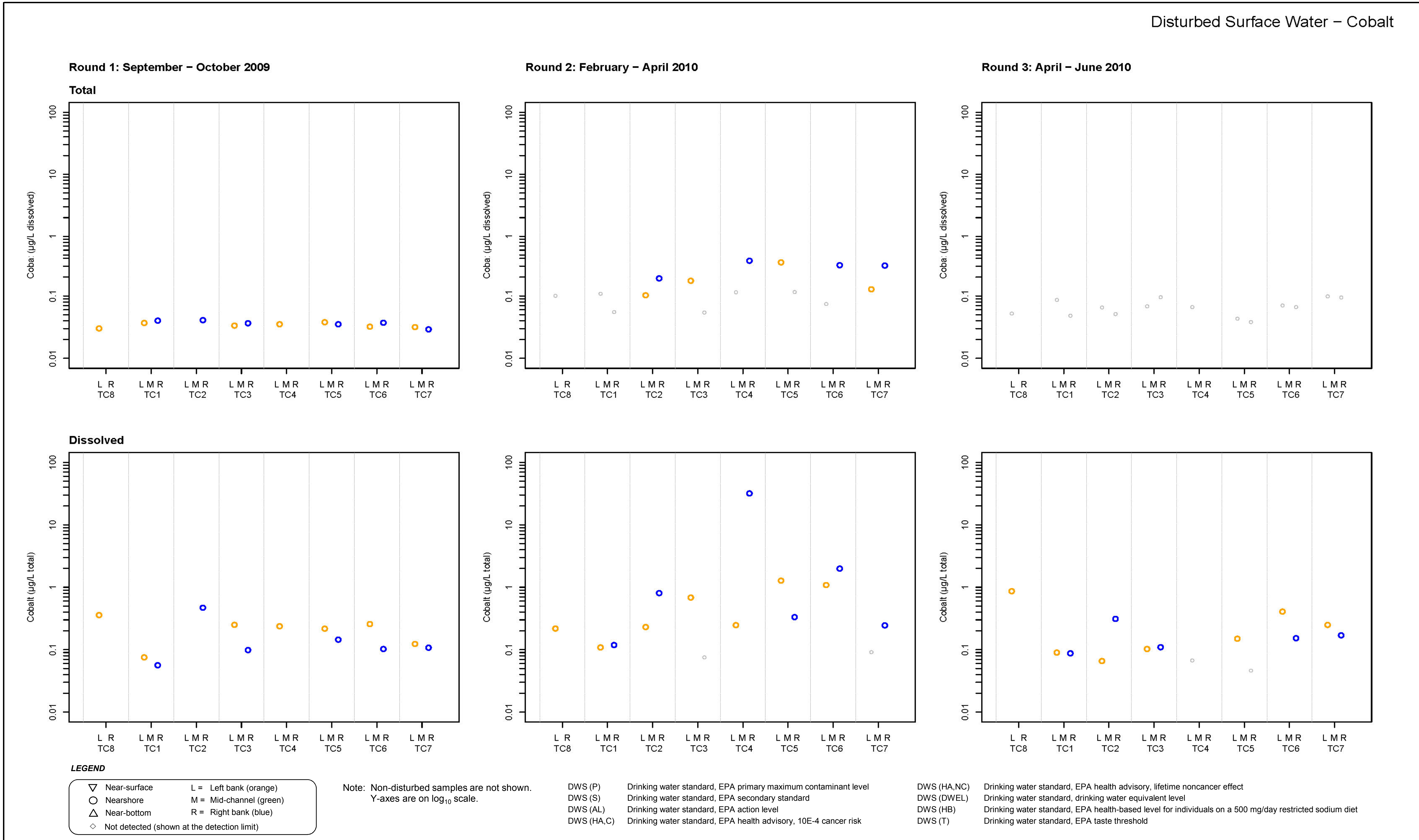


LEGEND

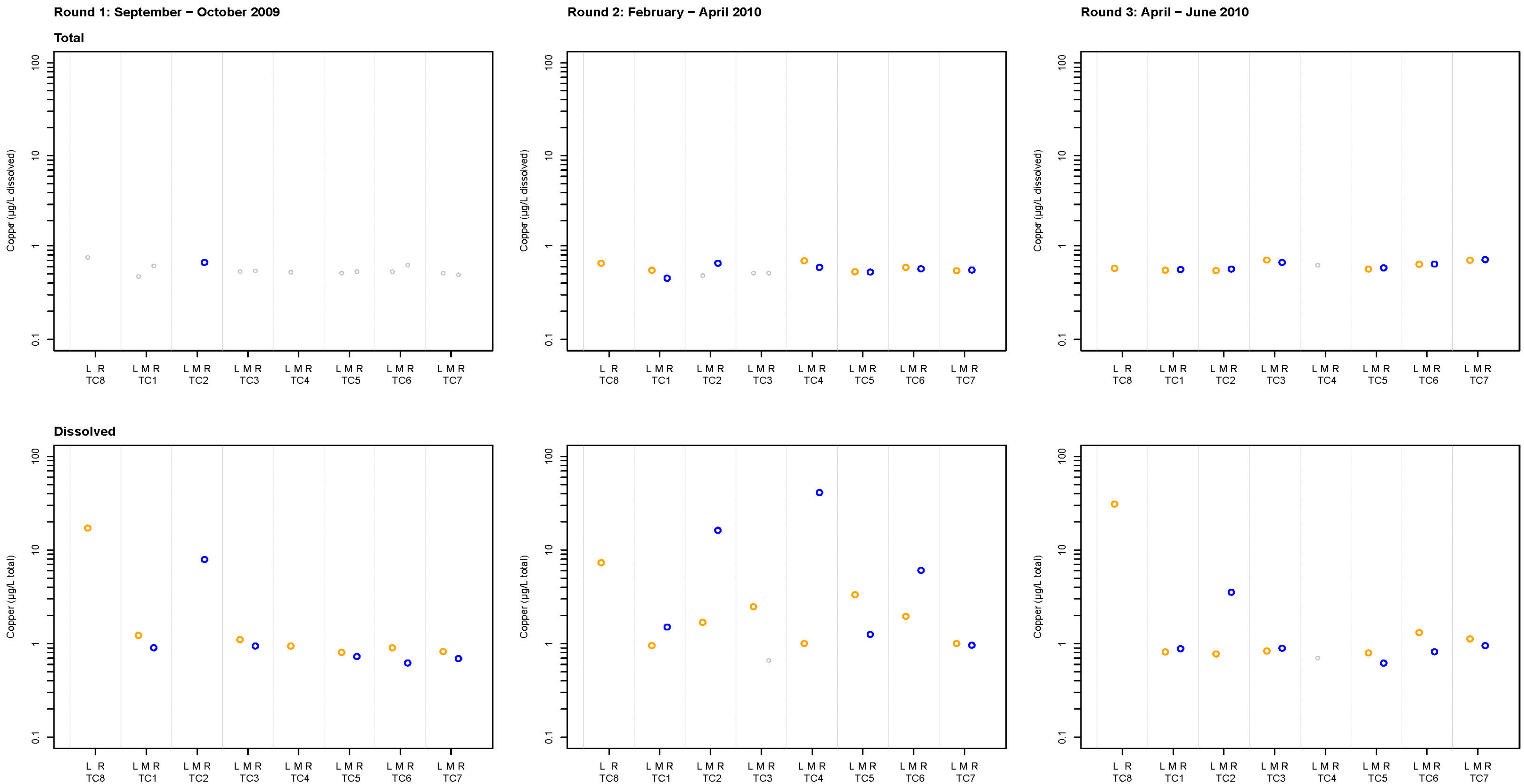
▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold


Disturbed Surface Water – Cobalt
Round 1: September – October 2009
Round 2: February – April 2010
Round 3: April – June 2010
Total
Dissolved
Coba: (µg/L dissolved)
Cobalt (µg/L total)
100
10
1
0.1
0.01
L R
L M R
TC8
TC1
TC2
TC3
TC4
TC5
TC6
TC7
LEGEND
Near-surface
Nearshore
Near-bottom
Not detected (shown at the detection limit)
L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)
Note: Non-disturbed samples are not shown.
Y-axes are on log10 scale.
DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water – Copper



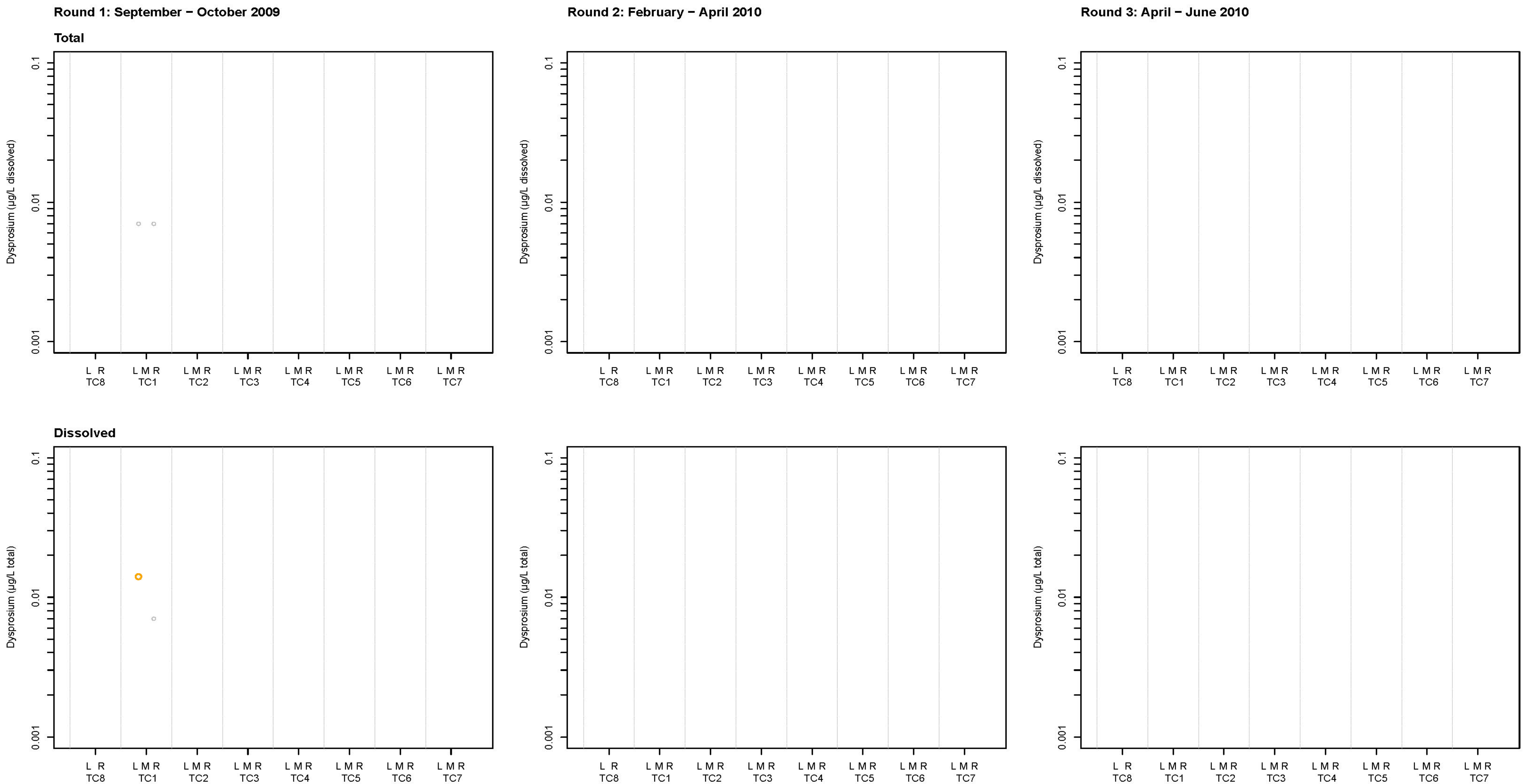
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Dysprosium



LEGEND

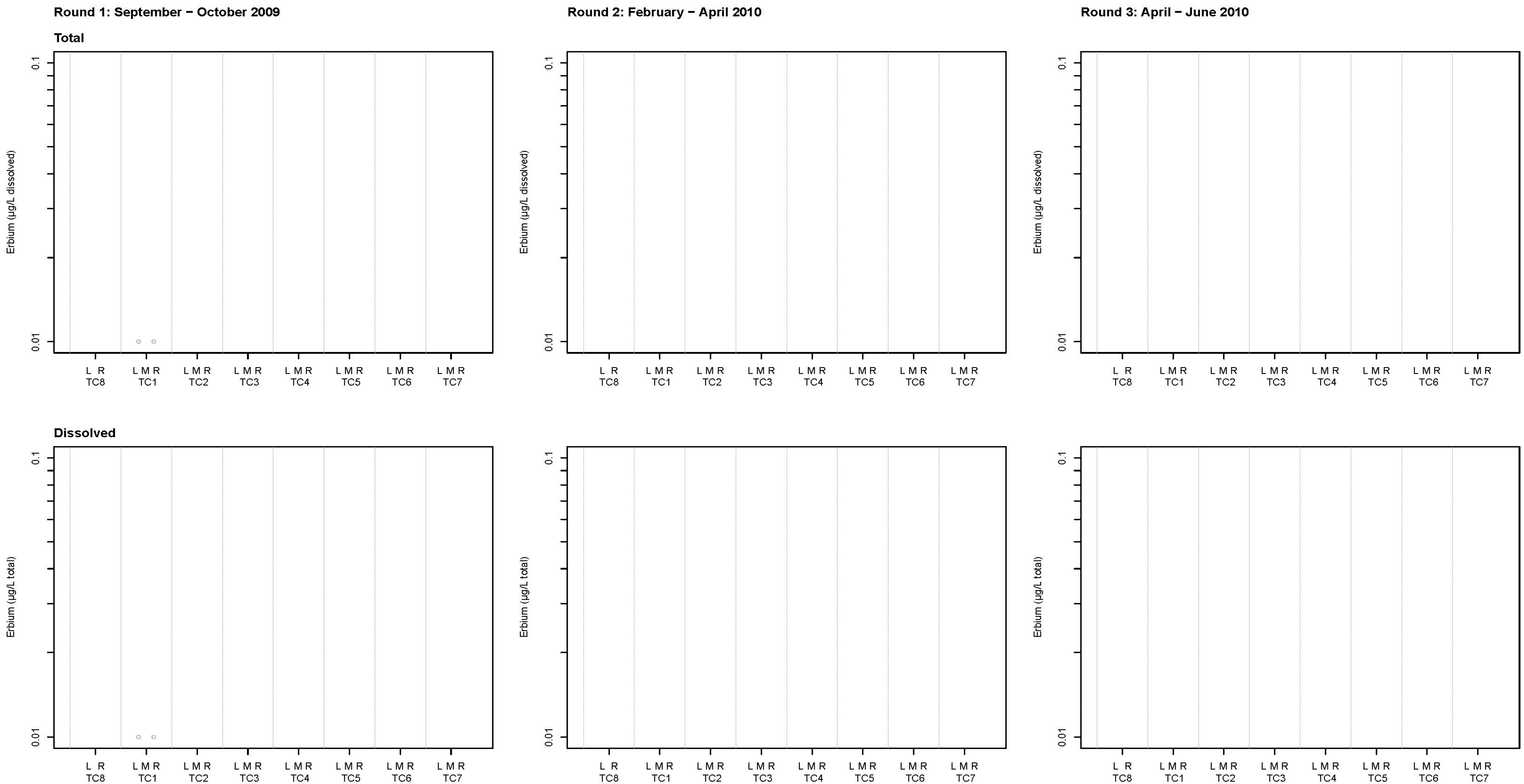
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Erbium



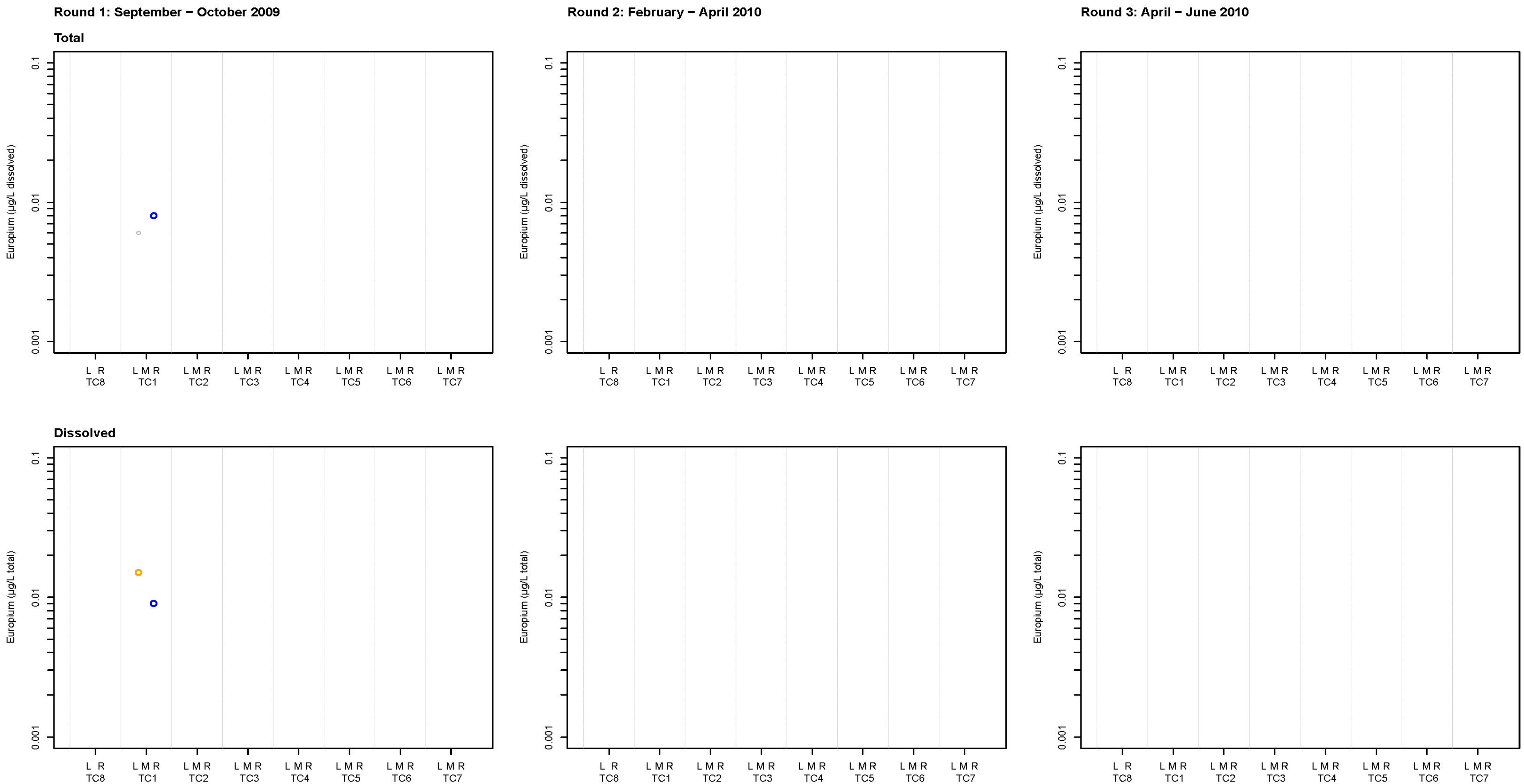
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Europium



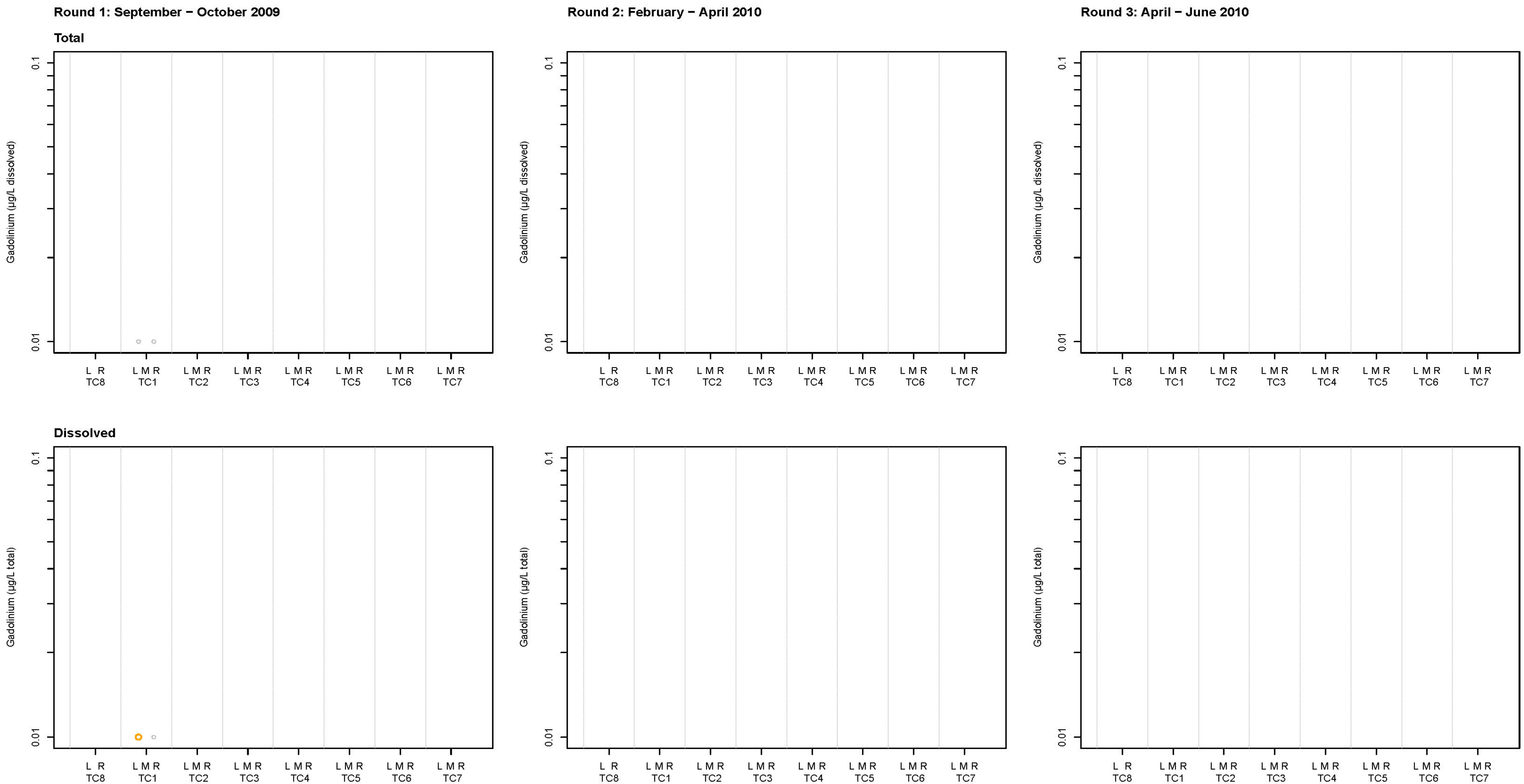
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Gadolinium



LEGEND

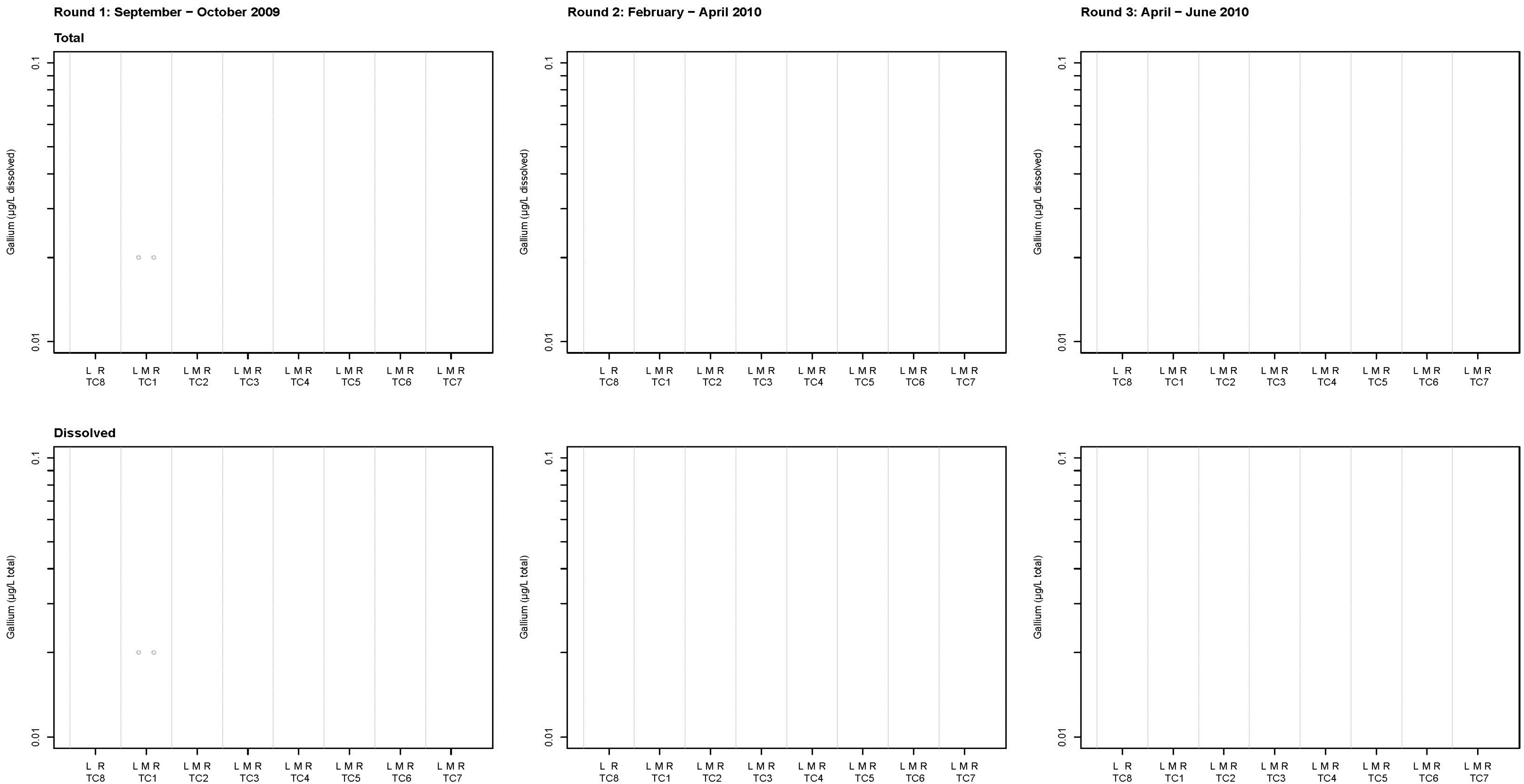
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Gallium



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

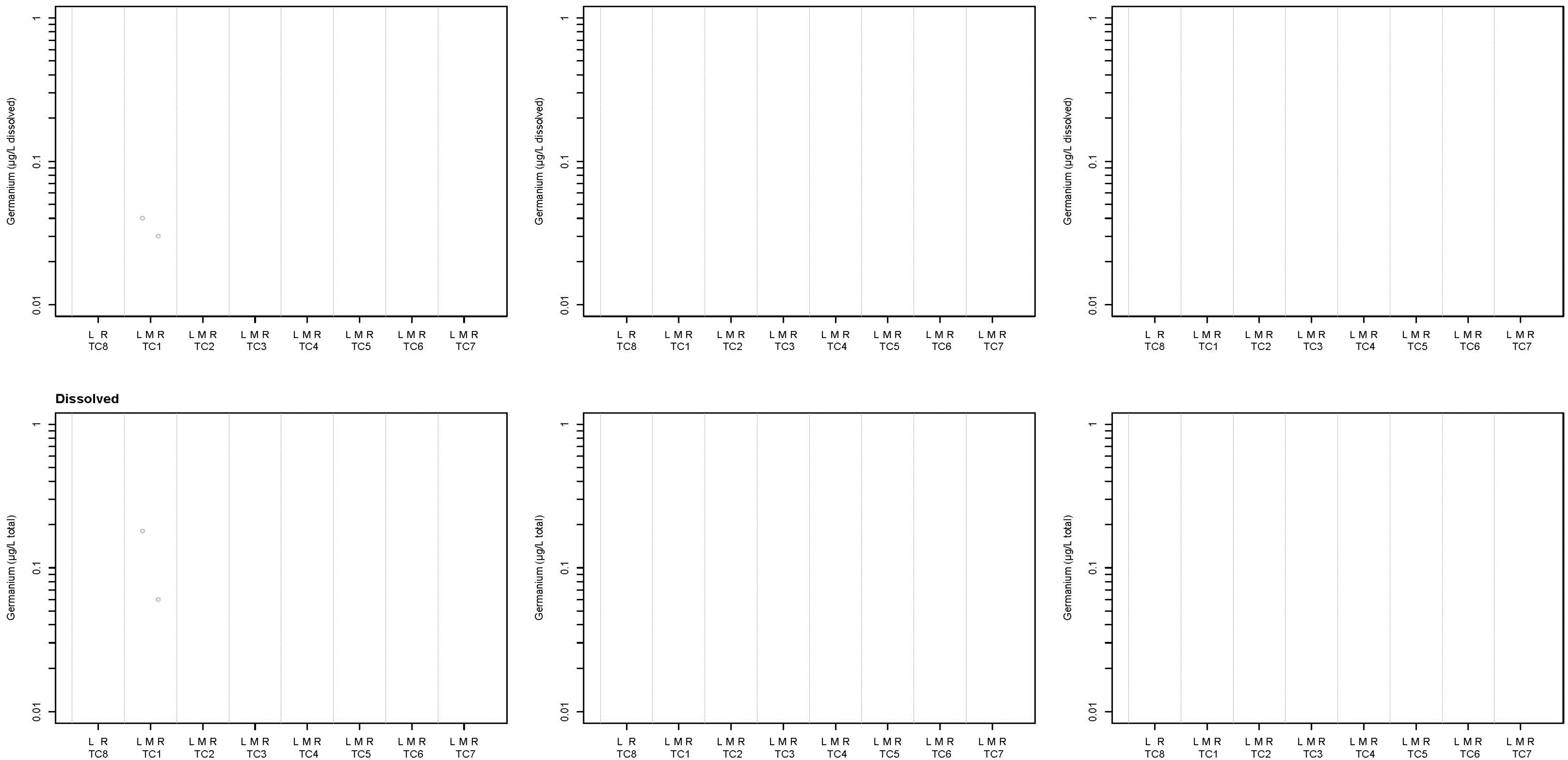
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Germanium

Round 1: September − October 2009 | **Round 2: February − April 2010** | **Round 3: April − June 2010**

Total



LEGEND

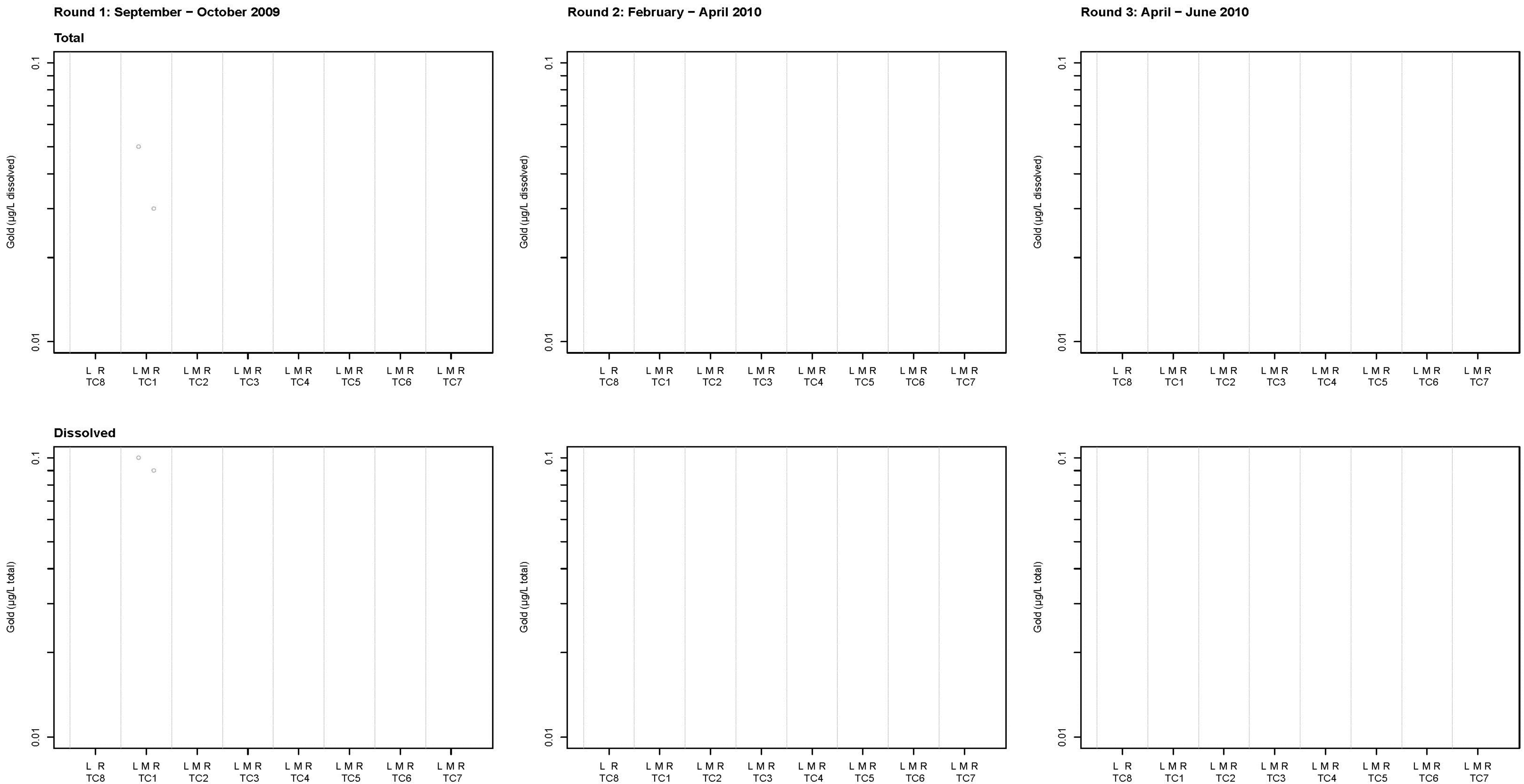
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Gold



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

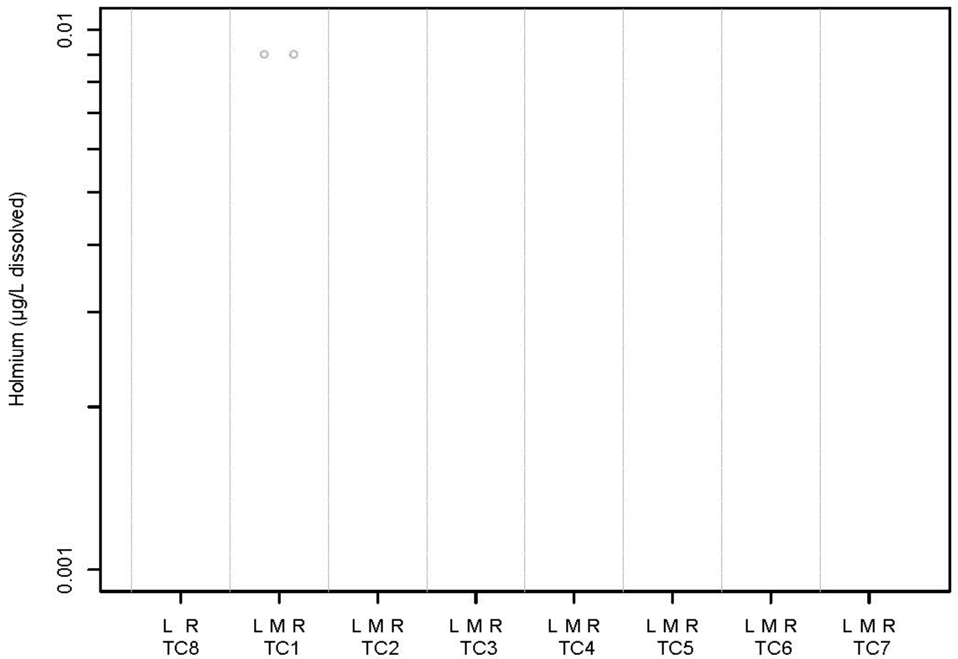
Disturbed Surface Water − Holmium

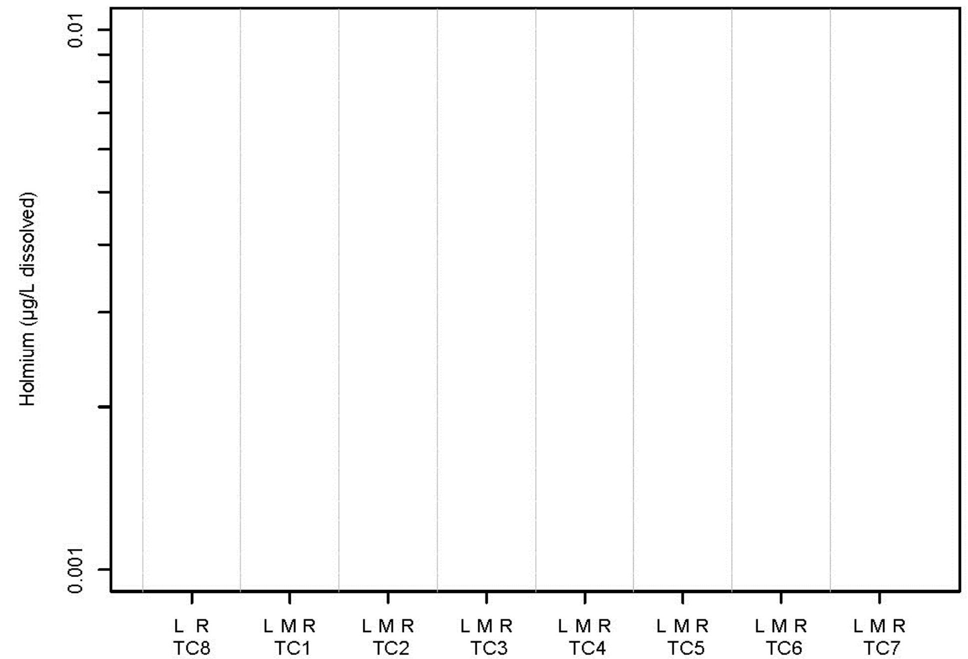
Round 1: September − October 2009

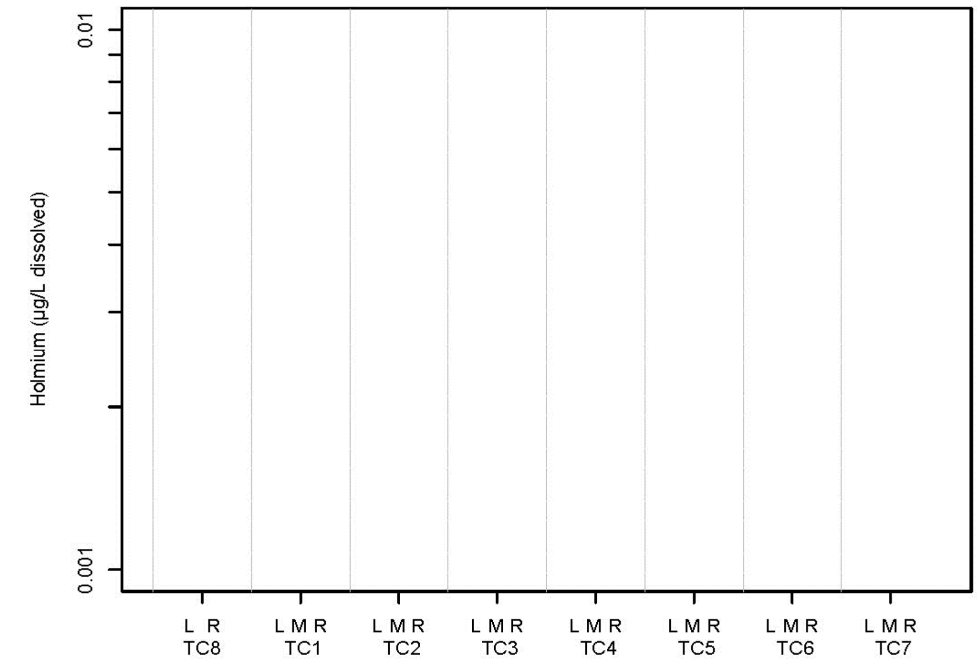
Round 2: February − April 2010

Round 3: April − June 2010

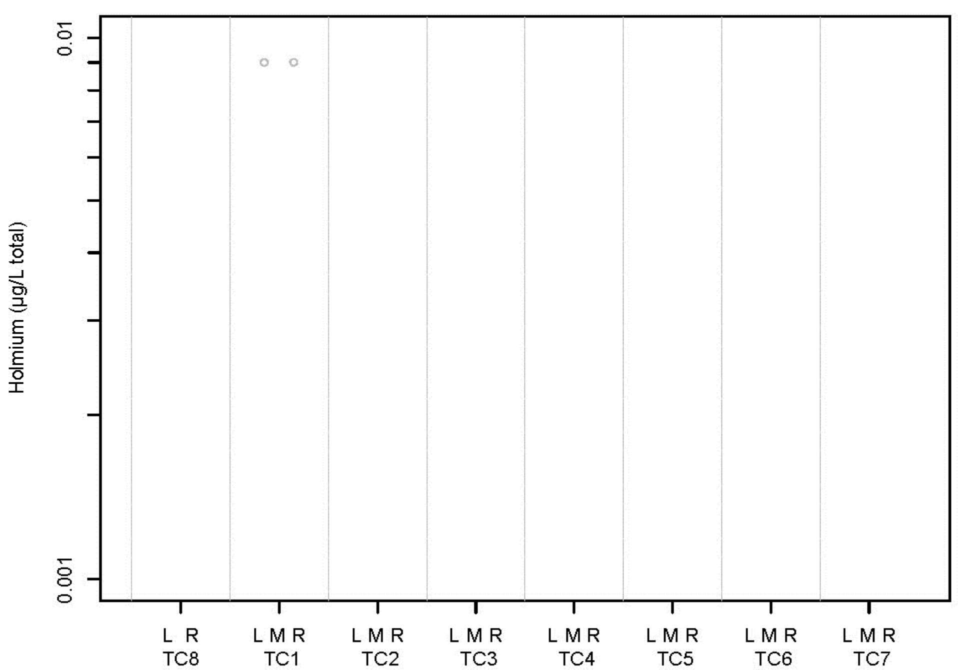
Total

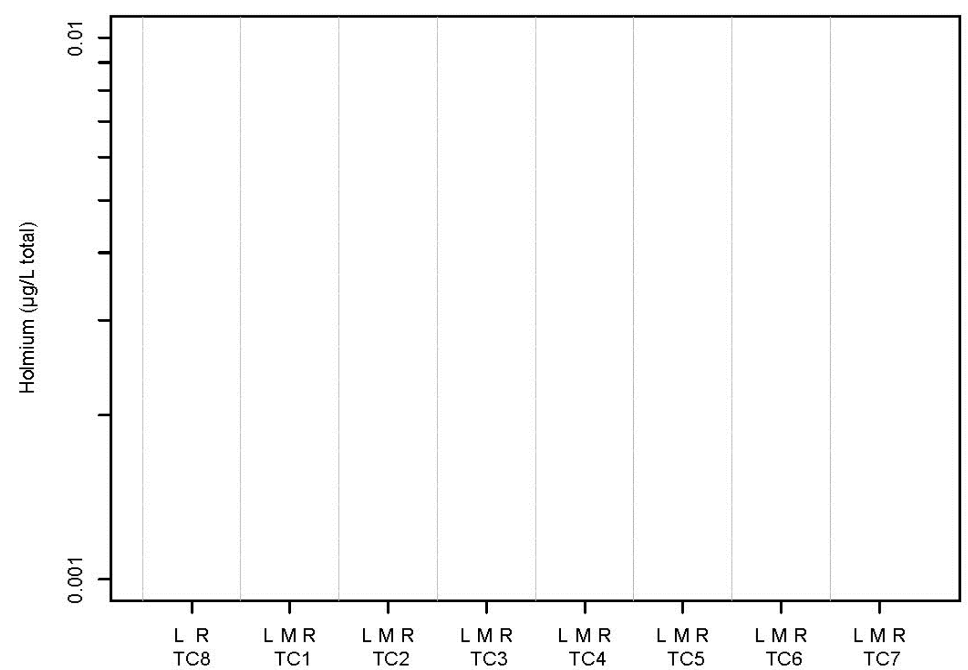


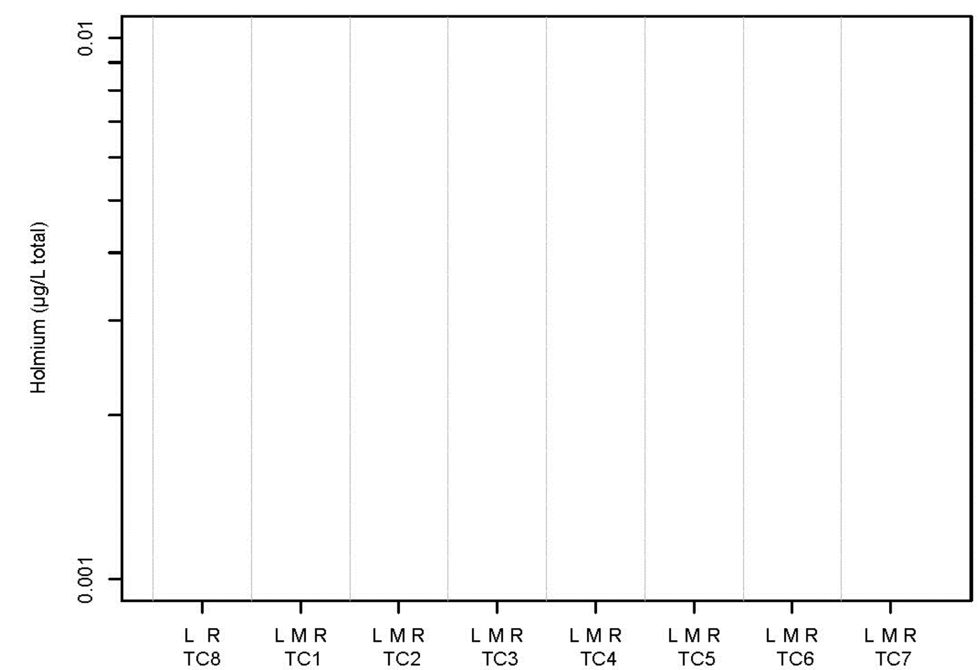




Dissolved







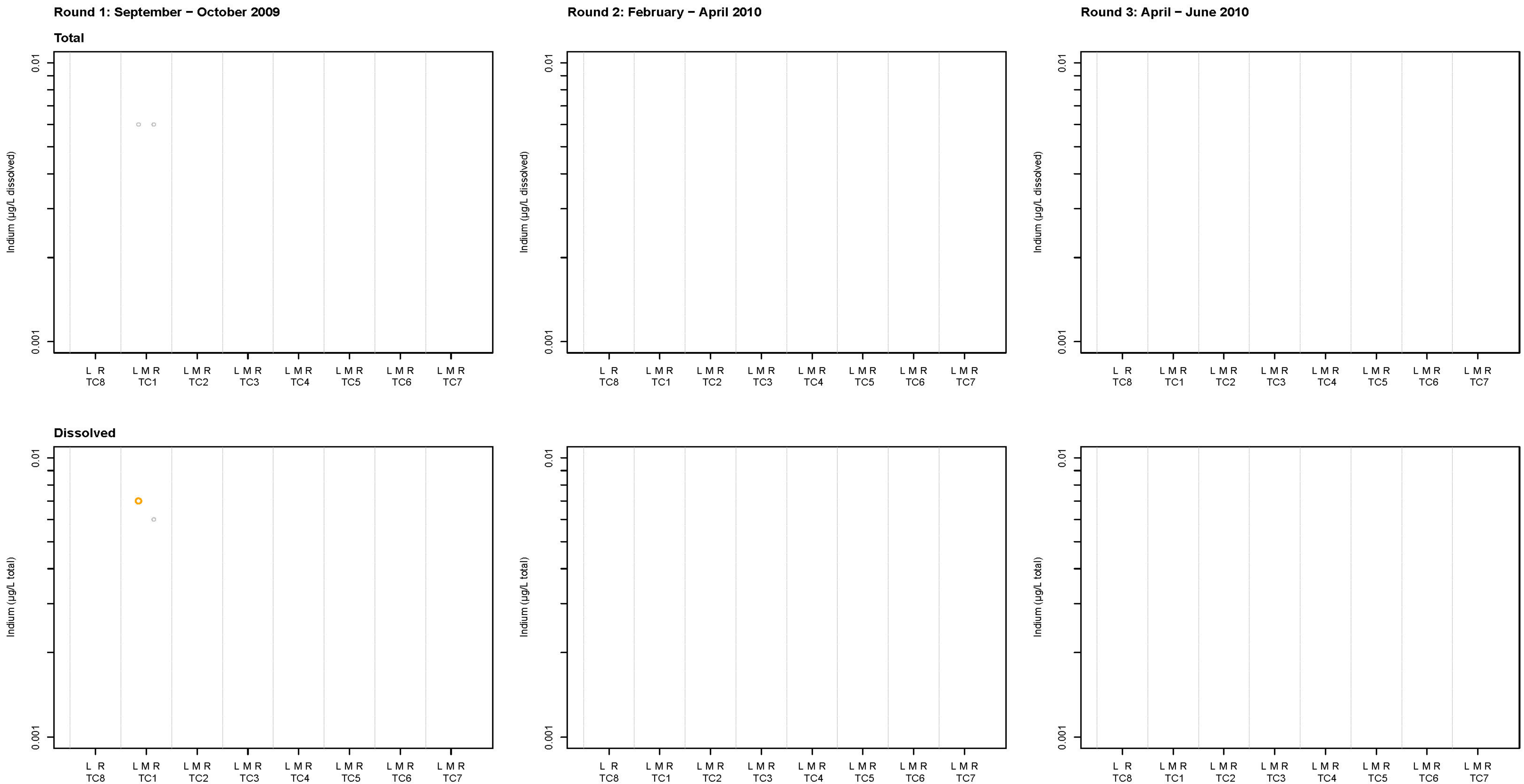
LEGEND

▽ Near-surface — L = Left bank (orange)
○ Nearshore — M = Mid-channel (green)
△ Near-bottom — R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water – Indium

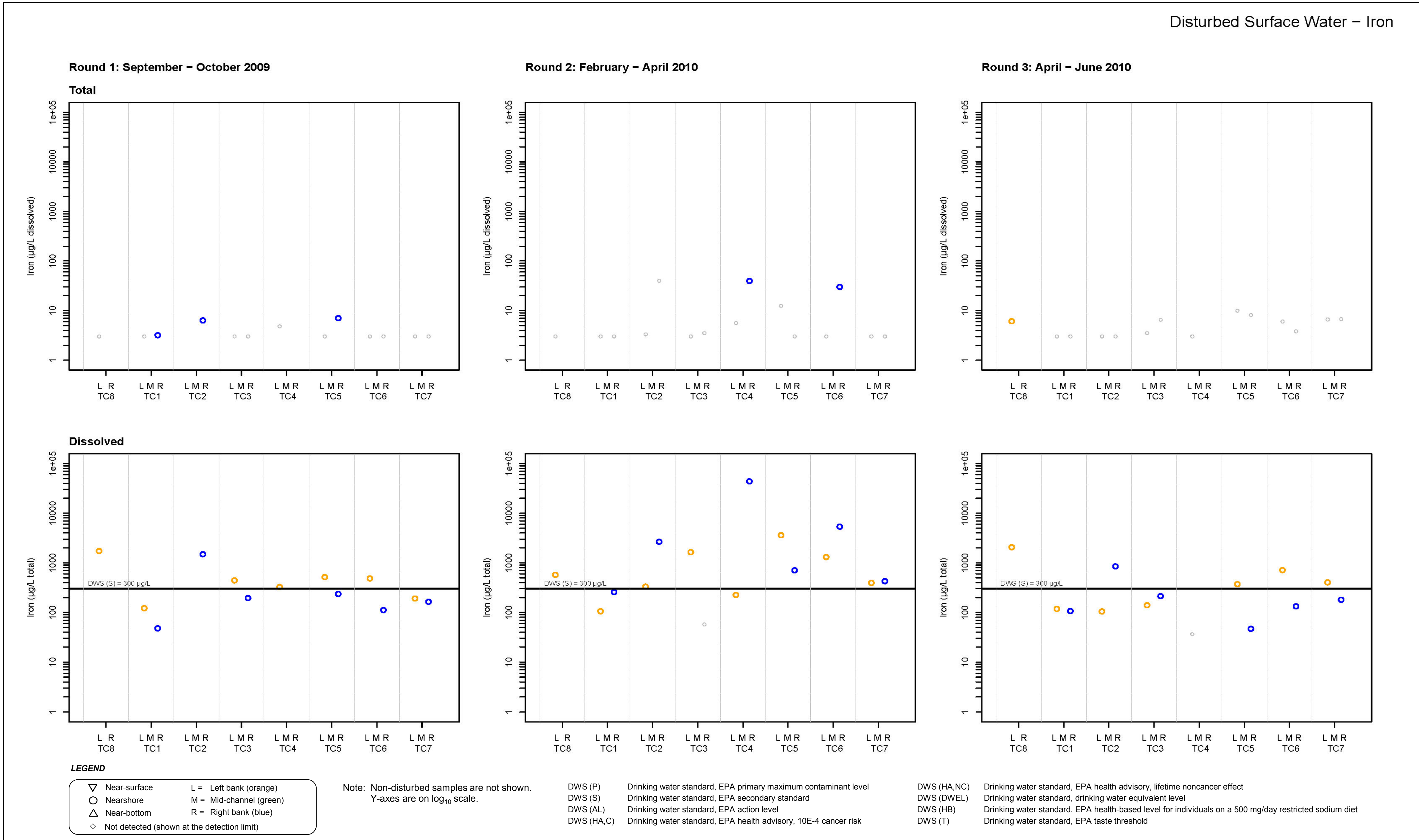


LEGEND

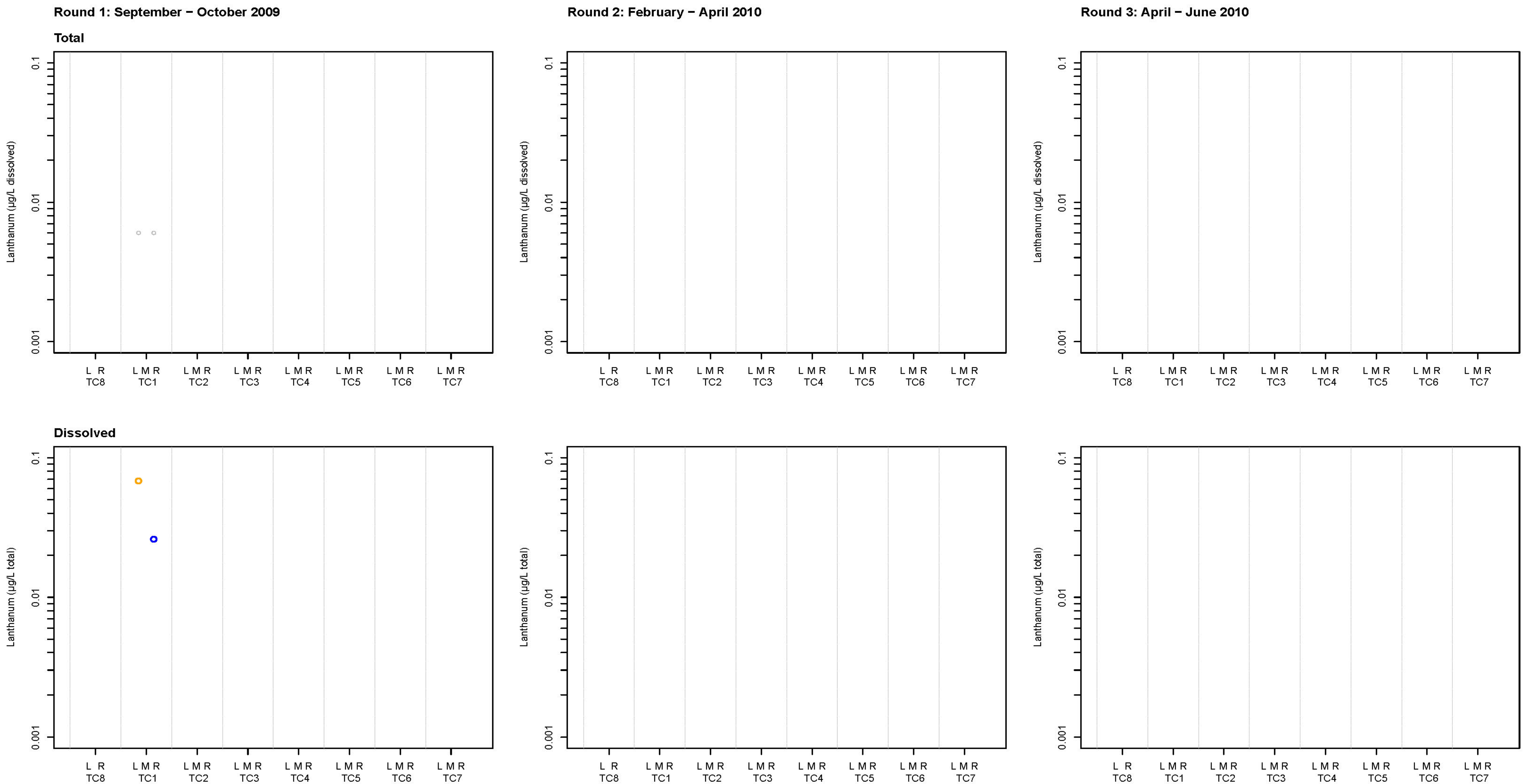
▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold


Disturbed Surface Water – Iron
Round 1: September – October 2009
Round 2: February – April 2010
Round 3: April – June 2010
Total
Dissolved
Iron (µg/L dissolved)
Iron (µg/L total)
1e+05
10000
1000
100
10
1
DWS (S) = 300 µg/L
L R
L M R
TC8
TC1
TC2
TC3
TC4
TC5
TC6
TC7
LEGEND
Near-surface
Nearshore
Near-bottom
Not detected (shown at the detection limit)
L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)
Note: Non-disturbed samples are not shown.
Y-axes are on log10 scale.
DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water − Lanthanum



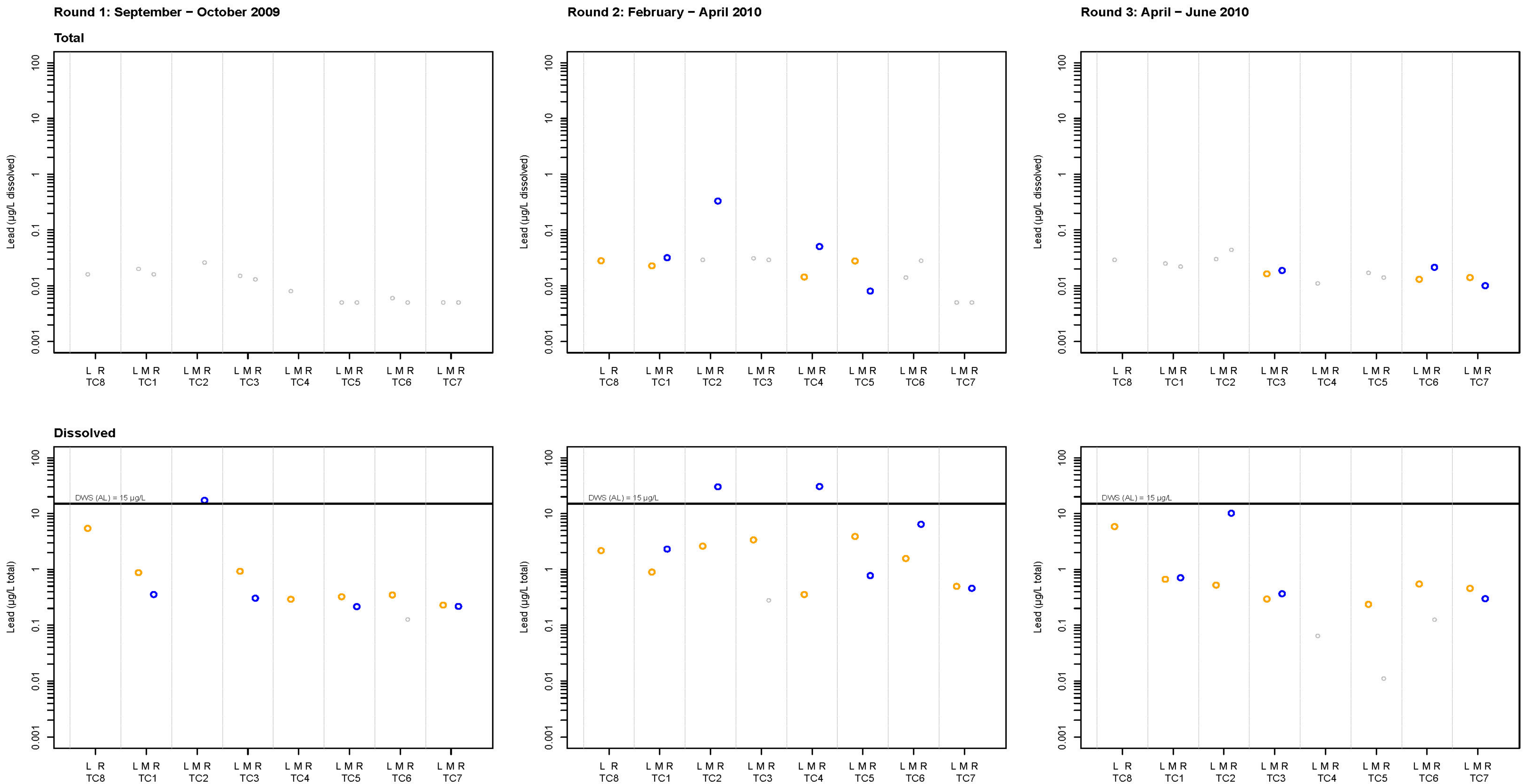
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Lead



LEGEND

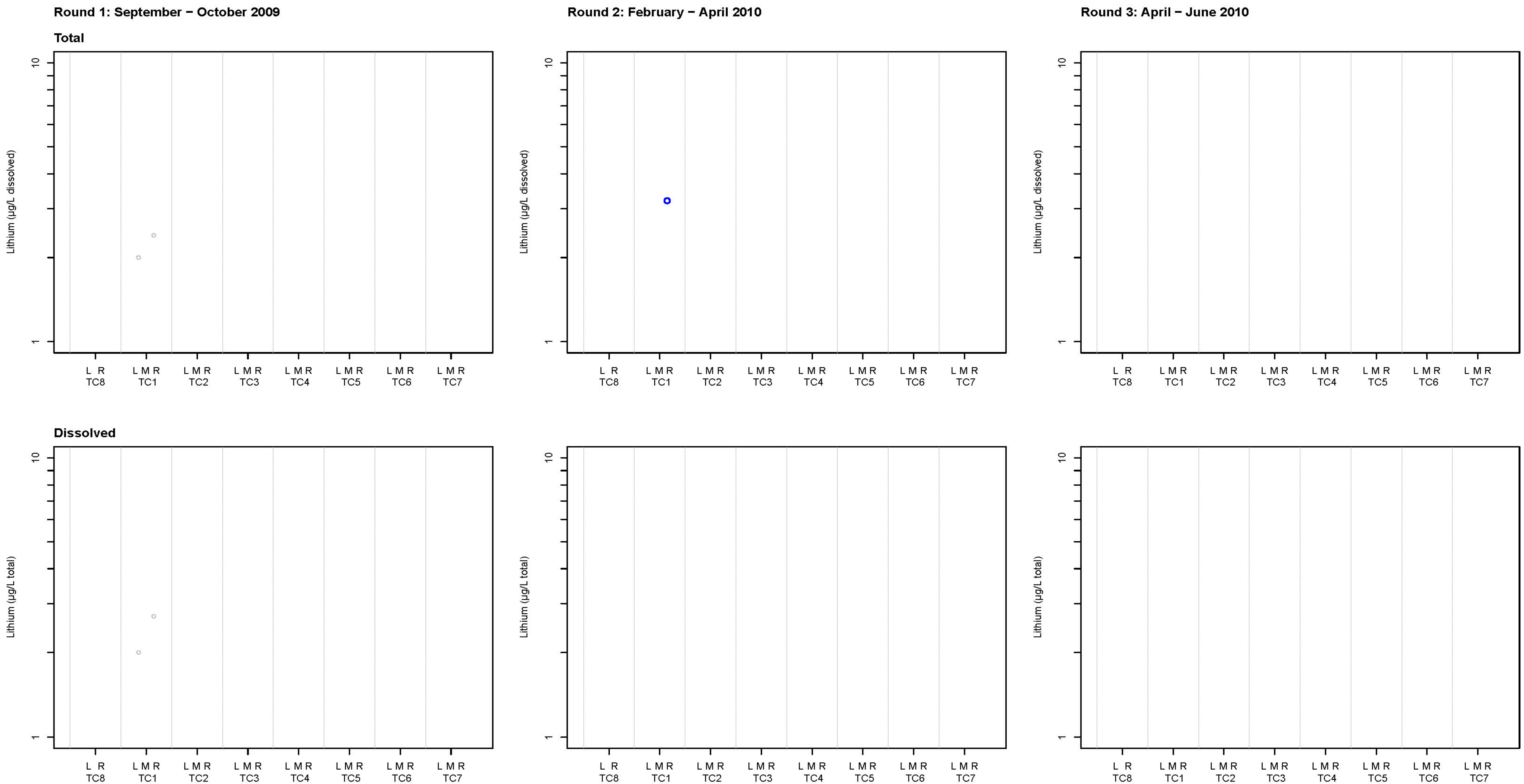
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Lithium



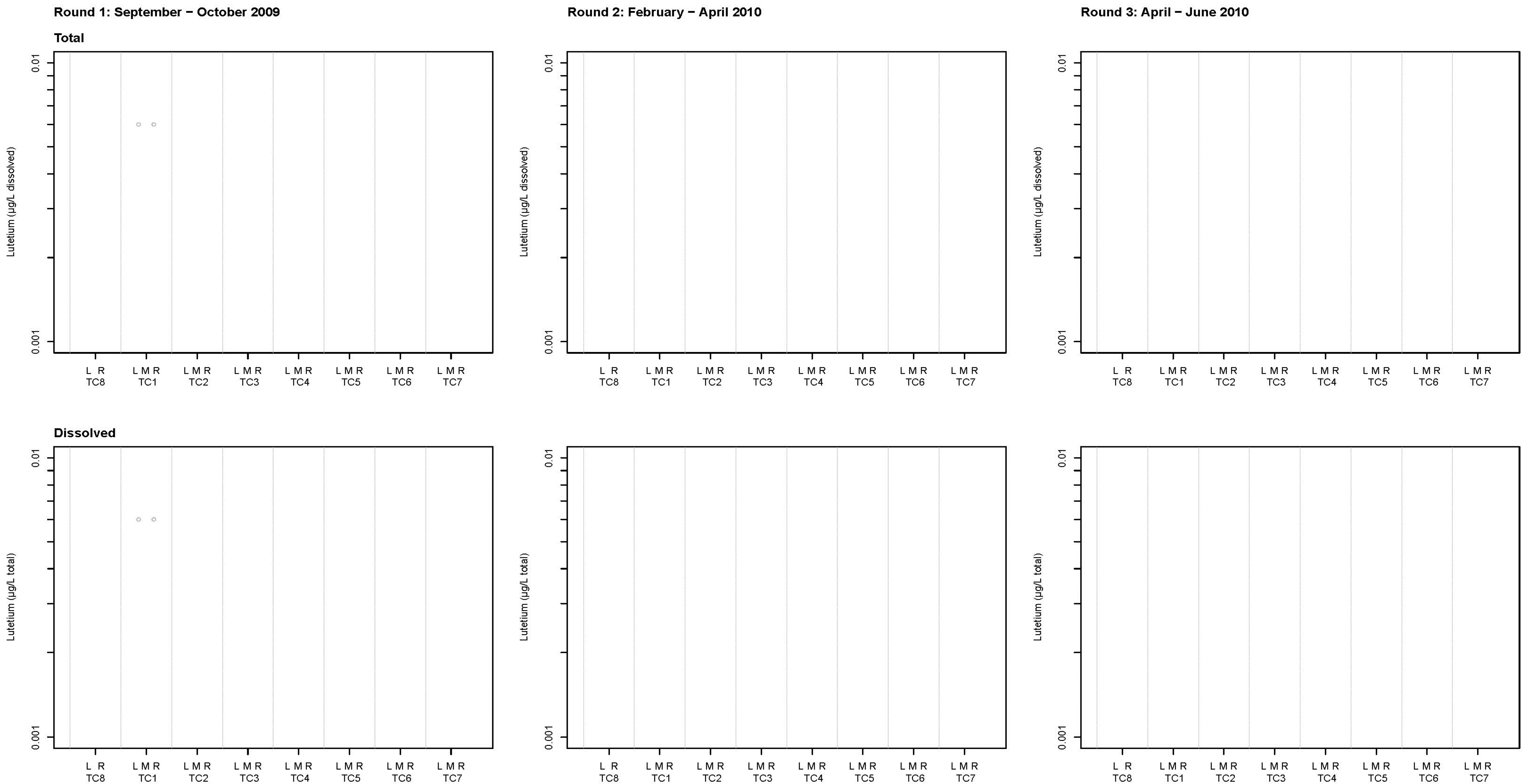
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Lutetium



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

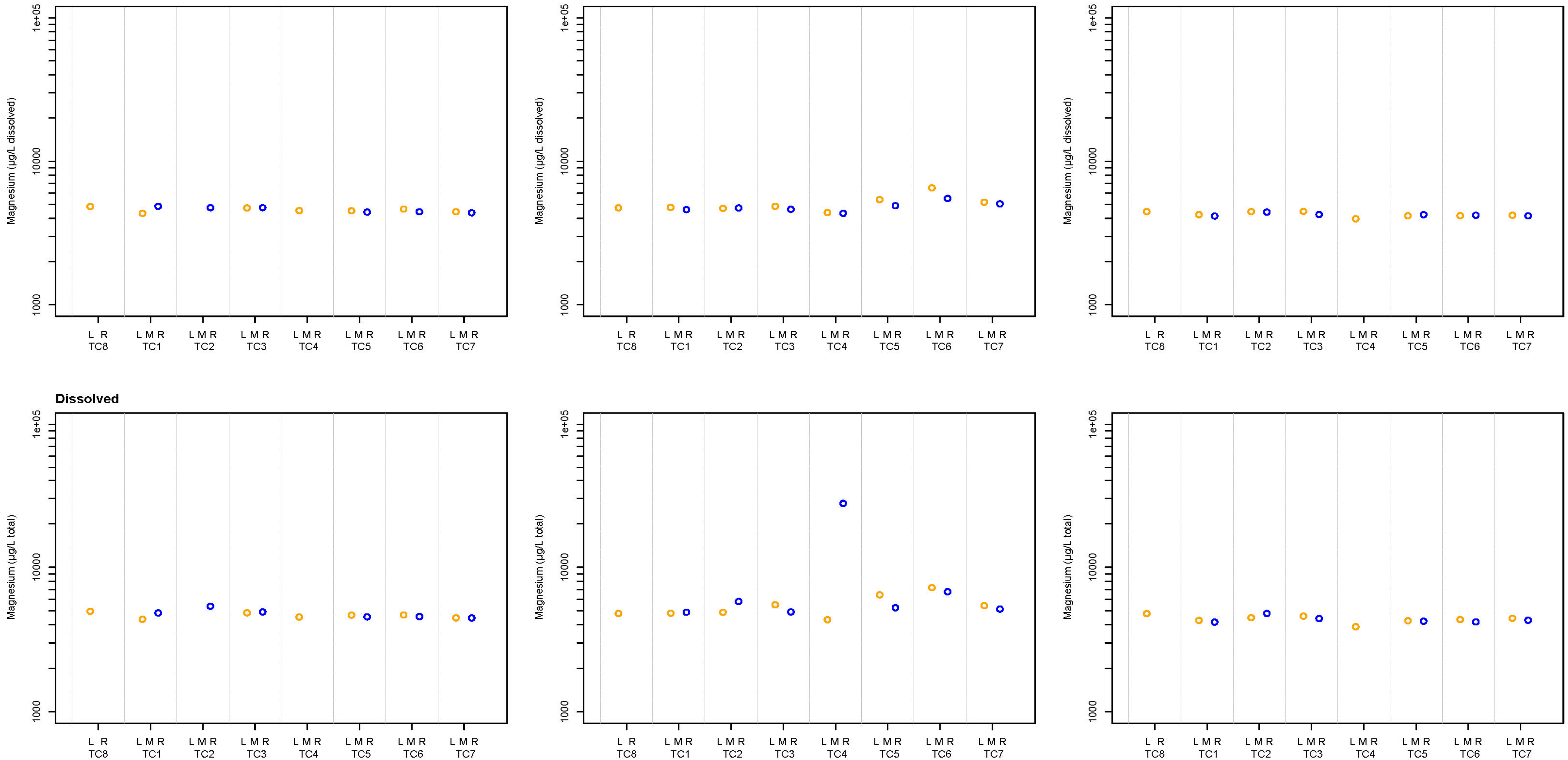
DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Magnesium

Round 1: September − October 2009 | **Round 2: February − April 2010** | **Round 3: April − June 2010**

Total

Dissolved



LEGEND

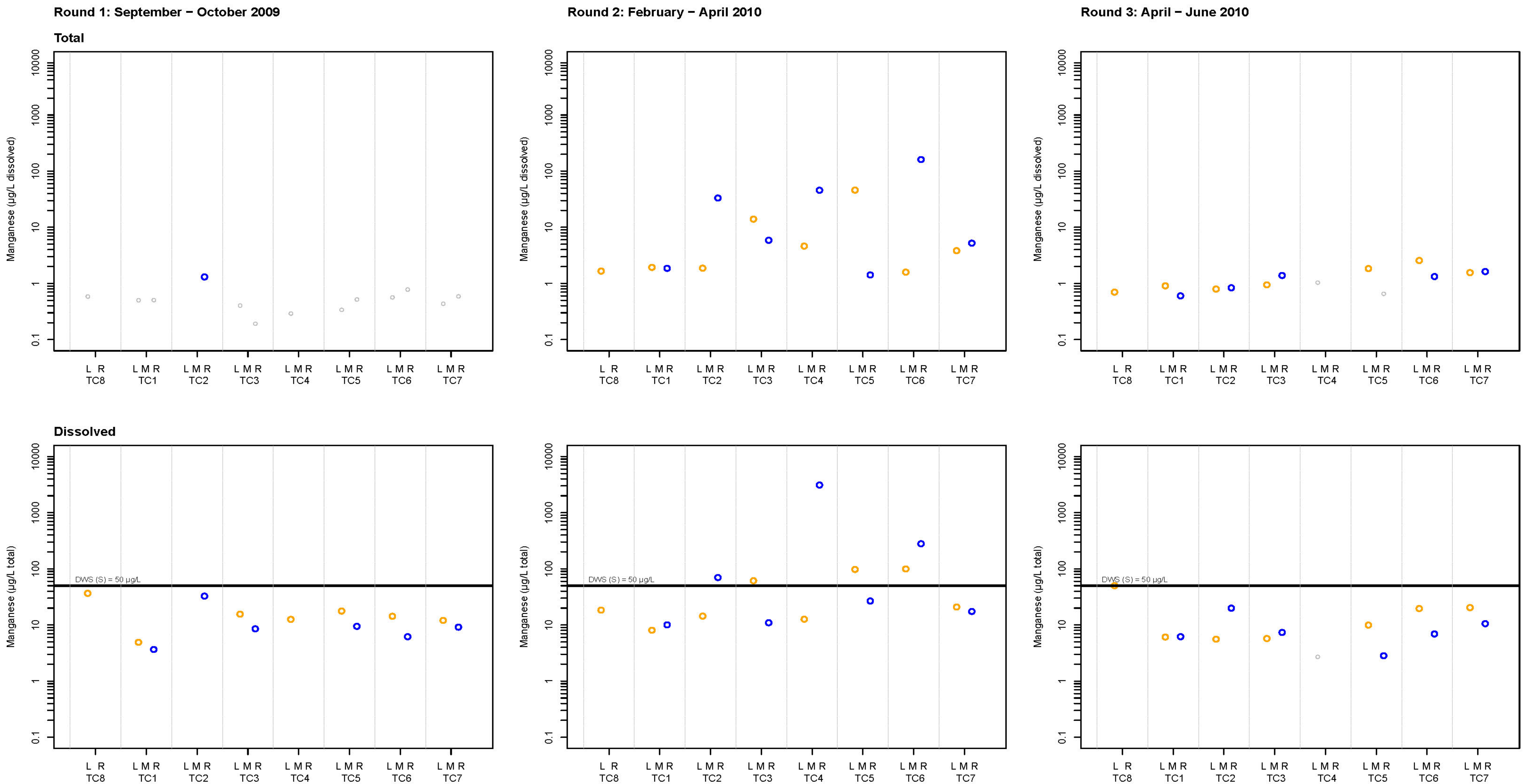
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Manganese



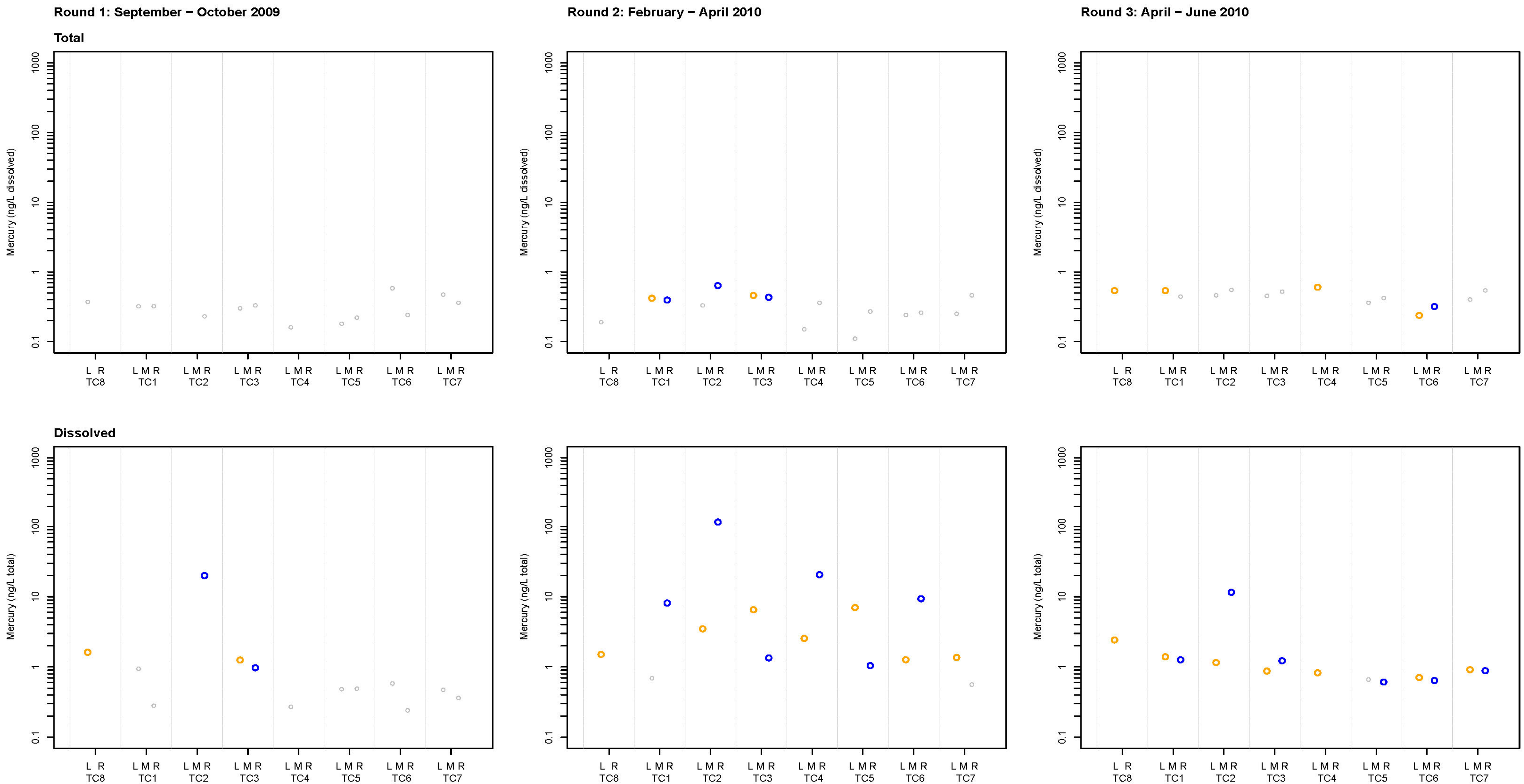
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Mercury



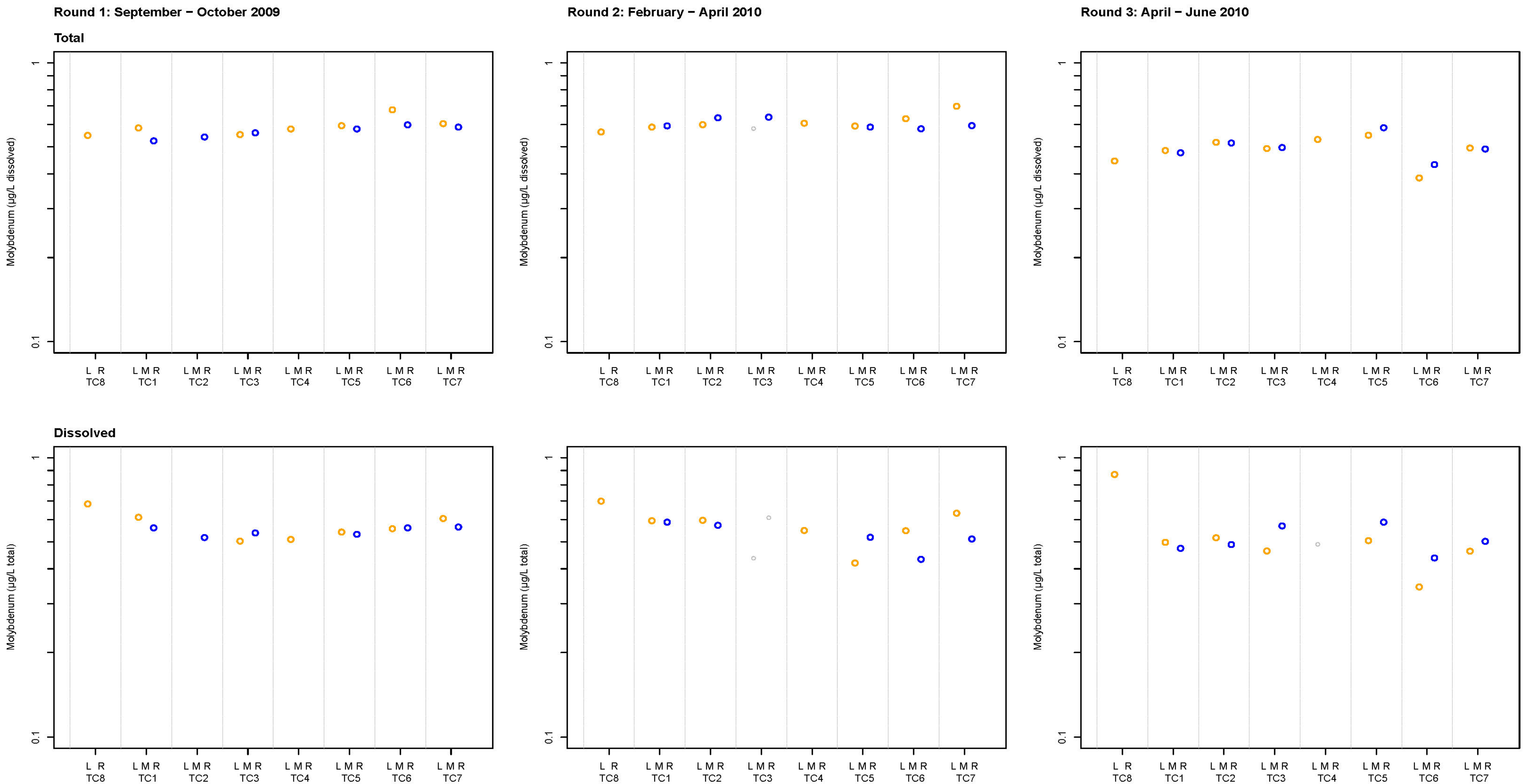
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Molybdenum



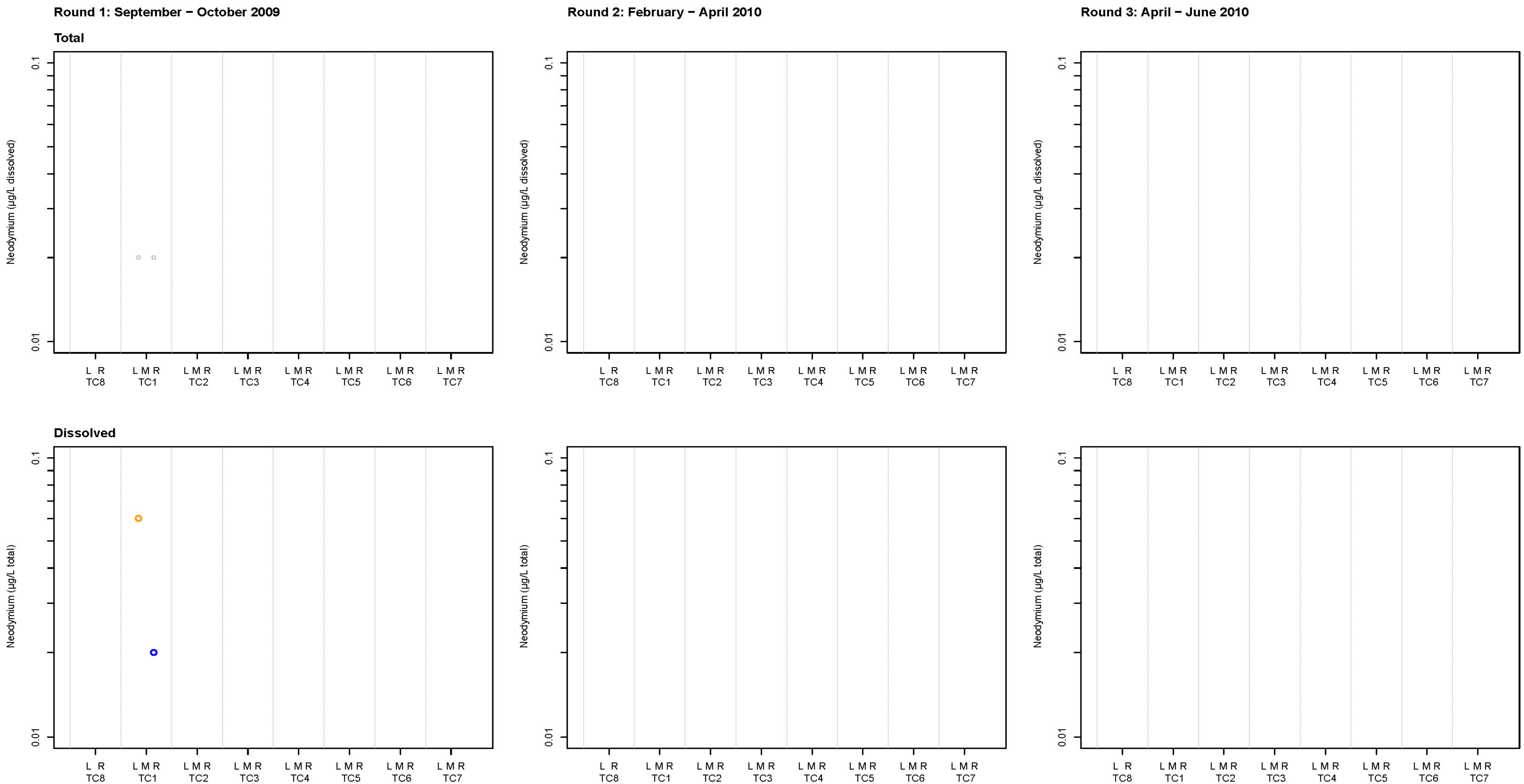
LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Neodymium



LEGEND

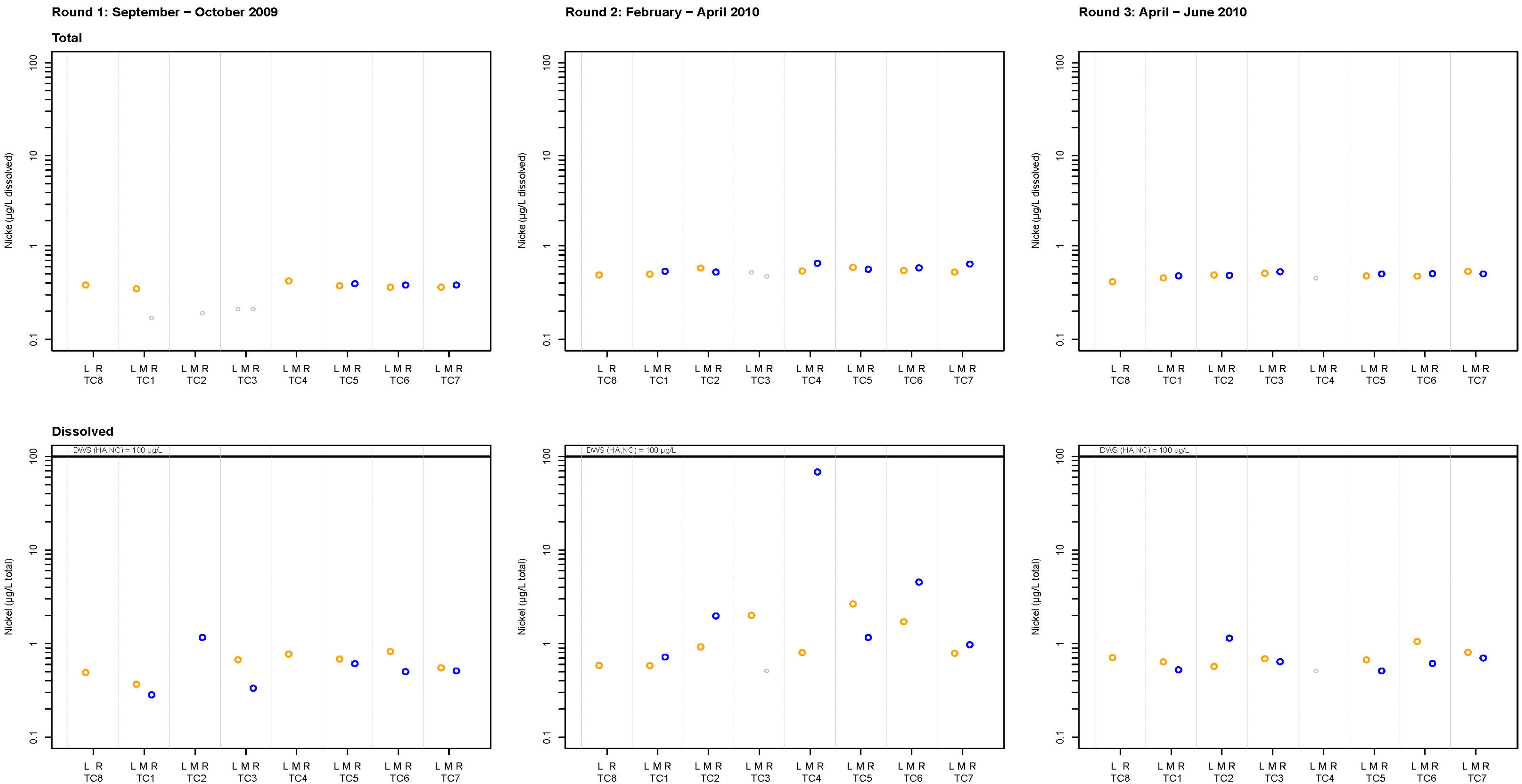
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Nickel



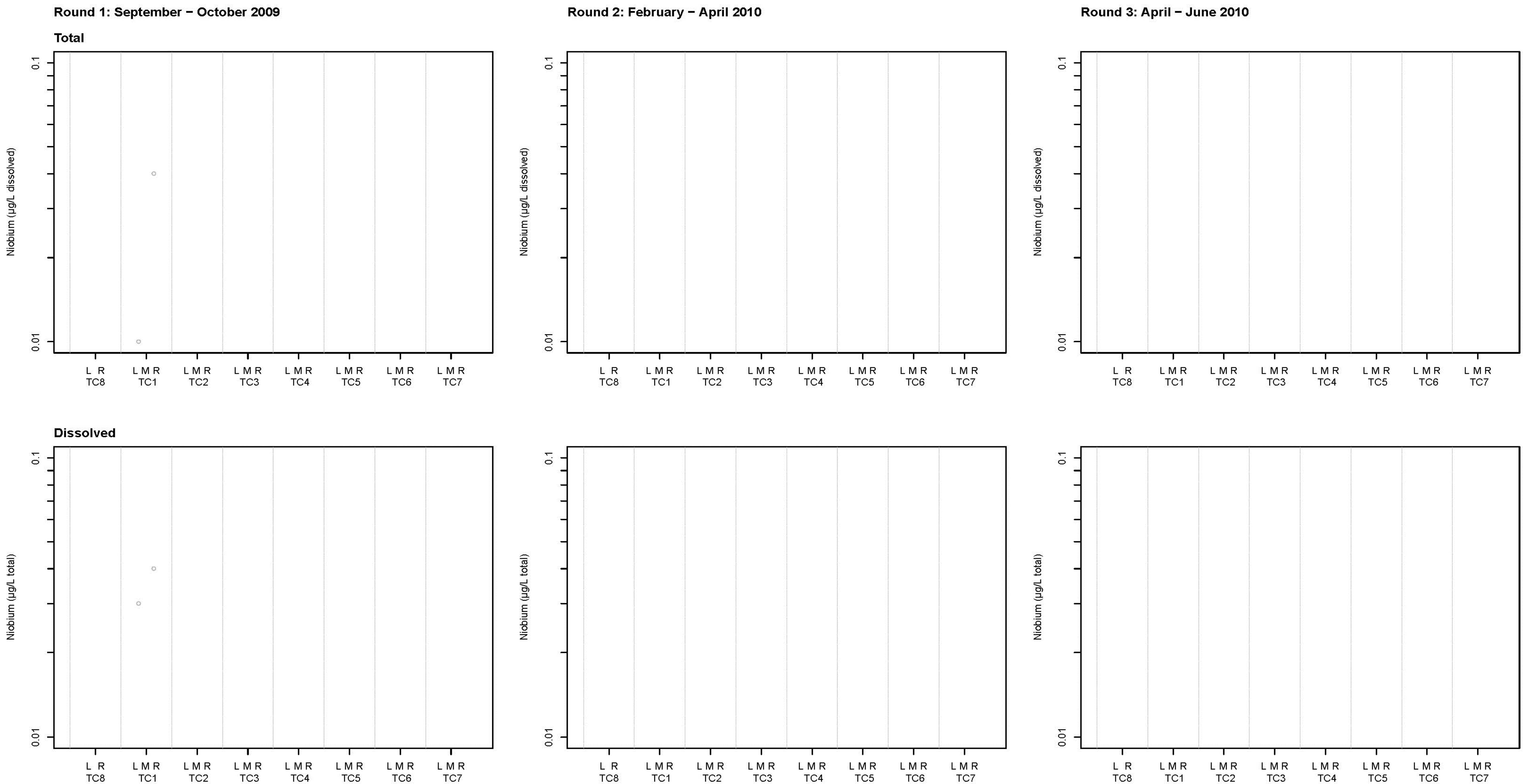
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Niobium



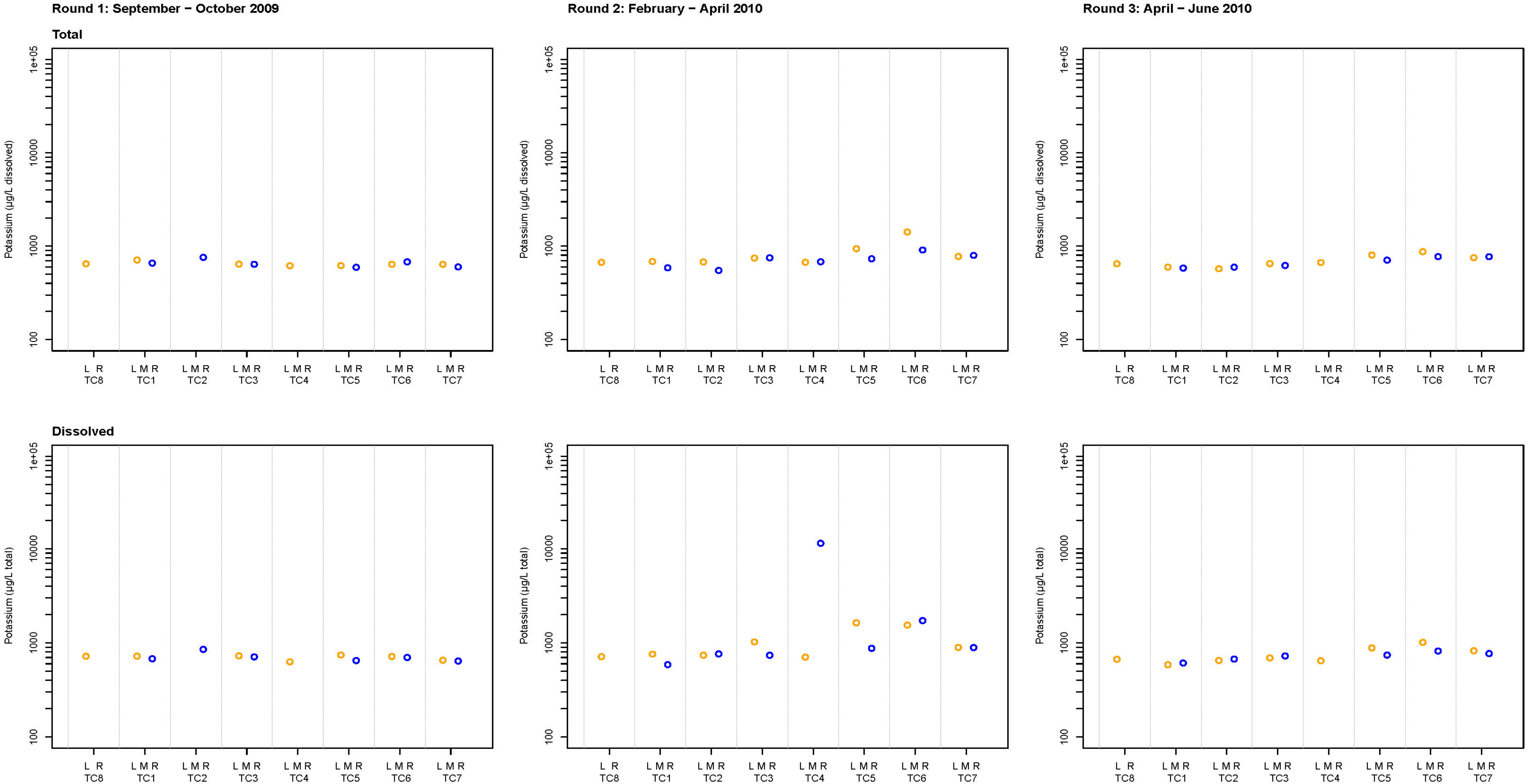
LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water − Potassium



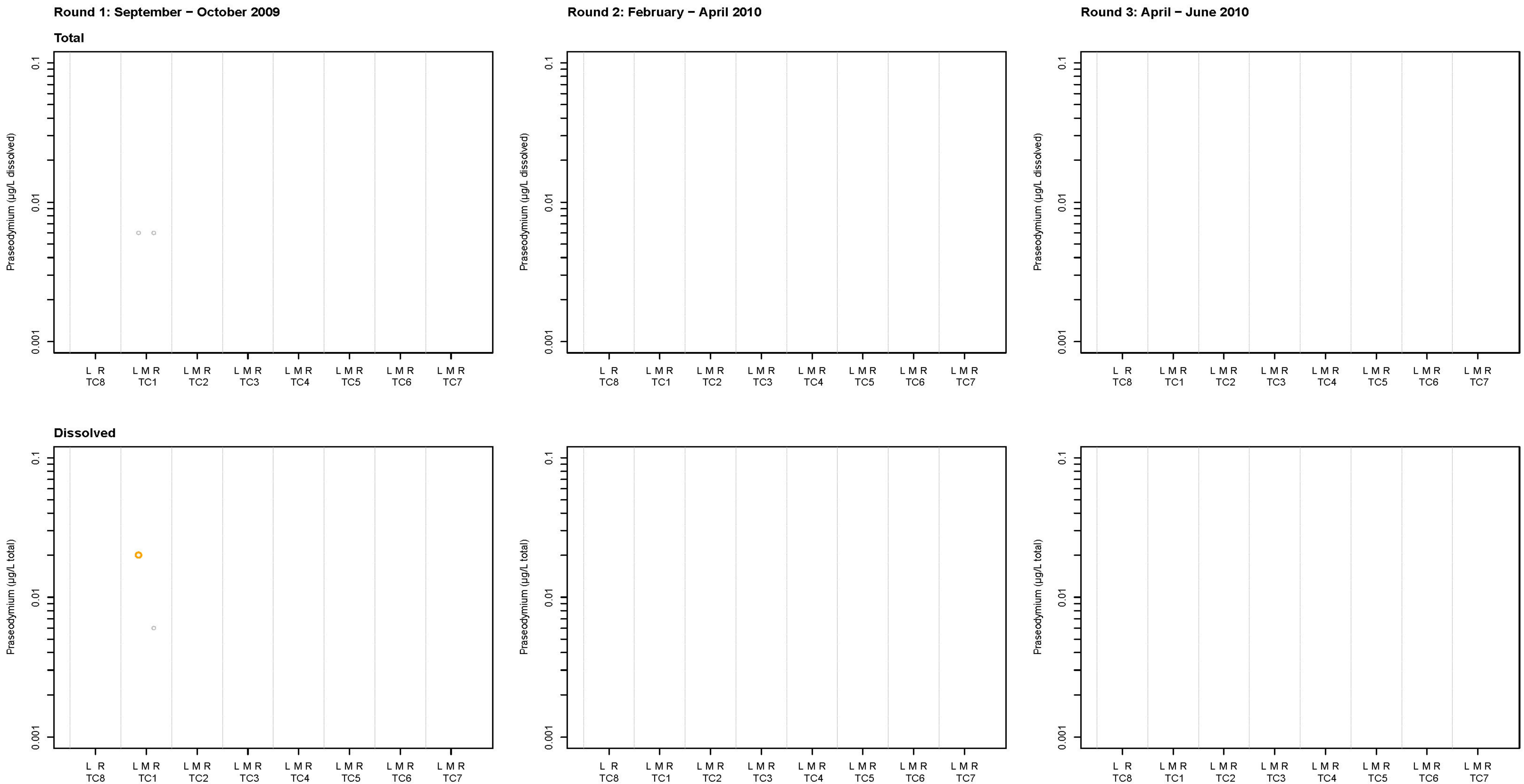
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Praseodymium



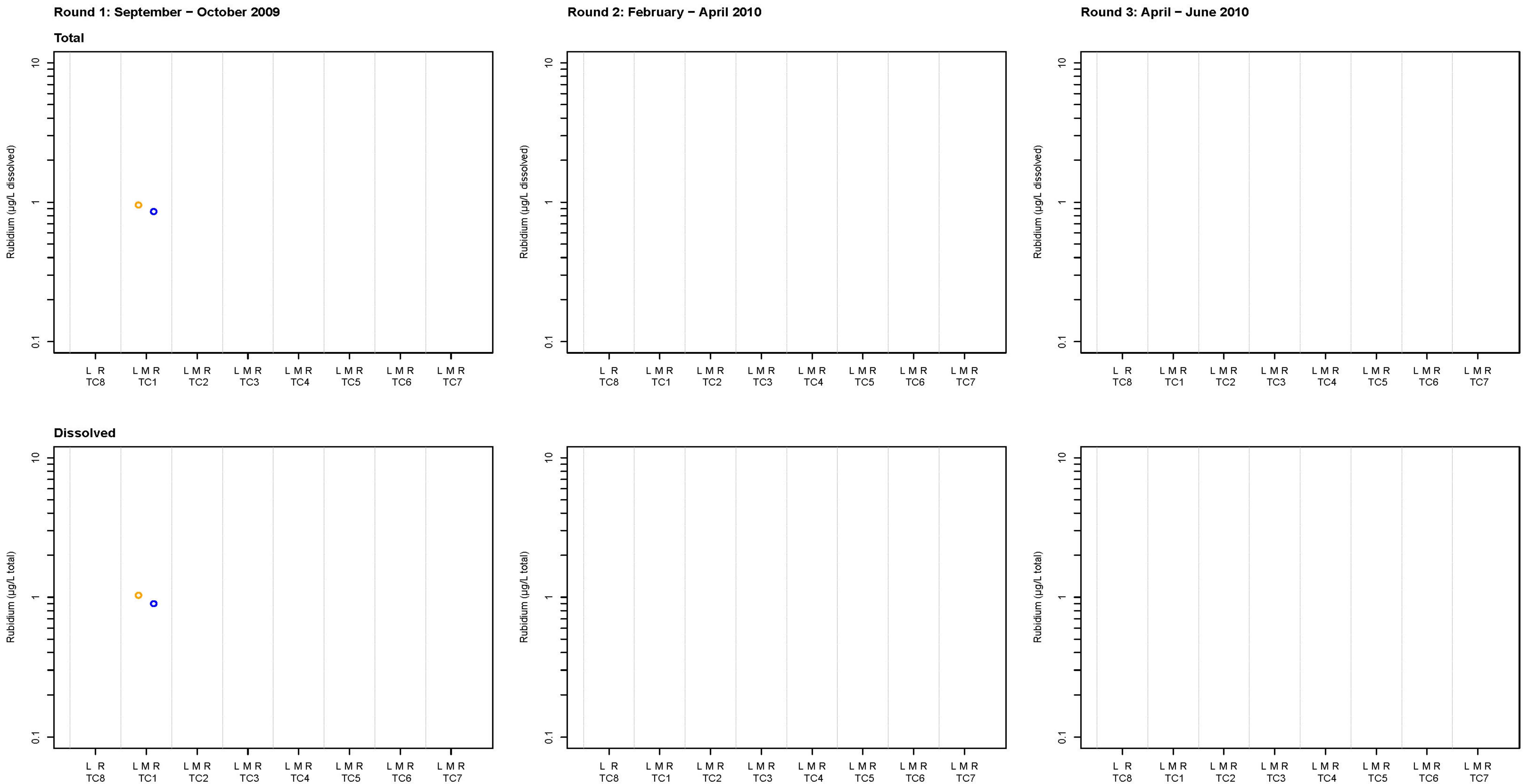
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Rubidium



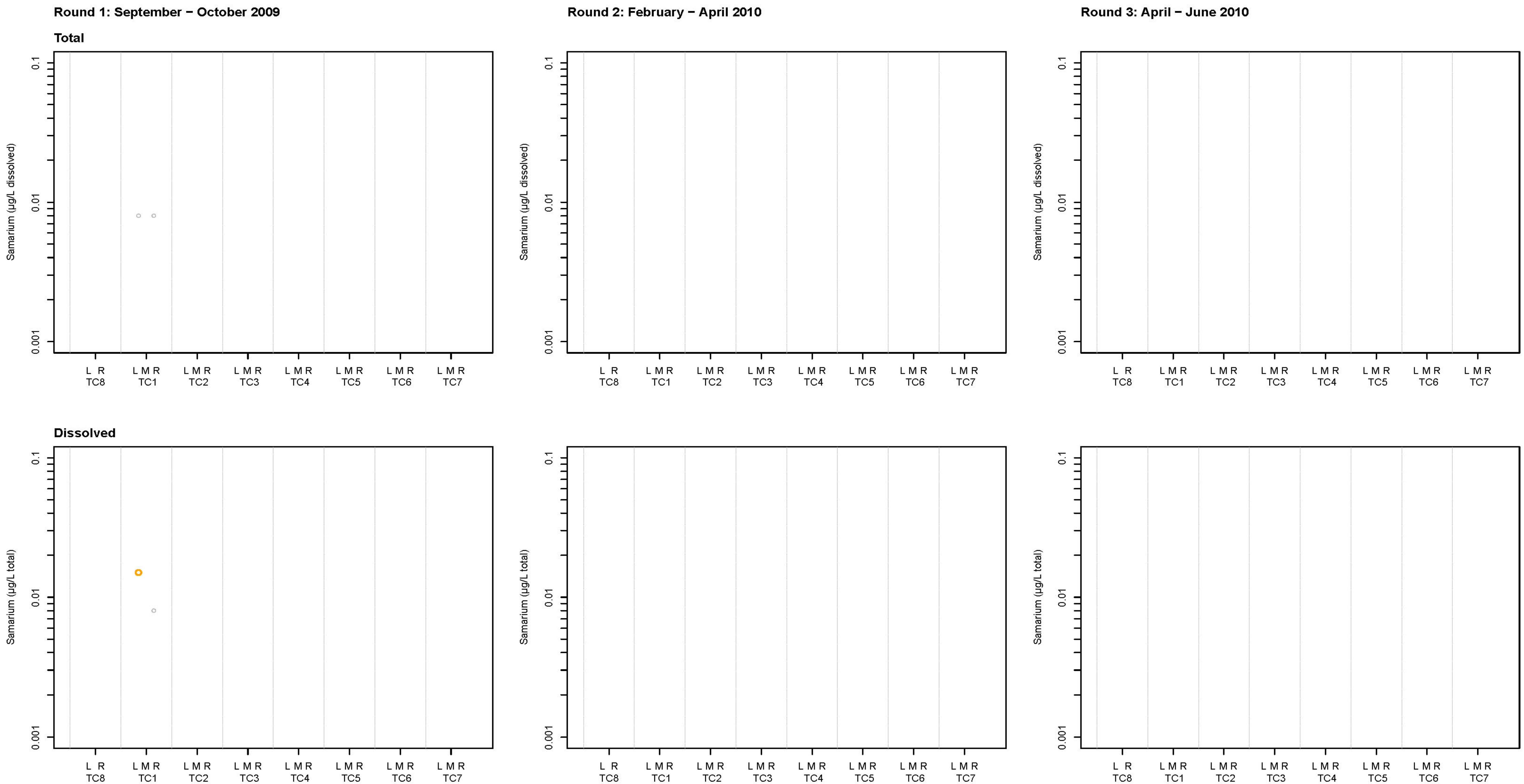
LEGEND

▽	Near-surface	L = Left bank (orange)
○	Nearshore	M = Mid-channel (green)
△	Near-bottom	R = Right bank (blue)
◇	Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Samarium



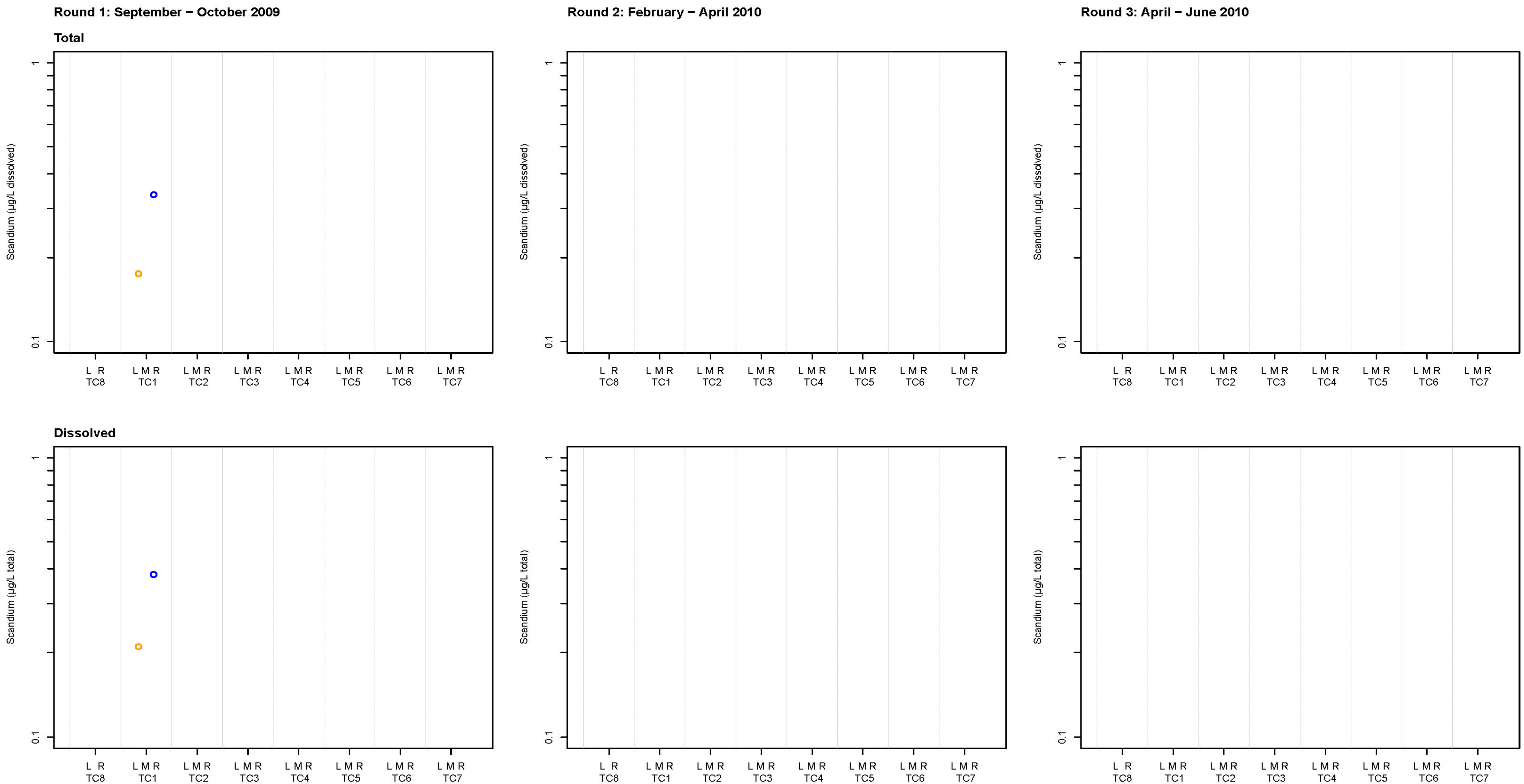
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Scandium



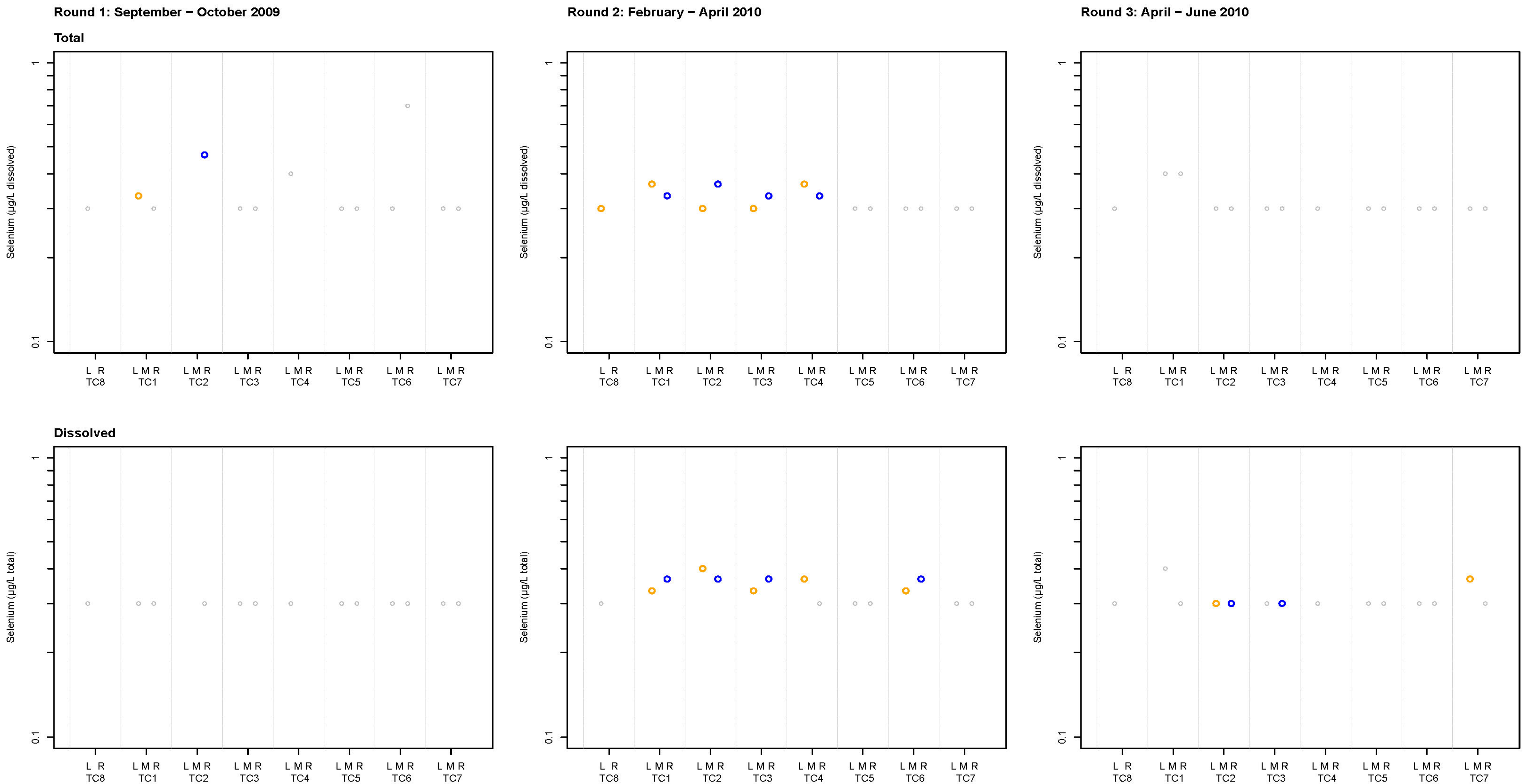
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Selenium



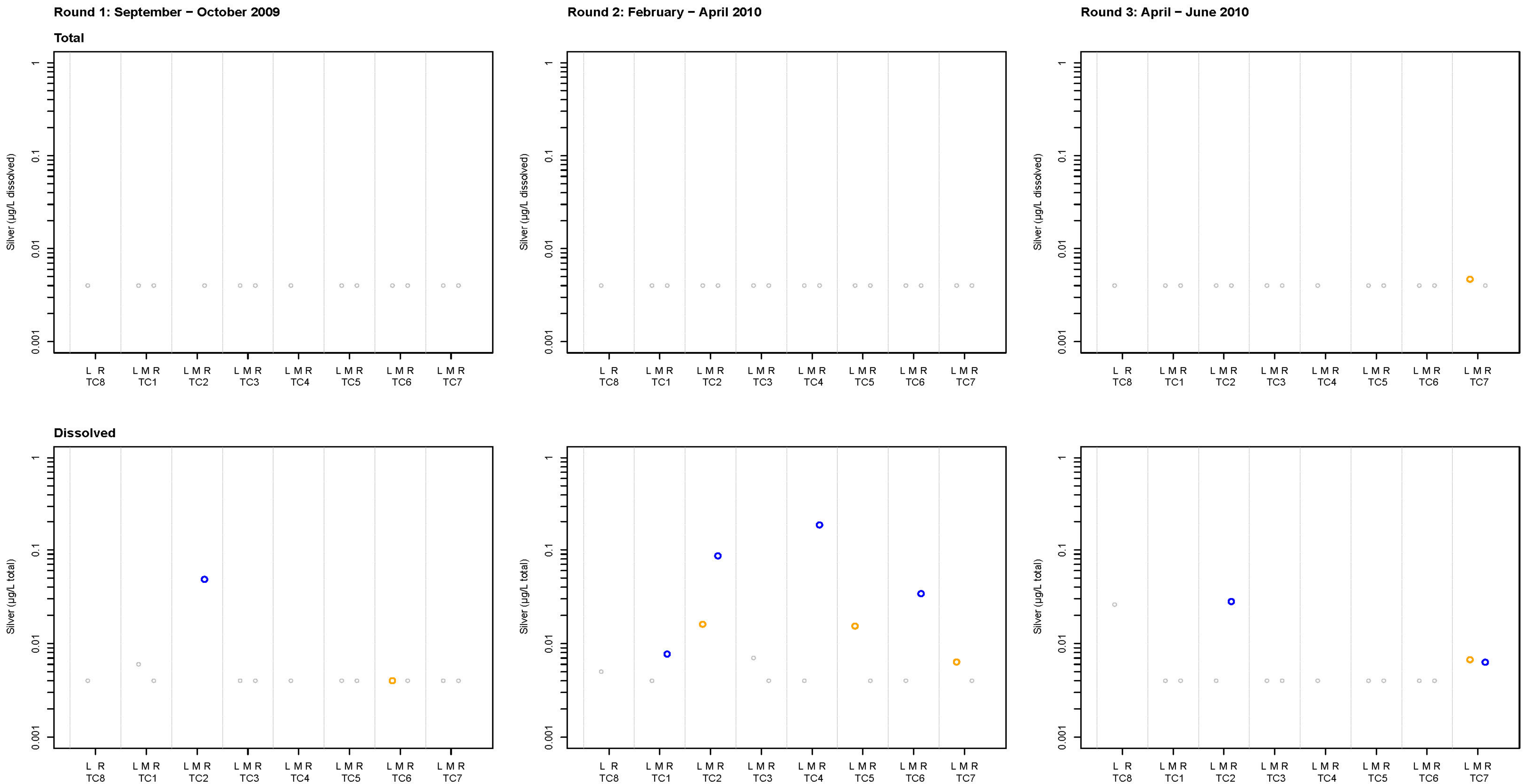
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Silver



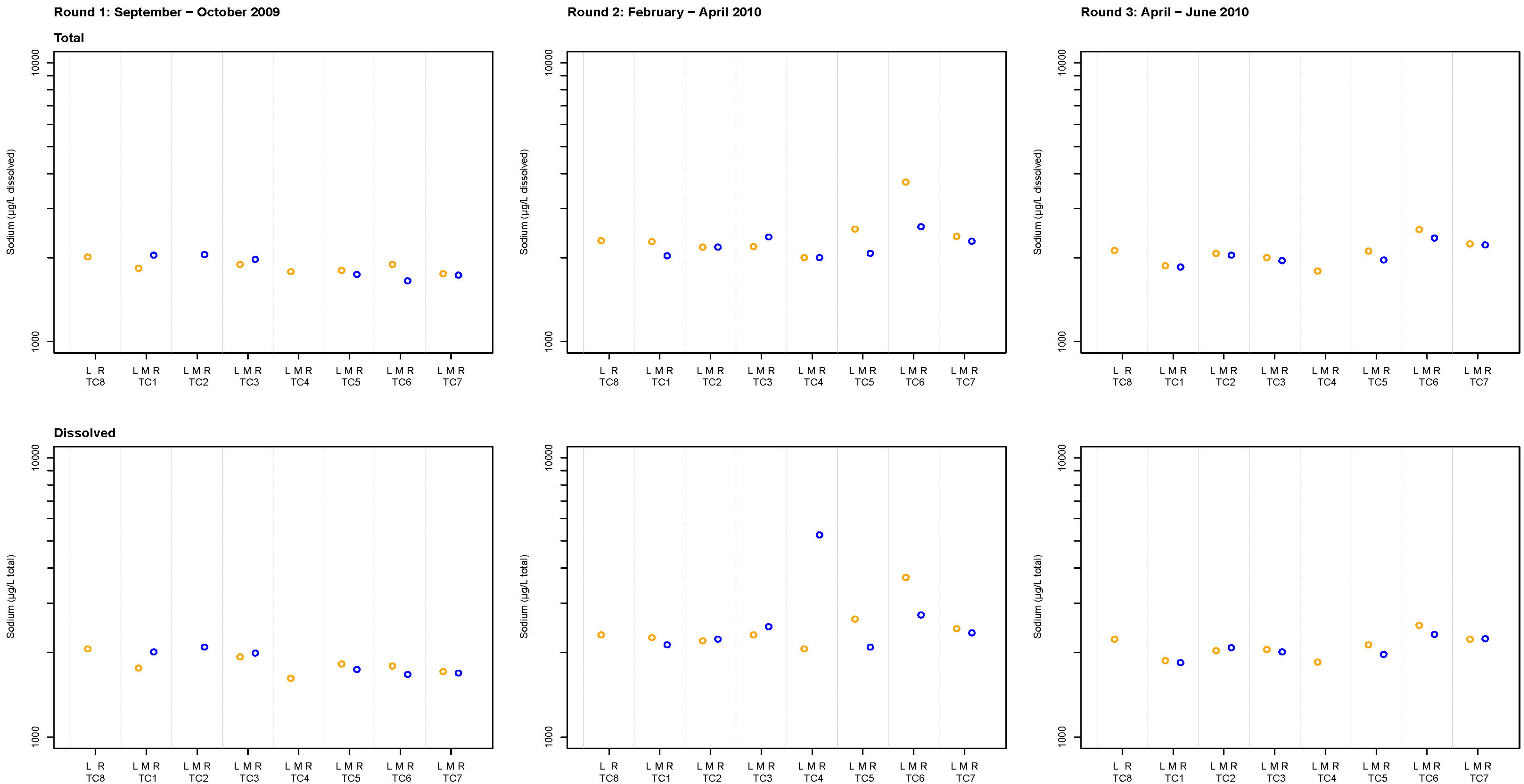
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Sodium



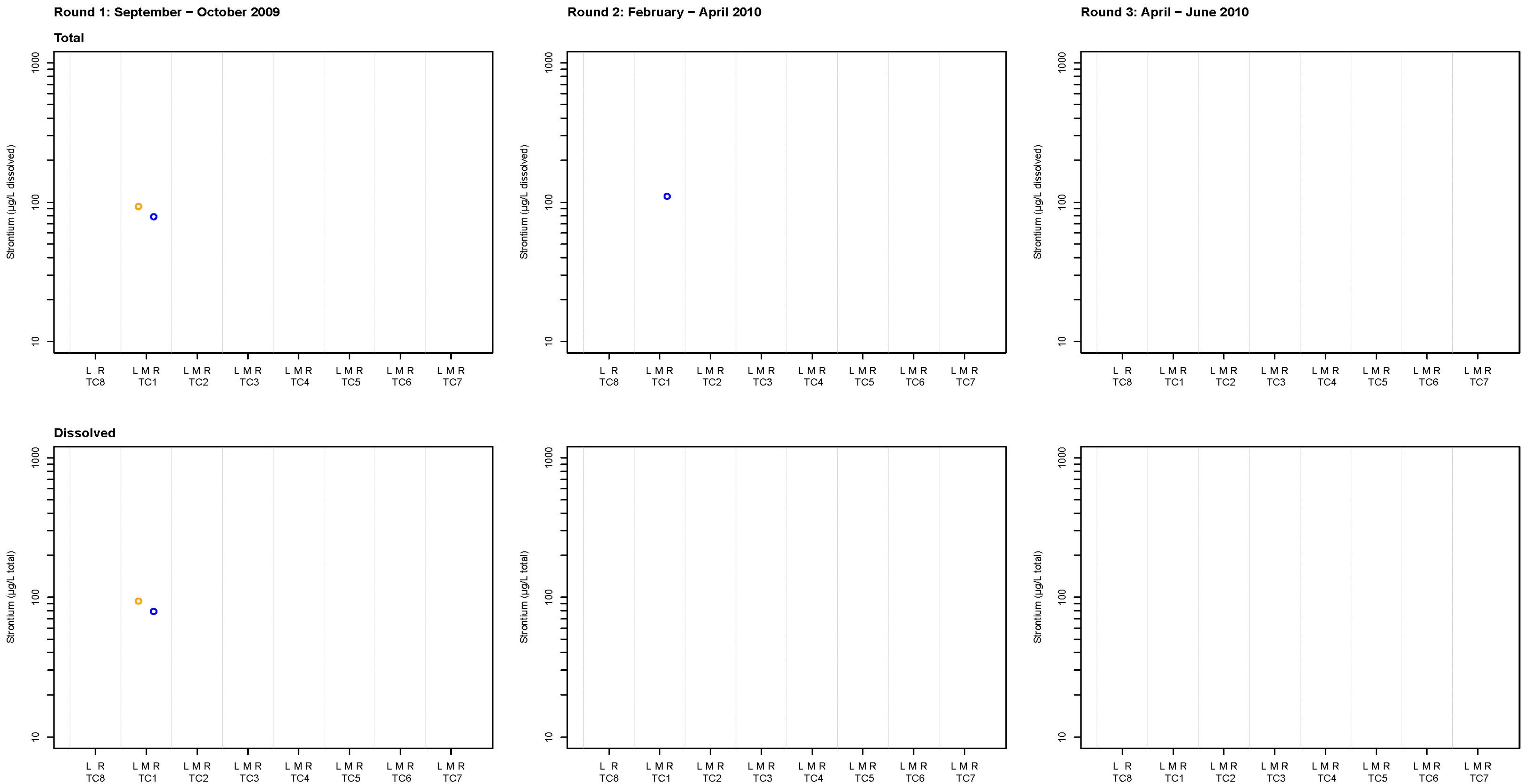
LEGEND

- ▽ Near-surface — L = Left bank (orange)
- ○ Nearshore — M = Mid-channel (green)
- △ Near-bottom — R = Right bank (blue)
- ◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Strontium



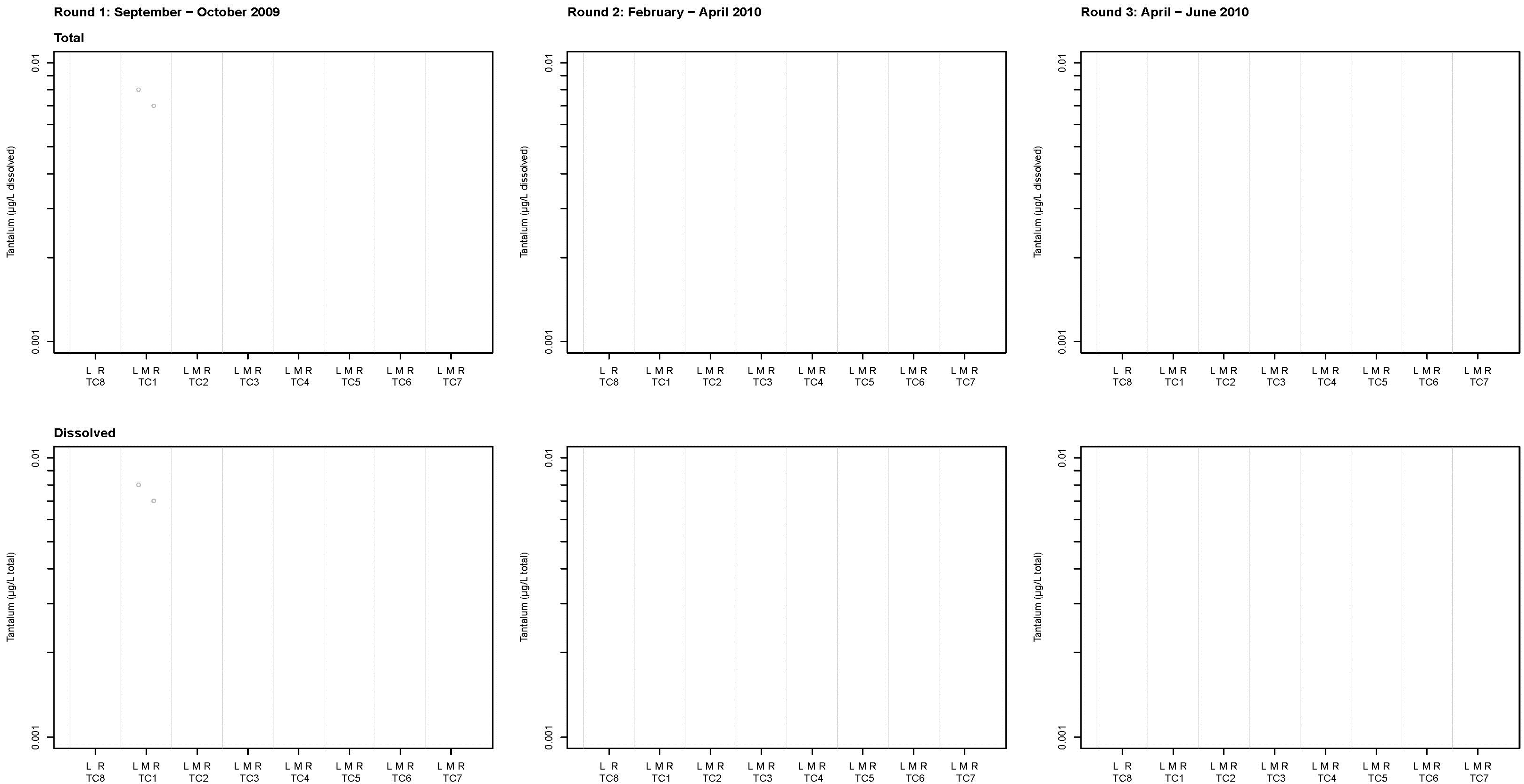
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Tantalum



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

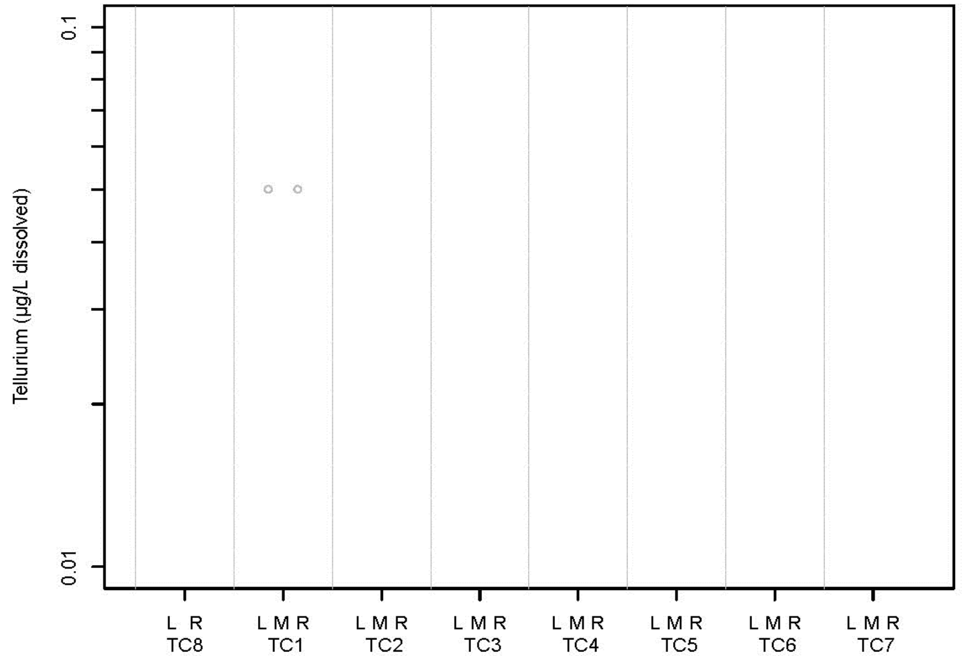
Disturbed Surface Water − Tellurium

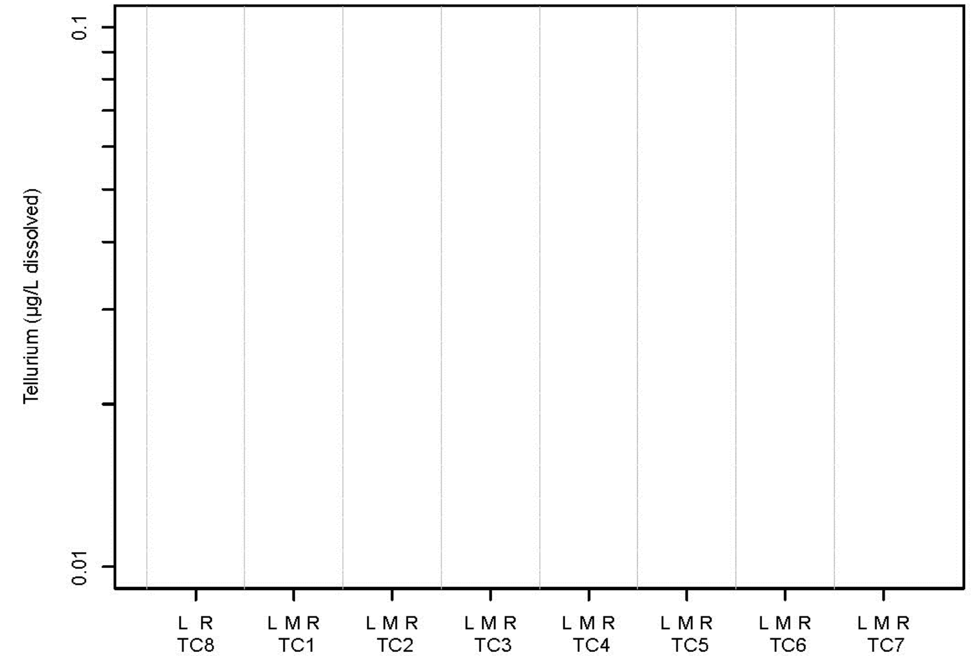
Round 1: September − October 2009

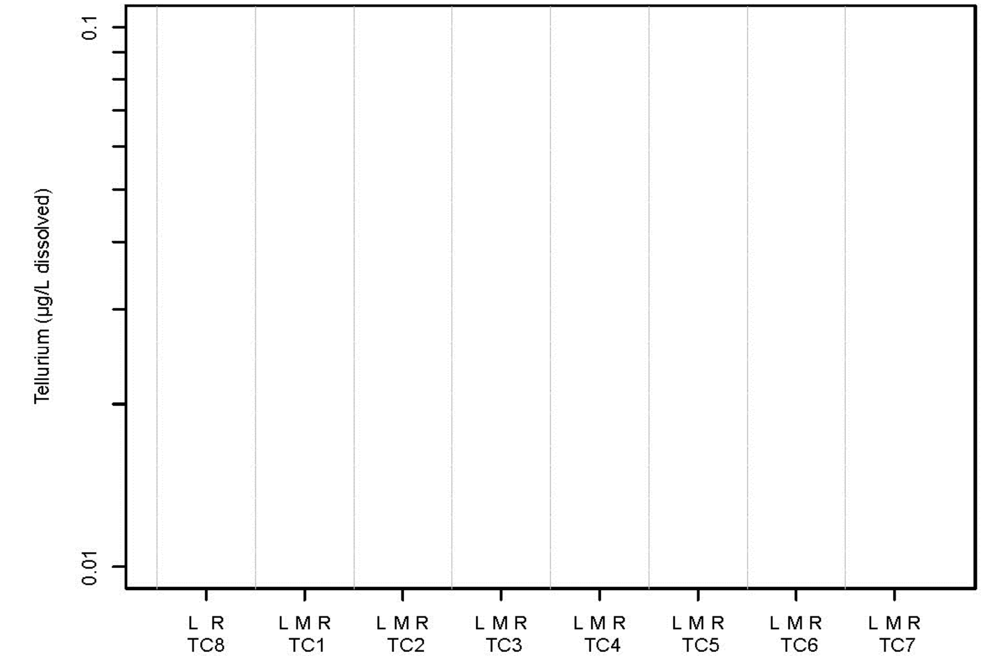
Round 2: February − April 2010

Round 3: April − June 2010

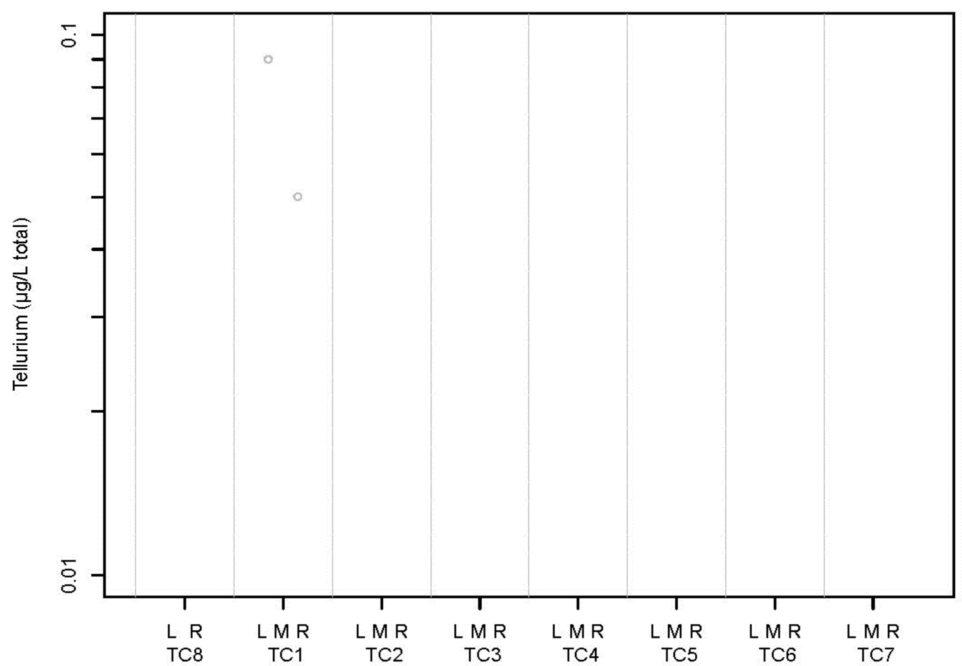
Total

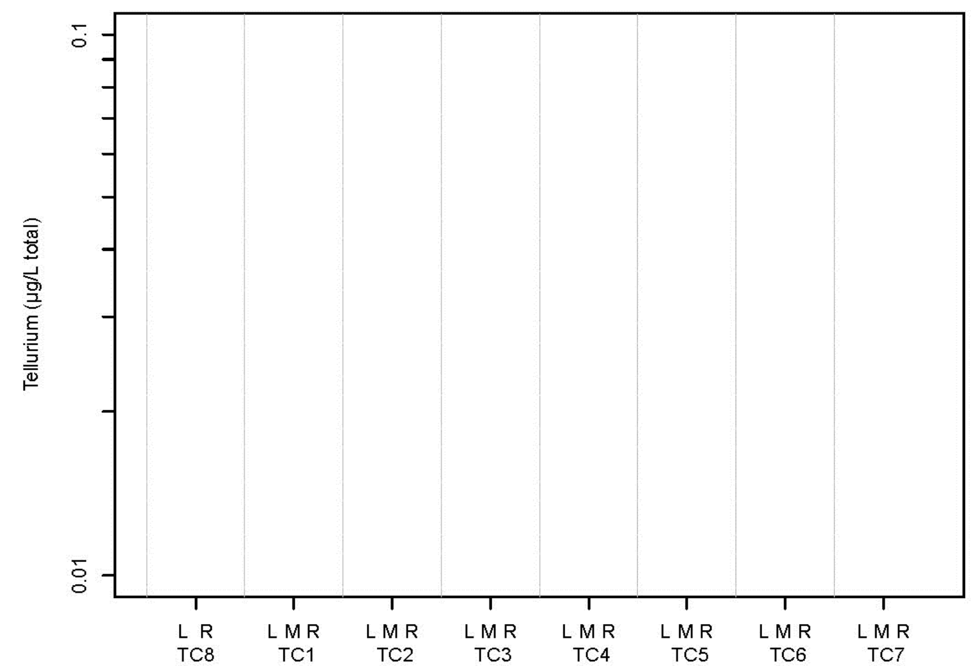


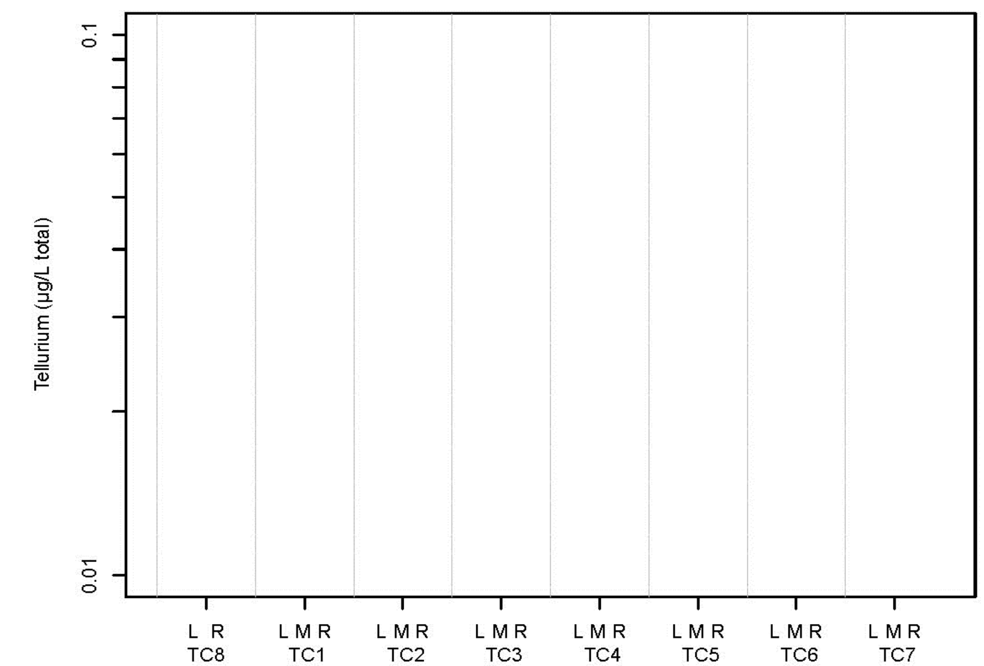




Dissolved







LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

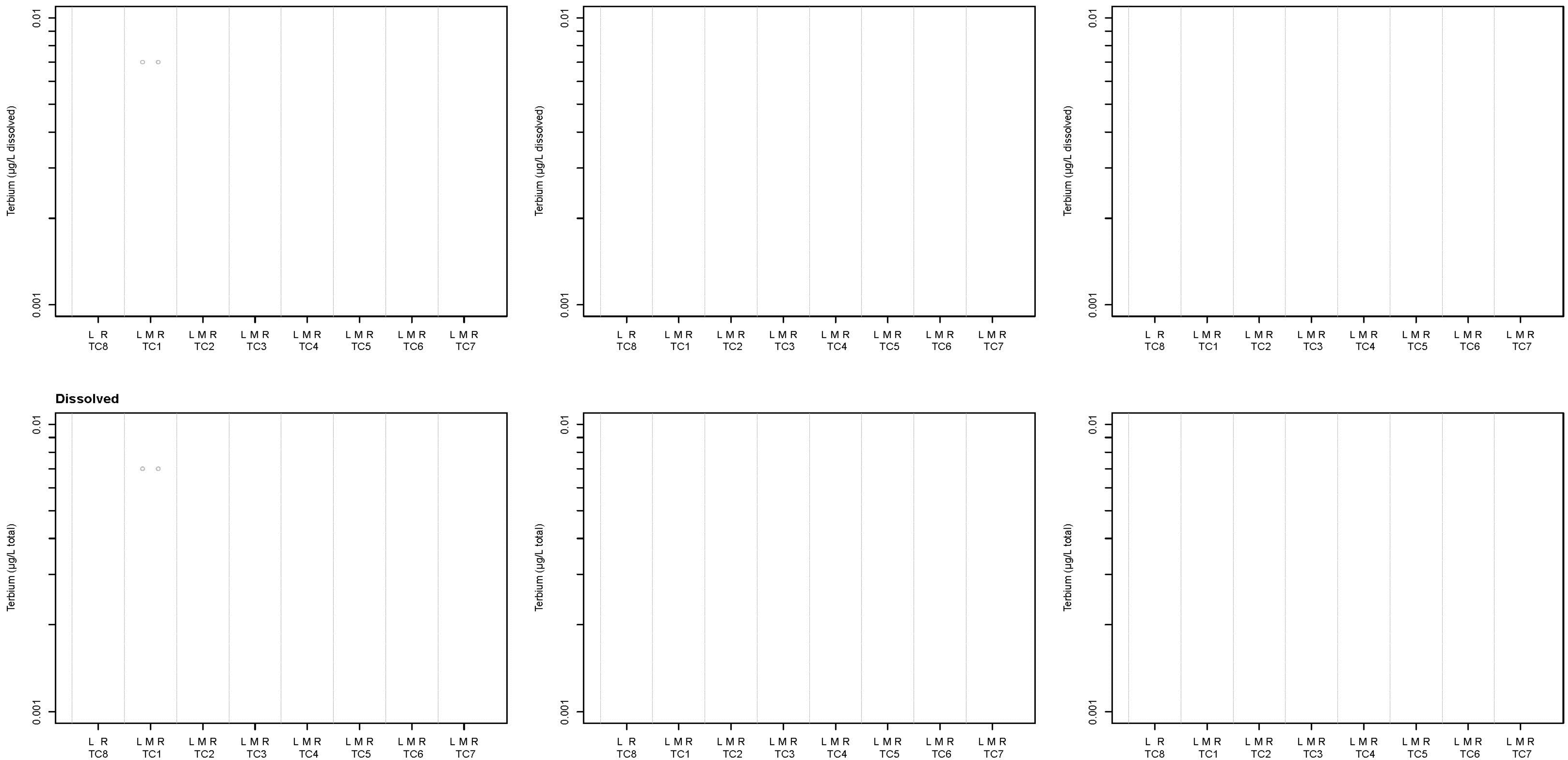
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Terbium

Round 1: September − October 2009 | **Round 2: February − April 2010** | **Round 3: April − June 2010**

Total



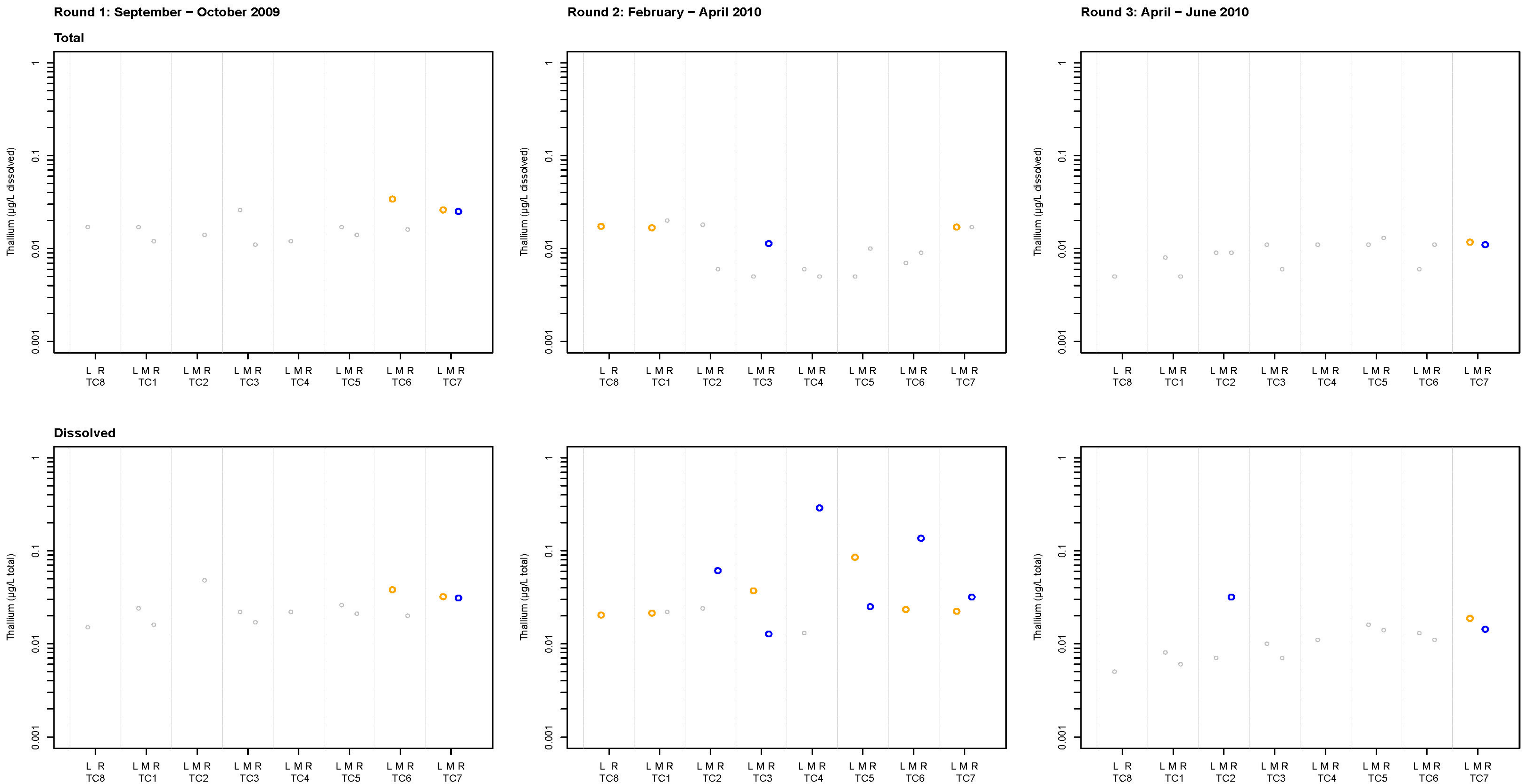
LEGEND

▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Thallium



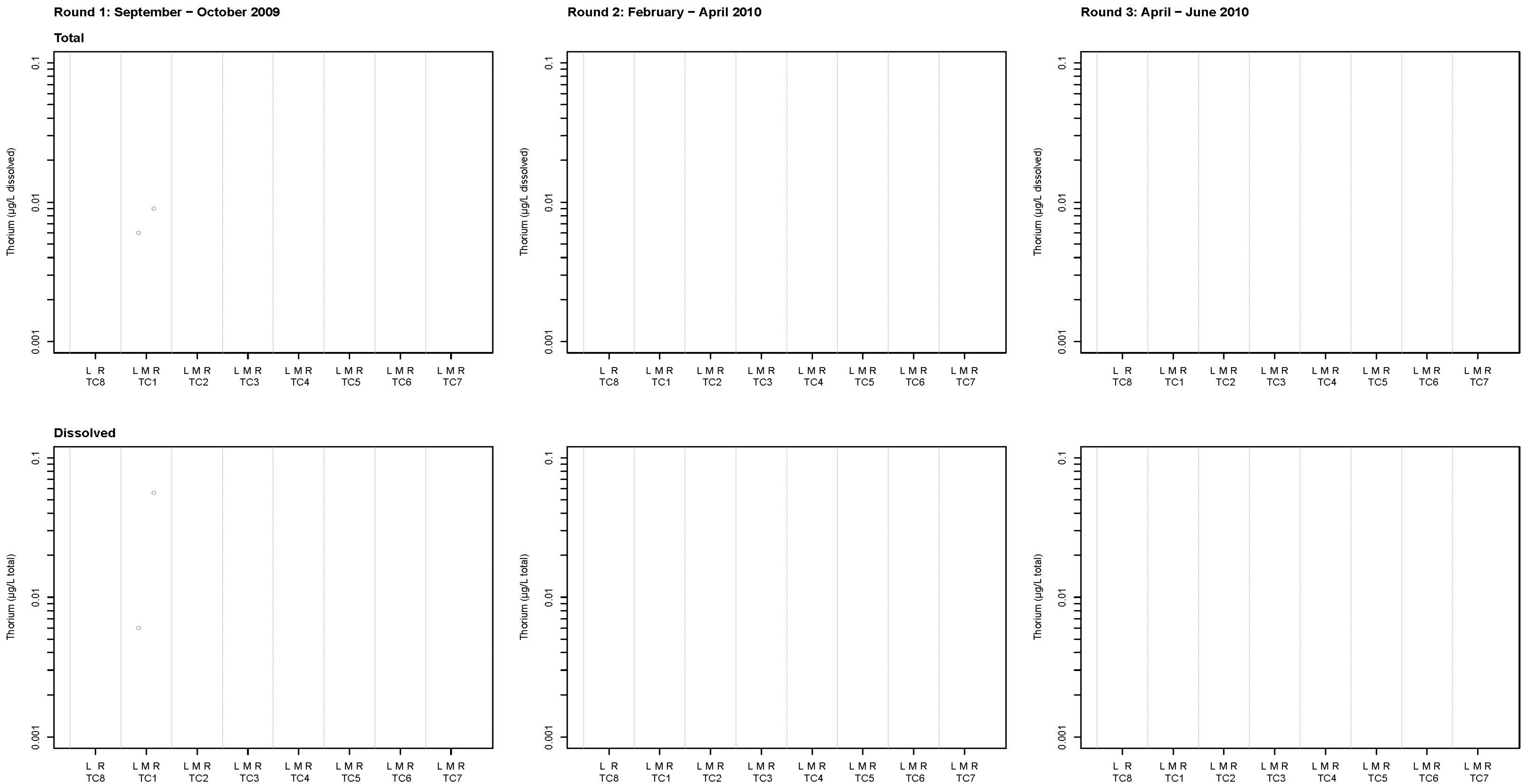
LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)
- L = Left bank (orange)
- M = Mid-channel (green)
- R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Thorium



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

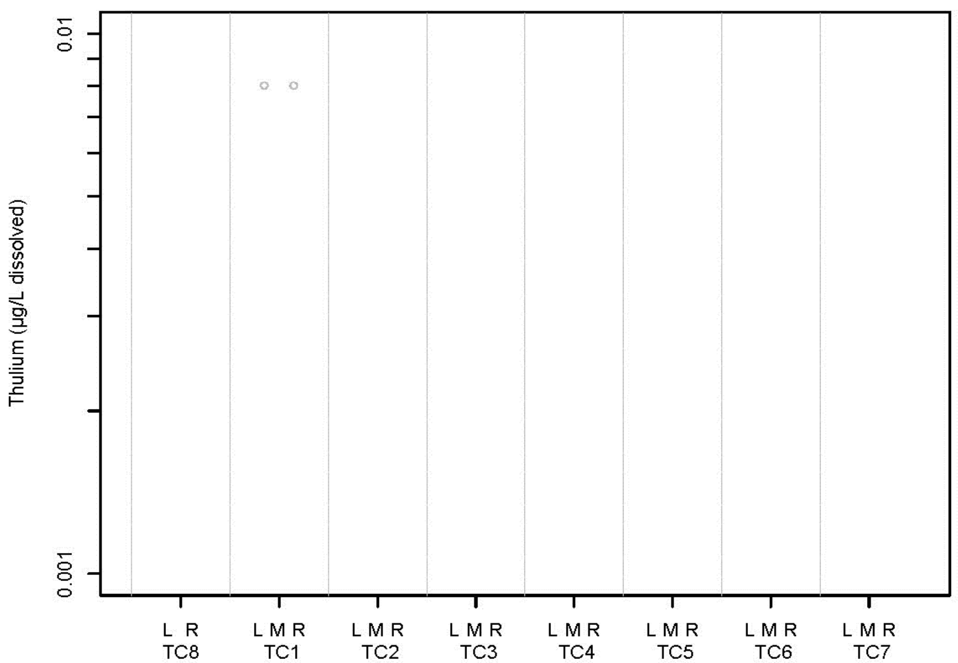
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

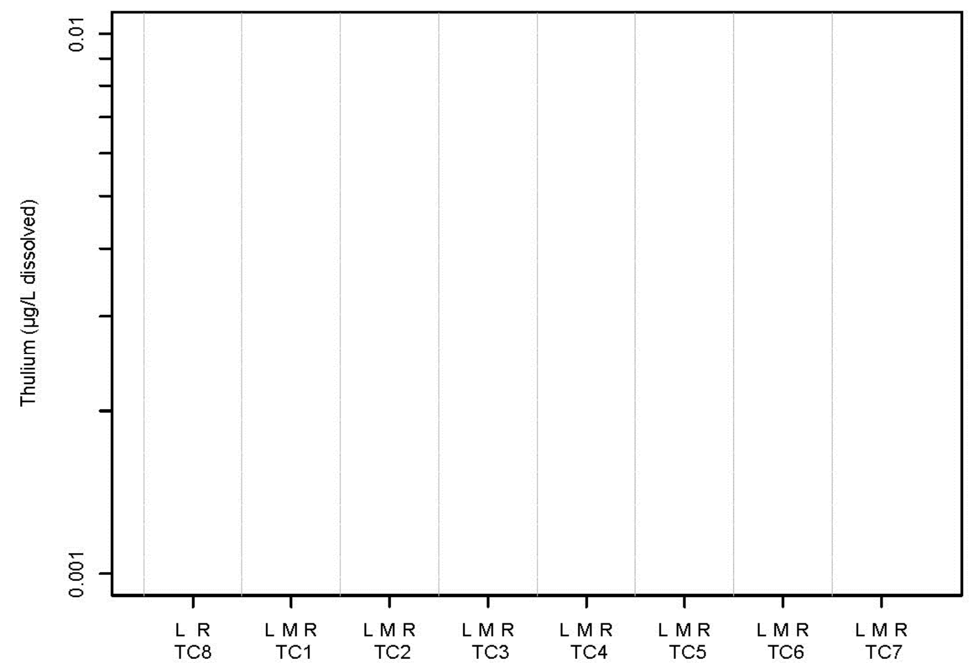
Disturbed Surface Water − Thulium

Round 1: September − October 2009

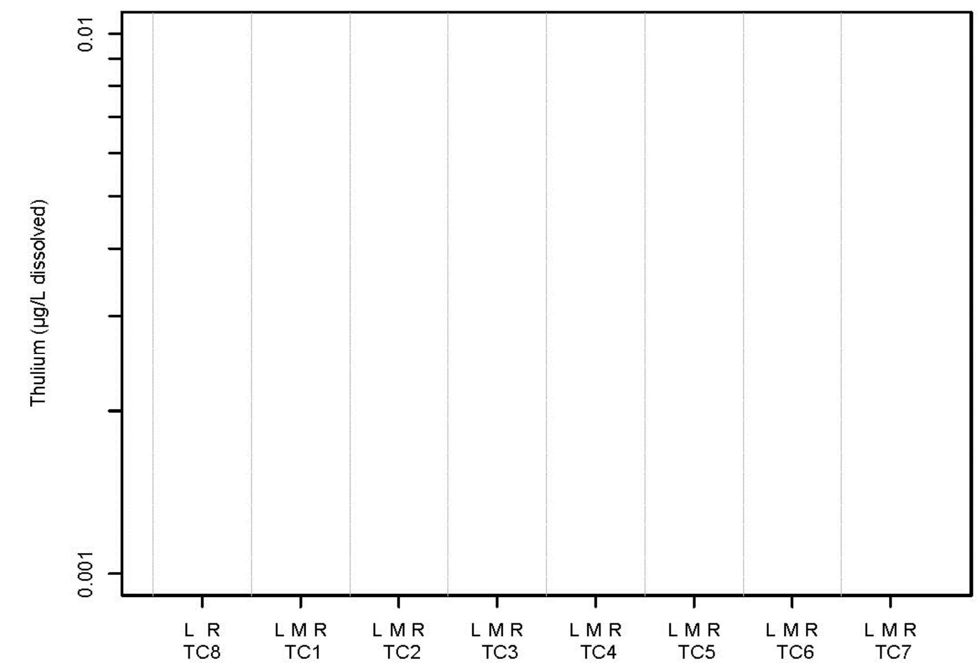
Total



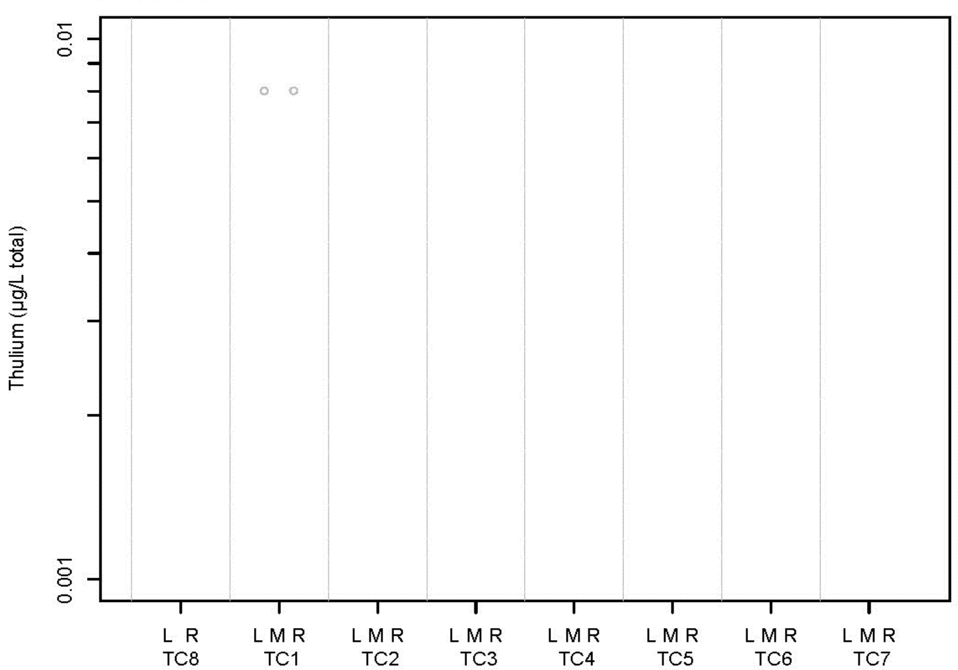
Round 2: February − April 2010

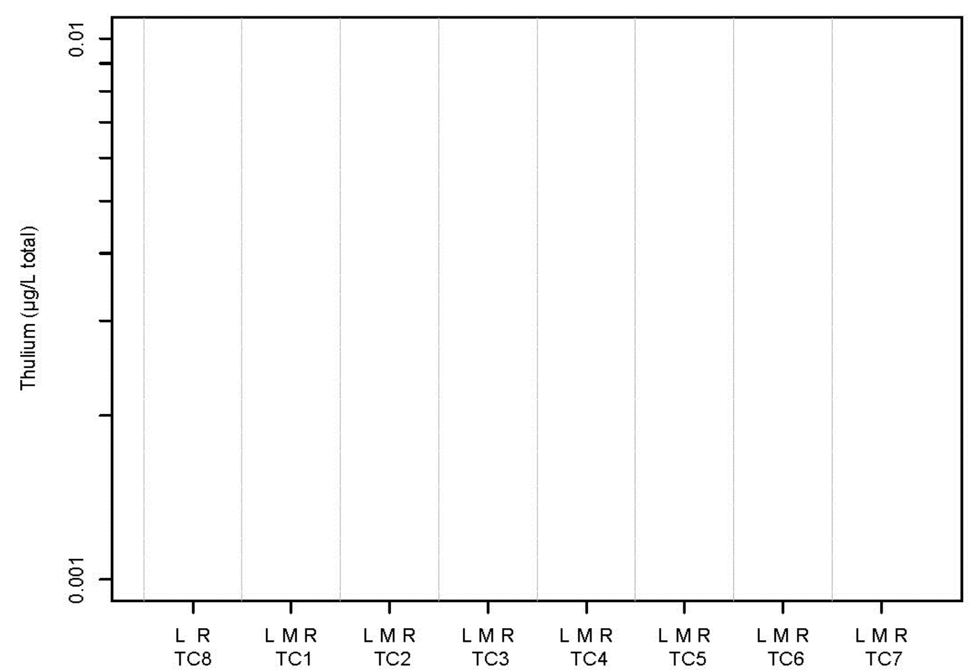


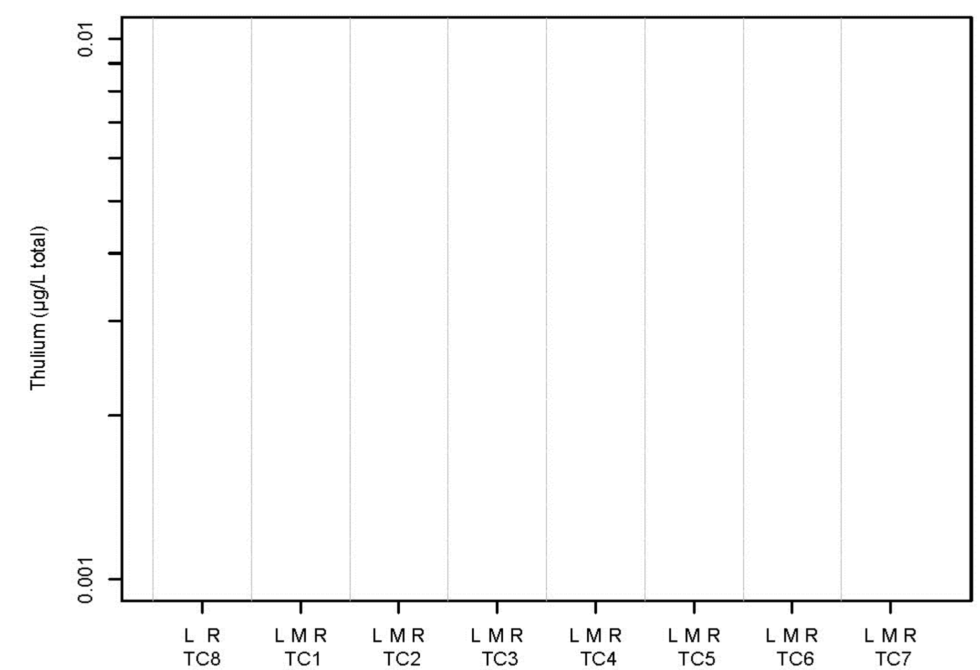
Round 3: April − June 2010



Dissolved







LEGEND

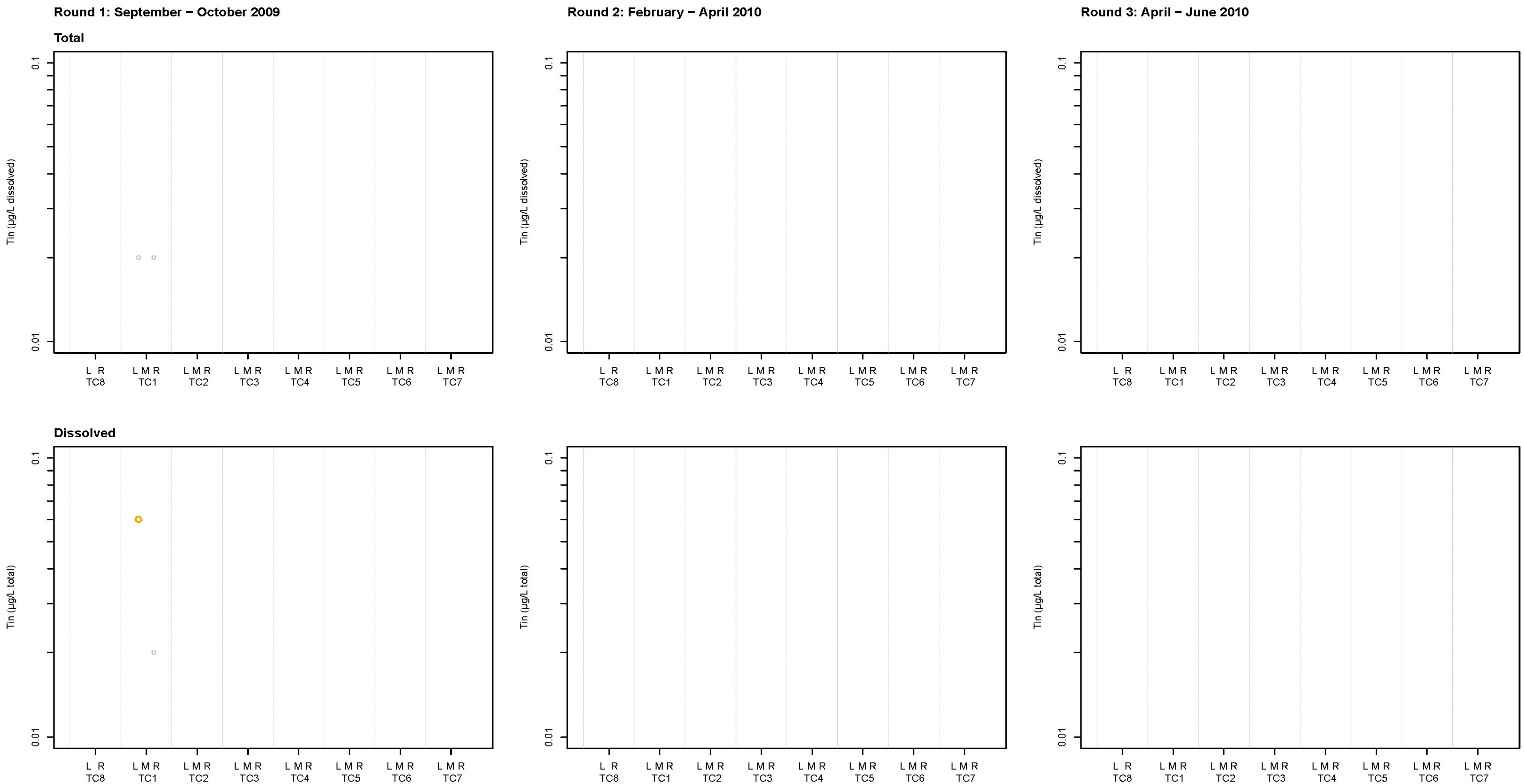
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Tin



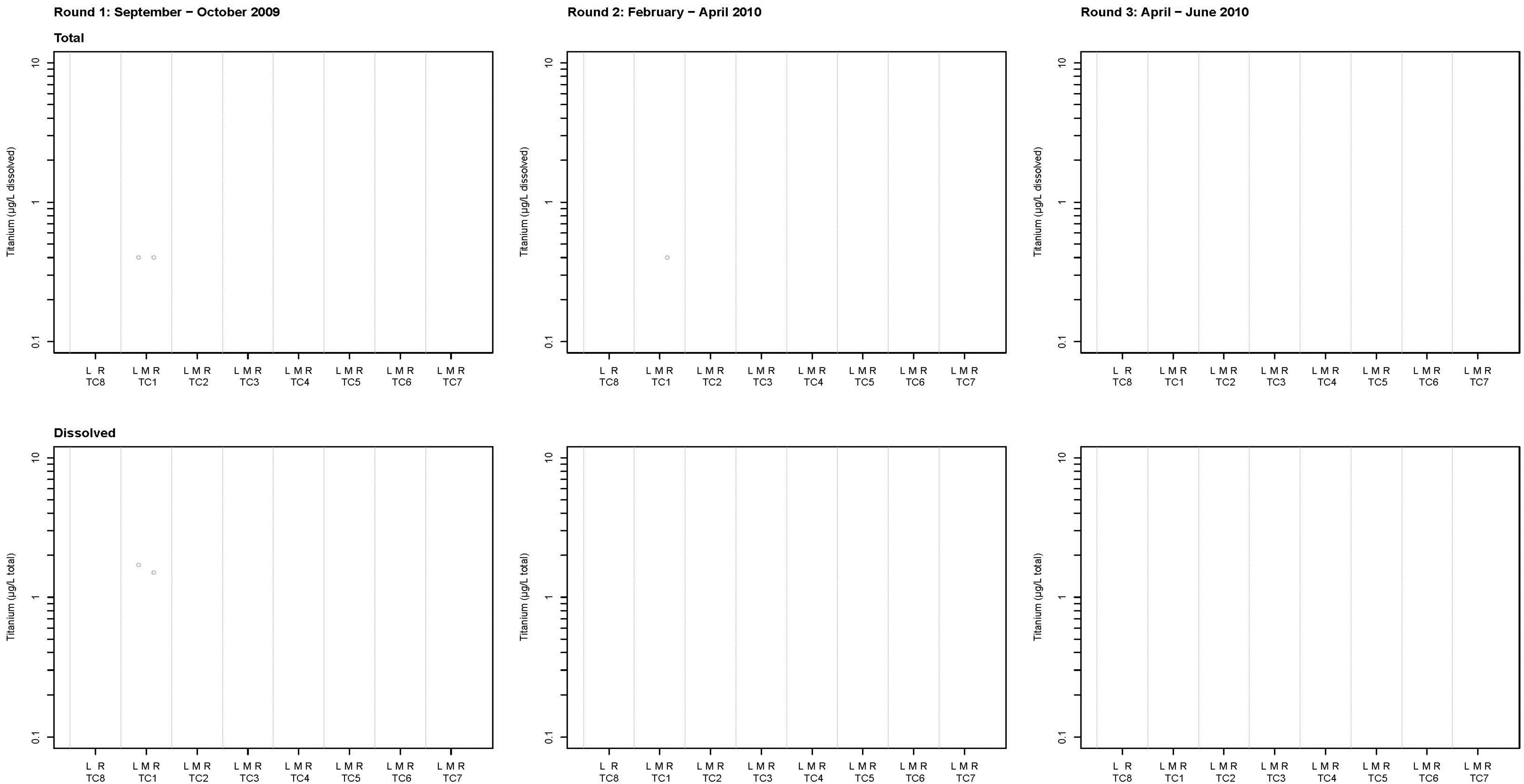
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Titanium



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

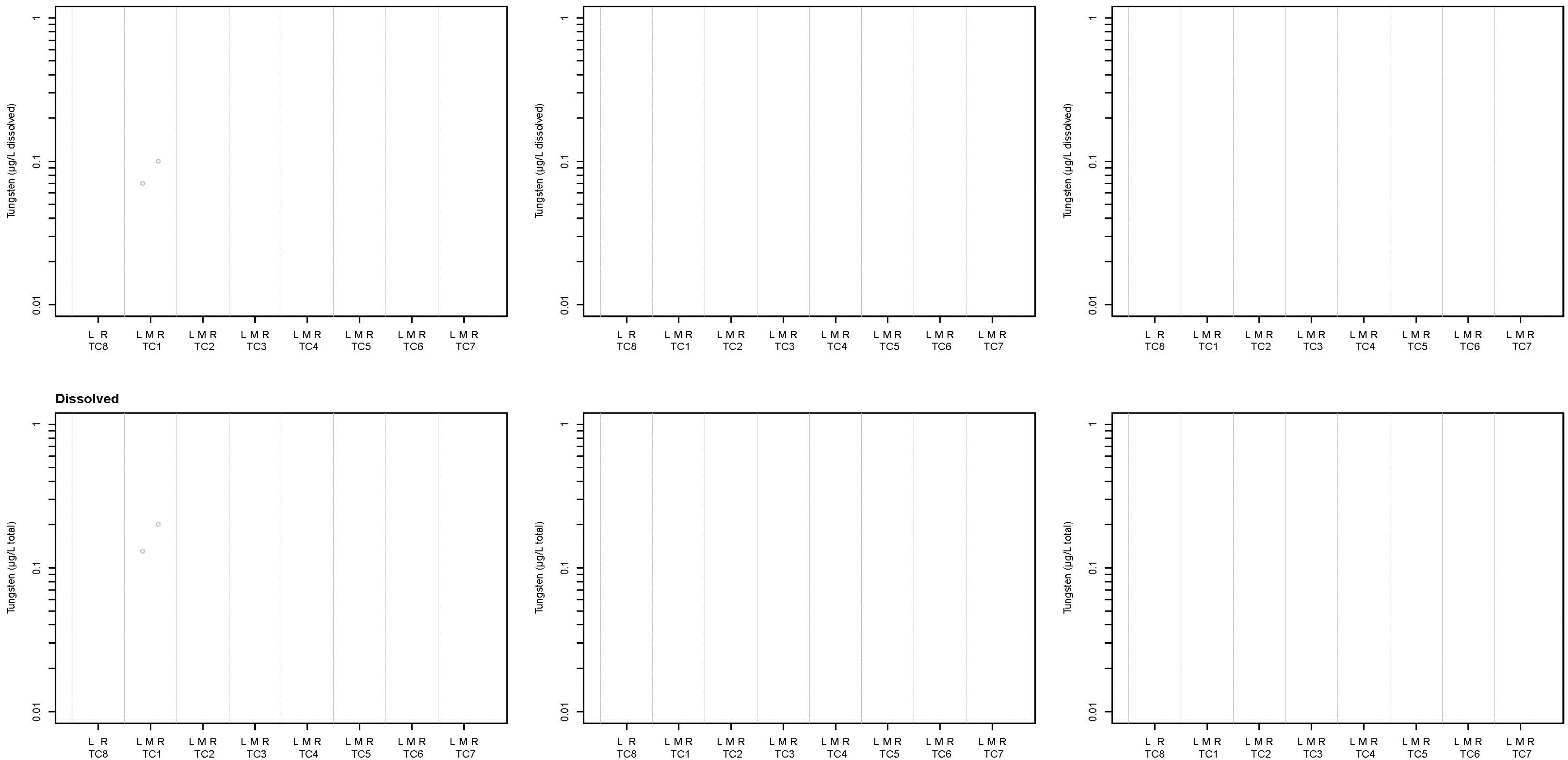
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Tungsten

Round 1: September − October 2009 | **Round 2: February − April 2010** | **Round 3: April − June 2010**

Total



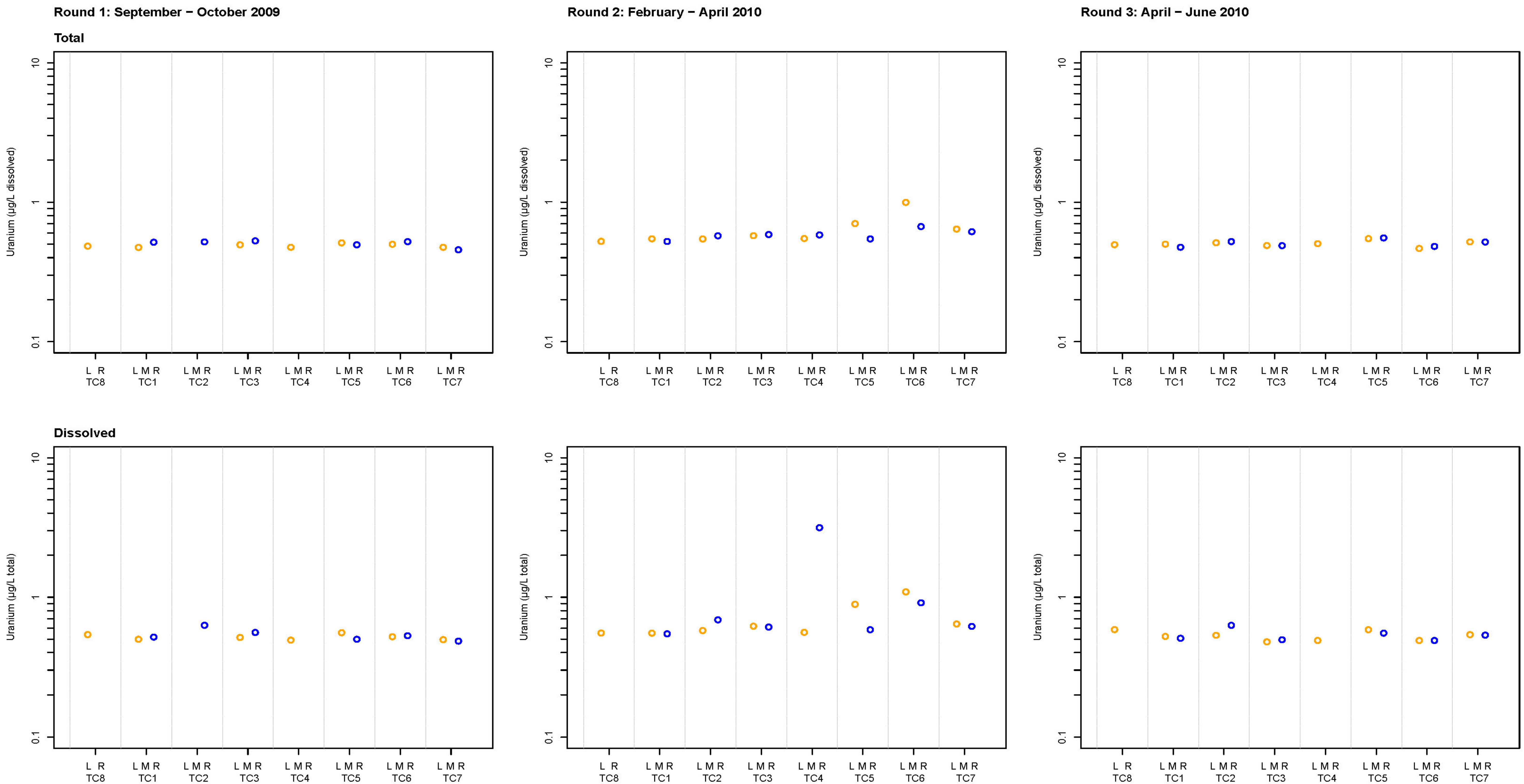
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Uranium



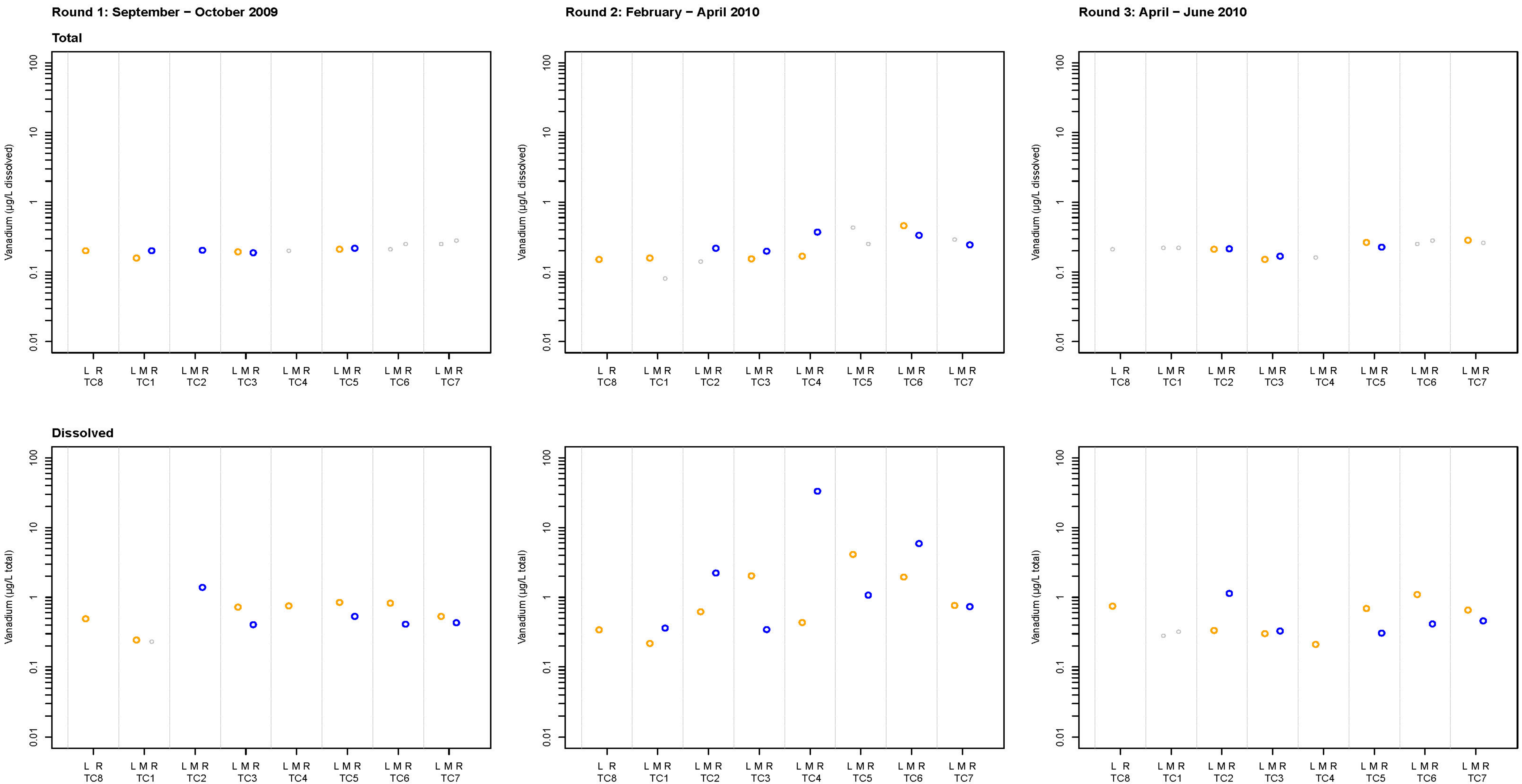
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Vanadium



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

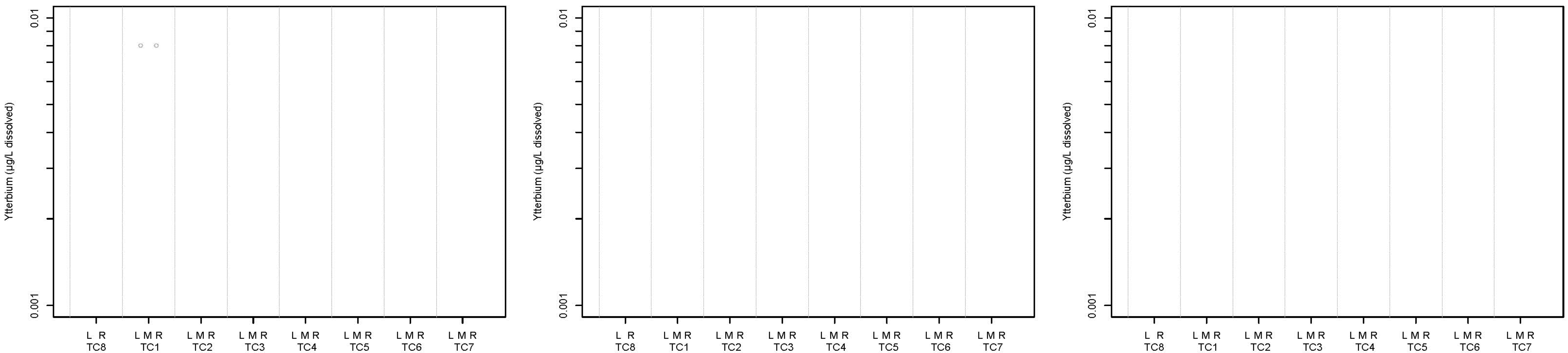
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

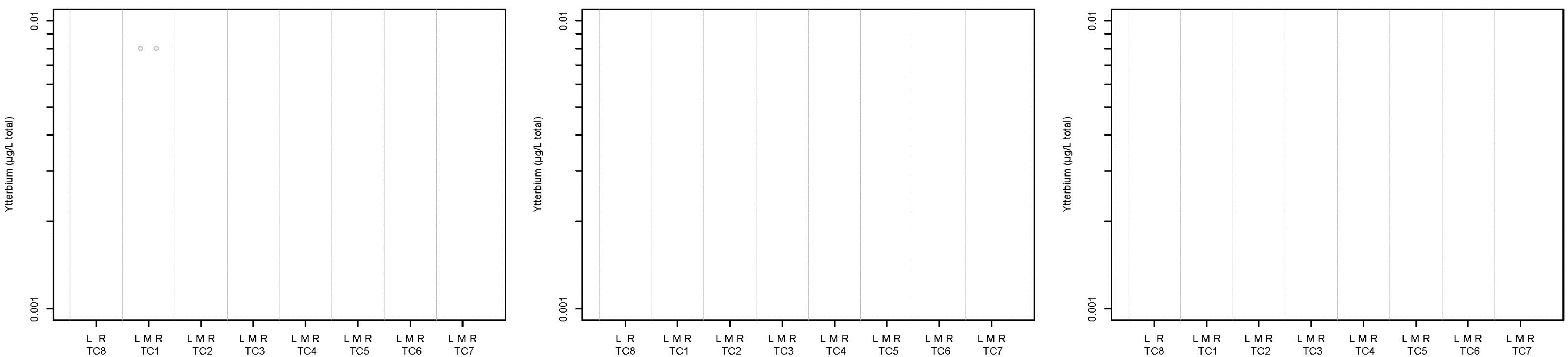
Disturbed Surface Water − Ytterbium

Round 1: September − October 2009 | **Round 2: February − April 2010** | **Round 3: April − June 2010**

Total



Dissolved



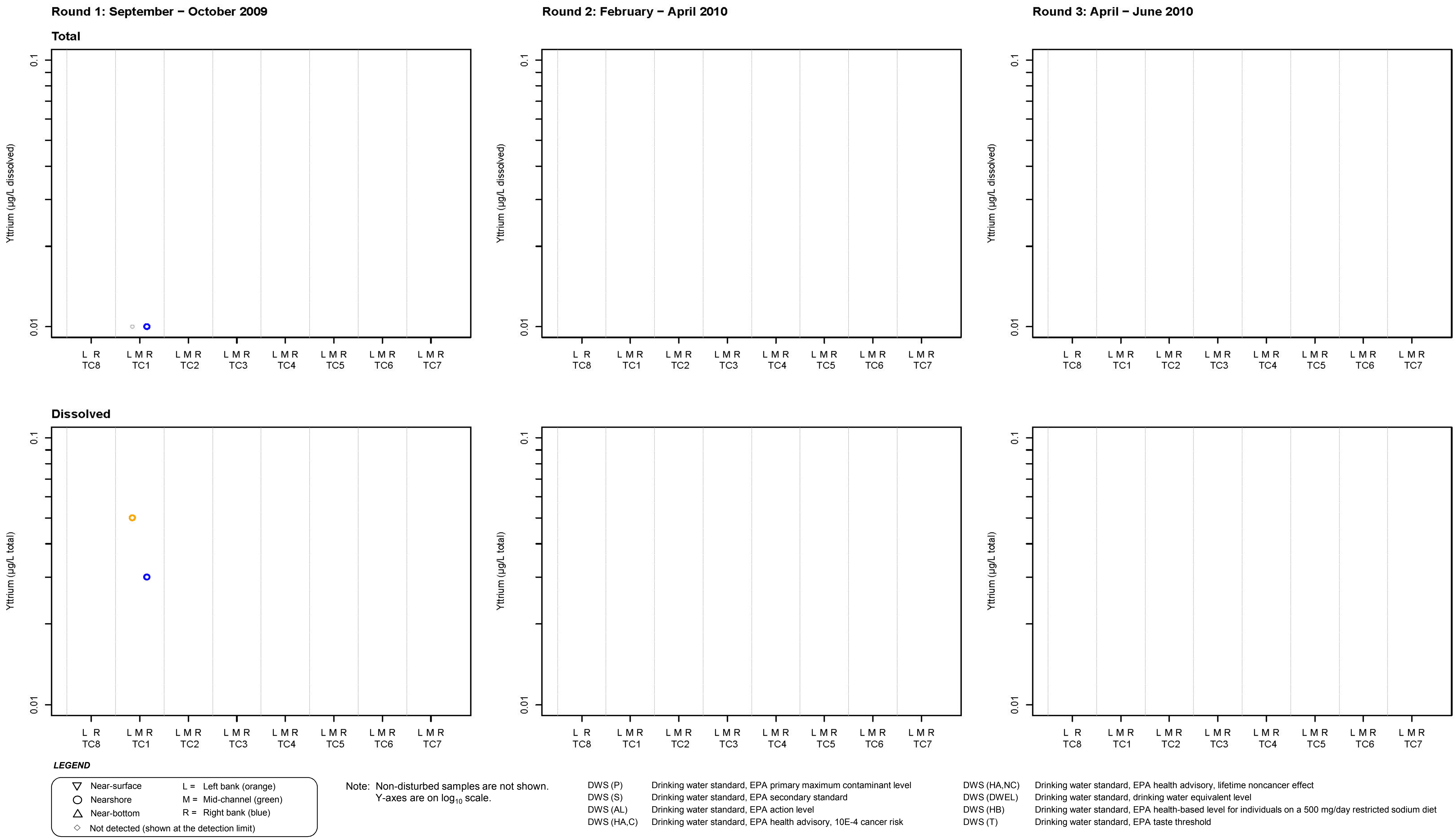
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

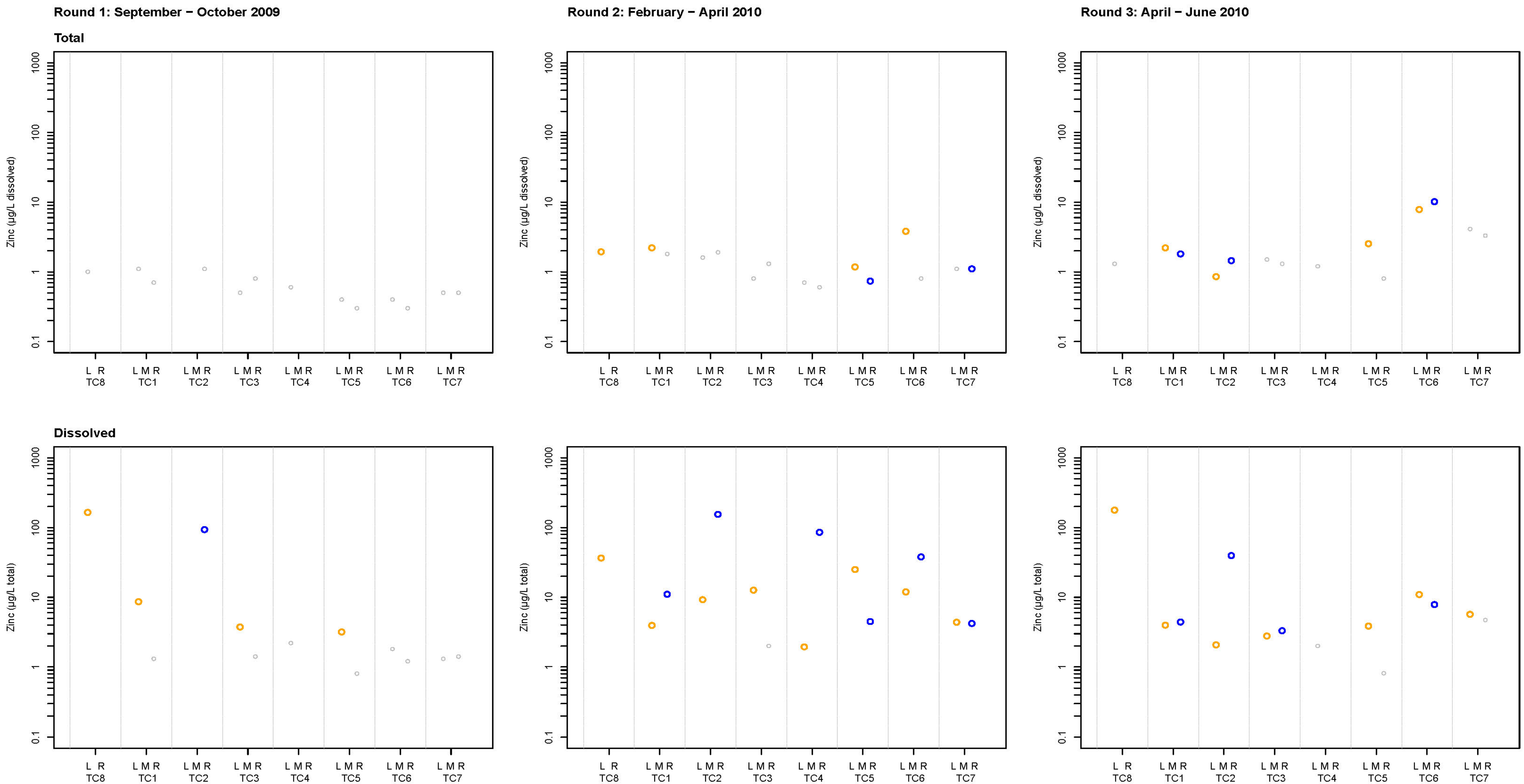
Disturbed Surface Water – Yttrium



Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water – Zinc



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

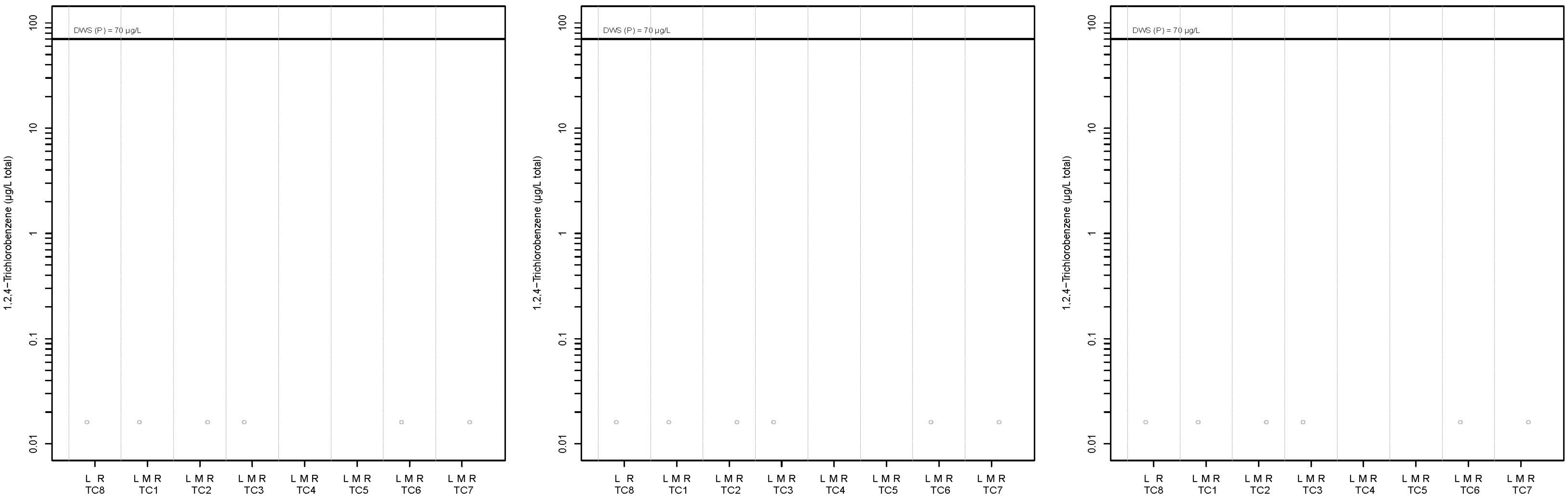
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 1,2,4−Trichlorobenzene

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



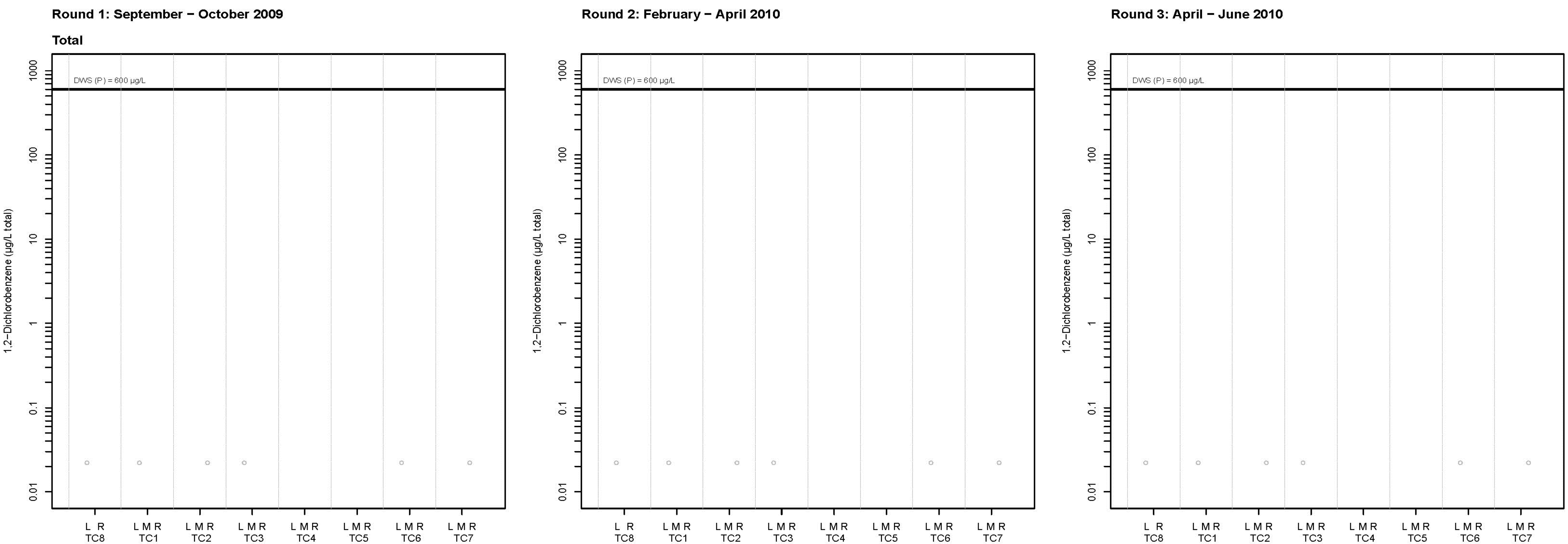
LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 1,2−Dichlorobenzene



LEGEND

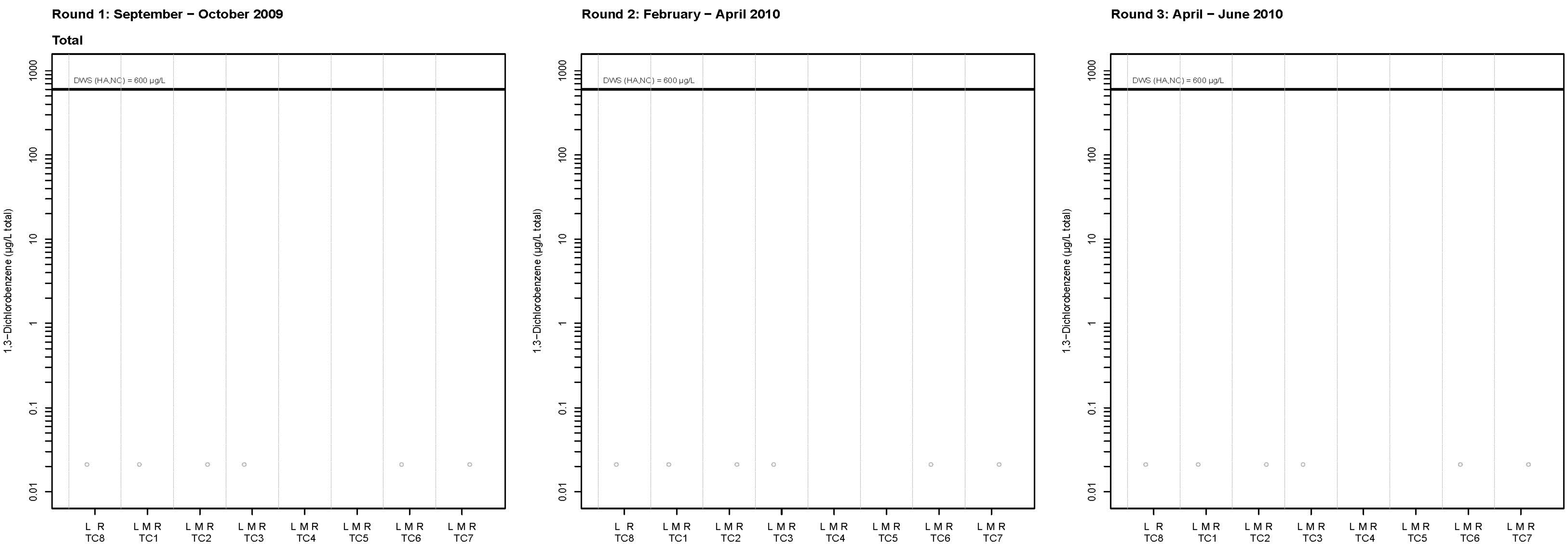
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 1,3−Dichlorobenzene



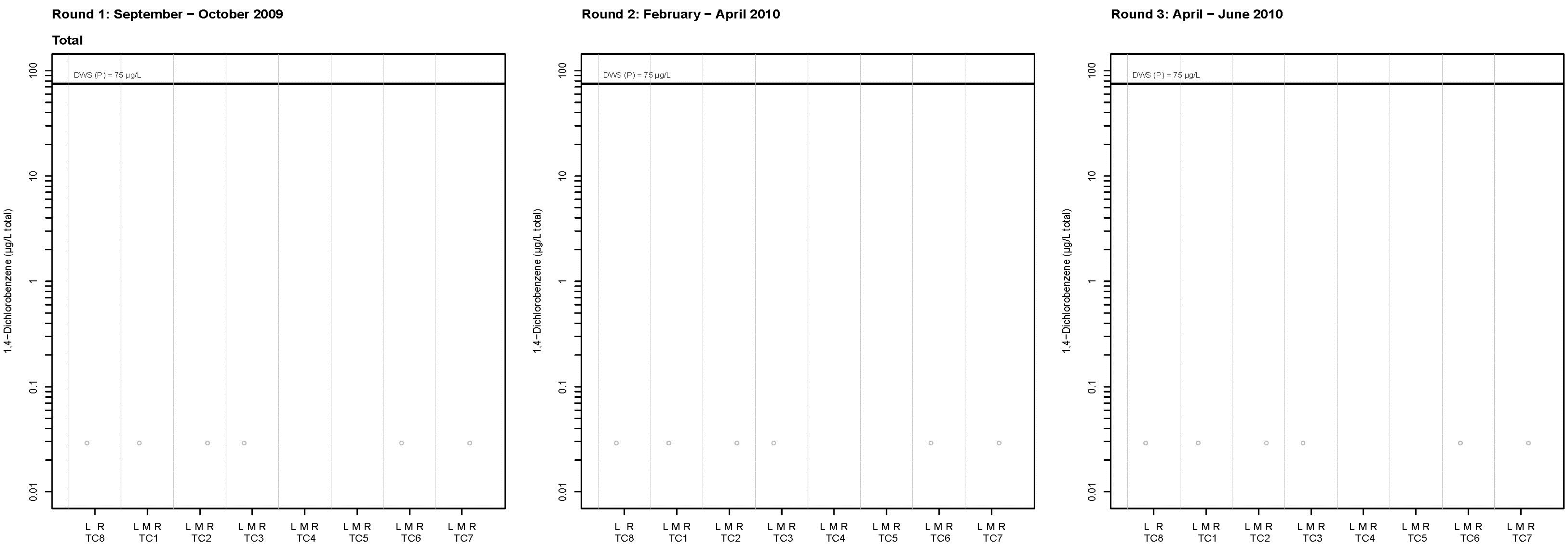
LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 1,4−Dichlorobenzene



LEGEND

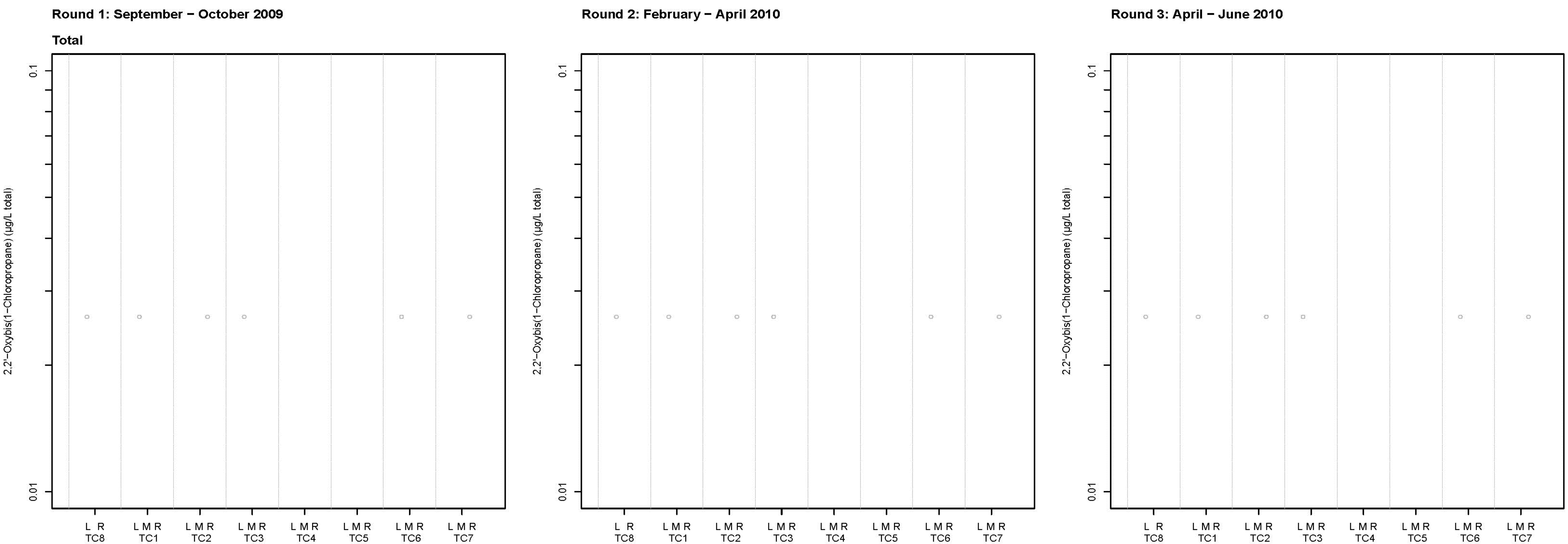
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,2'−Oxybis (1−Chloropropane)



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

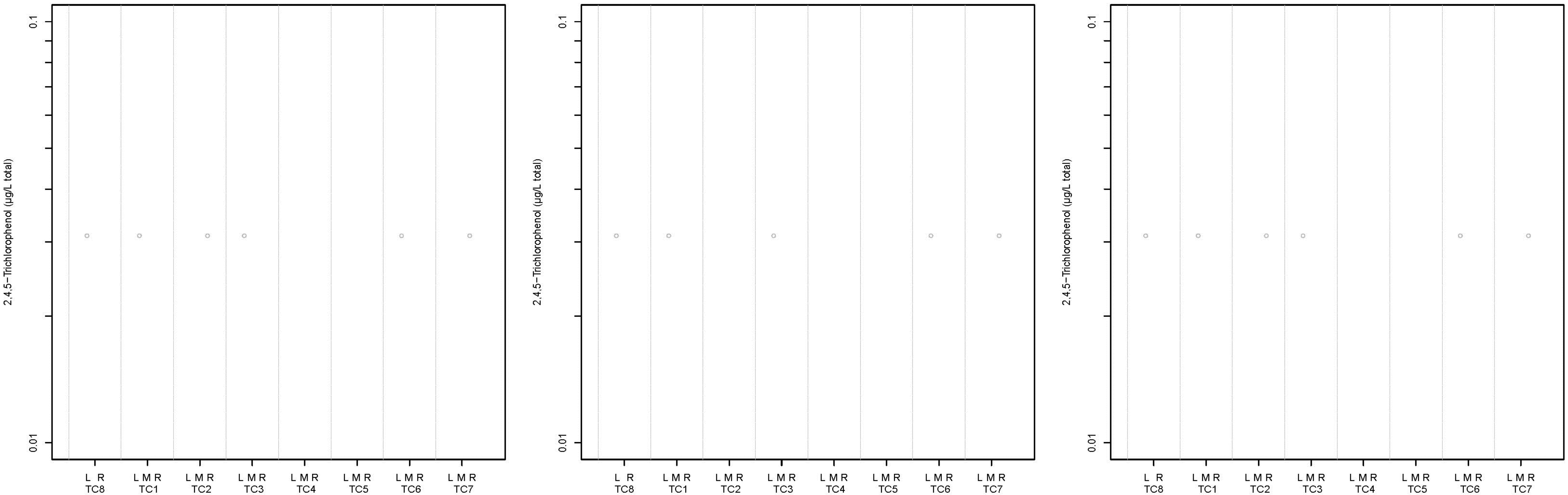
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,4,5−Trichlorophenol

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



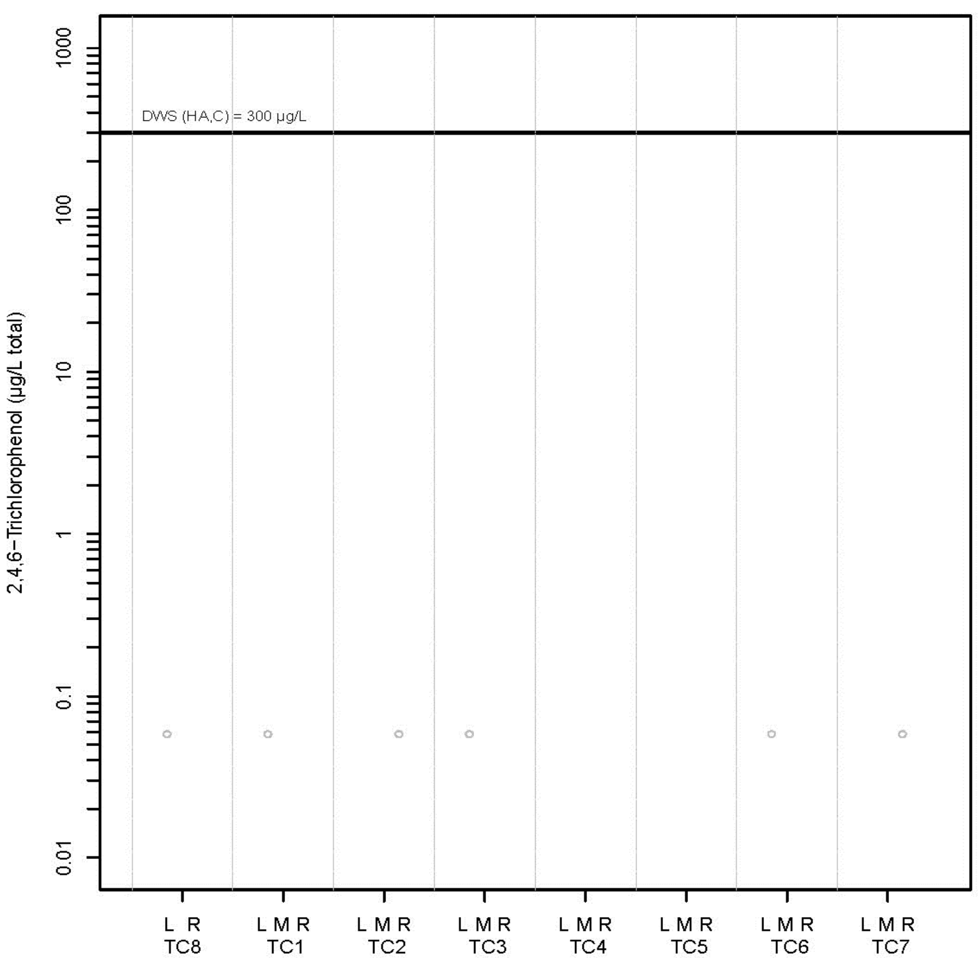
LEGEND

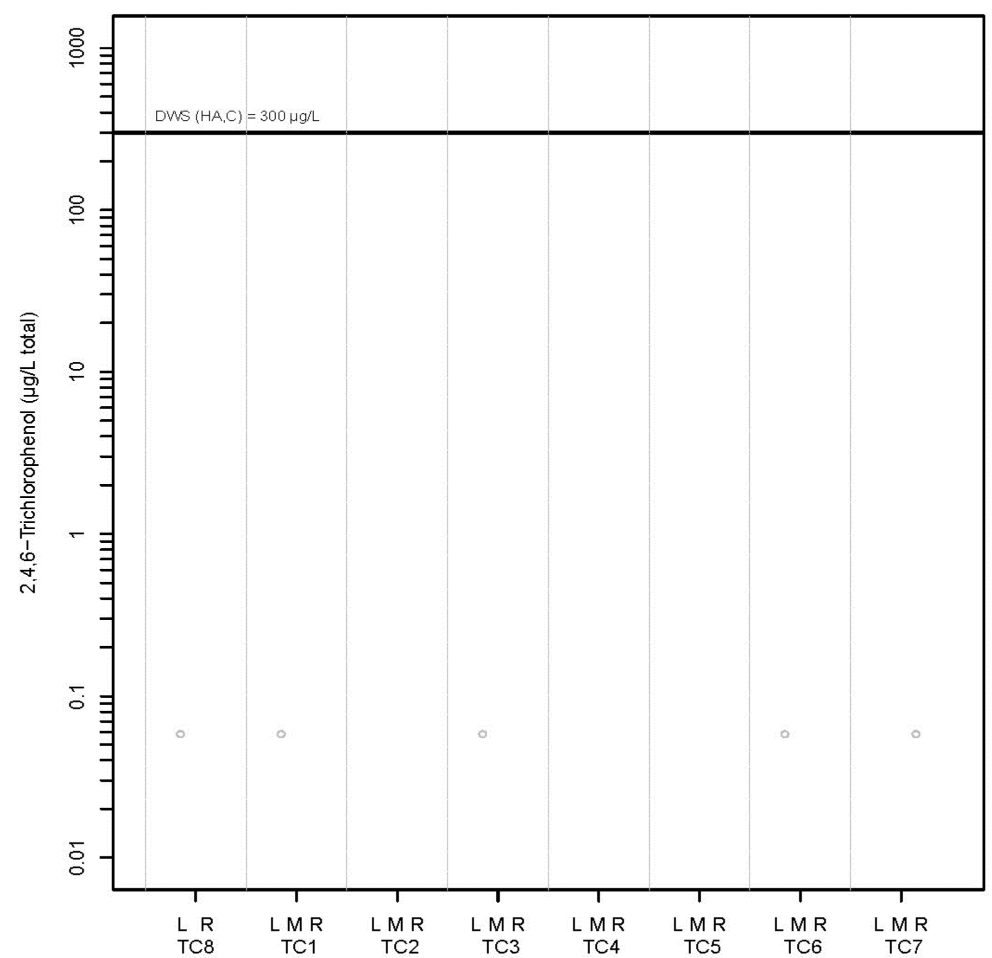
▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

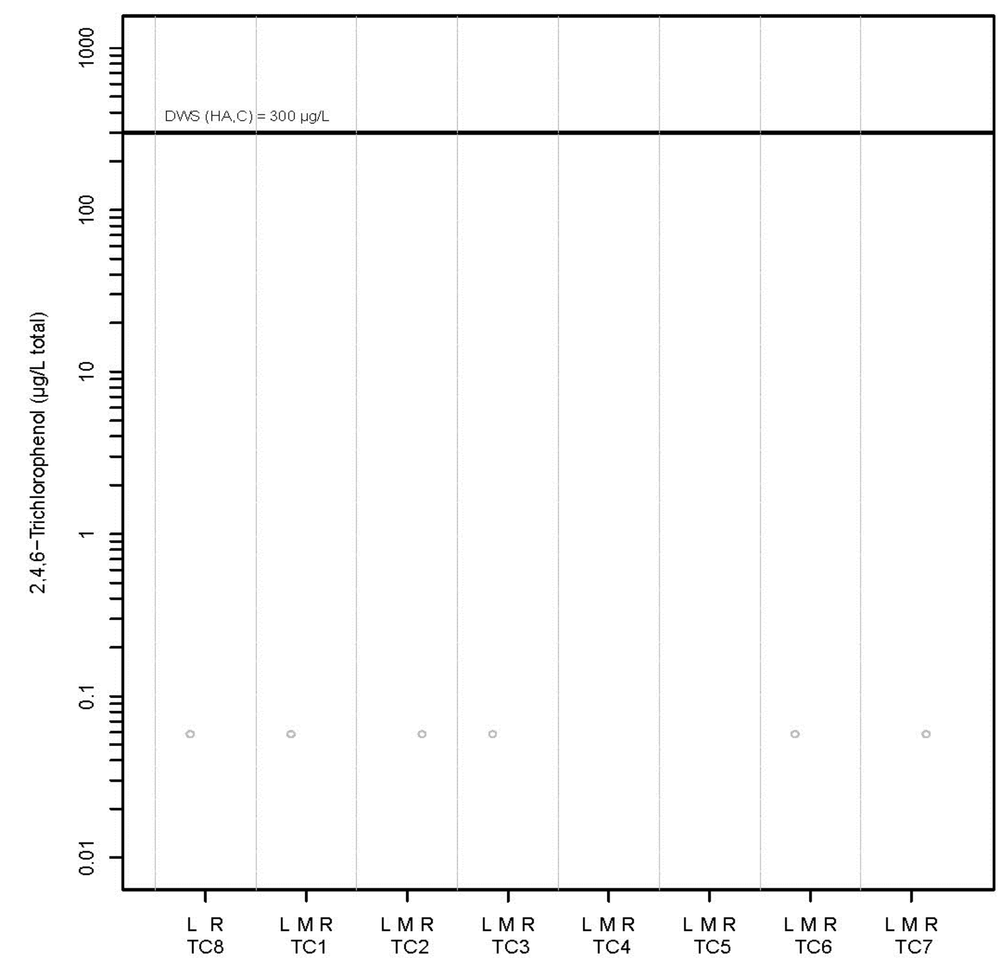
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,4,6−Trichlorophenol







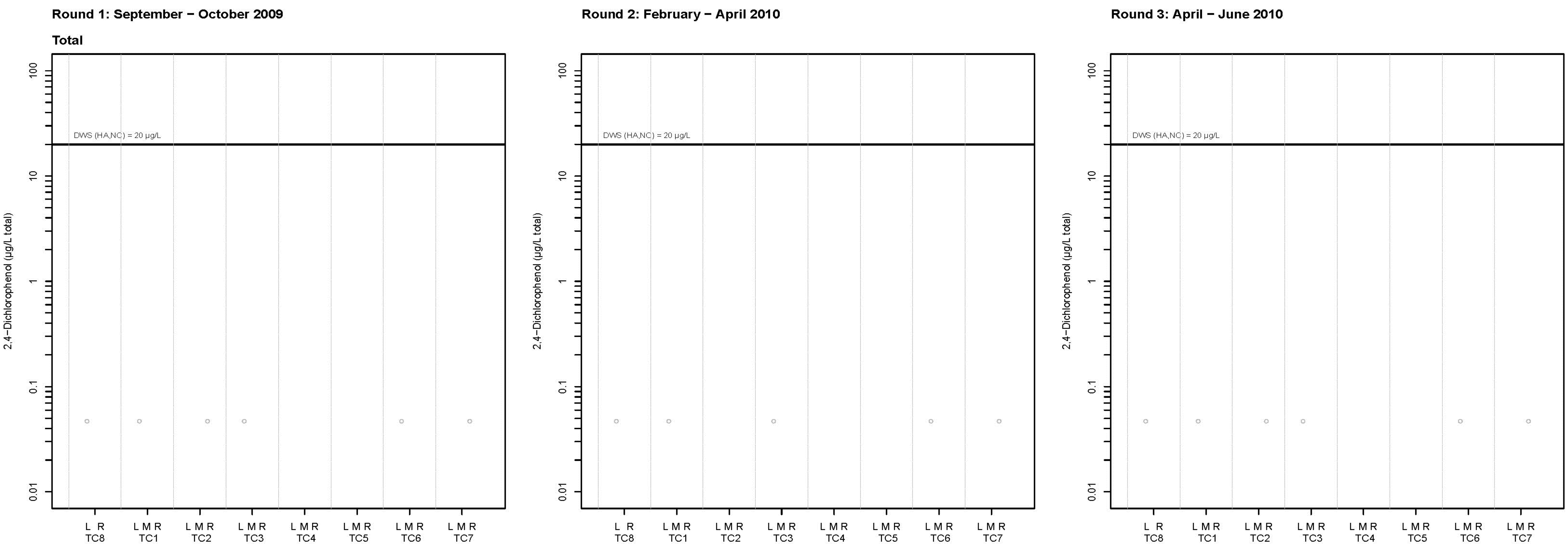
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,4−Dichlorophenol



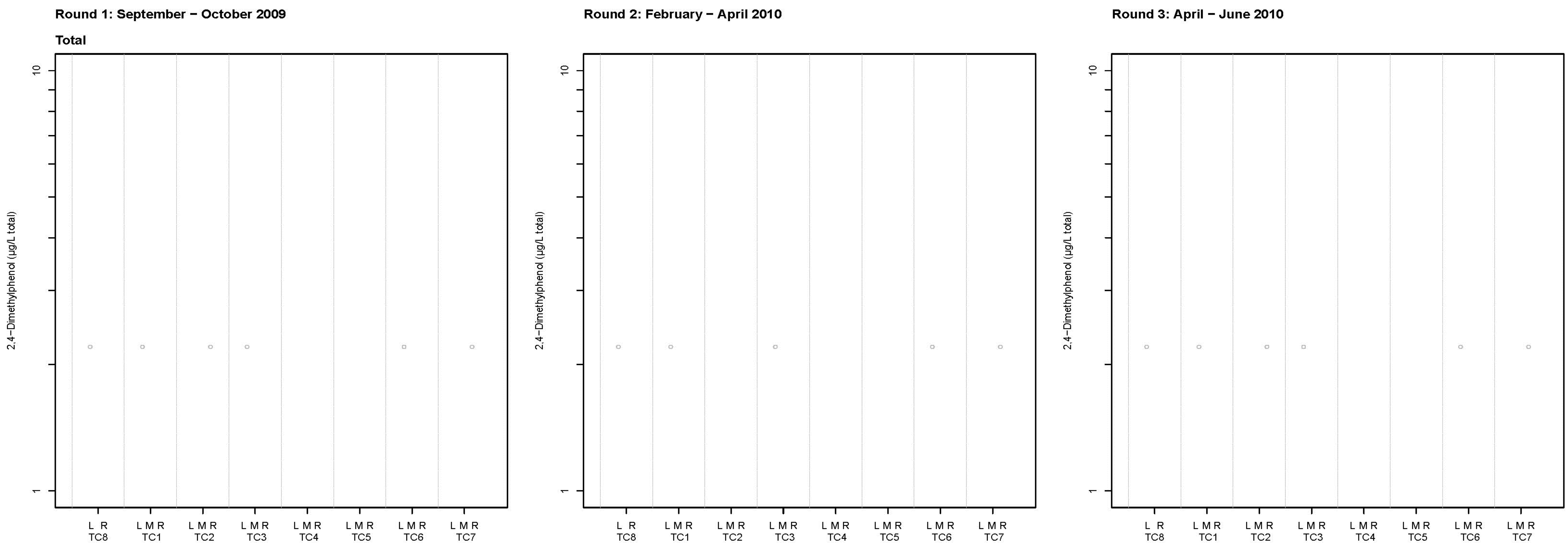
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – 2,4–Dimethylphenol



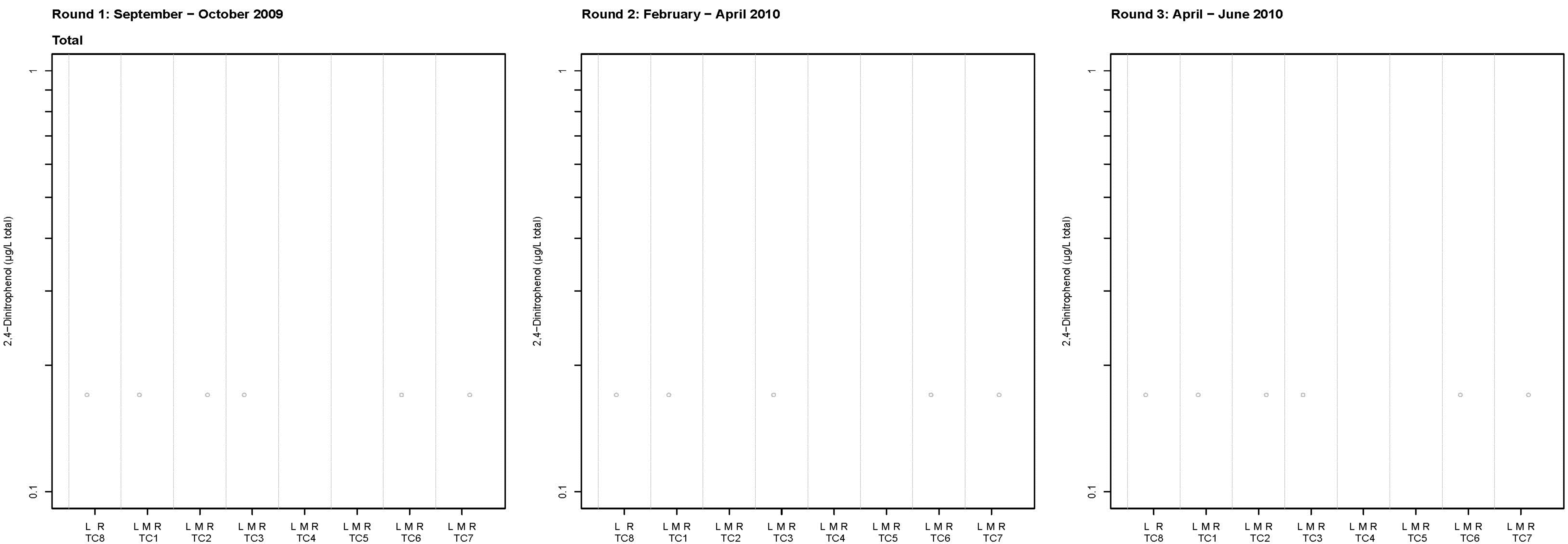
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,4−Dinitrophenol



LEGEND

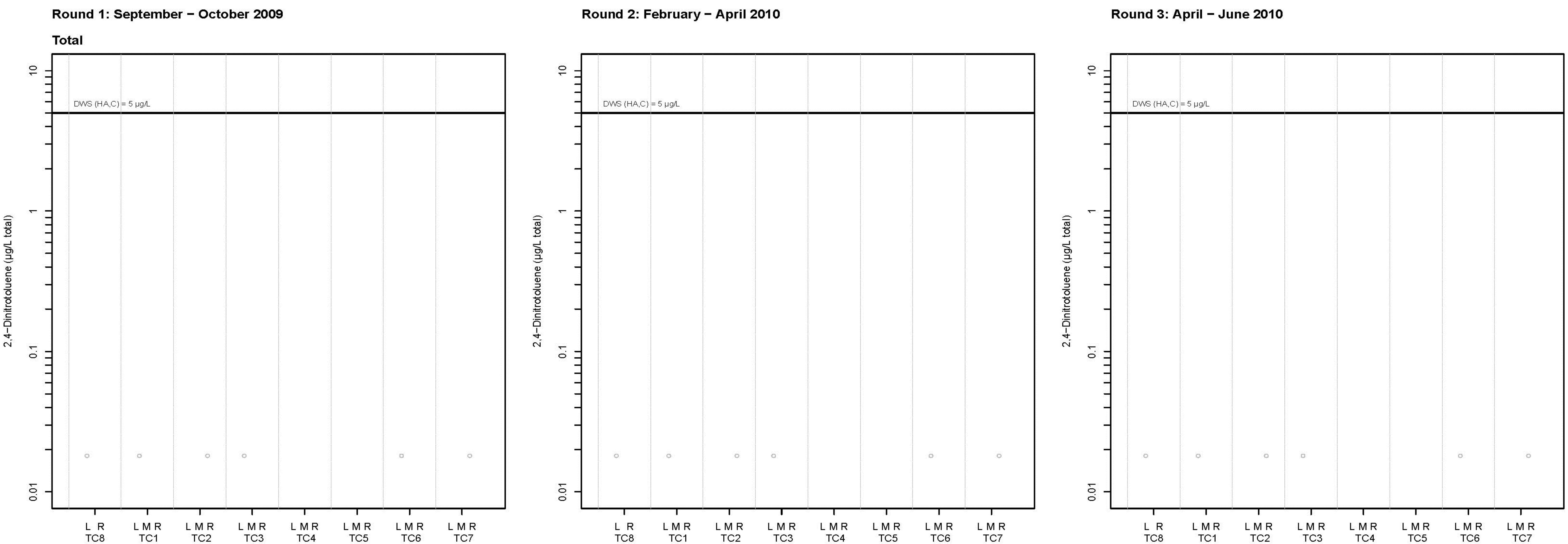
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,4−Dinitrotoluene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

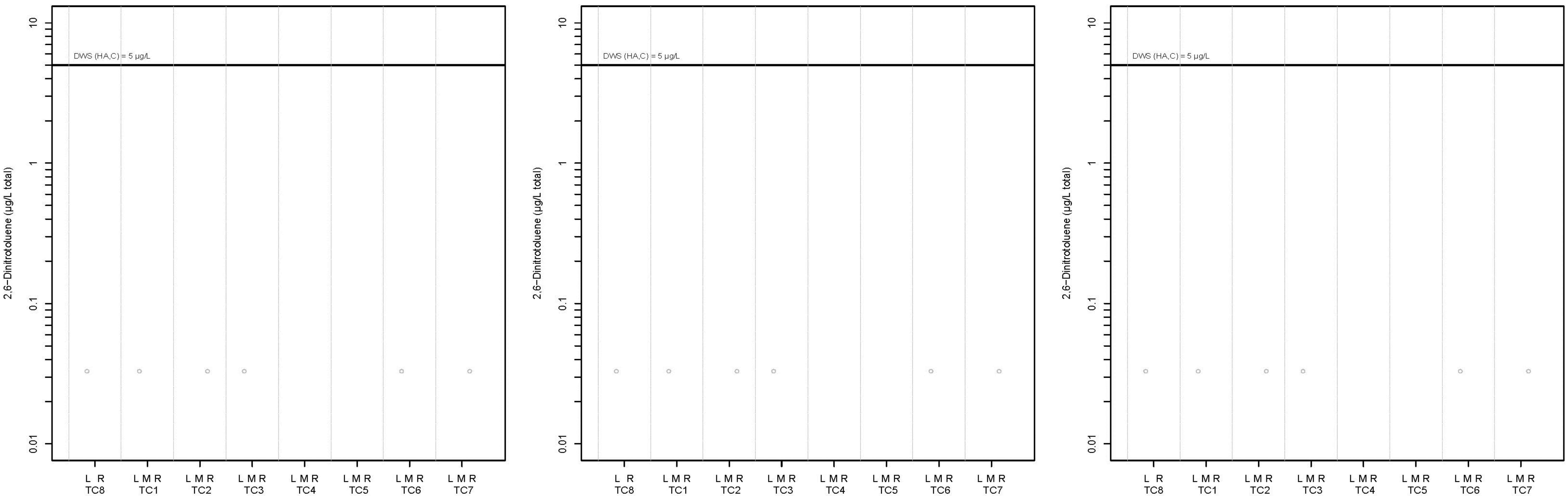
Disturbed Surface Water − 2,6−Dinitrotoluene

Round 1: September − October 2009

Round 2: February − April 2010

Round 3: April − June 2010

Total



LEGEND

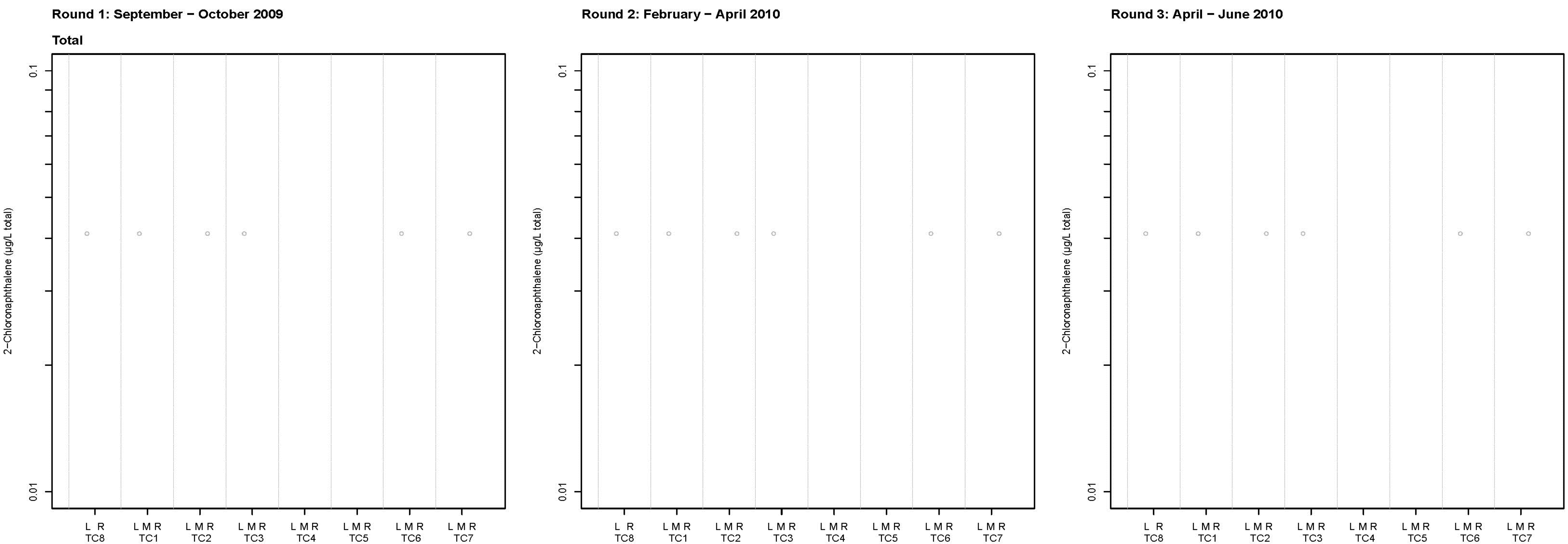
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2−Chloronaphthalene



LEGEND

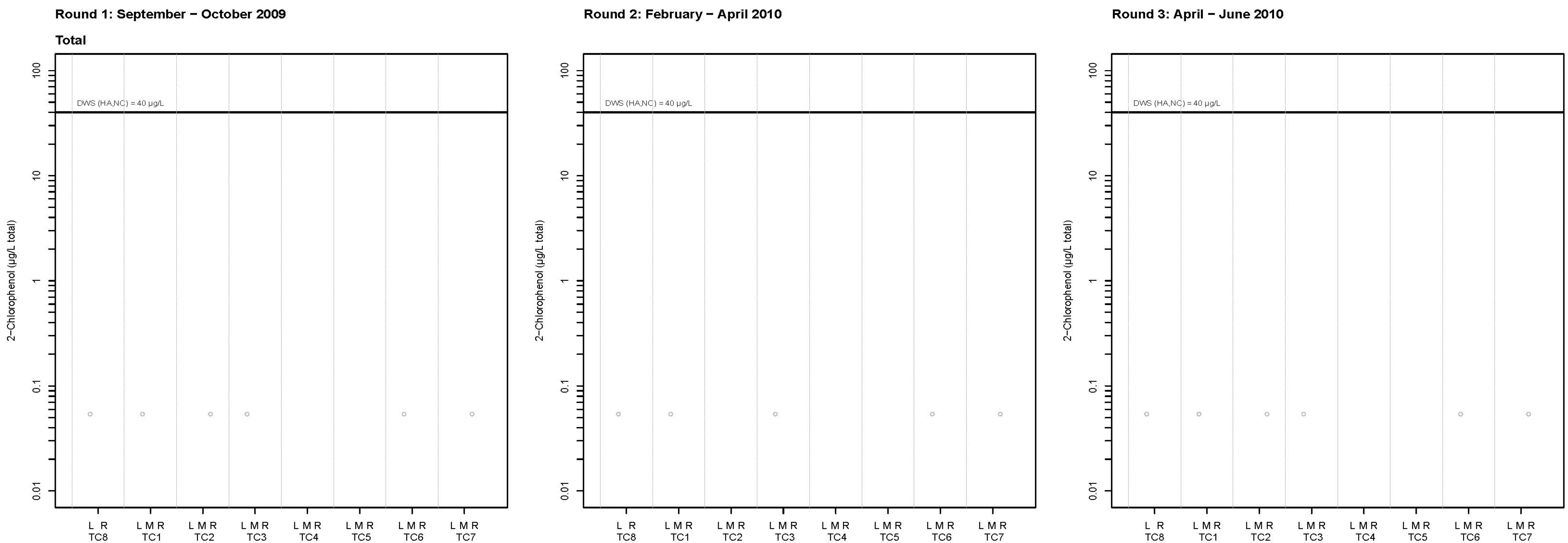
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2−Chlorophenol



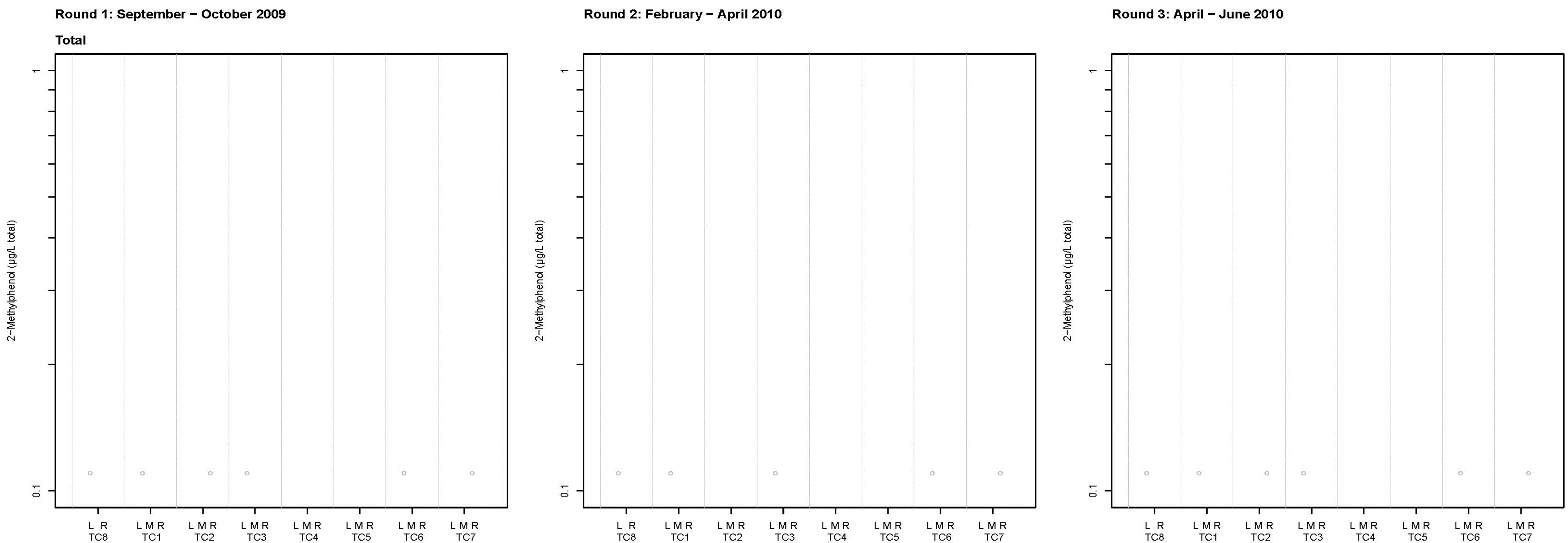
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2−Methylphenol



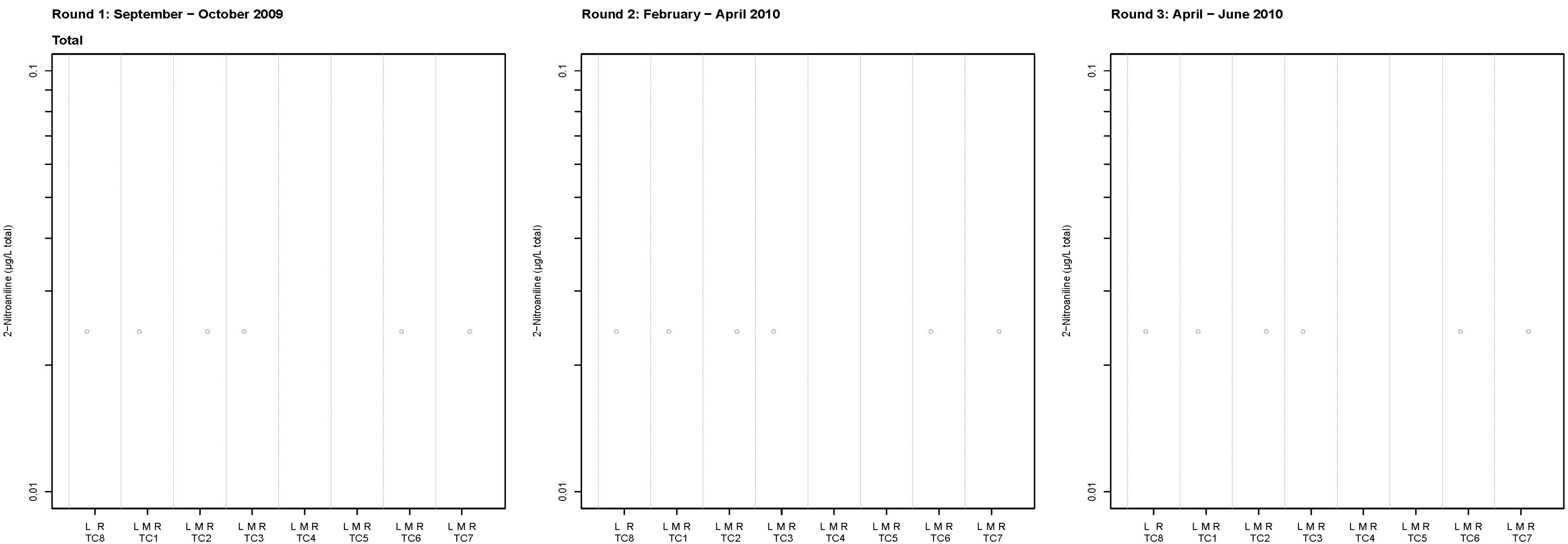
LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2−Nitroaniline



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

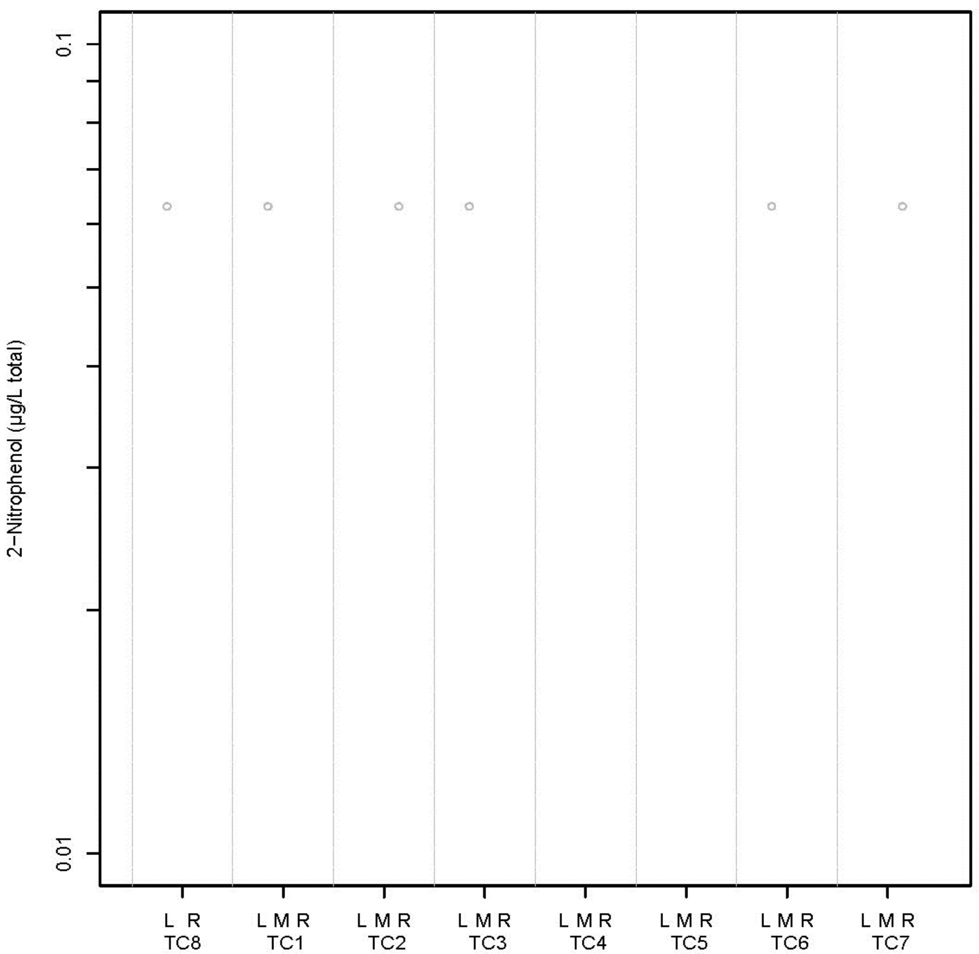
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

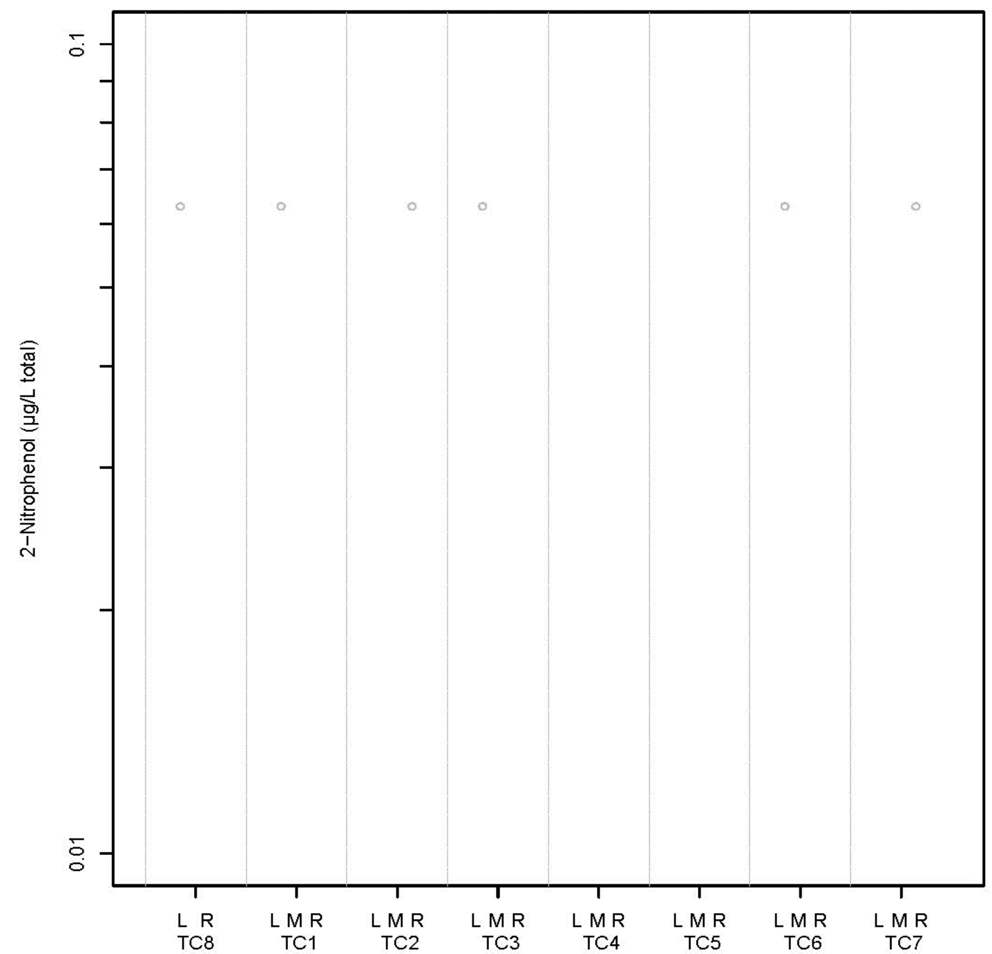
Disturbed Surface Water − 2−Nitrophenol

Round 1: September − October 2009

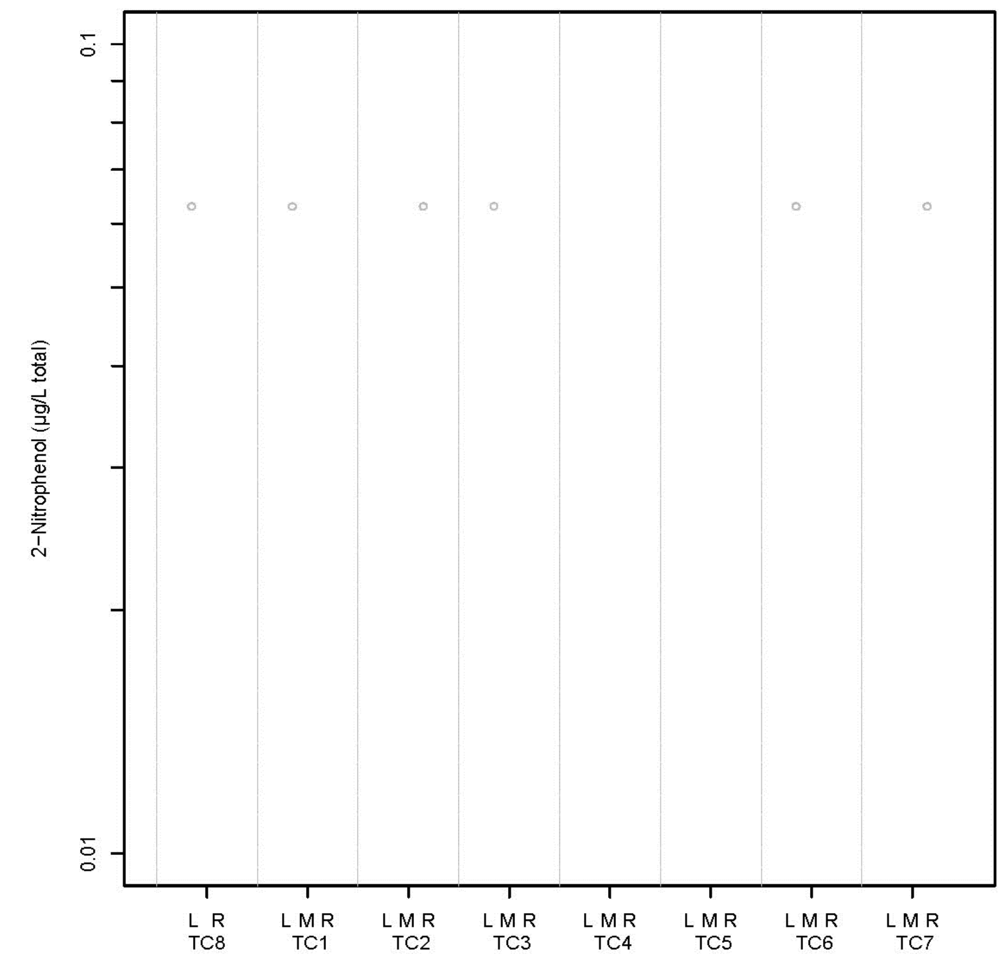
Total



Round 2: February − April 2010



Round 3: April − June 2010



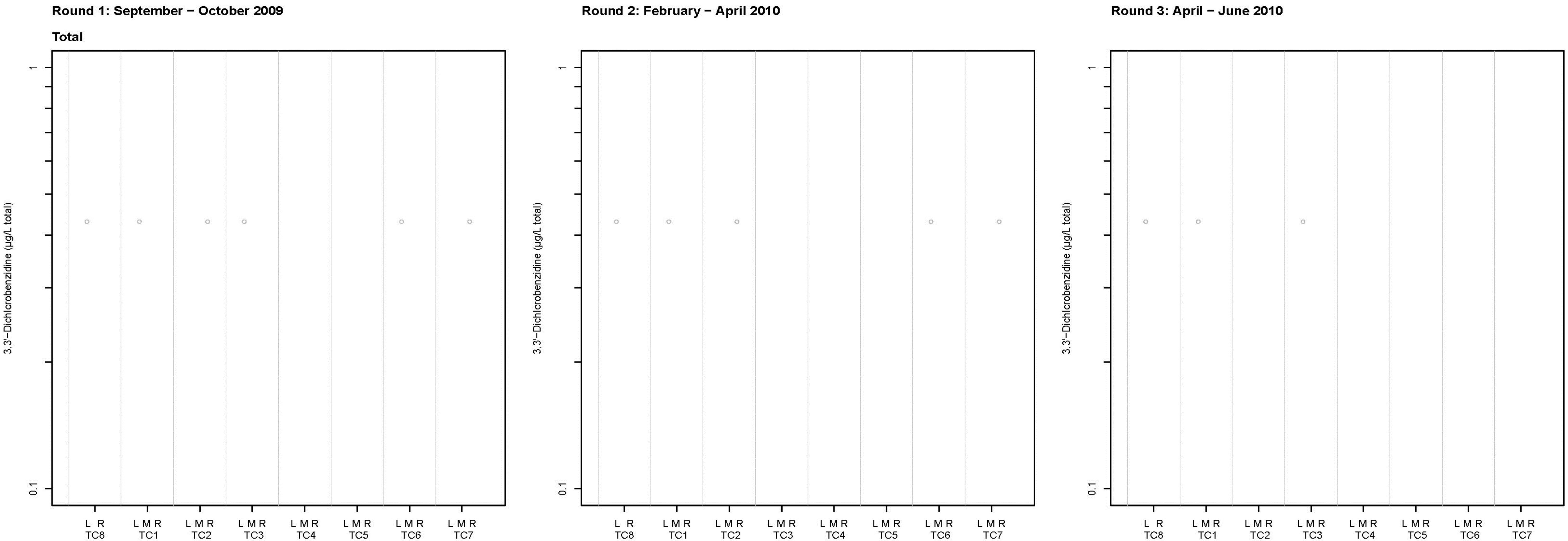
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 3,3'−Dichlorobenzidine



LEGEND

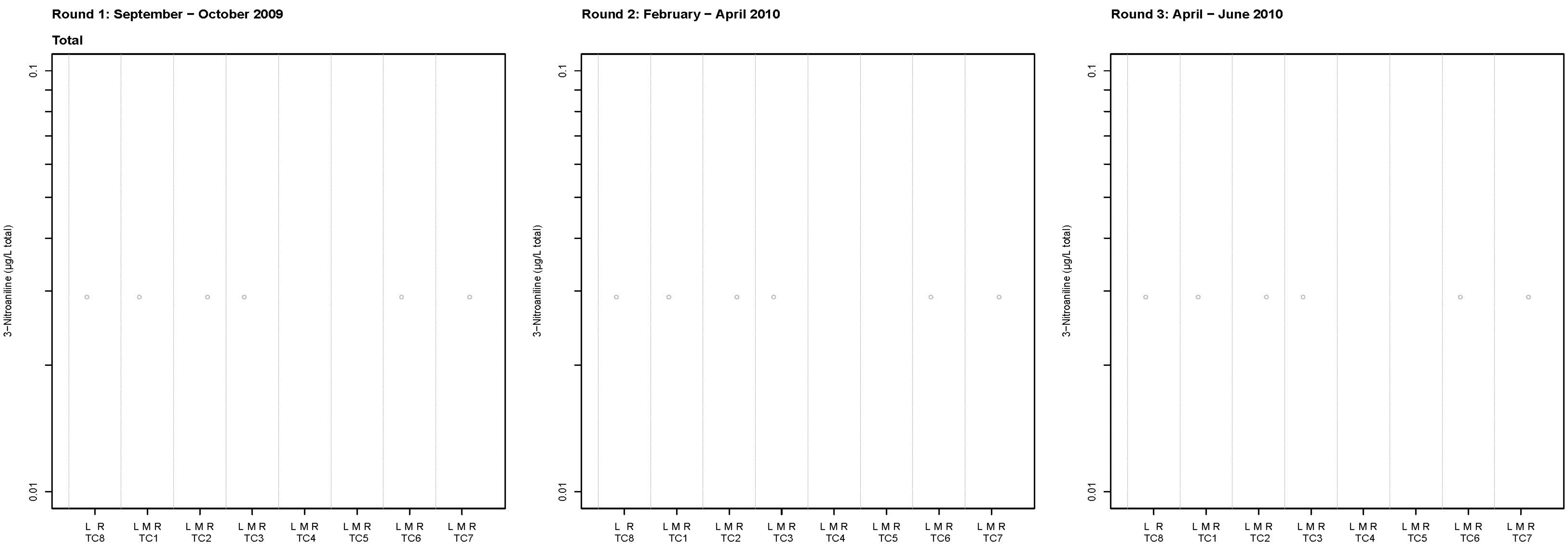
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 3−Nitroaniline



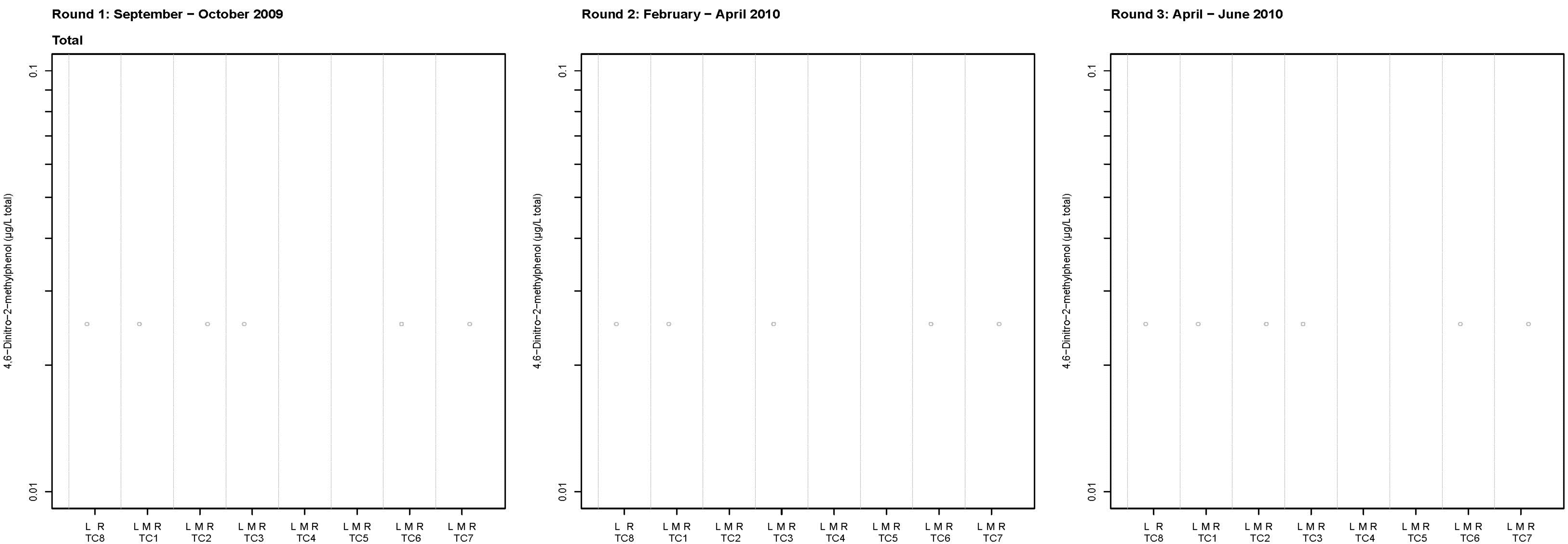
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 4,6−Dinitro−2−methylphenol



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

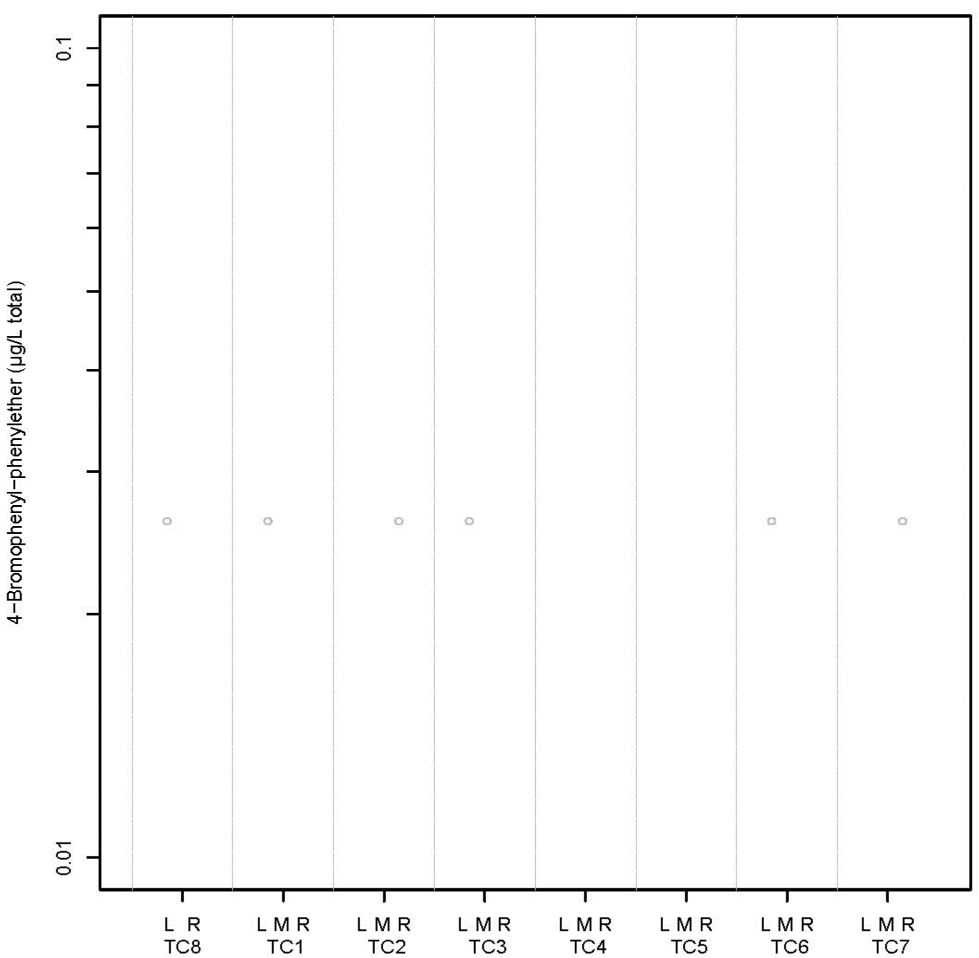
Note: Non-disturbed samples are not shown. Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

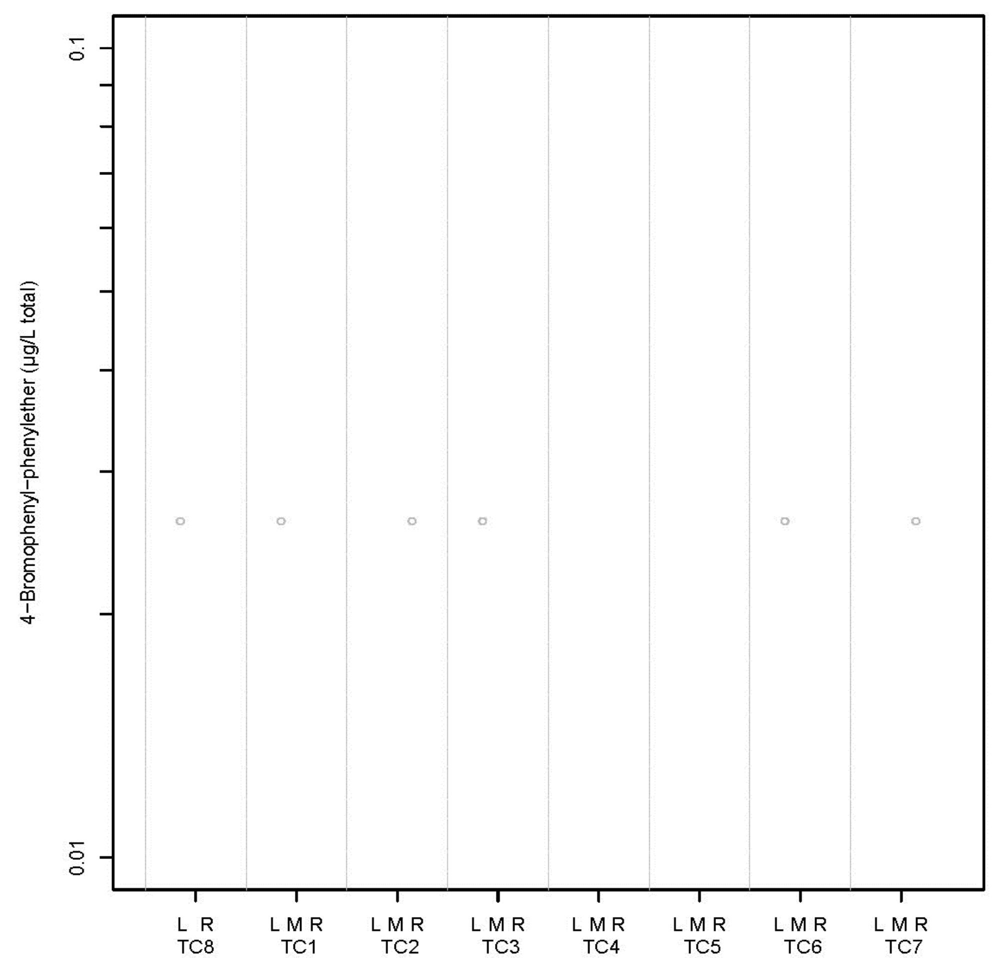
Disturbed Surface Water − 4−Bromophenyl−phenylether

Round 1: September − October 2009

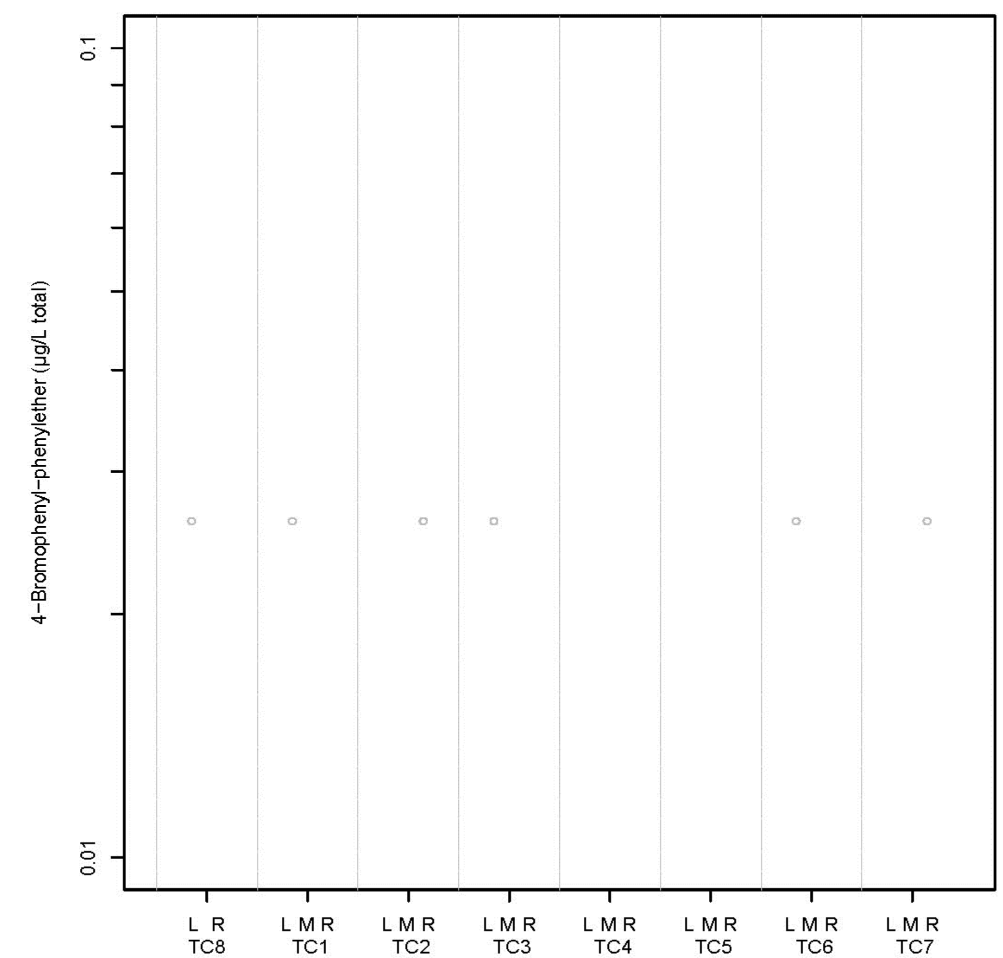
Total



Round 2: February − April 2010



Round 3: April − June 2010



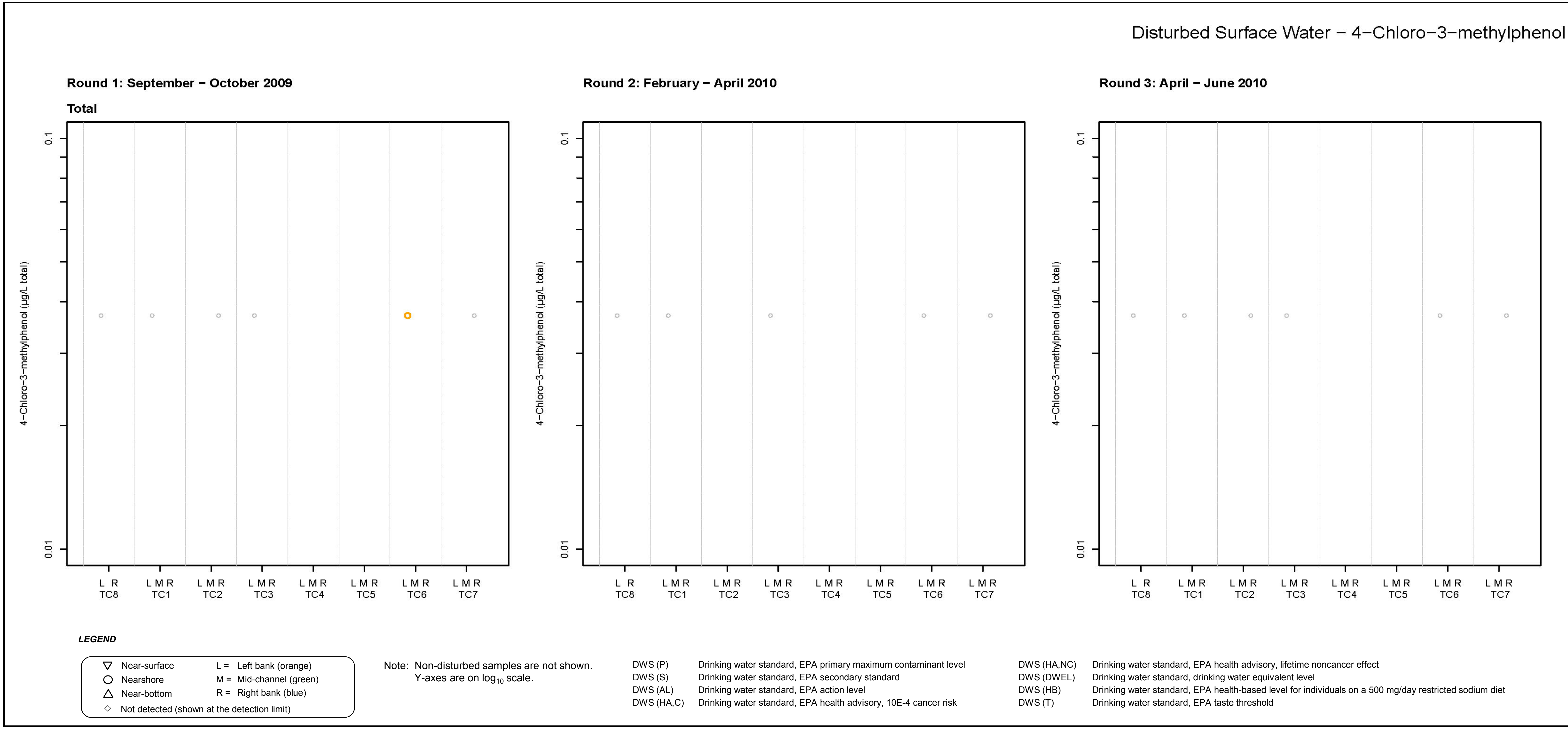
LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

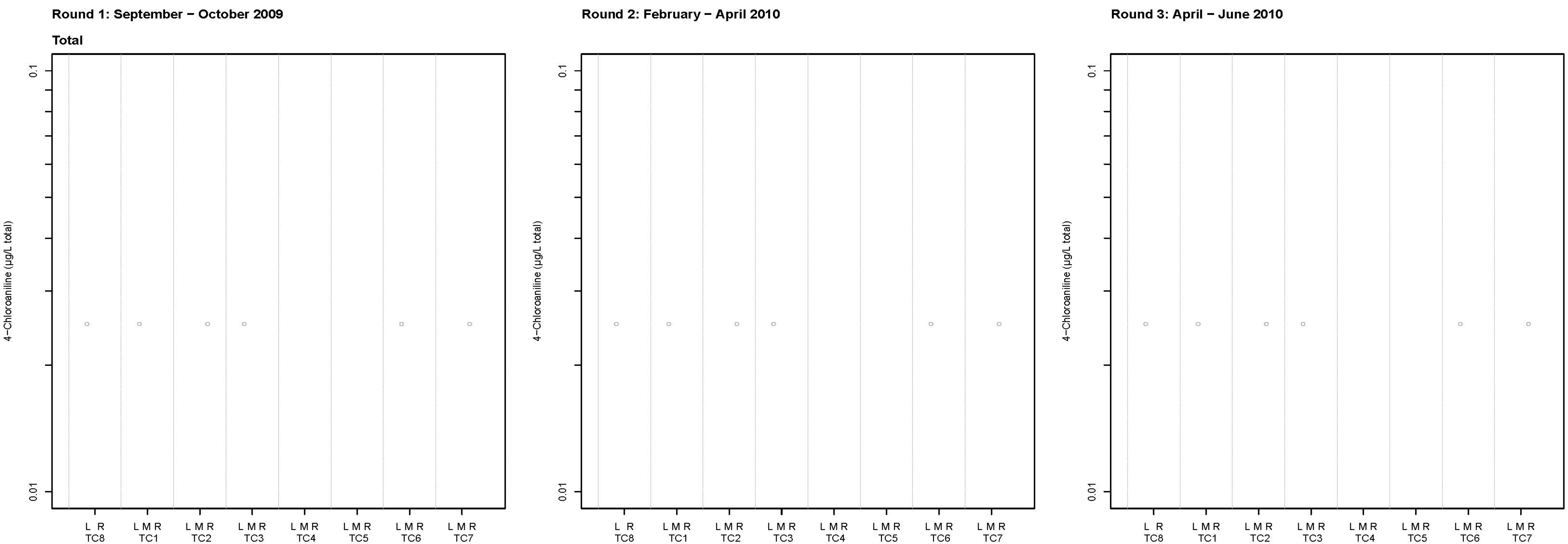
L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold


Disturbed Surface Water − 4−Chloro−3−methylphenol
Round 1: September − October 2009
Total
Round 2: February − April 2010
Round 3: April − June 2010
4−Chloro−3−methylphenol (µg/L total)
0.1
0.01
L R
TC8
L M R
TC1
L M R
TC2
L M R
TC3
L M R
TC4
L M R
TC5
L M R
TC6
L M R
TC7
LEGEND
Near-surface
Nearshore
Near-bottom
Not detected (shown at the detection limit)
L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)
Note: Non-disturbed samples are not shown.
Y-axes are on log10 scale.
DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water − 4−Chloroaniline



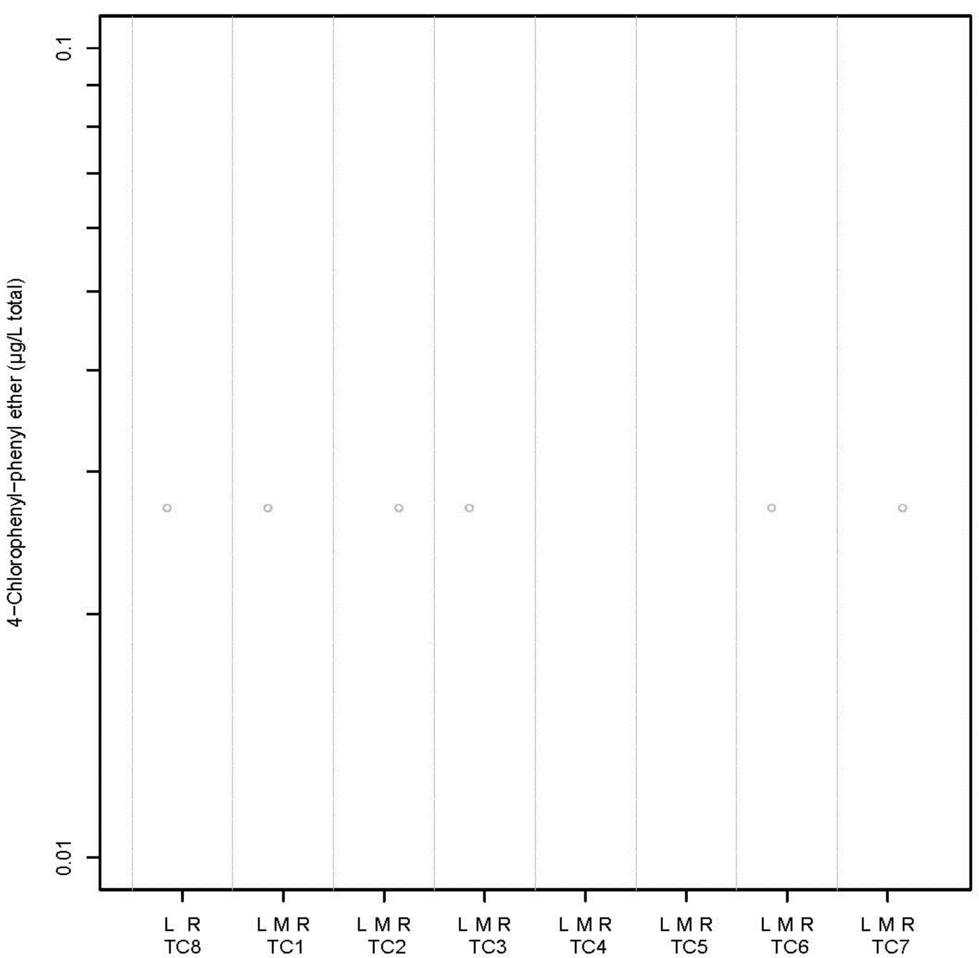
LEGEND

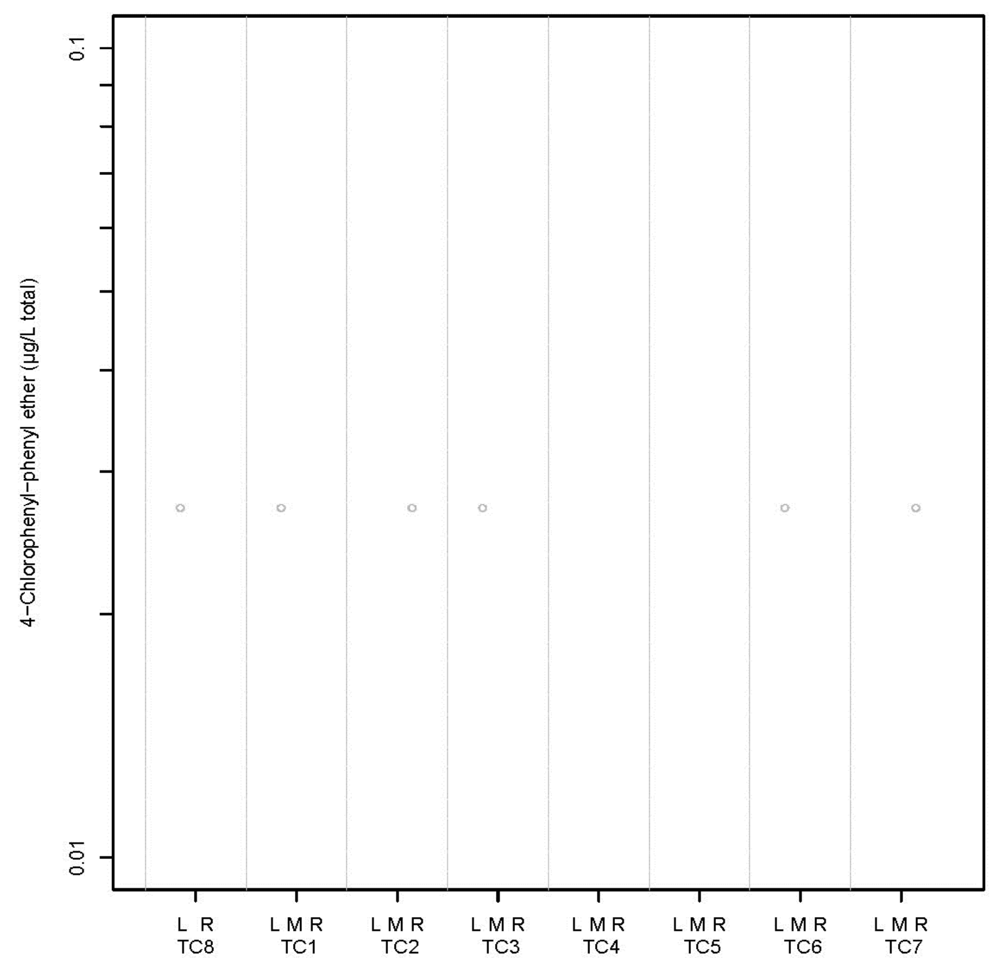
▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

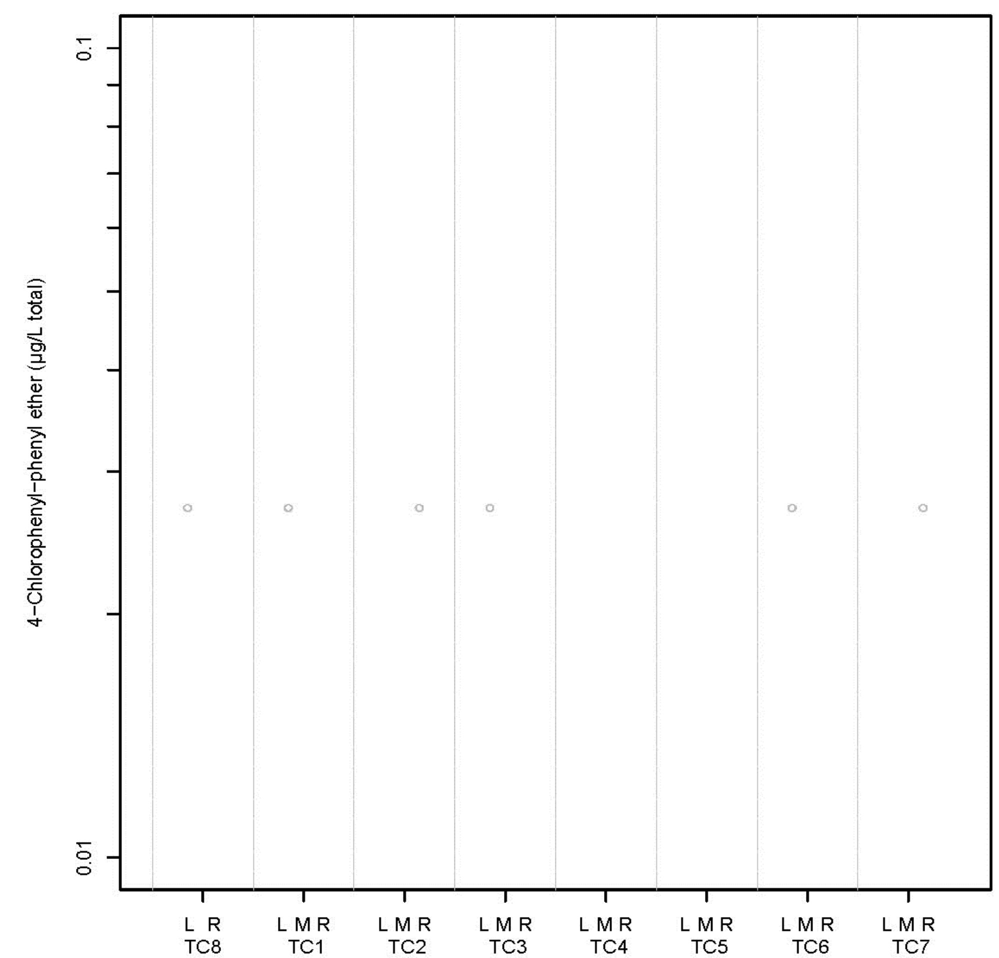
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 4−Chlorophenyl−phenyl ether







LEGEND

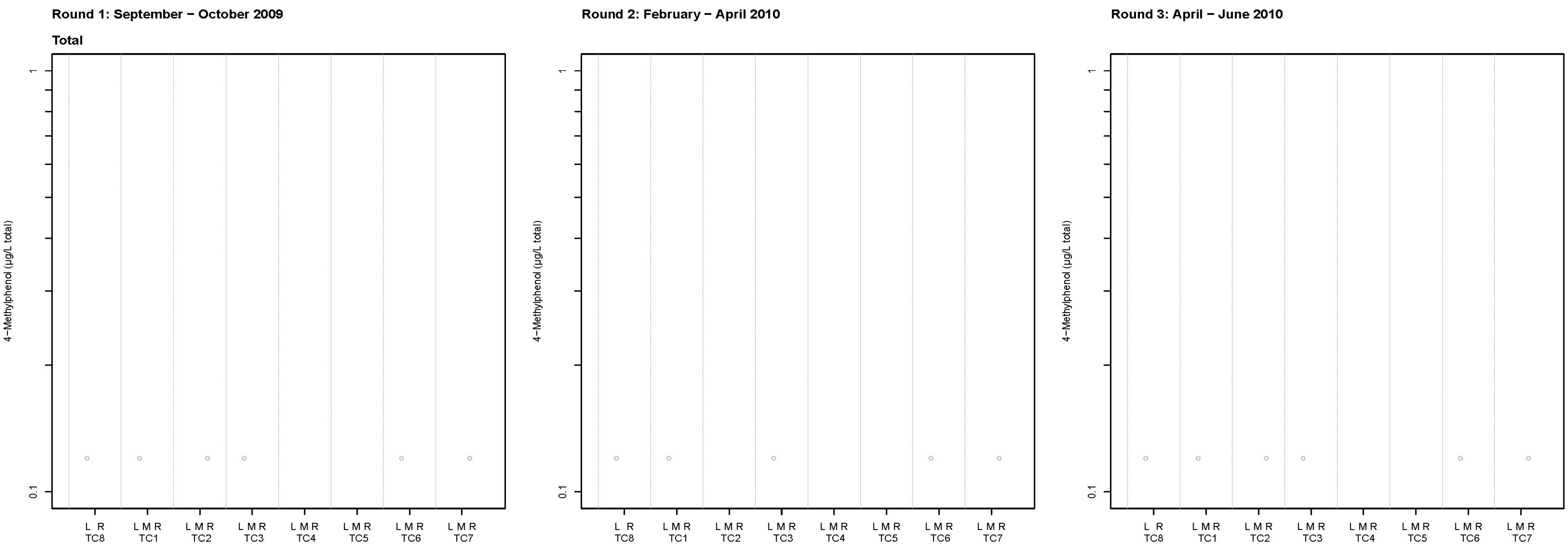
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 4−Methylphenol



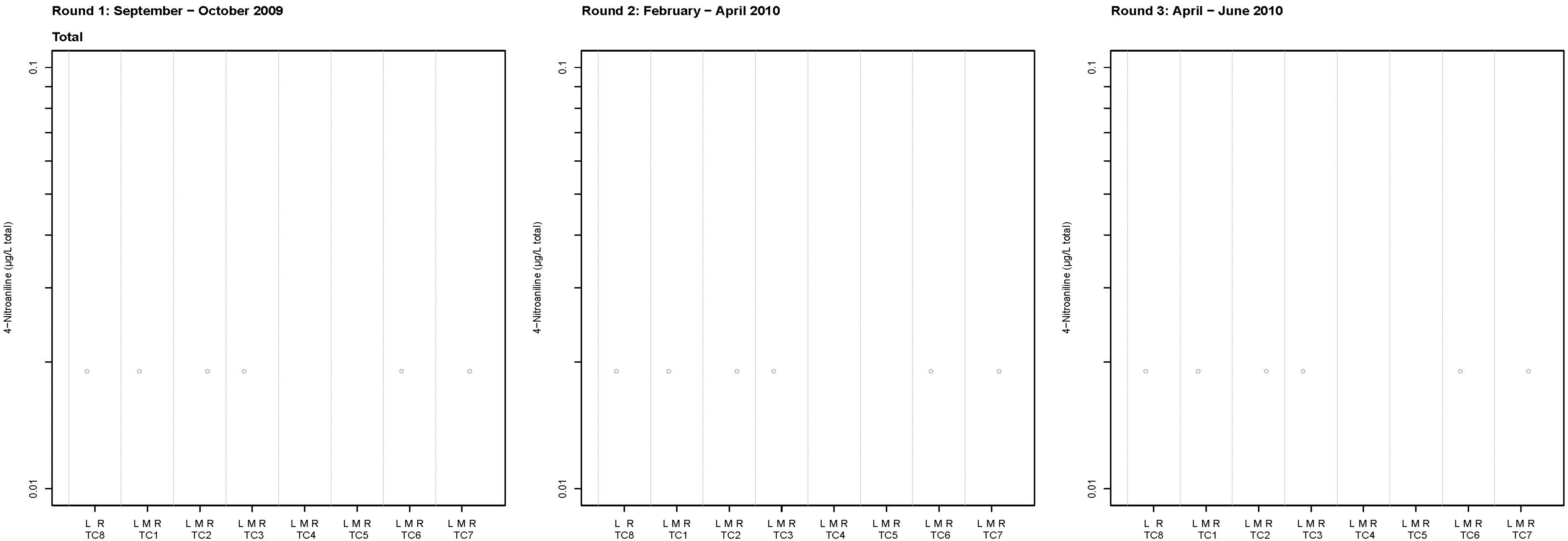
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 4−Nitroaniline



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

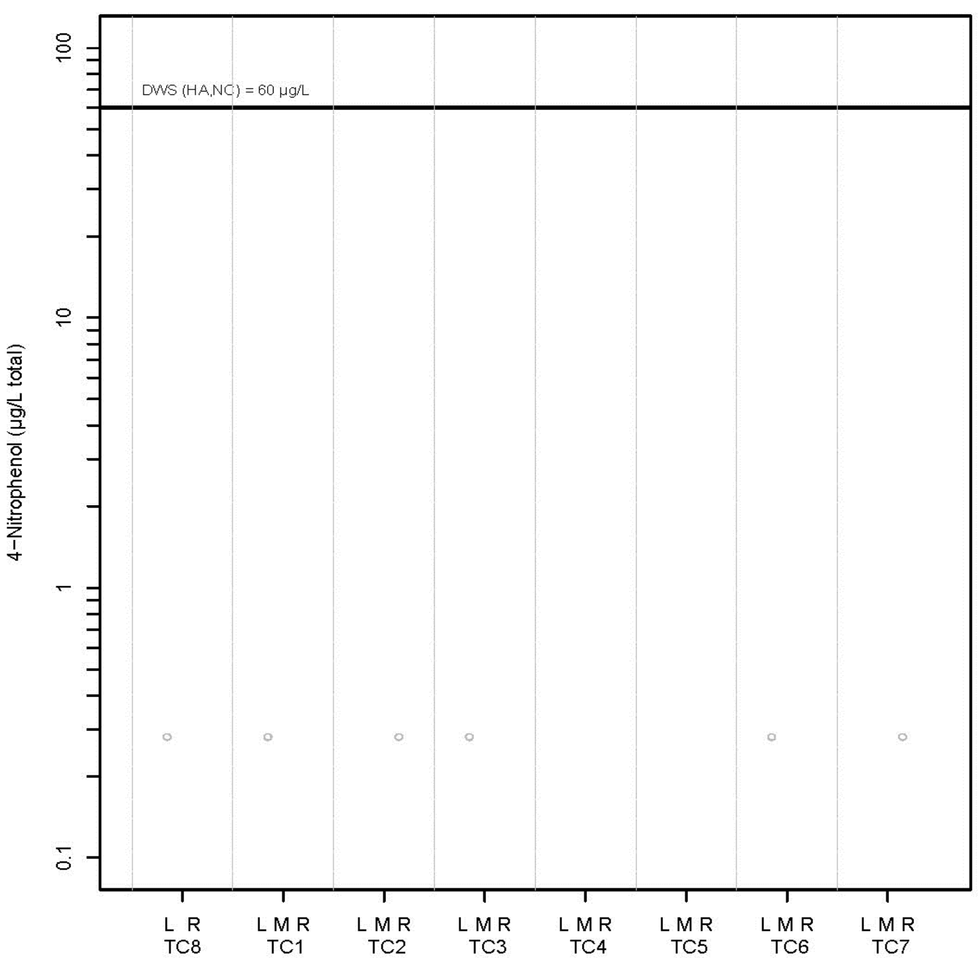
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

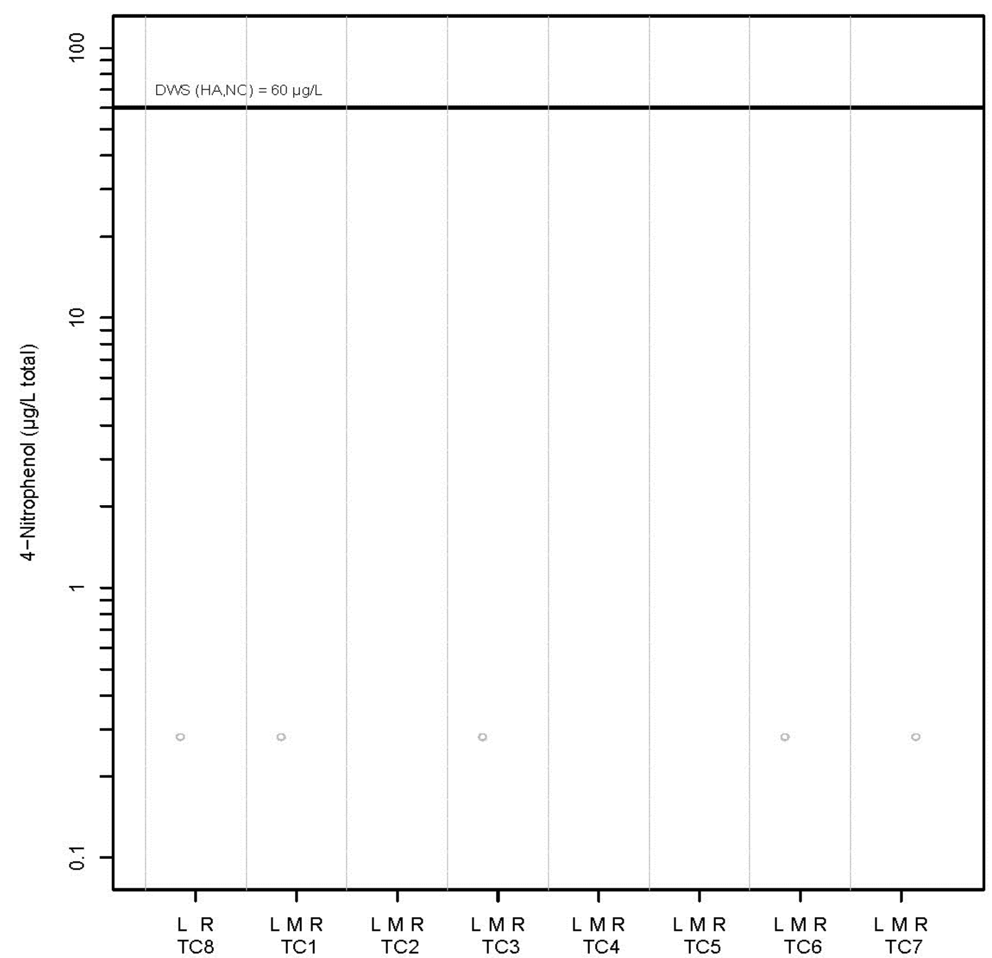
Disturbed Surface Water − 4−Nitrophenol

Round 1: September − October 2009

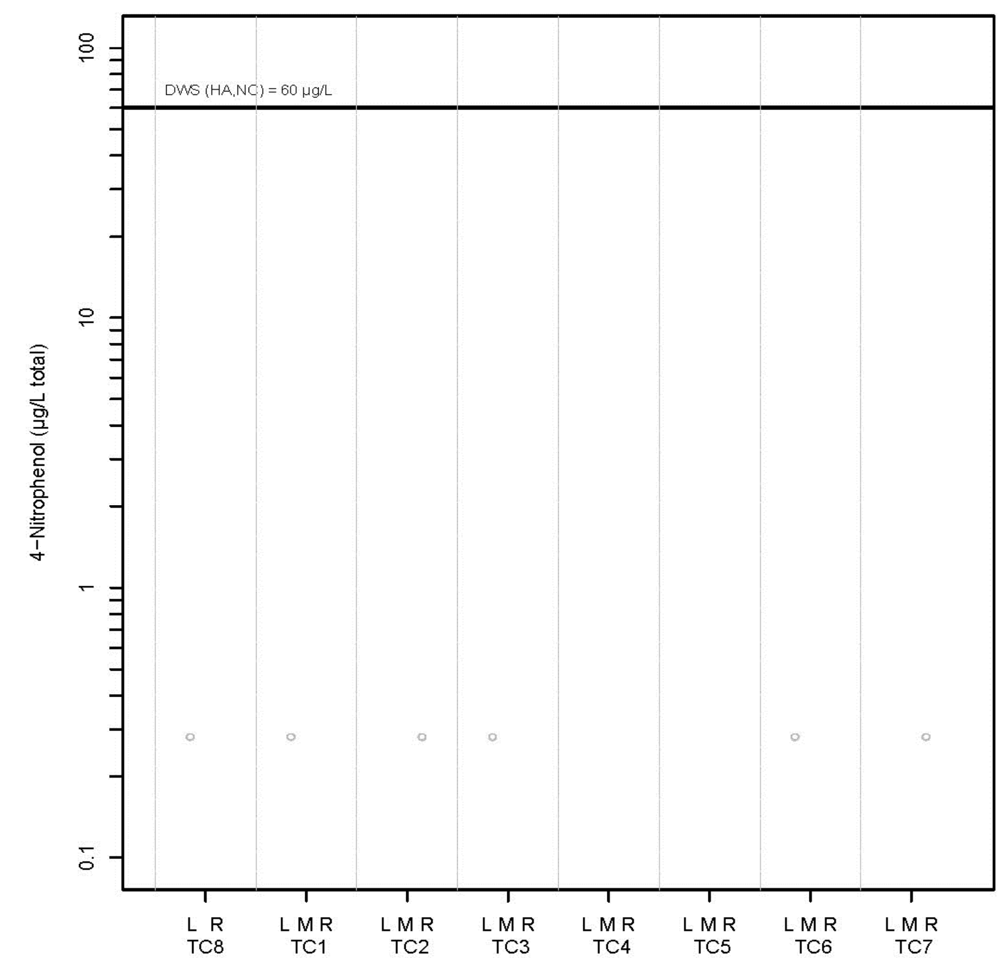
Total



Round 2: February − April 2010



Round 3: April − June 2010



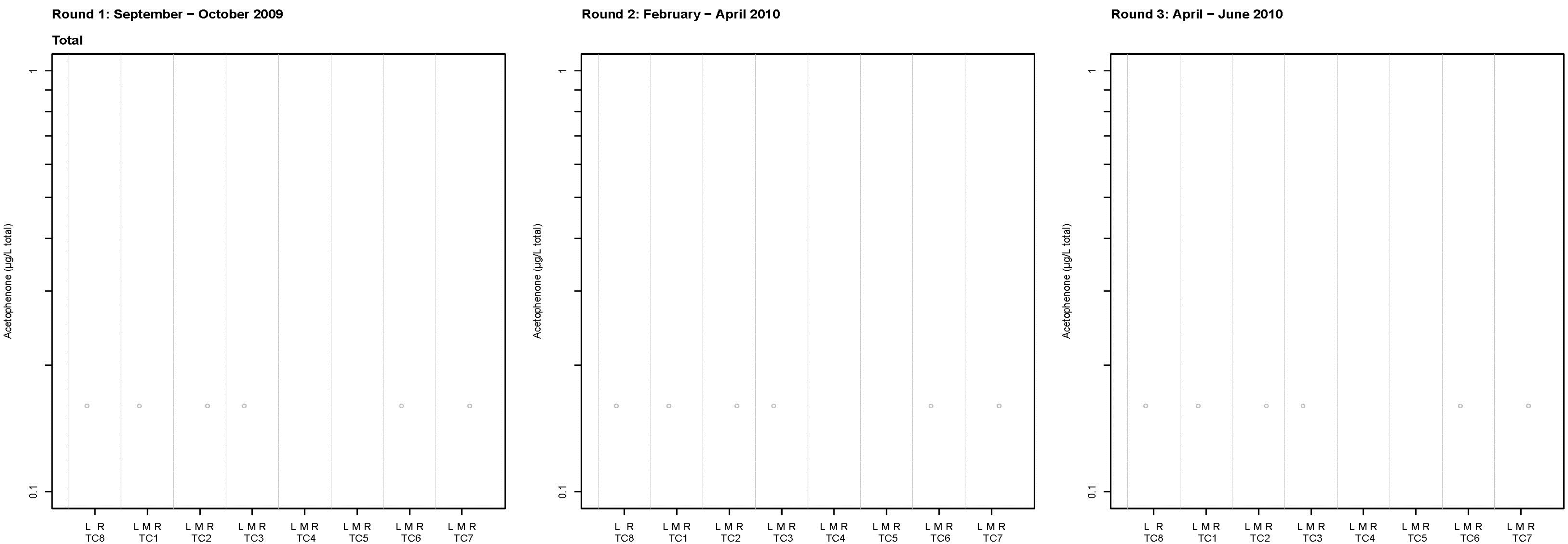
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Acetophenone



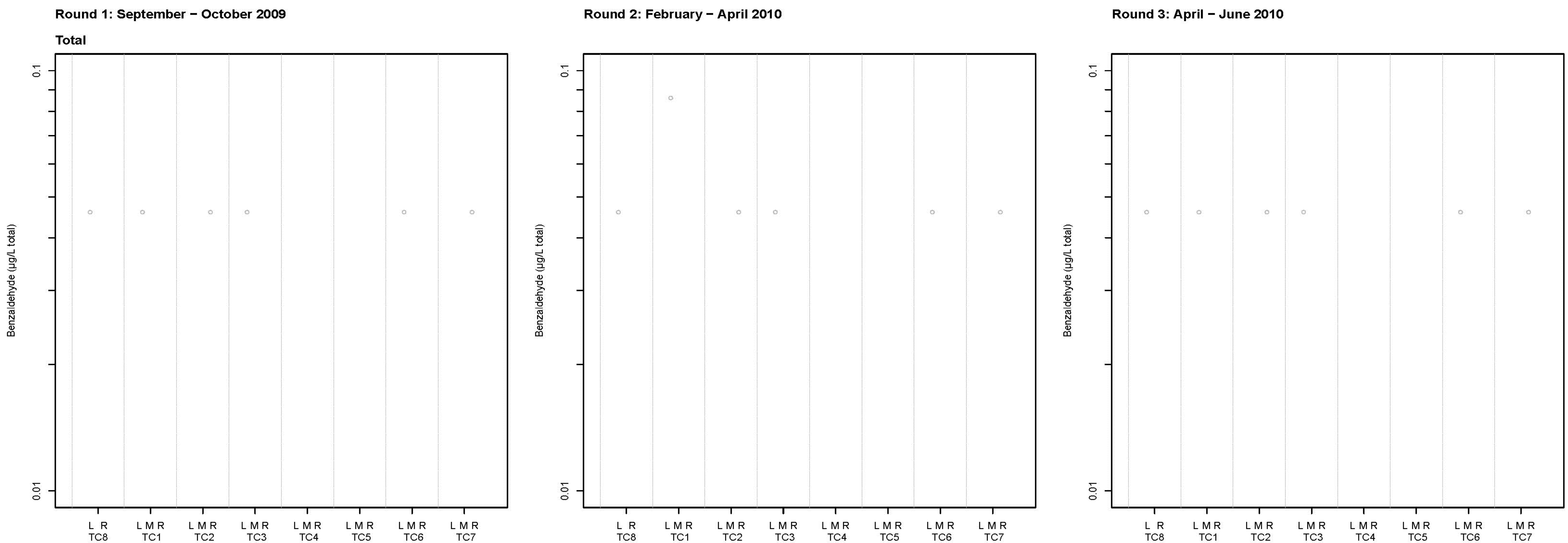
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Benzaldehyde



LEGEND

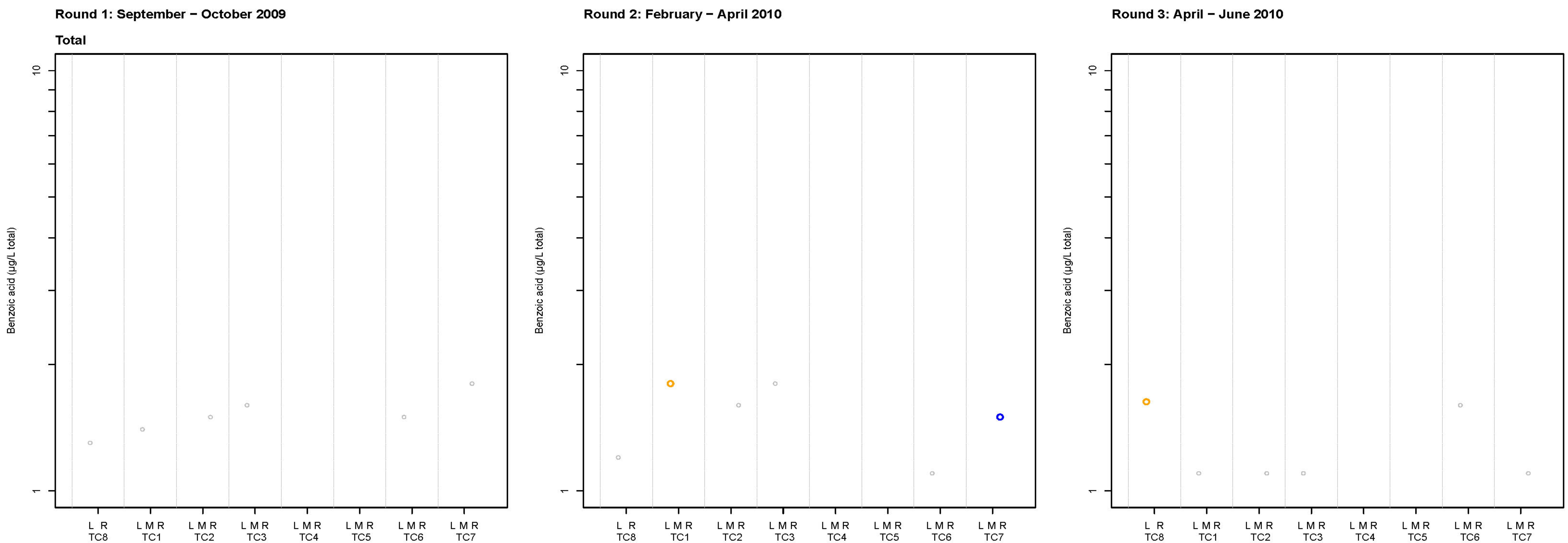
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Benzoic Acid



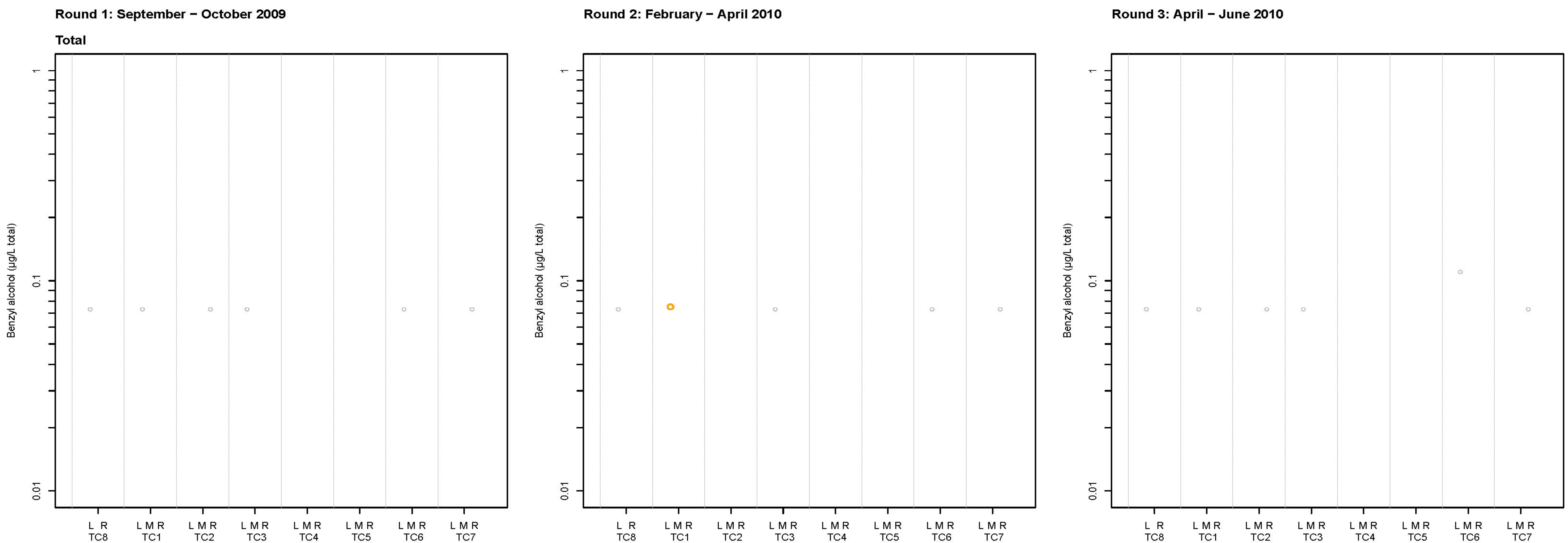
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Benzyl Alcohol



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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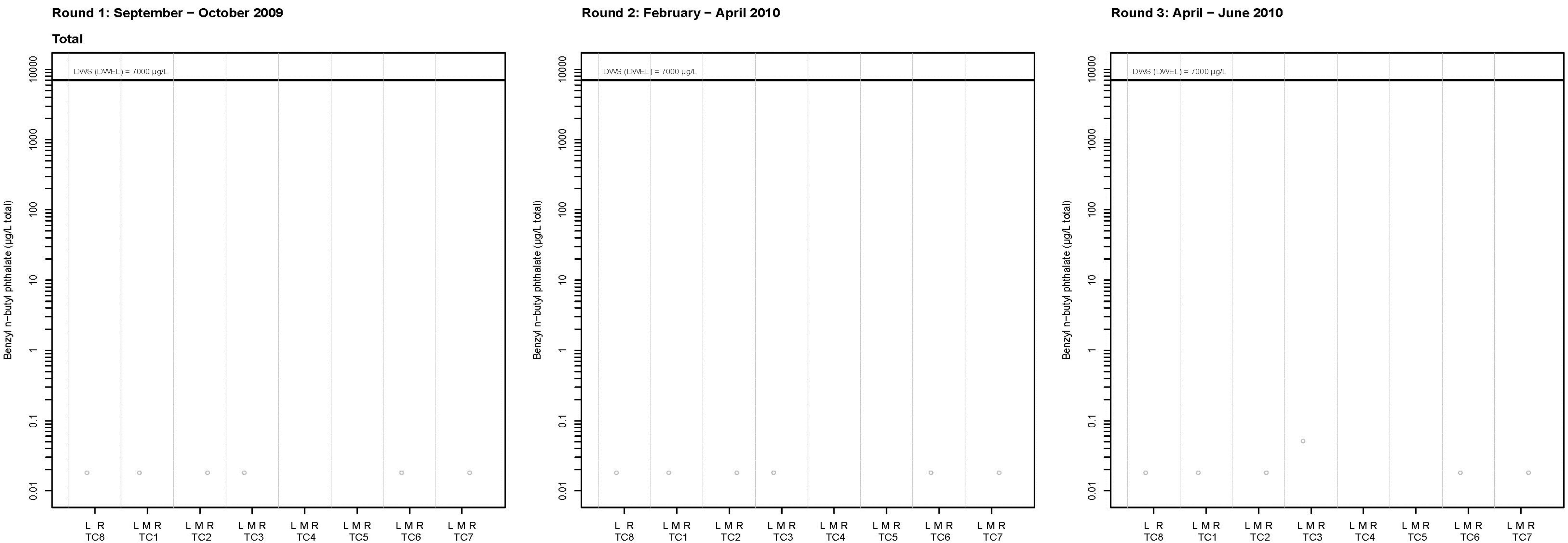
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Benzyl n−butyl phthalate



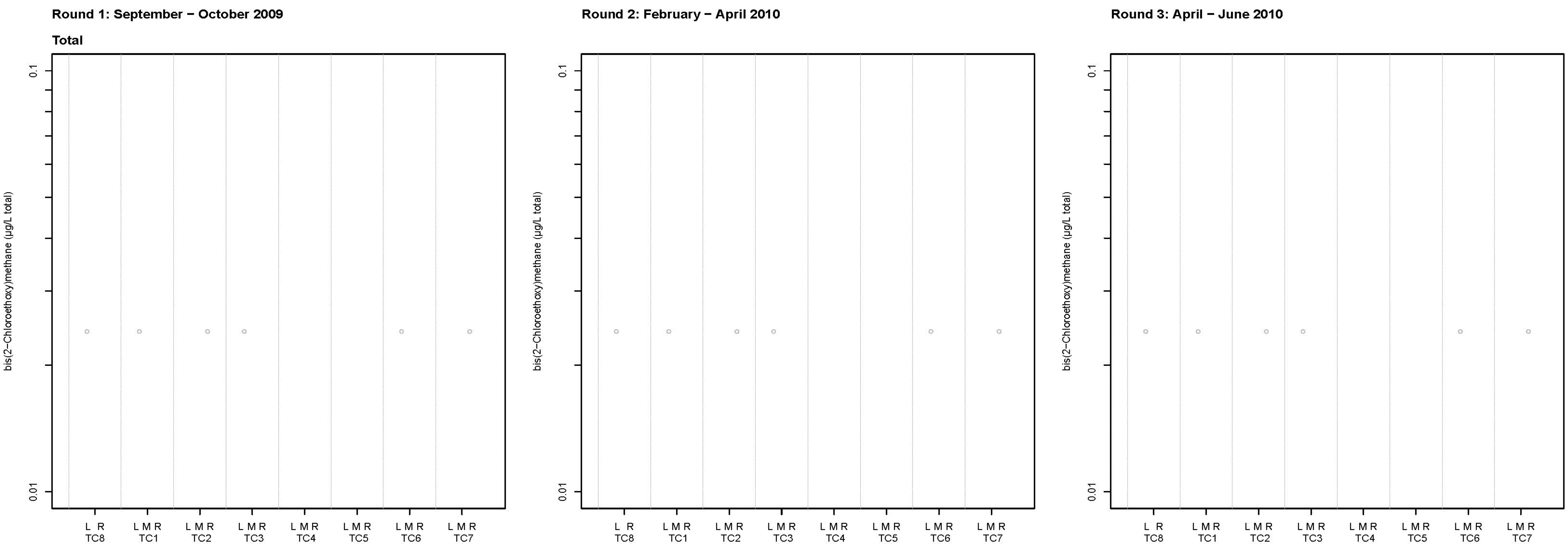
LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − bis(2−Chloroethoxy)methane



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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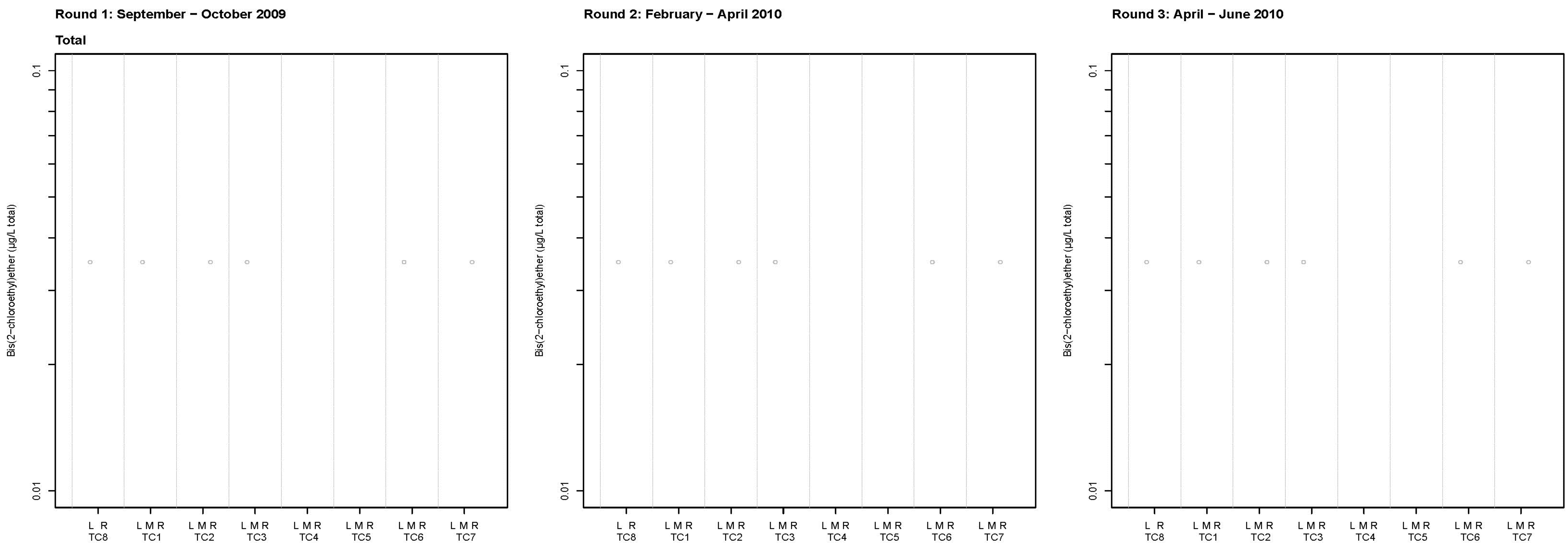
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − bis(2−Chloroethyl)ether



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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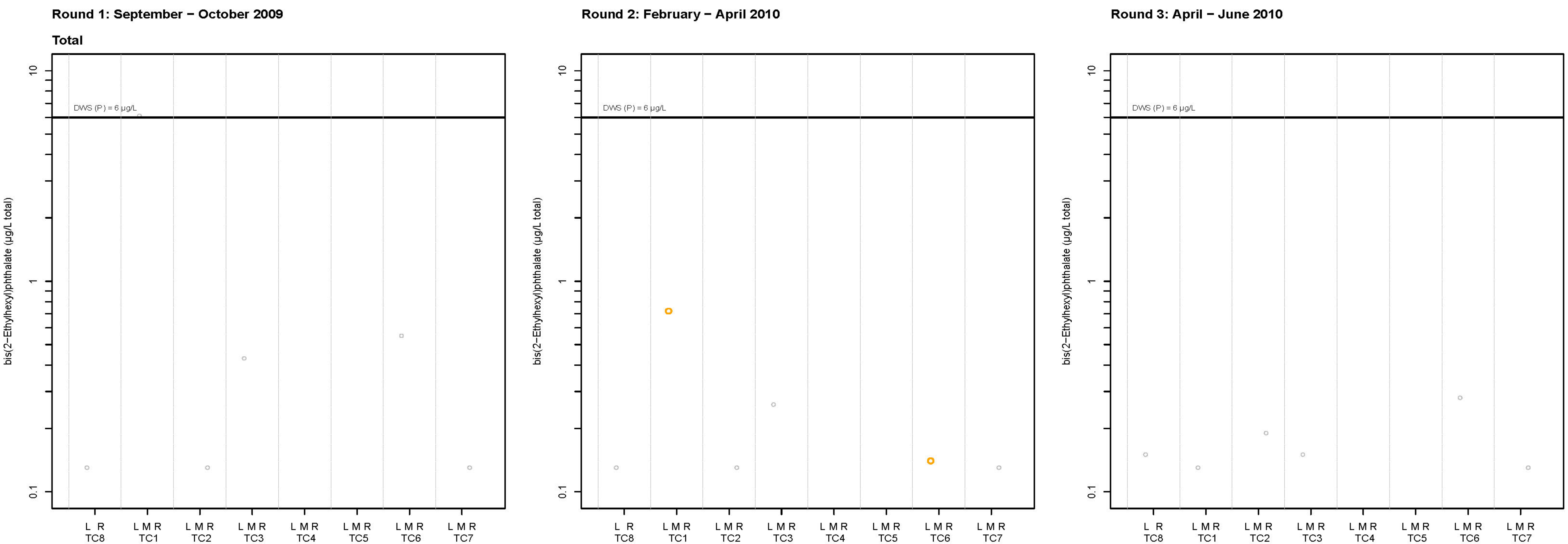
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − bis(2−Ethylhexyl)phthalate



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

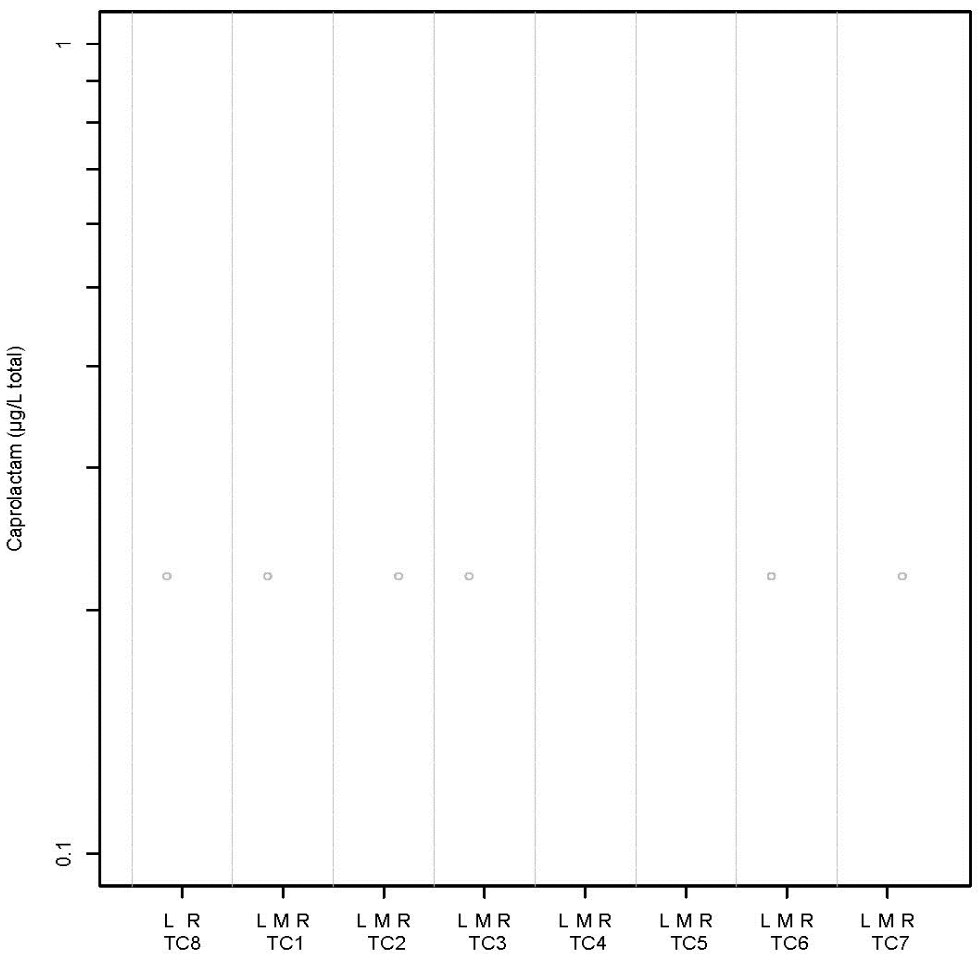
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

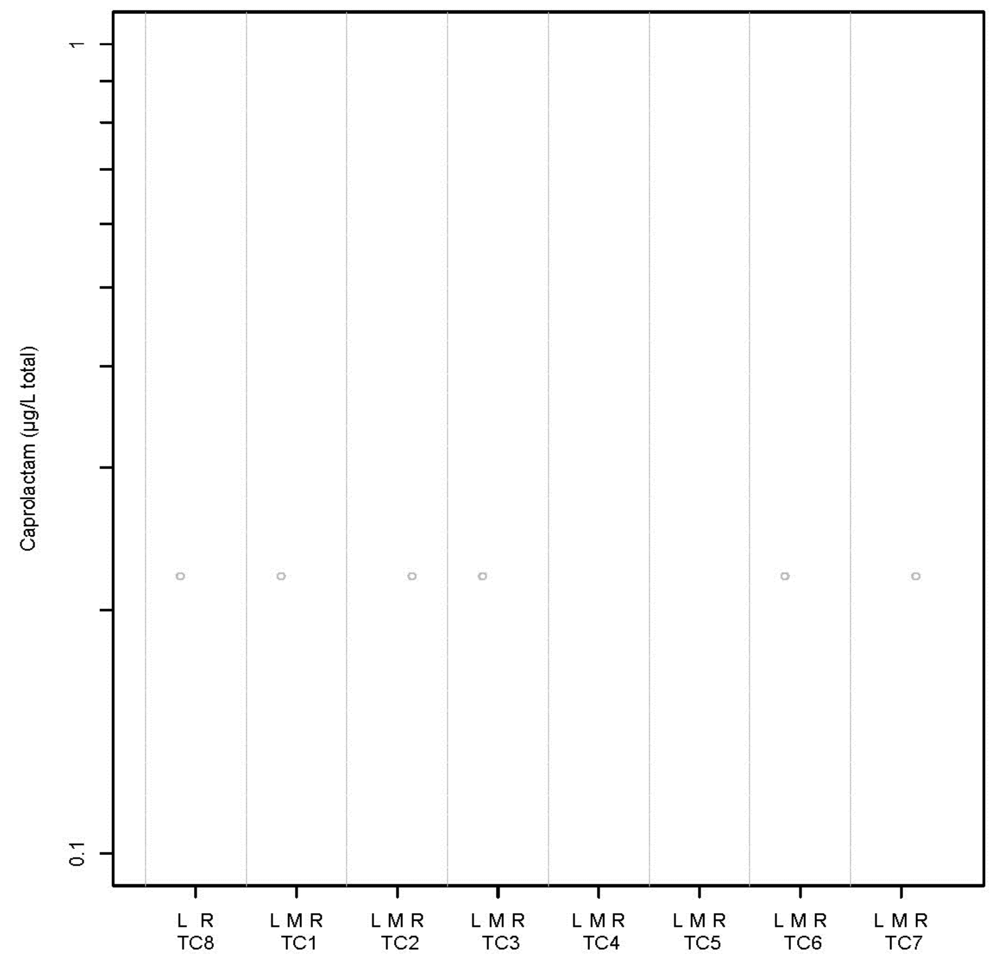
Disturbed Surface Water − Caprolactam

Round 1: September − October 2009

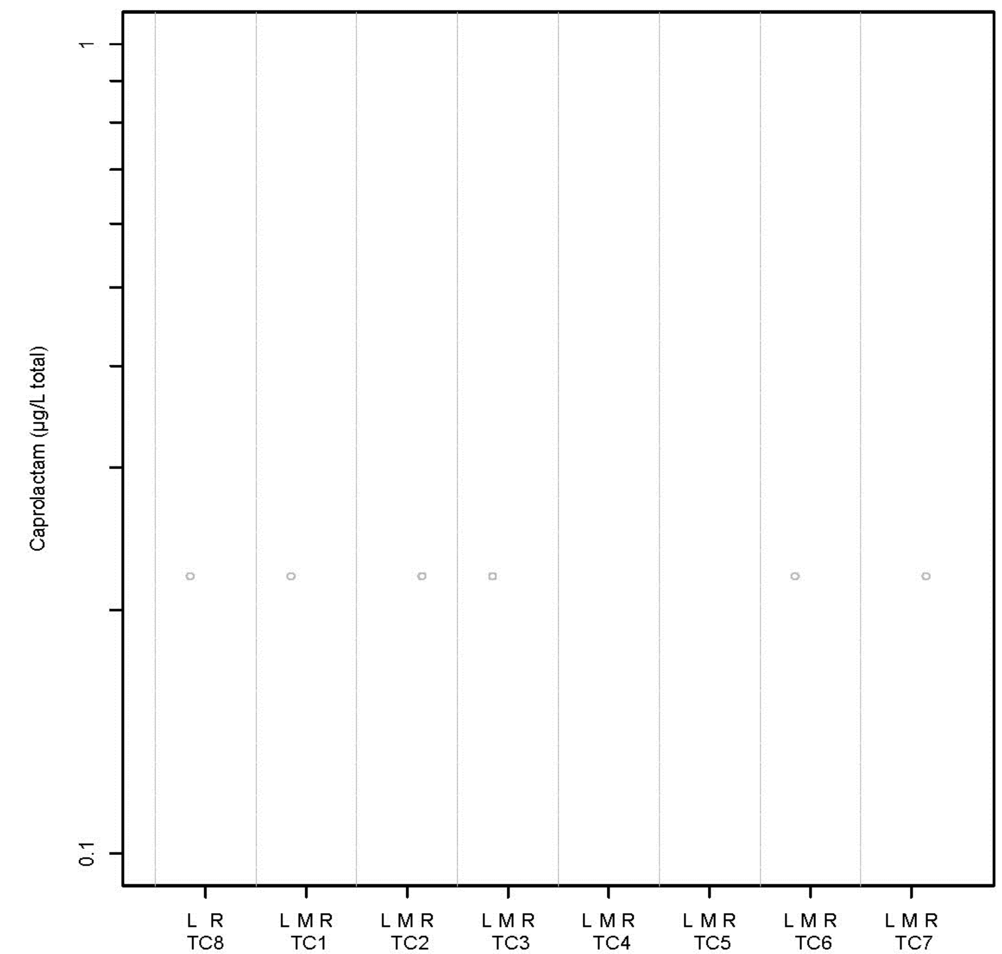
Total



Round 2: February − April 2010



Round 3: April − June 2010



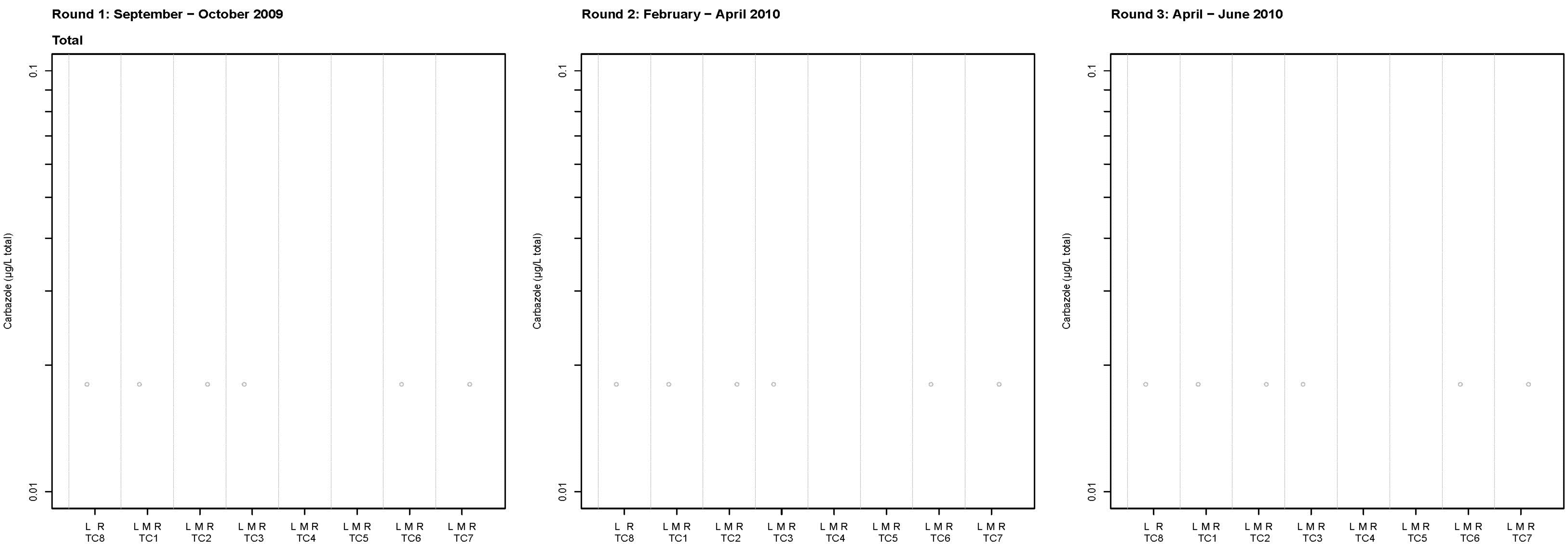
LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Carbazole



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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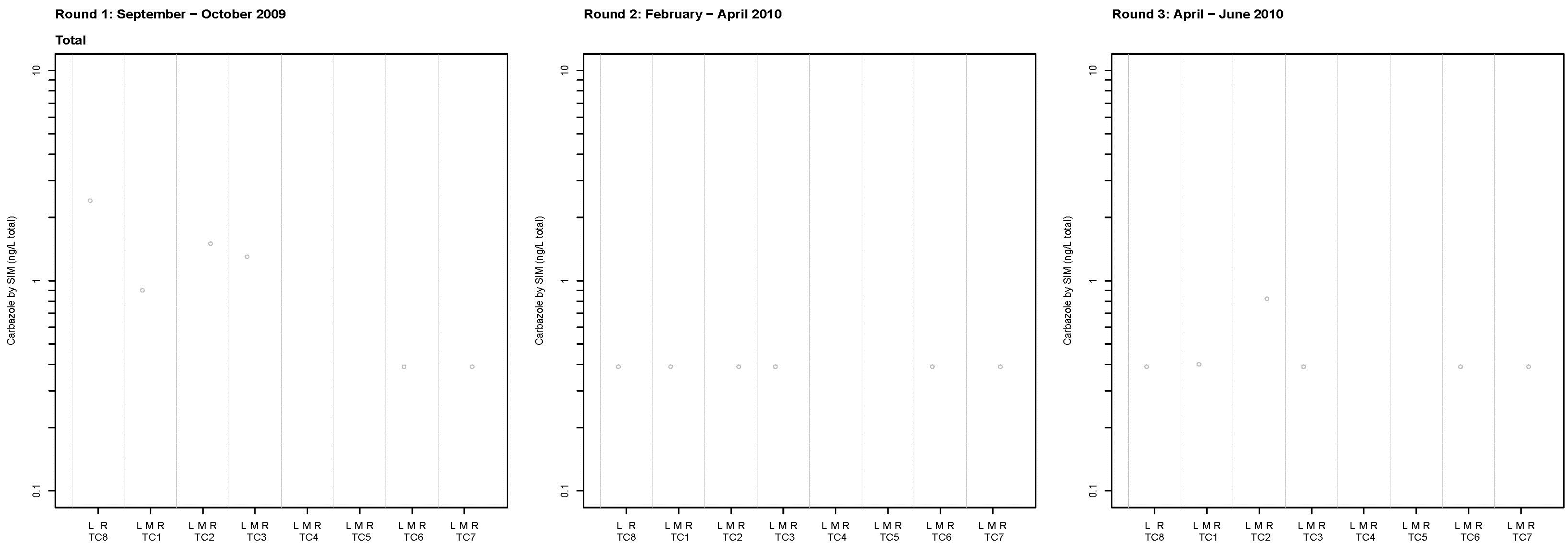
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Carbazole by SIM



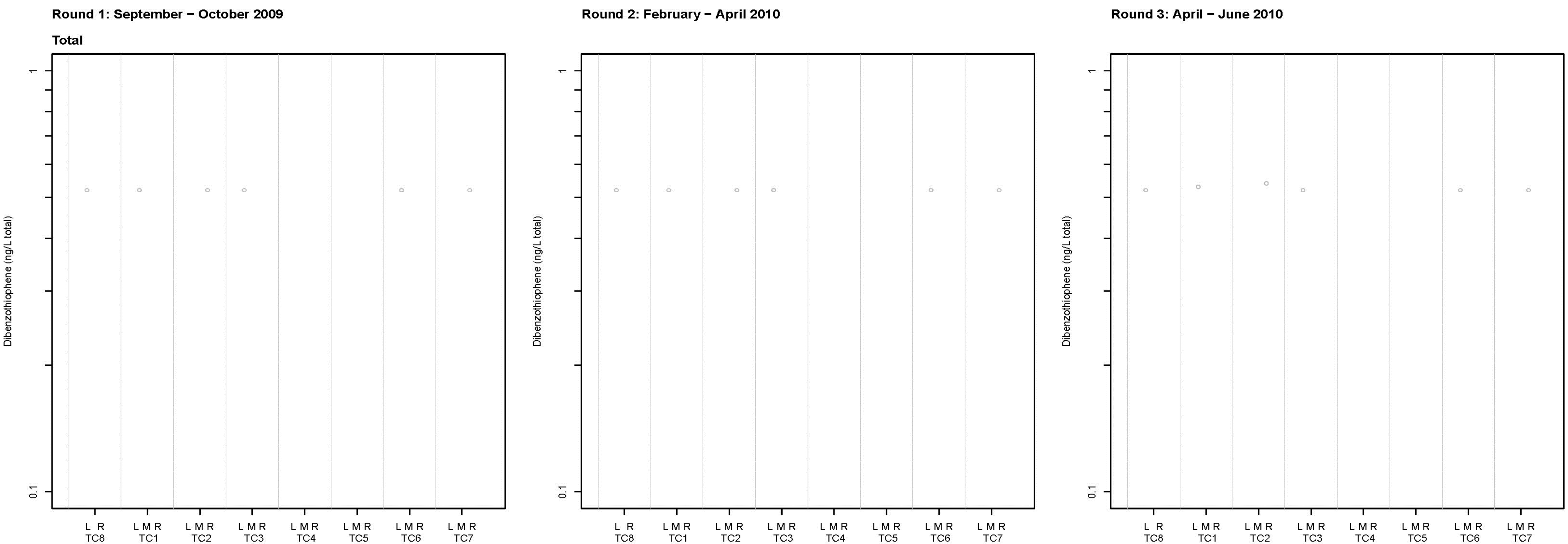
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Dibenzothiophene



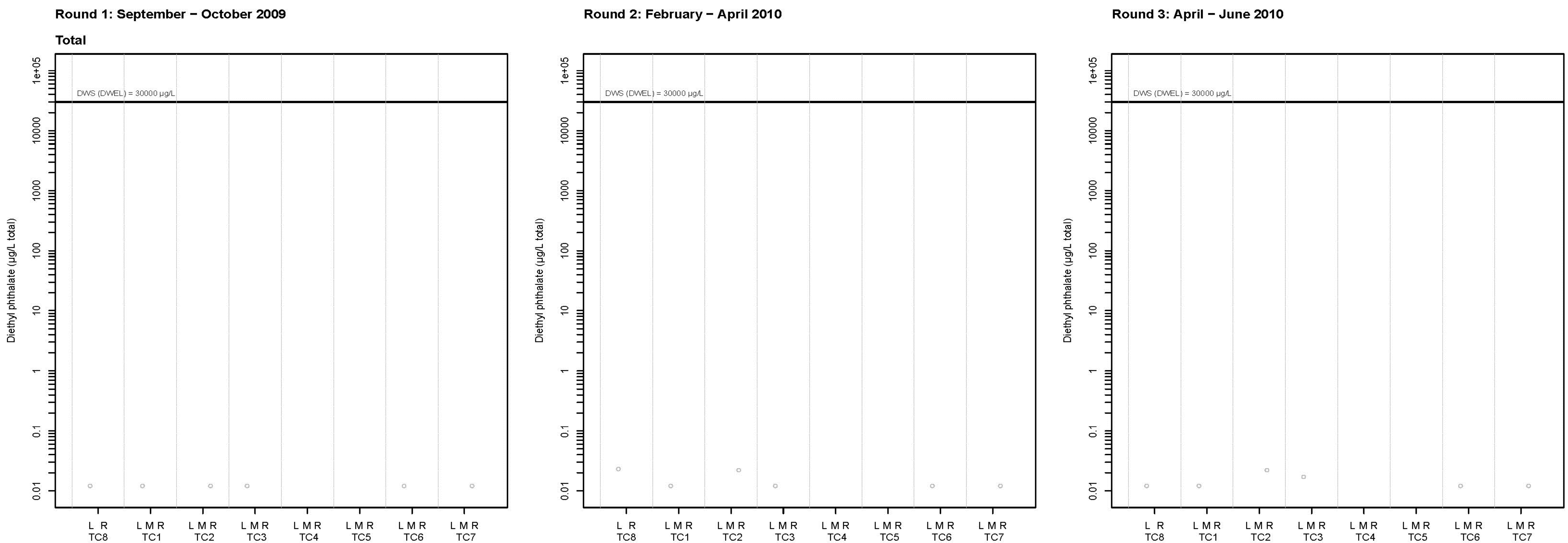
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Diethyl phthalate



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

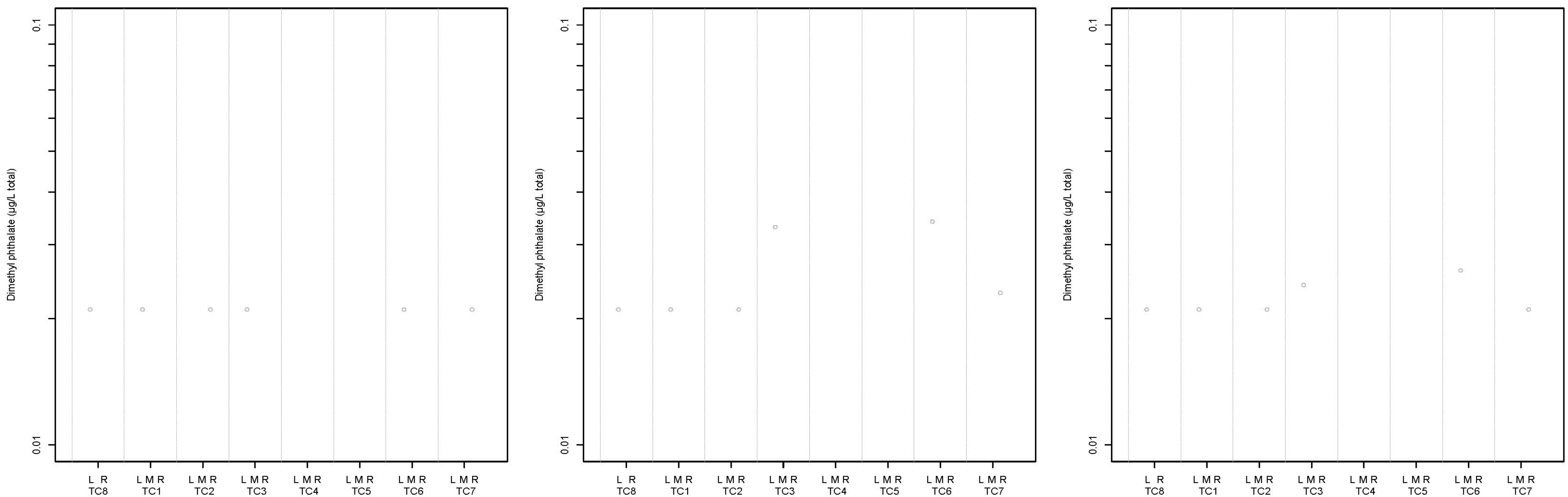
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Dimethyl phthalate

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



LEGEND

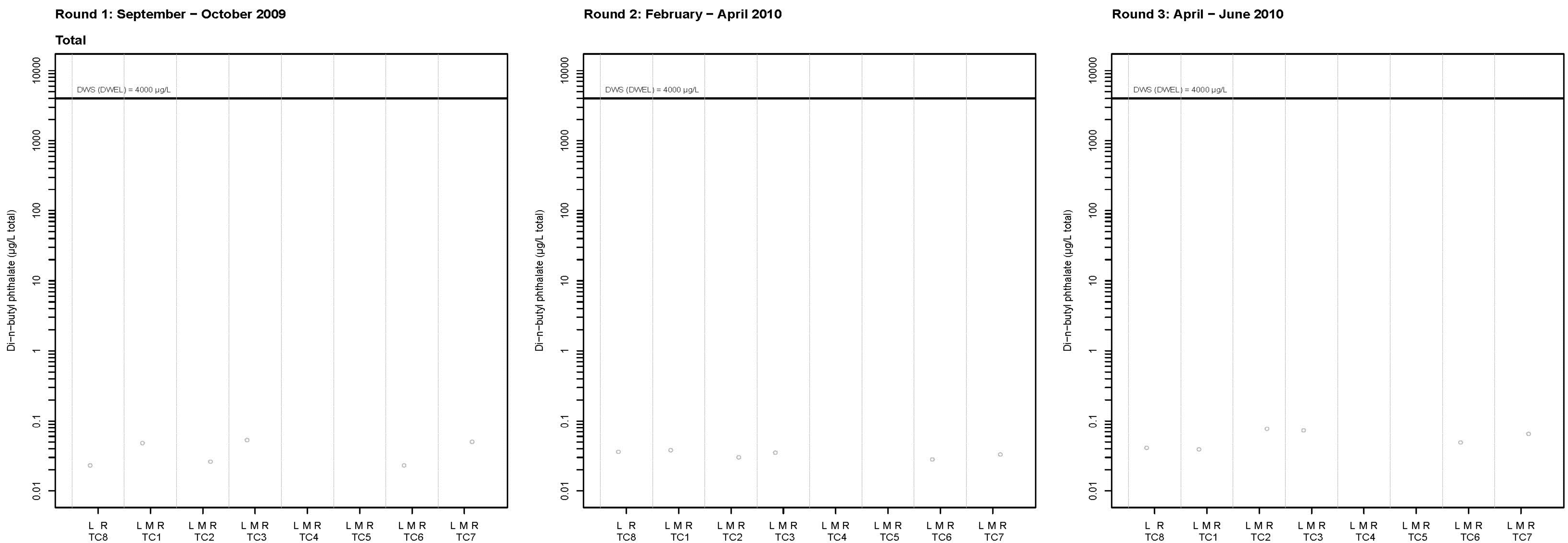
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Di−n−butyl phthalate



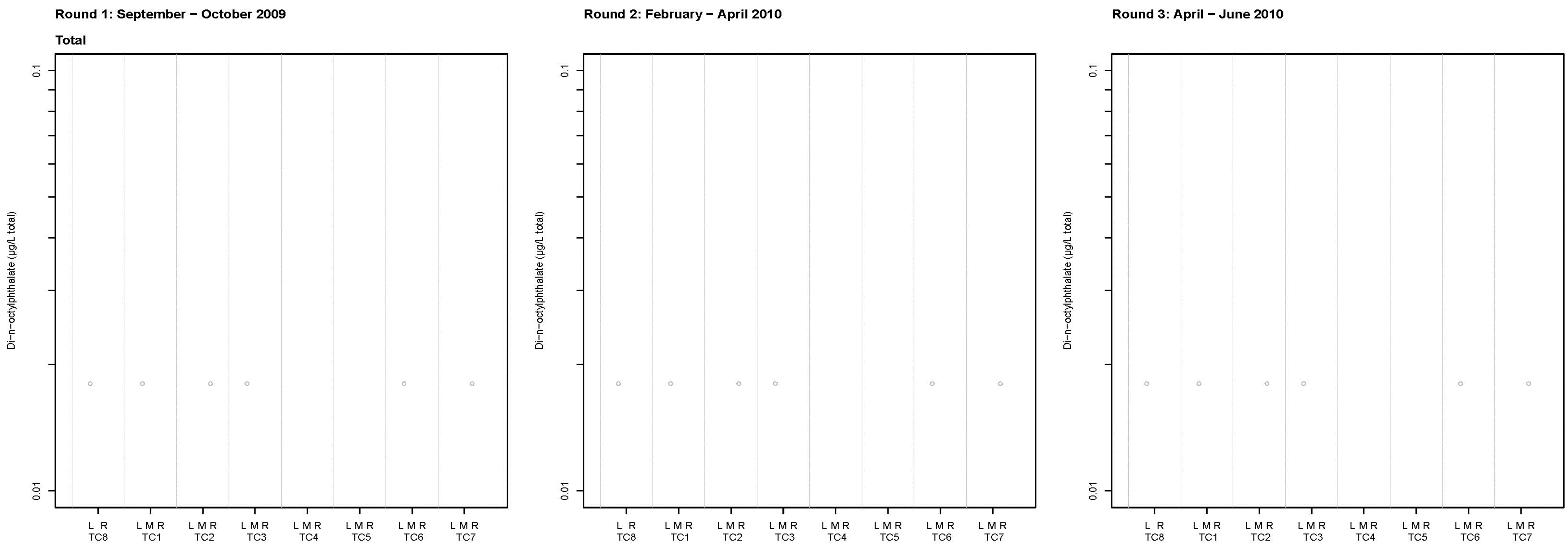
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Di−n−octylphthalate



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

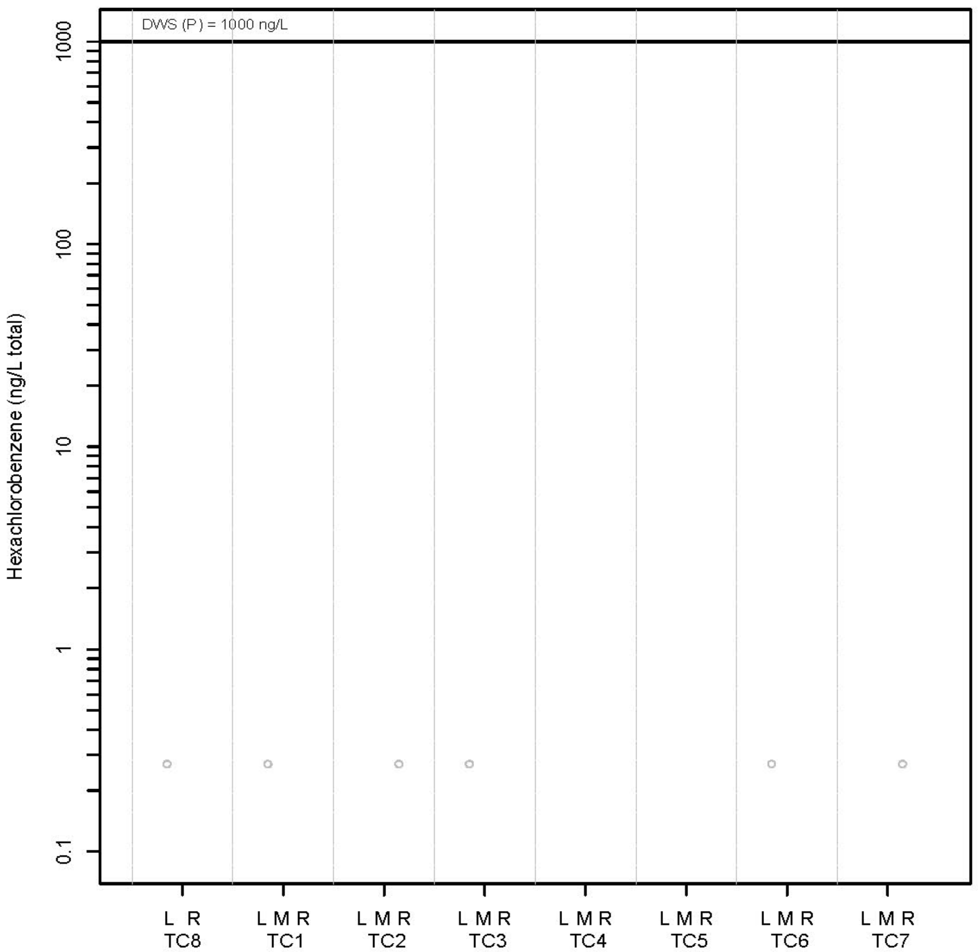
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

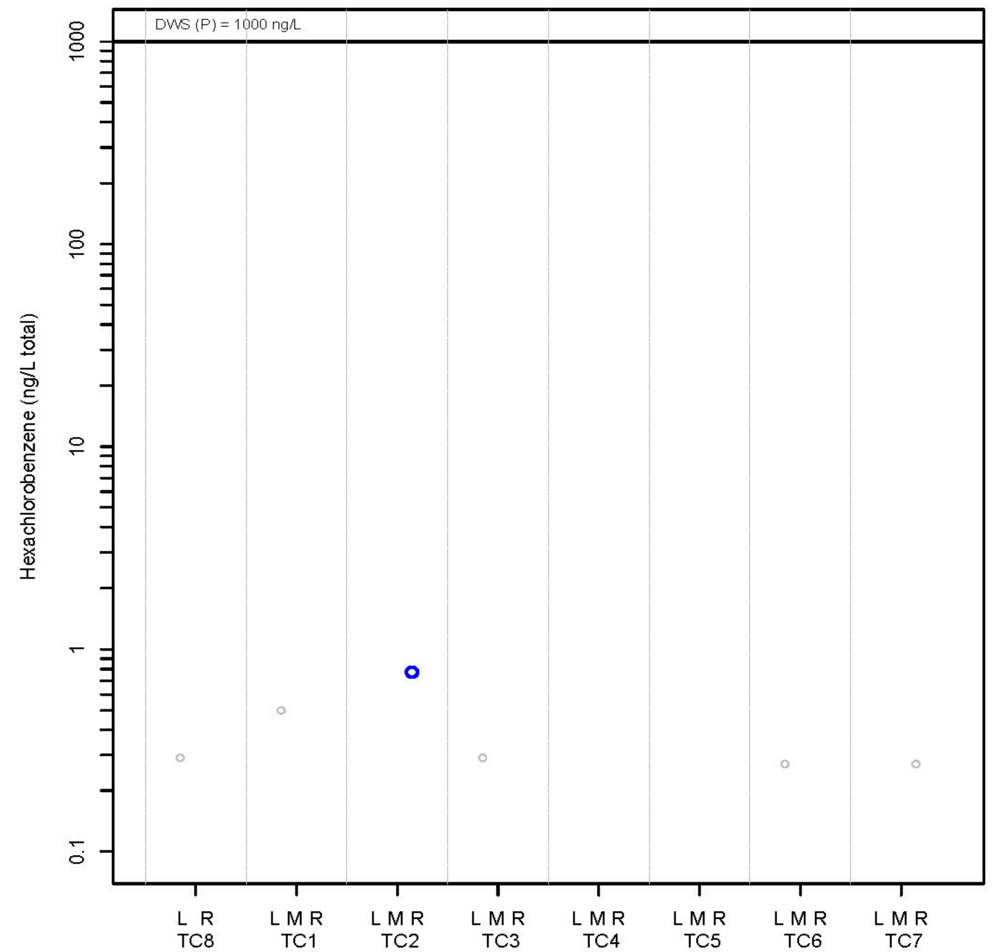
Disturbed Surface Water − Hexachlorobenzene

Round 1: September − October 2009

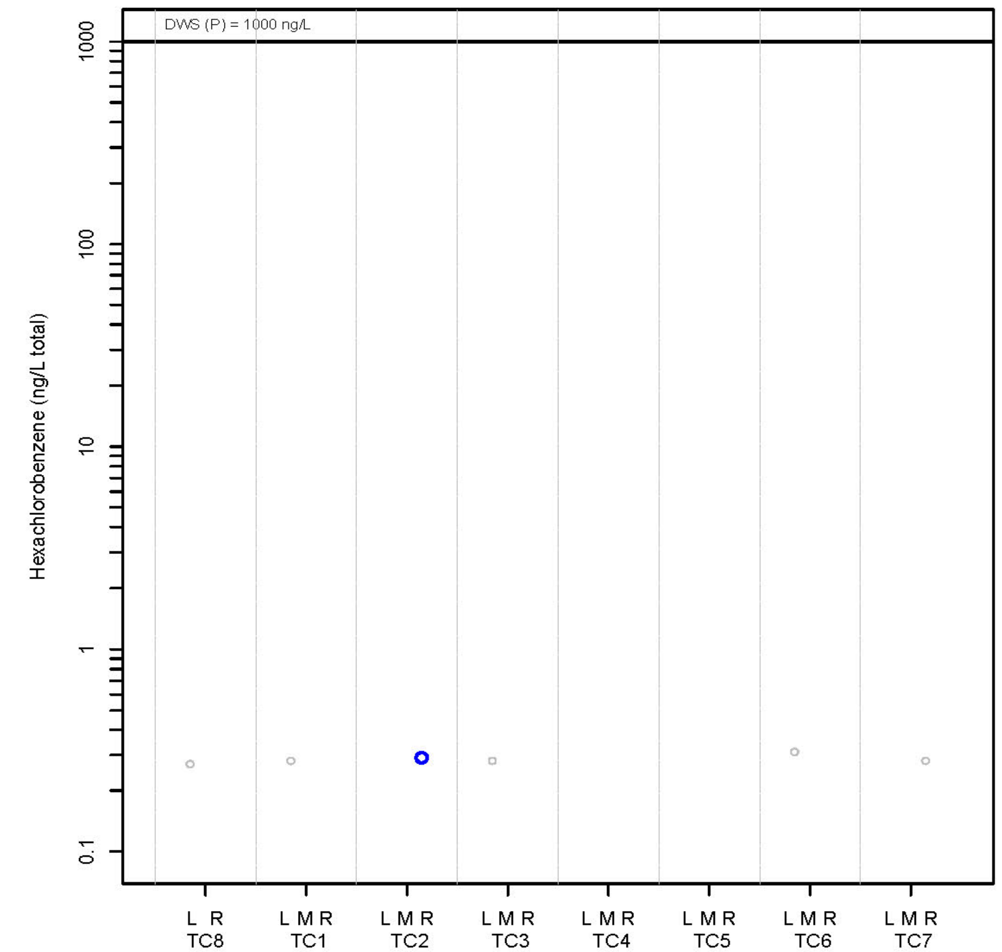
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

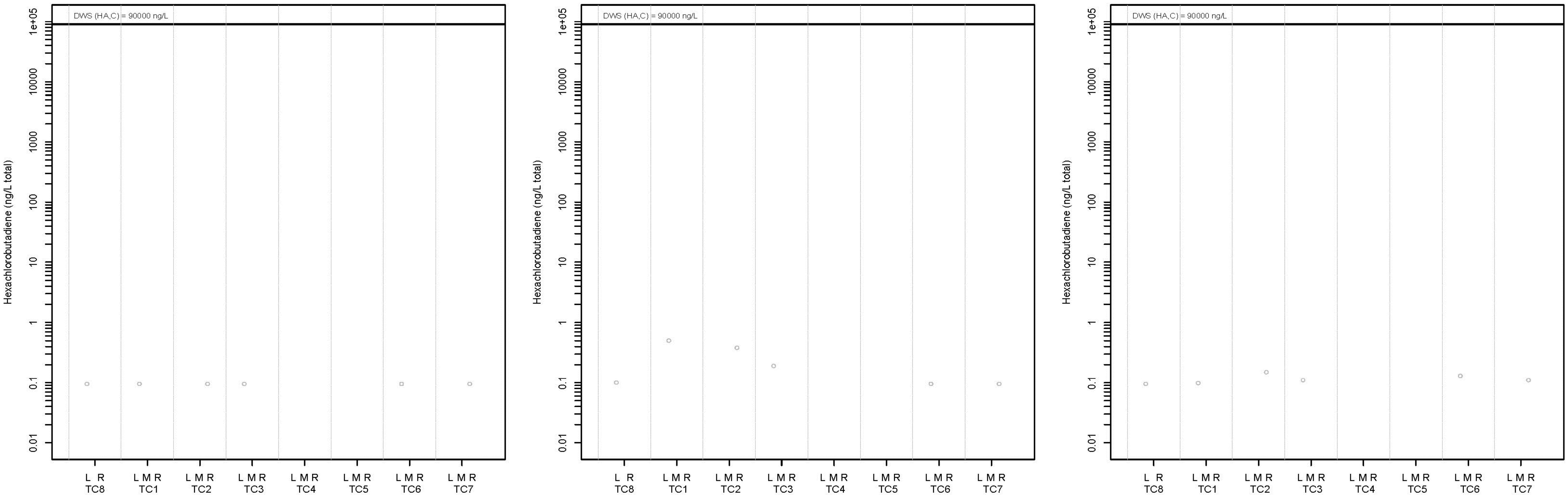
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Hexachlorobutadiene

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

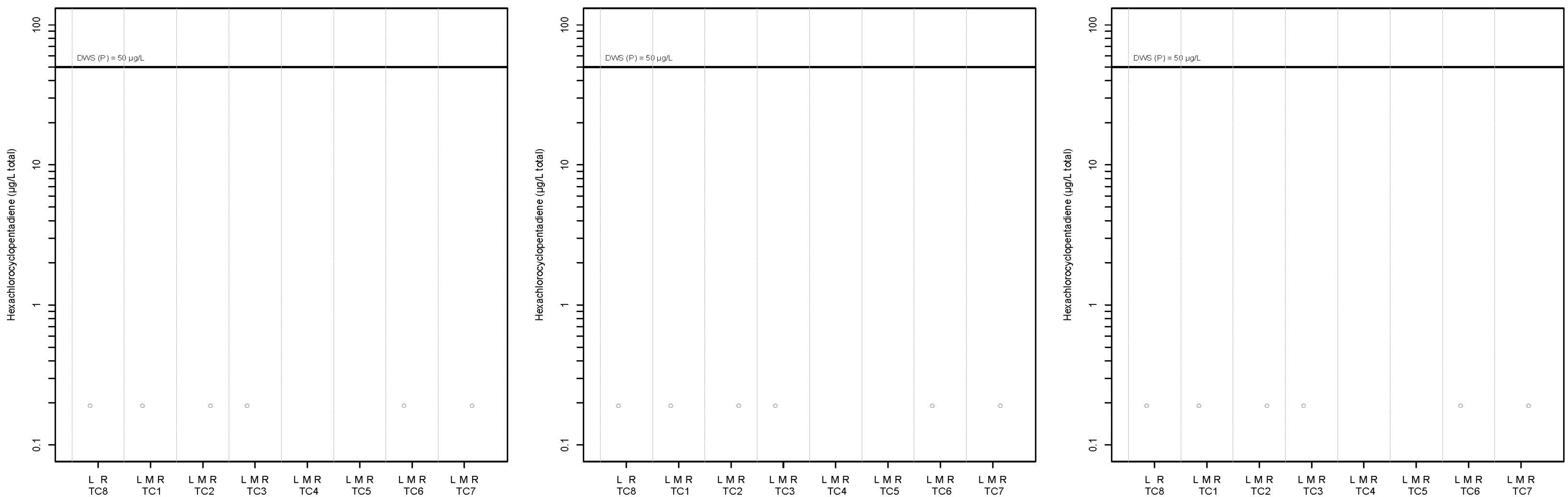
Disturbed Surface Water − Hexachlorocyclopentadiene

Round 1: September − October 2009

Round 2: February − April 2010

Round 3: April − June 2010

Total



LEGEND

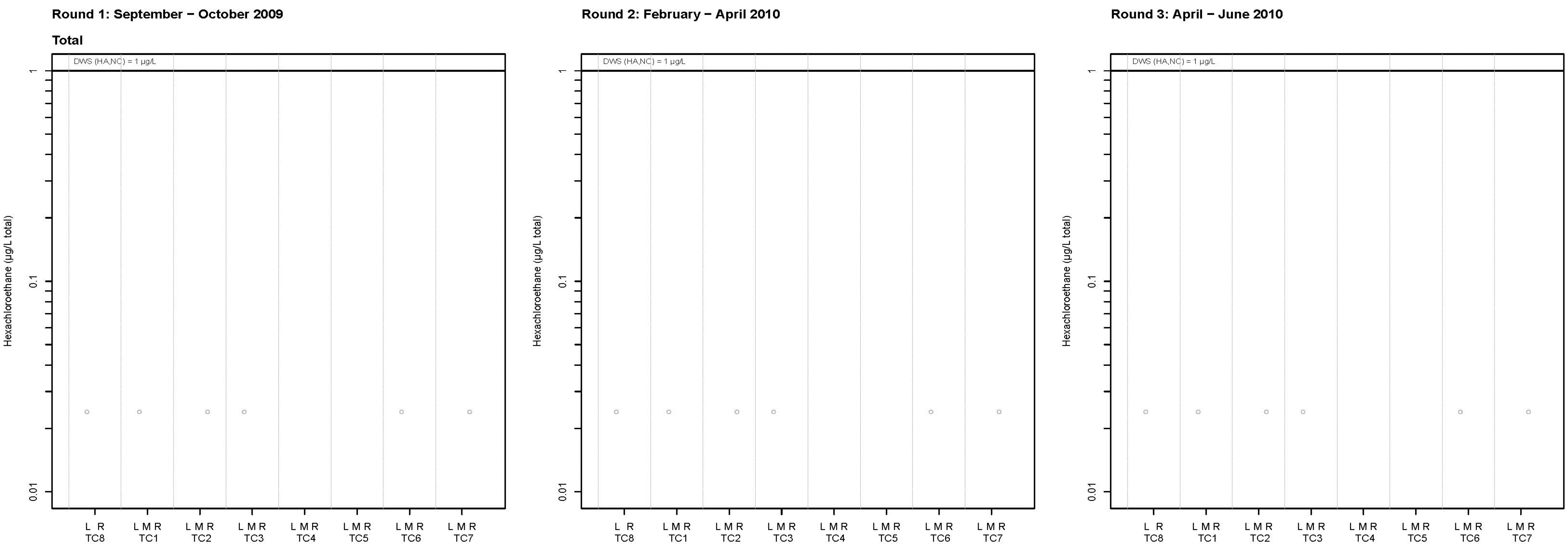
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Hexachloroethane



LEGEND

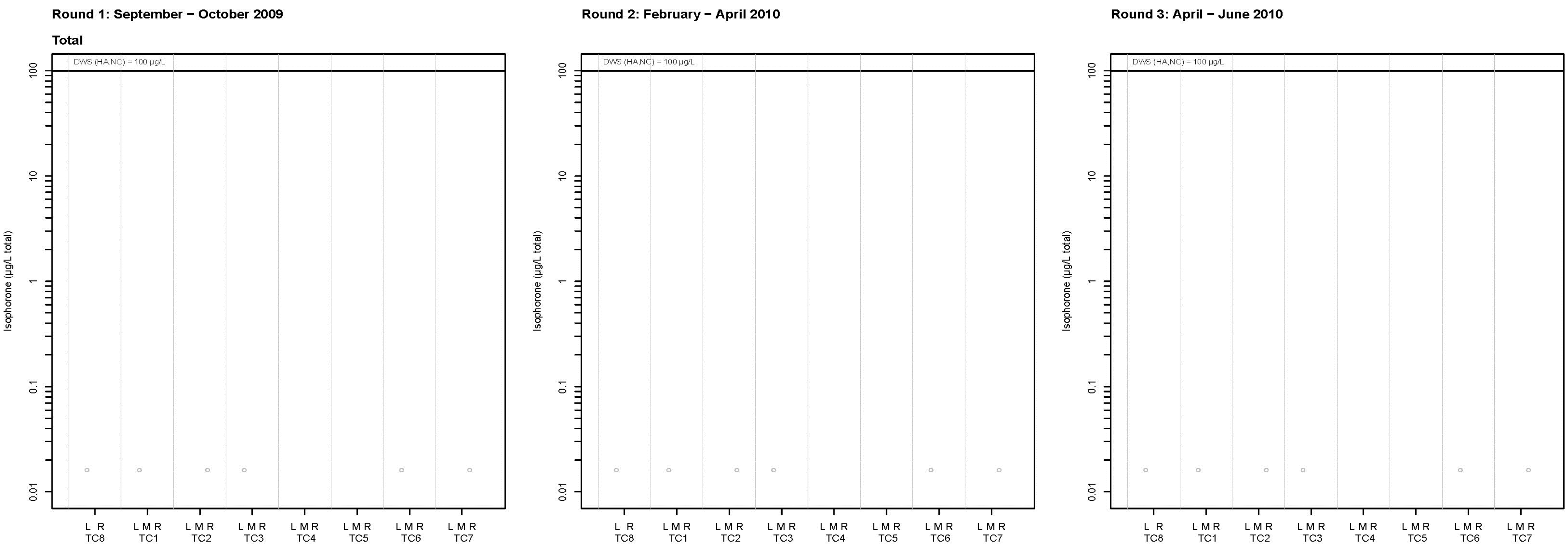
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water − Isophorone



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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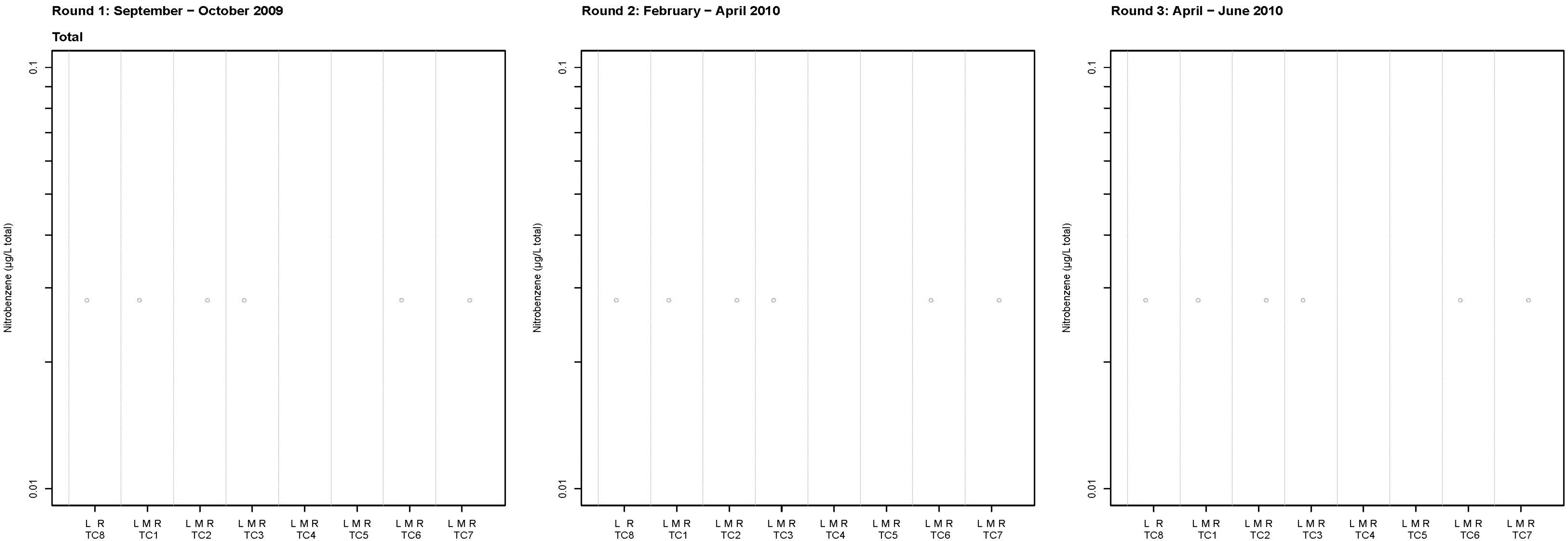
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Nitrobenzene



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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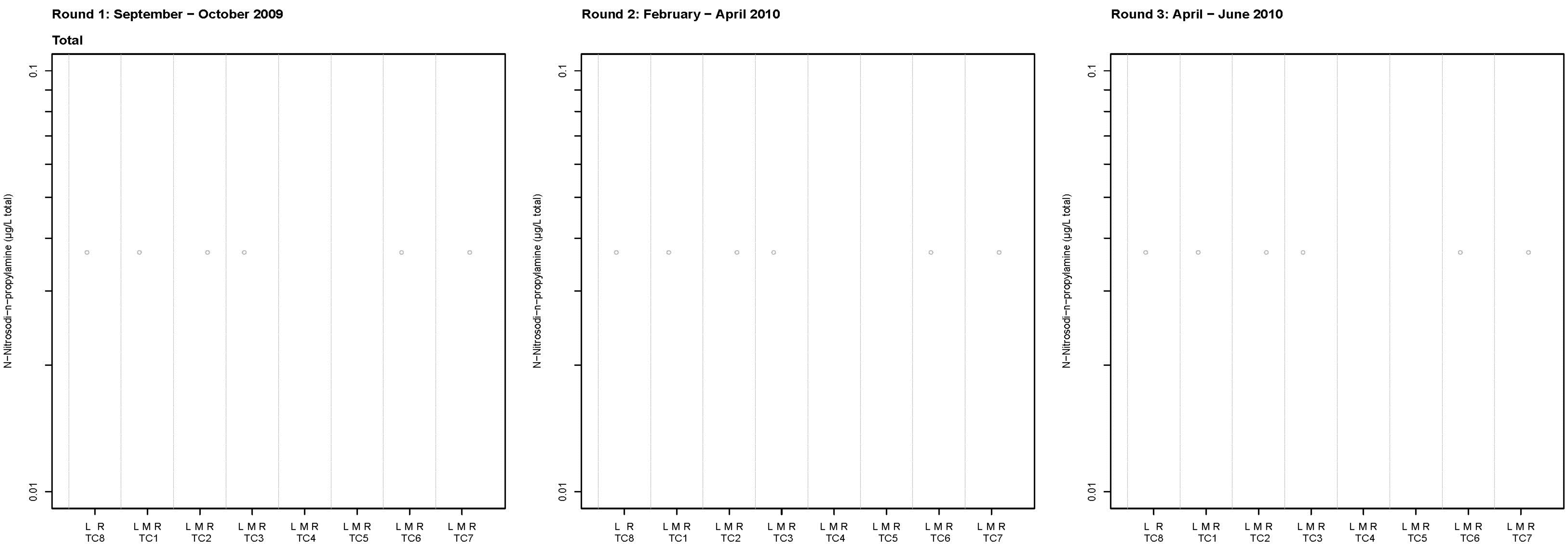
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − N−Nitrosodi−n−propylamine



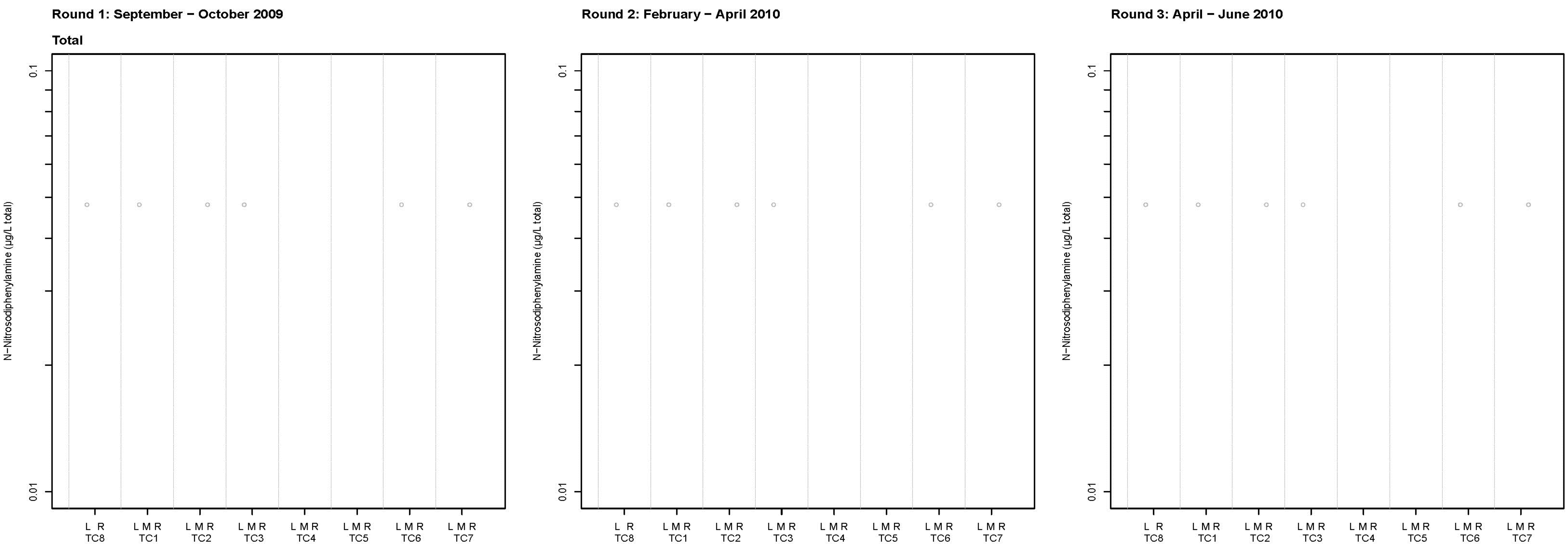
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − N−Nitrosodiphenylamine



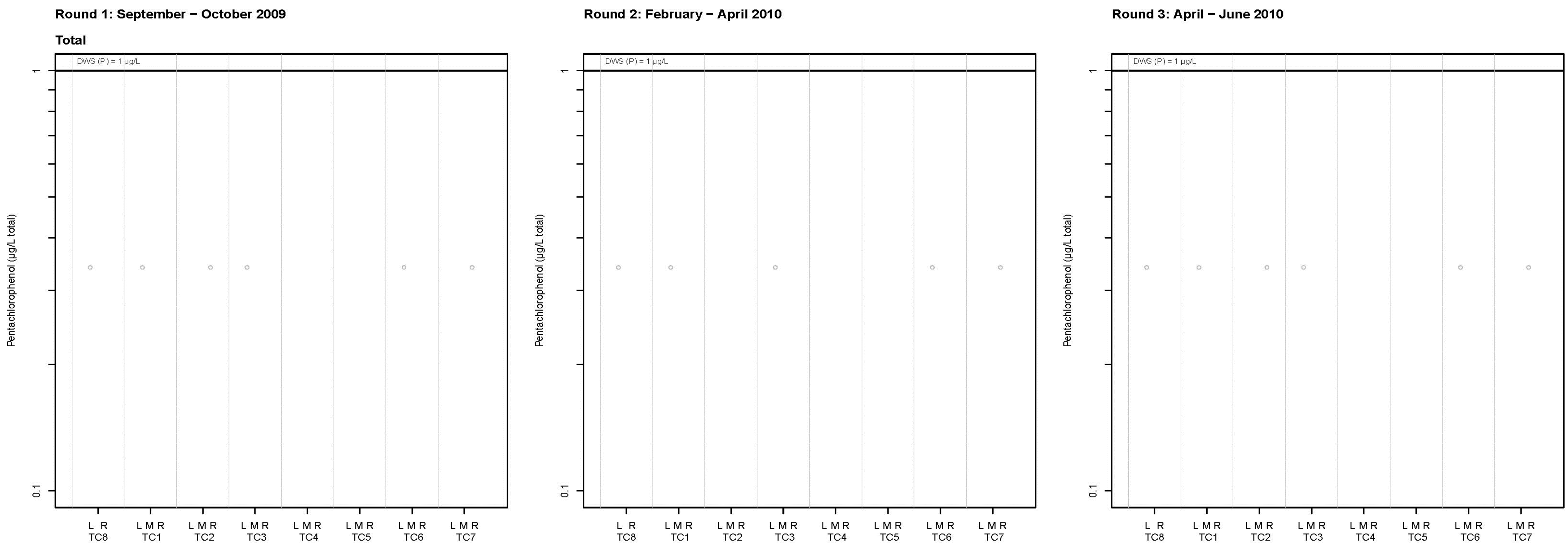
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Pentachlorophenol



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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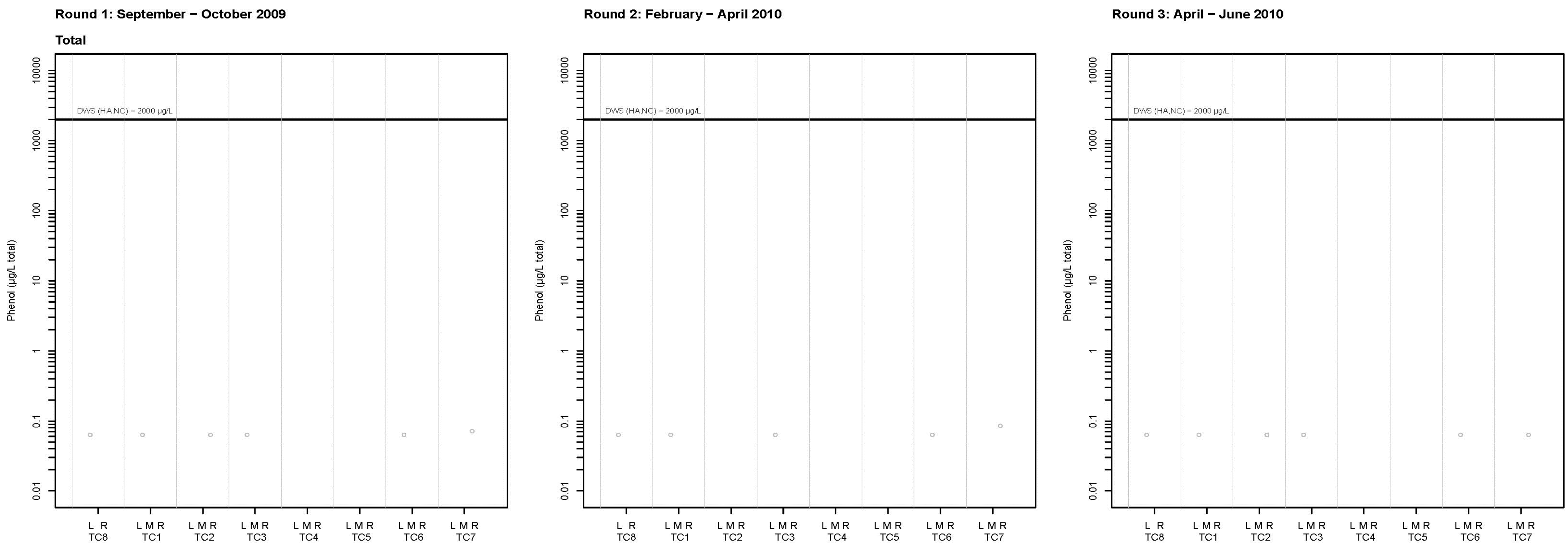
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Phenol



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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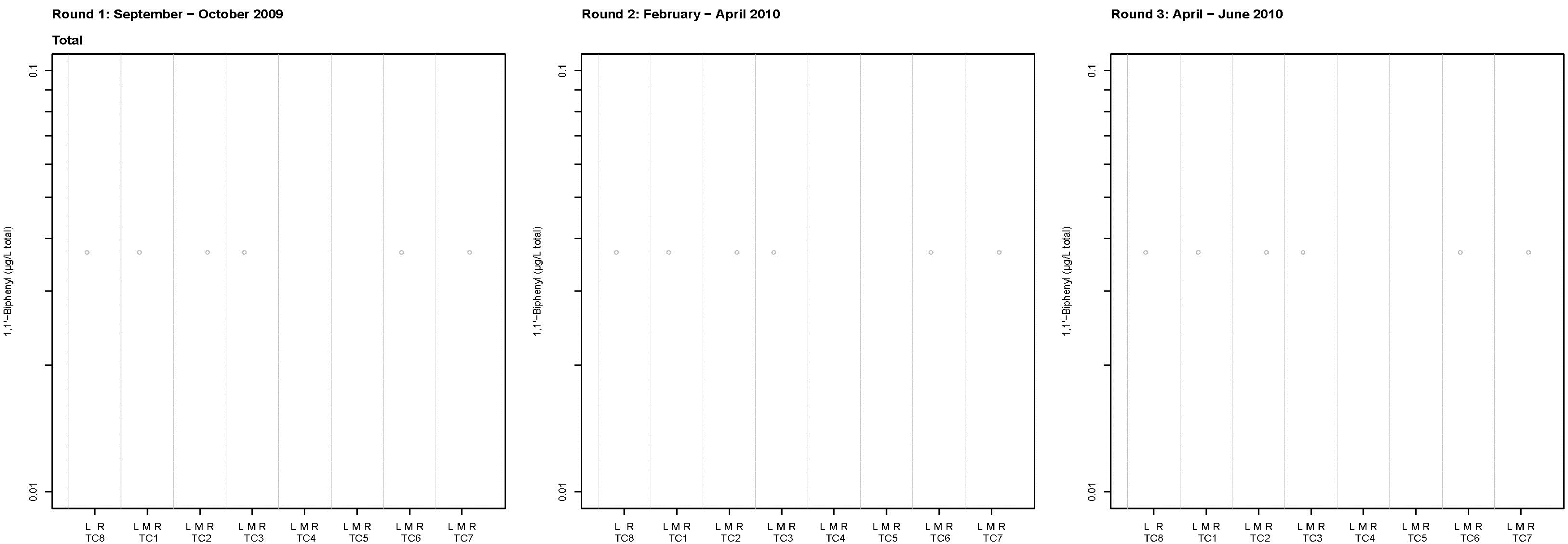
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 1,1'−Biphenyl



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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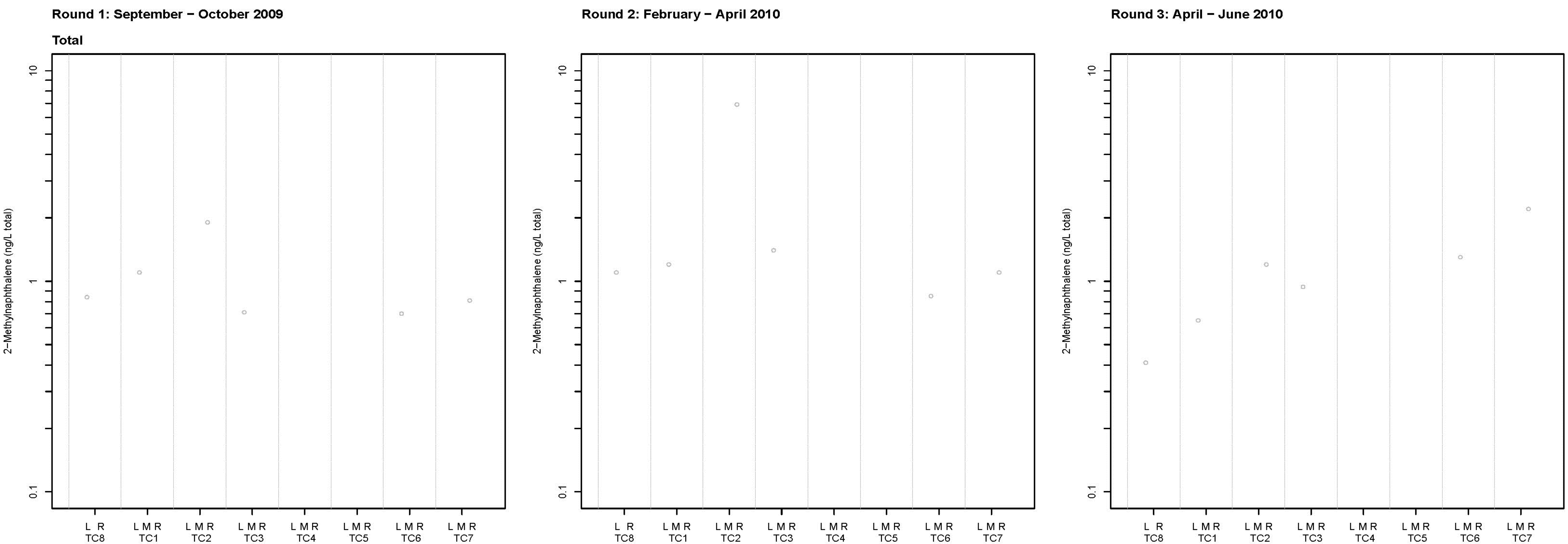
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2−Methylnaphthalene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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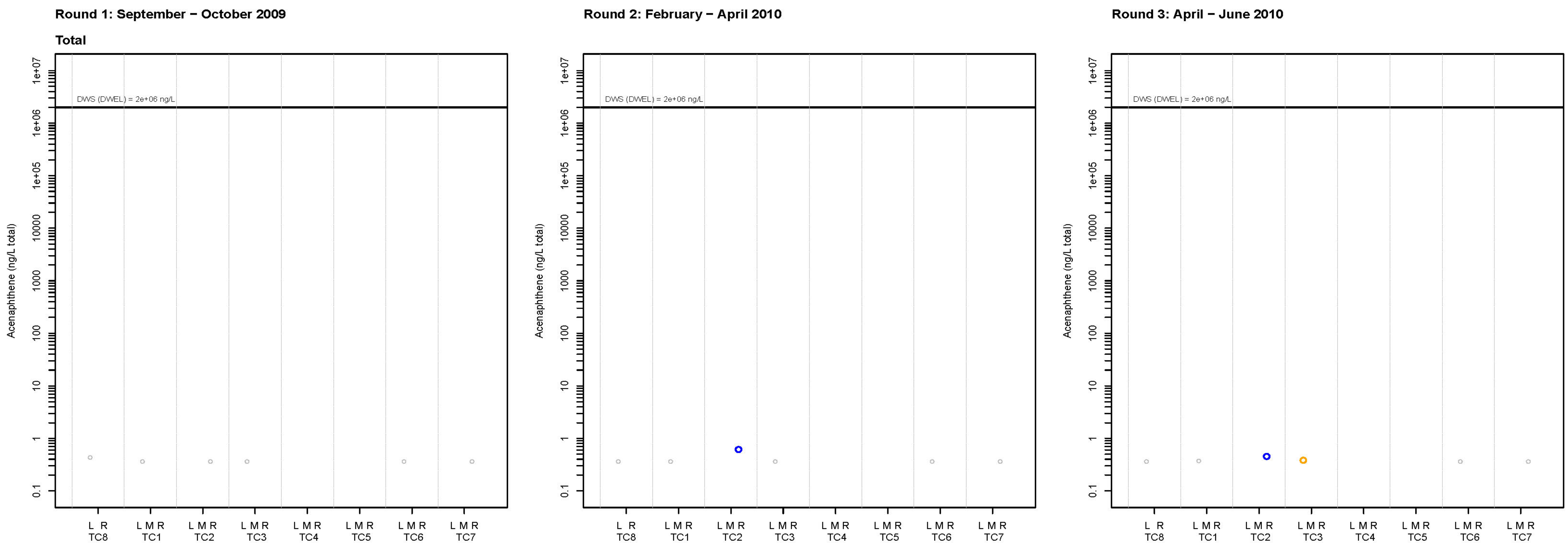
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Acenaphthene



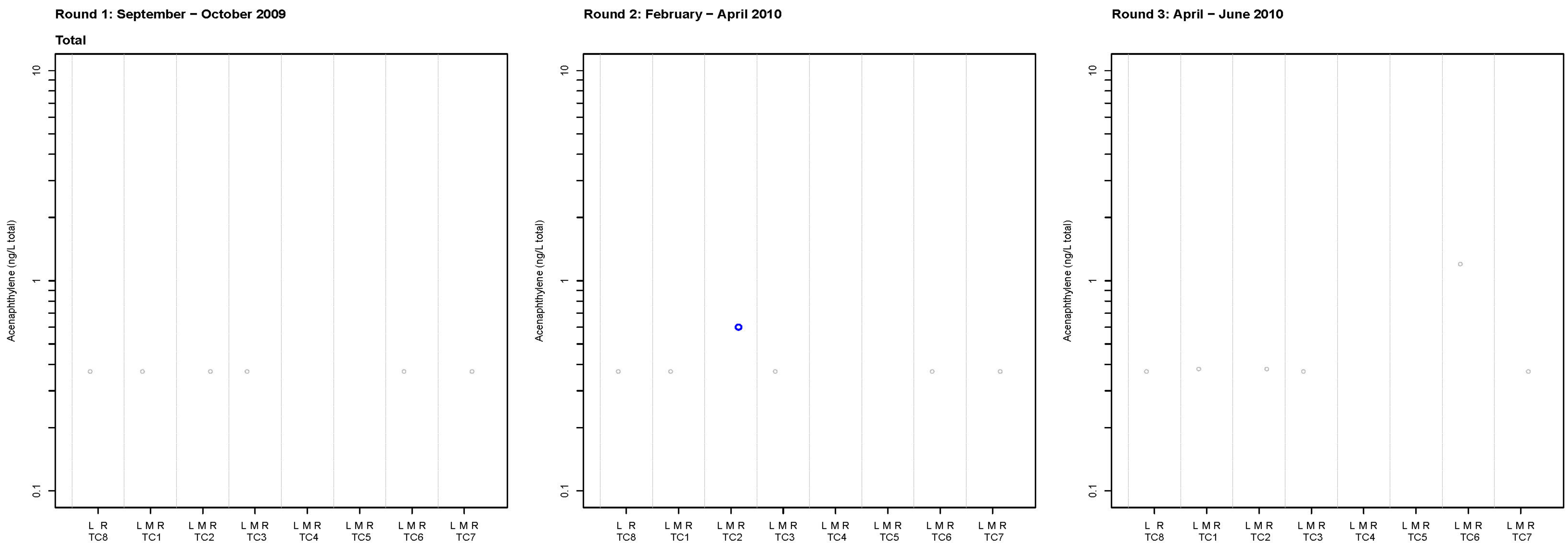
LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)
- L = Left bank (orange)
- M = Mid-channel (green)
- R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Acenaphthylene



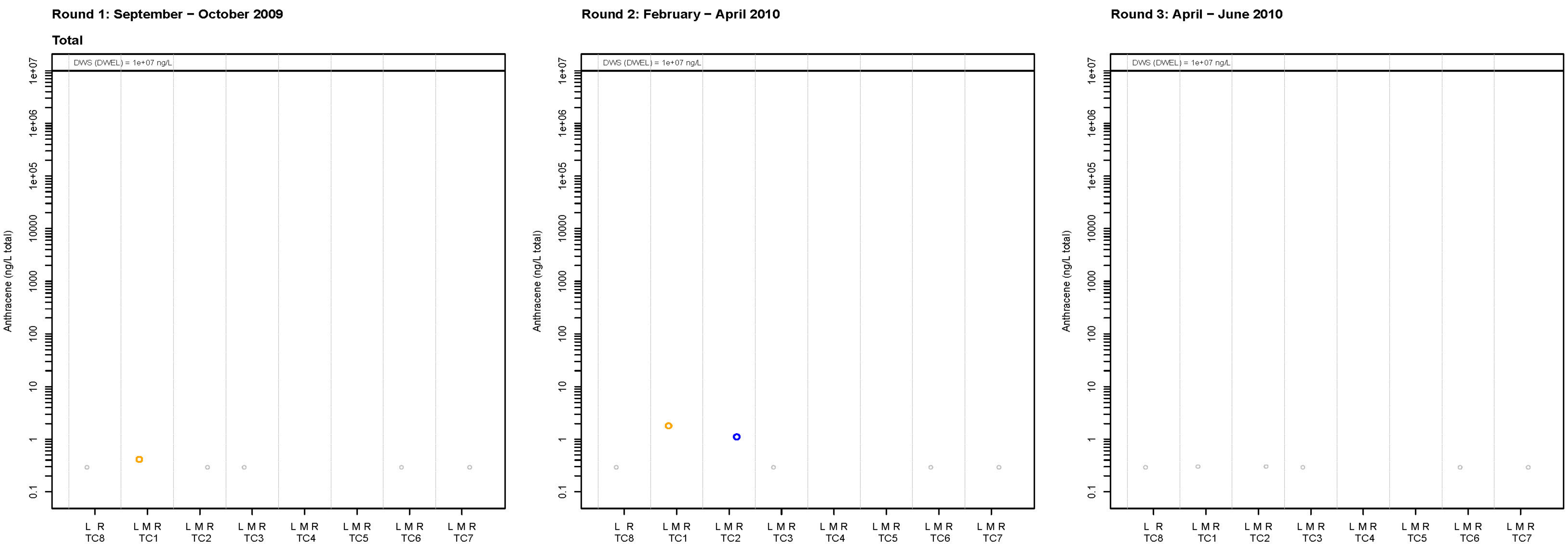
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Anthracene



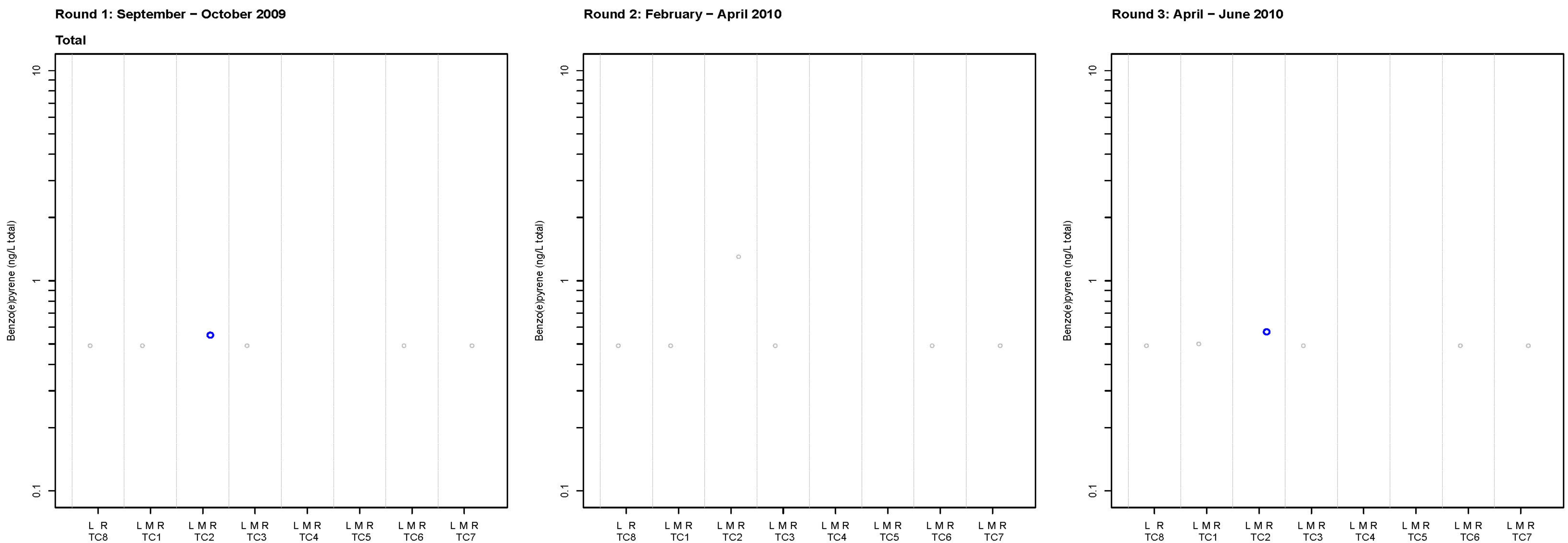
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Benzo(e)pyrene



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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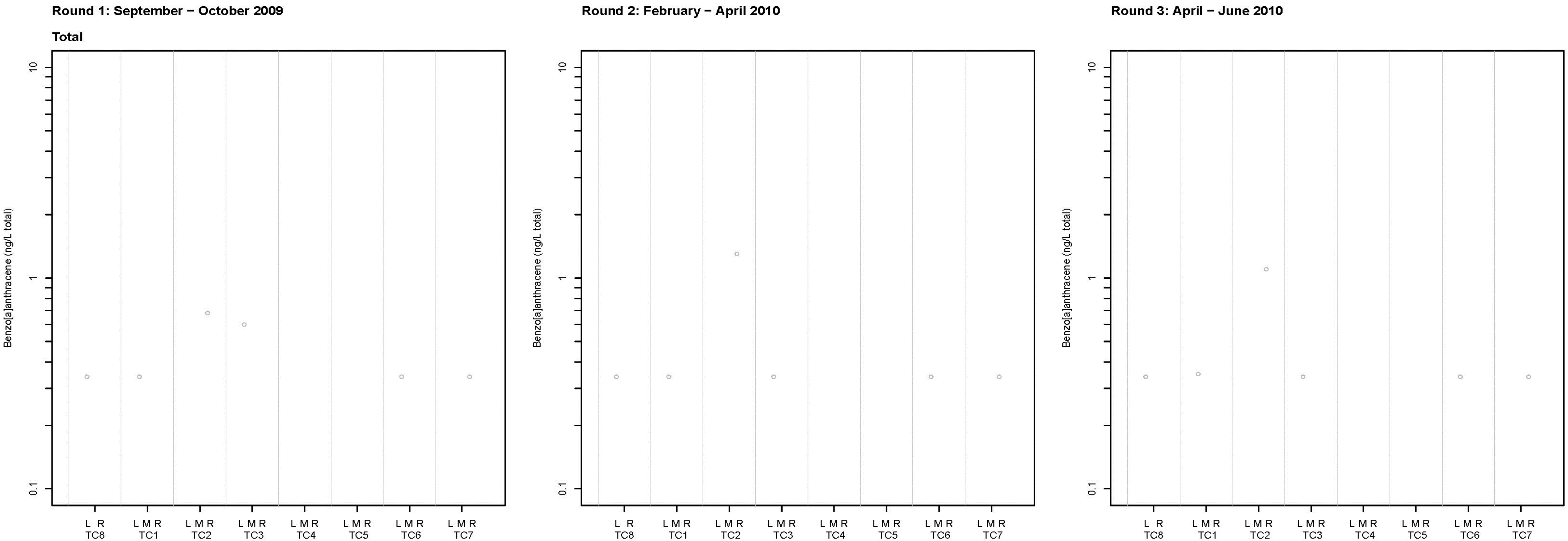
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Benzo[a]anthracene



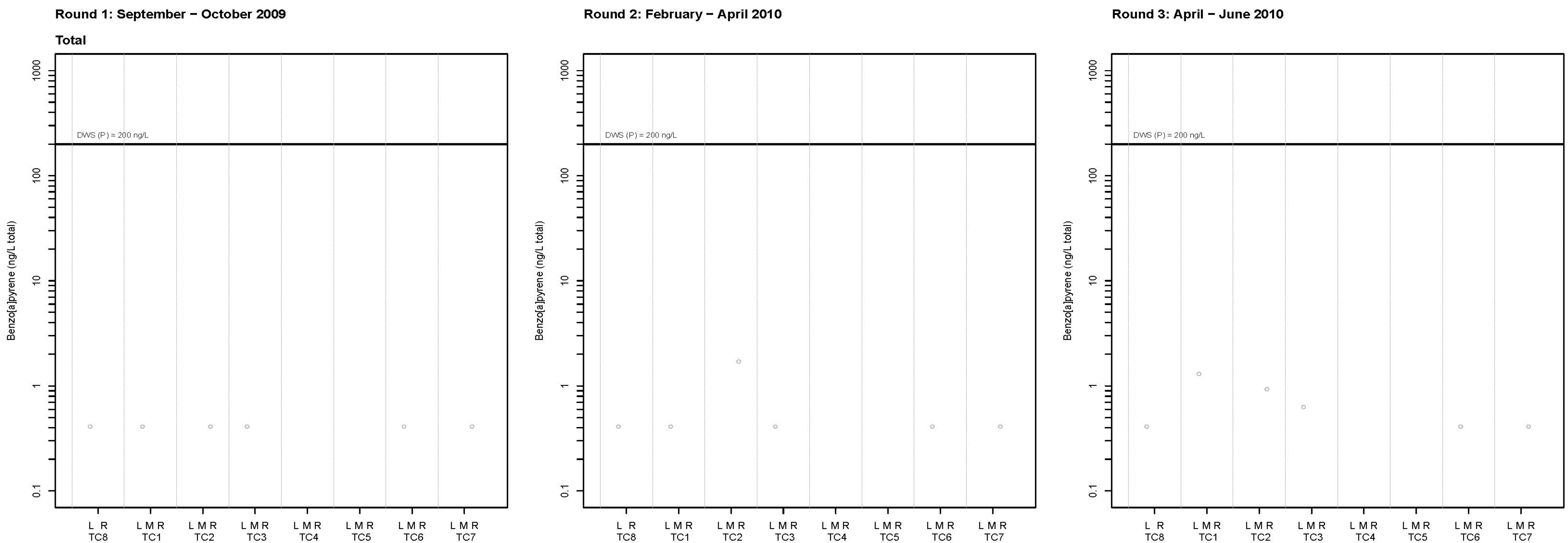
LEGEND

▽ Near-surface — L = Left bank (orange)
○ Nearshore — M = Mid-channel (green)
△ Near-bottom — R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Benzo[a]pyrene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

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DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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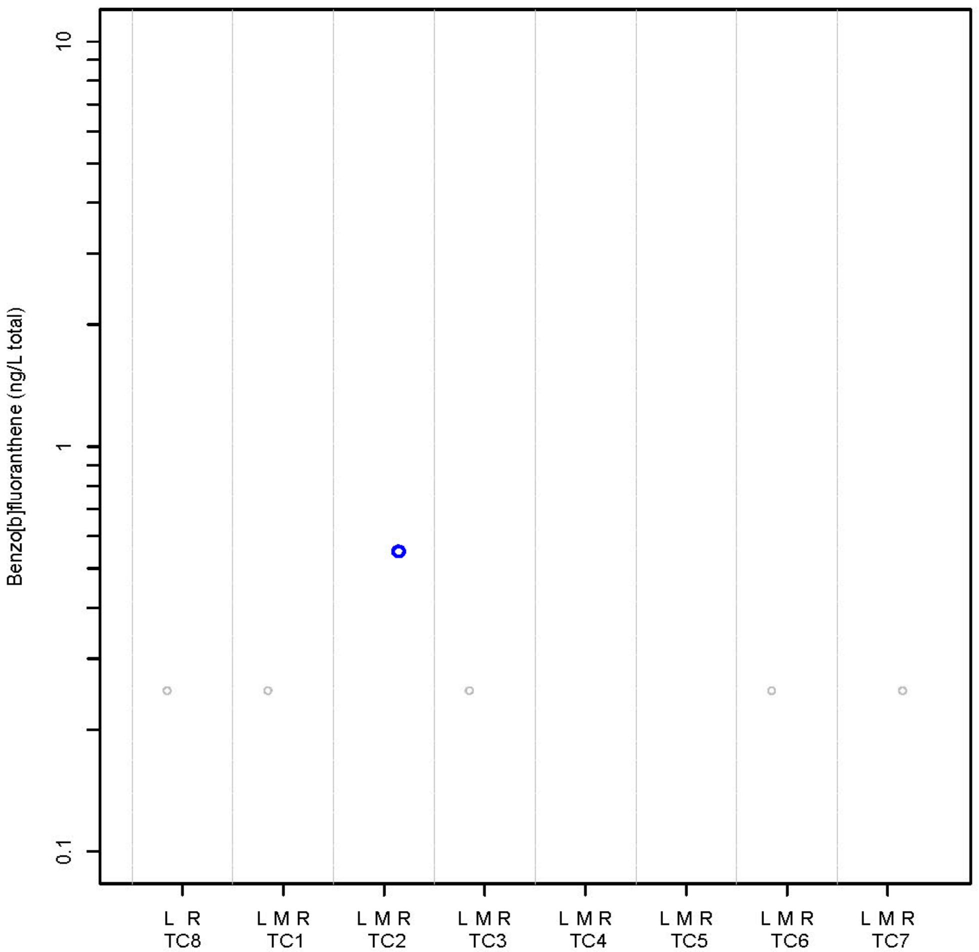
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

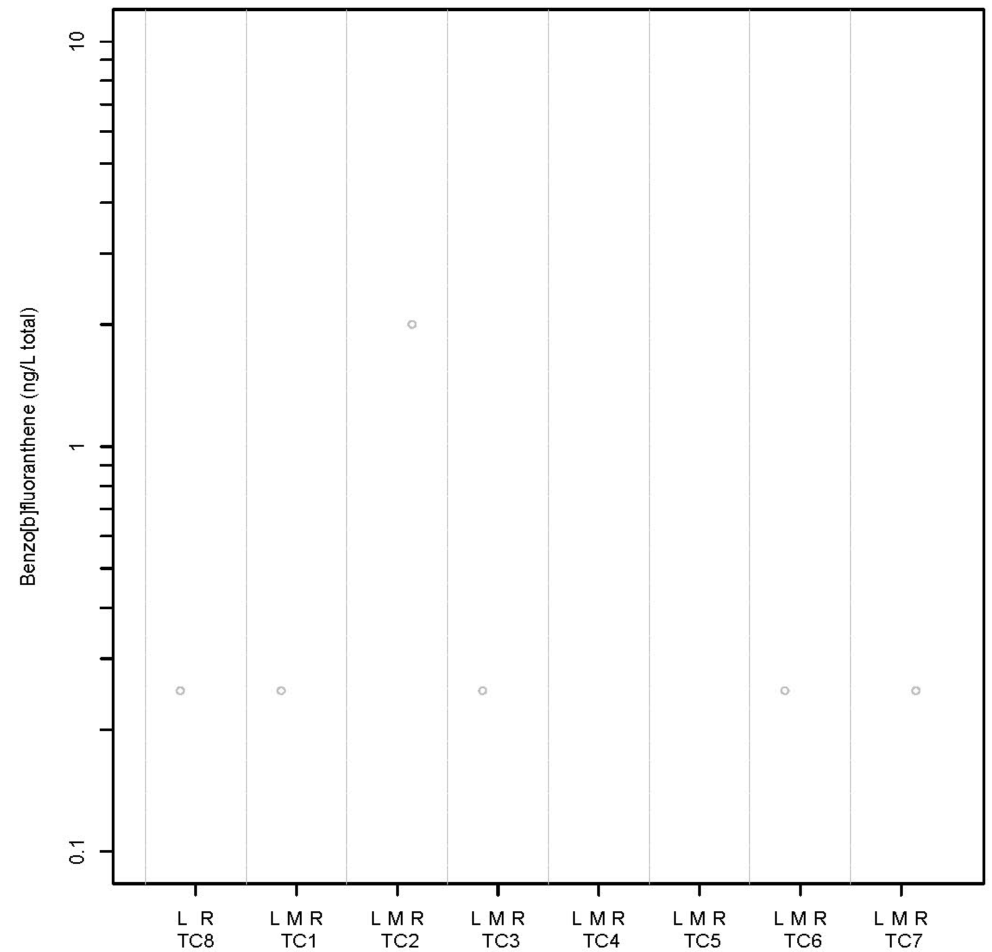
Disturbed Surface Water − Benzo[b]fluoranthene

Round 1: September − October 2009

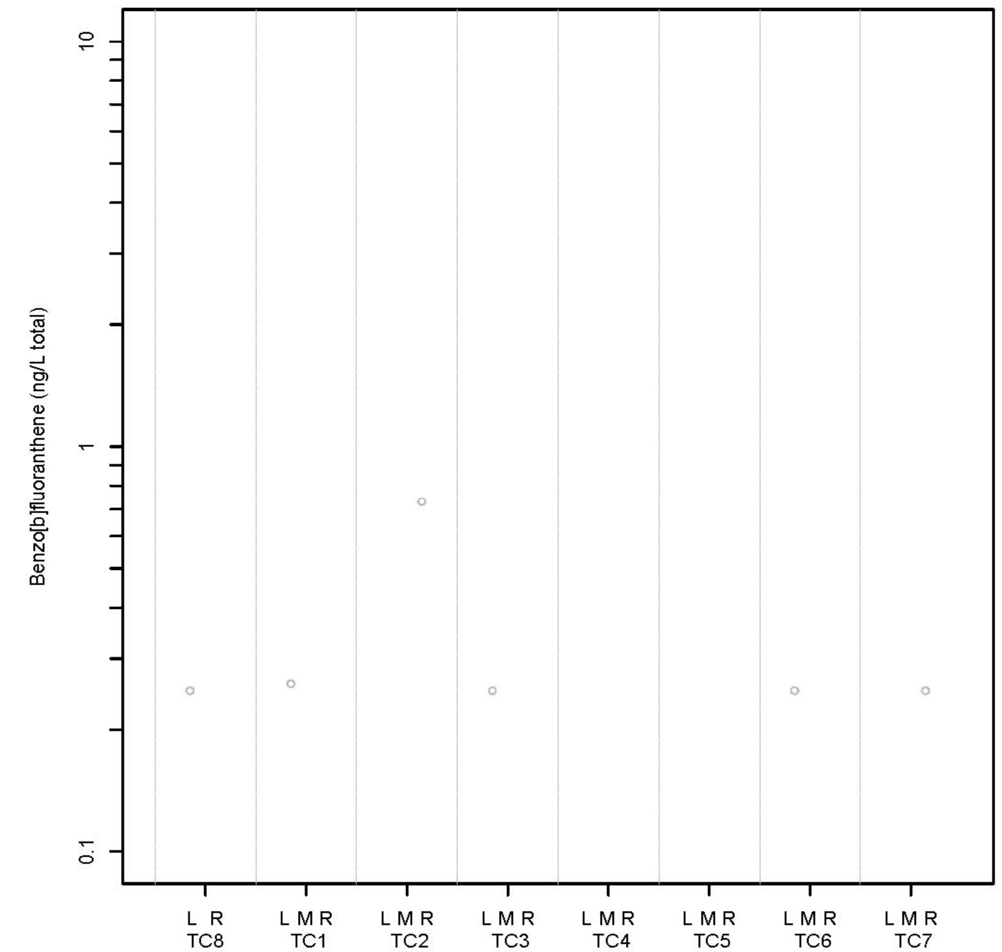
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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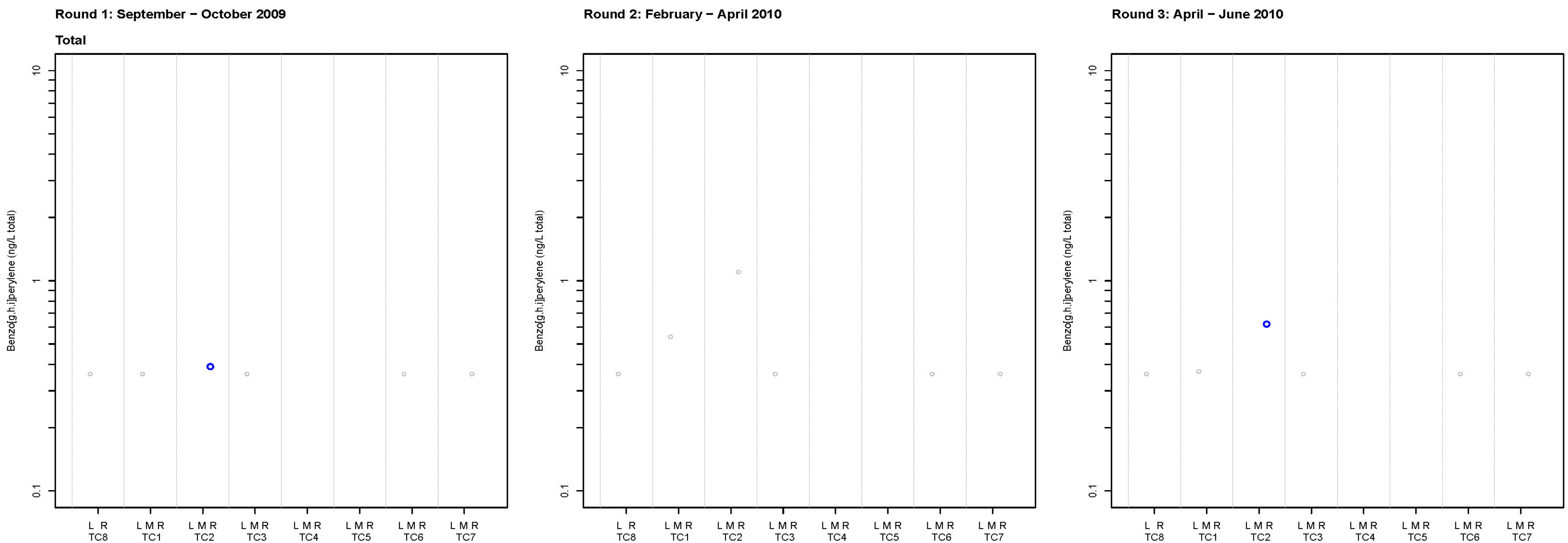
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Benzo[g,h,i]perylene



LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

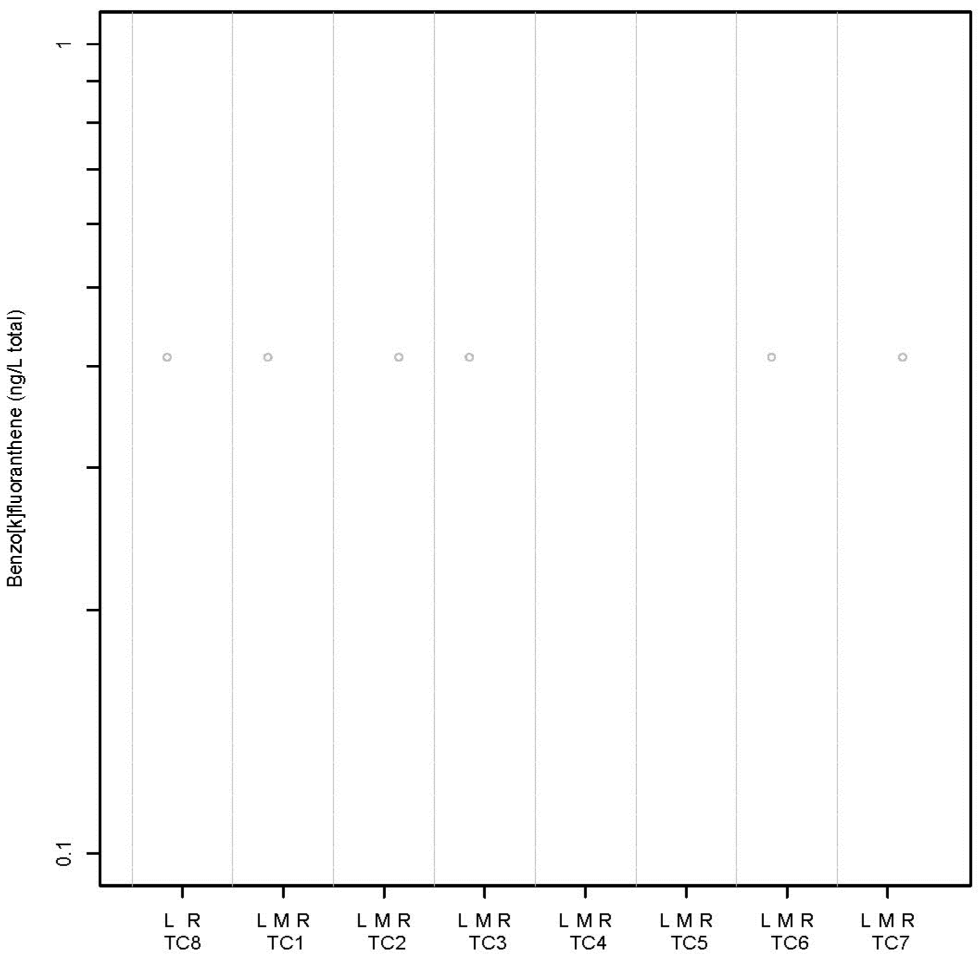
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

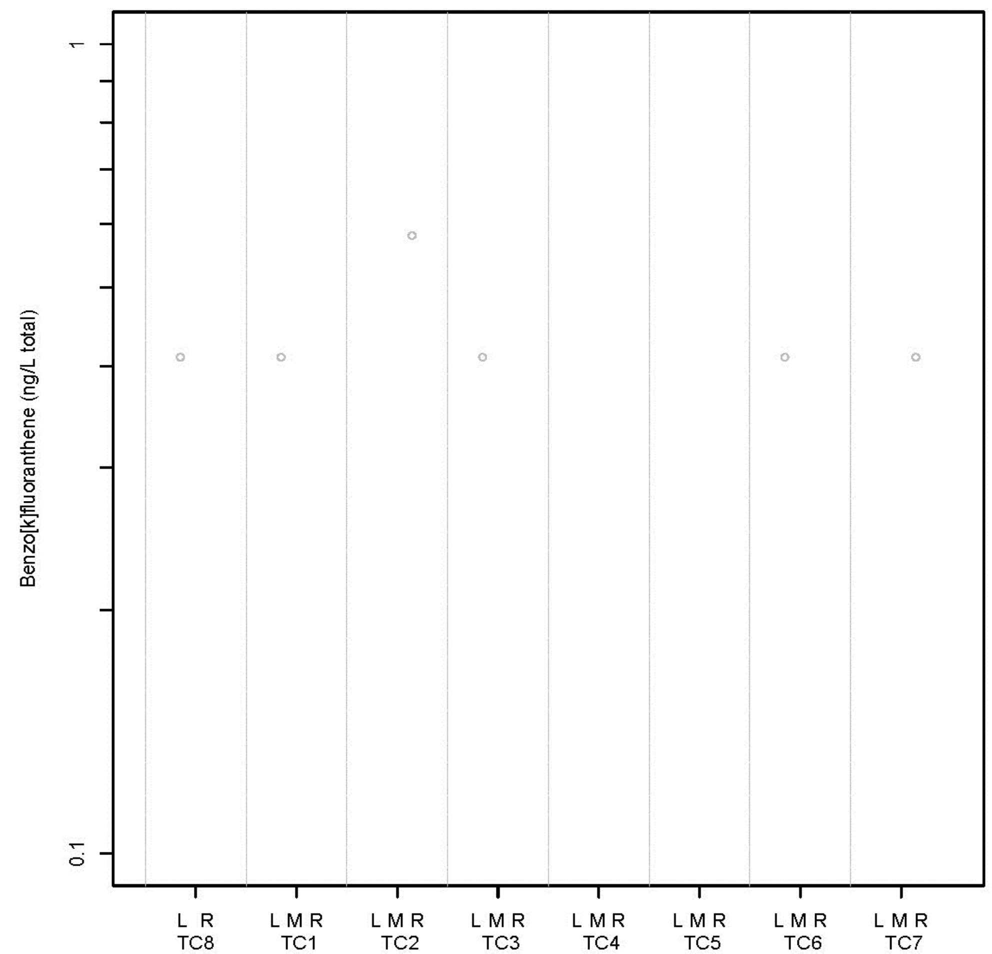
Disturbed Surface Water − Benzo[k]fluoranthene

Round 1: September − October 2009

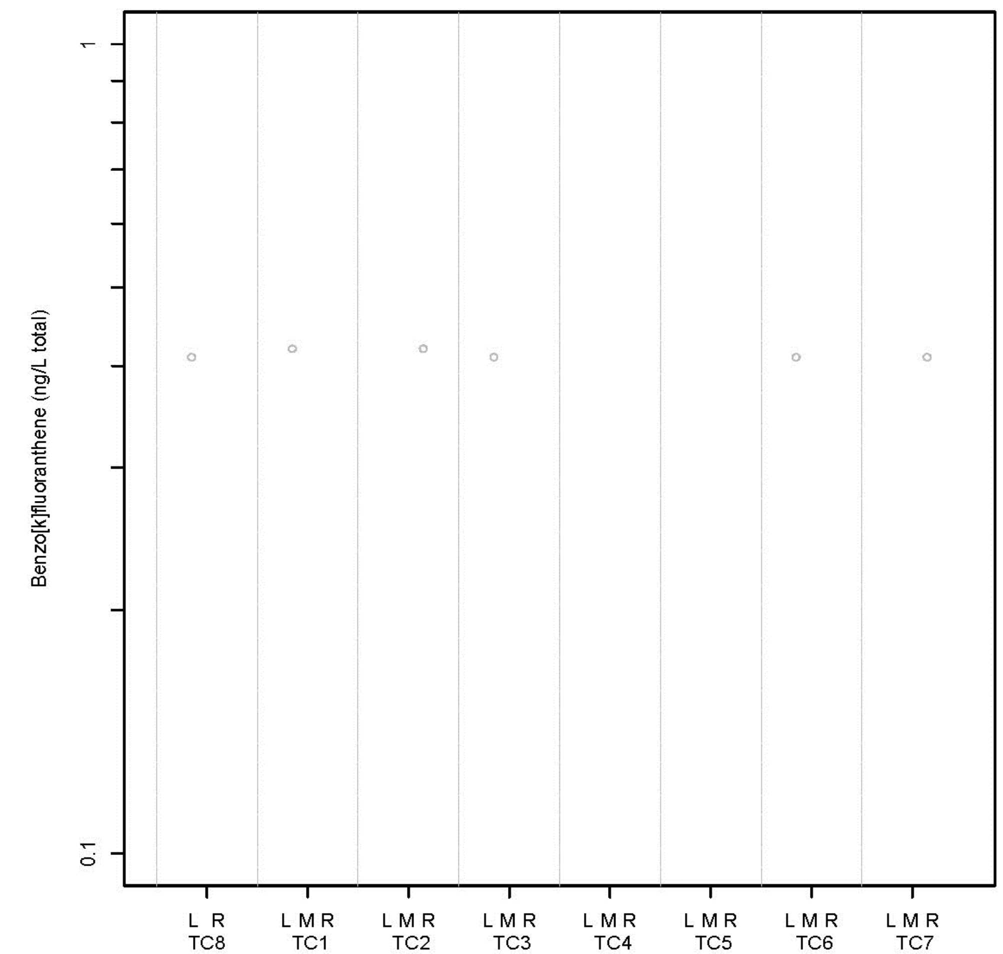
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

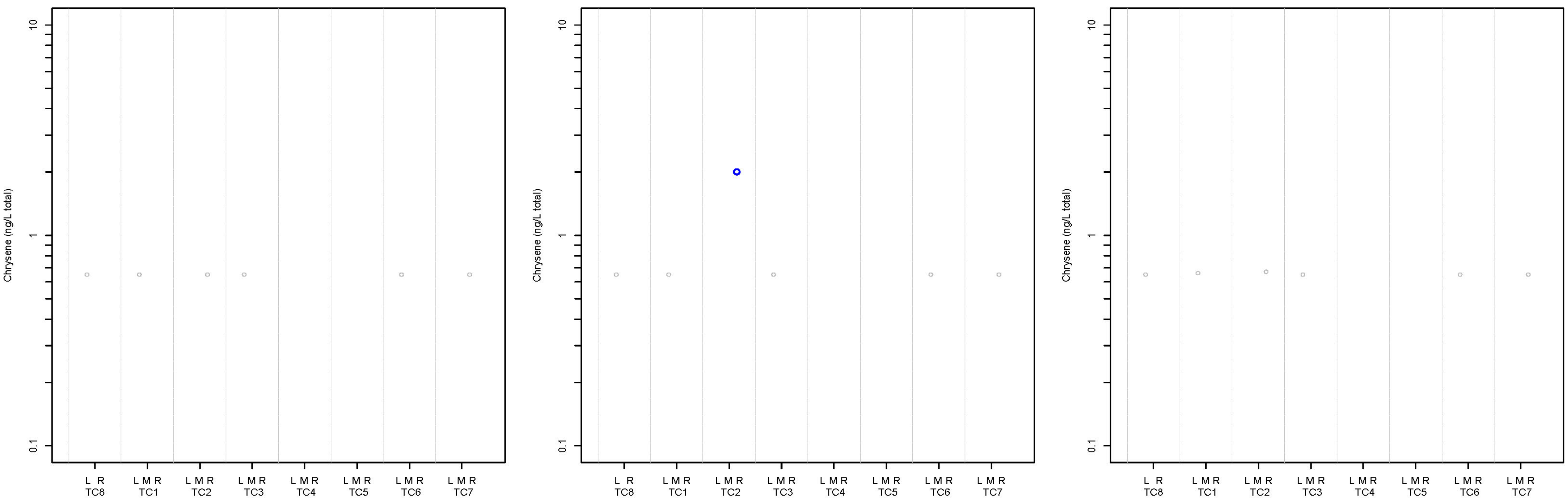
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Chrysene

Round 1: September − October 2009 | Round 2: February − April 2010 | Round 3: April − June 2010

Total



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

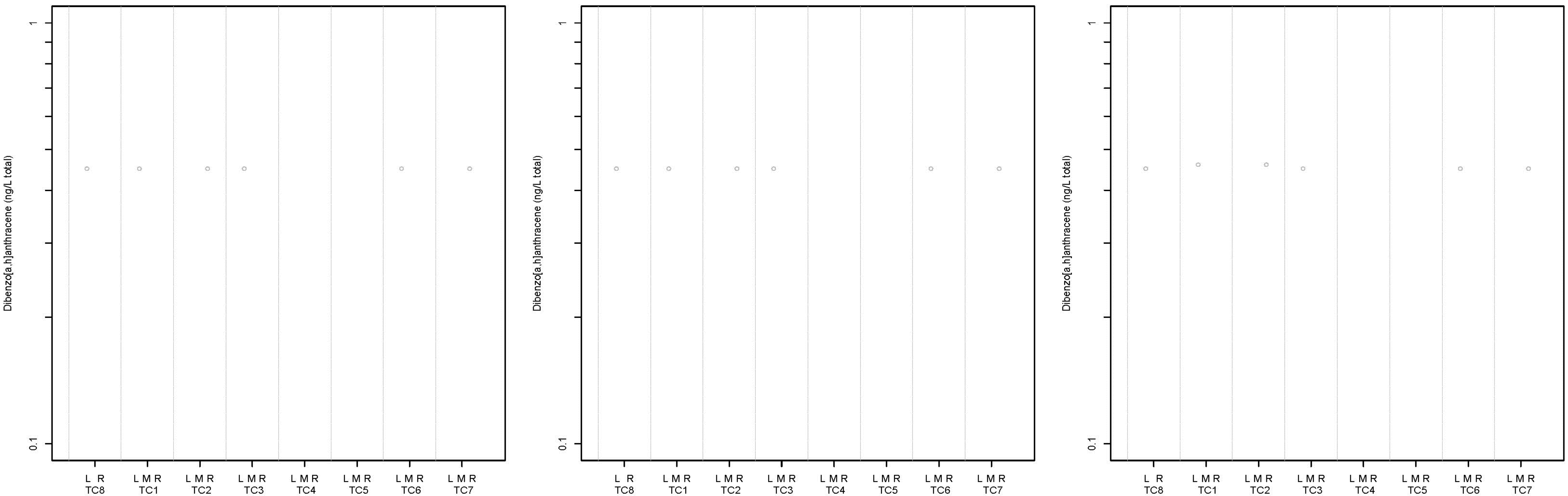
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Dibenzo[a,h]anthracene

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

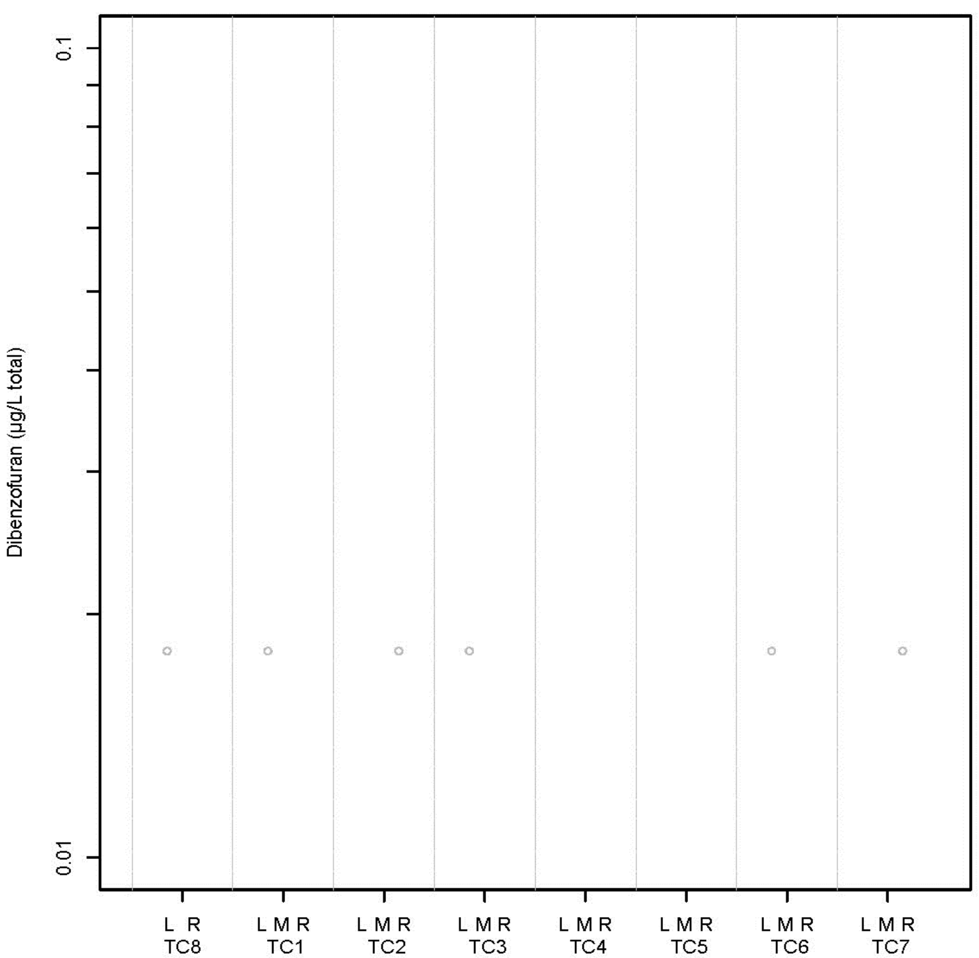
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

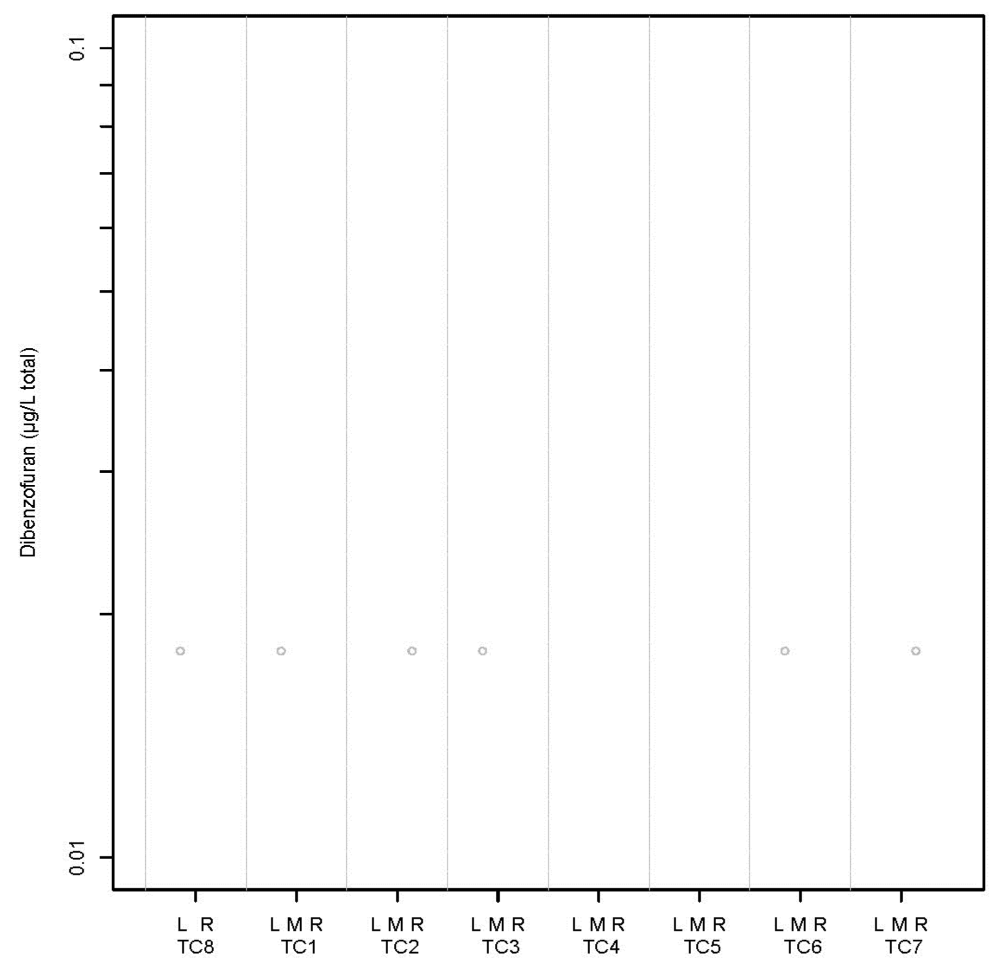
Disturbed Surface Water − Dibenzofuran

Round 1: September − October 2009

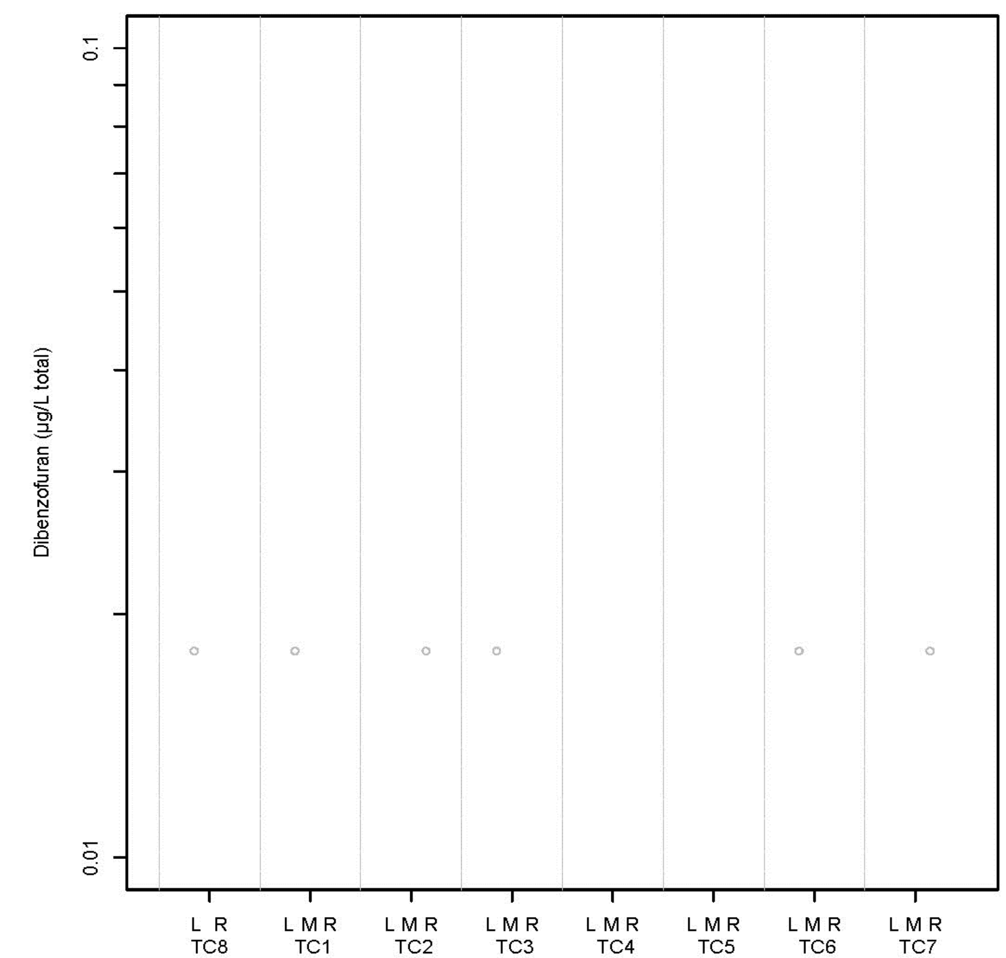
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

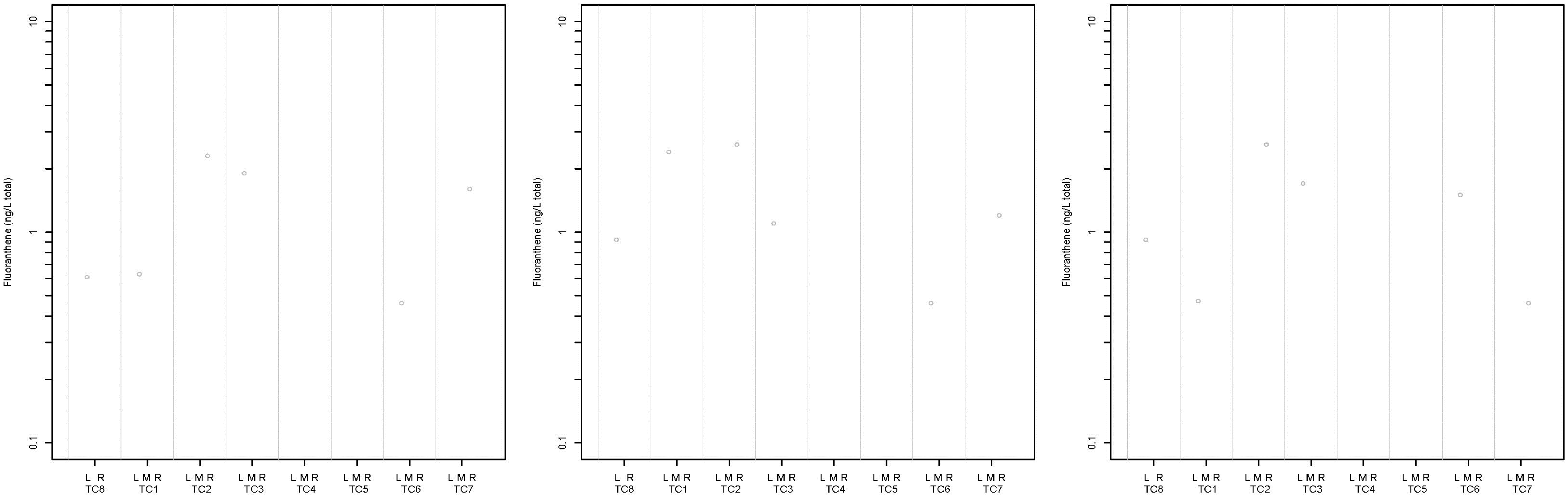
Disturbed Surface Water − Fluoranthene

Round 1: September − October 2009

Round 2: February − April 2010

Round 3: April − June 2010

Total



LEGEND

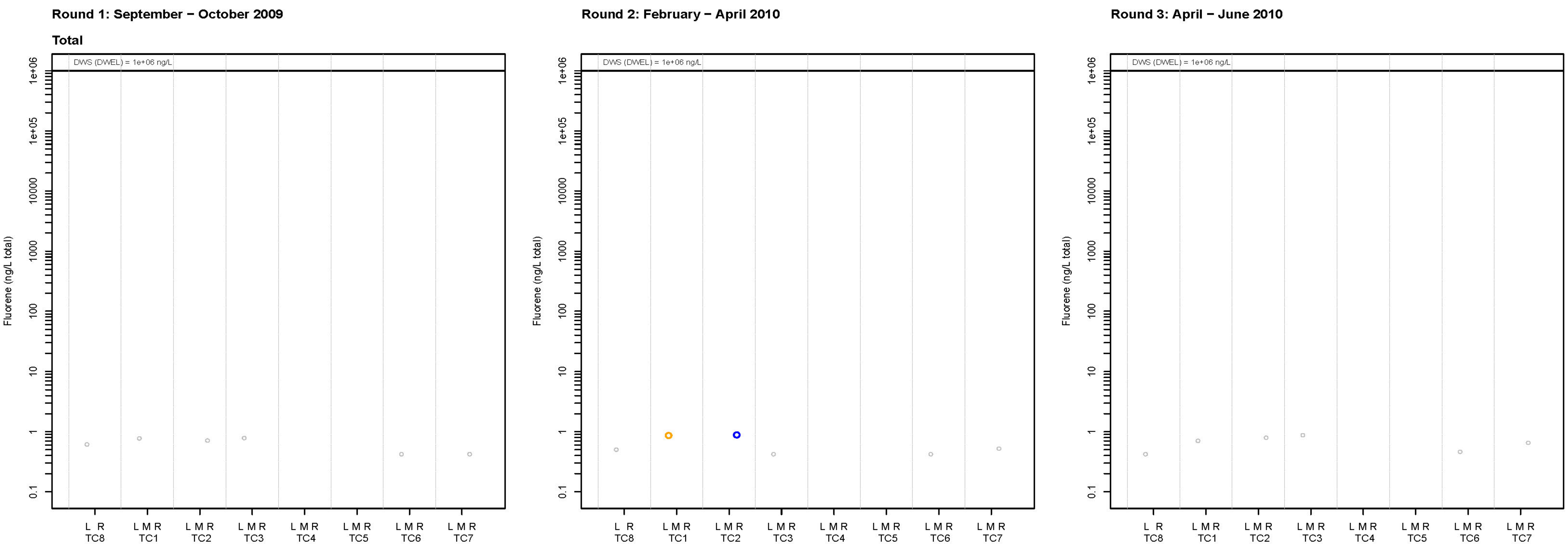
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – Fluorene



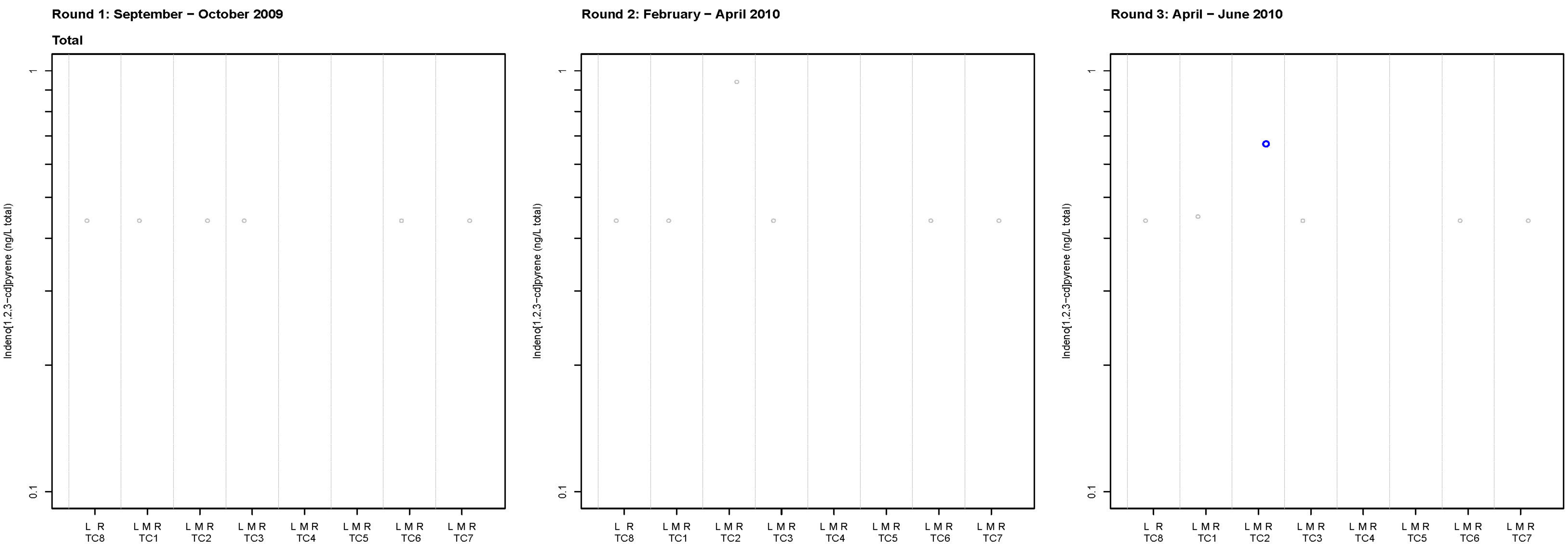
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Indeno[1,2,3−cd]pyrene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

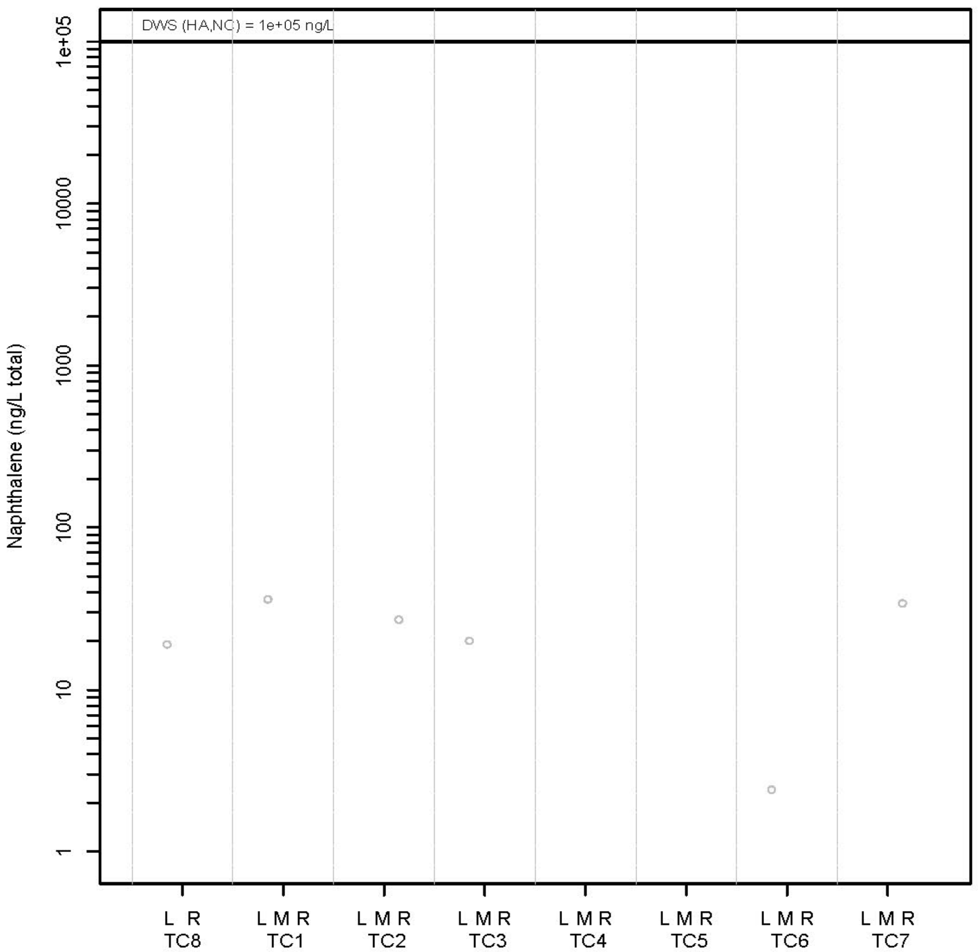
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

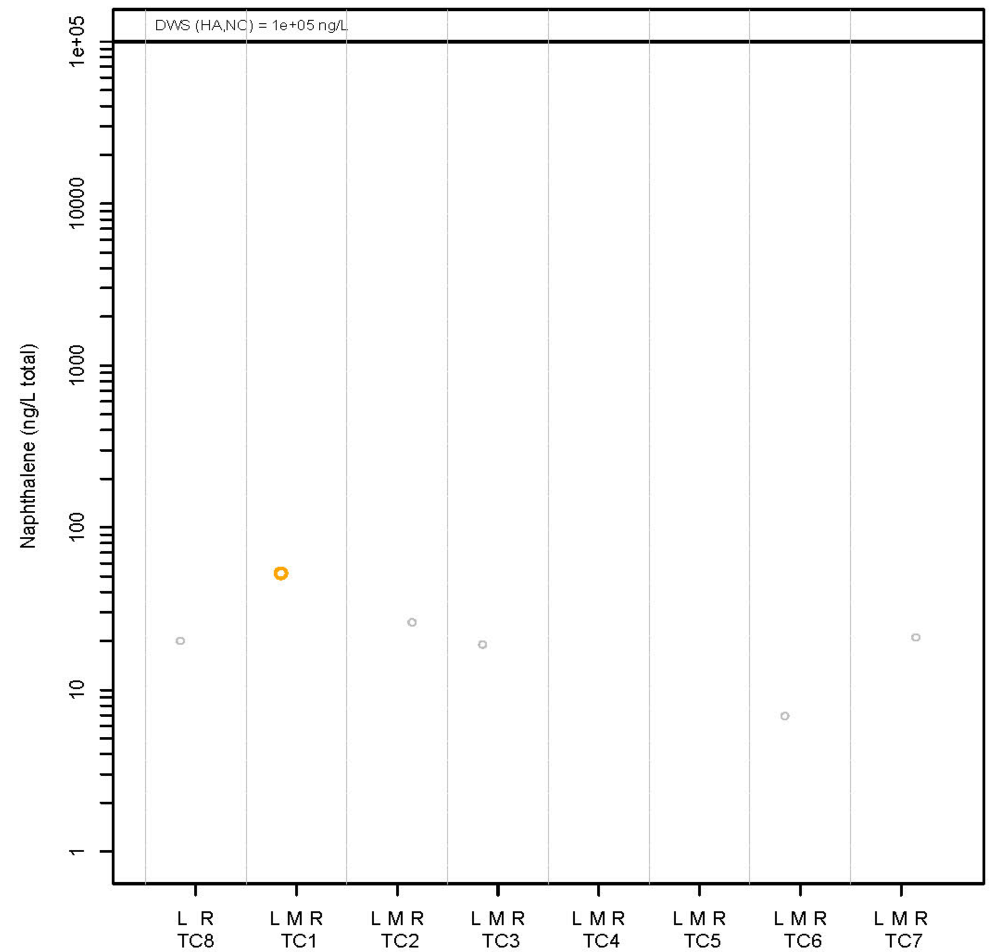
Disturbed Surface Water − Naphthalene

Round 1: September − October 2009

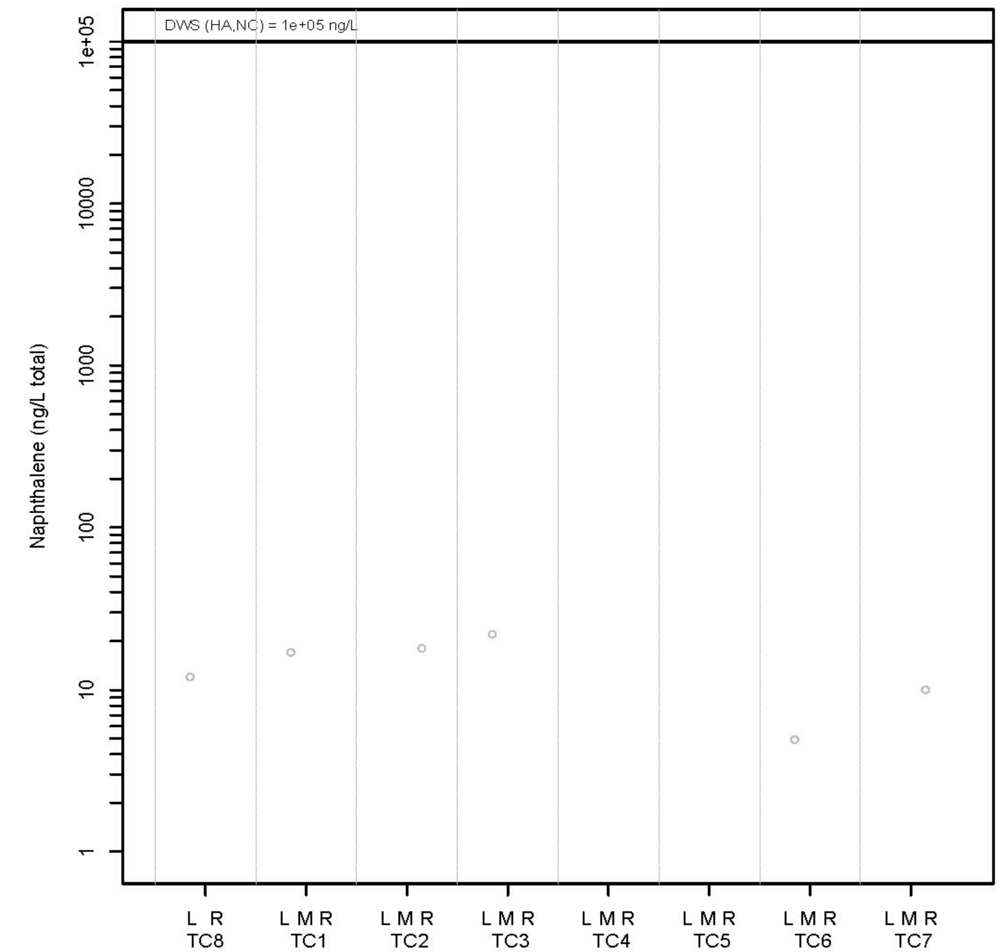
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

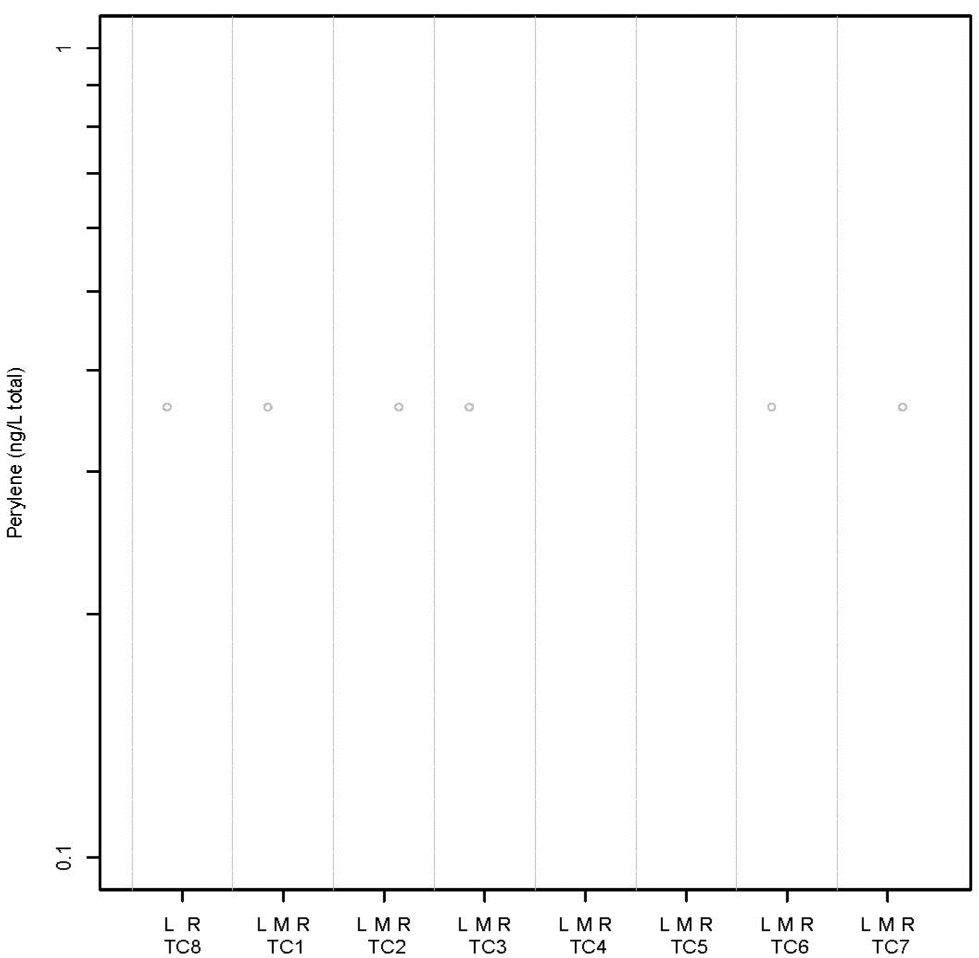
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

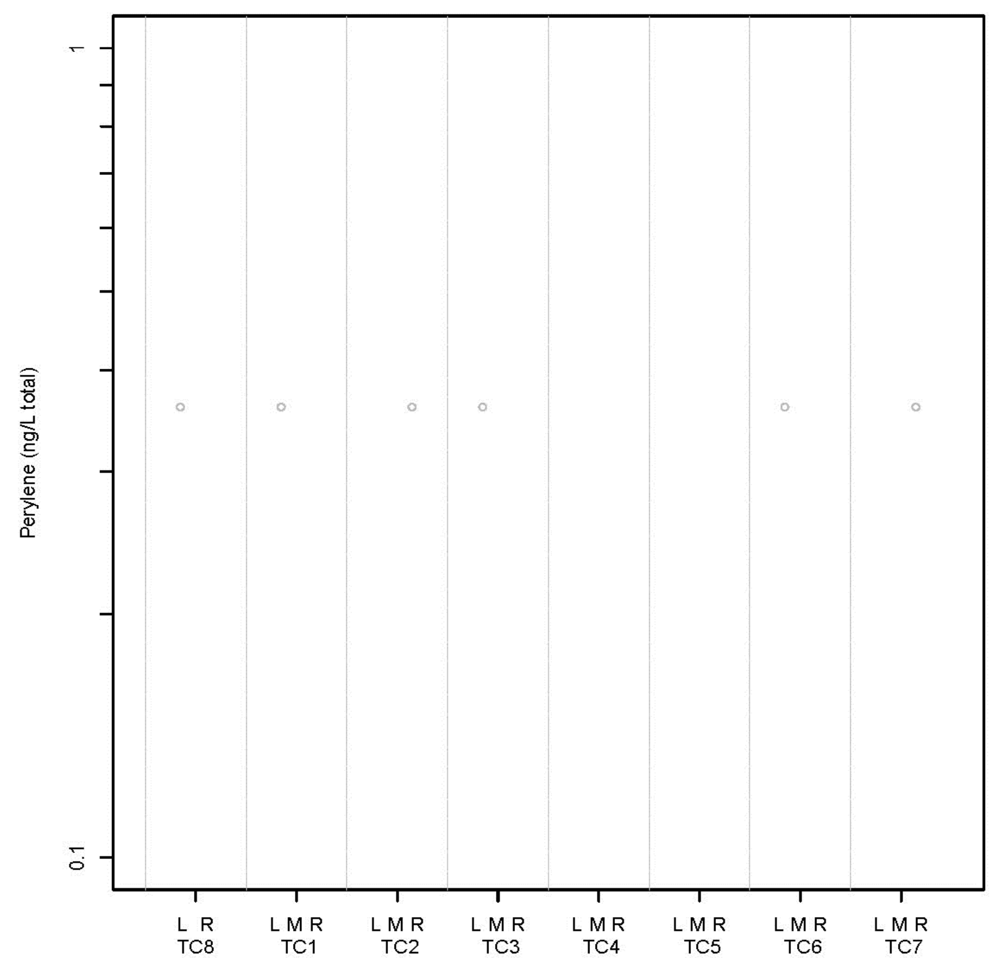
L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

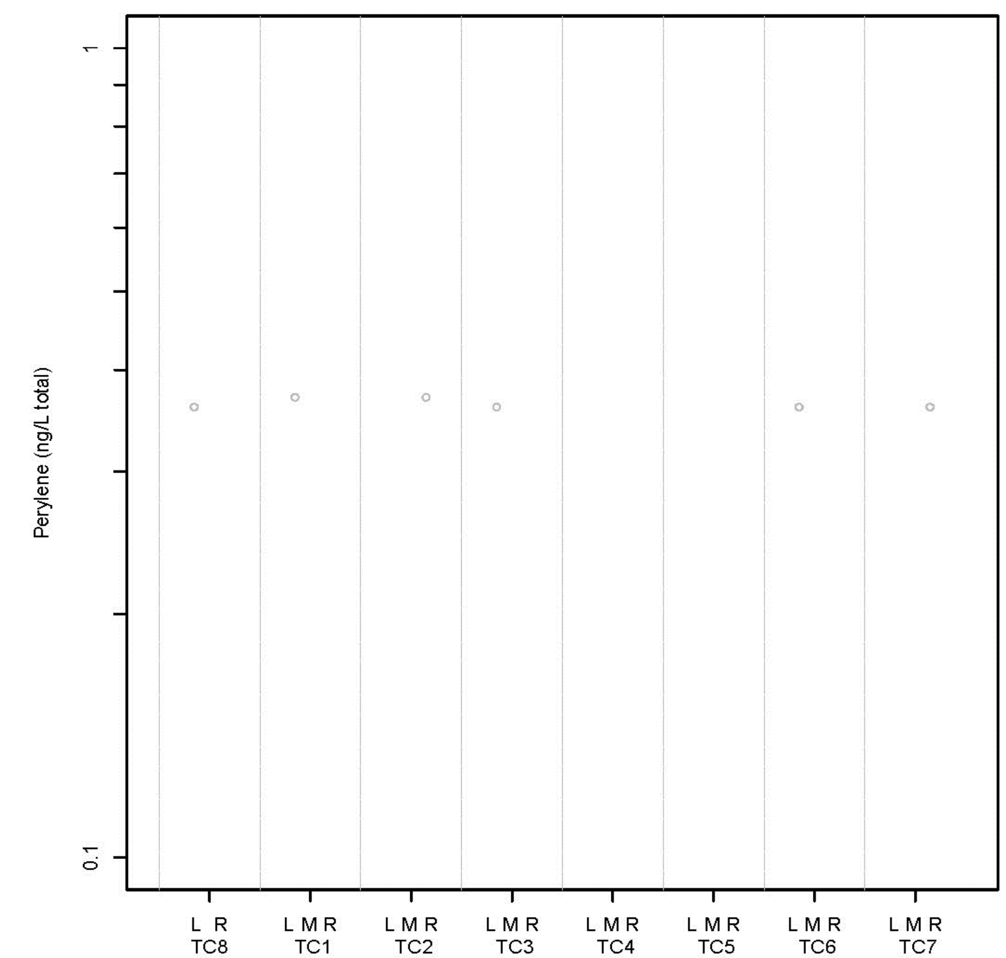
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Perylene







LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

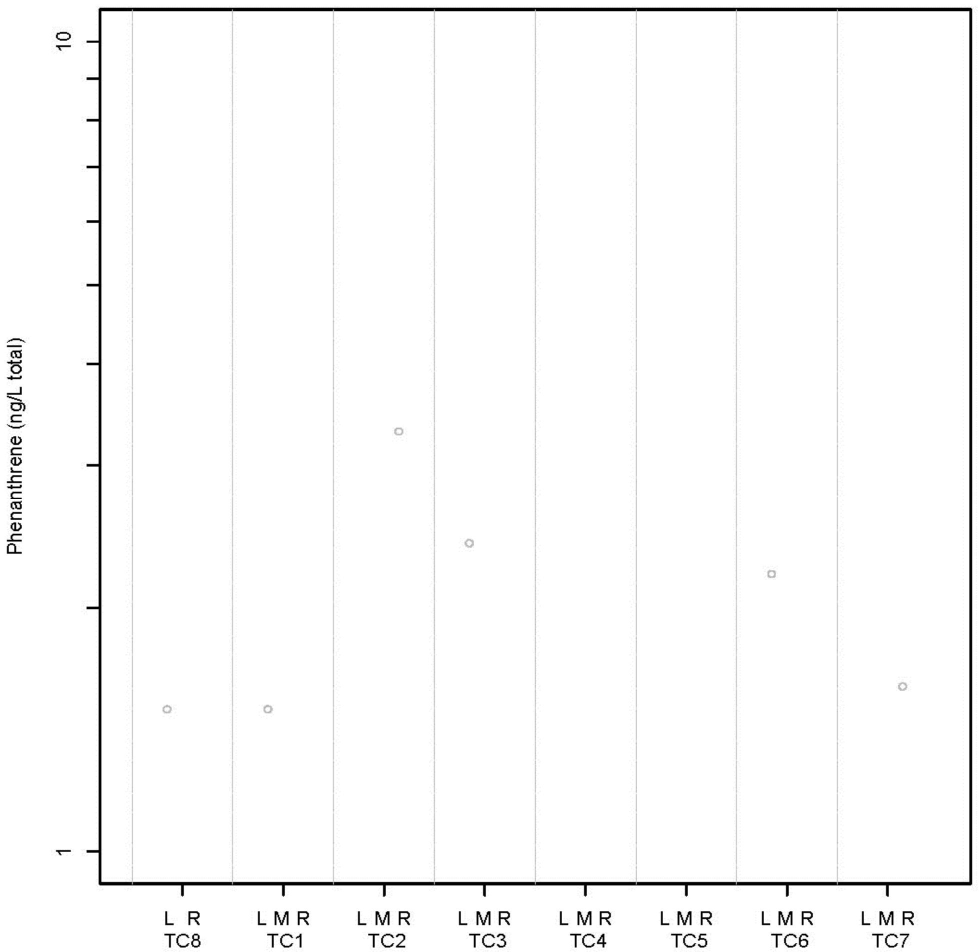
Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

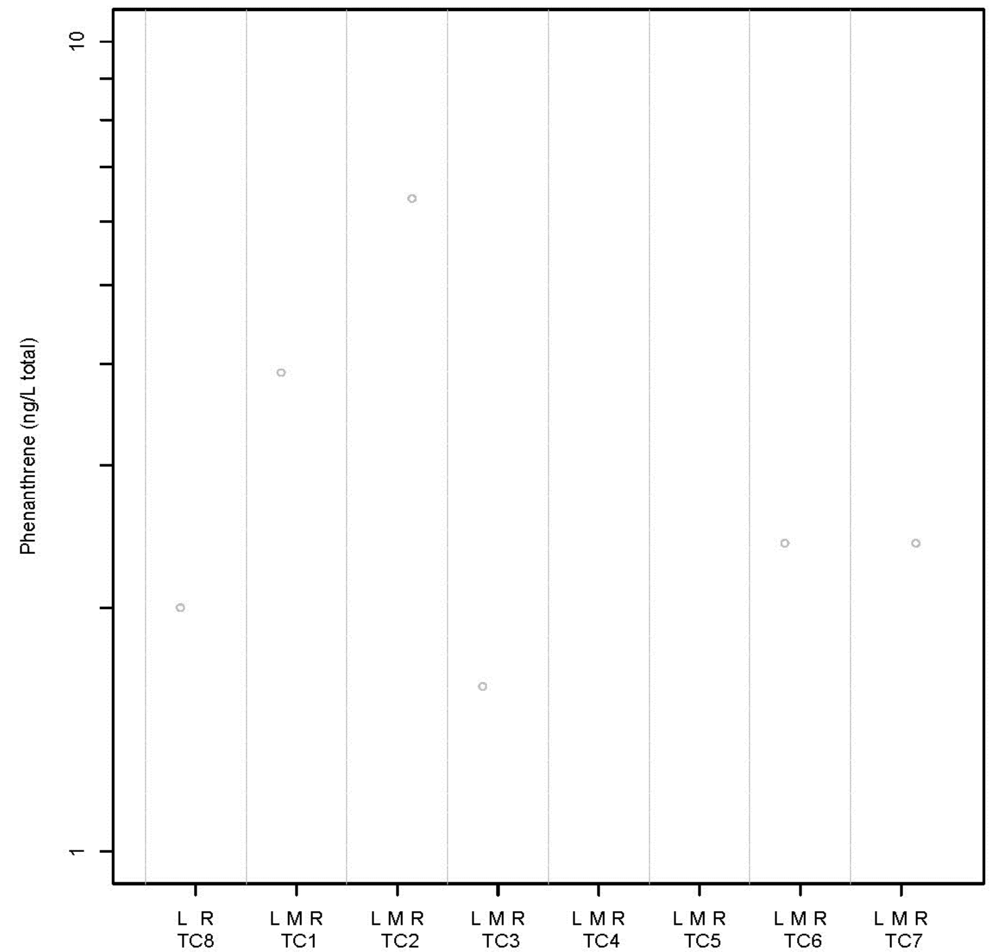
Disturbed Surface Water − Phenanthrene

Round 1: September − October 2009

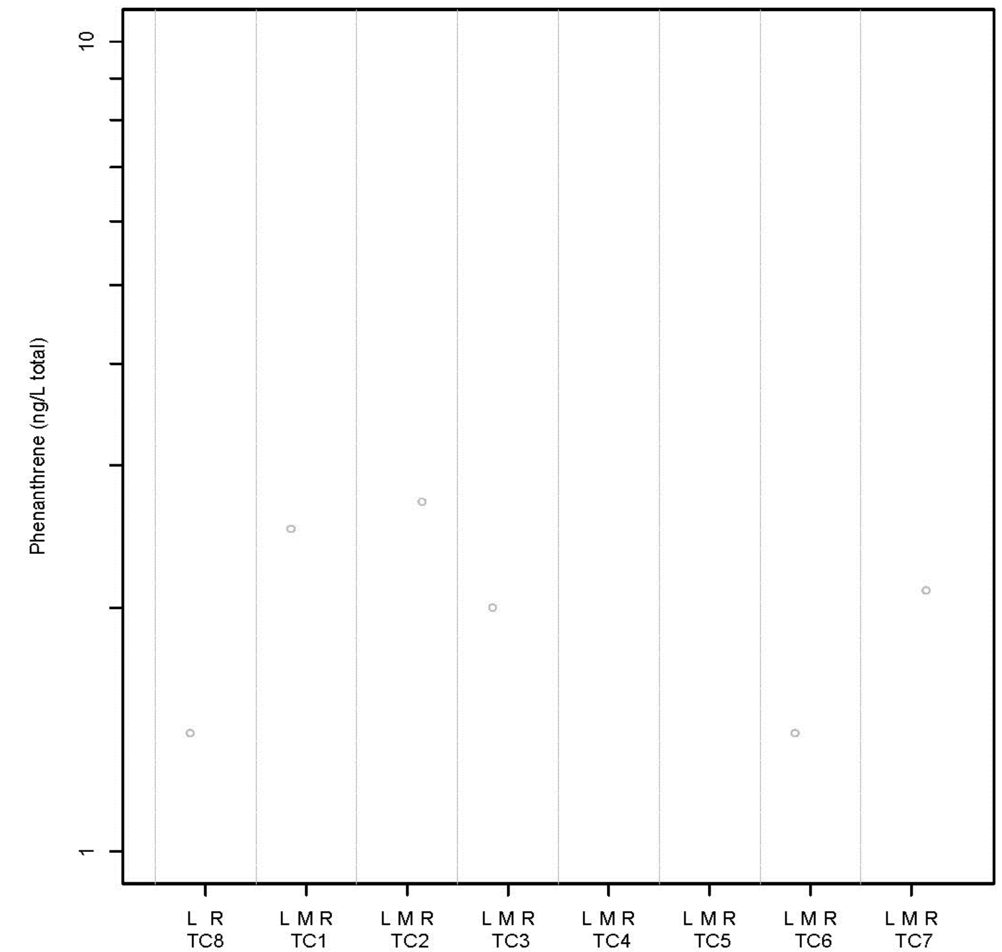
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

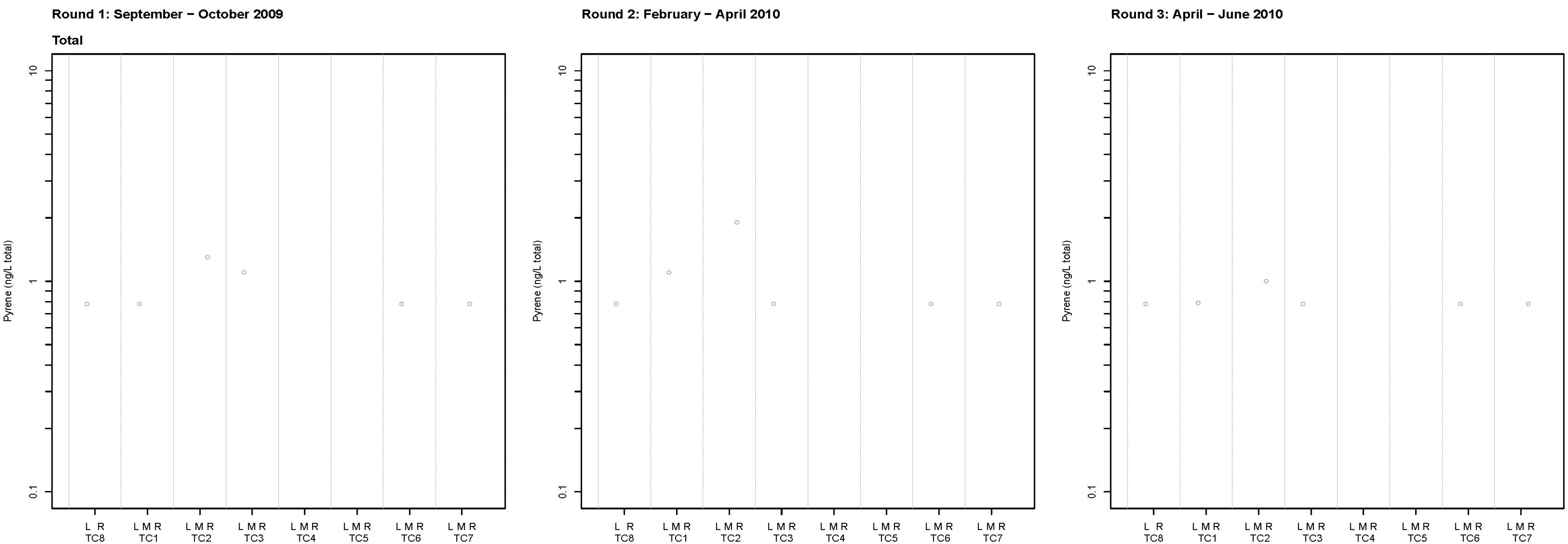
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Pyrene



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

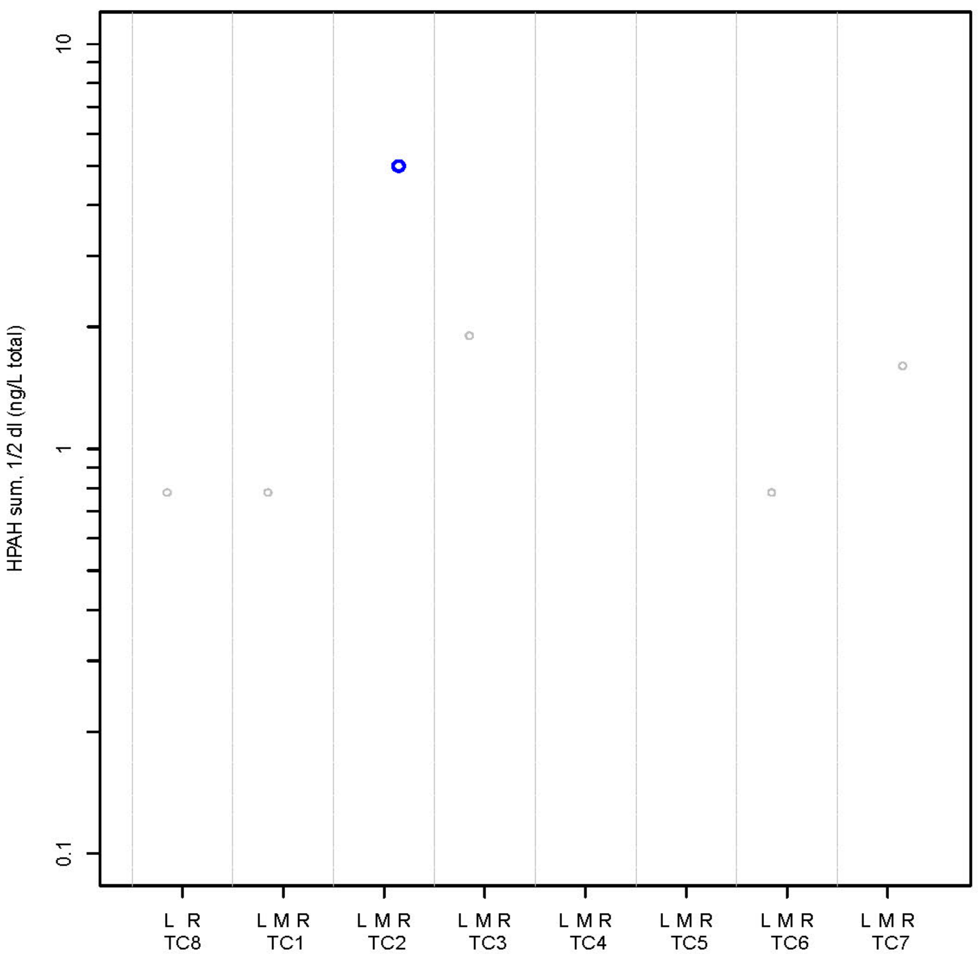
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

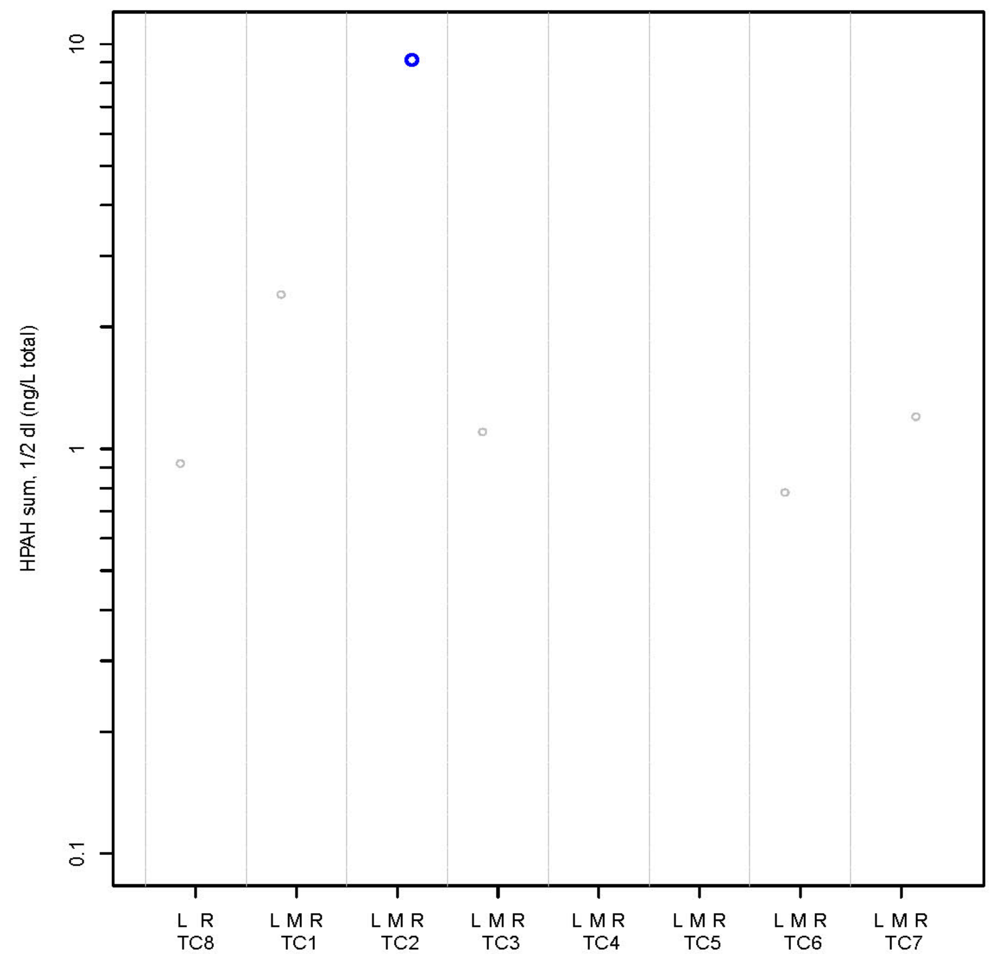
Disturbed Surface Water − Sum of HPAH

Round 1: September − October 2009

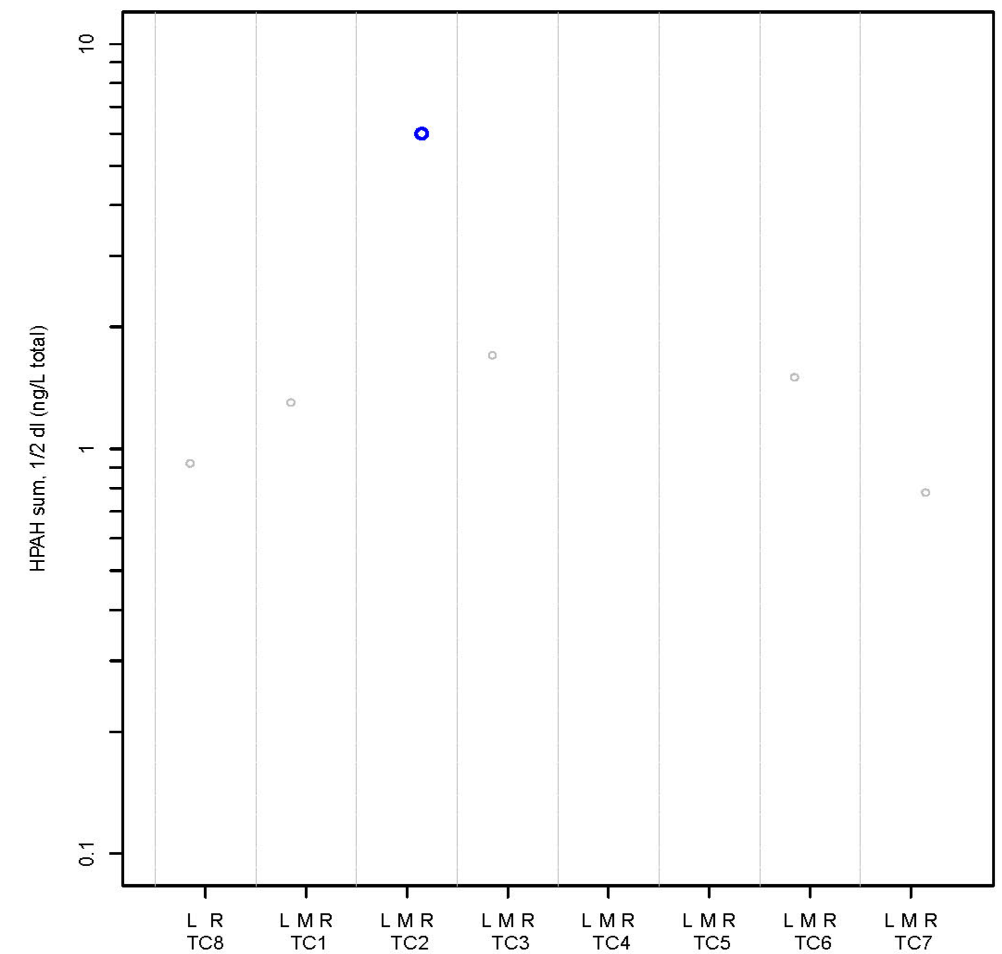
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

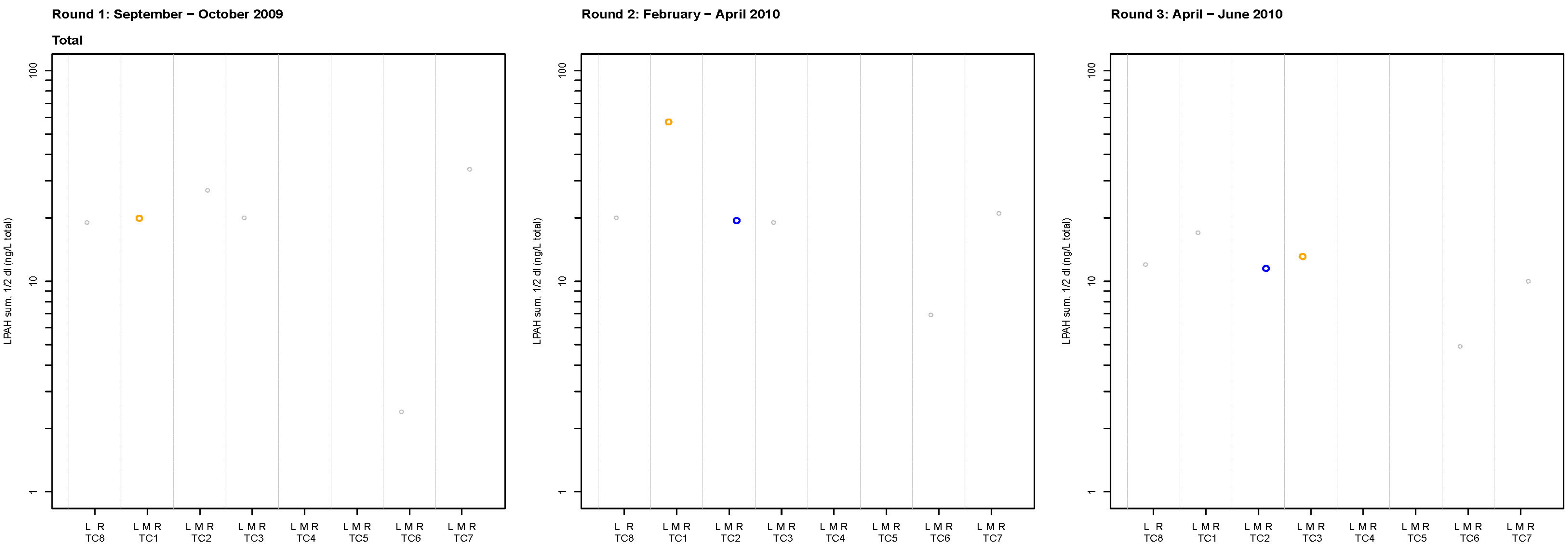
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Sum of LPAH



LEGEND

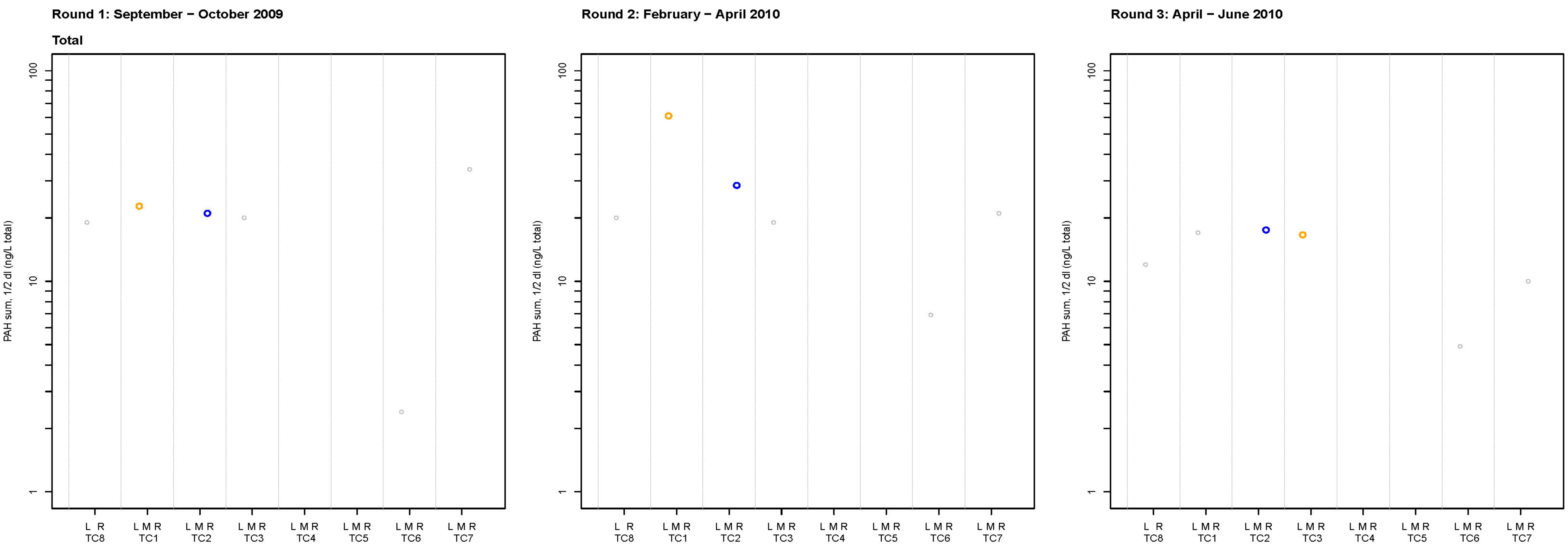
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Sum of PAH



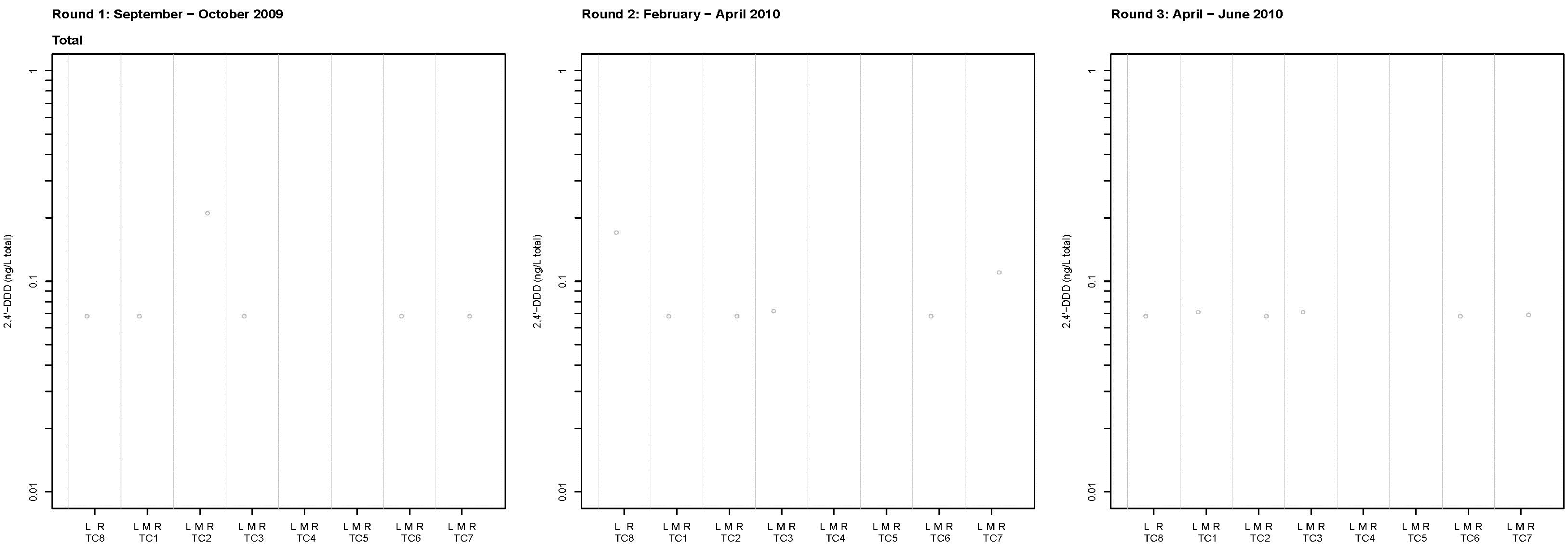
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,4'−DDD



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

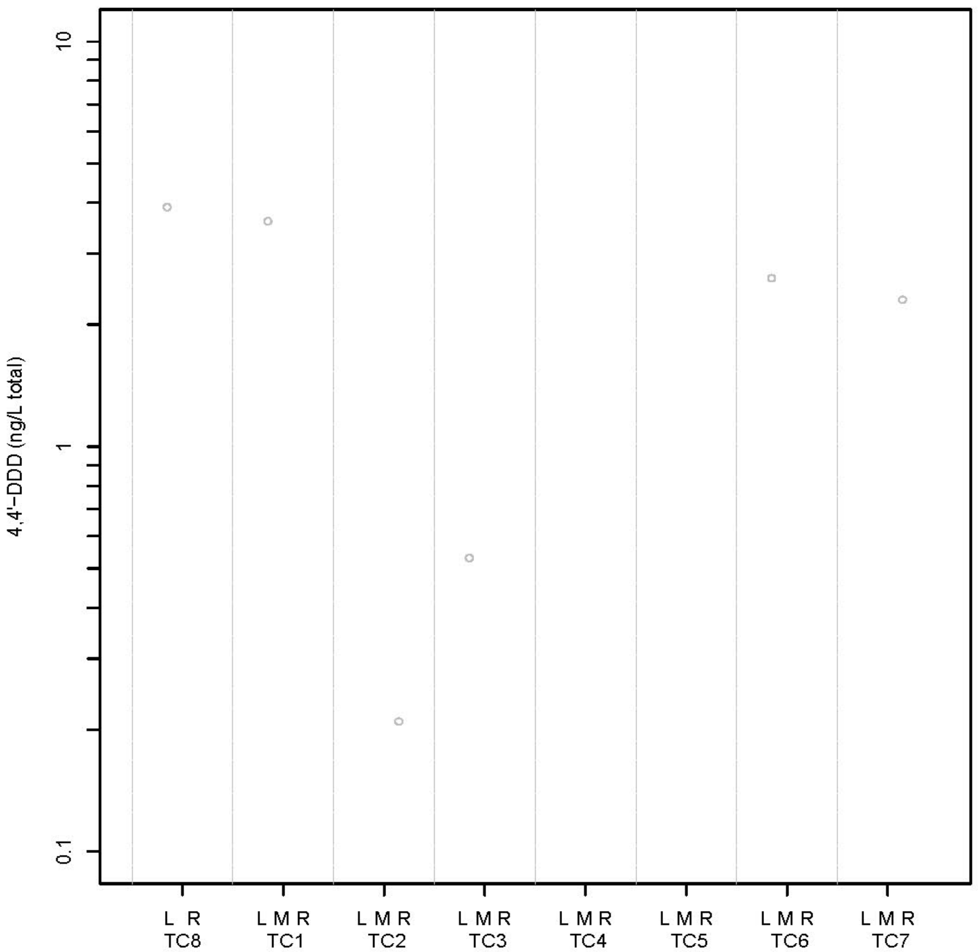
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

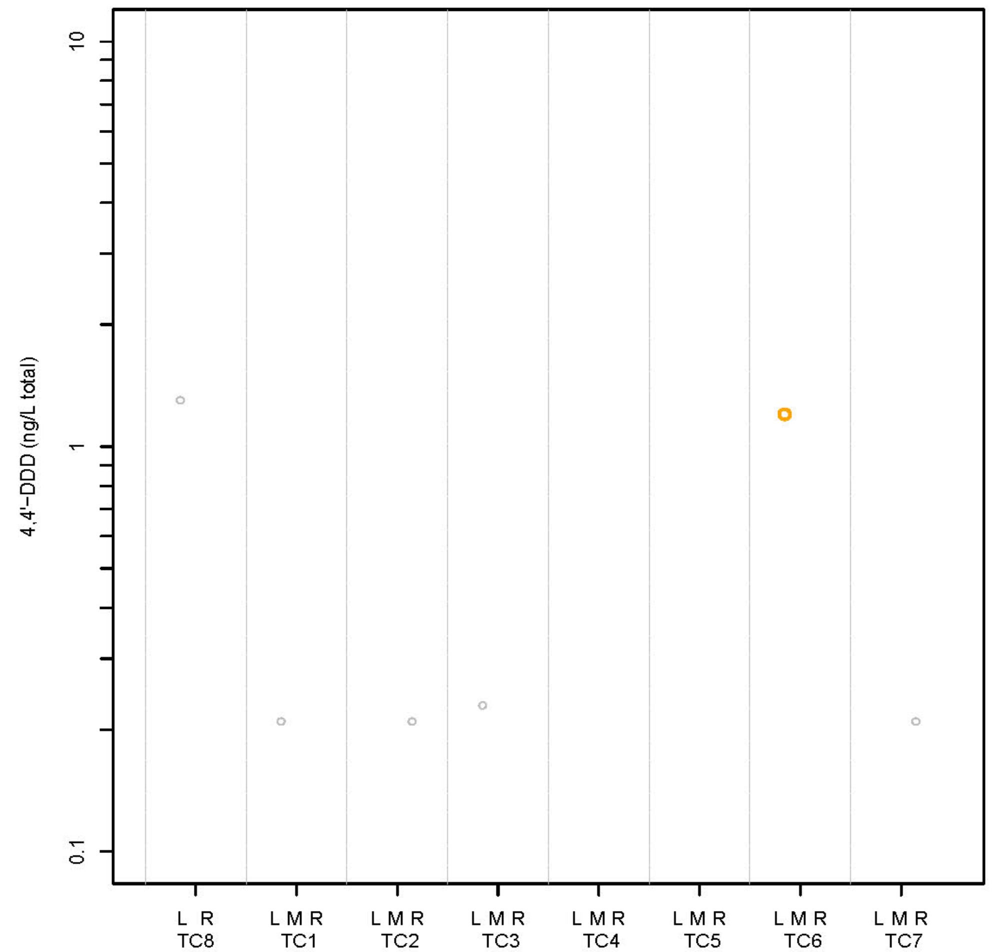
Disturbed Surface Water – 4,4'–DDD

Round 1: September – October 2009

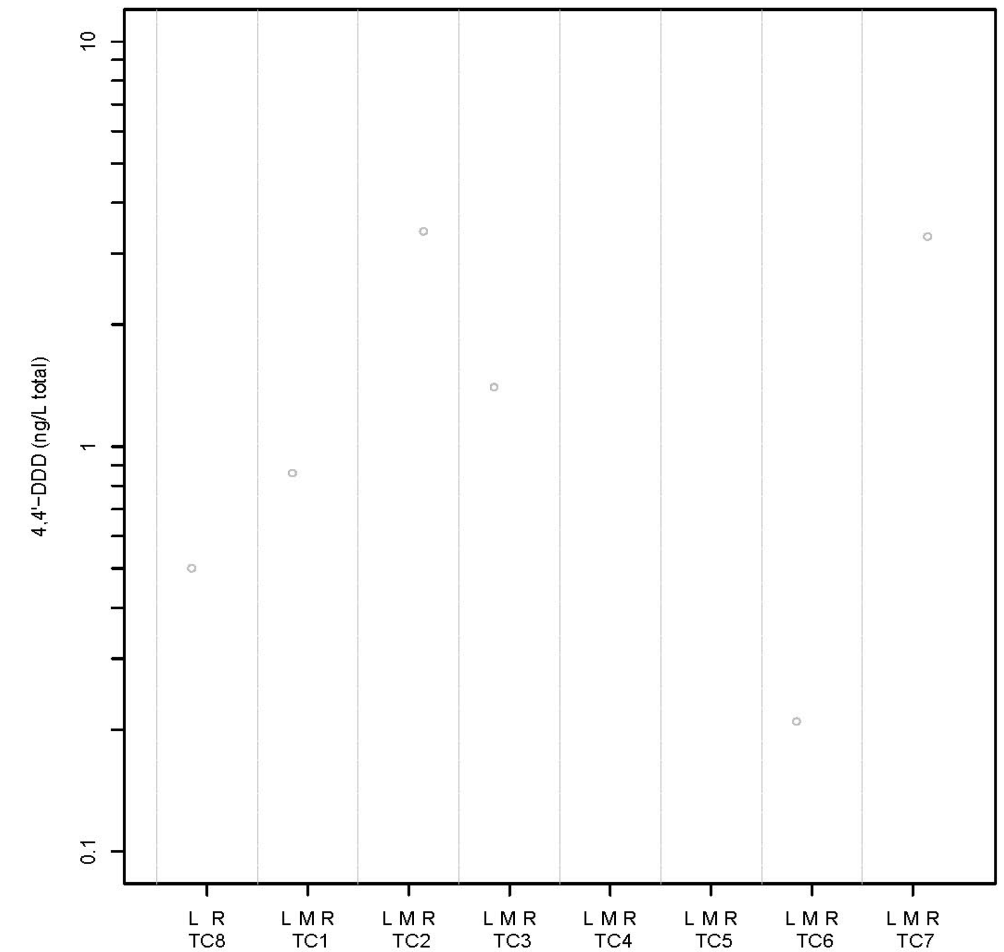
Total



Round 2: February – April 2010



Round 3: April – June 2010



LEGEND

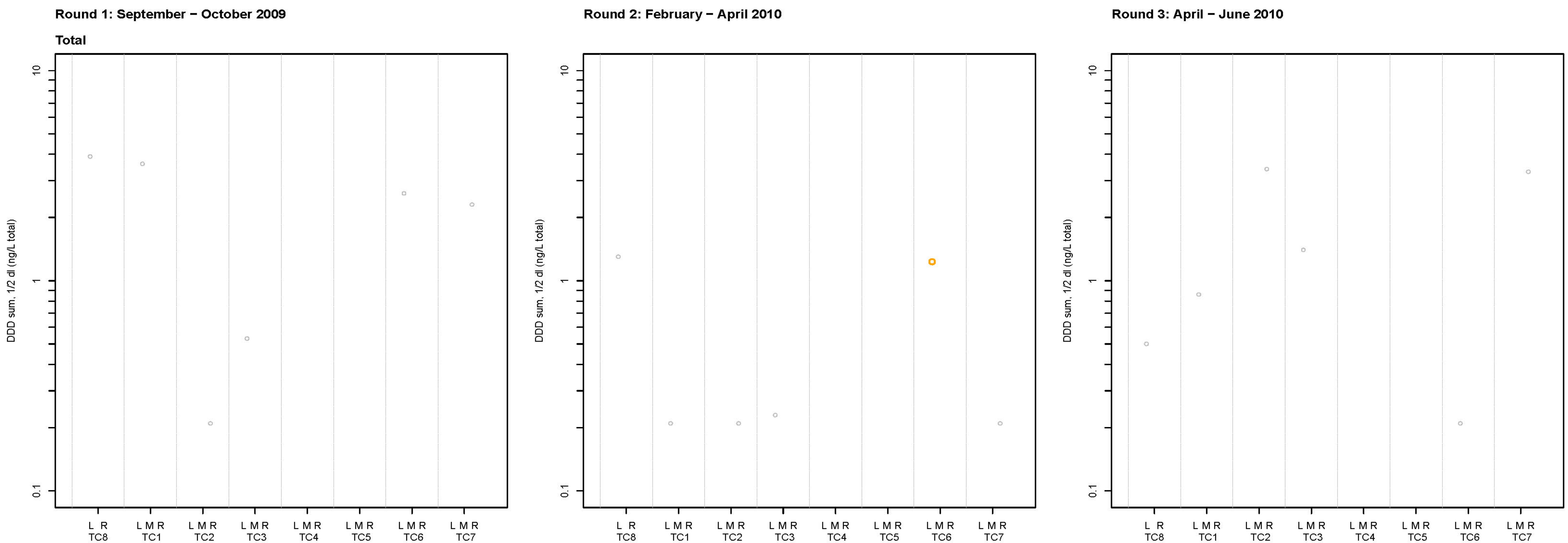
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Sum of DDD



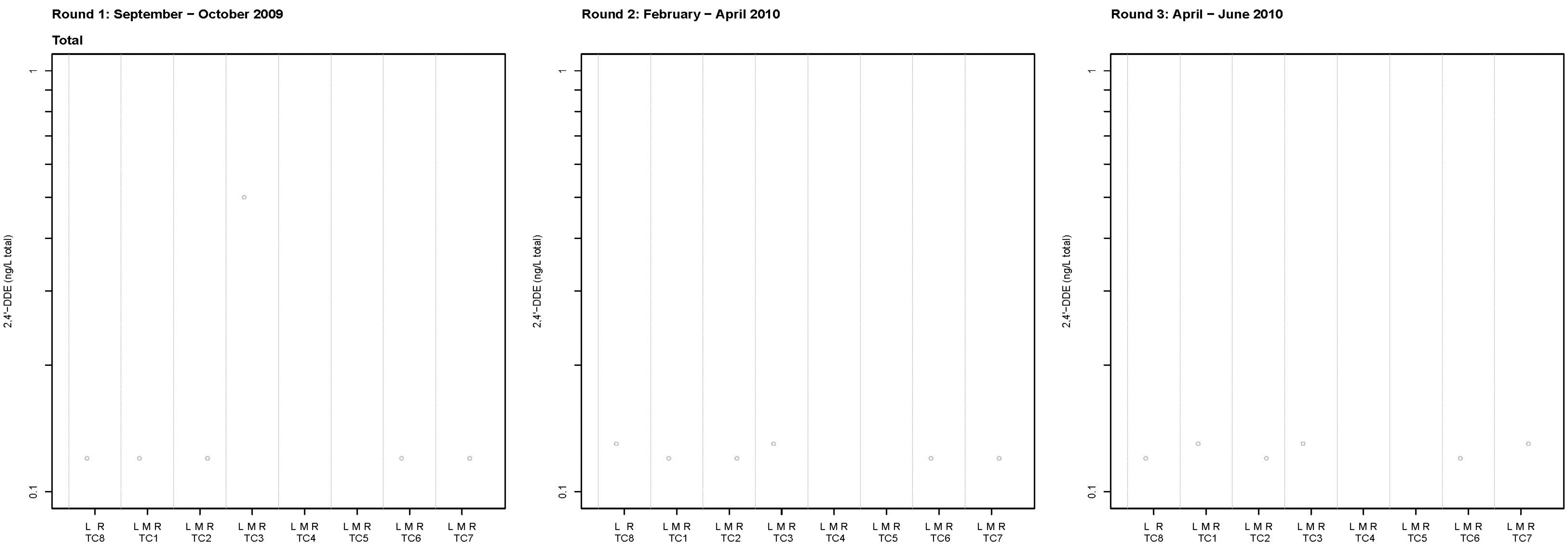
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – 2,4'–DDE



LEGEND

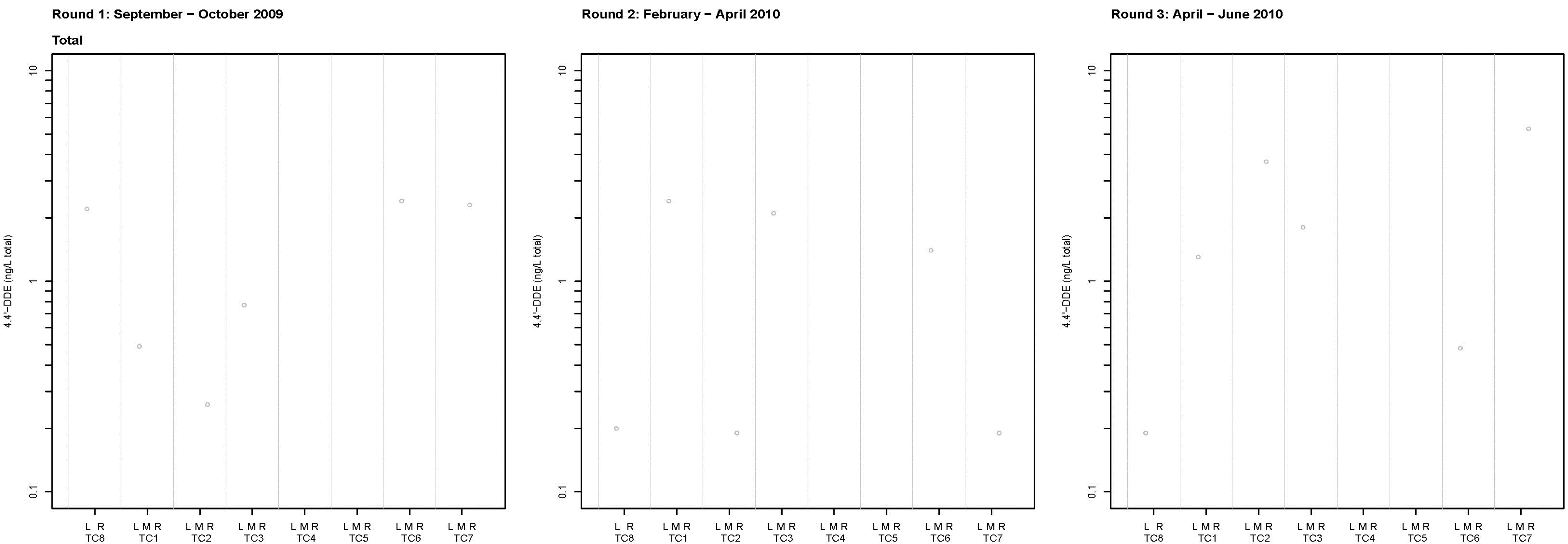
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 4,4'−DDE



LEGEND

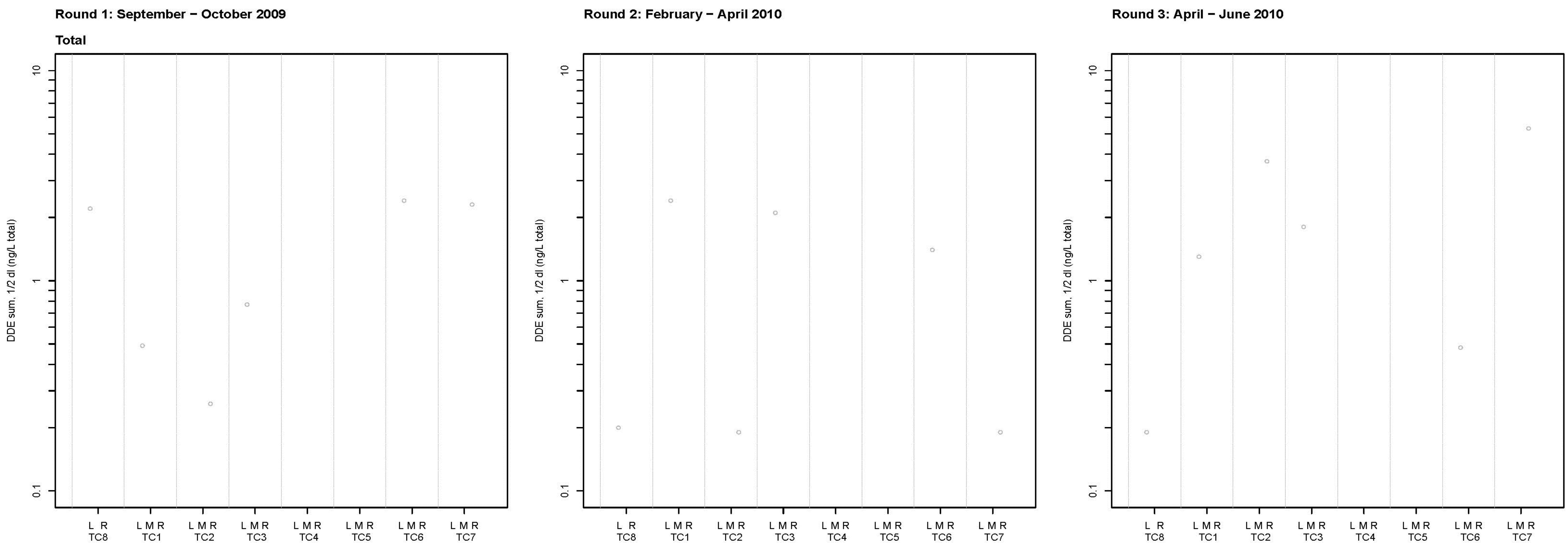
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Sum of DDE



LEGEND

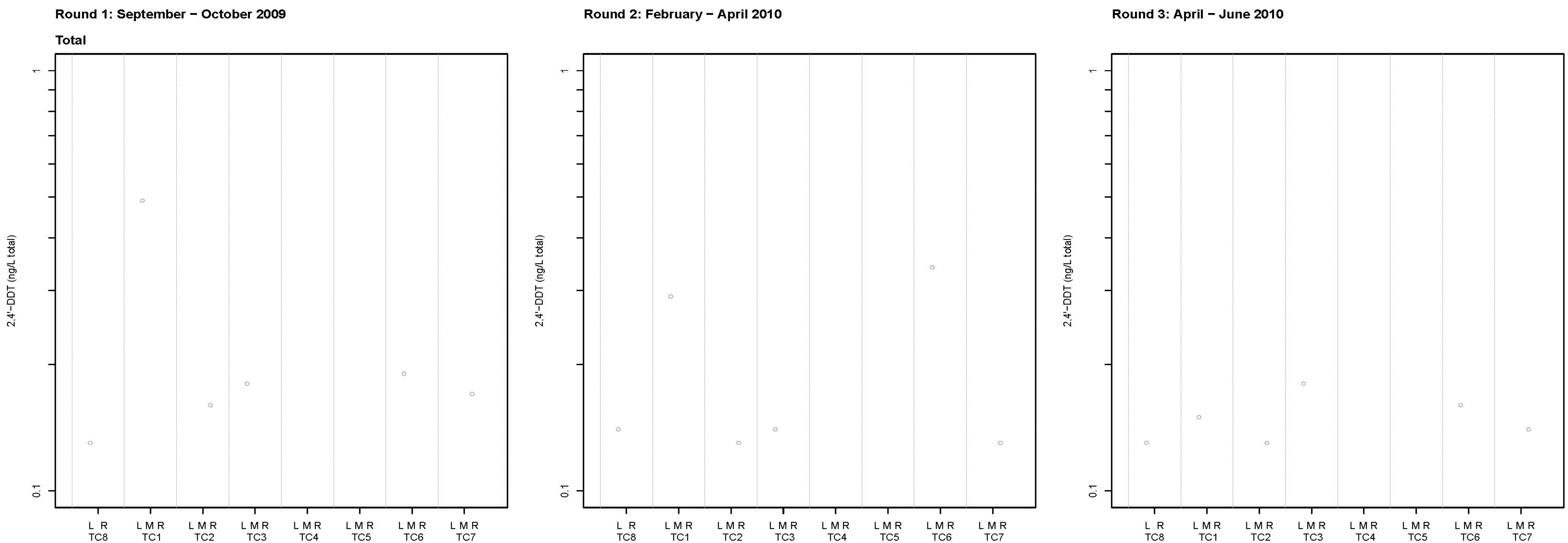
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,4'−DDT



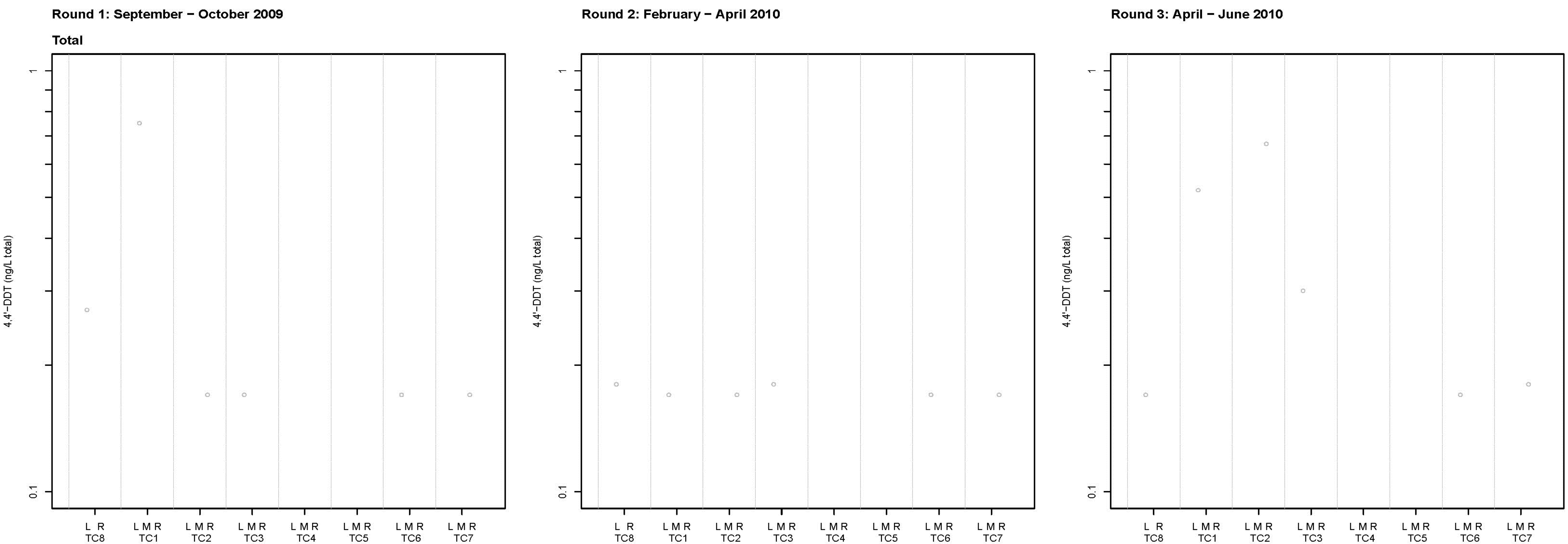
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 4,4'−DDT



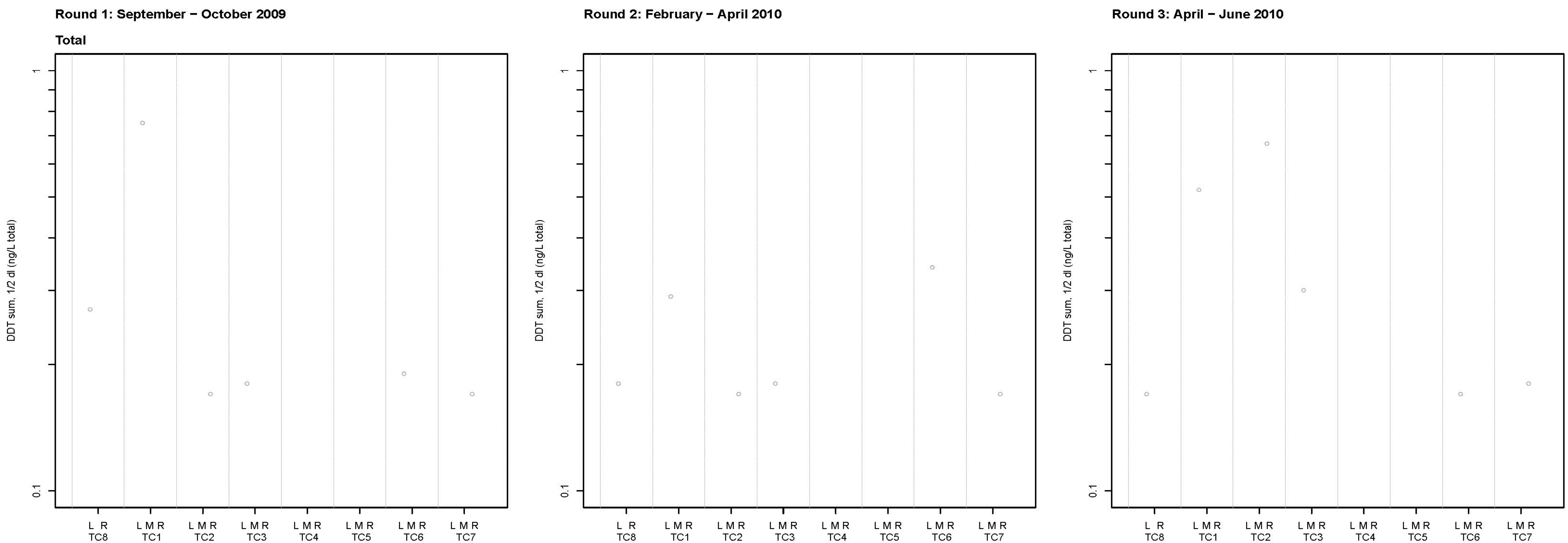
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Sum of DDT



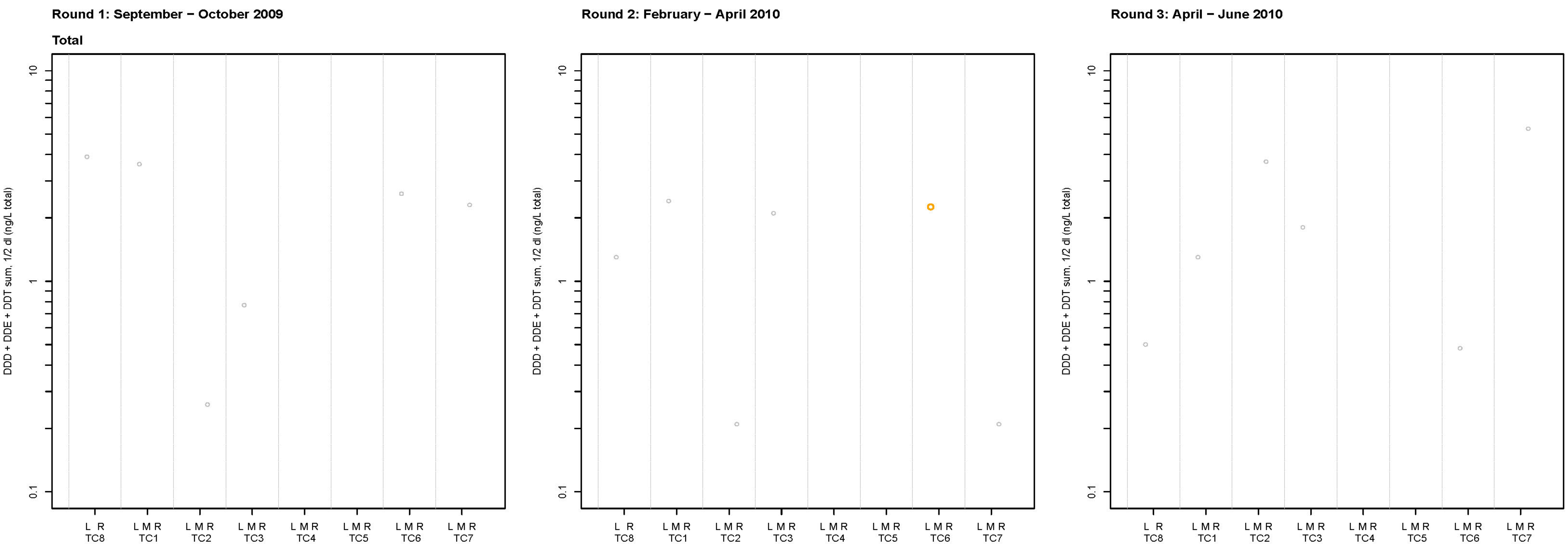
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Sum of DDD, DDE, and DDT



LEGEND

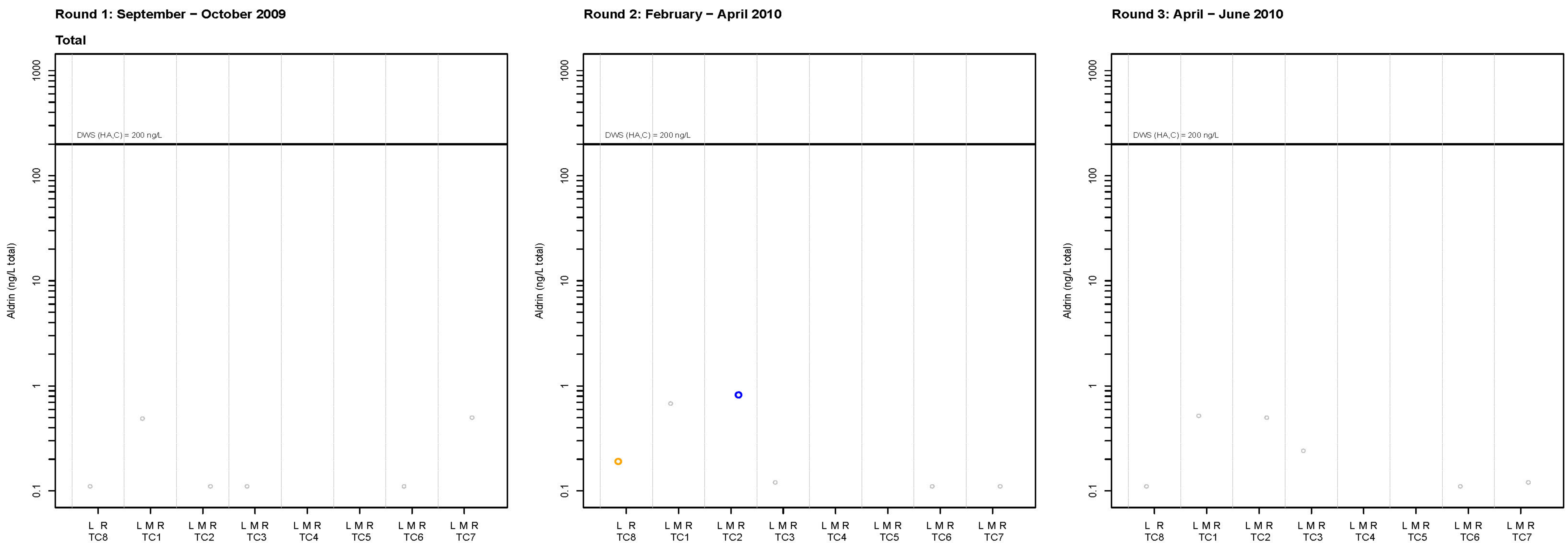
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

- L = Left bank (orange)
- M = Mid-channel (green)
- R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Aldrin



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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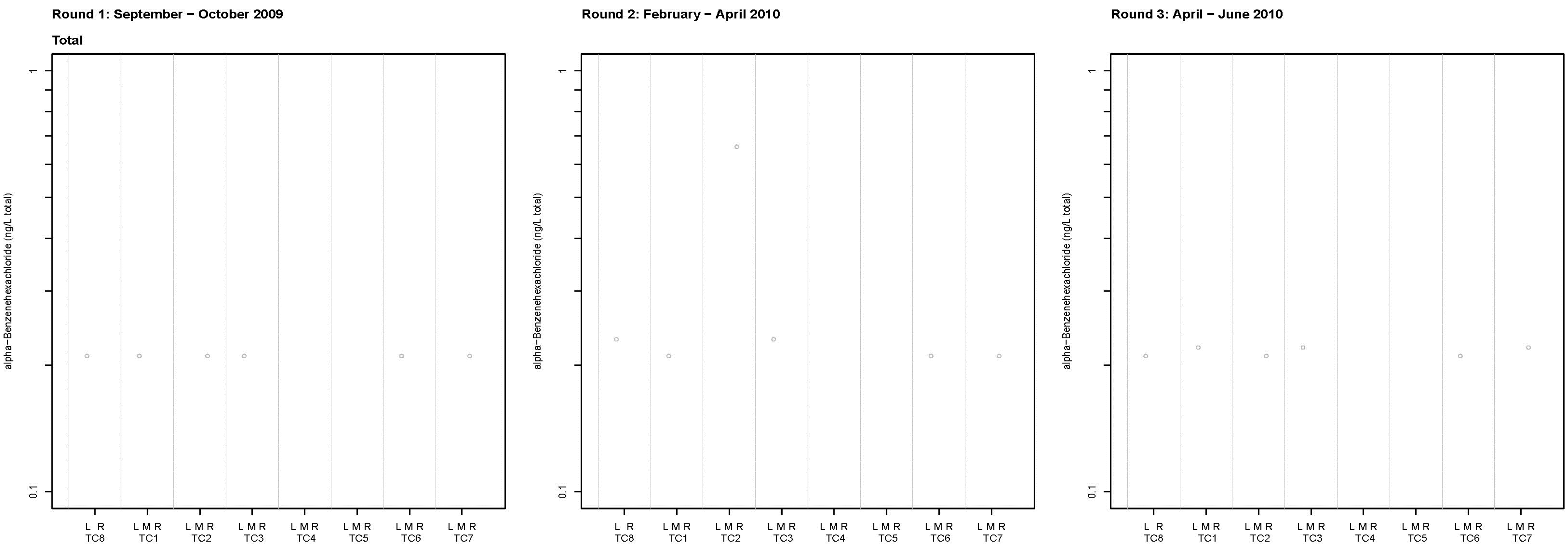
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − alpha−Benzenehexachloride



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

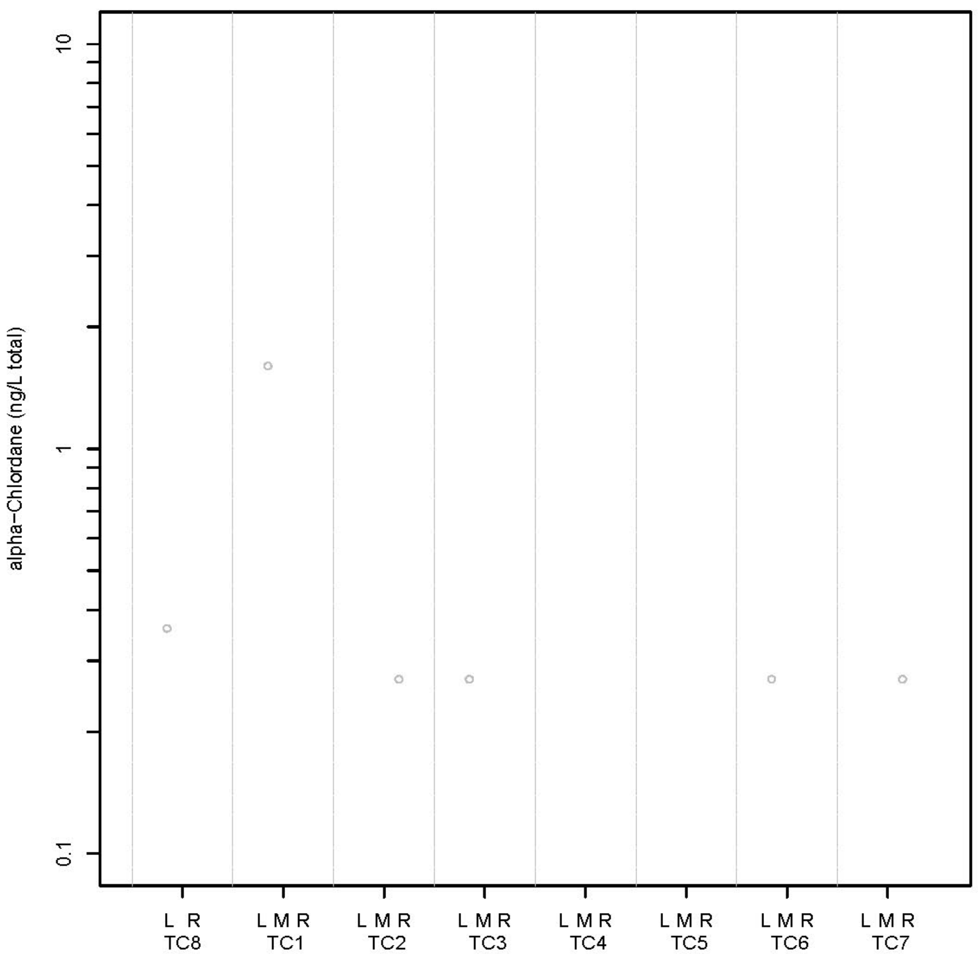
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

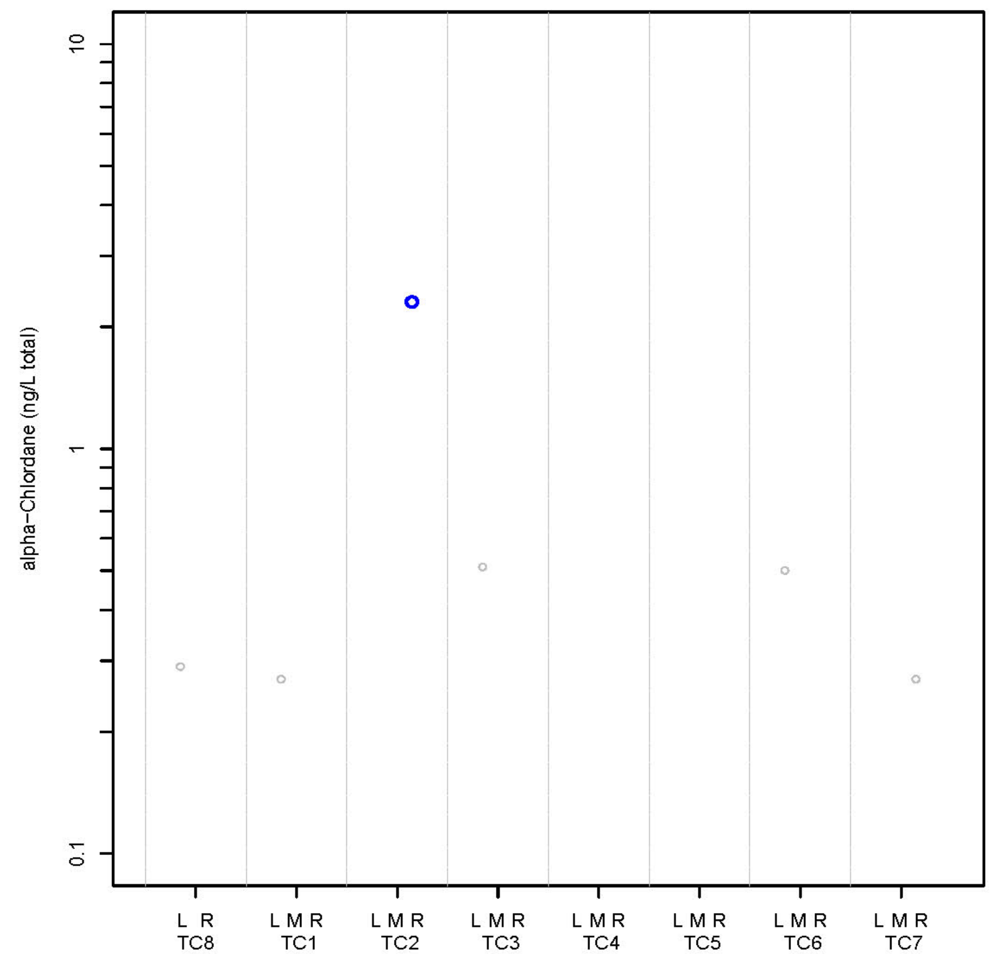
Disturbed Surface Water − alpha−Chlordane

Round 1: September − October 2009

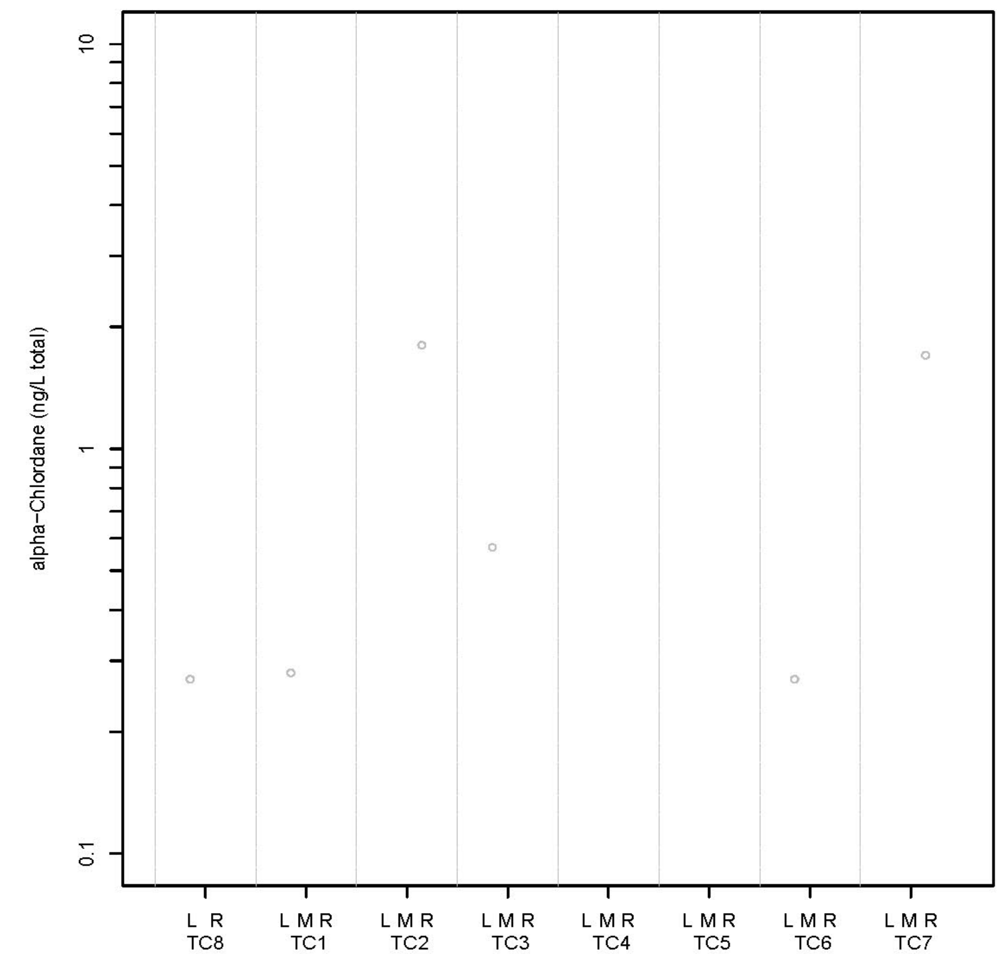
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

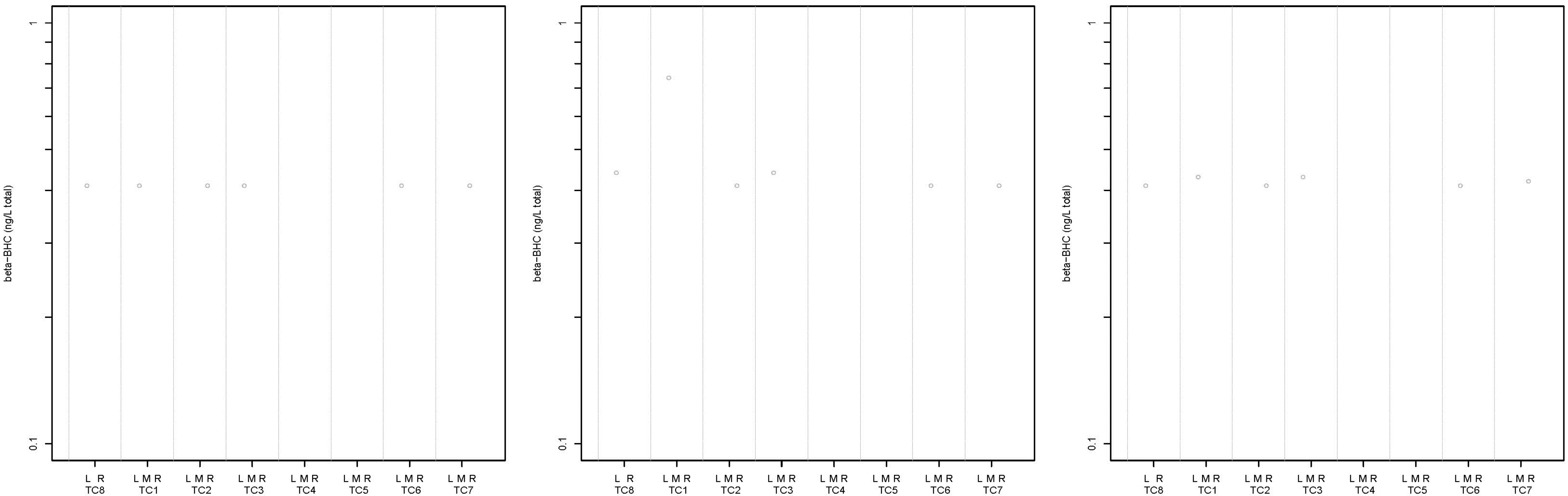
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − beta−BHC

Round 1: September − October 2009 | **Round 2: February − April 2010** | **Round 3: April − June 2010**

Total



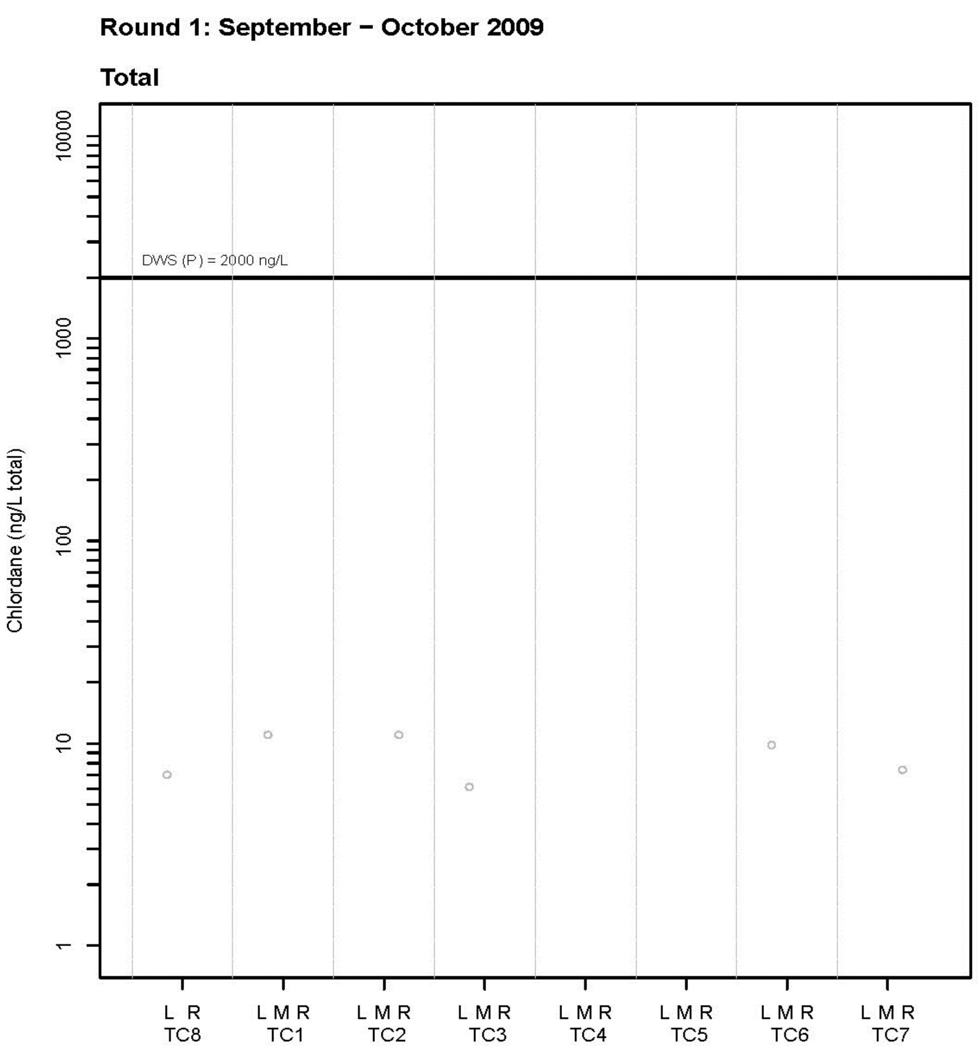
LEGEND

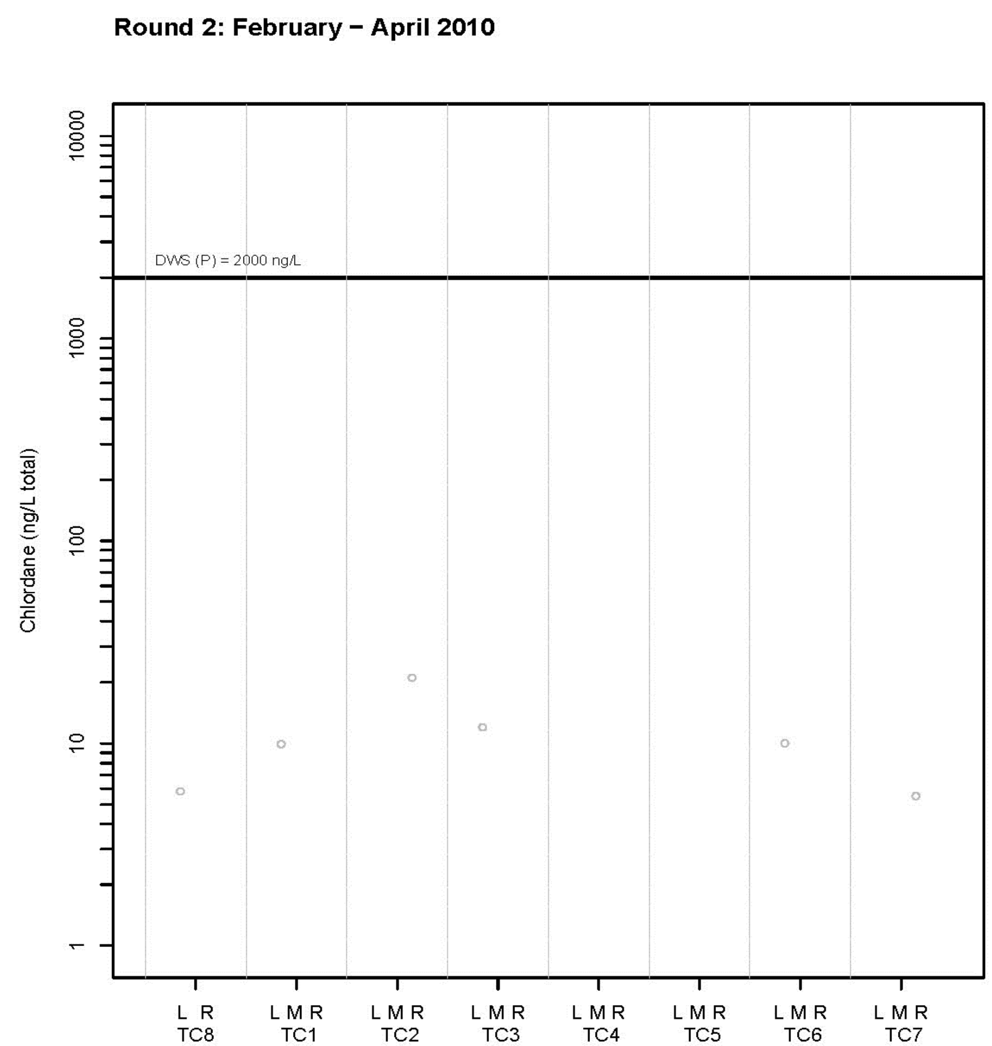
▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

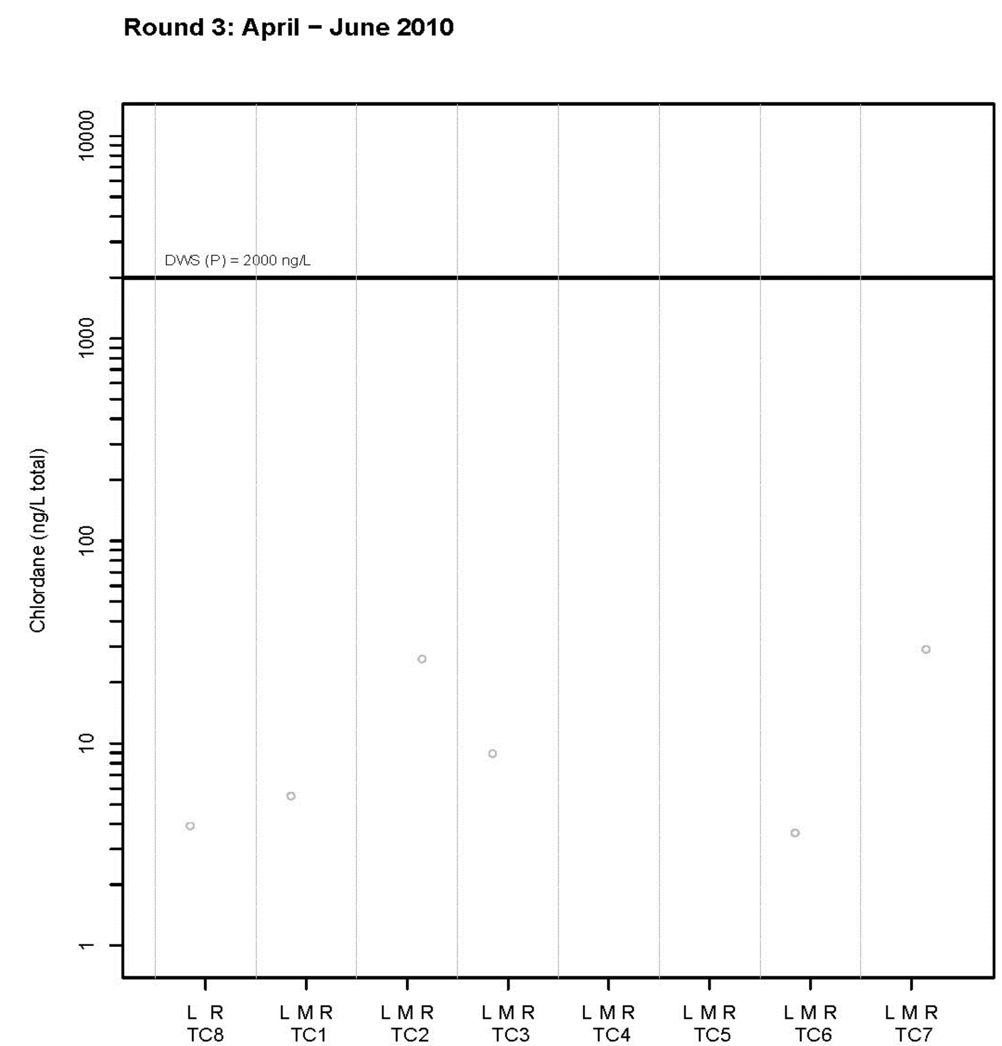
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Chlordane







LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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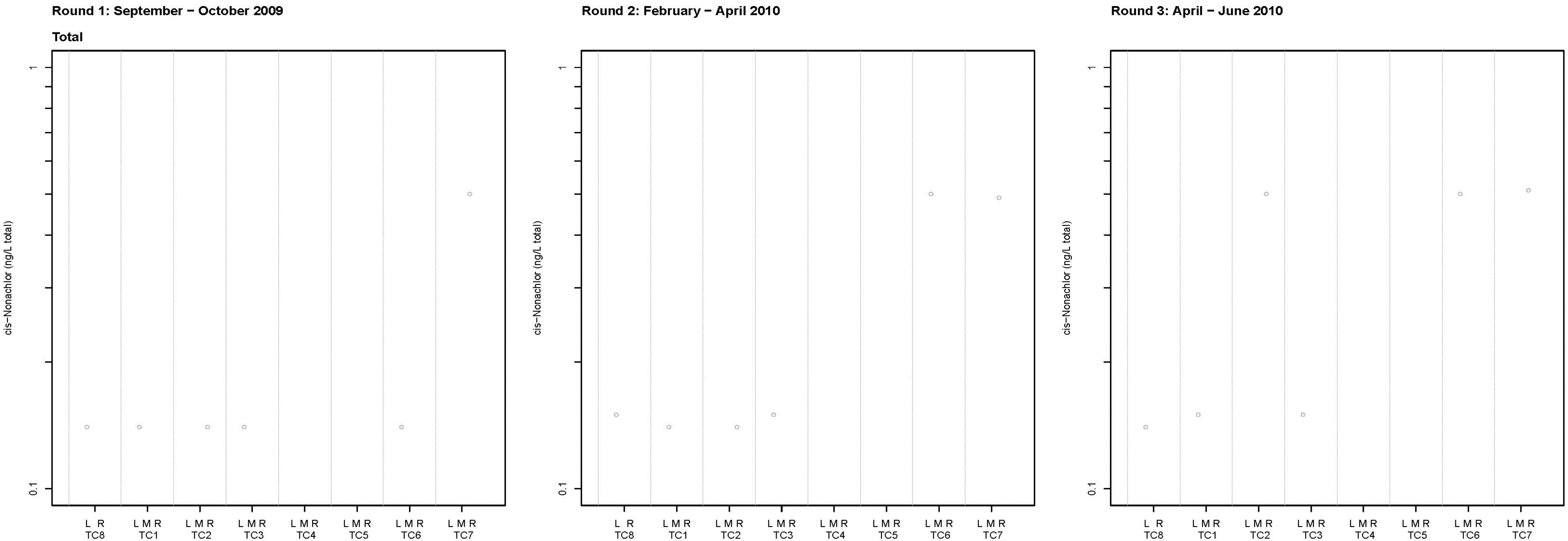
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − cis−Nonachlor



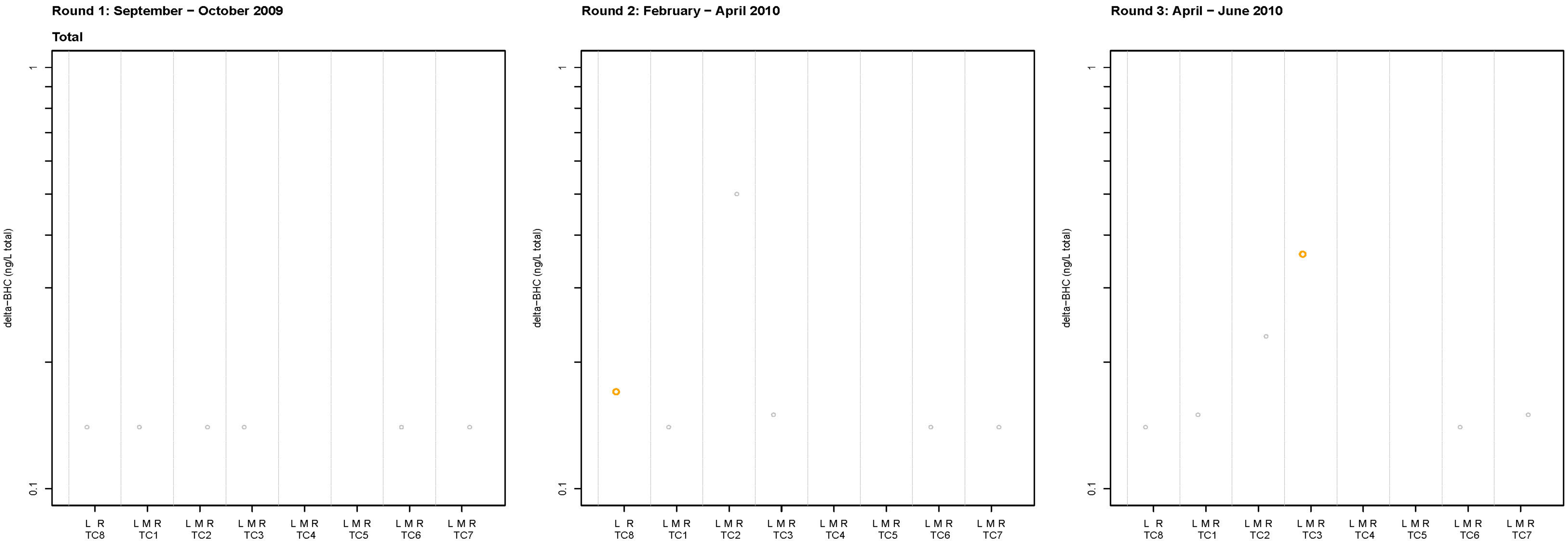
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − delta−BHC



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

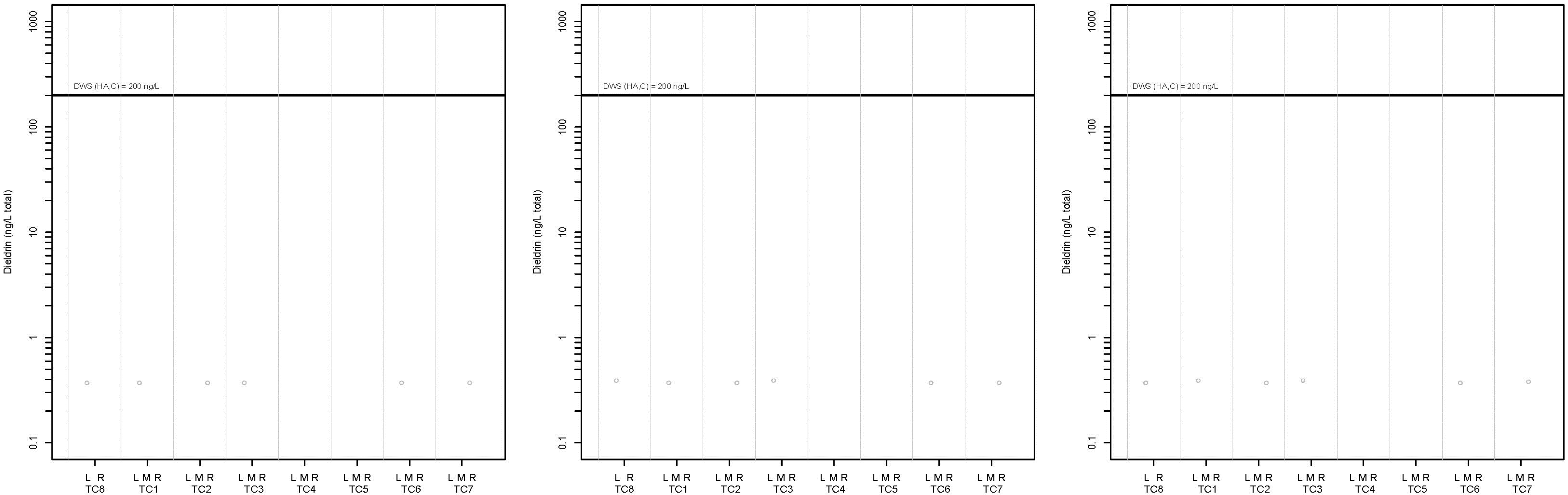
Disturbed Surface Water − Dieldrin

Round 1: September − October 2009

Round 2: February − April 2010

Round 3: April − June 2010

Total



LEGEND

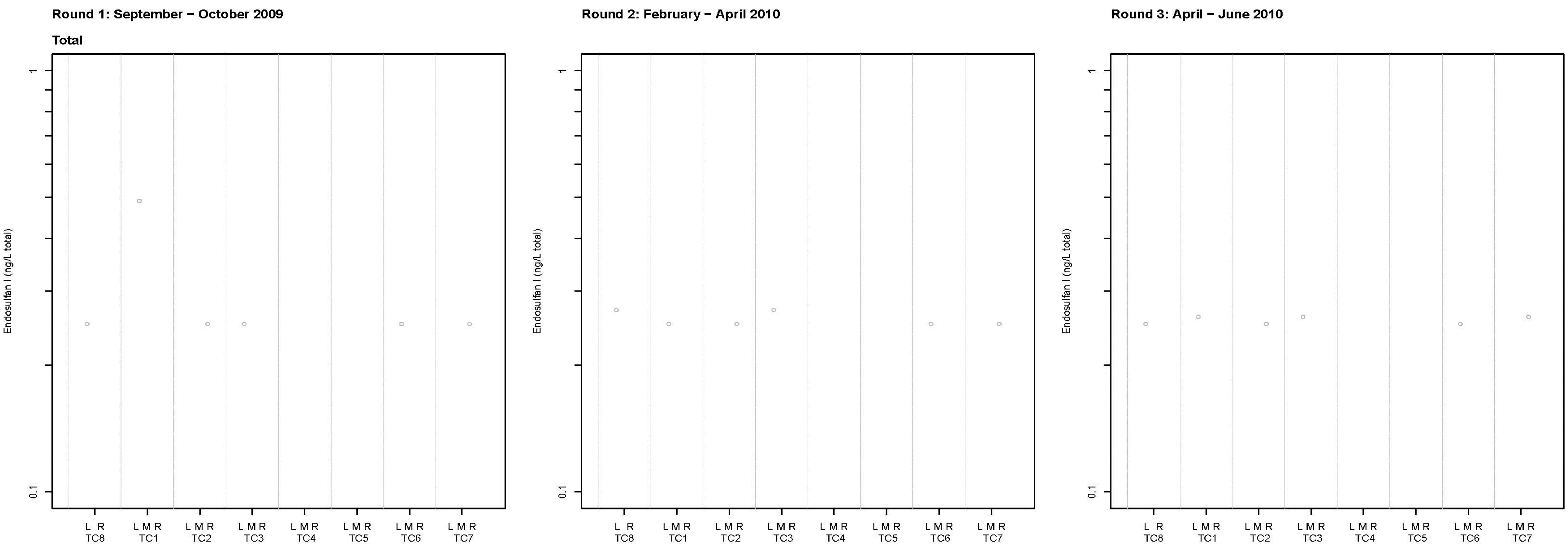
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Endosulfan I



LEGEND

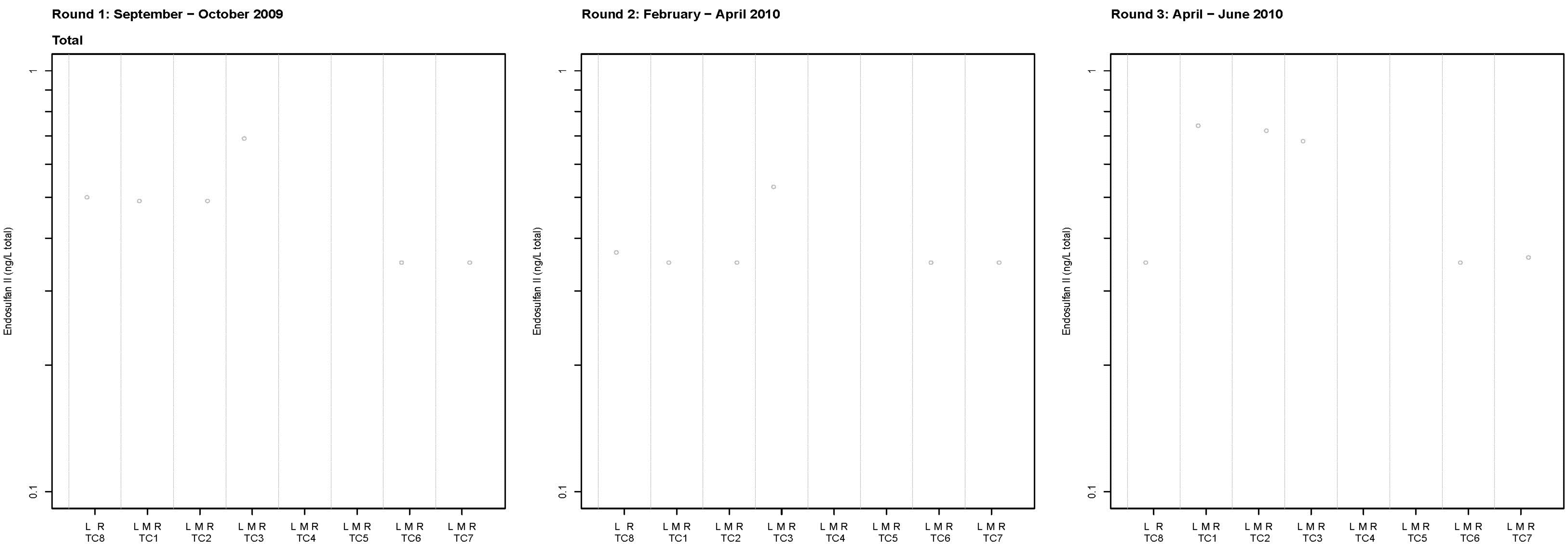
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Endosulfan II



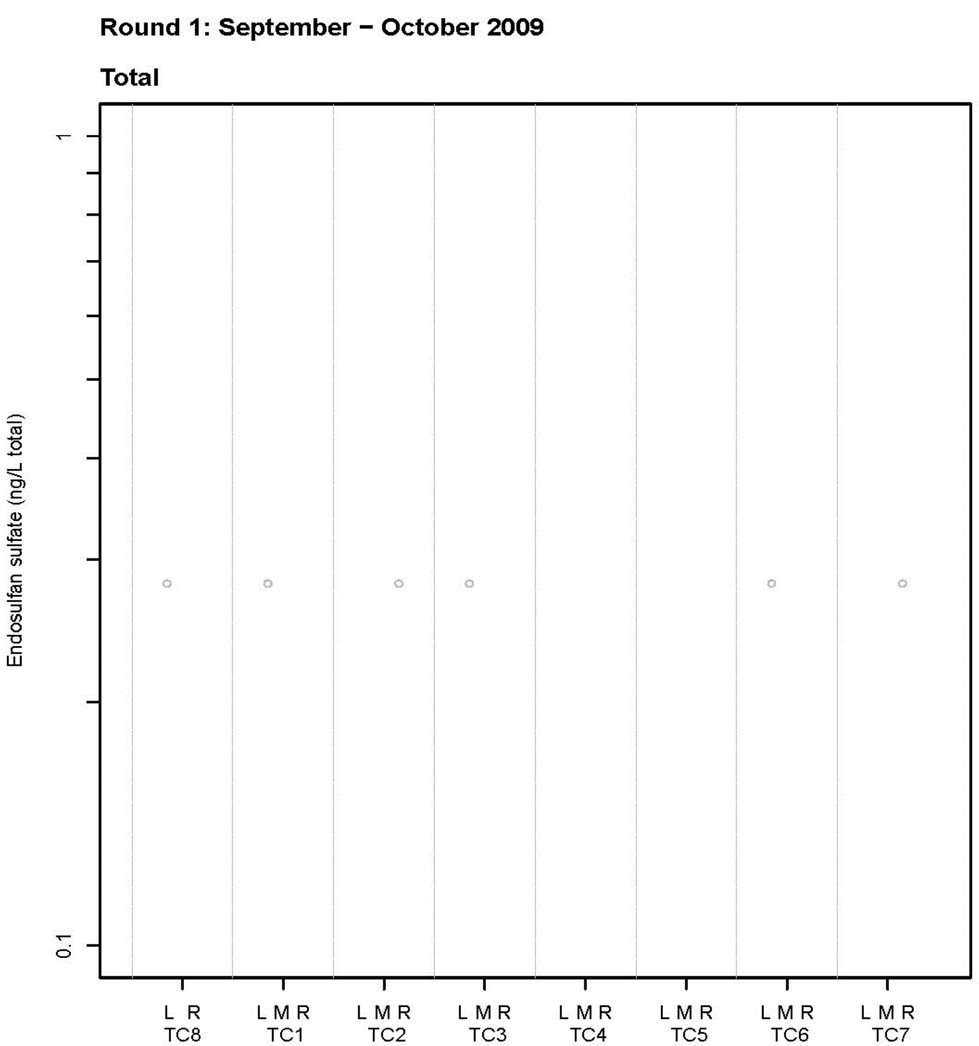
LEGEND

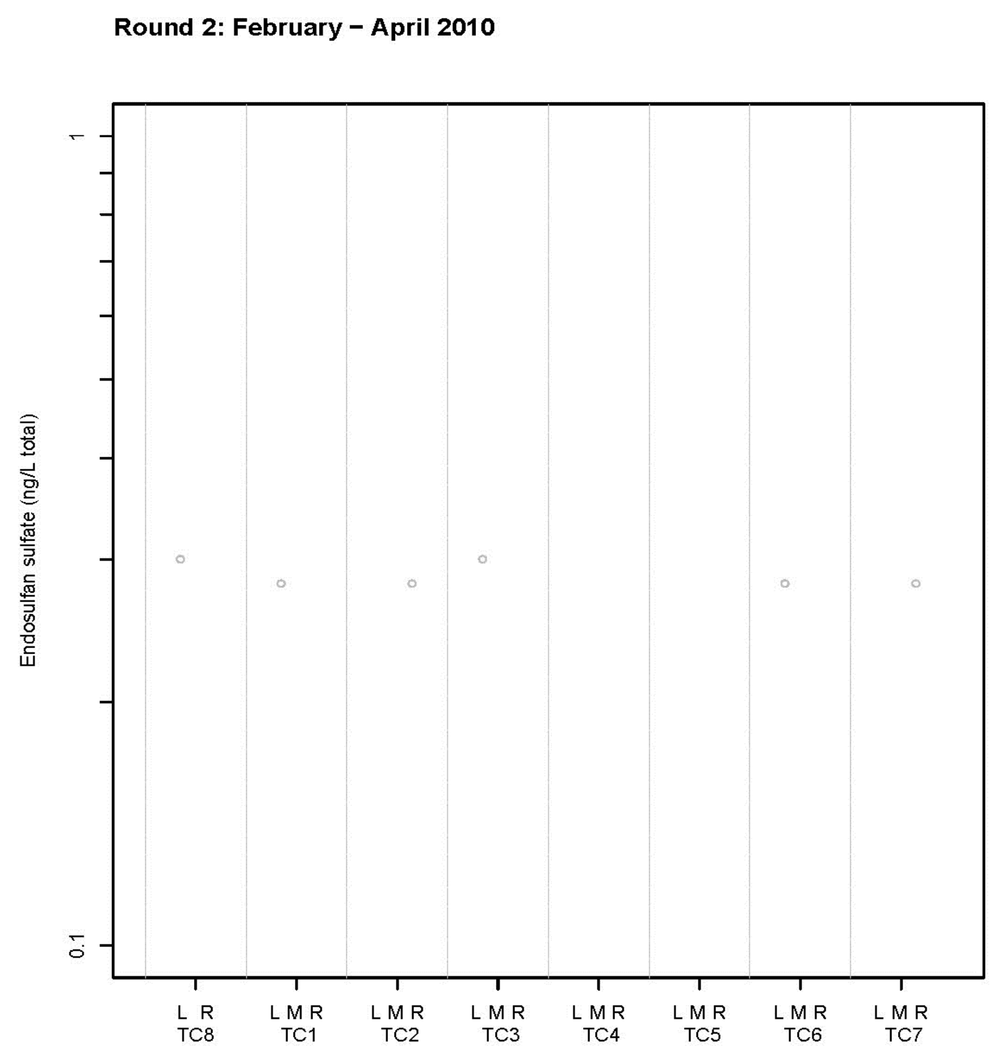
▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

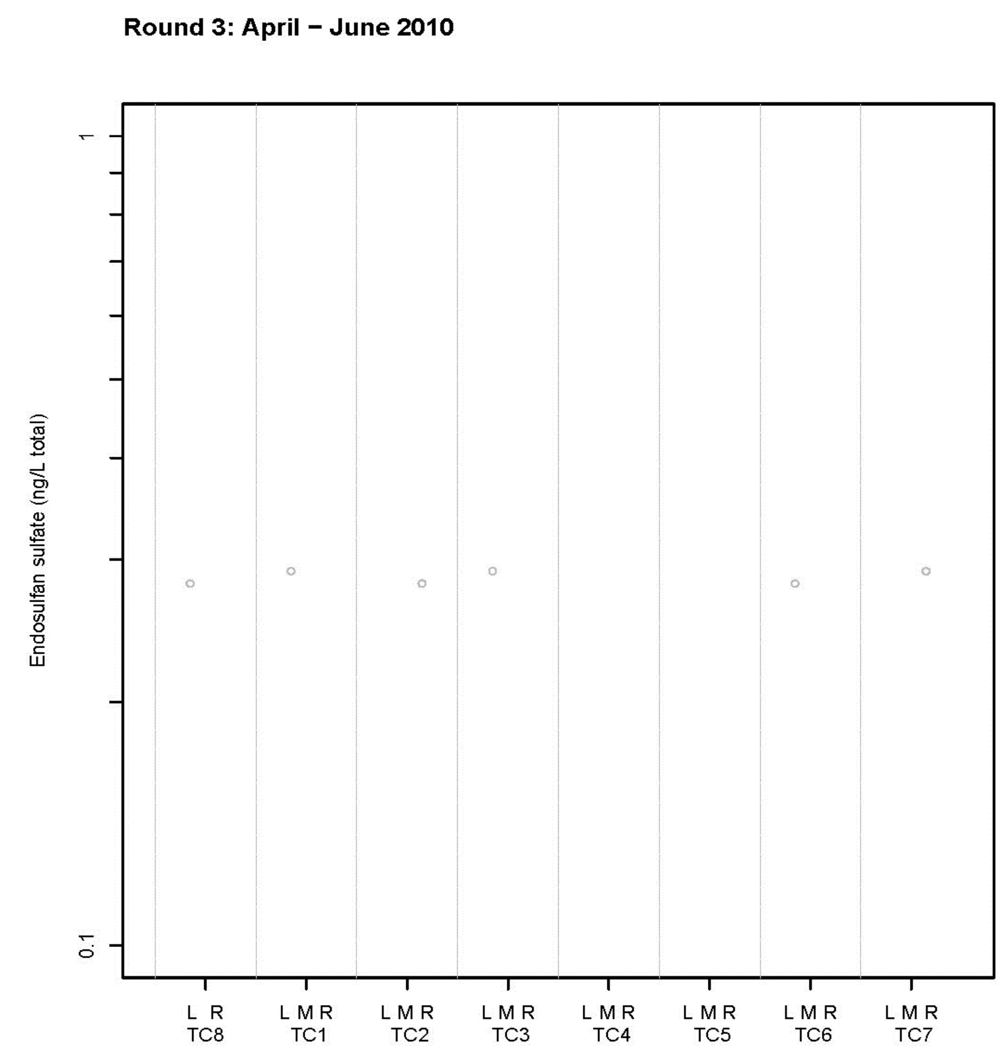
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Endosulfan Sulfate







LEGEND

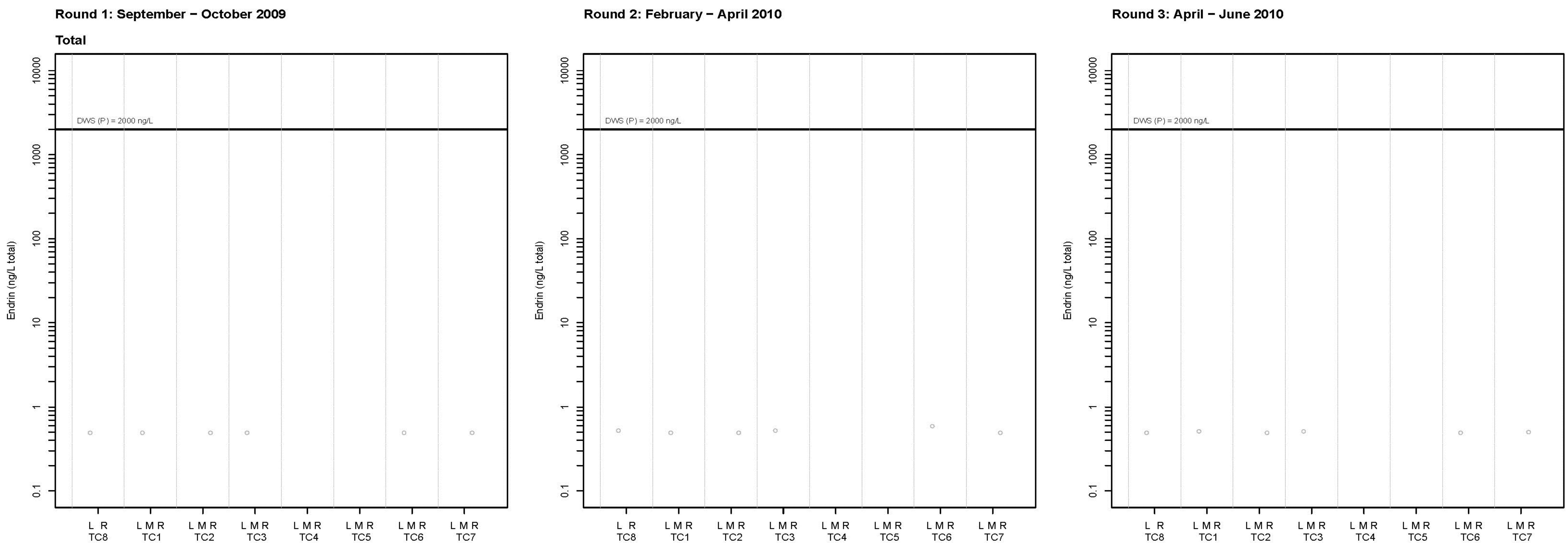
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Endrin



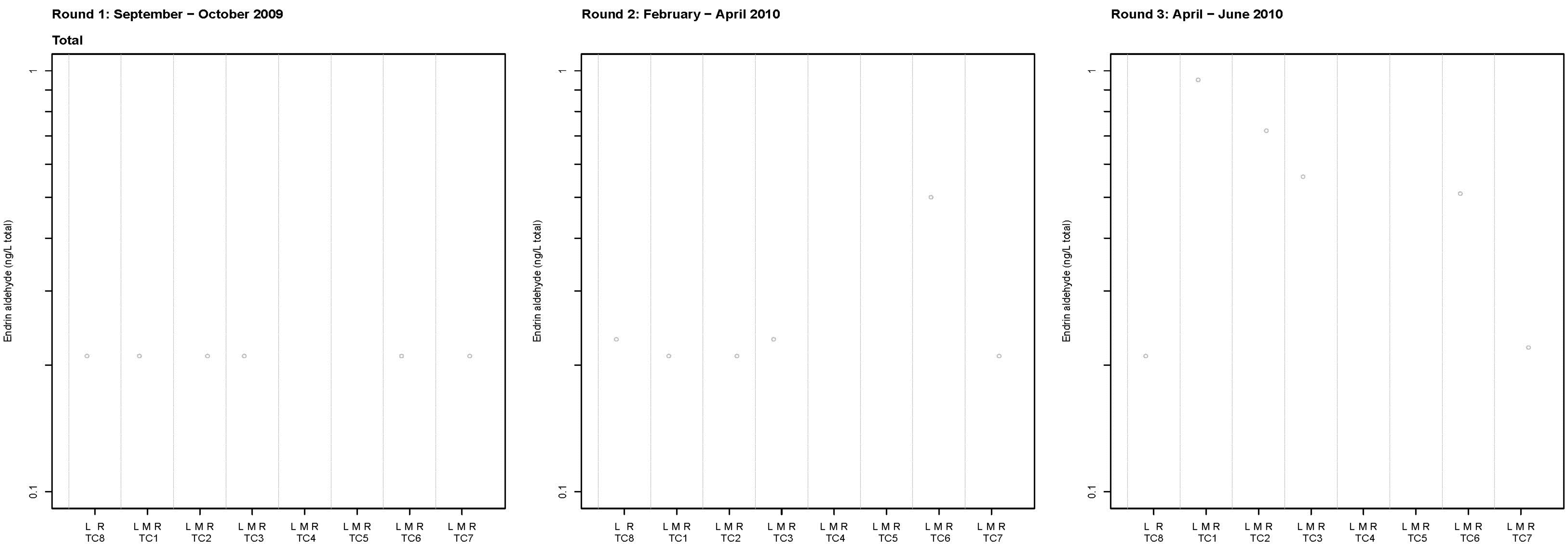
LEGEND

▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Endrin Aldehyde



LEGEND

Near-surface
Nearshore
Near-bottom
Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
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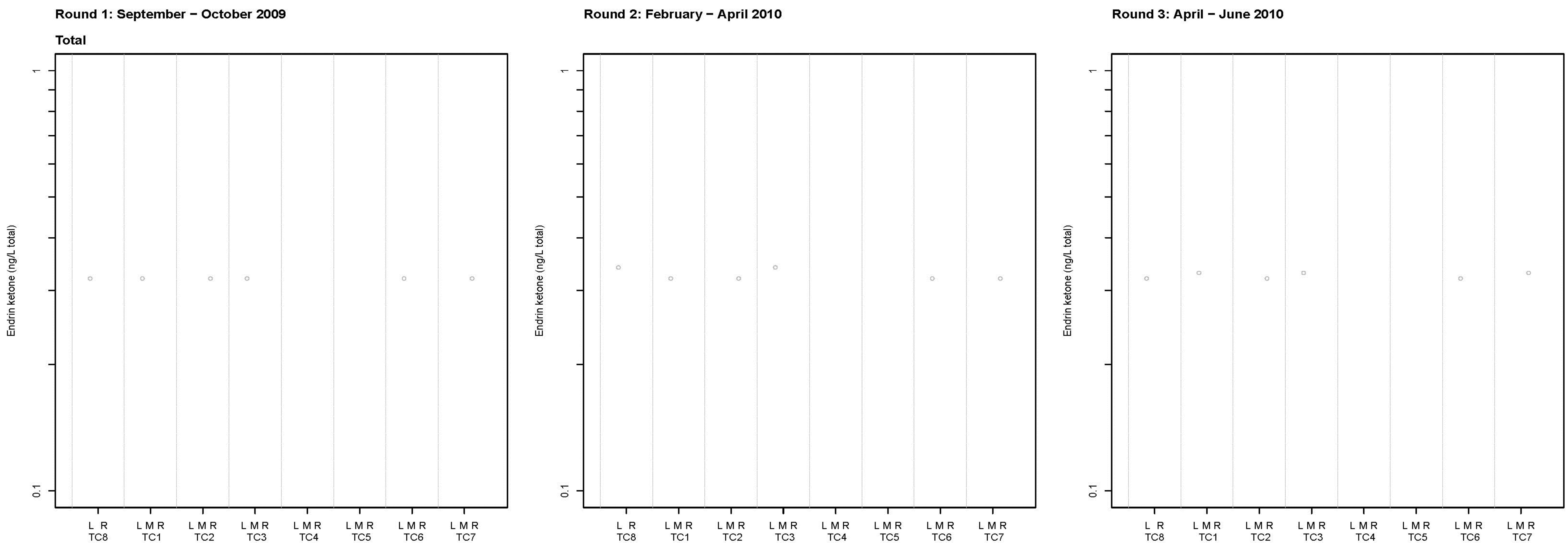
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Endrin Ketone



LEGEND

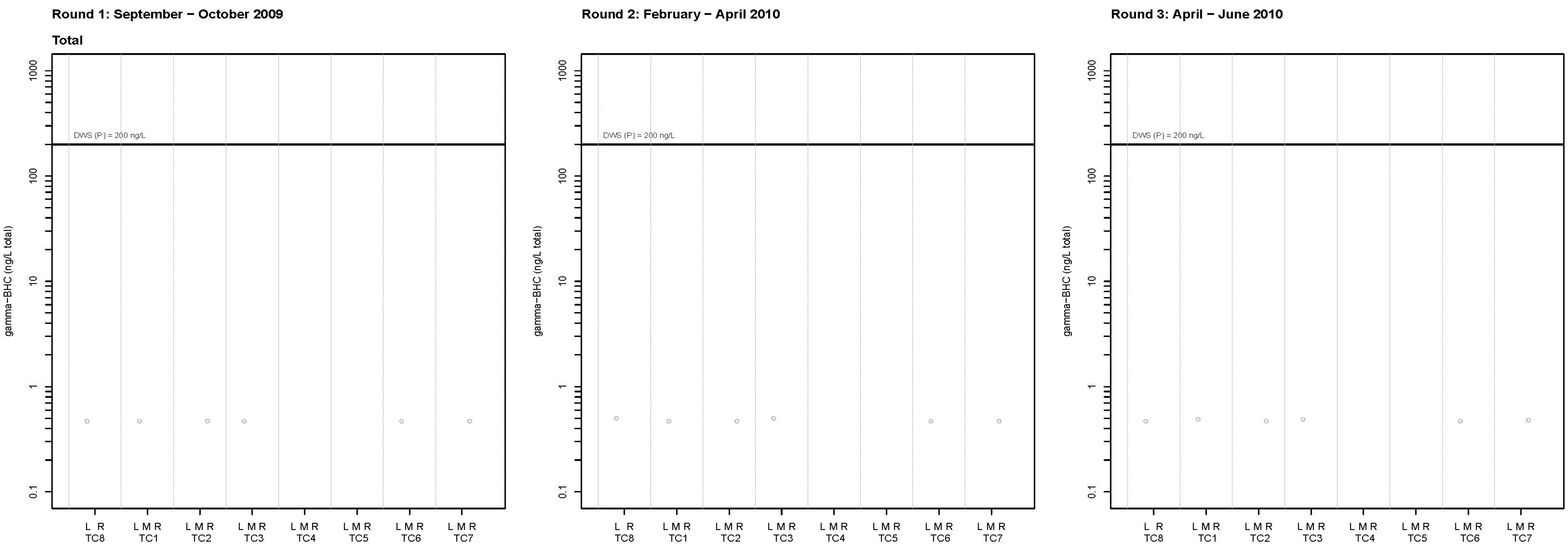
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − gamma−BHC



LEGEND

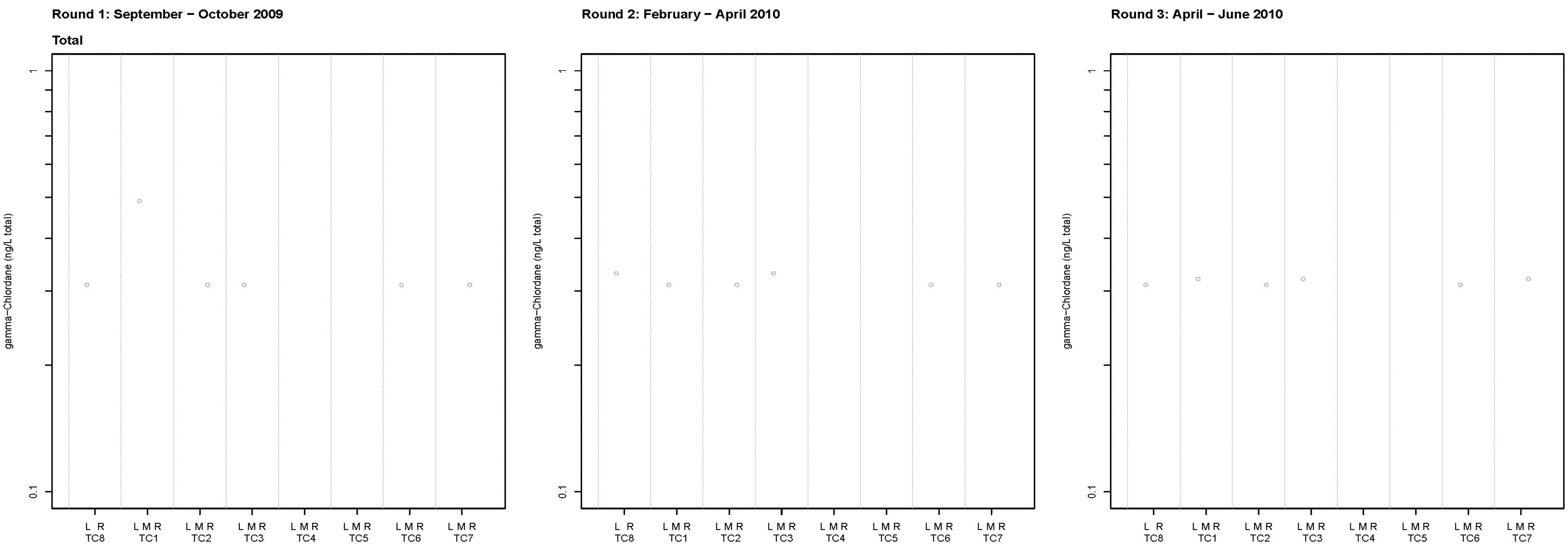
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water − gamma−Chlordane



LEGEND

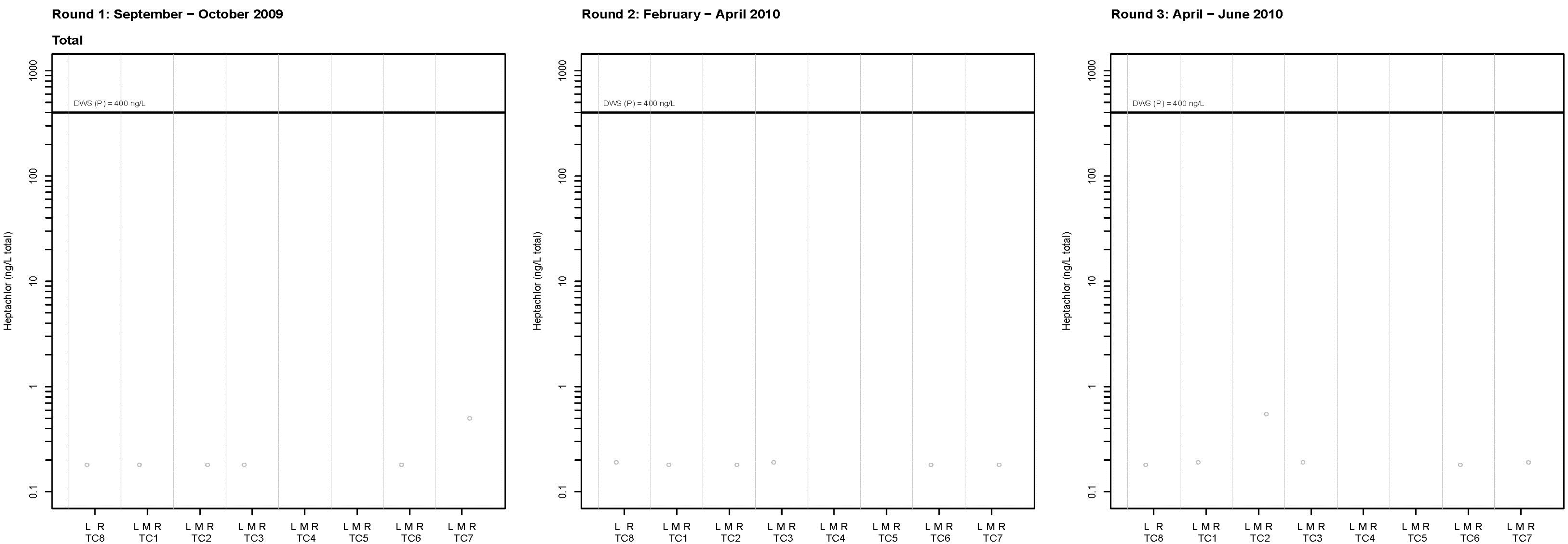
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Heptachlor



LEGEND

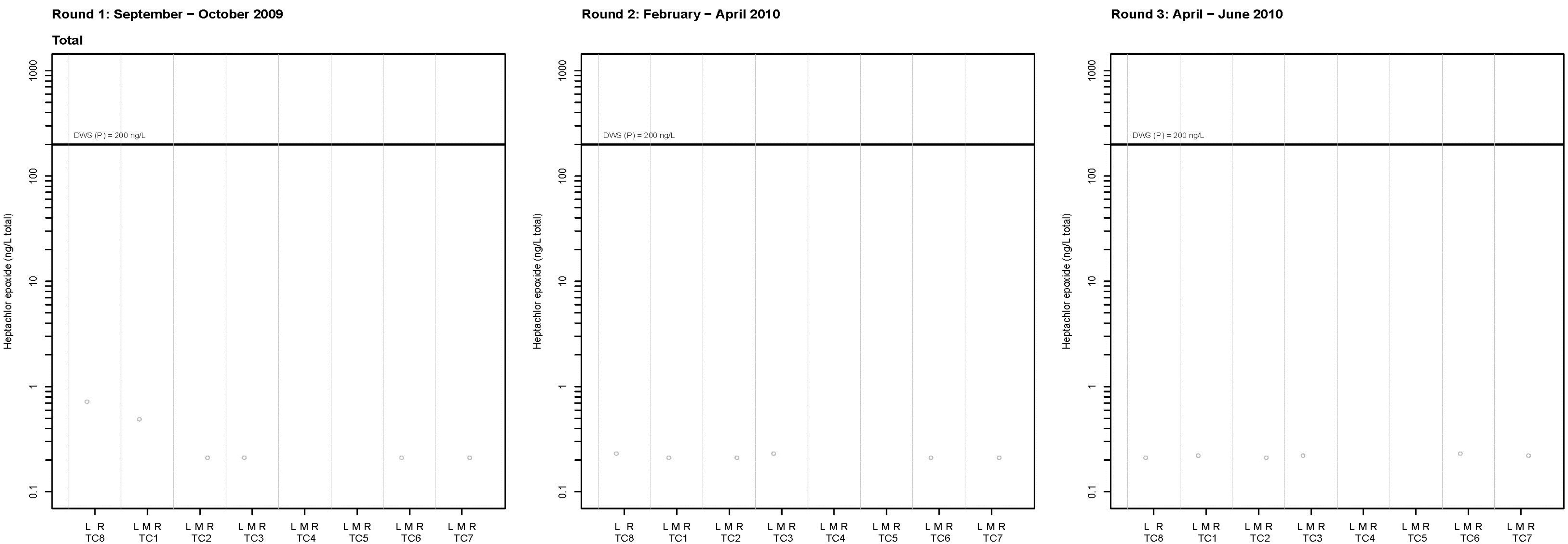
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Heptachlor Epoxide



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

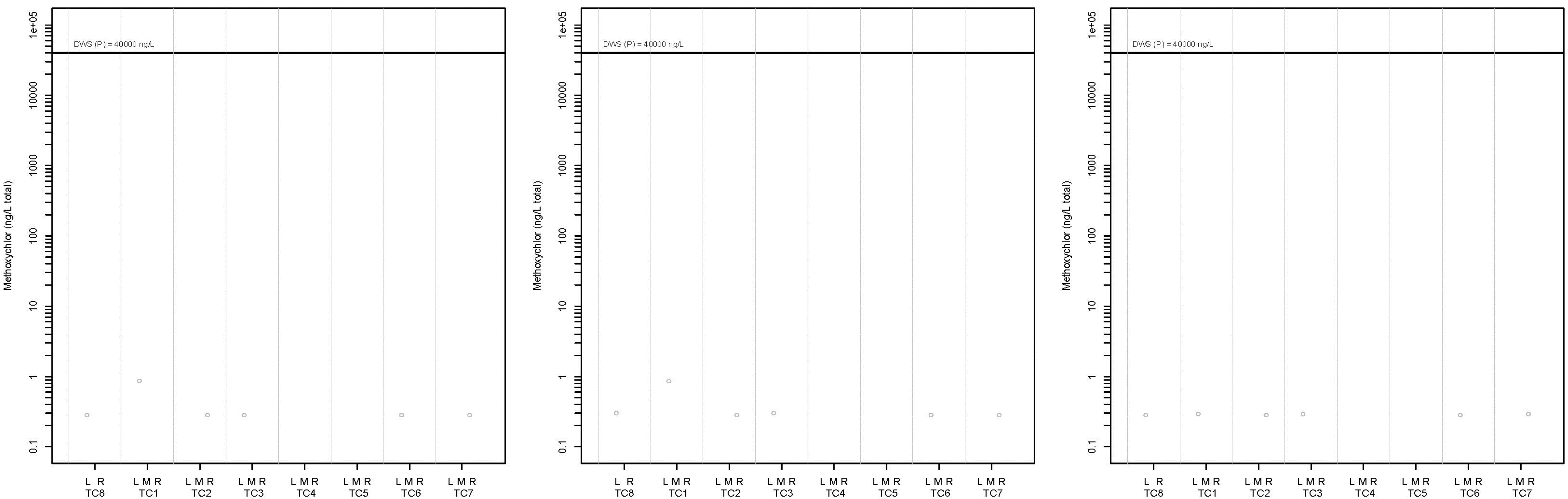
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Methoxychlor

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



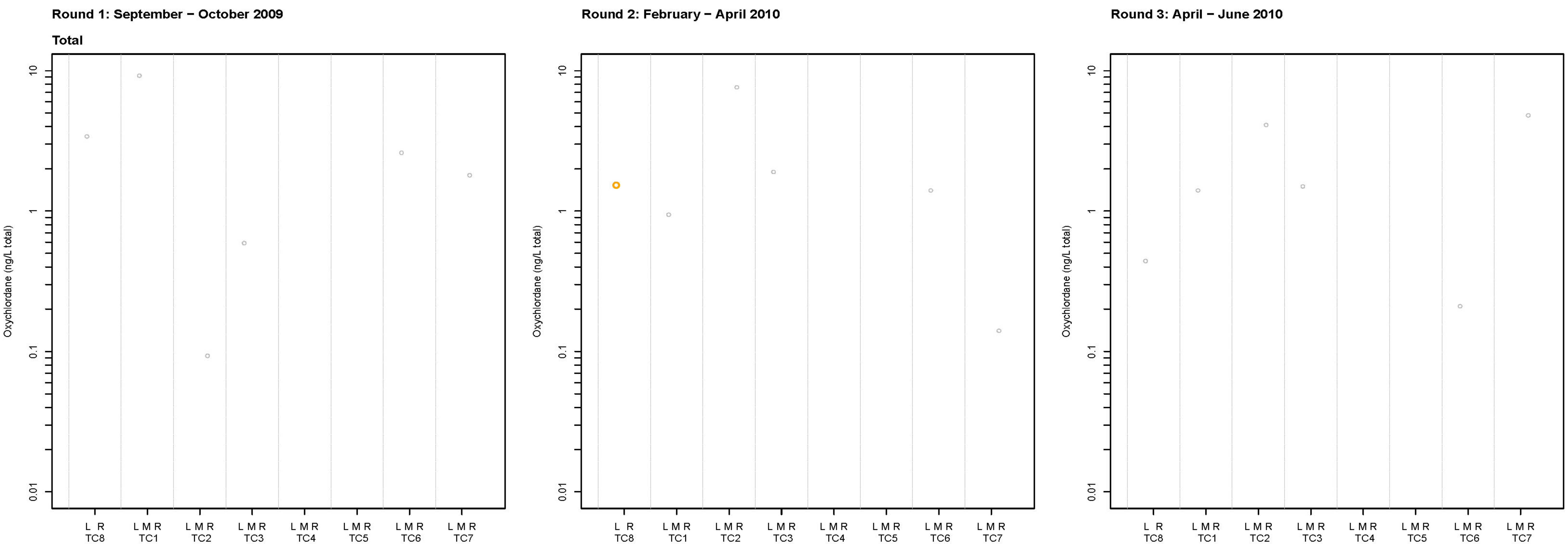
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown. Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Oxychlordane



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

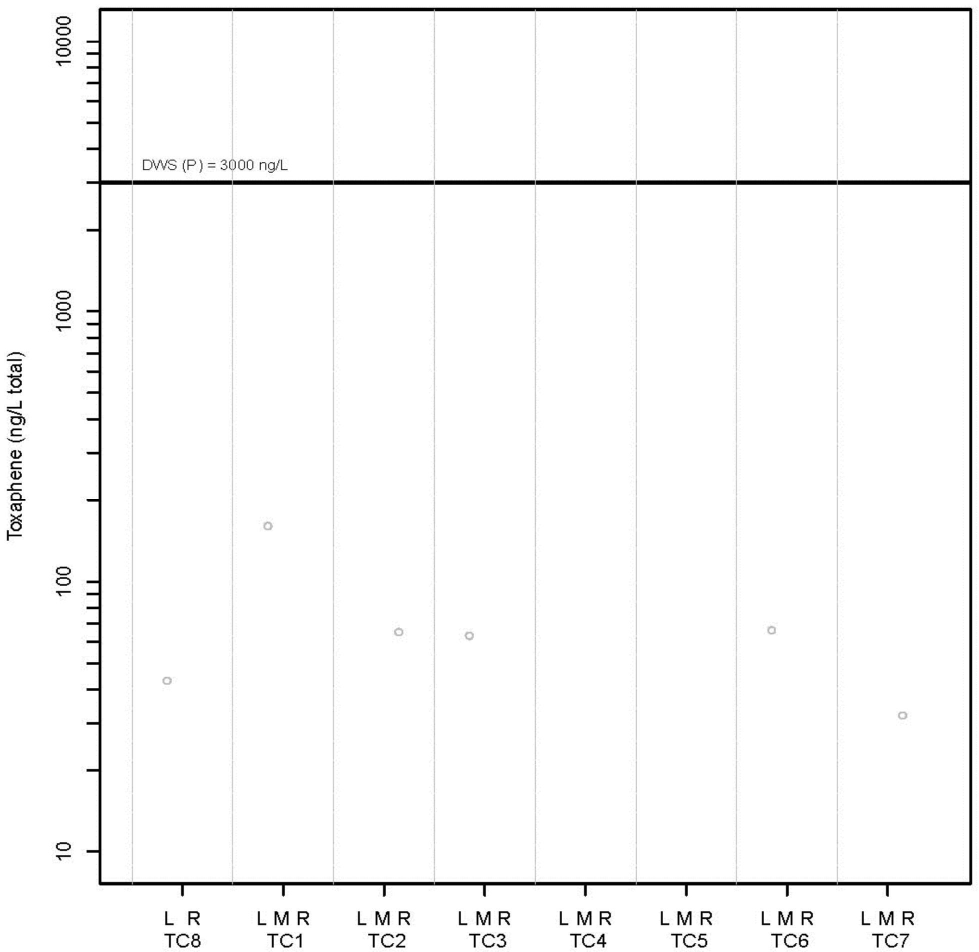
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

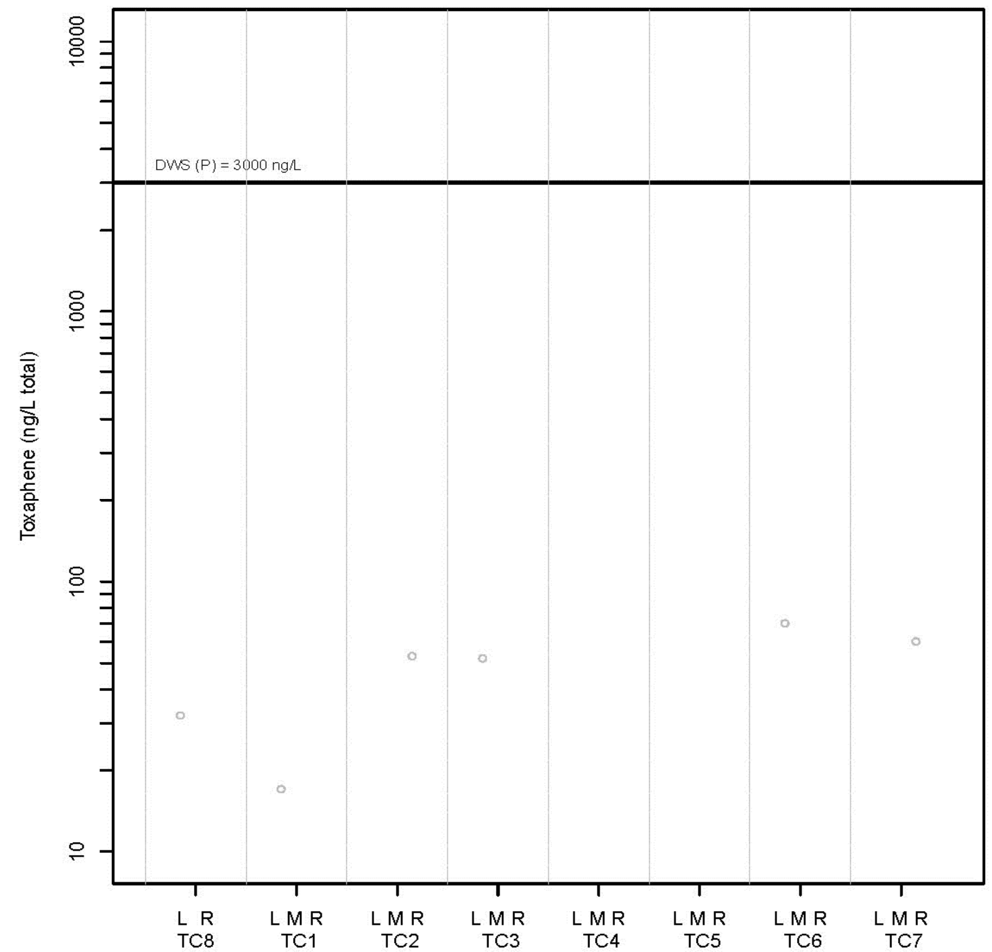
Disturbed Surface Water − Toxaphene

Round 1: September − October 2009

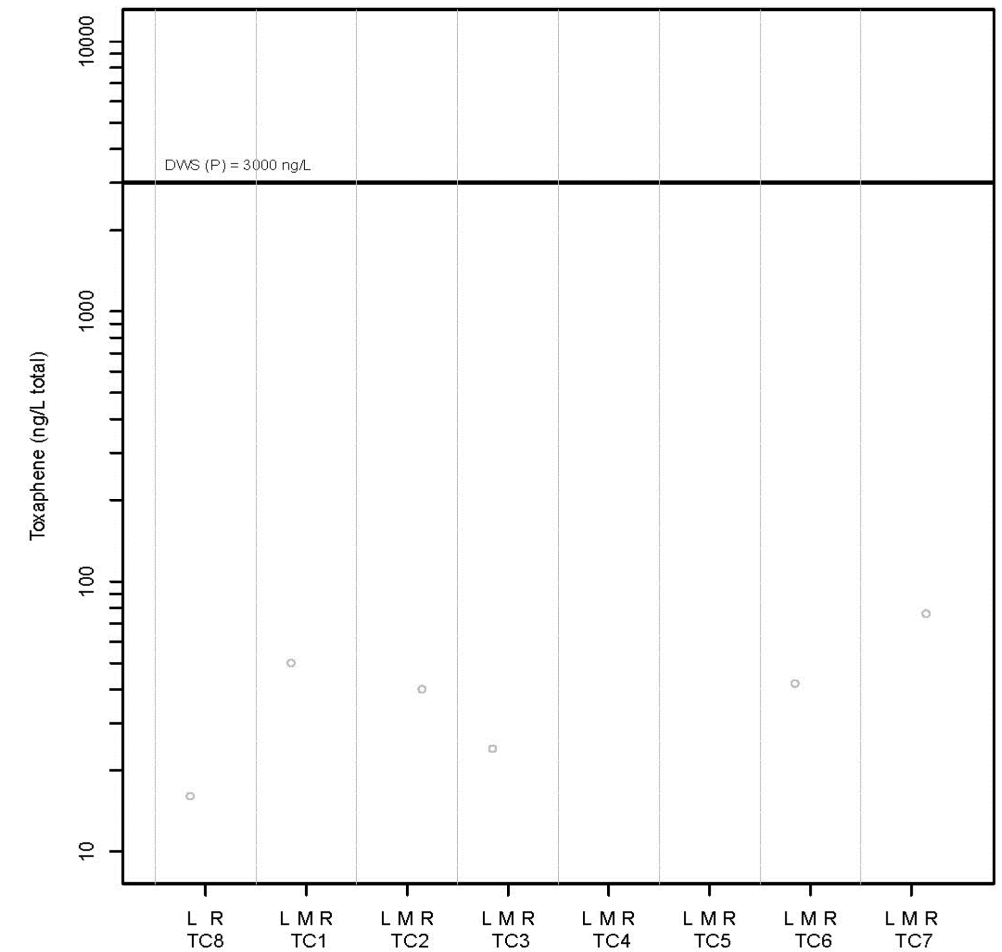
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

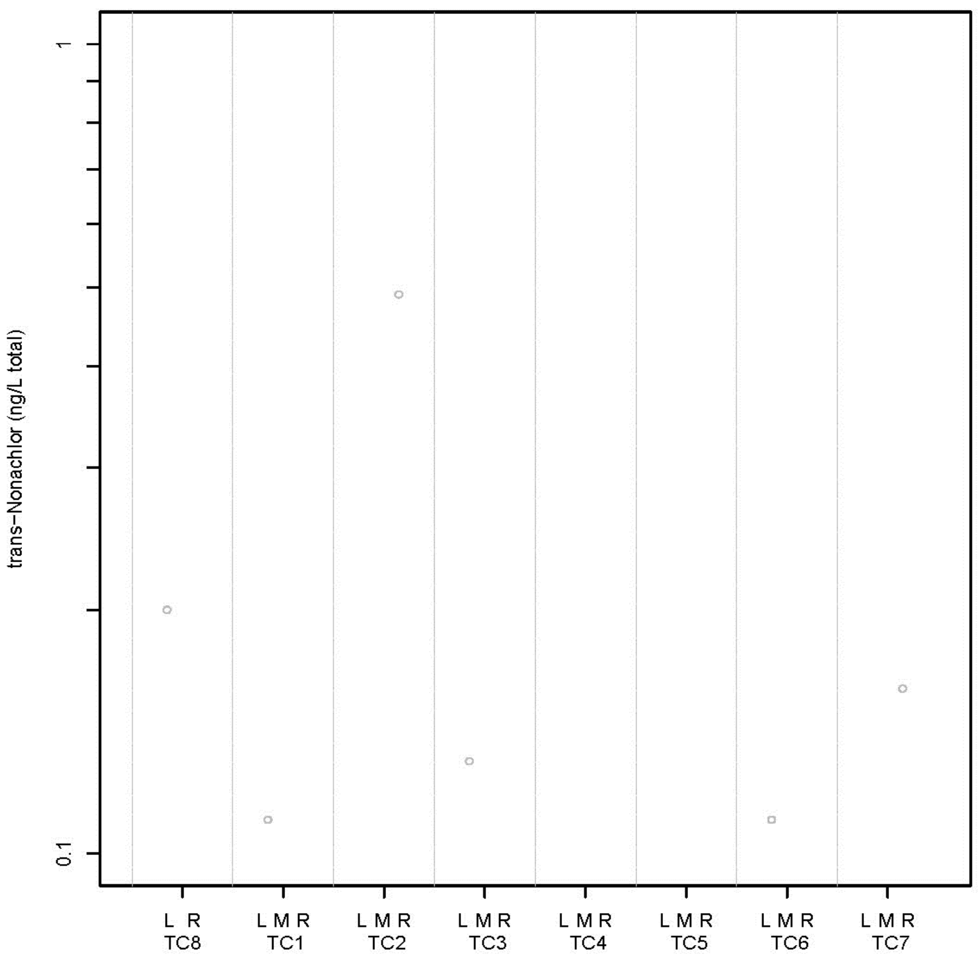
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

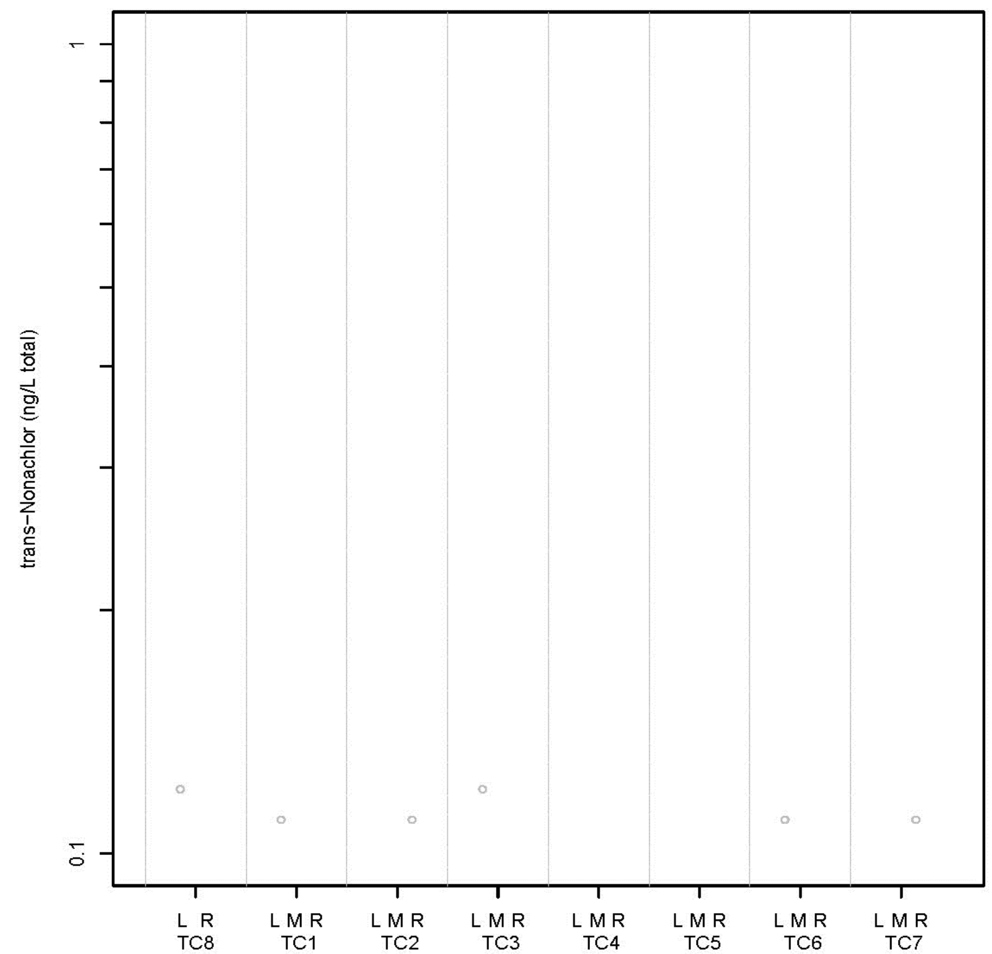
Disturbed Surface Water − trans−Nonachlor

Round 1: September − October 2009

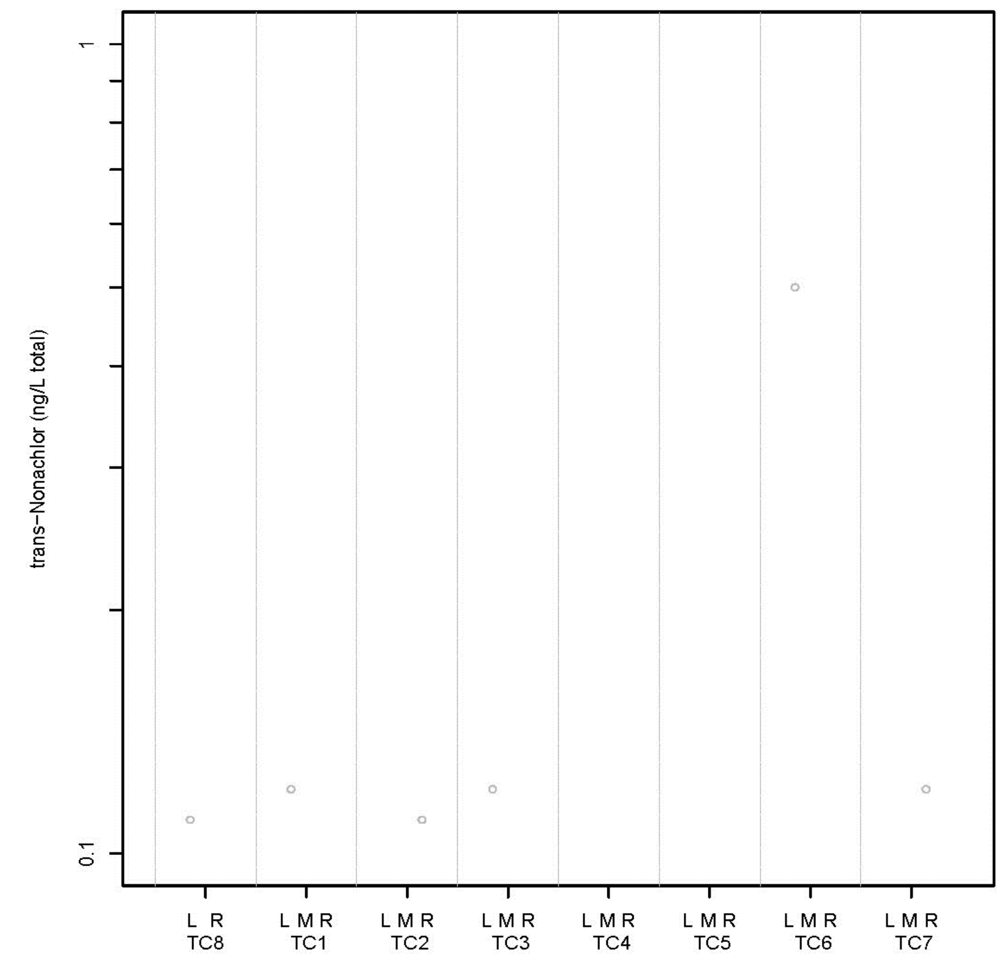
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

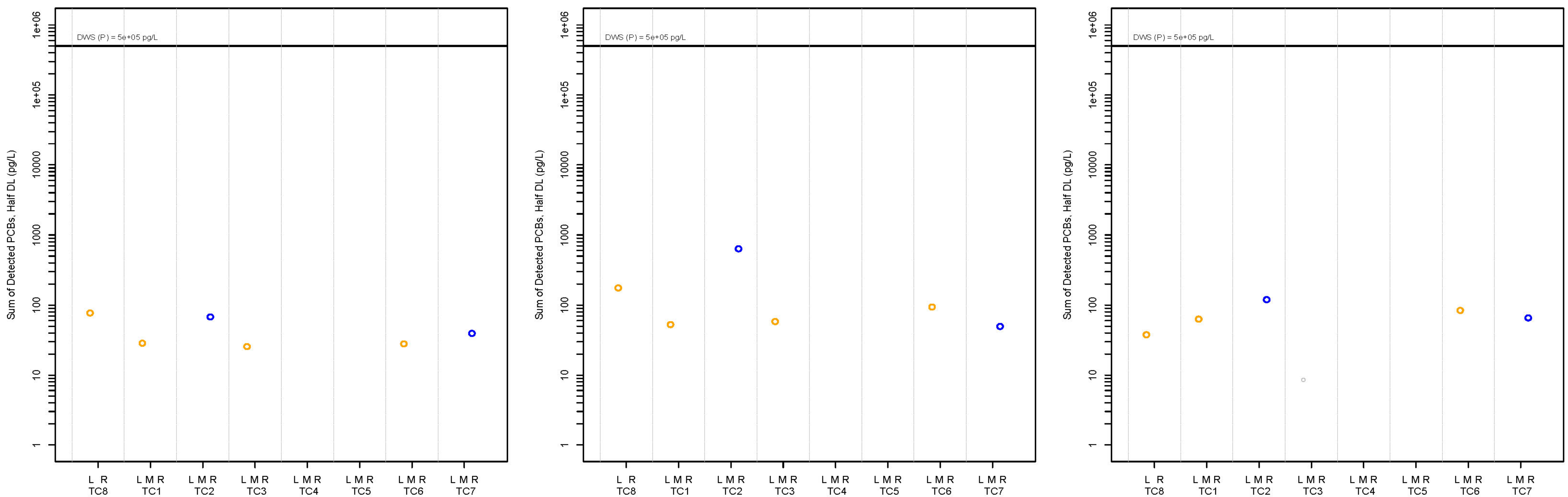
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Sum of Detected PCBs, Half DL

Round 1: September − October 2009 | **Round 2: February − April 2010** | **Round 3: April − June 2010**

Total



LEGEND

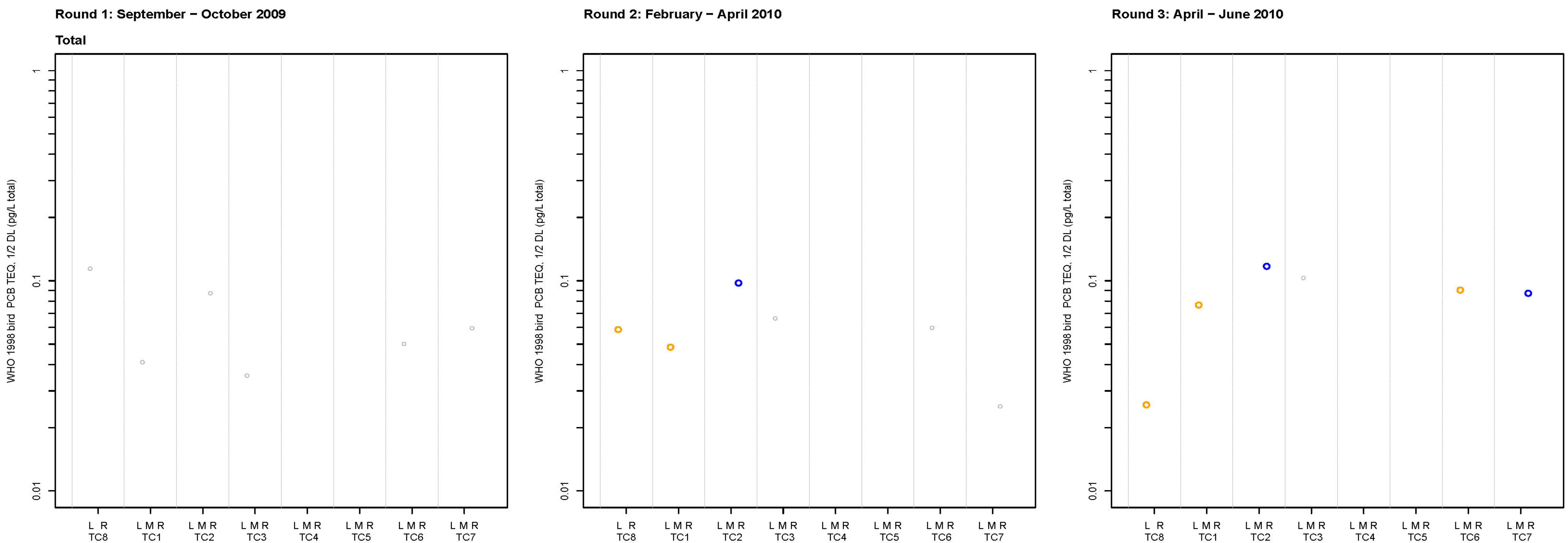
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – PCB TEQ, Birds



LEGEND

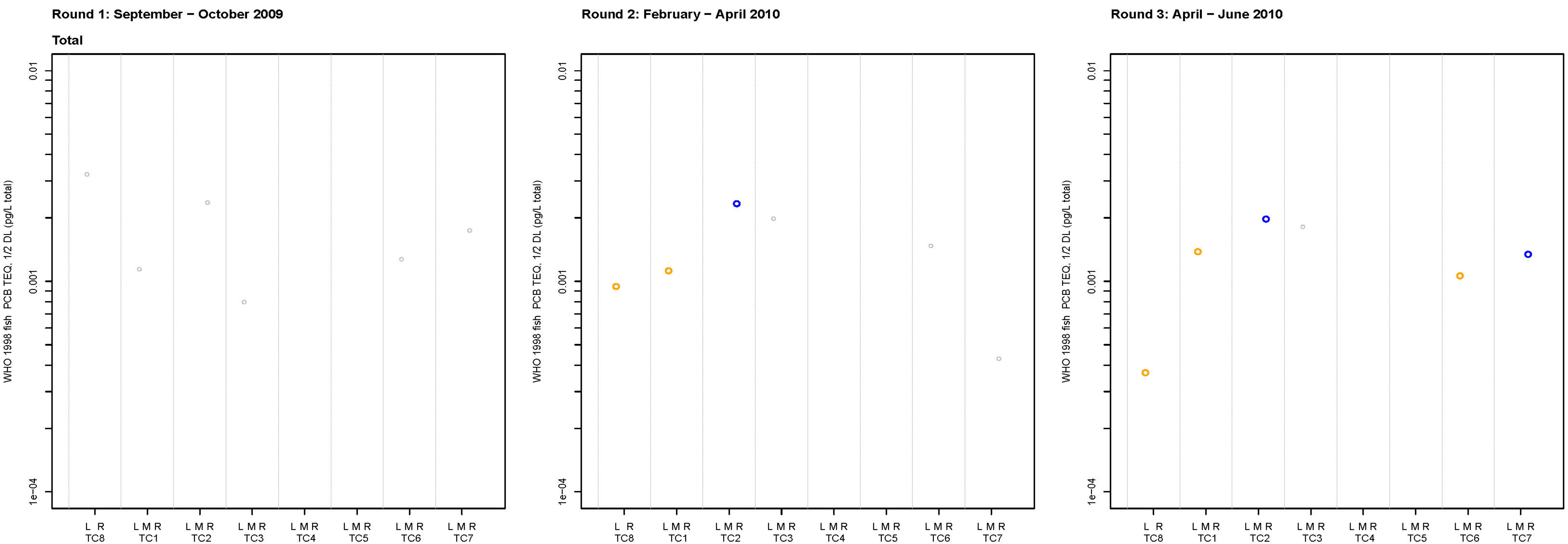
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – PCB TEQ, Fish



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

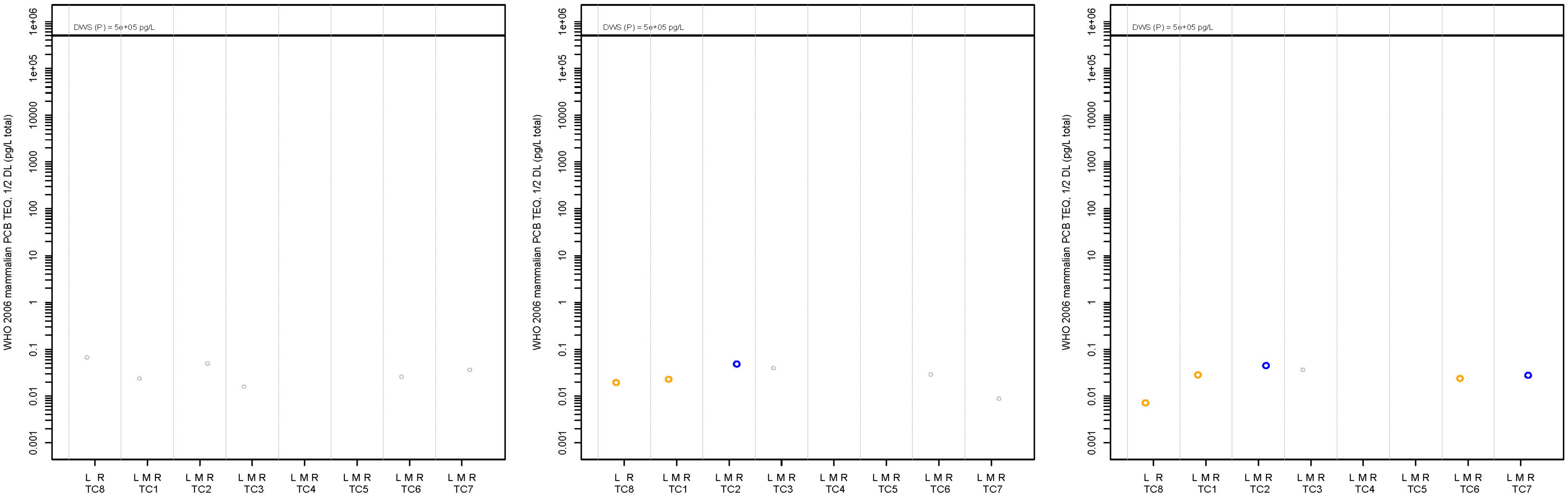
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water – PCB TEQ, Mammals

Round 1: September – October 2009 **Round 2: February – April 2010** **Round 3: April – June 2010**

Total



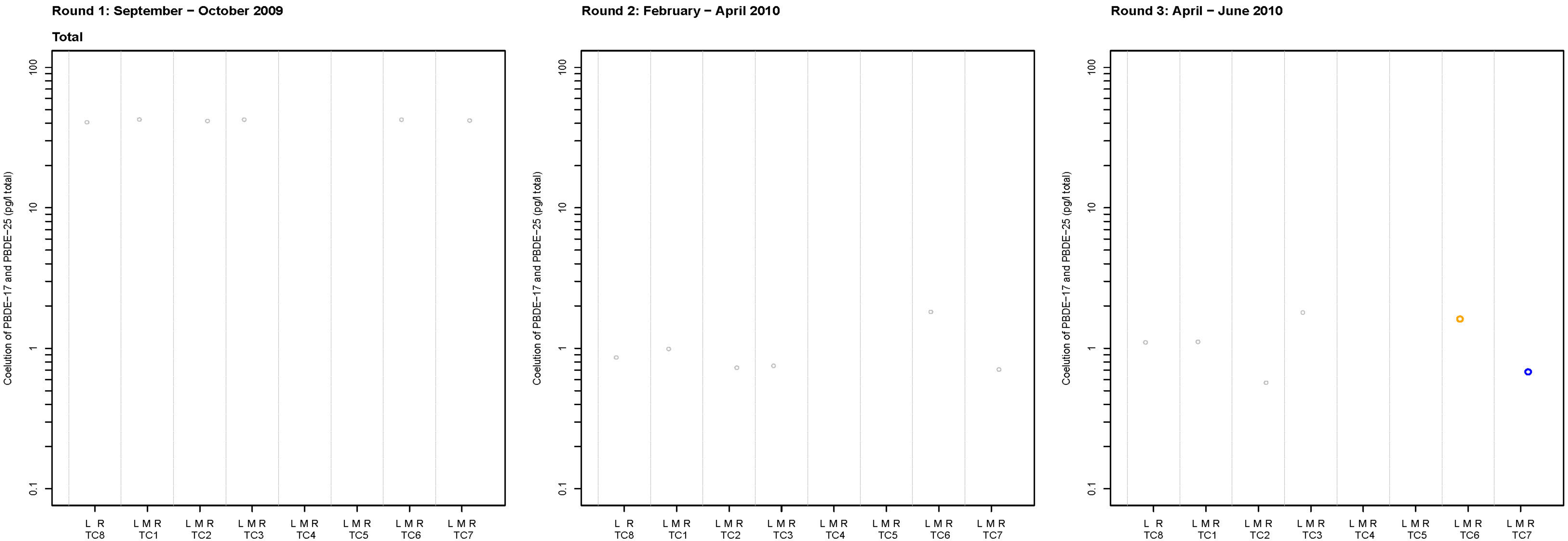
LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Coelution of PBDE−17 and PBDE−25



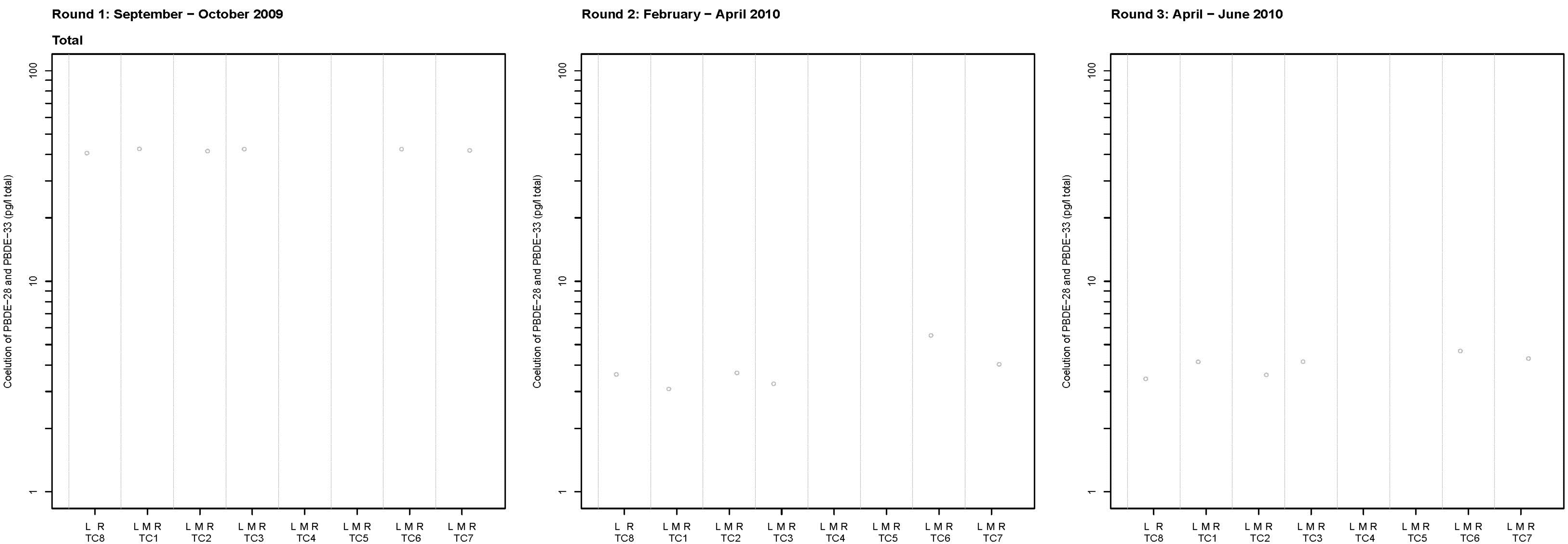
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Coelution of PBDE−28 and PBDE−33



LEGEND

▽ Near-surface	L =	Left bank (orange)
○ Nearshore	M =	Mid-channel (green)
△ Near-bottom	R =	Right bank (blue)
◇ Not detected (shown at the detection limit)		

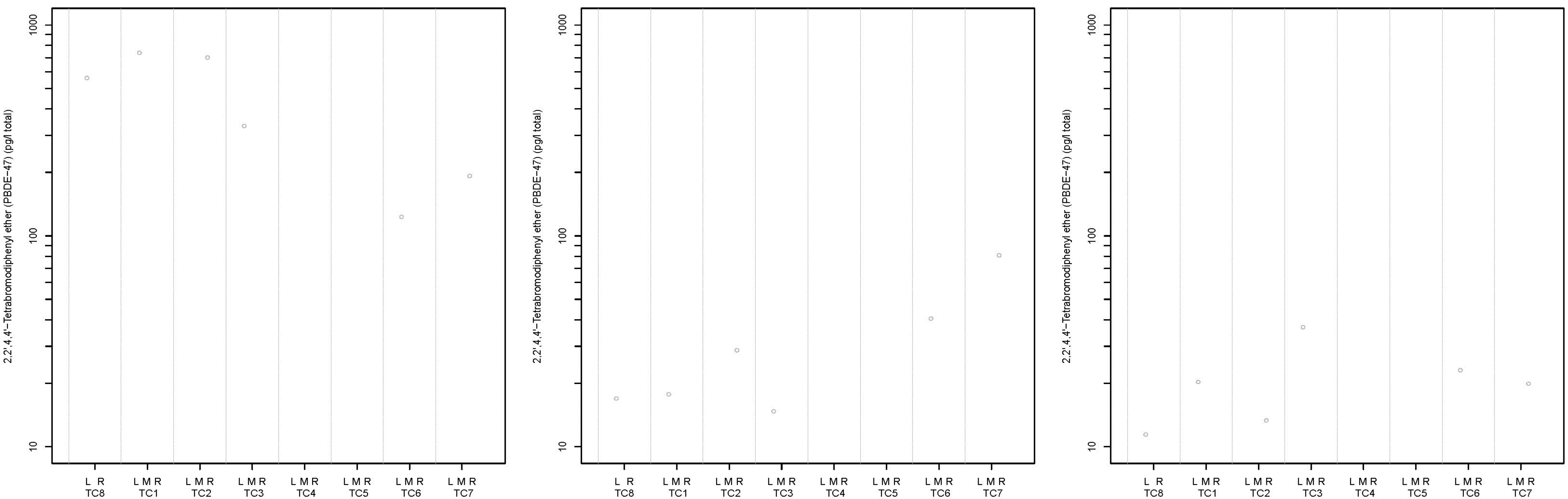
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,2',4,4'−Tetrabromodiphenyl ether (PBDE−47)

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



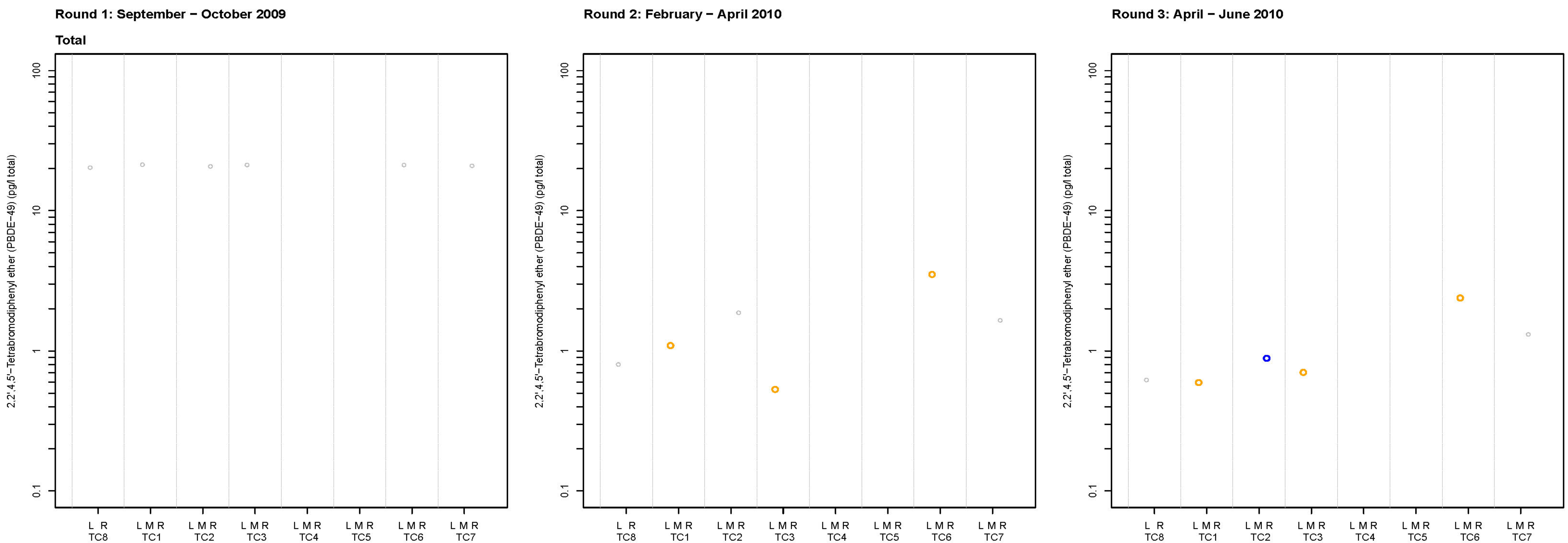
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,2',4,5'−Tetrabromodiphenyl ether (PBDE−49)



LEGEND

▽ Near-surface ○ Nearshore △ Near-bottom ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

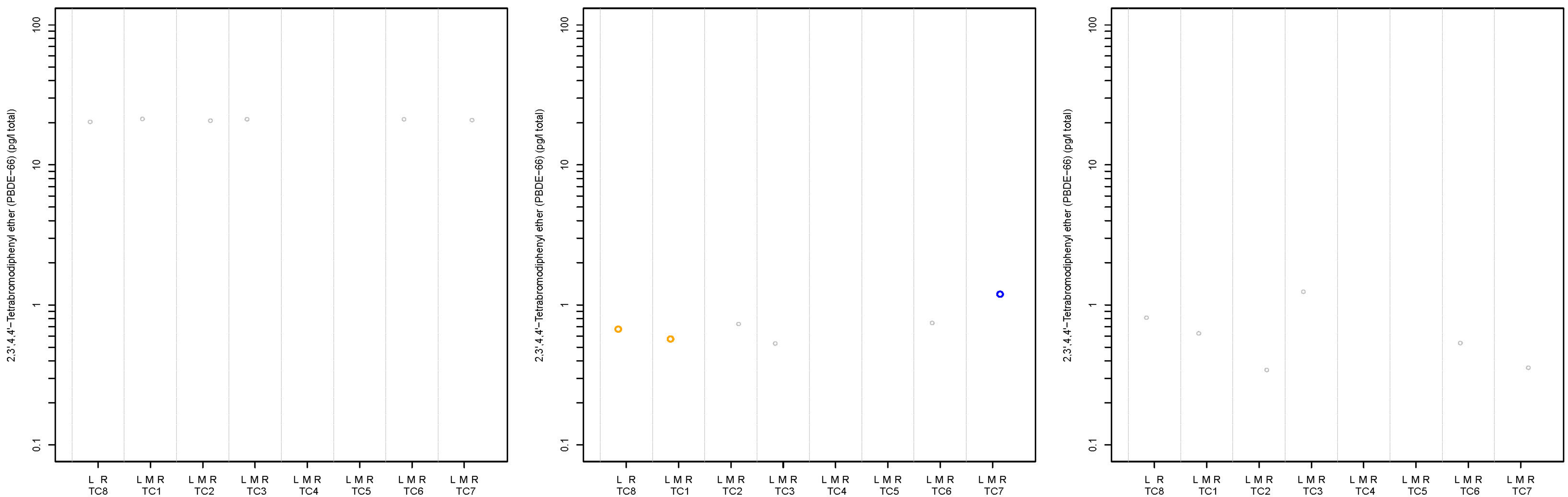
Disturbed Surface Water – 2,3',4,4'–Tetrabromodiphenyl ether (PBDE–66)

Round 1: September – October 2009

Round 2: February – April 2010

Round 3: April – June 2010

Total



LEGEND

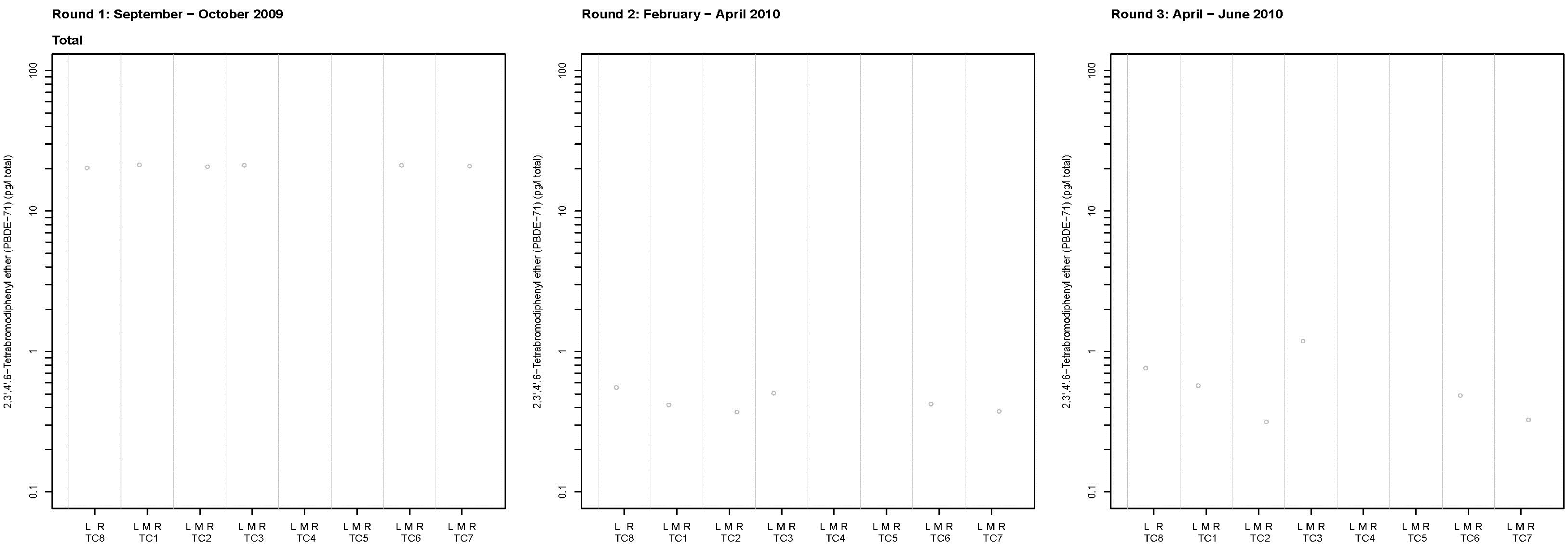
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,3',4',6−Tetrabromodiphenyl ether (PBDE−71)



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

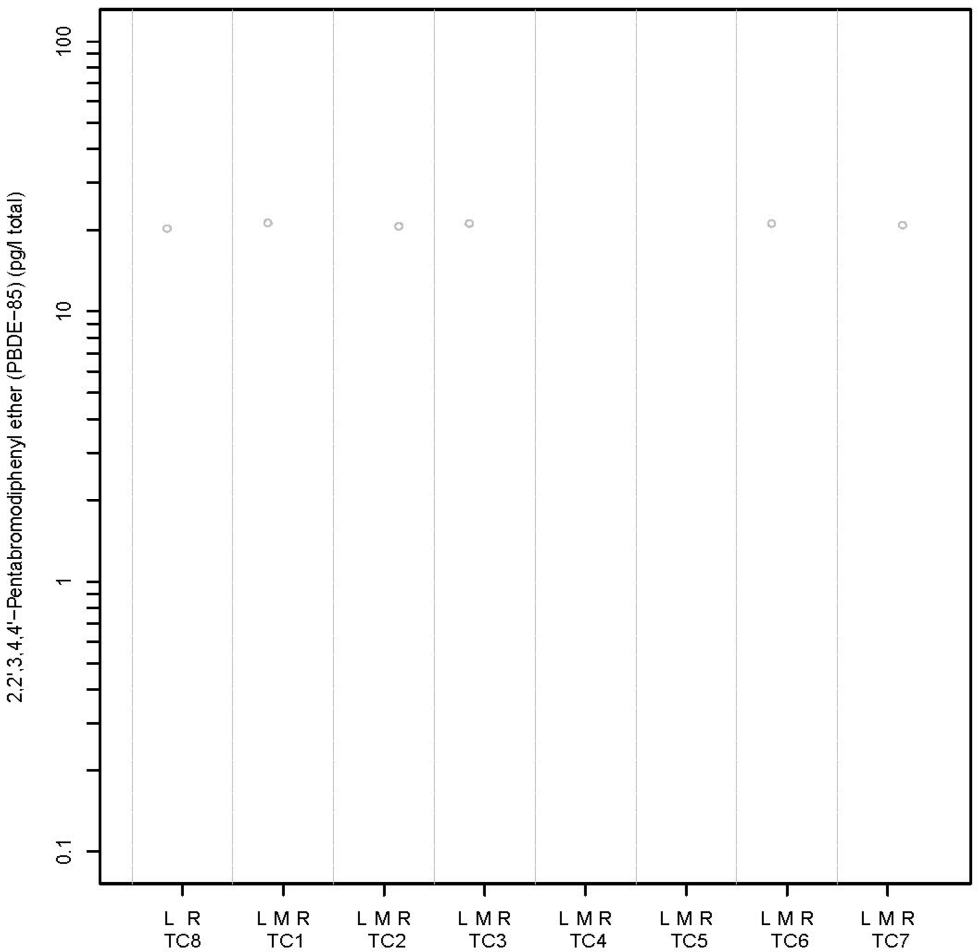
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

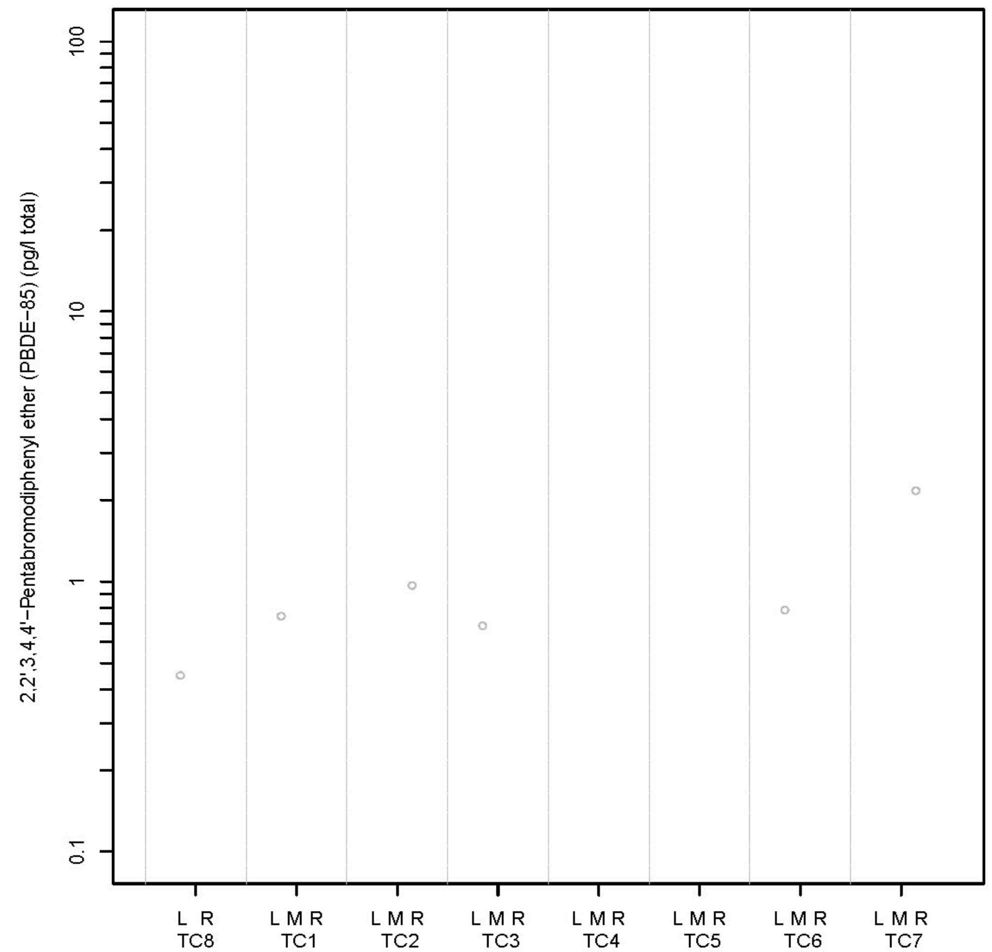
Disturbed Surface Water − 2,2',3,4,4'−Pentabromodiphenyl ether (PBDE−85)

Round 1: September − October 2009

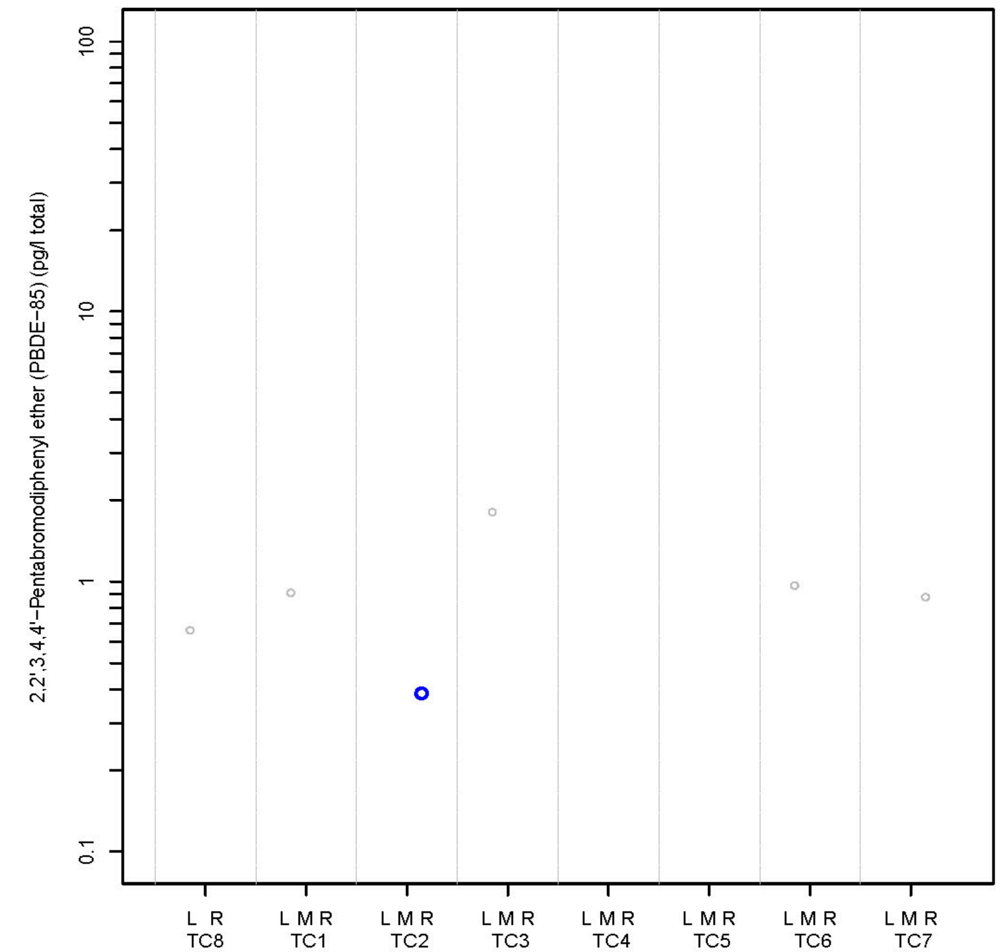
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

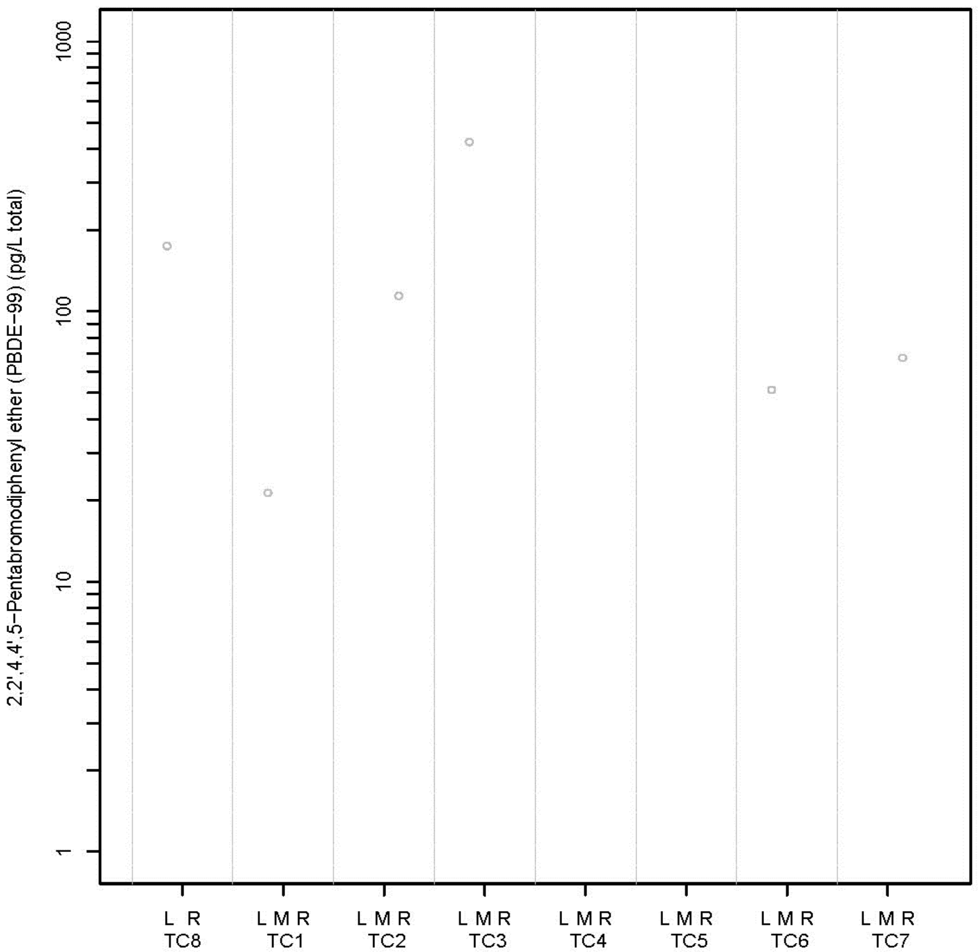
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

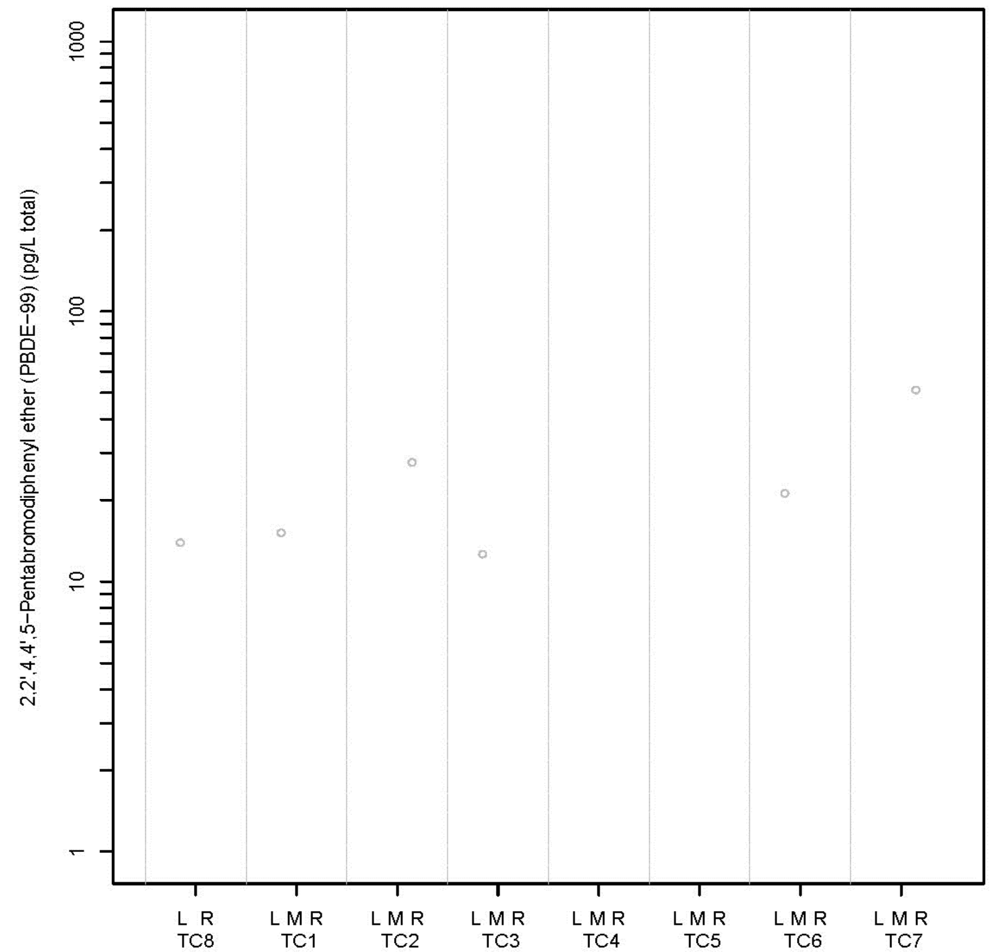
Disturbed Surface Water − 2,2',4,4',5−Pentabromodiphenyl ether (PBDE−99)

Round 1: September − October 2009

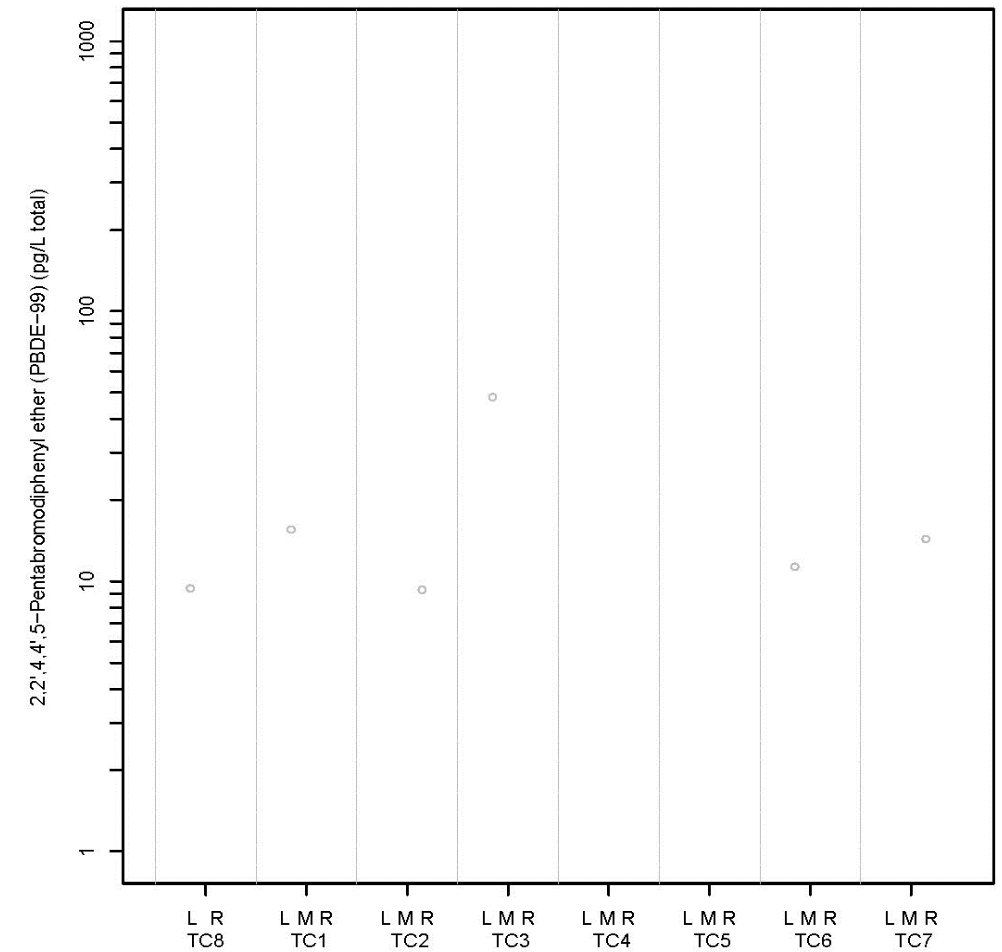
Total



Round 2: February − April 2010



Round 3: April − June 2010



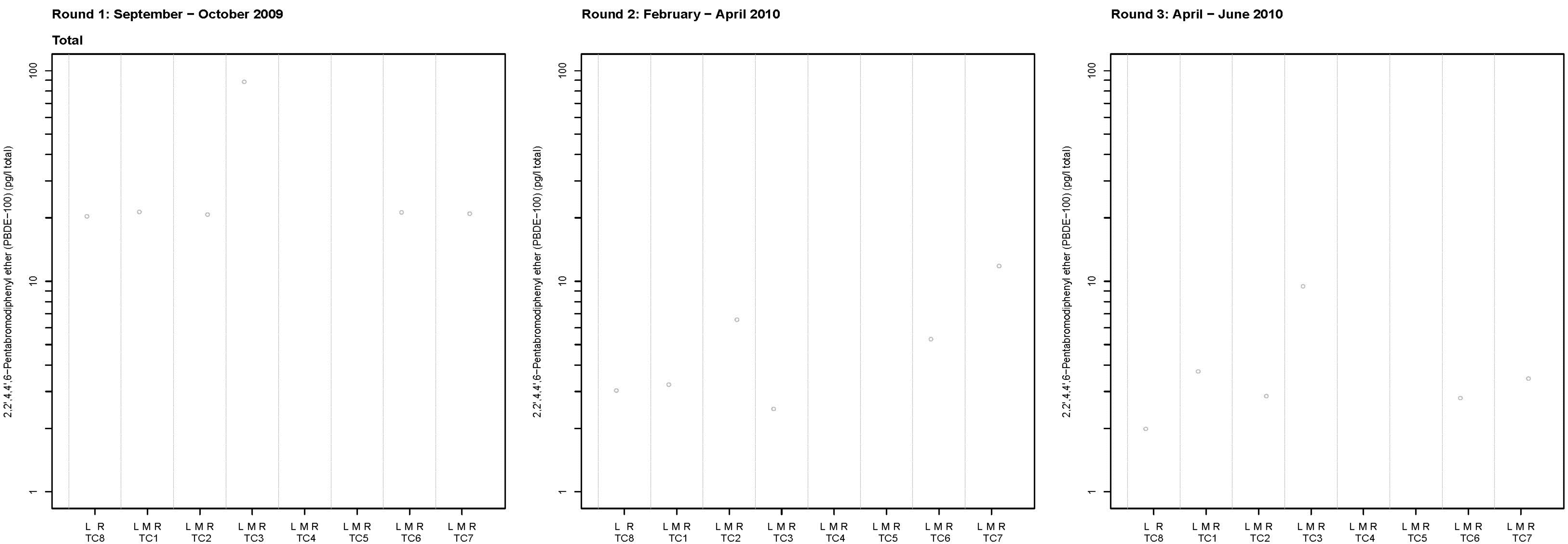
LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,2',4,4',6−Pentabromodiphenyl ether (PBDE−100)



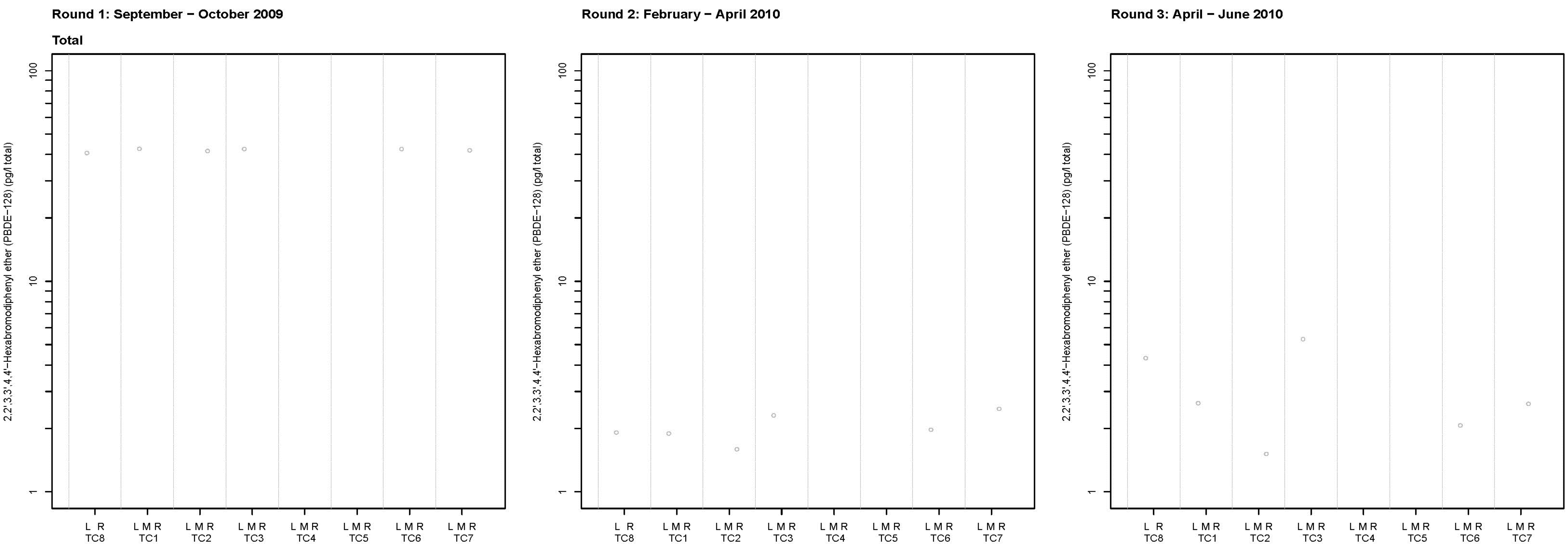
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,2',3,3',4,4'−Hexabromodiphenyl ether (PBDE−128)



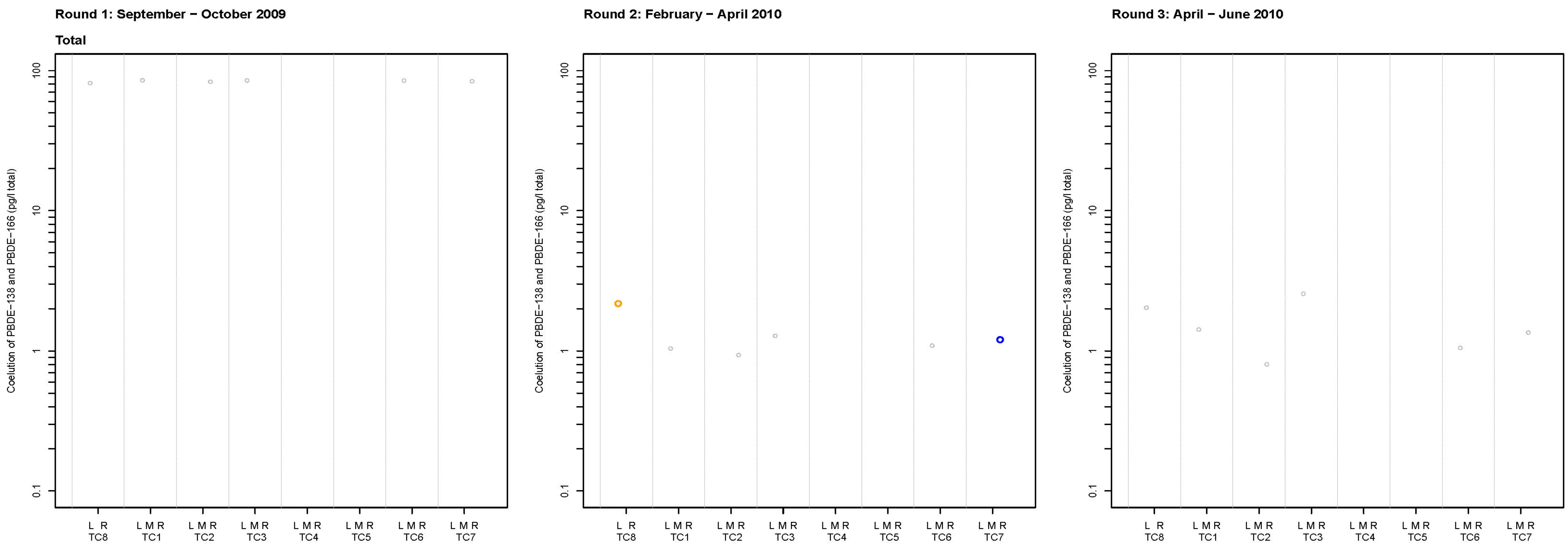
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Coelution of PBDE−138 and PBDE−166



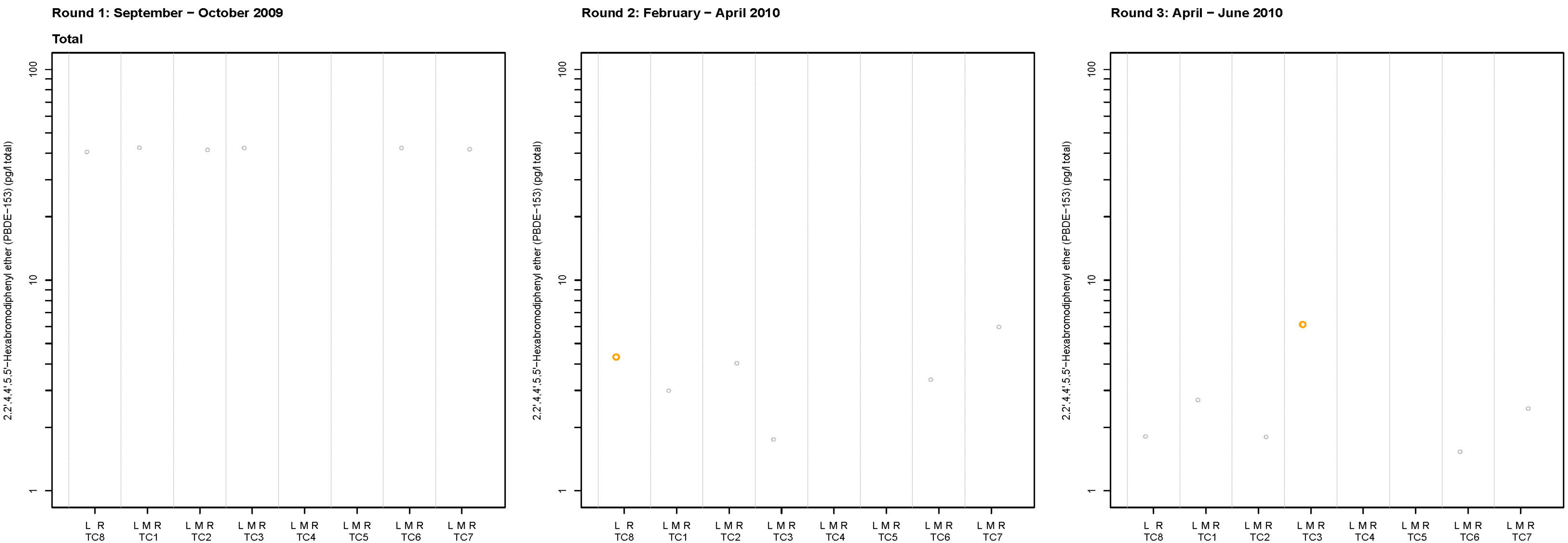
LEGEND

▽	Near-surface	L =	Left bank (orange)
○	Nearshore	M =	Mid-channel (green)
△	Near-bottom	R =	Right bank (blue)
◇	Not detected (shown at the detection limit)		

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,2',4,4',5,5'−Hexabromodiphenyl ether (PBDE−153)



LEGEND

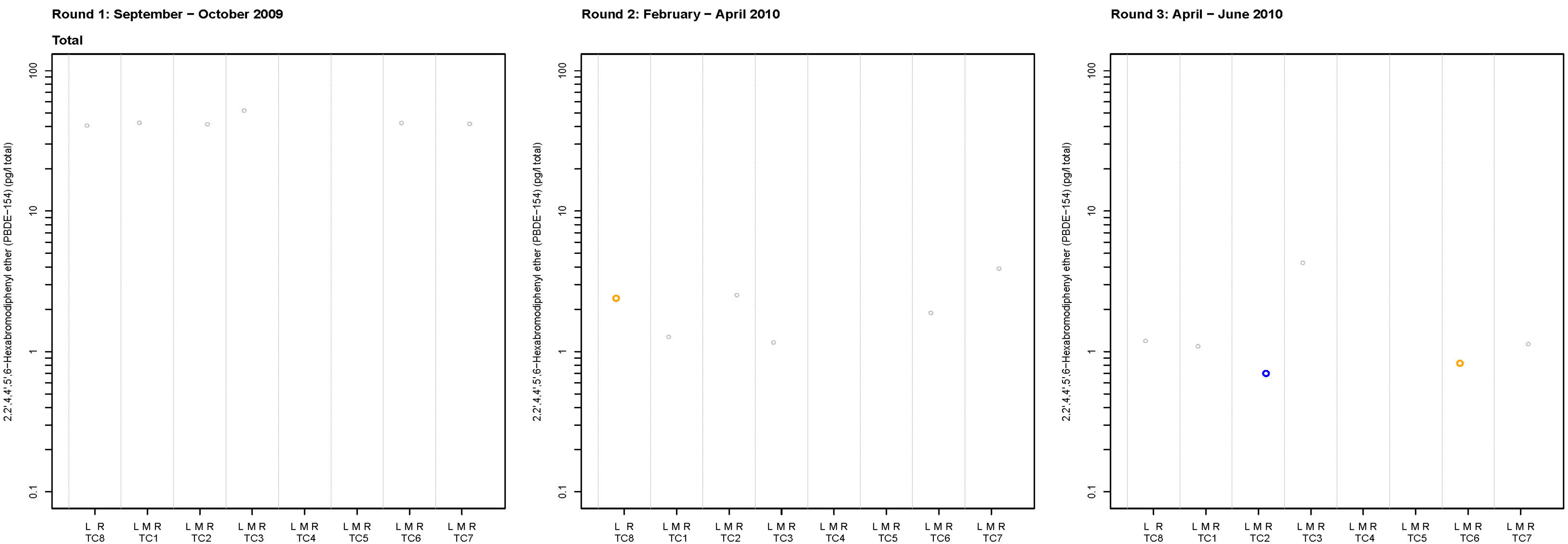
- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,2',4,4',5',6−Hexabromodiphenyl ether (PBDE−154)



LEGEND

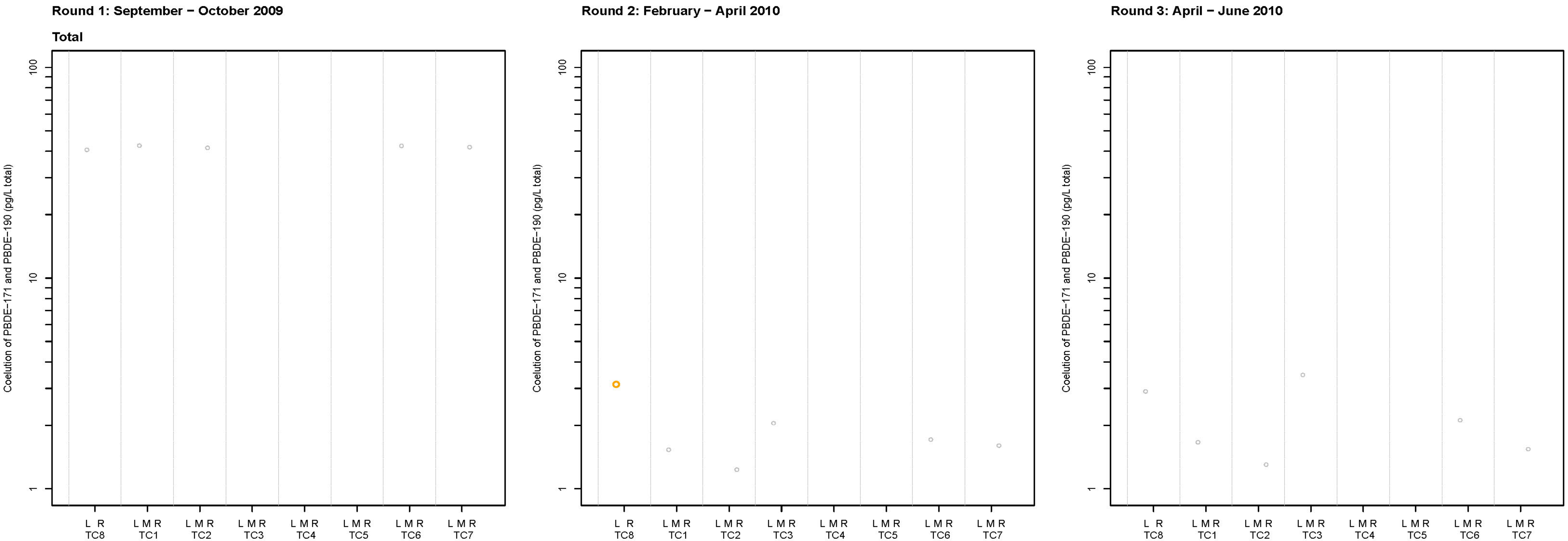
▽ Near-surface
○ Nearshore
△ Near-bottom
◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P) Drinking water standard, EPA primary maximum contaminant level
DWS (S) Drinking water standard, EPA secondary standard
DWS (AL) Drinking water standard, EPA action level
DWS (HA,C) Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC) Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL) Drinking water standard, drinking water equivalent level
DWS (HB) Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T) Drinking water standard, EPA taste threshold

Disturbed Surface Water − Coelution of PBDE−171 and PBDE−190



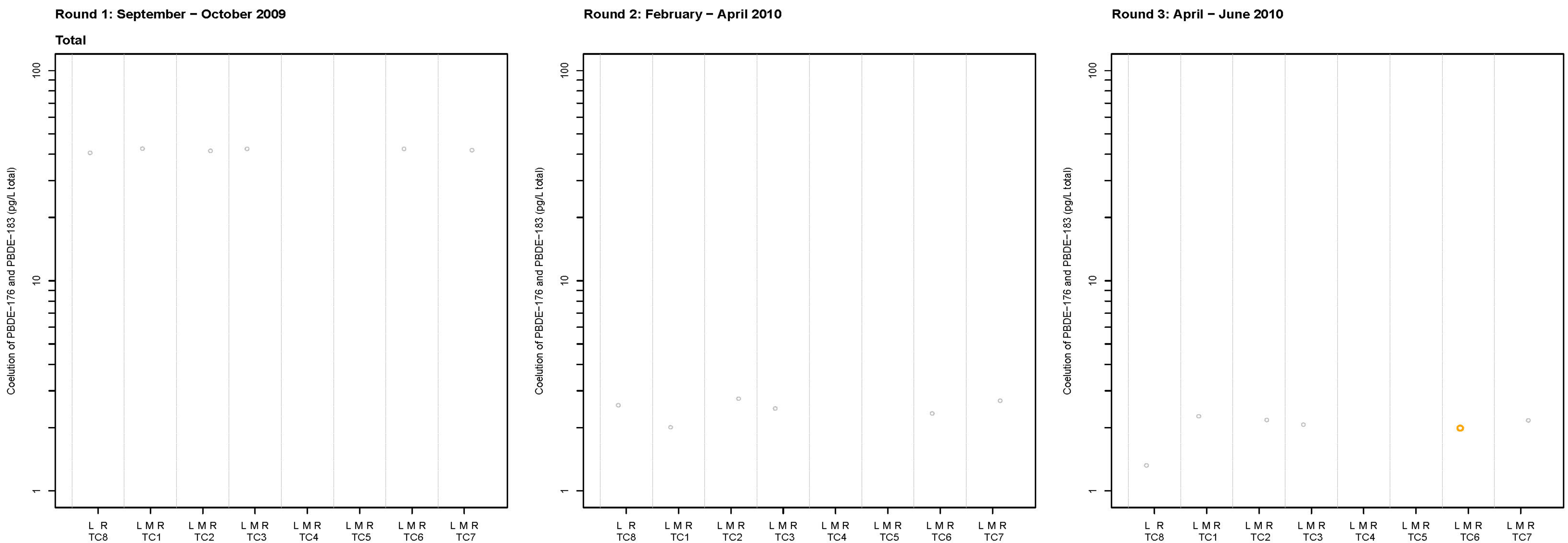
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Coelution of PBDE−176 and PBDE−183



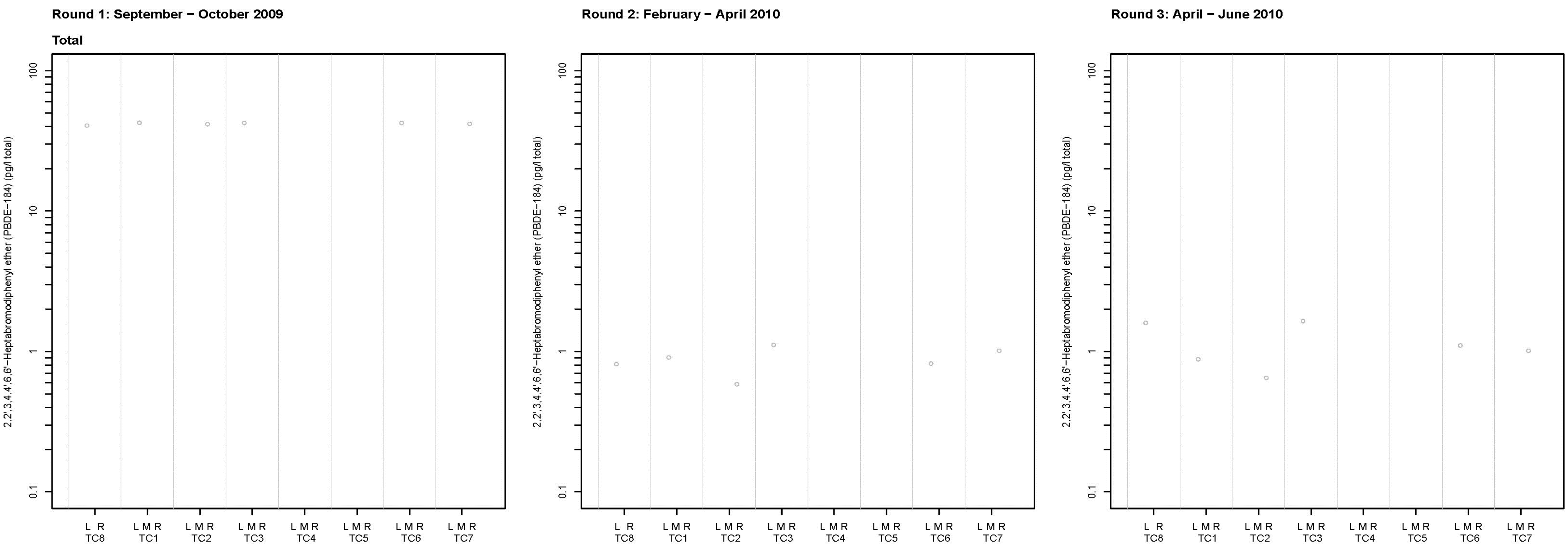
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,2',3,4,4',6,6'−Heptabromodiphenyl ether (PBDE−184)



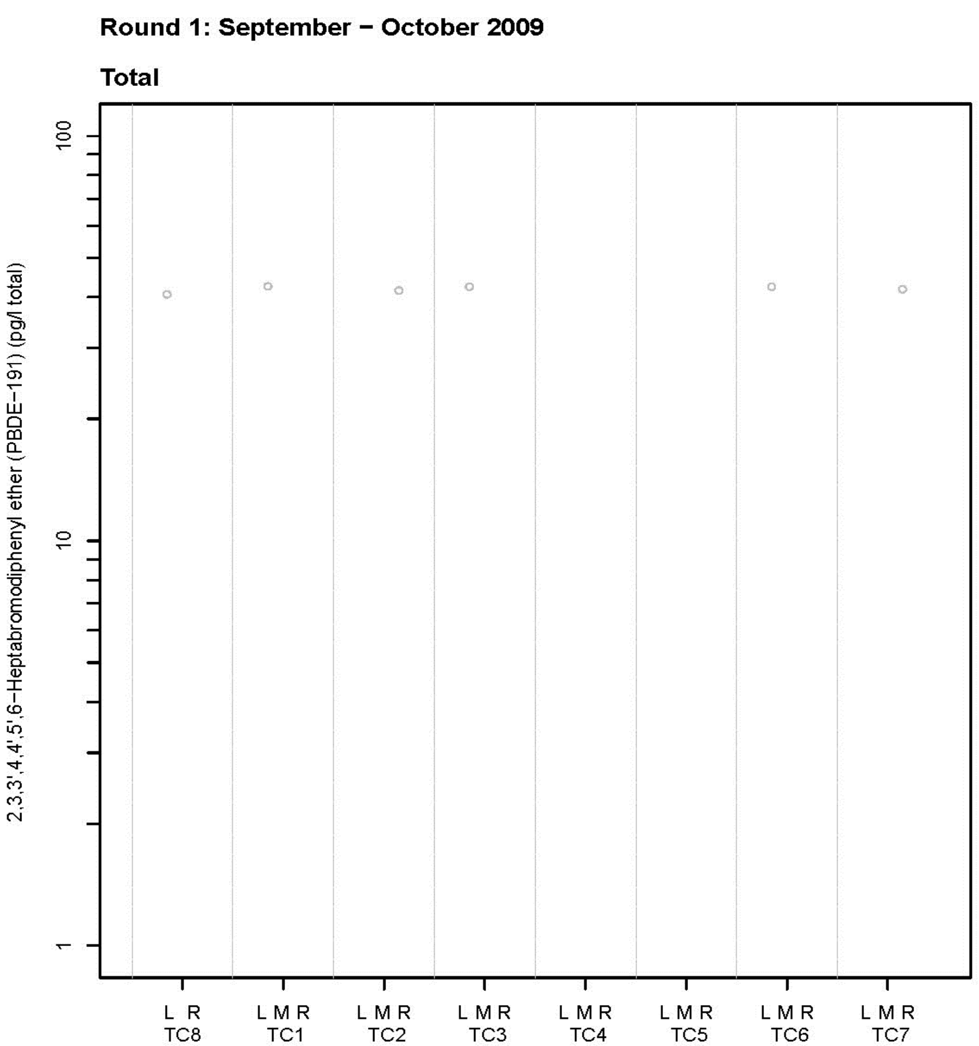
LEGEND

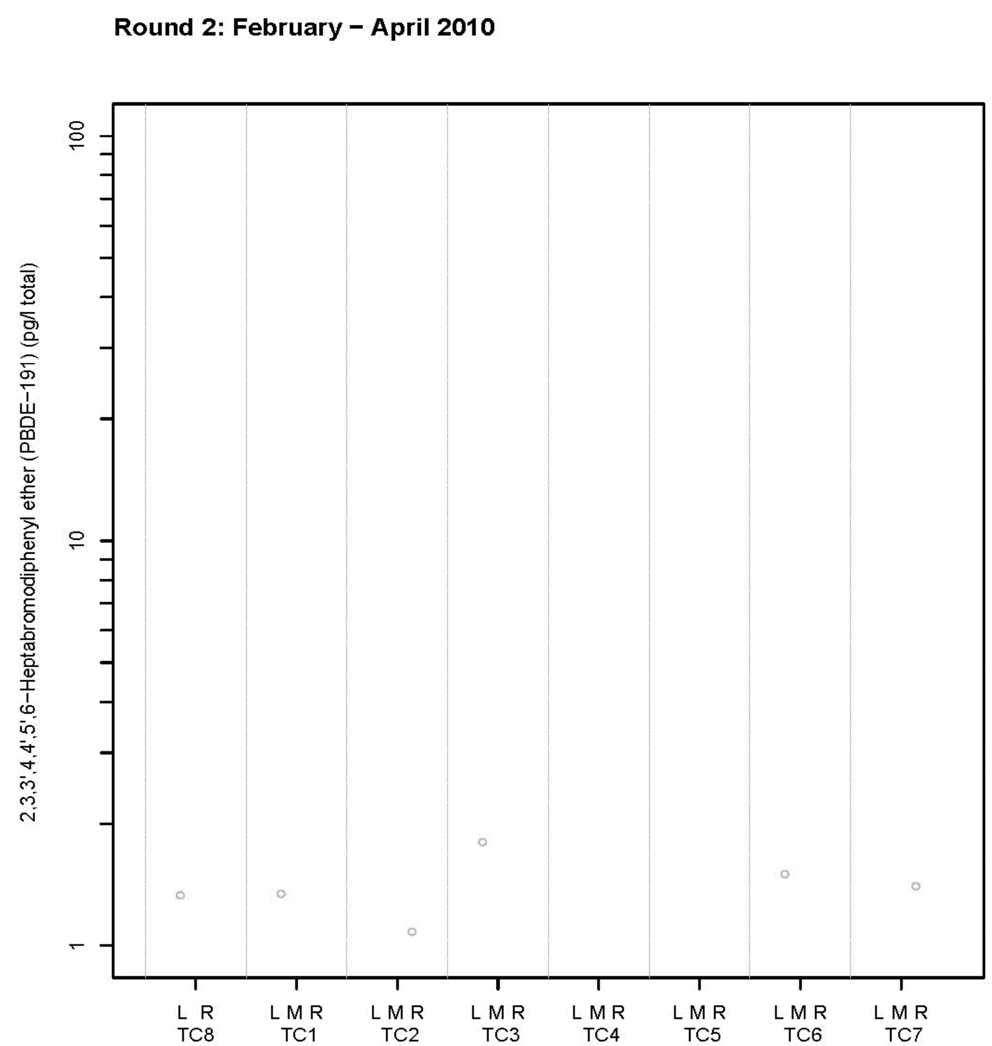
▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

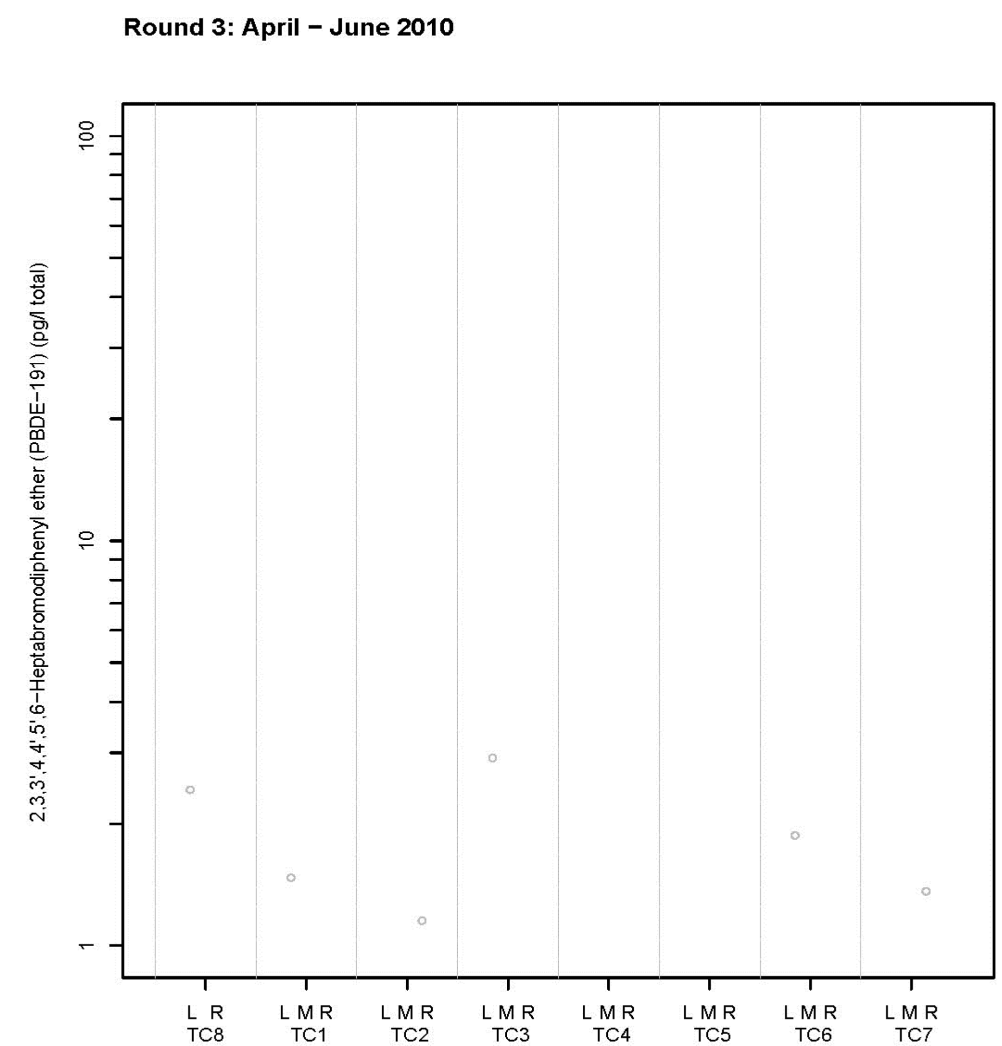
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,3,3',4,4',5',6−Heptabromodiphenyl ether (PBDE−191)







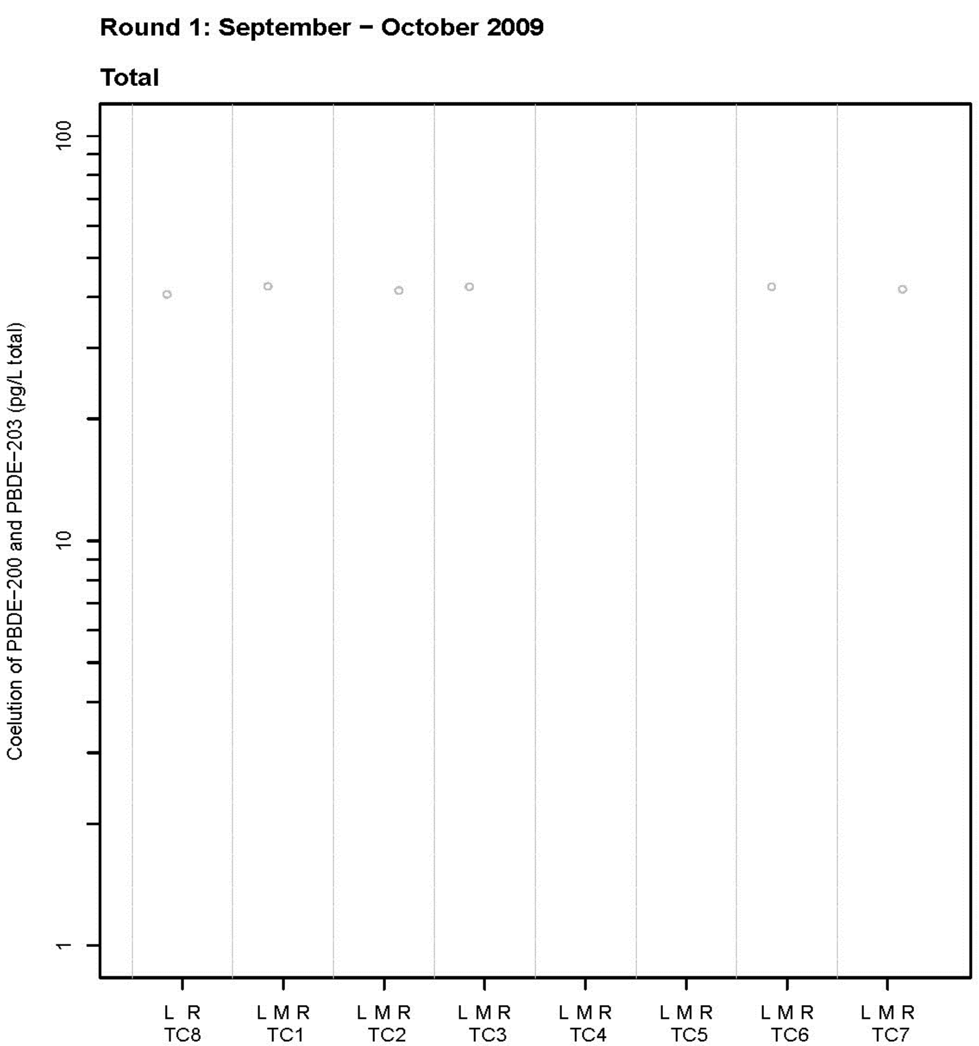
LEGEND

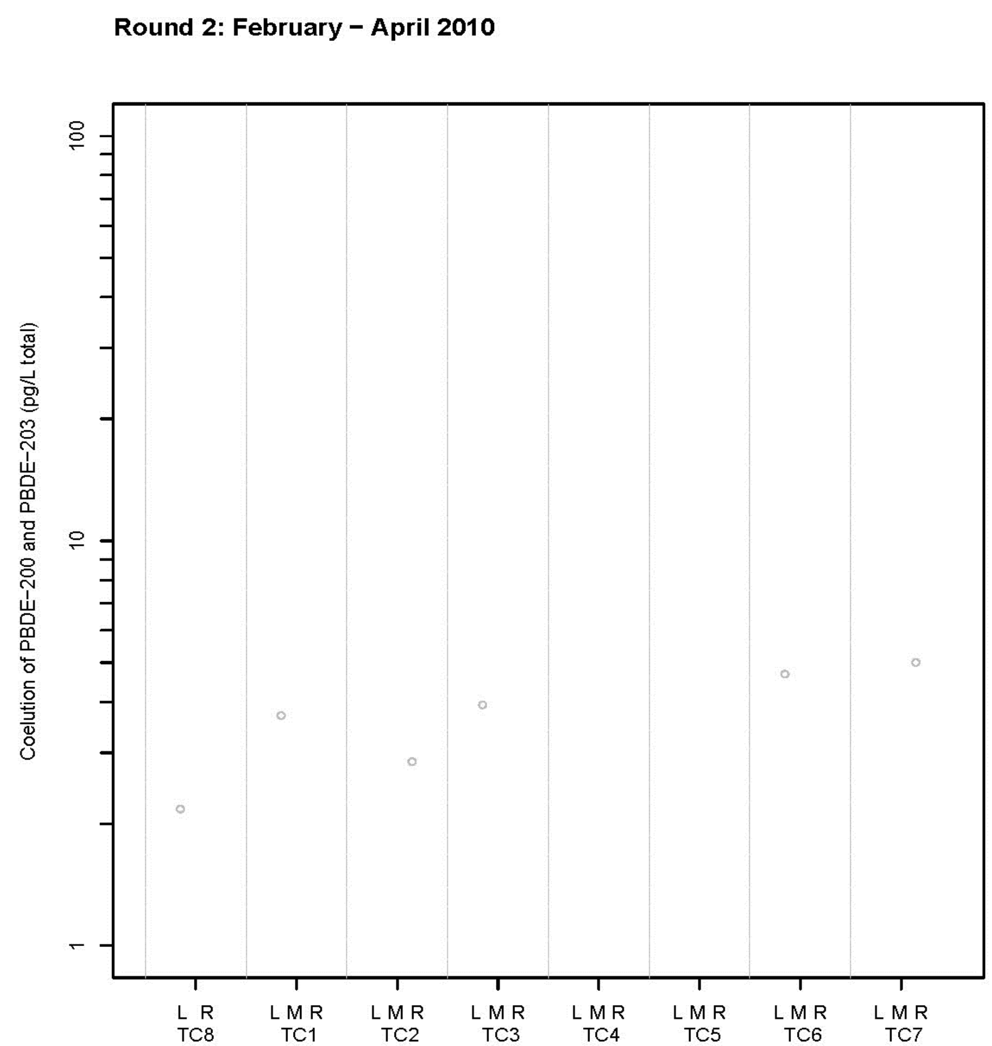
▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

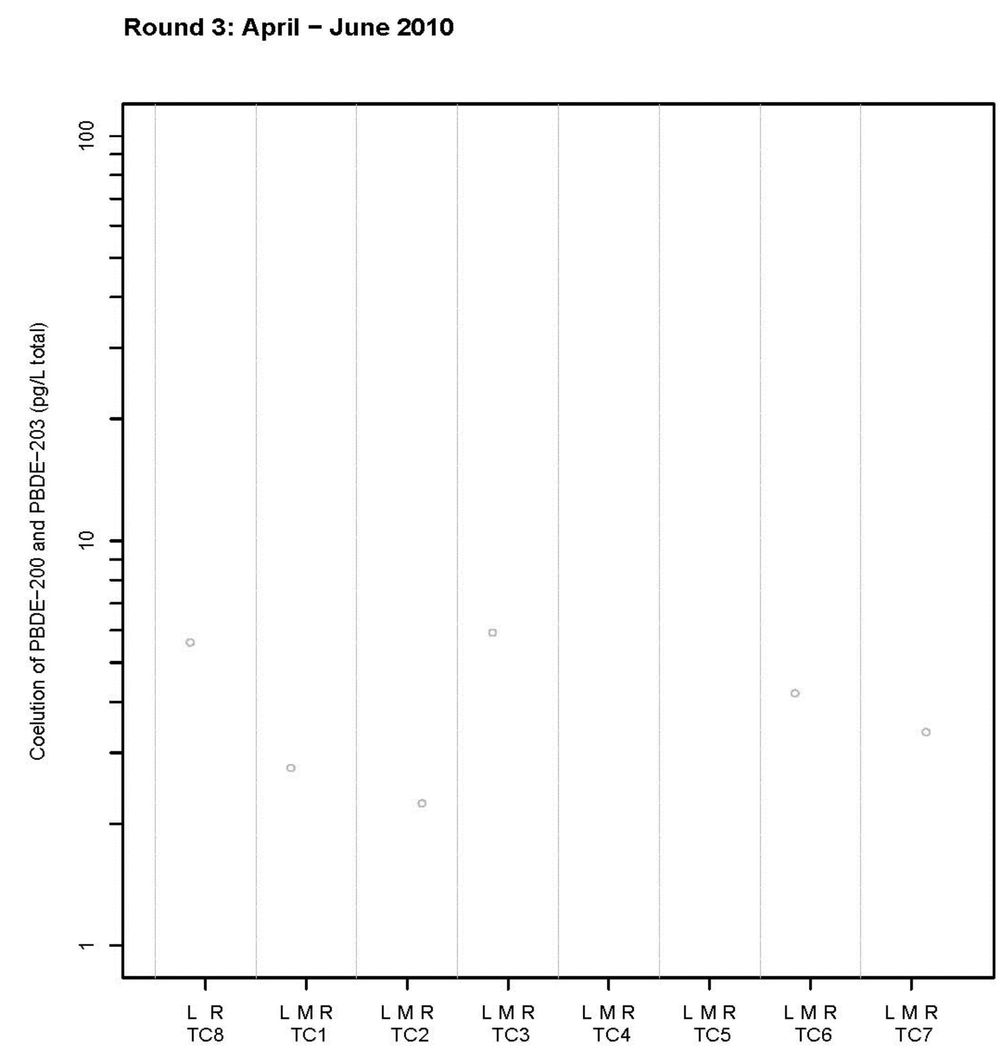
Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Coelution of PBDE−200 and PBDE−203







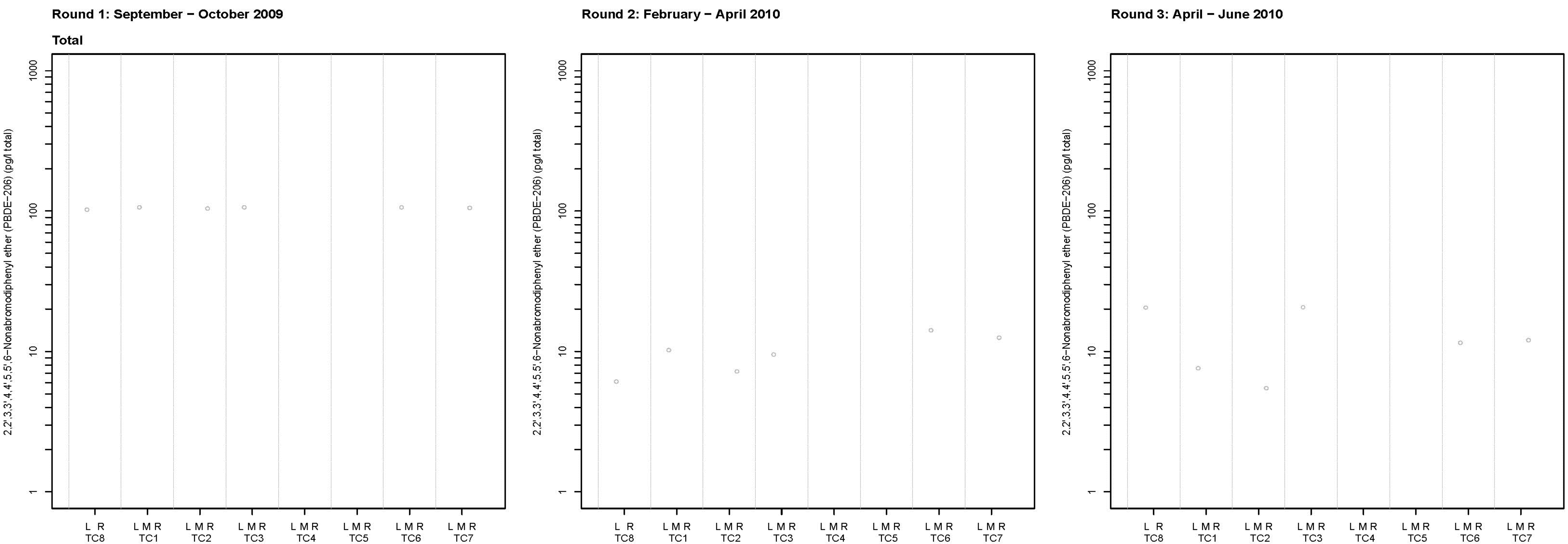
LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

Note: Non-disturbed samples are not shown.
Y-axes are on $\log_{10}$ scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − 2,2',3,3',4,4',5,5',6−Nonabromodiphenyl ether (PBDE−206)



LEGEND

- ▽ Near-surface
- ○ Nearshore
- △ Near-bottom
- ◇ Not detected (shown at the detection limit)

L = Left bank (orange)
M = Mid-channel (green)
R = Right bank (blue)

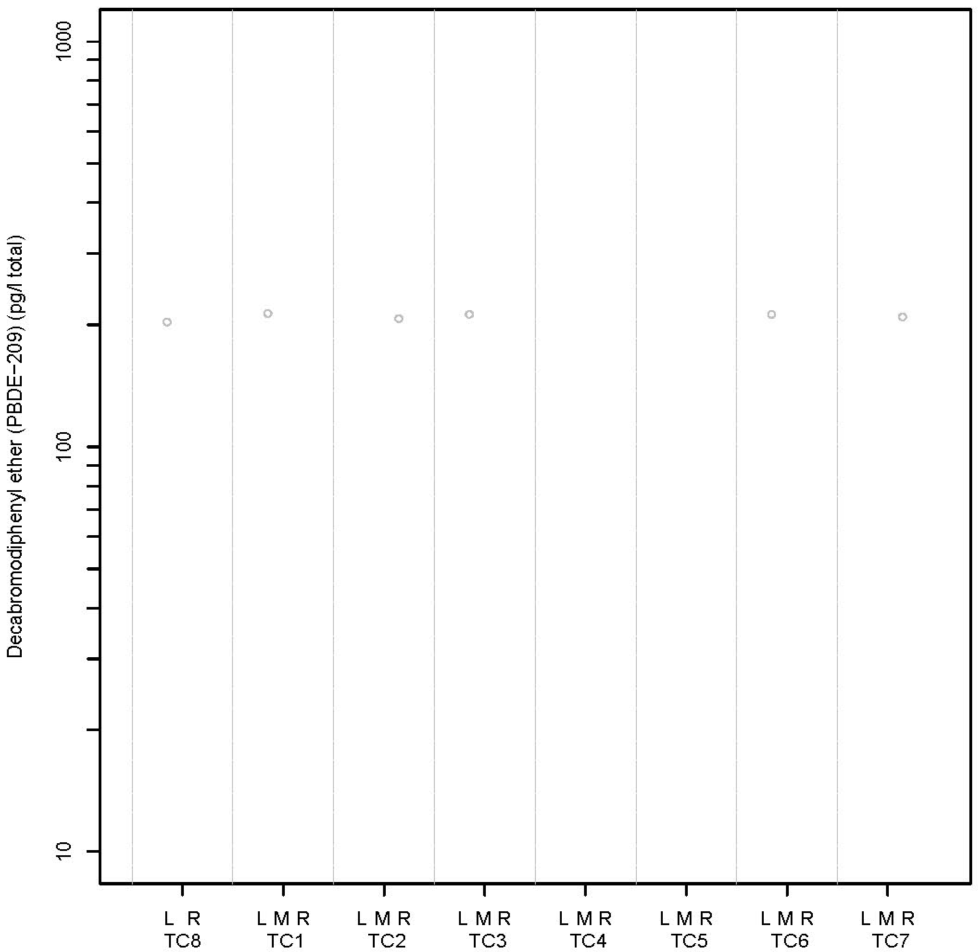
Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

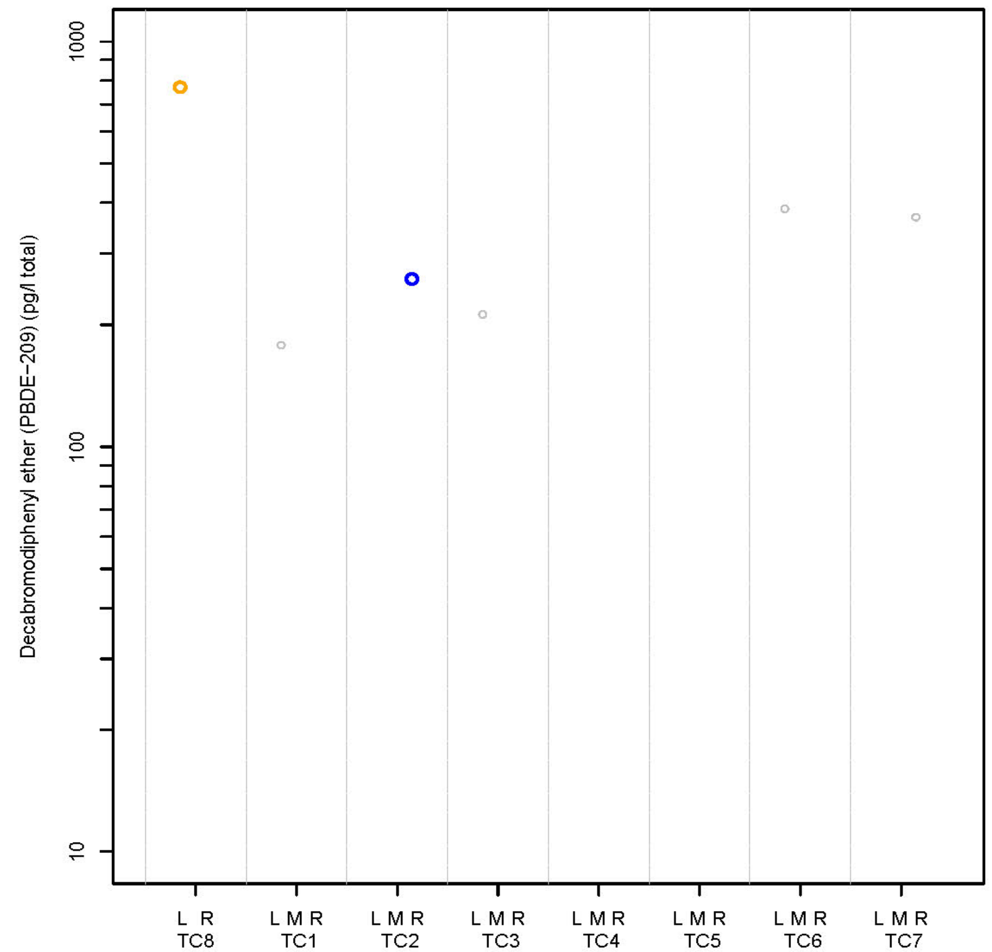
Disturbed Surface Water − Decabromodiphenyl ether (PBDE−209)

Round 1: September − October 2009

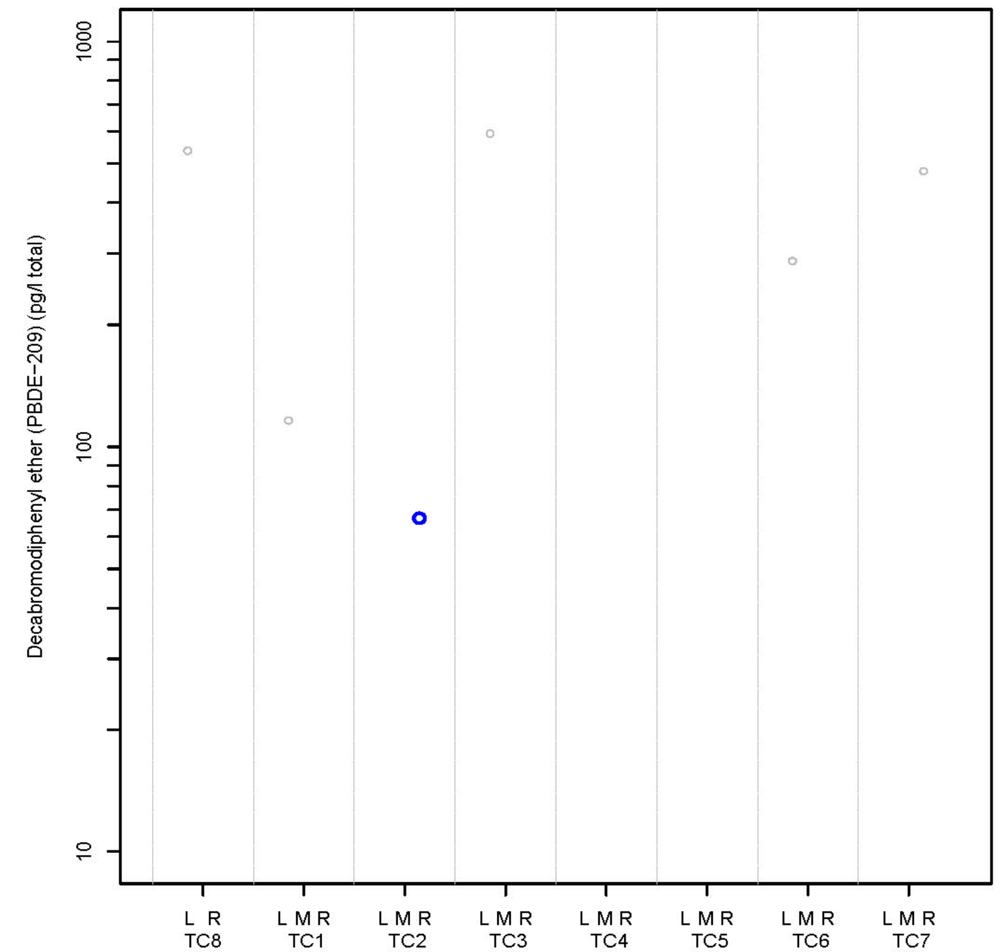
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

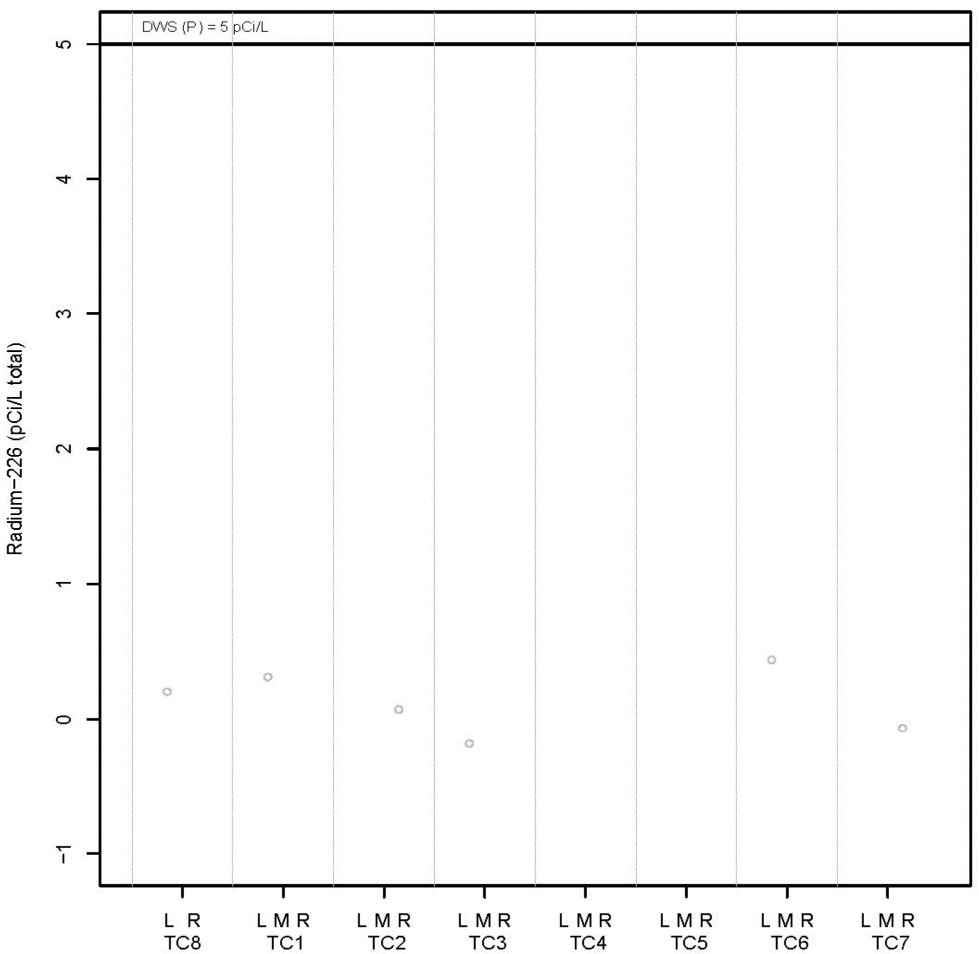
Note: Non-disturbed samples are not shown.
Y-axes are on log_{10} scale.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

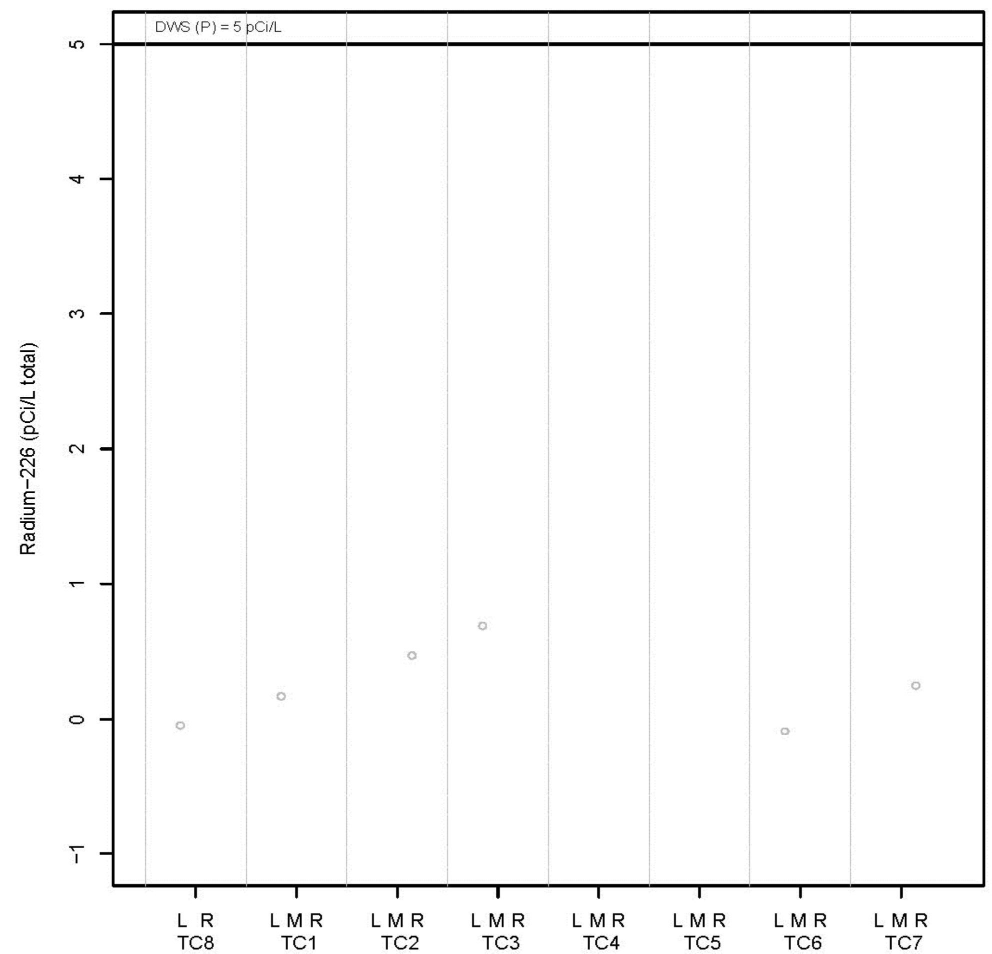
Disturbed Surface Water − Radium−226

Round 1: September − October 2009

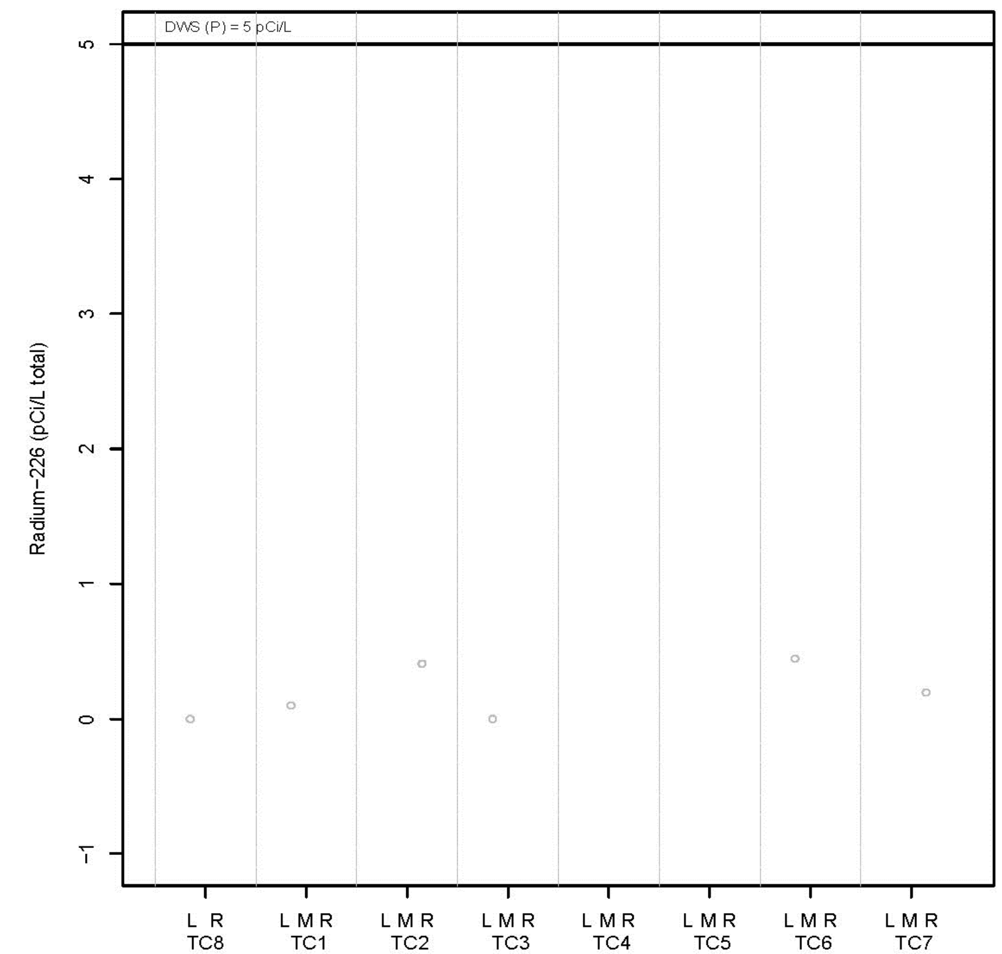
Total



Round 2: February − April 2010



Round 3: April − June 2010



LEGEND

▽ Near-surface	L = Left bank (orange)
○ Nearshore	M = Mid-channel (green)
△ Near-bottom	R = Right bank (blue)
◇ Not detected (shown at the detection limit)	

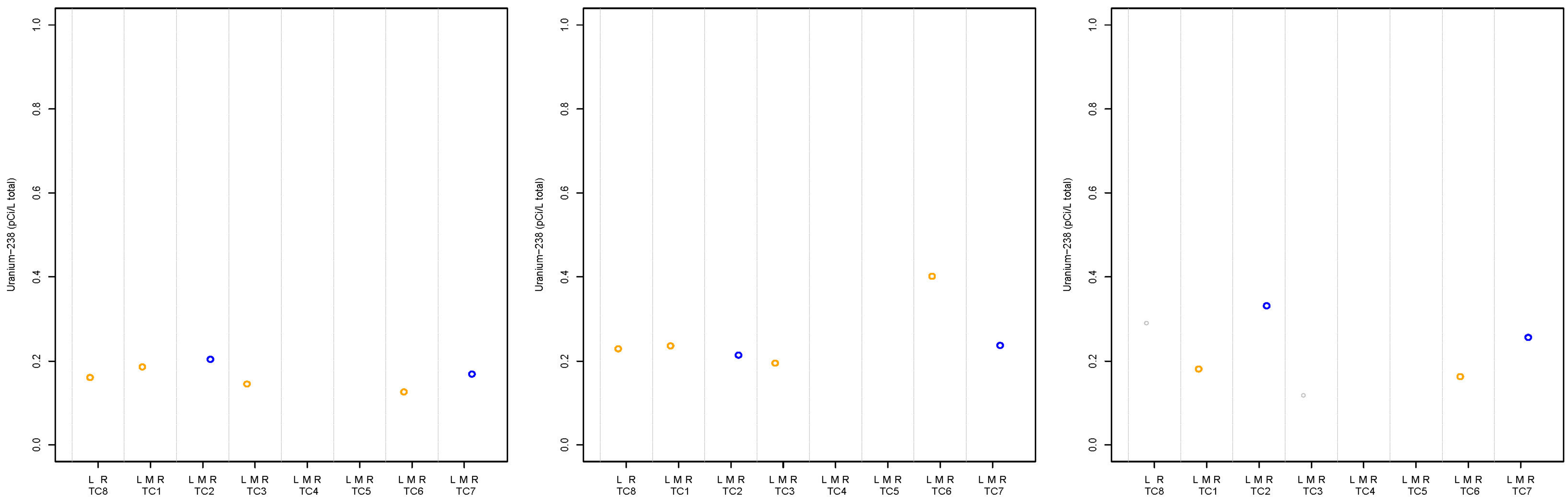
Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Disturbed Surface Water − Uranium−238

Round 1: September − October 2009 **Round 2: February − April 2010** **Round 3: April − June 2010**

Total



LEGEND

▽ Near-surface L = Left bank (orange)
○ Nearshore M = Mid-channel (green)
△ Near-bottom R = Right bank (blue)
◇ Not detected (shown at the detection limit)

Note: Non-disturbed samples are not shown.

DWS (P)	Drinking water standard, EPA primary maximum contaminant level
DWS (S)	Drinking water standard, EPA secondary standard
DWS (AL)	Drinking water standard, EPA action level
DWS (HA,C)	Drinking water standard, EPA health advisory, 10E-4 cancer risk
DWS (HA,NC)	Drinking water standard, EPA health advisory, lifetime noncancer effect
DWS (DWEL)	Drinking water standard, drinking water equivalent level
DWS (HB)	Drinking water standard, EPA health-based level for individuals on a 500 mg/day restricted sodium diet
DWS (T)	Drinking water standard, EPA taste threshold

Appendix G – Statistical Approach

This Appendix provides necessary details about how the statistical analysis was conducted to compare sampling transects and the depths and sides sampled within each transect. This approach differs from what was in the Surface Water QAPP (TAI 2009), which specified a stepwise approach using triplicate samples from TC3, TC6, and CAN1 as a measure of variability. During discussions between TAI and EPA (April 5 – April 15, 2010), EPA identified that the currently available field triplicate samples represented an agreed upon level of effort and, therefore, could be used as the residual variability when assessing significant differences between locations and depths within a transect. Appendix D to this Surface Water Data Summary and Data Gap Report provides these communications. Therefore, triplicate sampling in Rounds 2 and 3 was not necessary, and for purposes of evaluating the data in the future, an Analysis of Variance (ANOVA) approach (or equivalent nonparametric statistic, if necessary) with the entire data set (data from Rounds 1, 2, and 3) would be appropriate.

Summary of Approach from the Surface Water QAPP

The comparison approach outlined in Section A7.6 of the QAPP (TAI 2009) systematically compares samples from each transect. First the left bank, mid-channel, and right bank near-surface and nearshore[1] samples are evaluated. If a statistical difference is concluded, then the evaluation is repeated with the nearshore samples excluded. The same evaluation is conducted for the near-bottom samples separately. If both of these evaluations conclude that samples are equivalent (i.e., not statistically significantly different) then the near-surface and near-bottom samples are pooled, and the evaluation repeated. This process is repeated for both dissolved and total results of each chemical of interest (COI), adjusting the significance level to account for the multiple comparisons conducted.

The statistical evaluation performed on each subset of identified samples compares the observed range (maximum minus minimum) to the distribution of ranges likely observed from a normal distribution fit to the data set. The distribution of ranges derives from randomly drawn samples from a normal distribution (i.e., Monte Carlo process) characterized by the average measured concentration of the subset being evaluated and the coefficient of variation (CV) defined by triplicate samples.[2] The range is calculated for each randomly drawn sample of the same size as the data subset being compared, (i.e., N=3–6 for the initial comparisons of near-surface and near-bottom samples). Significance of the comparison is based on the percentile of

[1] Nearshore samples were only collected at the left and right banks, not mid-channel.

[2] A normal distribution is characterized by a mean and standard deviation. Standard deviation can be calculated by multiplying the coefficient of variation by the mean.

the observed range within the distribution. If the observed range is above the appropriate percentile[3] then a significant difference is concluded and samples are not combined for further analysis.

Conclusions from this method rely on the variability of field triplicate samples collected at one of three locations: the riverine segment of the river (TC3), the reservoir segment of the river (TC6), and upriver from Trail, B.C. (CAN1). Each comparison depends upon the CV of the applicable location and sample type, for each COI. It is unclear why the variability at these transects should be expected at other transects. Also, within each of these transects there appears to be a fairly wide range of CV estimates with no guidance for selecting the most appropriate CV for use in the calculations.

Calculated CV estimates of the triplicate samples from TC3, TC6, and CAN1, based on detected concentrations, indicated that within sample type (left, right, and mid-channel near-surface, for example), the CVs for each transect generally do not vary substantially. However, between sample types (near-surface compared to near-bottom, for example) the CVs are more variable. This variability is not surprising, as the CV estimates are based on only three results. This comparison method is further complicated for COIs that were not detected in samples from the three transects with field replicates or not detected in all samples at the transect being compared. Either of these conditions makes statistical comparisons using this approach unreliable because neither the CV nor the observed range can be estimated.

Therefore, the method described in the QAPP does not provide robust conclusions; they are reliant upon the variability observed among three results from a different location (TC3, TC6, or CAN1). The method implies that variability at these locations should be representative of the variability expected at another transect. Further, the CV estimates from these locations vary substantially, yet the determination of significance depends entirely on those estimates.

Methods Used for Data Summary Report

Analysis excluded disturbed water samples, focusing only on the balanced design of the non-disturbed water samples. Most transects provided replicate samples at five depth-side categories, including left, right, and middle for near surface and near bottom, and left and right near shore. CAN1, TC10, and TC9 were not sampled mid-channel and CAN2 was sampled repeatedly only on the left shore. Additional replicate samples were collected at TC3, TC4, TC5,

[3] The percentile is selected to achieve the equivalence of an overall 0.05 significance level across all COIs. Using a Bonferonni adjustment for the number of COIs (m) would result in a percentile of (100-0.05/m) for each comparison.

and TC6 , in addition to triplicate samples collected during Round 1 and Round 2 at TC3, TC6, and CAN 1. All of the field replicate samples were included in the statistical evaluation.

Because of the large number of analytes for which a majority of results were undetected, analytes were screened based on the overall percentage of detected results as well as the percentage for each round of sampling. Analytes with more than 30% detected results across all rounds of sampling and more than 10% detected results within each of the three sampling rounds were retained for statistical evaluation. The higher percentage of undetected results skews the statistical comparisons as a result of the variability in detection limits, which is generally much lower than the measured variability in detected concentrations. Statistical comparisons included all undetected concentrations at half the detection limit.

ANOVA followed by Tukey's multiple comparison test provided an assessment of differences between transects, as well as between depths and sides within each transect. The fitted model included factors for depth and side and an interaction term nested within each transect in addition to a transect main-effect factor. When the underlying assumptions of ANOVA (normality and homogeneity of variance) could not be met by the data, either as reported or transformed, the non-parametric Kruskal-Wallis test was used followed by Wilcoxon tests to assess the multiple comparisons between transects. Differences between depths or sides within each transect were also evaluated based on Kruskal-Wallis tests. Following standard statistical procedure, only factors significant in the initial overall evaluation (ANOVA or Kruskal-Wallis test) were carried forward for the multiple comparison assessment. Significance was determined after a Bonferroni adjustment for the number of comparisons. All statistical evaluations were conducted at an overall 0.05 significance level, i.e., 95 percent confidence level.

Underlying assumptions to ANOVA were tested using Levene's test for variability between groups and the Shapiro-Wilks test for the assessment of normality. Log_{10} transformed concentrations were also evaluated. Non-parametric methods were used for conclusions only when the equal variance assumption (homoscedasticity) could not be met because the standard, parametric ANOVA method is quite robust to departures from normality. Parametric methods are generally more powerful for detecting differences than non-parametric methods.

Appendix Materials

Materials in this Appendix include complete output for the initial tests and quantile-to-quantile plots. Boxplots by depth and side and by transect are also included for information. Also provided is the complete statistical output for the multiple comparison assessments of differences between transects and between depths and sides within each transect, where appropriate.

Appendix G1a.

Tukey's multiple comparisons and Wilcoxon tests to identify specific transect differences

Alkalinity

```
   Levene's test by Transect
data:  Conc
Test Statistic = 3.194, p-value = 0.0007119

data:  log10(Conc)
Test Statistic = 3.4224, p-value = 0.0003264


   Levene's test by Depth
data:  Conc
Test Statistic = 0.4848, p-value = 0.6164

data:  log10(Conc)
Test Statistic = 0.5178, p-value = 0.5965


   Levene's test by Side
data:  Conc
Test Statistic = 0.3156, p-value = 0.7296

data:  log10(Conc)
Test Statistic = 0.2658, p-value = 0.7668



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 46.2241, df = 10, p-value = 1.306e-06
```

```
Dependent Variable Alkalinity
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.152
                   The p-value is 0.927 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.288
                   The p-value is 0.866 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.235
                   The p-value is 0.889 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.281
                   The p-value is 0.869 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.072
                   The p-value is 0.965 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.395
                   The p-value is 0.821 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.063
                   The p-value is 0.969 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.339
                   The p-value is 0.512 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.871
                   The p-value is 0.647 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Alkalinity
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.002
                    The p-value is 0.965 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 1.190
                    The p-value is 0.275 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 7.762
                    The p-value is 0.021 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.463
                    The p-value is 0.793 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.235
                    The p-value is 0.889 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.002
                    The p-value is 0.606 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.593
                    The p-value is 0.744 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.972
                    The p-value is 0.615 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.202
                    The p-value is 0.904 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 3.343
                    The p-value is 0.068 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Chloride Ion

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.7421, p-value = 0.07223

data:  log10(Conc)
Test Statistic = 2.0339, p-value = 0.03071


   Levene's test by Depth
data:  Conc
Test Statistic = 0.4571, p-value = 0.6336

data:  log10(Conc)
Test Statistic = 0.0196, p-value = 0.9806


   Levene's test by Side
data:  Conc
Test Statistic = 0.5024, p-value = 0.6057

data:  log10(Conc)
Test Statistic = 0.5065, p-value = 0.6032



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 29.8026, df = 10, p-value = 0.0009227
```

```
Dependent Variable Chloride ion
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.322
                   The p-value is 0.851 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.500
                   The p-value is 0.287 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.236
                   The p-value is 0.889 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.409
                   The p-value is 0.815 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 3.395
                   The p-value is 0.183 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.454
                   The p-value is 0.797 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 10.807
                   The p-value is 0.005 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 4.838
                   The p-value is 0.089 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 4.760
                   The p-value is 0.093 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.232
                   The p-value is 0.890 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Chloride ion
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.333
                    The p-value is 0.564 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.000
                    The p-value is 1.000 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.648
                    The p-value is 0.723 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.142
                    The p-value is 0.931 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.078
                    The p-value is 0.962 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.292
                    The p-value is 0.864 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.367
                    The p-value is 0.832 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.238
                    The p-value is 0.888 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.091
                    The p-value is 0.956 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 0.038
                    The p-value is 0.845 assuming chi-square distribution with 1 df.


            P-values reported are not adjusted for multiple comparisons.
            Adjusted significance level is 0.05 / 10 = 0.005.
```

Fluoride

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.353, p-value = 0.2031

data:  log10(Conc)
Test Statistic = 1.6562, p-value = 0.09183


   Levene's test by Depth
data:  Conc
Test Statistic = 0.1437, p-value = 0.8662

data:  log10(Conc)
Test Statistic = 0.0199, p-value = 0.9803


   Levene's test by Side
data:  Conc
Test Statistic = 2.154, p-value = 0.1182

data:  log10(Conc)
Test Statistic = 2.3639, p-value = 0.09615
```

```
  Standard ANOVA - full model
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
Transect             10 0.004610 4.61e-04   4.923 2.77e-06 ***
Transect:Depth       20 0.000756 3.78e-05   0.404    0.990
Transect:Side        17 0.001602 9.43e-05   1.007    0.453
Transect:Depth:Side  27 0.001537 5.69e-05   0.608    0.936
Residuals           178 0.016667 9.36e-05
```

```
                Df   Sum Sq  Mean Sq F value   Pr(>F)
Transect        10 0.004610 4.61e-04   5.191 8.85e-07 ***
Transect:Depth  20 0.000756 3.78e-05   0.426    0.986
Transect:Side   17 0.001602 9.43e-05   1.061    0.394
Residuals      205 0.018204 8.88e-05
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.1554, p-value = 0.02131

data:  log10(Conc)
Test Statistic = 2.1589, p-value = 0.02108


   Levene's test by Depth
data:  Conc
Test Statistic = 0.0841, p-value = 0.9194

data:  log10(Conc)
Test Statistic = 0.1736, p-value = 0.8407


   Levene's test by Side
data:  Conc
Test Statistic = 0.0325, p-value = 0.968

data:  log10(Conc)
Test Statistic = 0.0364, p-value = 0.9642



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 34.0145, df = 10, p-value = 0.0001837
```

```
Dependent Variable Hardness
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.197
                   The p-value is 0.906 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.571
                   The p-value is 0.276 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.302
                   The p-value is 0.860 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.359
                   The p-value is 0.835 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 3.105
                   The p-value is 0.212 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.099
                   The p-value is 0.952 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.508
                   The p-value is 0.776 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.843
                   The p-value is 0.656 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 2.226
                   The p-value is 0.329 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.716
                   The p-value is 0.699 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Hardness
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.031
                    The p-value is 0.860 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.429
                    The p-value is 0.513 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.302
                    The p-value is 0.860 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.302
                    The p-value is 0.860 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.628
                    The p-value is 0.731 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.291
                    The p-value is 0.864 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.217
                    The p-value is 0.897 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.190
                    The p-value is 0.909 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.004
                    The p-value is 0.998 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 3.177
                    The p-value is 0.075 assuming chi-square distribution with 1 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.1448, p-value = 0.3295

data:  log10(Conc)
Test Statistic = 1.1649, p-value = 0.3153


   Levene's test by Depth
data:  Conc
Test Statistic = 0.027, p-value = 0.9733

data:  log10(Conc)
Test Statistic = 0.0148, p-value = 0.9853


   Levene's test by Side
data:  Conc
Test Statistic = 1.3027, p-value = 0.2736

data:  log10(Conc)
Test Statistic = 1.28, p-value = 0.2799



  Standard ANOVA - full model
                     Df Sum Sq  Mean Sq F value Pr(>F)
Transect             10 0.1877 0.018773   1.061  0.395
Transect:Depth       20 0.3630 0.018149   1.026  0.434
Transect:Side        17 0.1932 0.011365   0.642  0.854
Transect:Depth:Side  27 0.1457 0.005396   0.305  1.000
Residuals           178 3.1488 0.017690


                Df Sum Sq Mean Sq F value Pr(>F)
Transect        10  0.188 0.01877   1.168  0.314
Transect:Depth  20  0.363 0.01815   1.129  0.322
Transect:Side   17  0.193 0.01137   0.707  0.794
Residuals      205  3.295 0.01607
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.2526, p-value = 0.01567

data:  log10(Conc)
Test Statistic = 1.8919, p-value = 0.04689


   Levene's test by Depth
data:  Conc
Test Statistic = 2.0351, p-value = 0.1328

data:  log10(Conc)
Test Statistic = 1.8081, p-value = 0.1661


   Levene's test by Side
data:  Conc
Test Statistic = 0.6779, p-value = 0.5086

data:  log10(Conc)
Test Statistic = 1.3712, p-value = 0.2557



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 51.4771, df = 10, p-value = 1.426e-07
```

```
Dependent Variable Silica
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.082
                   The p-value is 0.960 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.162
                   The p-value is 0.206 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.181
                   The p-value is 0.913 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.445
                   The p-value is 0.801 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.356
                   The p-value is 0.837 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.486
                   The p-value is 0.476 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.506
                   The p-value is 0.776 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.633
                   The p-value is 0.268 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.936
                   The p-value is 0.626 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.582
                   The p-value is 0.453 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Silica
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.159
                    The p-value is 0.690 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.196
                    The p-value is 0.658 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 1.196
                    The p-value is 0.550 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.578
                    The p-value is 0.749 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.374
                    The p-value is 0.830 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.051
                    The p-value is 0.975 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 1.071
                    The p-value is 0.585 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.870
                    The p-value is 0.647 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.108
                    The p-value is 0.947 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 4.083
                    The p-value is 0.043 assuming chi-square distribution with 1 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

Silicon, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 5.2391, p-value = 2.248e-05

data:  log10(Conc)
Test Statistic = 2.8447, p-value = 0.008139


   Levene's test by Depth
data:  Conc
Test Statistic = 1.3723, p-value = 0.2565

data:  log10(Conc)
Test Statistic = 0.6813, p-value = 0.5074


   Levene's test by Side
data:  Conc
Test Statistic = 0.3814, p-value = 0.6836

data:  log10(Conc)
Test Statistic = 1.1811, p-value = 0.3097



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 36.2453, df = 7, p-value = 6.516e-06
```

```
Dependent Variable Silicon, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.232
                   The p-value is 0.890 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.429
                   The p-value is 0.180 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.008
                   The p-value is 0.996 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.408
                   The p-value is 0.816 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.175
                   The p-value is 0.556 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.779
                   The p-value is 0.249 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.165
                   The p-value is 0.559 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Dependent Variable Silicon, dissolved
Grouping Variable SIDE$

Results for TRANSECT$ = CAN1
Kruskal-Wallis Test Statistic: 0.000
The p-value is 1.000 assuming chi-square distribution with 1 df.

Results for TRANSECT$ = TC10
Kruskal-Wallis Test Statistic: 0.429
The p-value is 0.513 assuming chi-square distribution with 1 df.

Results for TRANSECT$ = TC1
Kruskal-Wallis Test Statistic: 1.757
The p-value is 0.415 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC2
Kruskal-Wallis Test Statistic: 0.200
The p-value is 0.655 assuming chi-square distribution with 1 df.

Results for TRANSECT$ = TC3
Kruskal-Wallis Test Statistic: 0.419
The p-value is 0.811 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC4
Kruskal-Wallis Test Statistic: 0.709
The p-value is 0.702 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC6
Kruskal-Wallis Test Statistic: 0.427
The p-value is 0.808 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC9
Kruskal-Wallis Test Statistic: 4.481
The p-value is 0.034 assuming chi-square distribution with 1 df.

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Silicon, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 5.2054, p-value = 2.442e-05

data:  log10(Conc)
Test Statistic = 2.6799, p-value = 0.01208


   Levene's test by Depth
data:  Conc
Test Statistic = 2.3037, p-value = 0.1033

data:  log10(Conc)
Test Statistic = 0.98, p-value = 0.3776


   Levene's test by Side
data:  Conc
Test Statistic = 0.387, p-value = 0.6798

data:  log10(Conc)
Test Statistic = 1.1371, p-value = 0.3234



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 35.5506, df = 7, p-value = 8.811e-06
```

```
Dependent Variable Silicon, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.114
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.286
                   The p-value is 0.867 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.472
                   The p-value is 0.790 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 2.250
                   The p-value is 0.325 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.485
                   The p-value is 0.785 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.754
                   The p-value is 0.686 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.644
                   The p-value is 0.162 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.613
                   The p-value is 0.271 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable  Silicon, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.002
                    The p-value is 0.965 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.048
                    The p-value is 0.827 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 1.533
                    The p-value is 0.465 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.222
                    The p-value is 0.637 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.096
                    The p-value is 0.953 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.072
                    The p-value is 0.585 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.688
                    The p-value is 0.709 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 4.083
                    The p-value is 0.043 assuming chi-square distribution with 1 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 8 = 0.00625.
```

Sulfate

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.0834, p-value = 0.02644

data:  log10(Conc)
Test Statistic = 2.2279, p-value = 0.01693


   Levene's test by Depth
data:  Conc
Test Statistic = 1.6923, p-value = 0.1862

data:  log10(Conc)
Test Statistic = 1.4325, p-value = 0.2407


   Levene's test by Side
data:  Conc
Test Statistic = 2.4978, p-value = 0.08431

data:  log10(Conc)
Test Statistic = 2.2509, p-value = 0.1074



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 38.5247, df = 10, p-value = 3.074e-05
```

```
Dependent Variable Sulfate
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.570
                   The p-value is 0.752 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.250
                   The p-value is 0.535 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.758
                   The p-value is 0.684 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.139
                   The p-value is 0.933 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.130
                   The p-value is 0.937 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.125
                   The p-value is 0.939 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.173
                   The p-value is 0.917 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 1.508
                   The p-value is 0.470 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 2.182
                   The p-value is 0.336 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.452
                   The p-value is 0.484 assuming chi-square distribution with 2 df.


         P-values reported are not adjusted for multiple comparisons.
         Adjusted significance level is 0.05 / 10 = 0.005.
```

```
Dependent Variable  Sulfate
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.018
                    The p-value is 0.894 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.000
                    The p-value is 1.000 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 3.737
                    The p-value is 0.154 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.032
                    The p-value is 0.984 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 1.249
                    The p-value is 0.536 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.286
                    The p-value is 0.867 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.249
                    The p-value is 0.883 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.069
                    The p-value is 0.966 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.295
                    The p-value is 0.863 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 4.498
                    The p-value is 0.034 assuming chi-square distribution with 1 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.702, p-value = 0.7222

data:  log10(Conc)
Test Statistic = 2.0021, p-value = 0.0338


   Levene's test by Depth
data:  Conc
Test Statistic = 0.9837, p-value = 0.3754

data:  log10(Conc)
Test Statistic = 0.0483, p-value = 0.9529


   Levene's test by Side
data:  Conc
Test Statistic = 0.7114, p-value = 0.4919

data:  log10(Conc)
Test Statistic = 0.9312, p-value = 0.3955



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 14.1943, df = 10, p-value = 0.1643
```

```
Dependent Variable TDS, lab
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.696
                   The p-value is 0.428 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.074
                   The p-value is 0.964 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 2.715
                   The p-value is 0.257 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 4.076
                   The p-value is 0.130 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.358
                   The p-value is 0.507 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.649
                   The p-value is 0.723 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 2.395
                   The p-value is 0.302 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.643
                   The p-value is 0.725 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.090
                   The p-value is 0.956 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.814
                   The p-value is 0.245 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

```
Dependent Variable  TDS, Lab
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 3.456
                    The p-value is 0.063 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 3.971
                    The p-value is 0.046 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 1.879
                    The p-value is 0.391 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.665
                    The p-value is 0.717 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.338
                    The p-value is 0.844 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.229
                    The p-value is 0.892 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 1.007
                    The p-value is 0.604 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 8.125
                    The p-value is 0.017 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 3.150
                    The p-value is 0.207 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 0.232
                    The p-value is 0.630 assuming chi-square distribution with 1 df.


            P-values reported are not adjusted for multiple comparisons.
            Adjusted significance level is 0.05 / 10 = 0.005.
```

Aluminum, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.5022, p-value = 0.8877

data:  log10(Conc)
Test Statistic = 0.7762, p-value = 0.6517


   Levene's test by Depth
data:  Conc
Test Statistic = 8.4033, p-value = 0.000294

data:  log10(Conc)
Test Statistic = 5.0243, p-value = 0.007259


   Levene's test by Side
data:  Conc
Test Statistic = 1.0168, p-value = 0.3633

data:  log10(Conc)
Test Statistic = 3.4432, p-value = 0.03349



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 39.7647, df = 10, p-value = 1.864e-05
```

```
Dependent Variable Aluminum, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.079
                   The p-value is 0.961 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 4.571
                   The p-value is 0.102 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.378
                   The p-value is 0.828 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.509
                   The p-value is 0.470 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 7.574
                   The p-value is 0.023 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 4.339
                   The p-value is 0.114 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 13.498
                   The p-value is 0.001 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 8.277
                   The p-value is 0.016 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 6.846
                   The p-value is 0.033 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.309
                   The p-value is 0.520 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Aluminum, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.383
                    The p-value is 0.536 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.429
                    The p-value is 0.513 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.698
                    The p-value is 0.705 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.591
                    The p-value is 0.744 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 1.305
                    The p-value is 0.521 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 2.482
                    The p-value is 0.289 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 2.862
                    The p-value is 0.239 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.375
                    The p-value is 0.829 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.979
                    The p-value is 0.613 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 1.235
                    The p-value is 0.266 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Antimony, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 6.2886, p-value = 1.506e-08

data:  log10(Conc)
Test Statistic = 5.4309, p-value = 3.001e-07


   Levene's test by Depth
data:  Conc
Test Statistic = 2.5816, p-value = 0.0777

data:  log10(Conc)
Test Statistic = 1.5362, p-value = 0.2173


   Levene's test by Side
data:  Conc
Test Statistic = 2.7715, p-value = 0.06453

data:  log10(Conc)
Test Statistic = 2.5077, p-value = 0.08354



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 76.4125, df = 10, p-value = 2.525e-12
```

```
Dependent Variable Antimony, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.234
                   The p-value is 0.889 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.429
                   The p-value is 0.180 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.756
                   The p-value is 0.685 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.202
                   The p-value is 0.904 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.570
                   The p-value is 0.752 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.627
                   The p-value is 0.163 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 5.143
                   The p-value is 0.076 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 12.253
                   The p-value is 0.002 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.969
                   The p-value is 0.616 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.518
                   The p-value is 0.772 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Antimony, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.025
                    The p-value is 0.874 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.048
                    The p-value is 0.827 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 2.156
                    The p-value is 0.340 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.363
                    The p-value is 0.834 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.460
                    The p-value is 0.794 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.820
                    The p-value is 0.664 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.528
                    The p-value is 0.768 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.383
                    The p-value is 0.501 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.860
                    The p-value is 0.651 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 0.454
                    The p-value is 0.501 assuming chi-square distribution with 1 df.


        P-values reported are not adjusted for multiple comparisons.
        Adjusted significance level is 0.05 / 10 = 0.005.
```

Antimony, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 5.2381, p-value = 5.893e-07

data:  log10(Conc)
Test Statistic = 5.2771, p-value = 5.141e-07


   Levene's test by Depth
data:  Conc
Test Statistic = 0.936, p-value = 0.3936

data:  log10(Conc)
Test Statistic = 0.2866, p-value = 0.7511


   Levene's test by Side
data:  Conc
Test Statistic = 3.2817, p-value = 0.03922

data:  log10(Conc)
Test Statistic = 2.5337, p-value = 0.08144



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 76.4365, df = 10, p-value = 2.498e-12
```

```
Dependent Variable Antimony, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.492
                   The p-value is 0.782 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.838
                   The p-value is 0.399 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.116
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.323
                   The p-value is 0.851 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.856
                   The p-value is 0.652 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.634
                   The p-value is 0.442 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 4.761
                   The p-value is 0.093 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 13.205
                   The p-value is 0.001 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 3.253
                   The p-value is 0.197 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.522
                   The p-value is 0.467 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Antimony, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.011
                    The p-value is 0.916 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.441
                    The p-value is 0.507 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 2.608
                    The p-value is 0.271 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.479
                    The p-value is 0.787 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.097
                    The p-value is 0.953 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 2.007
                    The p-value is 0.367 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 1.054
                    The p-value is 0.590 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 3.167
                    The p-value is 0.205 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 2.091
                    The p-value is 0.352 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 2.373
                    The p-value is 0.123 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Arsenic, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 3.8535, p-value = 7.359e-05

data:  log10(Conc)
Test Statistic = 5.9824, p-value = 4.224e-08


   Levene's test by Depth
data:  Conc
Test Statistic = 3.0427, p-value = 0.04948

data:  log10(Conc)
Test Statistic = 3.2855, p-value = 0.03904


   Levene's test by Side
data:  Conc
Test Statistic = 1.3326, p-value = 0.2657

data:  log10(Conc)
Test Statistic = 1.4994, p-value = 0.2253



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 118.5655, df = 10, p-value < 2.2e-16
```

```
Dependent Variable Arsenic, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.038
                   The p-value is 0.981 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.970
                   The p-value is 0.373 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.275
                   The p-value is 0.529 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.105
                   The p-value is 0.949 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.808
                   The p-value is 0.668 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 3.009
                   The p-value is 0.222 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 8.820
                   The p-value is 0.012 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.543
                   The p-value is 0.462 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.816
                   The p-value is 0.665 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Arsenic, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.002
                    The p-value is 0.964 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 1.000
                    The p-value is 0.317 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.752
                    The p-value is 0.687 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.368
                    The p-value is 0.832 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 4.009
                    The p-value is 0.135 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 3.339
                    The p-value is 0.188 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 1.622
                    The p-value is 0.444 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 3.889
                    The p-value is 0.143 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.258
                    The p-value is 0.879 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 7.993
                    The p-value is 0.005 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Inorganic arsenic, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 3.8326, p-value = 7.937e-05

data:  log10(Conc)
Test Statistic = 4.9891, p-value = 1.386e-06


   Levene's test by Depth
data:  Conc
Test Statistic = 8.7198, p-value = 0.0002187

data:  log10(Conc)
Test Statistic = 8.7769, p-value = 0.0002073


   Levene's test by Side
data:  Conc
Test Statistic = 3.1578, p-value = 0.04423

data:  log10(Conc)
Test Statistic = 6.0033, p-value = 0.002842



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 122.0399, df = 10, p-value < 2.2e-16
```

```
Dependent Variable Inorganic arsenic, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.133
                   The p-value is 0.568 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.714
                   The p-value is 0.156 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.869
                   The p-value is 0.393 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.151
                   The p-value is 0.927 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.492
                   The p-value is 0.782 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.615
                   The p-value is 0.735 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 6.271
                   The p-value is 0.043 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 15.497
                   The p-value is 0.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 3.487
                   The p-value is 0.175 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 3.069
                   The p-value is 0.216 assuming chi-square distribution with 2 df.


P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.
```

```
Dependent Variable  Inorganic arsenic, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.564
                    The p-value is 0.453 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.048
                    The p-value is 0.827 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 5.993
                    The p-value is 0.050 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.182
                    The p-value is 0.913 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.011
                    The p-value is 0.995 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.436
                    The p-value is 0.804 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 4.800
                    The p-value is 0.091 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.330
                    The p-value is 0.514 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.579
                    The p-value is 0.748 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 9.199
                    The p-value is 0.002 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Inorganic arsenic, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 5.7172, p-value = 1.077e-07

data:  log10(Conc)
Test Statistic = 4.4464, p-value = 9.311e-06


   Levene's test by Depth
data:  Conc
Test Statistic = 9.1822, p-value = 0.000142

data:  log10(Conc)
Test Statistic = 9.3232, p-value = 0.0001246


   Levene's test by Side
data:  Conc
Test Statistic = 2.7919, p-value = 0.06323

data:  log10(Conc)
Test Statistic = 5.2764, p-value = 0.005698



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 110.5829, df = 10, p-value < 2.2e-16
```

```
Dependent Variable Inorganic arsenic, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.495
                   The p-value is 0.781 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.016
                   The p-value is 0.602 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.356
                   The p-value is 0.508 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.320
                   The p-value is 0.852 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 2.554
                   The p-value is 0.279 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 4.916
                   The p-value is 0.086 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 10.030
                   The p-value is 0.007 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 4.006
                   The p-value is 0.135 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 4.970
                   The p-value is 0.083 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Inorganic arsenic, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 1.643
                    The p-value is 0.200 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.048
                    The p-value is 0.827 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 3.705
                    The p-value is 0.157 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.219
                    The p-value is 0.896 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.450
                    The p-value is 0.799 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.630
                    The p-value is 0.730 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 3.796
                    The p-value is 0.150 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.736
                    The p-value is 0.692 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.135
                    The p-value is 0.935 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 5.340
                    The p-value is 0.021 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Barium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 7.8753, p-value = 6.118e-11

data:  log10(Conc)
Test Statistic = 7.2534, p-value = 5.135e-10


   Levene's test by Depth
data:  Conc
Test Statistic = 6.663, p-value = 0.001516

data:  log10(Conc)
Test Statistic = 10.632, p-value = 3.702e-05


   Levene's test by Side
data:  Conc
Test Statistic = 2.0147, p-value = 0.1355

data:  log10(Conc)
Test Statistic = 3.6318, p-value = 0.02788



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 141.3335, df = 10, p-value < 2.2e-16
```

```
Dependent Variable Barium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.256
                   The p-value is 0.534 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.603
                   The p-value is 0.165 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.653
                   The p-value is 0.721 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.222
                   The p-value is 0.895 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.114
                   The p-value is 0.945 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 2.310
                   The p-value is 0.315 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 4.109
                   The p-value is 0.128 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 8.874
                   The p-value is 0.012 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 4.122
                   The p-value is 0.127 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.903
                   The p-value is 0.637 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Barium, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.018
                    The p-value is 0.894 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.441
                    The p-value is 0.507 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 6.322
                    The p-value is 0.042 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.175
                    The p-value is 0.916 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.190
                    The p-value is 0.909 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 5.003
                    The p-value is 0.082 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.209
                    The p-value is 0.901 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 2.845
                    The p-value is 0.241 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.160
                    The p-value is 0.923 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 10.704
                    The p-value is 0.001 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Barium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 9.0002, p-value = 1.385e-12

data:  log10(Conc)
Test Statistic = 8.5633, p-value = 5.973e-12


   Levene's test by Depth
data:  Conc
Test Statistic = 7.4886, p-value = 0.0006942

data:  log10(Conc)
Test Statistic = 11.2542, p-value = 2.089e-05


   Levene's test by Side
data:  Conc
Test Statistic = 1.6631, p-value = 0.1916

data:  log10(Conc)
Test Statistic = 3.0486, p-value = 0.04919



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 139.3329, df = 10, p-value < 2.2e-16
```

```
Dependent Variable Barium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.091
                   The p-value is 0.955 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.721
                   The p-value is 0.257 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.471
                   The p-value is 0.790 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.182
                   The p-value is 0.913 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.295
                   The p-value is 0.863 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 2.563
                   The p-value is 0.278 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 3.584
                   The p-value is 0.167 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 7.925
                   The p-value is 0.019 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 3.122
                   The p-value is 0.210 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.348
                   The p-value is 0.510 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Barium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.951
                    The p-value is 0.329 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 1.765
                    The p-value is 0.184 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 5.900
                    The p-value is 0.052 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.237
                    The p-value is 0.888 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.338
                    The p-value is 0.844 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 7.133
                    The p-value is 0.028 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.912
                    The p-value is 0.634 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.189
                    The p-value is 0.552 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.108
                    The p-value is 0.947 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 12.000
                    The p-value is 0.001 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Cadmium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 4.647, p-value = 4.584e-06

data:  log10(Conc)
Test Statistic = 1.8463, p-value = 0.05357


   Levene's test by Depth
data:  Conc
Test Statistic = 4.3202, p-value = 0.0143

data:  log10(Conc)
Test Statistic = 2.7802, p-value = 0.06395


   Levene's test by Side
data:  Conc
Test Statistic = 0.596, p-value = 0.5518

data:  log10(Conc)
Test Statistic = 0.8329, p-value = 0.436



  Standard ANOVA-log10 - full model
                     Df Sum Sq Mean Sq F value   Pr(>F)    
Transect             10  3.176  0.3176   7.895 1.86e-10 ***
Transect:Depth       20  1.031  0.0515   1.281    0.197    
Transect:Side        17  0.311  0.0183   0.455    0.969    
Transect:Depth:Side  27  0.652  0.0241   0.600    0.941    
Residuals           178  7.161  0.0402                     


                Df Sum Sq Mean Sq F value   Pr(>F)    
Transect        10  3.176  0.3176   8.334 2.54e-11 ***
Transect:Depth  20  1.031  0.0515   1.353     0.15    
Transect:Side   17  0.311  0.0183   0.481     0.96    
Residuals      205  7.812  0.0381                     
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.8261, p-value = 0.0568

data:  log10(Conc)
Test Statistic = 1.9093, p-value = 0.04455


   Levene's test by Depth
data:  Conc
Test Statistic = 5.6294, p-value = 0.004061

data:  log10(Conc)
Test Statistic = 4.6889, p-value = 0.01002


   Levene's test by Side
data:  Conc
Test Statistic = 1.7534, p-value = 0.1753

data:  log10(Conc)
Test Statistic = 2.7055, p-value = 0.0688



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 72.5487, df = 10, p-value = 1.424e-11
```

```
Dependent Variable Cadmium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.047
                   The p-value is 0.977 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.397
                   The p-value is 0.497 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.010
                   The p-value is 0.603 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.492
                   The p-value is 0.782 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.879
                   The p-value is 0.237 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.352
                   The p-value is 0.509 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 5.102
                   The p-value is 0.078 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 7.600
                   The p-value is 0.022 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.478
                   The p-value is 0.787 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.203
                   The p-value is 0.548 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Cadmium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.008
                    The p-value is 0.929 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 3.137
                    The p-value is 0.077 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.886
                    The p-value is 0.642 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 1.806
                    The p-value is 0.405 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.562
                    The p-value is 0.755 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.223
                    The p-value is 0.543 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.738
                    The p-value is 0.692 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.218
                    The p-value is 0.897 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.902
                    The p-value is 0.637 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 4.119
                    The p-value is 0.042 assuming chi-square distribution with 1 df.


            P-values reported are not adjusted for multiple comparisons.
            Adjusted significance level is 0.05 / 10 = 0.005.
```

Calcium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.6364, p-value = 0.09699

data:  log10(Conc)
Test Statistic = 1.5707, p-value = 0.1159


   Levene's test by Depth
data:  Conc
Test Statistic = 0.253, p-value = 0.7766

data:  log10(Conc)
Test Statistic = 0.3889, p-value = 0.6782


   Levene's test by Side
data:  Conc
Test Statistic = 0.1434, p-value = 0.8664

data:  log10(Conc)
Test Statistic = 0.1624, p-value = 0.8502



  Standard ANOVA - full model
                     Df    Sum Sq  Mean Sq F value   Pr(>F)    
Transect             10 102277583 10227758   3.523 0.000288 ***
Transect:Depth       20  14979626   748981   0.258 0.999539    
Transect:Side        17  10203050   600179   0.207 0.999736    
Transect:Depth:Side  27   9021357   334124   0.115 1.000000    
Residuals           178 516754273  2903114                     


                Df    Sum Sq  Mean Sq F value   Pr(>F)    
Transect        10 102277583 10227758   3.988 5.36e-05 ***
Transect:Depth  20  14979626   748981   0.292    0.999    
Transect:Side   17  10203050   600179   0.234    0.999    
Residuals      205 525775630  2564759                     
```

Calcium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.9156, p-value = 0.04374

data:  log10(Conc)
Test Statistic = 1.8997, p-value = 0.04582


   Levene's test by Depth
data:  Conc
Test Statistic = 0.4707, p-value = 0.6251

data:  log10(Conc)
Test Statistic = 0.7059, p-value = 0.4946


   Levene's test by Side
data:  Conc
Test Statistic = 0.1751, p-value = 0.8395

data:  log10(Conc)
Test Statistic = 0.1844, p-value = 0.8317



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 34.0358, df = 10, p-value = 0.0001821
```

```
Dependent Variable Calcium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.225
                   The p-value is 0.893 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.803
                   The p-value is 0.246 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.839
                   The p-value is 0.657 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.202
                   The p-value is 0.904 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.686
                   The p-value is 0.710 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.174
                   The p-value is 0.917 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 1.007
                   The p-value is 0.604 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 1.884
                   The p-value is 0.390 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 2.012
                   The p-value is 0.366 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.483
                   The p-value is 0.785 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Calcium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.097
                    The p-value is 0.756 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 1.263
                    The p-value is 0.261 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.823
                    The p-value is 0.663 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.245
                    The p-value is 0.885 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 1.160
                    The p-value is 0.560 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.231
                    The p-value is 0.891 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.768
                    The p-value is 0.681 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.870
                    The p-value is 0.647 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.081
                    The p-value is 0.960 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 1.822
                    The p-value is 0.177 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Cerium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.5706, p-value = 0.779

data:  log10(Conc)
Test Statistic = 0.9811, p-value = 0.4471


   Levene's test by Depth
data:  Conc
Test Statistic = 8.4278, p-value = 0.0003337

data:  log10(Conc)
Test Statistic = 10.7039, p-value = 4.387e-05


   Levene's test by Side
data:  Conc
Test Statistic = 0.5319, p-value = 0.5885

data:  log10(Conc)
Test Statistic = 2.3533, p-value = 0.0984



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 30.766, df = 7, p-value = 6.867e-05
```

```
Dependent Variable Cerium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.115
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 4.333
                   The p-value is 0.115 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.979
                   The p-value is 0.613 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 6.753
                   The p-value is 0.034 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 7.636
                   The p-value is 0.022 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 9.529
                   The p-value is 0.009 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.196
                   The p-value is 0.550 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable  Cerium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.566
                    The p-value is 0.452 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.222
                    The p-value is 0.637 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 1.697
                    The p-value is 0.428 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 1.800
                    The p-value is 0.180 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.973
                    The p-value is 0.615 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 2.003
                    The p-value is 0.367 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.641
                    The p-value is 0.726 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 2.527
                    The p-value is 0.112 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Cesium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 4.6963, p-value = 8.58e-05

data:  log10(Conc)
Test Statistic = 2.6413, p-value = 0.01324


   Levene's test by Depth
data:  Conc
Test Statistic = 0.0579, p-value = 0.9438

data:  log10(Conc)
Test Statistic = 0.4482, p-value = 0.6396


   Levene's test by Side
data:  Conc
Test Statistic = 0.3778, p-value = 0.686

data:  log10(Conc)
Test Statistic = 0.7658, p-value = 0.4667



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 34.9843, df = 7, p-value = 1.126e-05
```

```
Dependent Variable Cesium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.417
                   The p-value is 0.492 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.618
                   The p-value is 0.734 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.412
                   The p-value is 0.814 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.520
                   The p-value is 0.771 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 6.562
                   The p-value is 0.038 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 3.279
                   The p-value is 0.194 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 8 = 0.00625.
```

```
Dependent Variable Cesium, dissolved
Grouping Variable  SIDE$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.944
                   The p-value is 0.331 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 2.070
                   The p-value is 0.355 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.279
                   The p-value is 0.870 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.529
                   The p-value is 0.767 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.263
                   The p-value is 0.196 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.445
                   The p-value is 0.229 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Cesium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.7079, p-value = 0.6654

data:  log10(Conc)
Test Statistic = 1.9455, p-value = 0.06614


   Levene's test by Depth
data:  Conc
Test Statistic = 3.4255, p-value = 0.03498

data:  log10(Conc)
Test Statistic = 2.3371, p-value = 0.09996


   Levene's test by Side
data:  Conc
Test Statistic = 0.2665, p-value = 0.7664

data:  log10(Conc)
Test Statistic = 0.0085, p-value = 0.9916



  Standard ANOVA-log10 - full model
                     Df Sum Sq Mean Sq F value   Pr(>F)    
Transect              7 0.8943 0.12775   6.040 6.12e-06 ***
Transect:Depth       16 0.6314 0.03946   1.866   0.0318 *  
Transect:Side        12 0.3320 0.02767   1.308   0.2247    
Transect:Depth:Side  18 0.4147 0.02304   1.089   0.3730    
Residuals           106 2.2420 0.02115                     


                Df Sum Sq Mean Sq F value   Pr(>F)    
Transect         7 0.8943 0.12775   5.963 5.39e-06 ***
Transect:Depth  16 0.6314 0.03946   1.842   0.0326 *  
Transect:Side   12 0.3320 0.02767   1.291   0.2317    
Residuals      124 2.6567 0.02142                     
```

Cobalt, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.6353, p-value = 0.7825

data:  log10(Conc)
Test Statistic = 1.5247, p-value = 0.1326


   Levene's test by Depth
data:  Conc
Test Statistic = 9.0586, p-value = 0.0001684

data:  log10(Conc)
Test Statistic = 8.9161, p-value = 0.0001921


   Levene's test by Side
data:  Conc
Test Statistic = 1.3427, p-value = 0.2634

data:  log10(Conc)
Test Statistic = 1.9724, p-value = 0.1417



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 48.5875, df = 10, p-value = 4.847e-07
```

```
Dependent Variable Cobalt, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.136
                   The p-value is 0.567 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.397
                   The p-value is 0.497 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.230
                   The p-value is 0.891 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 2.451
                   The p-value is 0.294 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 5.951
                   The p-value is 0.051 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 6.660
                   The p-value is 0.036 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 4.995
                   The p-value is 0.082 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.887
                   The p-value is 0.053 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.041
                   The p-value is 0.980 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.386
                   The p-value is 0.824 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Cobalt, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 1.559
                    The p-value is 0.212 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 1.225
                    The p-value is 0.268 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 1.804
                    The p-value is 0.406 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 2.851
                    The p-value is 0.240 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.913
                    The p-value is 0.634 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.551
                    The p-value is 0.460 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.584
                    The p-value is 0.747 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.046
                    The p-value is 0.593 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 4.103
                    The p-value is 0.129 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 2.700
                    The p-value is 0.100 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Copper, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.0059, p-value = 0.439

data:  log10(Conc)
Test Statistic = 2.2361, p-value = 0.01652


   Levene's test by Depth
data:  Conc
Test Statistic = 2.7936, p-value = 0.06312

data:  log10(Conc)
Test Statistic = 2.975, p-value = 0.05287


   Levene's test by Side
data:  Conc
Test Statistic = 1.2084, p-value = 0.3004

data:  log10(Conc)
Test Statistic = 1.8871, p-value = 0.1537



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 62.9599, df = 10, p-value = 9.937e-10
```

```
Dependent Variable Copper, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 2.878
                   The p-value is 0.237 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.515
                   The p-value is 0.773 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.406
                   The p-value is 0.816 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 6.598
                   The p-value is 0.037 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 4.128
                   The p-value is 0.127 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 5.565
                   The p-value is 0.062 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 8.642
                   The p-value is 0.013 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.207
                   The p-value is 0.201 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.757
                   The p-value is 0.415 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.338
                   The p-value is 0.311 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Copper, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.199
                    The p-value is 0.655 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 3.971
                    The p-value is 0.046 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 2.018
                    The p-value is 0.365 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 1.695
                    The p-value is 0.428 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.586
                    The p-value is 0.746 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 3.044
                    The p-value is 0.218 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.177
                    The p-value is 0.915 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.478
                    The p-value is 0.478 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 1.306
                    The p-value is 0.521 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 7.268
                    The p-value is 0.007 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Europium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 4.5679, p-value = 0.0001179

data:  log10(Conc)
Test Statistic = 3.9274, p-value = 0.000575


   Levene's test by Depth
data:  Conc
Test Statistic = 0.5093, p-value = 0.6019

data:  log10(Conc)
Test Statistic = 0.348, p-value = 0.7067


   Levene's test by Side
data:  Conc
Test Statistic = 0.8797, p-value = 0.417

data:  log10(Conc)
Test Statistic = 1.1245, p-value = 0.3274



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 30.4217, df = 7, p-value = 7.945e-05
```

Dependent Variable Europium, dissolved
Grouping Variable DEPTH$

Results for TRANSECT$ = CAN1
Kruskal-Wallis Test Statistic: 2.000
The p-value is 0.368 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC10
Kruskal-Wallis Test Statistic: 2.000
The p-value is 0.368 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC1
Kruskal-Wallis Test Statistic: 3.275
The p-value is 0.194 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC2
Kruskal-Wallis Test Statistic: 2.700
The p-value is 0.259 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC3
Kruskal-Wallis Test Statistic: 0.585
The p-value is 0.747 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC4
Kruskal-Wallis Test Statistic: 0.828
The p-value is 0.661 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC6
Kruskal-Wallis Test Statistic: 4.078
The p-value is 0.130 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC9
Kruskal-Wallis Test Statistic: 1.406
The p-value is 0.495 assuming chi-square distribution with 2 df.

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable  Europium, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 1.000
                    The p-value is 0.317 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 1.000
                    The p-value is 0.317 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 1.969
                    The p-value is 0.374 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.200
                    The p-value is 0.655 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 1.657
                    The p-value is 0.437 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.603
                    The p-value is 0.740 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.069
                    The p-value is 0.966 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 7.299
                    The p-value is 0.007 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Europium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.5785, p-value = 0.01537

data:  log10(Conc)
Test Statistic = 3.9494, p-value = 0.0005445


   Levene's test by Depth
data:  Conc
Test Statistic = 2.7297, p-value = 0.06833

data:  log10(Conc)
Test Statistic = 0.3742, p-value = 0.6884


   Levene's test by Side
data:  Conc
Test Statistic = 0.456, p-value = 0.6346

data:  log10(Conc)
Test Statistic = 0.901, p-value = 0.4083



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 32.5567, df = 7, p-value = 3.201e-05
```

```
Dependent Variable Europium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.429
                   The p-value is 0.490 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.001
                   The p-value is 0.999 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 3.000
                   The p-value is 0.223 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.985
                   The p-value is 0.371 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 2.270
                   The p-value is 0.321 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.978
                   The p-value is 0.137 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 3.497
                   The p-value is 0.174 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Europium, total
Grouping Variable  SIDE$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.905
                   The p-value is 0.341 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.000
                   The p-value is 0.317 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.945
                   The p-value is 0.623 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.498
                   The p-value is 0.780 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.168
                   The p-value is 0.558 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.070
                   The p-value is 0.965 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 6.499
                   The p-value is 0.011 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Iron, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.626, p-value = 0.7911

data:  log10(Conc)
Test Statistic = 0.5394, p-value = 0.8612


   Levene's test by Depth
data:  Conc
Test Statistic = 11.6668, p-value = 1.435e-05

data:  log10(Conc)
Test Statistic = 12.0159, p-value = 1.043e-05


   Levene's test by Side
data:  Conc
Test Statistic = 1.0453, p-value = 0.3531

data:  log10(Conc)
Test Statistic = 3.4471, p-value = 0.03336



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 58.1955, df = 10, p-value = 7.942e-09
```

```
Dependent Variable Iron, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.292
                   The p-value is 0.864 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 4.191
                   The p-value is 0.123 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.364
                   The p-value is 0.833 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 4.074
                   The p-value is 0.130 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 5.514
                   The p-value is 0.063 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 6.855
                   The p-value is 0.032 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 20.670
                   The p-value is 0.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 8.329
                   The p-value is 0.016 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 9.592
                   The p-value is 0.008 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.170
                   The p-value is 0.338 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Iron, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.236
                    The p-value is 0.627 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.196
                    The p-value is 0.658 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.791
                    The p-value is 0.673 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.591
                    The p-value is 0.744 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.269
                    The p-value is 0.874 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 7.680
                    The p-value is 0.021 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 1.821
                    The p-value is 0.402 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.345
                    The p-value is 0.510 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 1.444
                    The p-value is 0.486 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 7.259
                    The p-value is 0.007 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.6844, p-value = 0.6851

data:  log10(Conc)
Test Statistic = 1.0706, p-value = 0.3851


   Levene's test by Depth
data:  Conc
Test Statistic = 7.2497, p-value = 0.0009739

data:  log10(Conc)
Test Statistic = 6.7345, p-value = 0.001563


   Levene's test by Side
data:  Conc
Test Statistic = 0.5384, p-value = 0.5848

data:  log10(Conc)
Test Statistic = 1.5385, p-value = 0.2179



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 26.8334, df = 7, p-value = 0.0003571
```

```
Dependent Variable Lanthanum, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.153
                   The p-value is 0.926 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.903
                   The p-value is 0.234 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.415
                   The p-value is 0.813 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.917
                   The p-value is 0.632 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 4.151
                   The p-value is 0.125 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 5.893
                   The p-value is 0.053 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 6.152
                   The p-value is 0.046 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.953
                   The p-value is 0.621 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable  Lanthanum, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.708
                    The p-value is 0.400 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 1.344
                    The p-value is 0.246 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 1.505
                    The p-value is 0.471 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 2.000
                    The p-value is 0.157 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 1.209
                    The p-value is 0.546 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 2.313
                    The p-value is 0.315 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.307
                    The p-value is 0.858 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 1.708
                    The p-value is 0.191 assuming chi-square distribution with 1 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 8 = 0.00625.
```

Lead, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.352, p-value = 0.2036

data:  log10(Conc)
Test Statistic = 0.7231, p-value = 0.7025


   Levene's test by Depth
data:  Conc
Test Statistic = 5.2394, p-value = 0.005902

data:  log10(Conc)
Test Statistic = 4.7841, p-value = 0.009142


   Levene's test by Side
data:  Conc
Test Statistic = 0.5608, p-value = 0.5715

data:  log10(Conc)
Test Statistic = 1.5893, p-value = 0.2061



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 143.2217, df = 10, p-value < 2.2e-16
```

```
Dependent Variable Lead, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.114
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.325
                   The p-value is 0.516 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 3.401
                   The p-value is 0.183 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 5.309
                   The p-value is 0.070 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.837
                   The p-value is 0.399 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 5.449
                   The p-value is 0.066 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.087
                   The p-value is 0.079 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 9.262
                   The p-value is 0.010 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.459
                   The p-value is 0.482 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Lead, total
Grouping Variable  SIDE$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.565
                   The p-value is 0.452 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.333
                   The p-value is 0.127 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.255
                   The p-value is 0.880 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.916
                   The p-value is 0.384 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.207
                   The p-value is 0.902 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 6.096
                   The p-value is 0.047 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.142
                   The p-value is 0.931 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.709
                   The p-value is 0.701 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.612
                   The p-value is 0.447 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.148
                   The p-value is 0.700 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Magnesium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 3.2946, p-value = 0.0005055

data:  log10(Conc)
Test Statistic = 3.2804, p-value = 0.0005307


   Levene's test by Depth
data:  Conc
Test Statistic = 0.3491, p-value = 0.7057

data:  log10(Conc)
Test Statistic = 0.3754, p-value = 0.6874


   Levene's test by Side
data:  Conc
Test Statistic = 0.351, p-value = 0.7043

data:  log10(Conc)
Test Statistic = 0.4557, p-value = 0.6345



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 61.9755, df = 10, p-value = 1.53e-09
```

```
Dependent Variable Magnesium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.504
                   The p-value is 0.777 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.721
                   The p-value is 0.257 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.736
                   The p-value is 0.692 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.057
                   The p-value is 0.589 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.744
                   The p-value is 0.689 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.205
                   The p-value is 0.902 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.798
                   The p-value is 0.671 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.228
                   The p-value is 0.892 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.269
                   The p-value is 0.874 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.505
                   The p-value is 0.777 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Magnesium, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.008
                    The p-value is 0.930 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.784
                    The p-value is 0.376 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 6.566
                    The p-value is 0.038 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.091
                    The p-value is 0.956 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 2.410
                    The p-value is 0.300 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.828
                    The p-value is 0.401 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.058
                    The p-value is 0.971 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.152
                    The p-value is 0.927 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.126
                    The p-value is 0.939 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 6.750
                    The p-value is 0.009 assuming chi-square distribution with 1 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

Magnesium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.676, p-value = 0.004025

data:  log10(Conc)
Test Statistic = 2.5056, p-value = 0.00701


   Levene's test by Depth
data:  Conc
Test Statistic = 0.3286, p-value = 0.7203

data:  log10(Conc)
Test Statistic = 0.307, p-value = 0.7359


   Levene's test by Side
data:  Conc
Test Statistic = 0.4292, p-value = 0.6515

data:  log10(Conc)
Test Statistic = 0.5345, p-value = 0.5866



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 61.5134, df = 10, p-value = 1.872e-09
```

```
Dependent Variable Magnesium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.319
                   The p-value is 0.853 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.135
                   The p-value is 0.935 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.576
                   The p-value is 0.750 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 3.518
                   The p-value is 0.172 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.907
                   The p-value is 0.635 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 1.522
                   The p-value is 0.467 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.022
                   The p-value is 0.989 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.968
                   The p-value is 0.374 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.652
                   The p-value is 0.438 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Magnesium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.096
                    The p-value is 0.757 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.051
                    The p-value is 0.822 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 6.031
                    The p-value is 0.049 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.193
                    The p-value is 0.908 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 1.285
                    The p-value is 0.526 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.052
                    The p-value is 0.591 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.017
                    The p-value is 0.992 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.078
                    The p-value is 0.962 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.104
                    The p-value is 0.949 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 8.898
                    The p-value is 0.003 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Manganese, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.9701, p-value = 0.4701

data:  log10(Conc)
Test Statistic = 3.7576, p-value = 0.0001033


   Levene's test by Depth
data:  Conc
Test Statistic = 9.4836, p-value = 0.0001075

data:  log10(Conc)
Test Statistic = 5.0952, p-value = 0.006783


   Levene's test by Side
data:  Conc
Test Statistic = 0.4719, p-value = 0.6244

data:  log10(Conc)
Test Statistic = 0.9687, p-value = 0.381



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 69.2262, df = 10, p-value = 6.253e-11
```

```
Dependent Variable Manganese, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.116
                   The p-value is 0.572 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.857
                   The p-value is 0.651 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.215
                   The p-value is 0.898 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 4.740
                   The p-value is 0.093 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 7.078
                   The p-value is 0.029 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.686
                   The p-value is 0.158 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 18.287
                   The p-value is 0.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 6.179
                   The p-value is 0.046 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 5.200
                   The p-value is 0.074 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.607
                   The p-value is 0.448 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Manganese, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.330
                    The p-value is 0.566 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 3.857
                    The p-value is 0.050 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 2.149
                    The p-value is 0.342 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 2.396
                    The p-value is 0.302 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.269
                    The p-value is 0.874 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 5.228
                    The p-value is 0.073 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.238
                    The p-value is 0.888 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.430
                    The p-value is 0.807 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 1.004
                    The p-value is 0.605 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 8.920
                    The p-value is 0.003 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Molybdenum, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.0142, p-value = 0.0326

data:  log10(Conc)
Test Statistic = 2.0794, p-value = 0.02676


   Levene's test by Depth
data:  Conc
Test Statistic = 0.9446, p-value = 0.3902

data:  log10(Conc)
Test Statistic = 1.2517, p-value = 0.2878


   Levene's test by Side
data:  Conc
Test Statistic = 0.9327, p-value = 0.3949

data:  log10(Conc)
Test Statistic = 0.8928, p-value = 0.4108



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 31.7257, df = 10, p-value = 0.0004448
```

```
Dependent Variable Molybdenum, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.856
                   The p-value is 0.652 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.529
                   The p-value is 0.171 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.228
                   The p-value is 0.541 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.610
                   The p-value is 0.737 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.029
                   The p-value is 0.986 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.081
                   The p-value is 0.960 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.551
                   The p-value is 0.759 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.123
                   The p-value is 0.940 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.895
                   The p-value is 0.639 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.264
                   The p-value is 0.322 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Molybdenum, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.008
                    The p-value is 0.930 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.784
                    The p-value is 0.376 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.258
                    The p-value is 0.879 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 1.538
                    The p-value is 0.463 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 5.596
                    The p-value is 0.061 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.254
                    The p-value is 0.881 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 2.025
                    The p-value is 0.363 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.505
                    The p-value is 0.777 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.609
                    The p-value is 0.737 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 3.004
                    The p-value is 0.083 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Molybdenum, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 3.27, p-value = 0.0005497

data:  log10(Conc)
Test Statistic = 3.3696, p-value = 0.0003911


   Levene's test by Depth
data:  Conc
Test Statistic = 0.2382, p-value = 0.7882

data:  log10(Conc)
Test Statistic = 0.7616, p-value = 0.468


   Levene's test by Side
data:  Conc
Test Statistic = 3.6866, p-value = 0.02643

data:  log10(Conc)
Test Statistic = 3.2464, p-value = 0.04056



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 30.0912, df = 10, p-value = 0.0008277
```

```
Dependent Variable Molybdenum, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 3.287
                   The p-value is 0.193 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.857
                   The p-value is 0.651 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.899
                   The p-value is 0.638 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.490
                   The p-value is 0.783 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.174
                   The p-value is 0.917 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 5.000
                   The p-value is 0.082 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.115
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 1.178
                   The p-value is 0.555 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.822
                   The p-value is 0.663 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.921
                   The p-value is 0.631 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Molybdenum, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.049
                    The p-value is 0.825 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.429
                    The p-value is 0.513 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 1.640
                    The p-value is 0.440 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.983
                    The p-value is 0.612 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 12.667
                    The p-value is 0.002 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.081
                    The p-value is 0.960 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.685
                    The p-value is 0.710 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.171
                    The p-value is 0.918 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.046
                    The p-value is 0.977 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 3.525
                    The p-value is 0.060 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Neodymium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.7127, p-value = 0.6613

data:  log10(Conc)
Test Statistic = 1.8013, p-value = 0.09081


   Levene's test by Depth
data:  Conc
Test Statistic = 6.4761, p-value = 0.001984

data:  log10(Conc)
Test Statistic = 2.9714, p-value = 0.05412


   Levene's test by Side
data:  Conc
Test Statistic = 0.3416, p-value = 0.7111

data:  log10(Conc)
Test Statistic = 0.9543, p-value = 0.3873



  Standard ANOVA-log10 - full model
                     Df Sum Sq Mean Sq F value Pr(>F)
Transect              7  2.081 0.29732   1.912 0.0747 .
Transect:Depth       16  3.052 0.19076   1.227 0.2602
Transect:Side        12  0.835 0.06962   0.448 0.9398
Transect:Depth:Side  18  1.546 0.08591   0.552 0.9249
Residuals           106 16.484 0.15551


                Df Sum Sq Mean Sq F value Pr(>F)
Transect         7  2.081 0.29732   2.045 0.0546 .
Transect:Depth  16  3.052 0.19076   1.312 0.2002
Transect:Side   12  0.835 0.06962   0.479 0.9239
Residuals      124 18.030 0.14540
```

Nickel, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.1427, p-value = 0.02207

data:  log10(Conc)
Test Statistic = 2.8734, p-value = 0.002102


   Levene's test by Depth
data:  Conc
Test Statistic = 0.4483, p-value = 0.6392

data:  log10(Conc)
Test Statistic = 0.5554, p-value = 0.5745


   Levene's test by Side
data:  Conc
Test Statistic = 2.4358, p-value = 0.08962

data:  log10(Conc)
Test Statistic = 1.9166, p-value = 0.1493



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 69.7947, df = 10, p-value = 4.857e-11
```

```
Dependent Variable Nickel, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.380
                   The p-value is 0.827 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 4.571
                   The p-value is 0.102 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.971
                   The p-value is 0.616 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.079
                   The p-value is 0.583 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.282
                   The p-value is 0.320 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.600
                   The p-value is 0.165 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 7.583
                   The p-value is 0.023 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 11.809
                   The p-value is 0.003 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 10.081
                   The p-value is 0.006 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.367
                   The p-value is 0.505 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Nickel, dissolved
Grouping Variable  SIDE$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.710
                   The p-value is 0.400 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.048
                   The p-value is 0.827 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.165
                   The p-value is 0.921 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.483
                   The p-value is 0.476 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.914
                   The p-value is 0.384 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 4.563
                   The p-value is 0.102 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.433
                   The p-value is 0.805 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.075
                   The p-value is 0.963 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.526
                   The p-value is 0.769 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 4.740
                   The p-value is 0.029 assuming chi-square distribution with 1 df.


           P-values reported are not adjusted for multiple comparisons.
           Adjusted significance level is 0.05 / 10 = 0.005.
```

Nickel, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.121, p-value = 0.3469

data:  log10(Conc)
Test Statistic = 3.7424, p-value = 0.0001089


   Levene's test by Depth
data:  Conc
Test Statistic = 3.2396, p-value = 0.04084

data:  log10(Conc)
Test Statistic = 0.1517, p-value = 0.8593


   Levene's test by Side
data:  Conc
Test Statistic = 2.0148, p-value = 0.1355

data:  log10(Conc)
Test Statistic = 1.4356, p-value = 0.2399



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 62.5542, df = 10, p-value = 1.187e-09
```

```
Dependent Variable Nickel, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.432
                   The p-value is 0.806 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.591
                   The p-value is 0.451 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.495
                   The p-value is 0.781 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.498
                   The p-value is 0.473 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 5.001
                   The p-value is 0.082 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 8.898
                   The p-value is 0.012 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 8.168
                   The p-value is 0.017 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 11.163
                   The p-value is 0.004 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 9.298
                   The p-value is 0.010 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.964
                   The p-value is 0.375 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Nickel, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.635
                    The p-value is 0.426 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.808
                    The p-value is 0.369 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.373
                    The p-value is 0.830 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 1.360
                    The p-value is 0.506 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.075
                    The p-value is 0.963 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 6.975
                    The p-value is 0.031 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.615
                    The p-value is 0.735 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.011
                    The p-value is 0.994 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 1.030
                    The p-value is 0.598 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 6.518
                    The p-value is 0.011 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Potassium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 8.4403, p-value = 9.035e-12

data:  log10(Conc)
Test Statistic = 8.4994, p-value = 7.407e-12


   Levene's test by Depth
data:  Conc
Test Statistic = 3.9485, p-value = 0.0205

data:  log10(Conc)
Test Statistic = 4.0286, p-value = 0.01897


   Levene's test by Side
data:  Conc
Test Statistic = 0.148, p-value = 0.8625

data:  log10(Conc)
Test Statistic = 0.0533, p-value = 0.9481



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 82.75, df = 10, p-value = 1.448e-13
```

```
Dependent Variable Potassium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.799
                   The p-value is 0.671 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.857
                   The p-value is 0.651 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.658
                   The p-value is 0.720 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.273
                   The p-value is 0.529 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.131
                   The p-value is 0.936 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.157
                   The p-value is 0.206 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 2.711
                   The p-value is 0.258 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 4.367
                   The p-value is 0.113 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 2.057
                   The p-value is 0.358 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.099
                   The p-value is 0.577 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Potassium, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.008
                    The p-value is 0.930 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 3.857
                    The p-value is 0.050 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.076
                    The p-value is 0.963 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 1.802
                    The p-value is 0.406 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.431
                    The p-value is 0.806 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.738
                    The p-value is 0.692 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.759
                    The p-value is 0.684 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.759
                    The p-value is 0.684 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.111
                    The p-value is 0.946 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 7.797
                    The p-value is 0.005 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Potassium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 8.5946, p-value = 5.379e-12

data:  log10(Conc)
Test Statistic = 8.6019, p-value = 5.248e-12


   Levene's test by Depth
data:  Conc
Test Statistic = 1.0131, p-value = 0.3646

data:  log10(Conc)
Test Statistic = 0.2024, p-value = 0.8169


   Levene's test by Side
data:  Conc
Test Statistic = 0.6456, p-value = 0.5252

data:  log10(Conc)
Test Statistic = 0.5764, p-value = 0.5626



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 66.2862, df = 10, p-value = 2.299e-10
```

```
Dependent Variable Potassium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.731
                   The p-value is 0.421 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.429
                   The p-value is 0.180 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.659
                   The p-value is 0.719 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.606
                   The p-value is 0.739 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 4.990
                   The p-value is 0.082 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.919
                   The p-value is 0.631 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 5.258
                   The p-value is 0.072 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.757
                   The p-value is 0.056 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.338
                   The p-value is 0.512 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 6.214
                   The p-value is 0.045 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Potassium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 3.947
                    The p-value is 0.047 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.429
                    The p-value is 0.513 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 2.938
                    The p-value is 0.230 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 3.234
                    The p-value is 0.199 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.201
                    The p-value is 0.904 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 2.529
                    The p-value is 0.282 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.338
                    The p-value is 0.845 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.364
                    The p-value is 0.834 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.111
                    The p-value is 0.946 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 4.083
                    The p-value is 0.043 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Praseodymium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.7624, p-value = 0.6197

data:  log10(Conc)
Test Statistic = 1.8551, p-value = 0.08076


   Levene's test by Depth
data:  Conc
Test Statistic = 6.2853, p-value = 0.002366

data:  log10(Conc)
Test Statistic = 2.4229, p-value = 0.09197


   Levene's test by Side
data:  Conc
Test Statistic = 0.3214, p-value = 0.7256

data:  log10(Conc)
Test Statistic = 0.3365, p-value = 0.7148



  Standard ANOVA-log10 - full model
                     Df Sum Sq Mean Sq F value Pr(>F)
Transect              7  1.600 0.22851   1.622  0.137
Transect:Depth       16  3.012 0.18827   1.337  0.189
Transect:Side        12  0.520 0.04333   0.308  0.987
Transect:Depth:Side  18  1.646 0.09146   0.649  0.852
Residuals           106 14.929 0.14084


                Df Sum Sq Mean Sq F value Pr(>F)
Transect         7  1.600 0.22851   1.709  0.113
Transect:Depth  16  3.012 0.18827   1.408  0.148
Transect:Side   12  0.520 0.04333   0.324  0.984
Residuals      124 16.575 0.13367
```

Rubidium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 3.3101, p-value = 0.002628

data:  log10(Conc)
Test Statistic = 2.9164, p-value = 0.006847


   Levene's test by Depth
data:  Conc
Test Statistic = 2.4839, p-value = 0.08669

data:  log10(Conc)
Test Statistic = 2.5829, p-value = 0.07876


   Levene's test by Side
data:  Conc
Test Statistic = 1.0763, p-value = 0.3434

data:  log10(Conc)
Test Statistic = 0.7023, p-value = 0.497



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 34.7627, df = 7, p-value = 1.239e-05
```

```
Dependent Variable Rubidium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.806
                   The p-value is 0.668 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.968
                   The p-value is 0.616 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.077
                   The p-value is 0.962 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.044
                   The p-value is 0.360 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.217
                   The p-value is 0.897 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.389
                   The p-value is 0.184 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.825
                   The p-value is 0.402 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Rubidium, dissolved
Grouping Variable  SIDE$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.642
                   The p-value is 0.423 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.054
                   The p-value is 0.817 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.852
                   The p-value is 0.653 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.200
                   The p-value is 0.655 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.979
                   The p-value is 0.225 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.565
                   The p-value is 0.754 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.630
                   The p-value is 0.730 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 5.126
                   The p-value is 0.024 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Rubidium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.3918, p-value = 0.2126

data:  log10(Conc)
Test Statistic = 1.5828, p-value = 0.1445


   Levene's test by Depth
data:  Conc
Test Statistic = 5.309, p-value = 0.005874

data:  log10(Conc)
Test Statistic = 4.1174, p-value = 0.01808


   Levene's test by Side
data:  Conc
Test Statistic = 1.0547, p-value = 0.3508

data:  log10(Conc)
Test Statistic = 0.7872, p-value = 0.4569



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 33.3425, df = 7, p-value = 2.286e-05
```

```
Dependent Variable Rubidium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.603
                   The p-value is 0.740 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.333
                   The p-value is 0.189 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.223
                   The p-value is 0.895 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.572
                   The p-value is 0.276 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.989
                   The p-value is 0.136 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.698
                   The p-value is 0.058 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 3.103
                   The p-value is 0.212 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Rubidium, total
Grouping Variable  SIDE$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.512
                   The p-value is 0.474 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.556
                   The p-value is 0.456 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.244
                   The p-value is 0.537 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.200
                   The p-value is 0.655 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.657
                   The p-value is 0.265 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.801
                   The p-value is 0.406 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 1.241
                   The p-value is 0.538 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 7.349
                   The p-value is 0.007 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Scandium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.2543, p-value = 0.03284

data:  log10(Conc)
Test Statistic = 2.8735, p-value = 0.007595


   Levene's test by Depth
data:  Conc
Test Statistic = 0.2765, p-value = 0.7588

data:  log10(Conc)
Test Statistic = 0.2035, p-value = 0.8161


   Levene's test by Side
data:  Conc
Test Statistic = 0.3138, p-value = 0.7312

data:  log10(Conc)
Test Statistic = 0.6073, p-value = 0.5461



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 30.4754, df = 7, p-value = 7.767e-05
```

```
Dependent Variable Scandium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.105
                   The p-value is 0.949 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.603
                   The p-value is 0.165 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.431
                   The p-value is 0.806 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.044
                   The p-value is 0.978 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.866
                   The p-value is 0.649 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.362
                   The p-value is 0.069 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.479
                   The p-value is 0.787 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Dependent Variable Scandium, dissolved
Grouping Variable SIDE$

Results for TRANSECT$ = CAN1
Kruskal-Wallis Test Statistic: 0.096
The p-value is 0.757 assuming chi-square distribution with 1 df.

Results for TRANSECT$ = TC10
Kruskal-Wallis Test Statistic: 0.441
The p-value is 0.507 assuming chi-square distribution with 1 df.

Results for TRANSECT$ = TC1
Kruskal-Wallis Test Statistic: 1.073
The p-value is 0.585 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC2
Kruskal-Wallis Test Statistic: 0.200
The p-value is 0.655 assuming chi-square distribution with 1 df.

Results for TRANSECT$ = TC3
Kruskal-Wallis Test Statistic: 0.105
The p-value is 0.949 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC4
Kruskal-Wallis Test Statistic: 0.264
The p-value is 0.876 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC6
Kruskal-Wallis Test Statistic: 3.268
The p-value is 0.195 assuming chi-square distribution with 2 df.

Results for TRANSECT$ = TC9
Kruskal-Wallis Test Statistic: 0.753
The p-value is 0.386 assuming chi-square distribution with 1 df.

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Scandium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.3377, p-value = 0.02707

data:  log10(Conc)
Test Statistic = 2.7703, p-value = 0.009732


   Levene's test by Depth
data:  Conc
Test Statistic = 1.5582, p-value = 0.2137

data:  log10(Conc)
Test Statistic = 0.6394, p-value = 0.529


   Levene's test by Side
data:  Conc
Test Statistic = 1.0768, p-value = 0.3432

data:  log10(Conc)
Test Statistic = 0.9823, p-value = 0.3767



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 30.231, df = 7, p-value = 8.613e-05
```

```
Dependent Variable Scandium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.179
                   The p-value is 0.915 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.258
                   The p-value is 0.323 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.215
                   The p-value is 0.898 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 2.700
                   The p-value is 0.259 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.387
                   The p-value is 0.824 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.400
                   The p-value is 0.819 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.629
                   The p-value is 0.269 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.763
                   The p-value is 0.683 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable  Scandium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.049
                    The p-value is 0.825 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 2.634
                    The p-value is 0.105 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.353
                    The p-value is 0.838 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.200
                    The p-value is 0.655 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.194
                    The p-value is 0.908 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.025
                    The p-value is 0.988 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.961
                    The p-value is 0.618 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 0.926
                    The p-value is 0.336 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Sodium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 9.4415, p-value = 3.207e-13

data:  log10(Conc)
Test Statistic = 9.367, p-value = 4.101e-13


   Levene's test by Depth
data:  Conc
Test Statistic = 5.3879, p-value = 0.005118

data:  log10(Conc)
Test Statistic = 5.4918, p-value = 0.004633


   Levene's test by Side
data:  Conc
Test Statistic = 1.7133, p-value = 0.1824

data:  log10(Conc)
Test Statistic = 2.7297, p-value = 0.06719



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 93.2655, df = 10, p-value = 1.203e-15
```

```
Dependent Variable Sodium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.495
                   The p-value is 0.781 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.030
                   The p-value is 0.985 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 3.370
                   The p-value is 0.185 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.133
                   The p-value is 0.936 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.162
                   The p-value is 0.922 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 2.759
                   The p-value is 0.252 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.519
                   The p-value is 0.284 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.522
                   The p-value is 0.770 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.365
                   The p-value is 0.833 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

```
Dependent Variable  Sodium, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.070
                    The p-value is 0.791 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.048
                    The p-value is 0.827 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 3.445
                    The p-value is 0.179 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 1.089
                    The p-value is 0.580 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.636
                    The p-value is 0.728 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 2.278
                    The p-value is 0.320 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 1.716
                    The p-value is 0.424 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.079
                    The p-value is 0.583 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.232
                    The p-value is 0.890 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 5.333
                    The p-value is 0.021 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Sodium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 7.6455, p-value = 1.339e-10

data:  log10(Conc)
Test Statistic = 7.3484, p-value = 3.705e-10


   Levene's test by Depth
data:  Conc
Test Statistic = 5.7206, p-value = 0.003722

data:  log10(Conc)
Test Statistic = 5.7361, p-value = 0.003667


   Levene's test by Side
data:  Conc
Test Statistic = 1.2041, p-value = 0.3017

data:  log10(Conc)
Test Statistic = 2.1329, p-value = 0.1206



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 85.5031, df = 10, p-value = 4.153e-14
```

```
Dependent Variable Sodium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.372
                   The p-value is 0.830 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.714
                   The p-value is 0.156 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.050
                   The p-value is 0.975 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 3.635
                   The p-value is 0.162 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.009
                   The p-value is 0.604 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.130
                   The p-value is 0.937 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 2.213
                   The p-value is 0.331 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.837
                   The p-value is 0.242 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.649
                   The p-value is 0.723 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.475
                   The p-value is 0.789 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Sodium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.018
                    The p-value is 0.894 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.048
                    The p-value is 0.827 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 3.017
                    The p-value is 0.221 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.191
                    The p-value is 0.909 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 1.465
                    The p-value is 0.481 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.537
                    The p-value is 0.464 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 2.652
                    The p-value is 0.266 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.682
                    The p-value is 0.431 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.231
                    The p-value is 0.891 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 5.340
                    The p-value is 0.021 assuming chi-square distribution with 1 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

Strontium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.1625, p-value = 0.04055

data:  log10(Conc)
Test Statistic = 2.1952, p-value = 0.03762


   Levene's test by Depth
data:  Conc
Test Statistic = 1.398, p-value = 0.2502

data:  log10(Conc)
Test Statistic = 1.7379, p-value = 0.1793


   Levene's test by Side
data:  Conc
Test Statistic = 0.2605, p-value = 0.771

data:  log10(Conc)
Test Statistic = 0.4212, p-value = 0.657



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 31.8534, df = 7, p-value = 4.324e-05
```

```
Dependent Variable Strontium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.106
                   The p-value is 0.948 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.258
                   The p-value is 0.323 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.191
                   The p-value is 0.909 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.105
                   The p-value is 0.949 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.794
                   The p-value is 0.672 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 4.776
                   The p-value is 0.092 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.072
                   The p-value is 0.585 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable  Strontium, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.283
                    The p-value is 0.595 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.484
                    The p-value is 0.487 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 3.055
                    The p-value is 0.217 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.200
                    The p-value is 0.655 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.343
                    The p-value is 0.843 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.406
                    The p-value is 0.816 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 2.150
                    The p-value is 0.341 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 5.801
                    The p-value is 0.016 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Strontium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.1164, p-value = 0.04504

data:  log10(Conc)
Test Statistic = 2.1935, p-value = 0.03777


   Levene's test by Depth
data:  Conc
Test Statistic = 1.4438, p-value = 0.2391

data:  log10(Conc)
Test Statistic = 1.7189, p-value = 0.1826


   Levene's test by Side
data:  Conc
Test Statistic = 0.058, p-value = 0.9437

data:  log10(Conc)
Test Statistic = 0.2494, p-value = 0.7796



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 33.3259, df = 7, p-value = 2.302e-05
```

```
Dependent Variable Strontium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.021
                   The p-value is 0.990 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.250
                   The p-value is 0.325 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.068
                   The p-value is 0.966 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.152
                   The p-value is 0.562 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.250
                   The p-value is 0.883 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 4.420
                   The p-value is 0.110 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.935
                   The p-value is 0.380 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable  Strontium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.008
                    The p-value is 0.929 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 2.722
                    The p-value is 0.099 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 3.602
                    The p-value is 0.165 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.200
                    The p-value is 0.655 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.035
                    The p-value is 0.983 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 0.499
                    The p-value is 0.779 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.624
                    The p-value is 0.444 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 7.806
                    The p-value is 0.005 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.

Adjusted significance level is 0.05 / 8 = 0.00625.

Thorium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.4698, p-value = 0.8553

data:  log10(Conc)
Test Statistic = 2.0495, p-value = 0.0524


   Levene's test by Depth
data:  Conc
Test Statistic = 5.0728, p-value = 0.007331

data:  log10(Conc)
Test Statistic = 5.5692, p-value = 0.004605


   Levene's test by Side
data:  Conc
Test Statistic = 0.3357, p-value = 0.7154

data:  log10(Conc)
Test Statistic = 0.093, p-value = 0.9112



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 20.3474, df = 7, p-value = 0.004866
```

```
Dependent Variable Thorium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.606
                   The p-value is 0.739 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.035
                   The p-value is 0.983 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 5.797
                   The p-value is 0.055 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 6.706
                   The p-value is 0.035 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.035
                   The p-value is 0.361 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.311
                   The p-value is 0.856 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable  Thorium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.008
                    The p-value is 0.928 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.000
                    The p-value is 1.000 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.274
                    The p-value is 0.872 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.000
                    The p-value is 1.000 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 1.111
                    The p-value is 0.574 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.999
                    The p-value is 0.368 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 3.006
                    The p-value is 0.222 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 0.010
                    The p-value is 0.919 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

Uranium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 4.2202, p-value = 2.048e-05

data:  log10(Conc)
Test Statistic = 4.26, p-value = 1.781e-05


   Levene's test by Depth
data:  Conc
Test Statistic = 1.4628, p-value = 0.2336

data:  log10(Conc)
Test Statistic = 1.4312, p-value = 0.241


   Levene's test by Side
data:  Conc
Test Statistic = 0.0196, p-value = 0.9806

data:  log10(Conc)
Test Statistic = 0.0467, p-value = 0.9544



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 68.1121, df = 10, p-value = 1.025e-10
```

```
Dependent Variable Uranium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.012
                   The p-value is 0.994 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.603
                   The p-value is 0.165 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.297
                   The p-value is 0.862 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.874
                   The p-value is 0.392 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.114
                   The p-value is 0.945 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.308
                   The p-value is 0.520 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.872
                   The p-value is 0.647 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.124
                   The p-value is 0.940 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.080
                   The p-value is 0.961 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.203
                   The p-value is 0.904 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Uranium, dissolved
Grouping Variable  SIDE$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.031
                   The p-value is 0.859 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.225
                   The p-value is 0.268 assuming chi-square distribution with 1 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.396
                   The p-value is 0.820 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.162
                   The p-value is 0.922 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.509
                   The p-value is 0.470 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.308
                   The p-value is 0.857 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.768
                   The p-value is 0.681 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.355
                   The p-value is 0.837 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.606
                   The p-value is 0.739 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.692
                   The p-value is 0.193 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Uranium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 3.4541, p-value = 0.0002927

data:  log10(Conc)
Test Statistic = 3.3679, p-value = 0.0003935


   Levene's test by Depth
data:  Conc
Test Statistic = 1.8225, p-value = 0.1638

data:  log10(Conc)
Test Statistic = 1.8171, p-value = 0.1646


   Levene's test by Side
data:  Conc
Test Statistic = 0.1323, p-value = 0.8761

data:  log10(Conc)
Test Statistic = 0.2445, p-value = 0.7833



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 66.3203, df = 10, p-value = 2.264e-10
```

```
Dependent Variable Uranium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.127
                   The p-value is 0.939 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 4.706
                   The p-value is 0.095 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.076
                   The p-value is 0.963 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.041
                   The p-value is 0.979 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.196
                   The p-value is 0.550 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.568
                   The p-value is 0.457 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 1.025
                   The p-value is 0.599 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.133
                   The p-value is 0.935 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.473
                   The p-value is 0.790 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.652
                   The p-value is 0.438 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Uranium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.636
                    The p-value is 0.425 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.000
                    The p-value is 1.000 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.632
                    The p-value is 0.729 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.004
                    The p-value is 0.998 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 2.234
                    The p-value is 0.327 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.624
                    The p-value is 0.444 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 1.252
                    The p-value is 0.535 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.240
                    The p-value is 0.887 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.116
                    The p-value is 0.944 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 3.704
                    The p-value is 0.054 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Vanadium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.4996, p-value = 0.007146

data:  log10(Conc)
Test Statistic = 3.2812, p-value = 0.0005291


   Levene's test by Depth
data:  Conc
Test Statistic = 0.5931, p-value = 0.5534

data:  log10(Conc)
Test Statistic = 1.6758, p-value = 0.1893


   Levene's test by Side
data:  Conc
Test Statistic = 1.2724, p-value = 0.282

data:  log10(Conc)
Test Statistic = 2.5055, p-value = 0.08368



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 65.0645, df = 10, p-value = 3.94e-10
```

```
Dependent Variable Vanadium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.749
                   The p-value is 0.688 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.250
                   The p-value is 0.325 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.867
                   The p-value is 0.648 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.131
                   The p-value is 0.936 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.680
                   The p-value is 0.432 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.239
                   The p-value is 0.887 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 4.185
                   The p-value is 0.123 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.870
                   The p-value is 0.647 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.498
                   The p-value is 0.473 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.189
                   The p-value is 0.335 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Vanadium, dissolved
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.097
                    The p-value is 0.755 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 2.722
                    The p-value is 0.099 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 1.610
                    The p-value is 0.447 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.019
                    The p-value is 0.990 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.955
                    The p-value is 0.620 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.275
                    The p-value is 0.529 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 1.155
                    The p-value is 0.561 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 3.272
                    The p-value is 0.195 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.781
                    The p-value is 0.677 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 8.374
                    The p-value is 0.004 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Yttrium, dissolved

```
   Levene's test by Transect
data:  Conc
Test Statistic = 2.6626, p-value = 0.01259

data:  log10(Conc)
Test Statistic = 2.0539, p-value = 0.05189


   Levene's test by Depth
data:  Conc
Test Statistic = 0.6094, p-value = 0.545

data:  log10(Conc)
Test Statistic = 0.2291, p-value = 0.7955


   Levene's test by Side
data:  Conc
Test Statistic = 0.2084, p-value = 0.8121

data:  log10(Conc)
Test Statistic = 0.0093, p-value = 0.9907



  Standard ANOVA-log10 - full model
                     Df Sum Sq Mean Sq F value  Pr(>F)
Transect              7  2.501  0.3572   3.507 0.00201 **
Transect:Depth       16  0.162  0.0101   0.099 1.00000
Transect:Side        12  0.432  0.0360   0.353 0.97622
Transect:Depth:Side  18  0.279  0.0155   0.152 0.99998
Residuals           106 10.796  0.1019


                Df Sum Sq Mean Sq F value  Pr(>F)
Transect         7  2.501  0.3572   4.000 0.00056 ***
Transect:Depth  16  0.162  0.0101   0.113 0.99999
Transect:Side   12  0.432  0.0360   0.403 0.96018
Residuals      124 11.076  0.0893
```

Yttrium, total

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.8274, p-value = 0.566

data:  log10(Conc)
Test Statistic = 0.7953, p-value = 0.5924


   Levene's test by Depth
data:  Conc
Test Statistic = 6.1765, p-value = 0.002617

data:  log10(Conc)
Test Statistic = 4.1645, p-value = 0.01729


   Levene's test by Side
data:  Conc
Test Statistic = 0.3465, p-value = 0.7077

data:  log10(Conc)
Test Statistic = 1.3822, p-value = 0.2541



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 24.0641, df = 7, p-value = 0.00111
```

```
Dependent Variable Yttrium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.038
                   The p-value is 0.981 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.250
                   The p-value is 0.535 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.465
                   The p-value is 0.793 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.500
                   The p-value is 0.472 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 3.781
                   The p-value is 0.151 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 5.061
                   The p-value is 0.080 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.416
                   The p-value is 0.067 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.600
                   The p-value is 0.449 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 8 = 0.00625.
```

```
Dependent Variable  Yttrium, total
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.169
                    The p-value is 0.681 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 2.500
                    The p-value is 0.114 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.964
                    The p-value is 0.617 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 1.000
                    The p-value is 0.317 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.227
                    The p-value is 0.893 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.714
                    The p-value is 0.424 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.646
                    The p-value is 0.724 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 1.445
                    The p-value is 0.229 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.5295, p-value = 0.8496

data:  log10(Conc)
Test Statistic = 1.8936, p-value = 0.06267


   Levene's test by Depth
data:  Conc
Test Statistic = 0.3398, p-value = 0.7127

data:  log10(Conc)
Test Statistic = 0.0821, p-value = 0.9213


   Levene's test by Side
data:  Conc
Test Statistic = 0.3918, p-value = 0.6769

data:  log10(Conc)
Test Statistic = 0.8717, p-value = 0.4215



  Standard ANOVA-log10 - full model
                    Df Sum Sq Mean Sq F value  Pr(>F)
Transect             9  3.126  0.3473   2.932 0.00574 **
Transect:Depth      20  2.717  0.1358   1.147 0.32948
Transect:Side        3  0.028  0.0094   0.079 0.97115
Transect:Depth:Side  5  0.446  0.0892   0.753 0.58692
Residuals           63  7.464  0.1185


               Df Sum Sq Mean Sq F value  Pr(>F)
Transect        9  3.126  0.3473   2.986 0.00469 **
Transect:Depth 20  2.717  0.1358   1.168 0.30864
Transect:Side   3  0.028  0.0094   0.080 0.97040
Residuals      68  7.910  0.1163
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 1.6931, p-value = 0.102

data:  log10(Conc)
Test Statistic = 0.5478, p-value = 0.8358


   Levene's test by Depth
data:  Conc
Test Statistic = 0.7234, p-value = 0.4877

data:  log10(Conc)
Test Statistic = 1.3832, p-value = 0.2556


   Levene's test by Side
data:  Conc
Test Statistic = 0.2308, p-value = 0.7944

data:  log10(Conc)
Test Statistic = 0.5895, p-value = 0.5566



  Standard ANOVA - full model
                    Df Sum Sq Mean Sq F value Pr(>F)
Transect             9  15700  1744.4   1.651  0.120
Transect:Depth      20  14072   703.6   0.666  0.844
Transect:Side        3    616   205.3   0.194  0.900
Transect:Depth:Side  5   1220   243.9   0.231  0.948
Residuals           63  66578  1056.8


               Df Sum Sq Mean Sq F value Pr(>F)
Transect        9  15700  1744.4   1.750 0.0946 .
Transect:Depth 20  14072   703.6   0.706 0.8067
Transect:Side   3    616   205.3   0.206 0.8919
Residuals      68  67797   997.0
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.7433, p-value = 0.6684

data:  log10(Conc)
Test Statistic = 1.3235, p-value = 0.2359


   Levene's test by Depth
data:  Conc
Test Statistic = 0.9544, p-value = 0.3886

data:  log10(Conc)
Test Statistic = 1.0269, p-value = 0.3619


   Levene's test by Side
data:  Conc
Test Statistic = 3.0709, p-value = 0.05087

data:  log10(Conc)
Test Statistic = 0.3101, p-value = 0.7341



  Standard ANOVA-log10 - full model
                    Df Sum Sq Mean Sq F value Pr(>F)
Transect             9  1.318 0.14646   1.369  0.221
Transect:Depth      20  0.816 0.04082   0.382  0.990
Transect:Side        3  0.045 0.01486   0.139  0.936
Transect:Depth:Side  5  0.157 0.03135   0.293  0.915
Residuals           63  6.739 0.10696


               Df Sum Sq Mean Sq F value Pr(>F)
Transect        9  1.318 0.14646   1.444  0.187
Transect:Depth 20  0.816 0.04082   0.403  0.987
Transect:Side   3  0.045 0.01486   0.147  0.932
Residuals      68  6.895 0.10140
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.3457, p-value = 0.9569

data:  log10(Conc)
Test Statistic = 1.6629, p-value = 0.1095


   Levene's test by Depth
data:  Conc
Test Statistic = 0.7973, p-value = 0.4534

data:  log10(Conc)
Test Statistic = 0.7712, p-value = 0.4653


   Levene's test by Side
data:  Conc
Test Statistic = 0.2902, p-value = 0.7488

data:  log10(Conc)
Test Statistic = 1.6584, p-value = 0.1957



  Standard ANOVA-log10 - full model
                    Df Sum Sq Mean Sq F value Pr(>F)
Transect             9  2.350 0.26111   1.934  0.063 .
Transect:Depth      20  0.796 0.03982   0.295  0.998
Transect:Side        3  0.001 0.00019   0.001  1.000
Transect:Depth:Side  5  0.097 0.01931   0.143  0.981
Residuals           63  8.506 0.13502


               Df Sum Sq Mean Sq F value Pr(>F)
Transect        9  2.350 0.26111   2.064 0.0451 *
Transect:Depth 20  0.796 0.03982   0.315 0.9973
Transect:Side   3  0.001 0.00019   0.001 0.9999
Residuals      68  8.603 0.12651
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 0.3664, p-value = 0.9482

data:  log10(Conc)
Test Statistic = 1.687, p-value = 0.1035


   Levene's test by Depth
data:  Conc
Test Statistic = 0.7102, p-value = 0.4941

data:  log10(Conc)
Test Statistic = 0.748, p-value = 0.476


   Levene's test by Side
data:  Conc
Test Statistic = 0.1918, p-value = 0.8258

data:  log10(Conc)
Test Statistic = 2.0472, p-value = 0.1346



  Standard ANOVA-log10 - full model
                    Df Sum Sq Mean Sq F value Pr(>F)
Transect             9  2.599 0.28875   2.004 0.0534 .
Transect:Depth      20  0.788 0.03942   0.274 0.9989
Transect:Side        3  0.001 0.00033   0.002 0.9998
Transect:Depth:Side  5  0.061 0.01224   0.085 0.9944
Residuals           63  9.076 0.14406


               Df Sum Sq Mean Sq F value Pr(>F)
Transect        9  2.599 0.28875   2.149 0.0367 *
Transect:Depth 20  0.788 0.03942   0.293 0.9983
Transect:Side   3  0.001 0.00033   0.002 0.9998
Residuals      68  9.137 0.13437
```

```
   Levene's test by Transect
data:  Conc
Test Statistic = 3.2961, p-value = 0.0008539


   Levene's test by Depth
data:  Conc
Test Statistic = 4.5462, p-value = 0.01157


   Levene's test by Side
data:  Conc
Test Statistic = 1.1777, p-value = 0.3098



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 65.3896, df = 9, p-value = 1.212e-10
```

```
Dependent Variable SIR, oxygen
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.012
                   The p-value is 0.994 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.143
                   The p-value is 0.565 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.868
                   The p-value is 0.648 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.010
                   The p-value is 0.995 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.017
                   The p-value is 0.992 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.392
                   The p-value is 0.822 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 1.442
                   The p-value is 0.486 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.539
                   The p-value is 0.281 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.969
                   The p-value is 0.616 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.548
                   The p-value is 0.461 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

```
Dependent Variable  SIR, oxygen
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.002
                    The p-value is 0.965 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 1.190
                    The p-value is 0.275 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 2.545
                    The p-value is 0.280 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.659
                    The p-value is 0.719 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.101
                    The p-value is 0.951 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.565
                    The p-value is 0.457 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 2.359
                    The p-value is 0.307 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 0.944
                    The p-value is 0.624 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.236
                    The p-value is 0.889 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 6.259
                    The p-value is 0.012 assuming chi-square distribution with 1 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
   Levene's test by Transect
data:  Conc
Test Statistic = 4.1978, p-value = 4.964e-05


   Levene's test by Depth
data:  Conc
Test Statistic = 4.1275, p-value = 0.01733


   Levene's test by Side
data:  Conc
Test Statistic = 0.7356, p-value = 0.4804



        Kruskal-Wallis rank sum test
data:  Conc and Transect
Kruskal-Wallis chi-squared = 61.4016, df = 9, p-value = 7.192e-10
```

```
Dependent Variable SIR, hydrogen
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.294
                   The p-value is 0.863 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.351
                   The p-value is 0.839 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.077
                   The p-value is 0.962 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.147
                   The p-value is 0.929 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.899
                   The p-value is 0.638 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 1.580
                   The p-value is 0.454 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.645
                   The p-value is 0.162 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.980
                   The p-value is 0.372 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.897
                   The p-value is 0.387 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  SIR, hydrogen
Grouping Variable   SIDE$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.096
                    The p-value is 0.757 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 0.048
                    The p-value is 0.827 assuming chi-square distribution with 1 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 2.742
                    The p-value is 0.254 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.090
                    The p-value is 0.956 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.385
                    The p-value is 0.825 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 3.146
                    The p-value is 0.207 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 2.814
                    The p-value is 0.245 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 1.150
                    The p-value is 0.563 assuming chi-square distribution with 2 df.

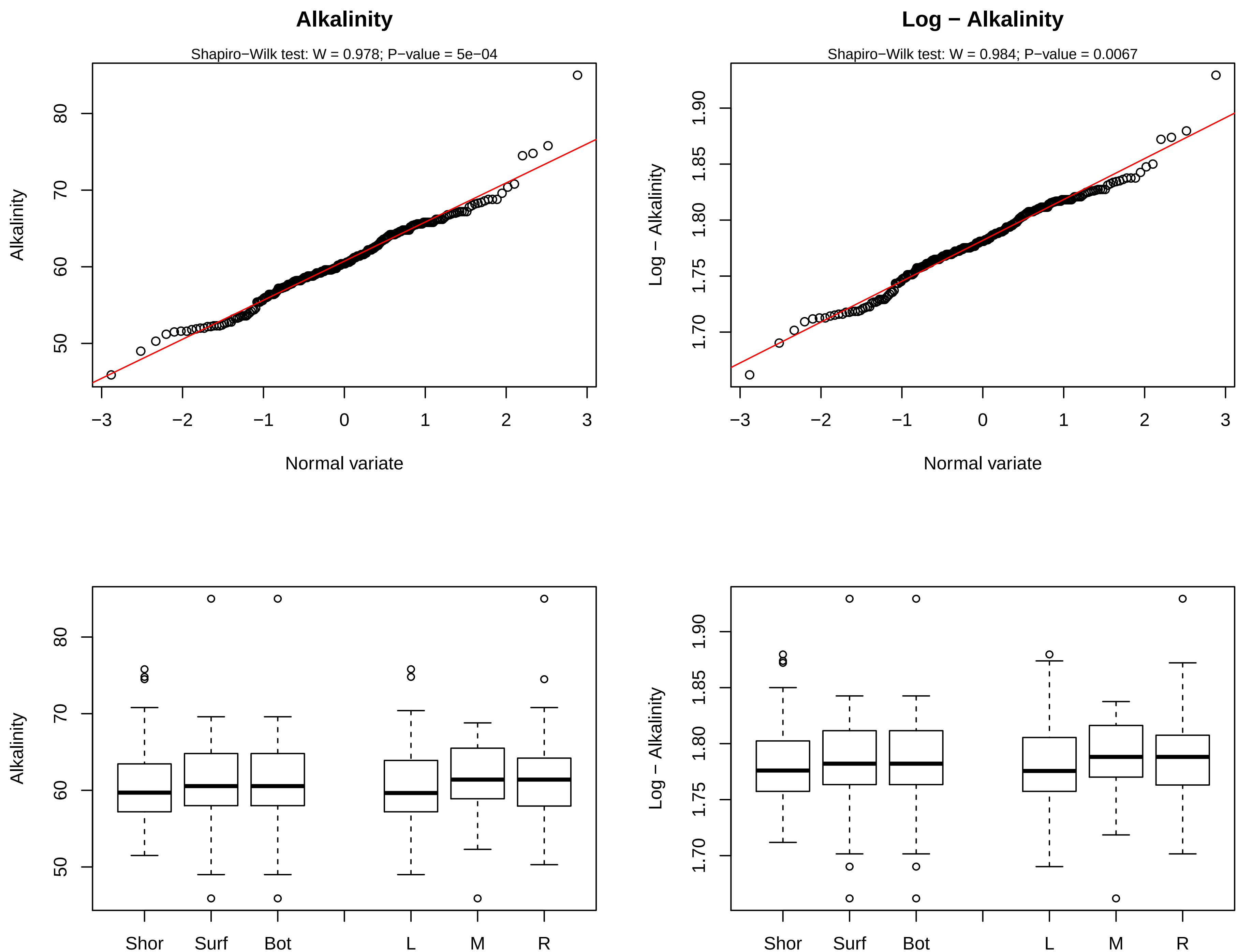
                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.017
                    The p-value is 0.992 assuming chi-square distribution with 2 df.

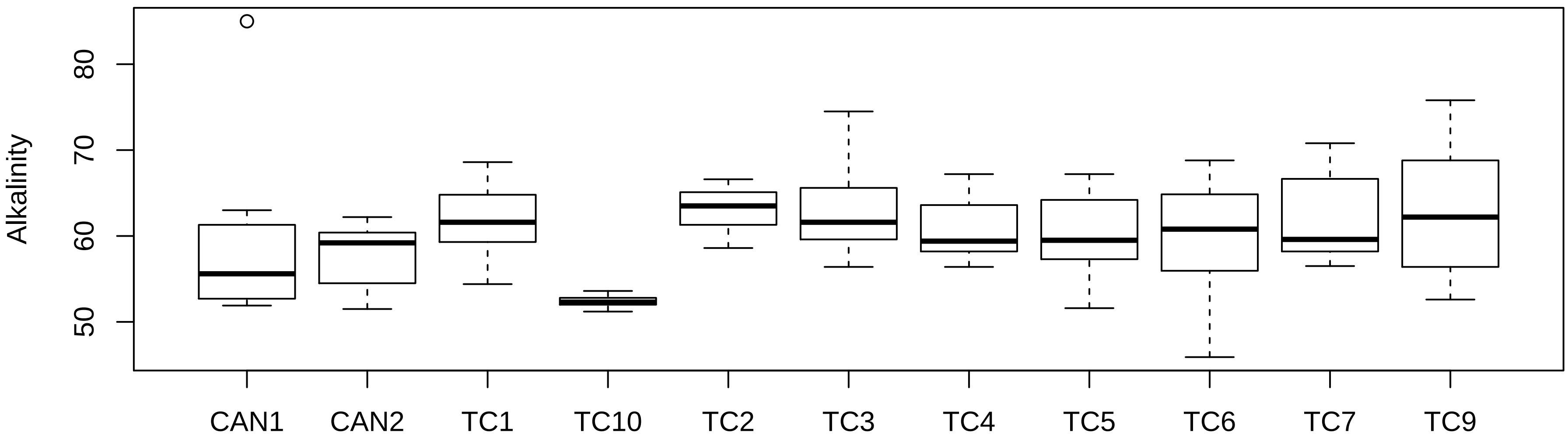
                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 5.346
                    The p-value is 0.021 assuming chi-square distribution with 1 df.

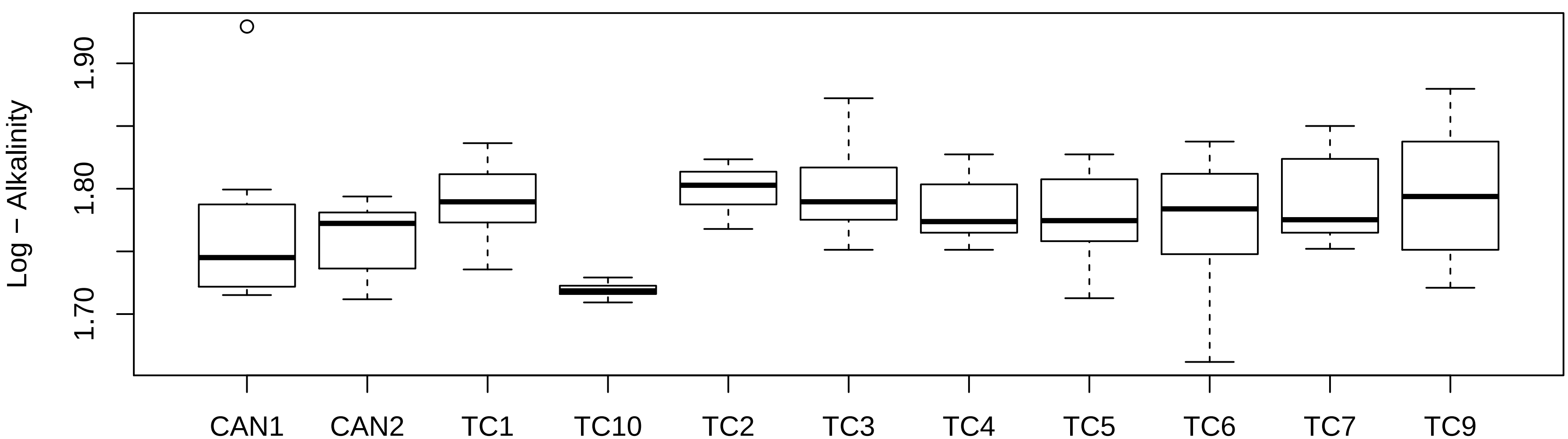

          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

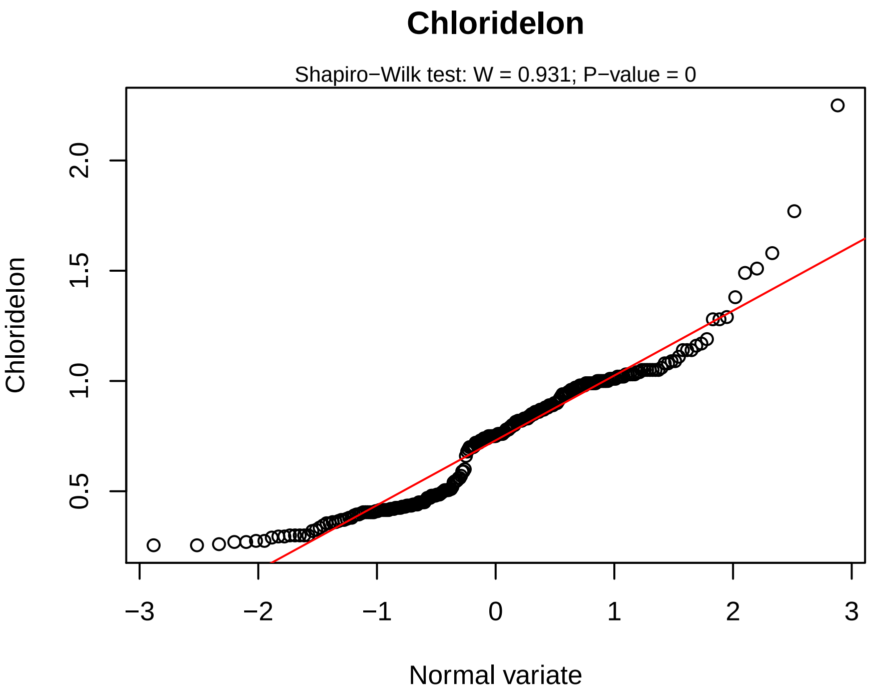
Appendix G1b.

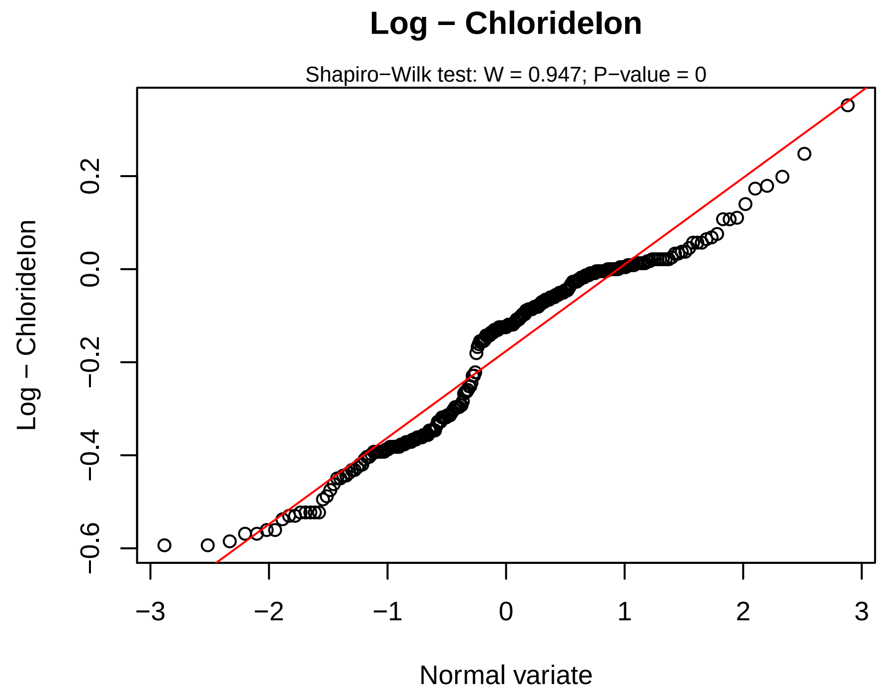
Distribution probability plots and Shapiro-Wilks distribution tests and boxplots by transect, depth, and side

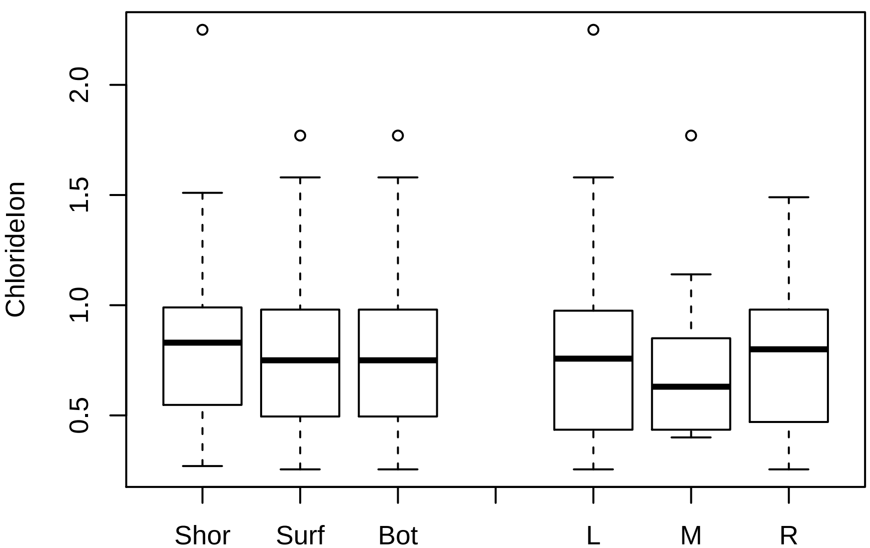

Alkalinity
Shapiro−Wilk test: W = 0.978; P−value = 5e−04
Alkalinity
50
60
70
80
−3
−2
−1
0
1
2
3
Normal variate
Log − Alkalinity
Shapiro−Wilk test: W = 0.984; P−value = 0.0067
Log − Alkalinity
1.70
1.75
1.80
1.85
1.90
−3
−2
−1
0
1
2
3
Normal variate
Alkalinity
50
60
70
80
Shor
Surf
Bot
L
M
R
Log − Alkalinity
1.70
1.75
1.80
1.85
1.90
Shor
Surf
Bot
L
M
R

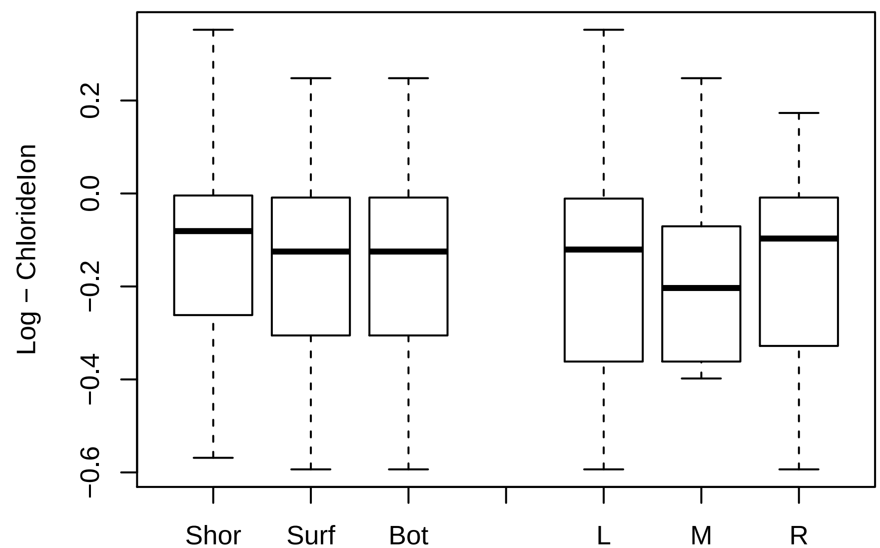

Alkalinity
80
70
60
50
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

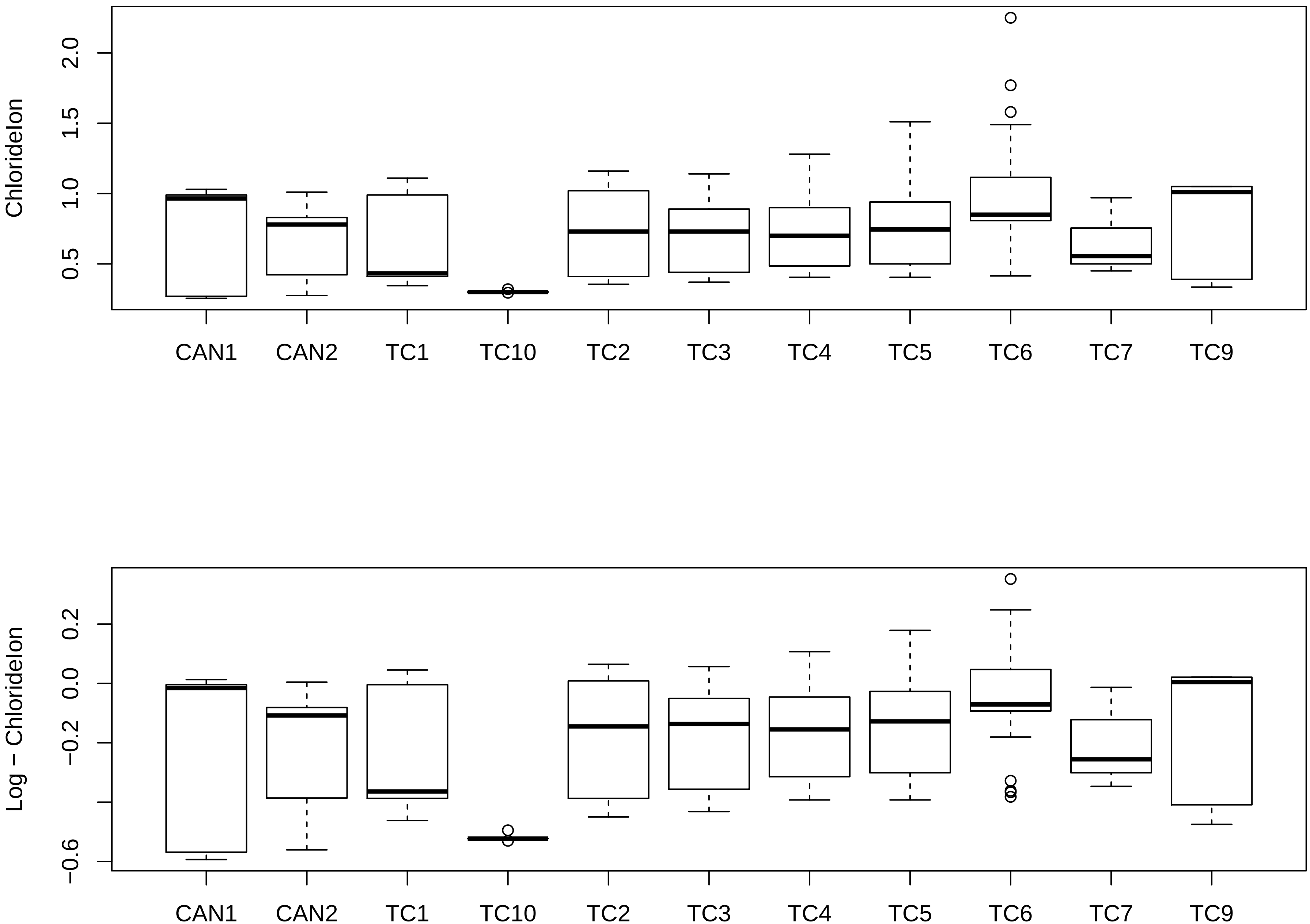

Log – Alkalinity
1.90
1.80
1.70
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

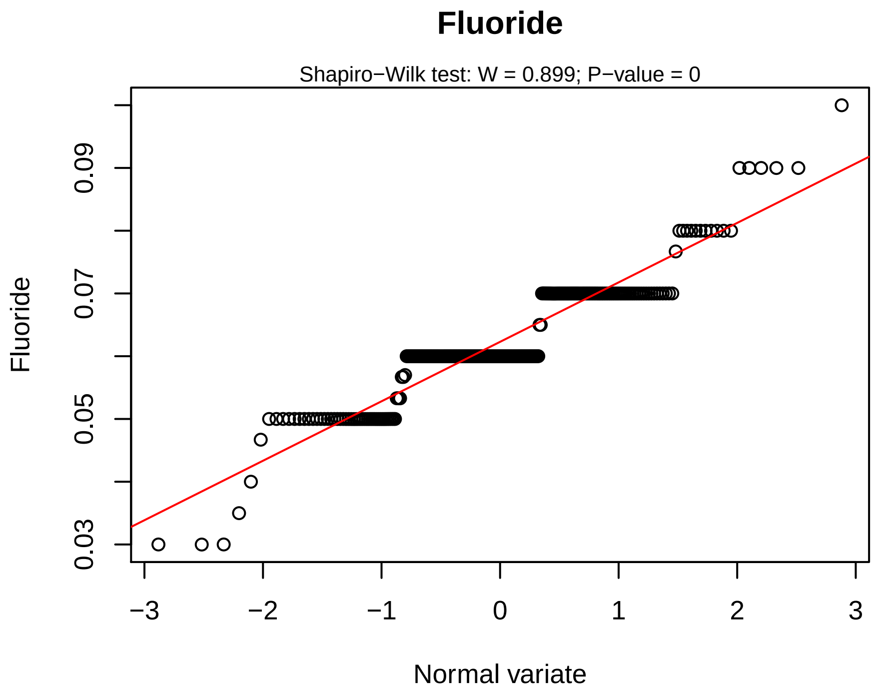

ChlorideIon
Shapiro−Wilk test: W = 0.931; P−value = 0
ChlorideIon
0.5
1.0
1.5
2.0
−3
−2
−1
0
1
2
3
Normal variate

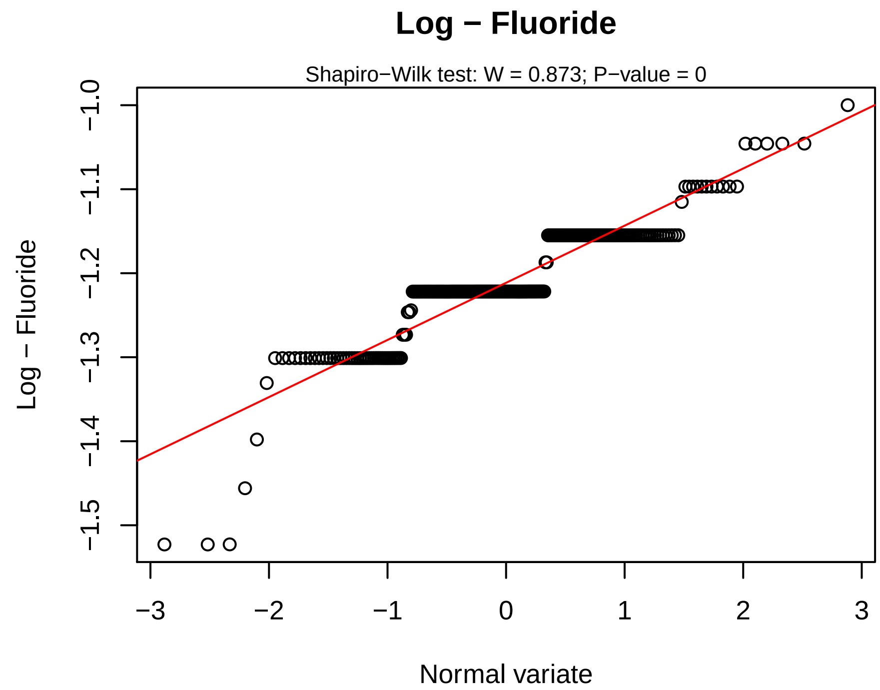

Log − ChlorideIon
Shapiro−Wilk test: W = 0.947; P−value = 0
Log − ChlorideIon
−0.6
−0.4
−0.2
0.0
0.2
−3
−2
−1
0
1
2
3
Normal variate

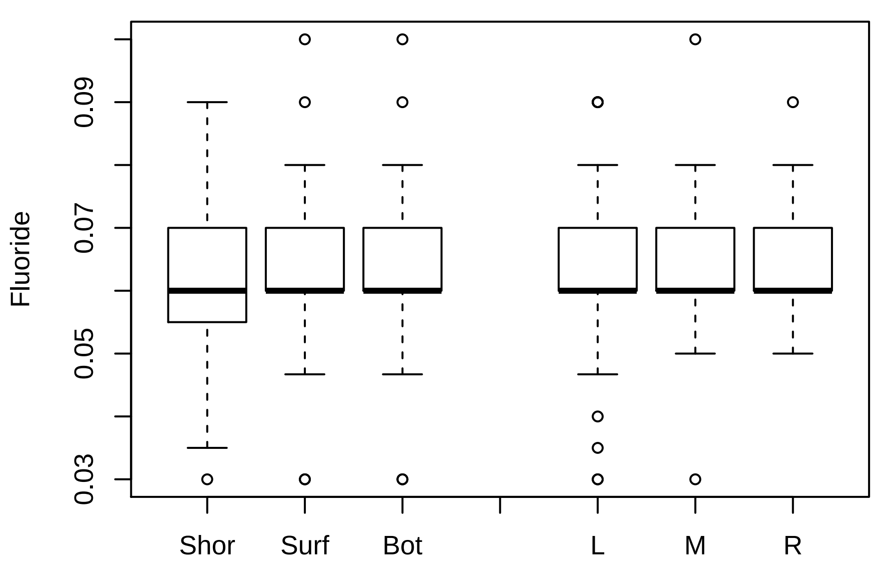

ChlorideIon
0.5
1.0
1.5
2.0
Shor
Surf
Bot
L
M
R

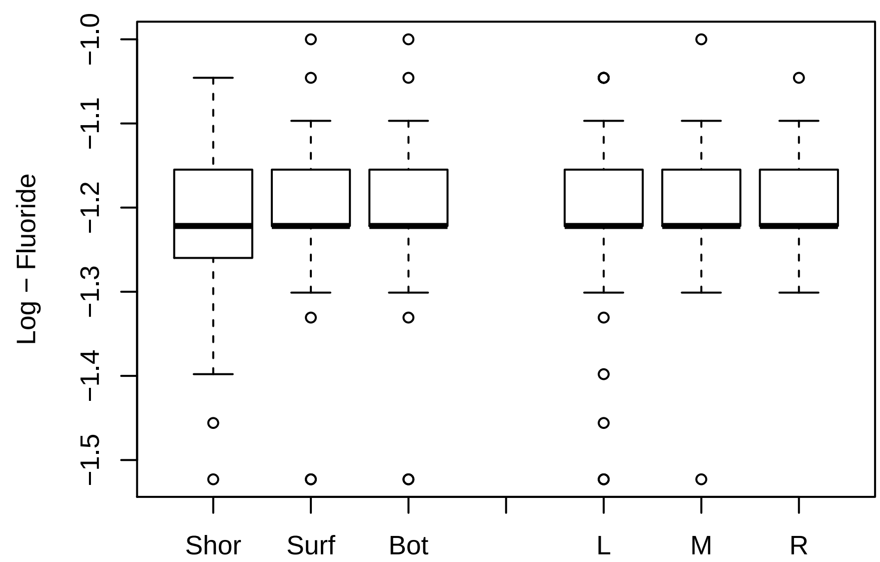

Log − ChlorideIon
−0.6
−0.4
−0.2
0.0
0.2
Shor
Surf
Bot
L
M
R

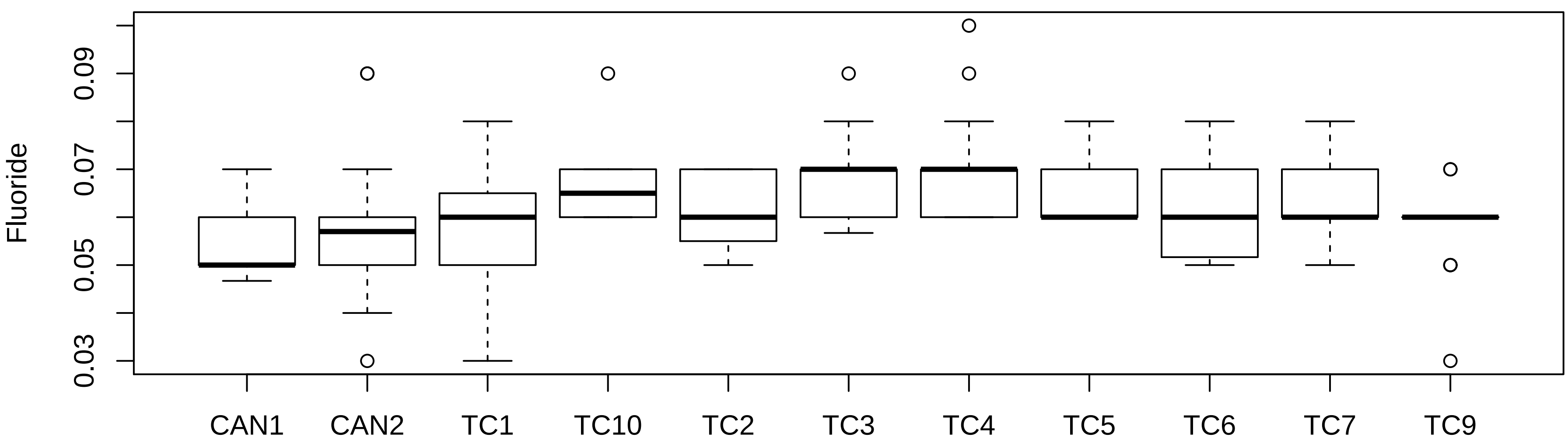

ChlorideIon
0.5
1.0
1.5
2.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9
Log − ChlorideIon
−0.6
−0.2
0.0
0.2
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

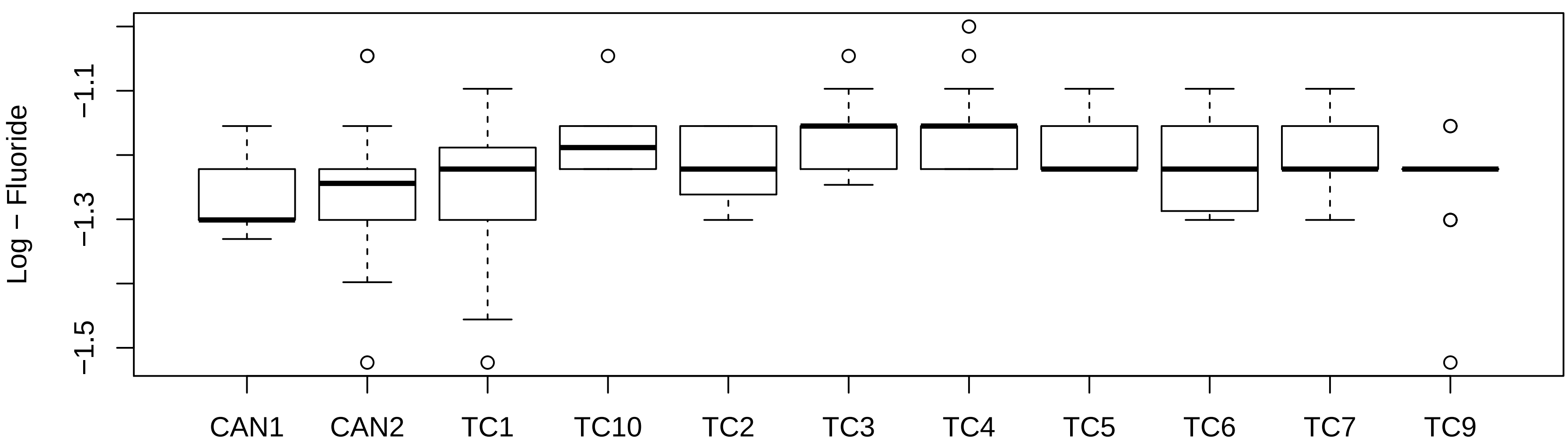

Fluoride
Shapiro−Wilk test: W = 0.899; P−value = 0
Fluoride
0.03
0.05
0.07
0.09
−3
−2
−1
0
1
2
3
Normal variate

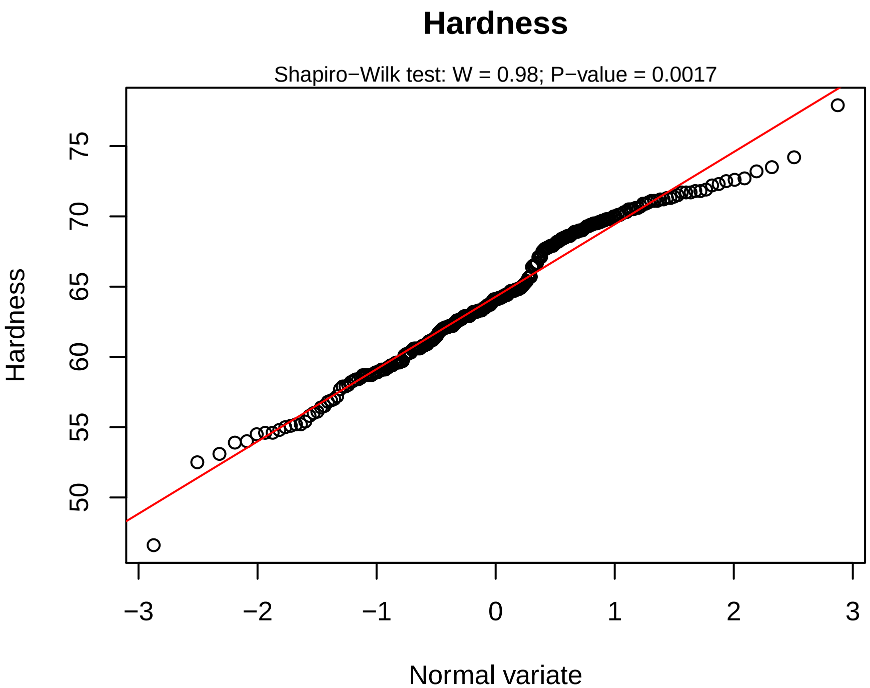

Log − Fluoride
Shapiro−Wilk test: W = 0.873; P−value = 0
Log − Fluoride
−1.5
−1.4
−1.3
−1.2
−1.1
−1.0
−3
−2
−1
0
1
2
3
Normal variate

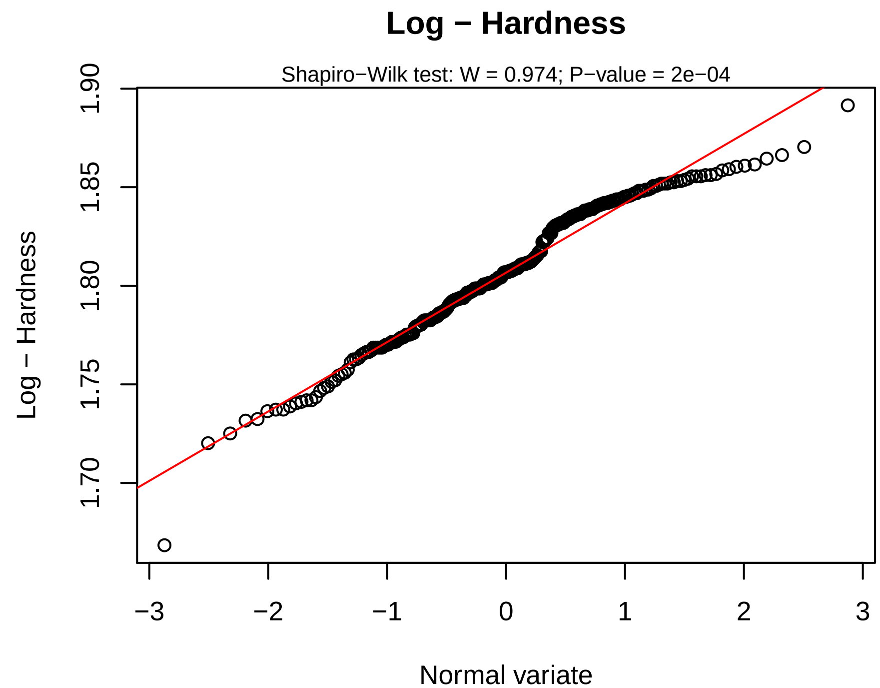

Fluoride
0.03
0.05
0.07
0.09
Shor
Surf
Bot
L
M
R

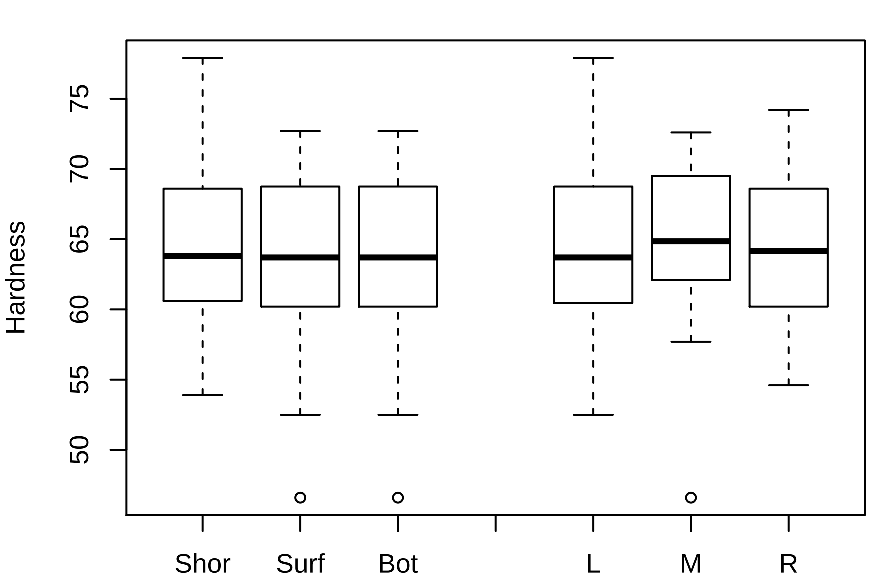

Log − Fluoride
−1.5
−1.4
−1.3
−1.2
−1.1
−1.0
Shor
Surf
Bot
L
M
R

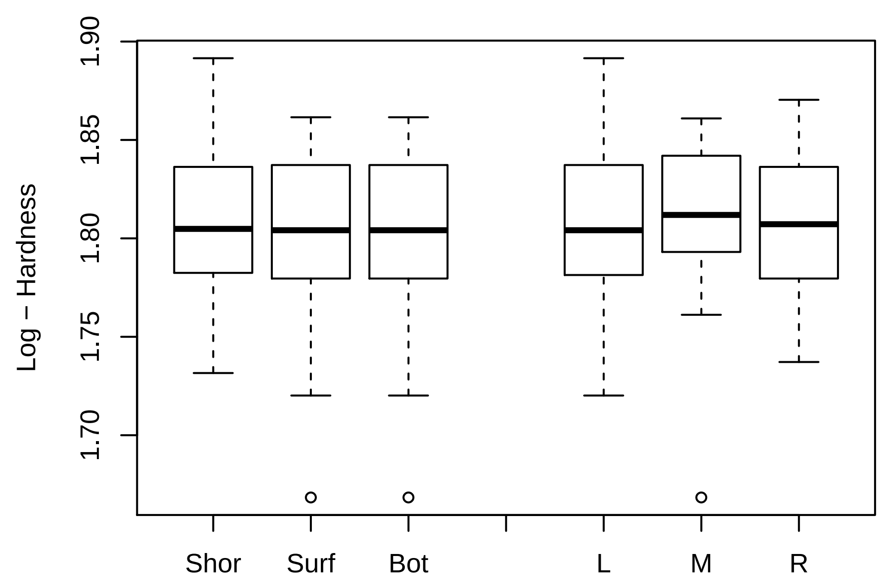

Fluoride
0.03
0.05
0.07
0.09
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

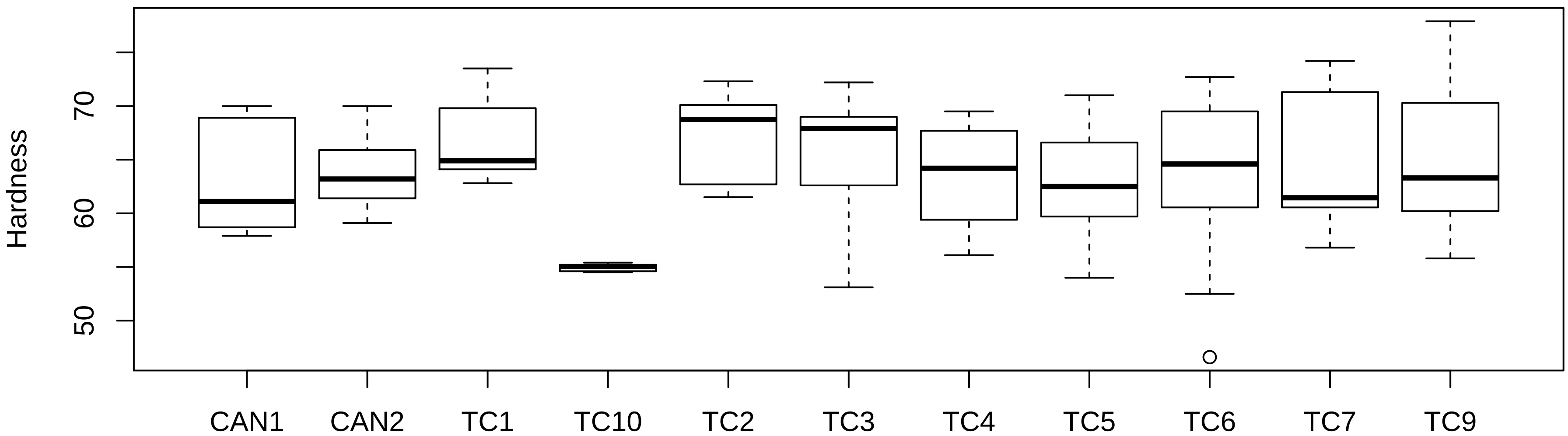

Log − Fluoride
−1.5
−1.3
−1.1
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


Hardness
Shapiro−Wilk test: W = 0.98; P−value = 0.0017
Hardness
Normal variate
50
55
60
65
70
75
−3
−2
−1
0
1
2
3

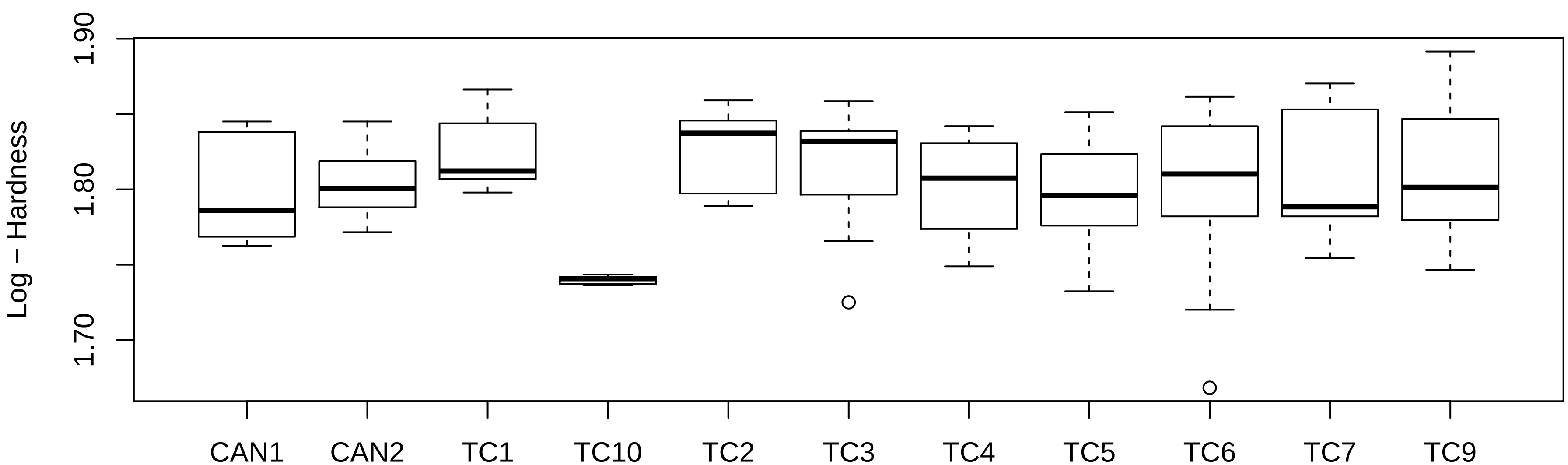

Log − Hardness
Shapiro−Wilk test: W = 0.974; P−value = 2e−04
Log − Hardness
Normal variate
1.70
1.75
1.80
1.85
1.90
−3
−2
−1
0
1
2
3


Hardness
50
55
60
65
70
75
Shor
Surf
Bot
L
M
R

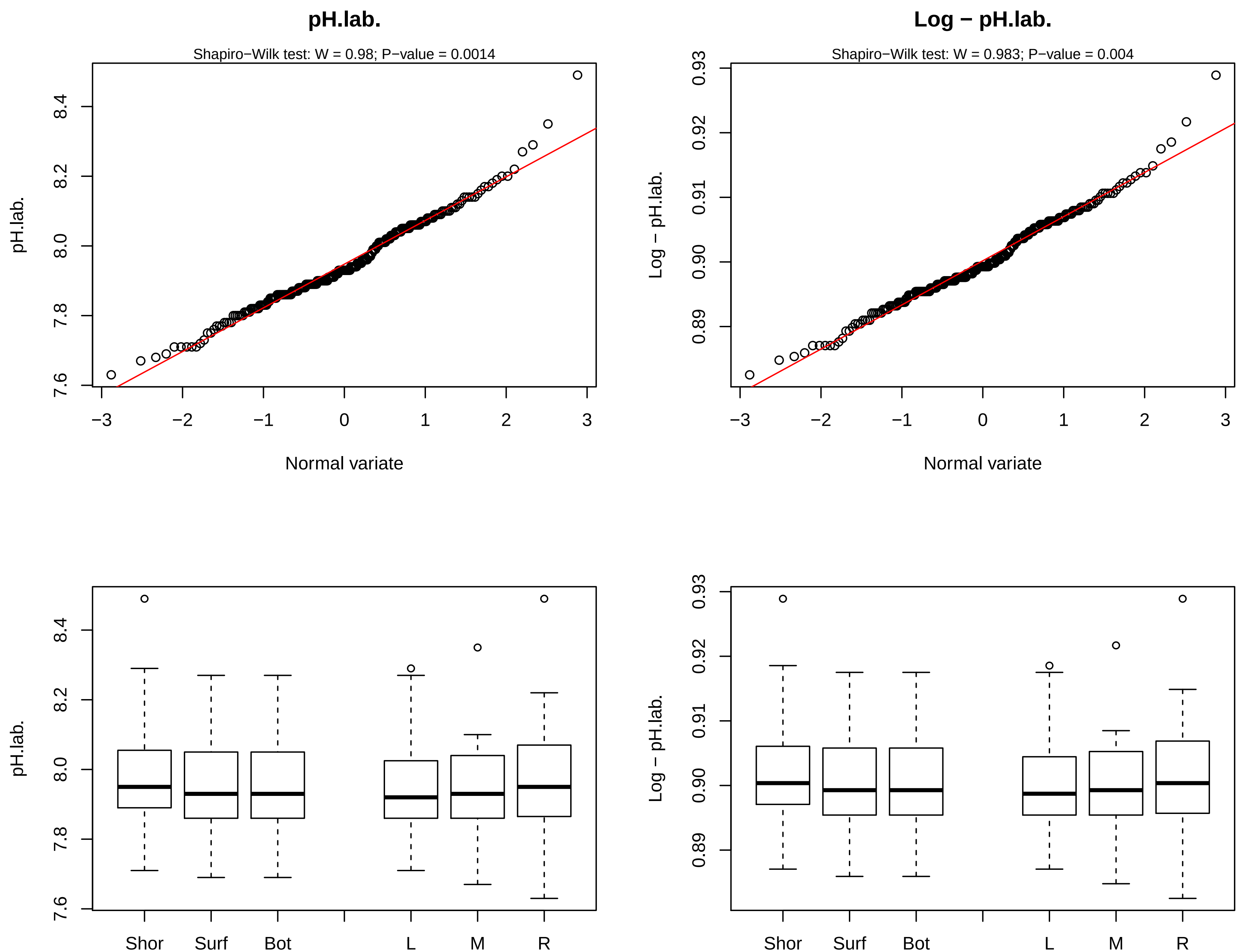

Log − Hardness
1.70
1.75
1.80
1.85
1.90
Shor
Surf
Bot
L
M
R



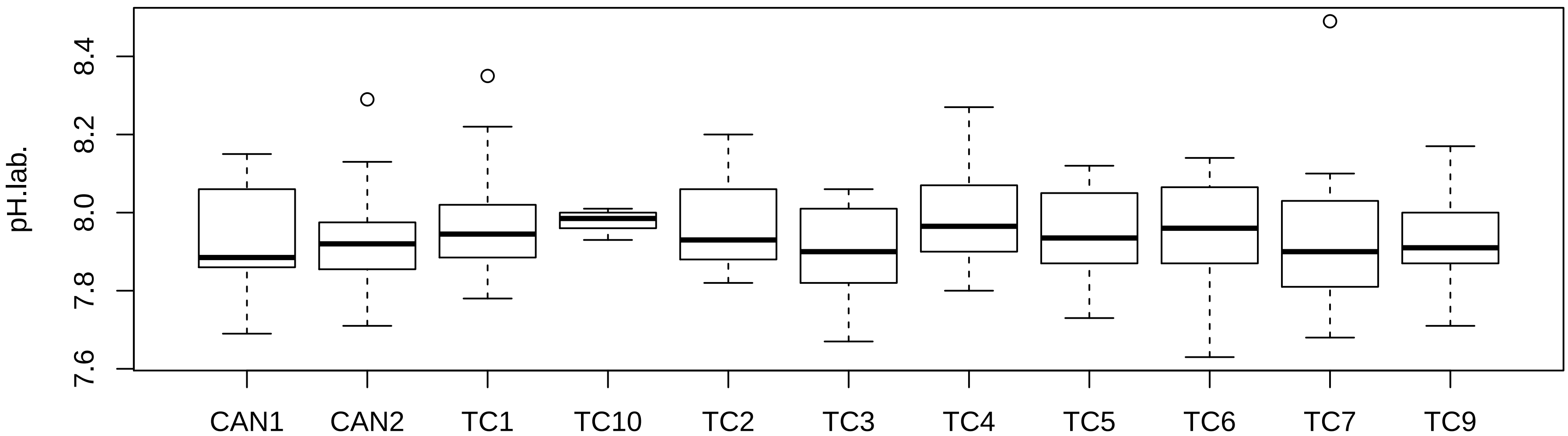
Hardness
50
60
70
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

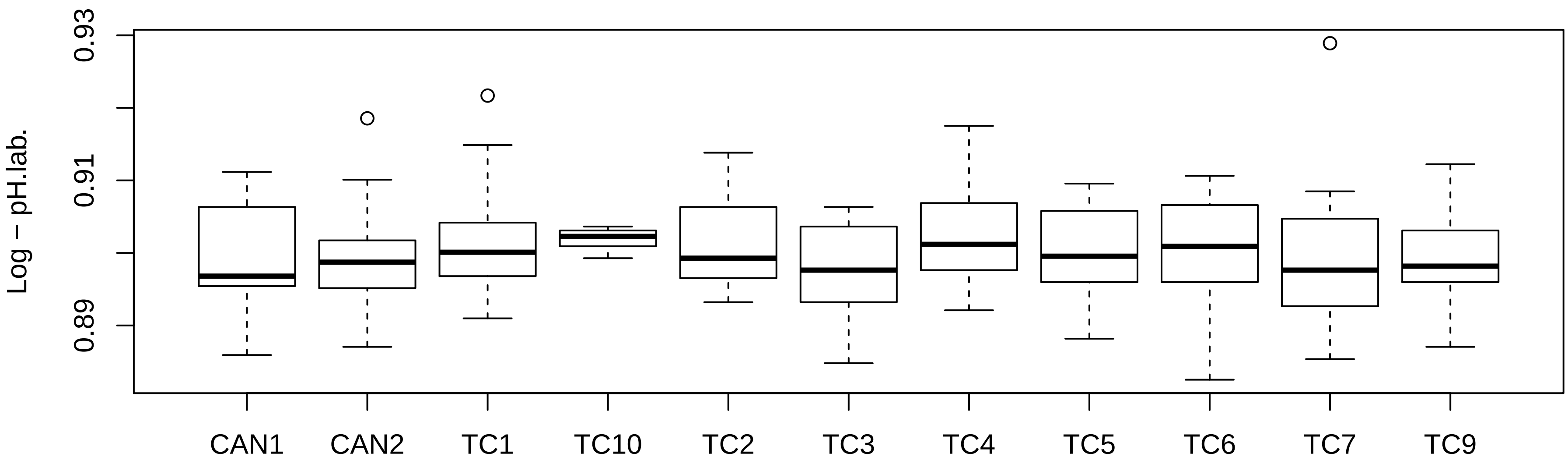


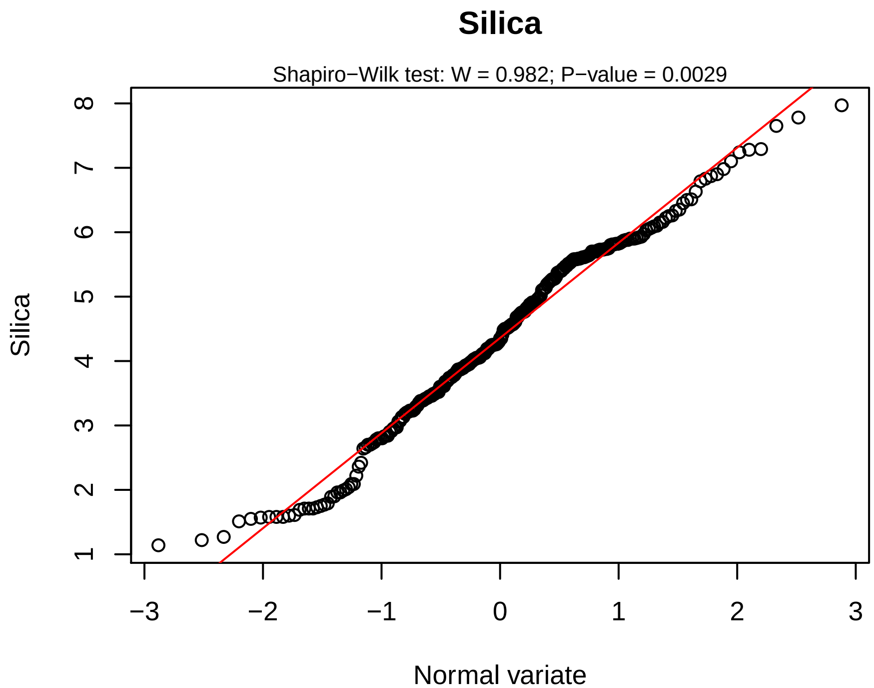
Log – Hardness
1.70
1.80
1.90
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

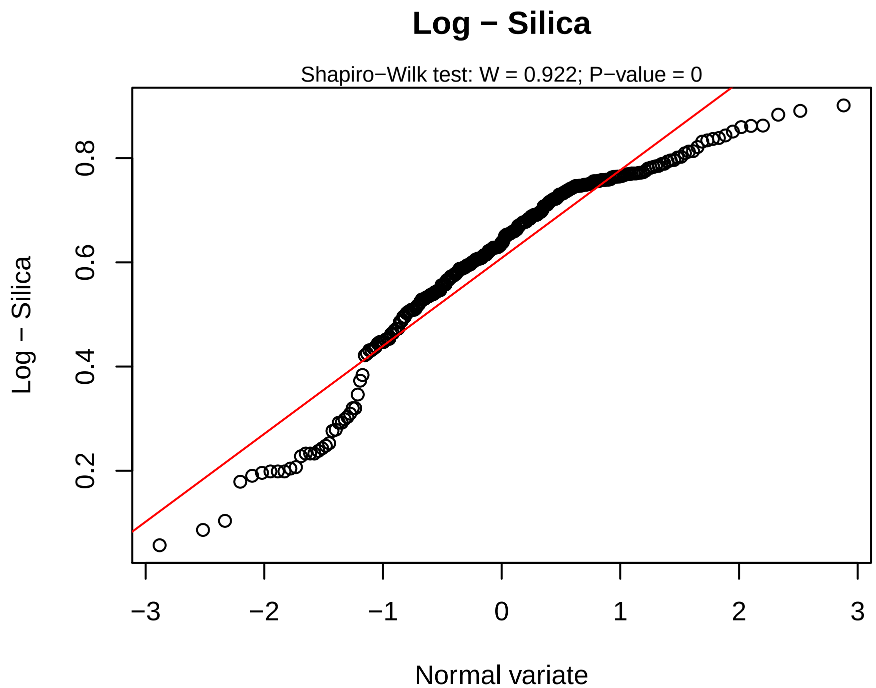


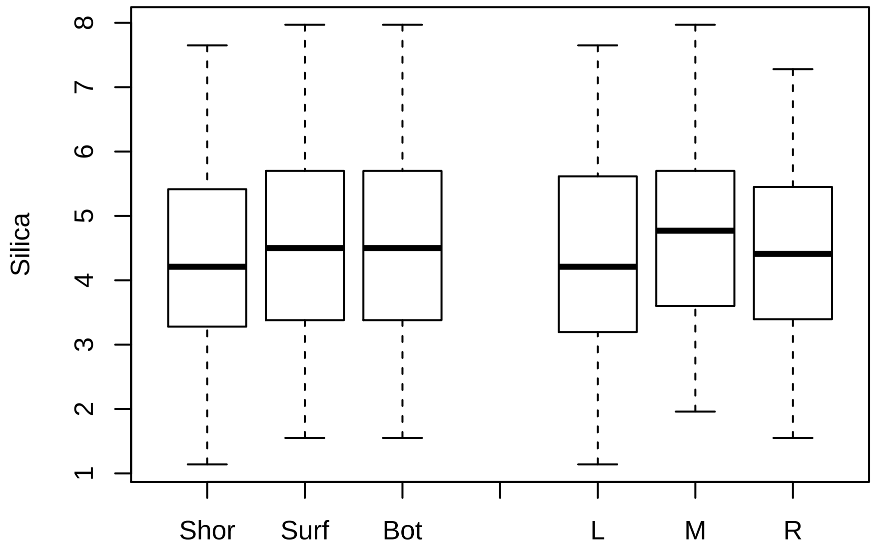
pH.lab.
Shapiro−Wilk test: W = 0.98; P−value = 0.0014
pH.lab.
Normal variate
Log − pH.lab.
Shapiro−Wilk test: W = 0.983; P−value = 0.004
Log − pH.lab.
Normal variate
pH.lab.
Shor
Surf
Bot
L
M
R
Log − pH.lab.
Shor
Surf
Bot
L
M
R

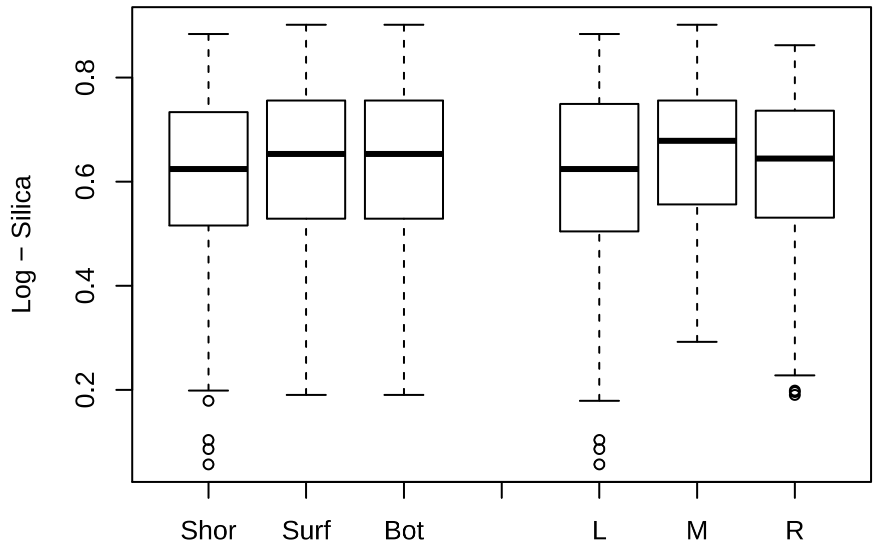

pH.lab.
8.4
8.2
8.0
7.8
7.6
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

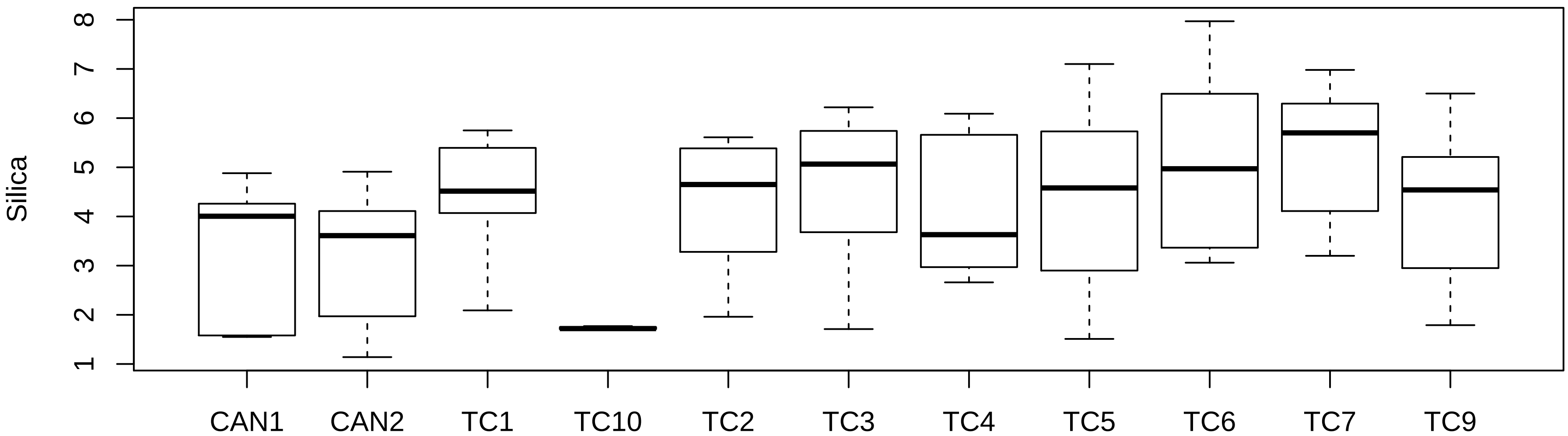

Log – pH.lab.
0.93
0.91
0.89
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

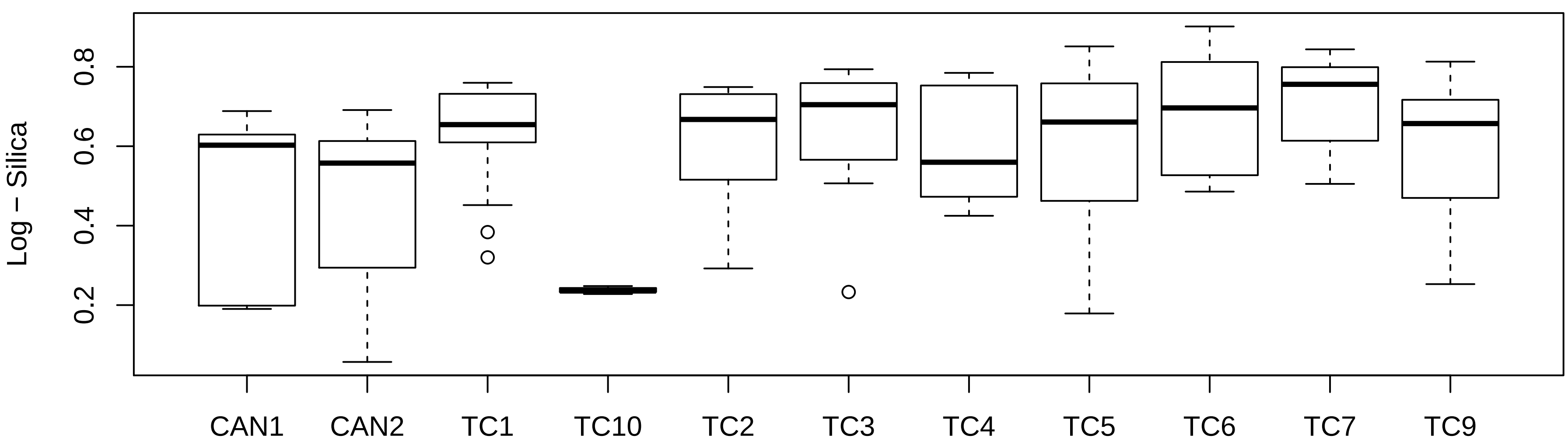

Silica
Shapiro−Wilk test: W = 0.982; P−value = 0.0029
Silica
Normal variate

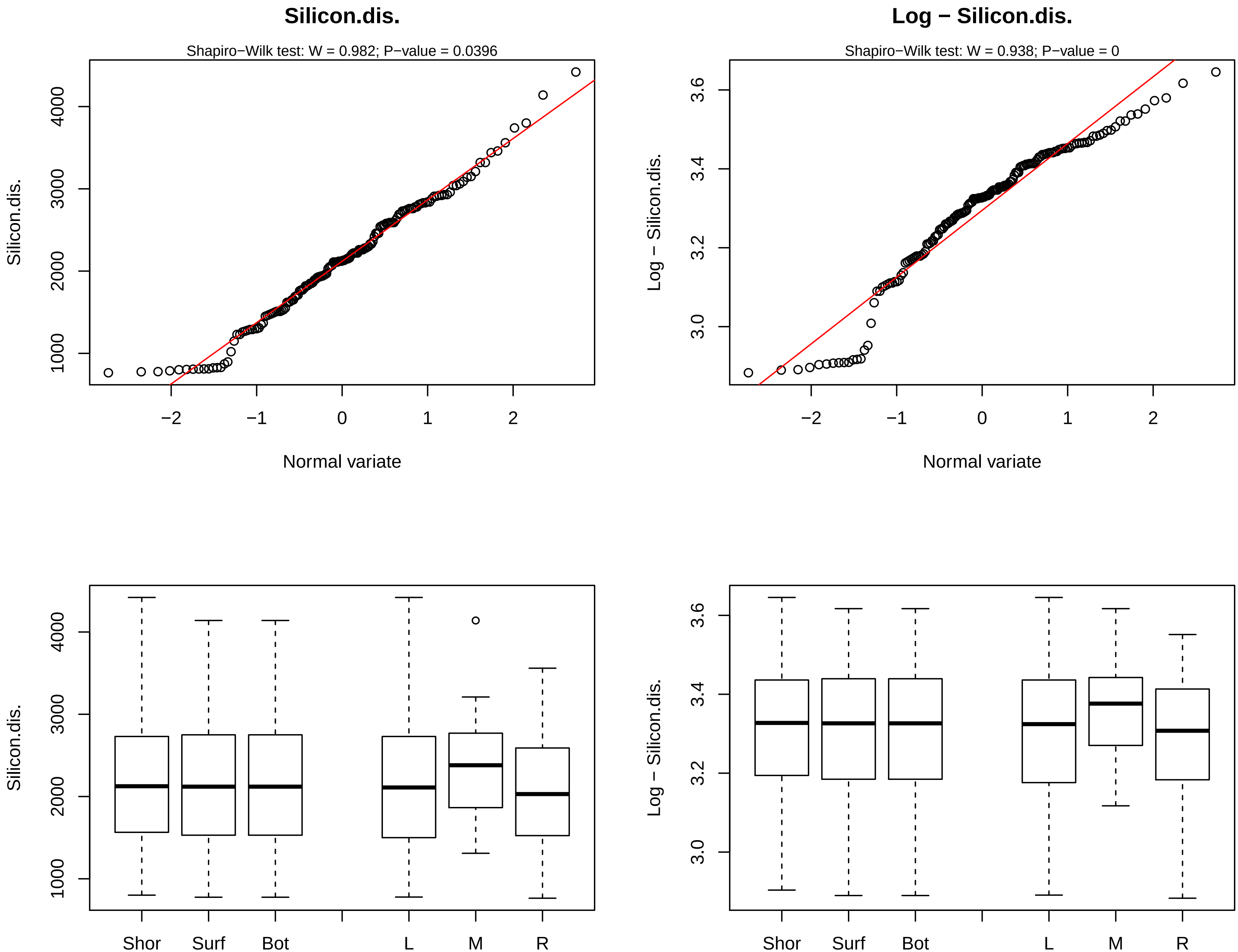

Log − Silica
Shapiro−Wilk test: W = 0.922; P−value = 0
Log − Silica
Normal variate

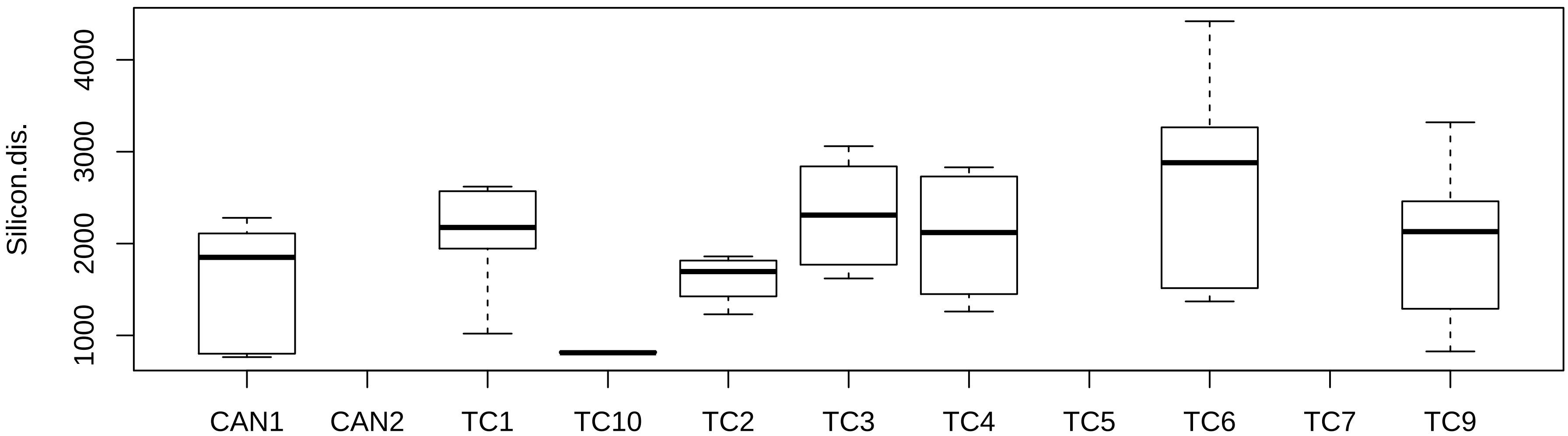

Silica
Shor
Surf
Bot
L
M
R


Log − Silica
Shor
Surf
Bot
L
M
R

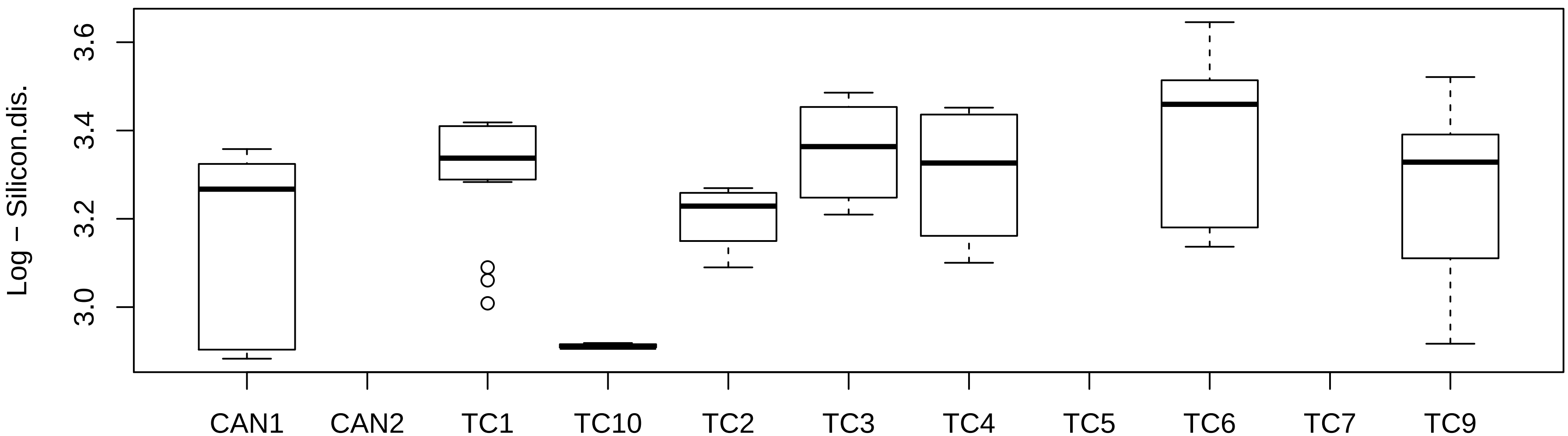

Silica
1
2
3
4
5
6
7
8
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


Log – Silica
0.2
0.4
0.6
0.8
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


Silicon.dis.
Shapiro−Wilk test: W = 0.982; P−value = 0.0396
Silicon.dis.
1000
2000
3000
4000
−2
−1
0
1
2
Normal variate
Log − Silicon.dis.
Shapiro−Wilk test: W = 0.938; P−value = 0
Log − Silicon.dis.
3.0
3.2
3.4
3.6
−2
−1
0
1
2
Normal variate
Silicon.dis.
1000
2000
3000
4000
Shor
Surf
Bot
L
M
R
Log − Silicon.dis.
3.0
3.2
3.4
3.6
Shor
Surf
Bot
L
M
R



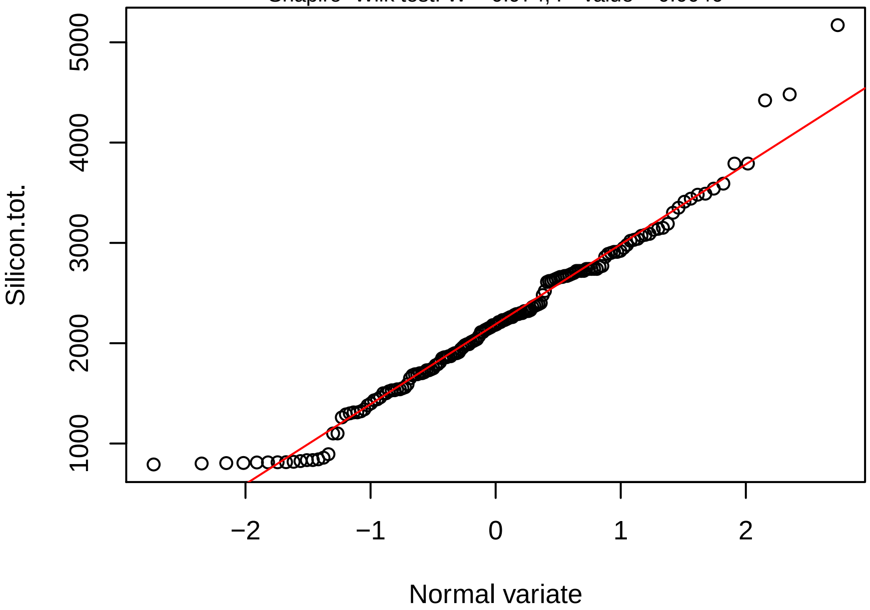
Silicon.dis.
1000
2000
3000
4000
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9



Log – Silicon.dis.
3.0
3.2
3.4
3.6
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

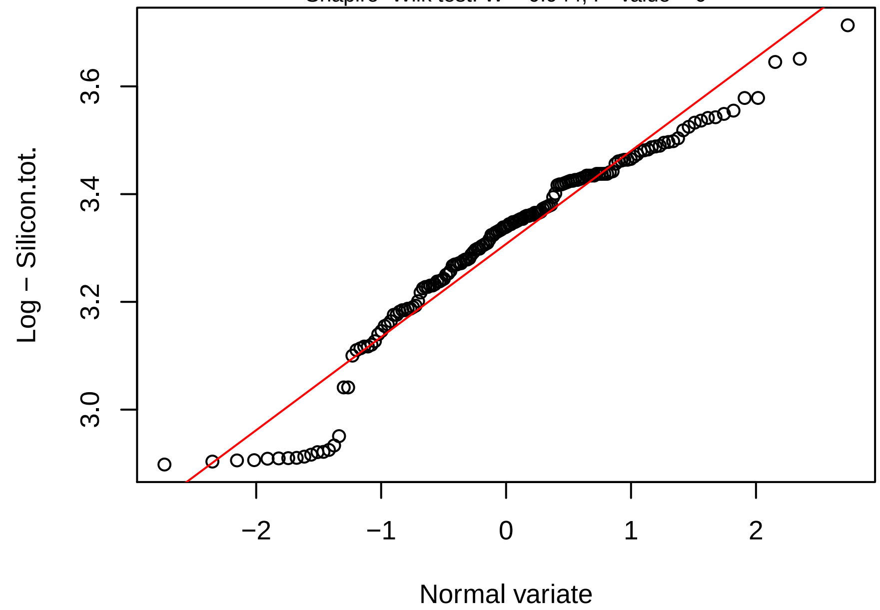
Silicon.tot.

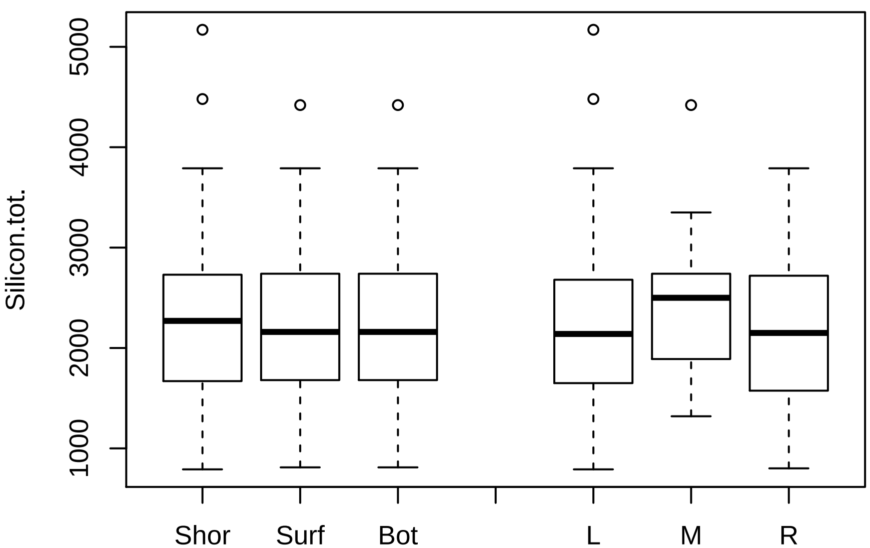
Shapiro−Wilk test: W = 0.974; P−value = 0.0046

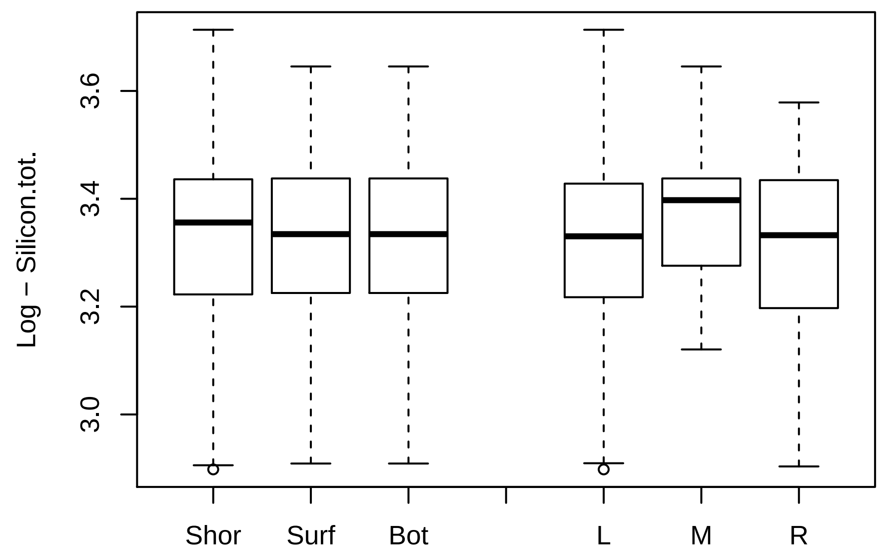


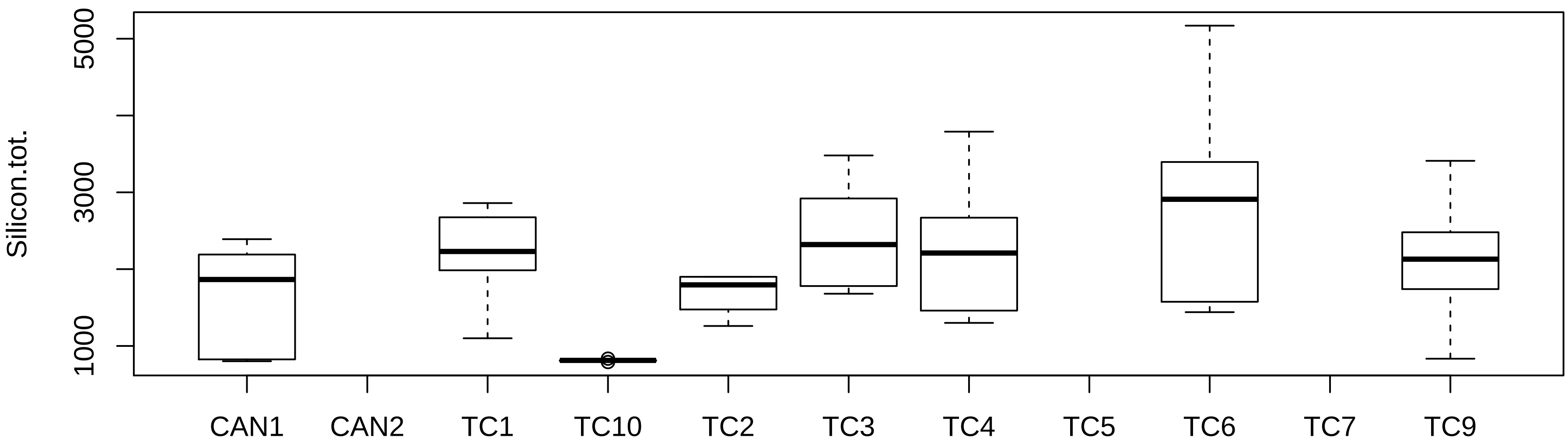
Log − Silicon.tot.

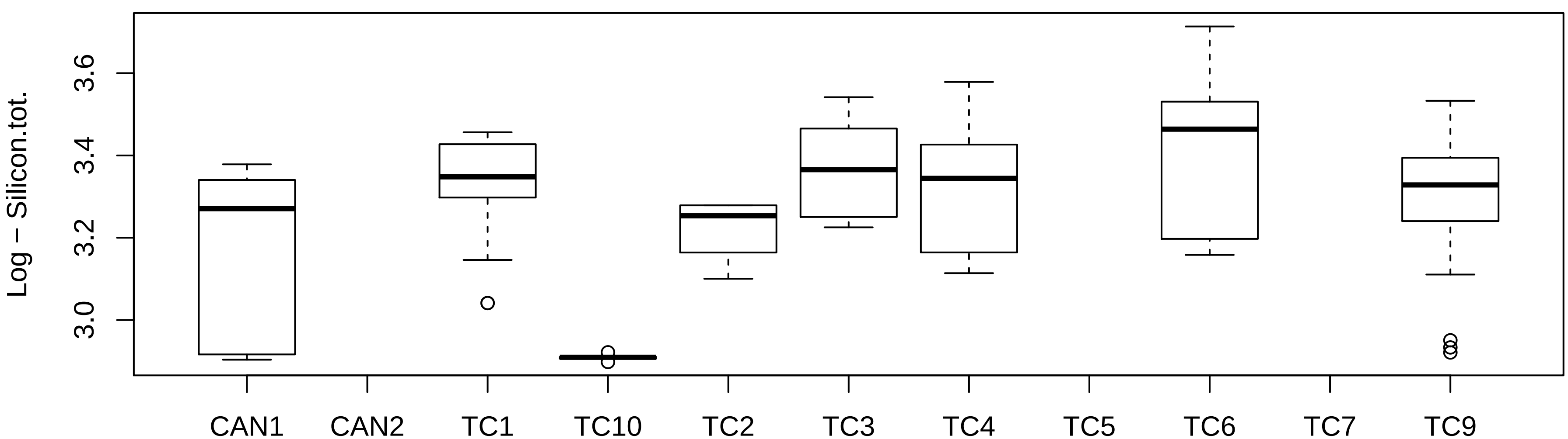
Shapiro−Wilk test: W = 0.944; P−value = 0

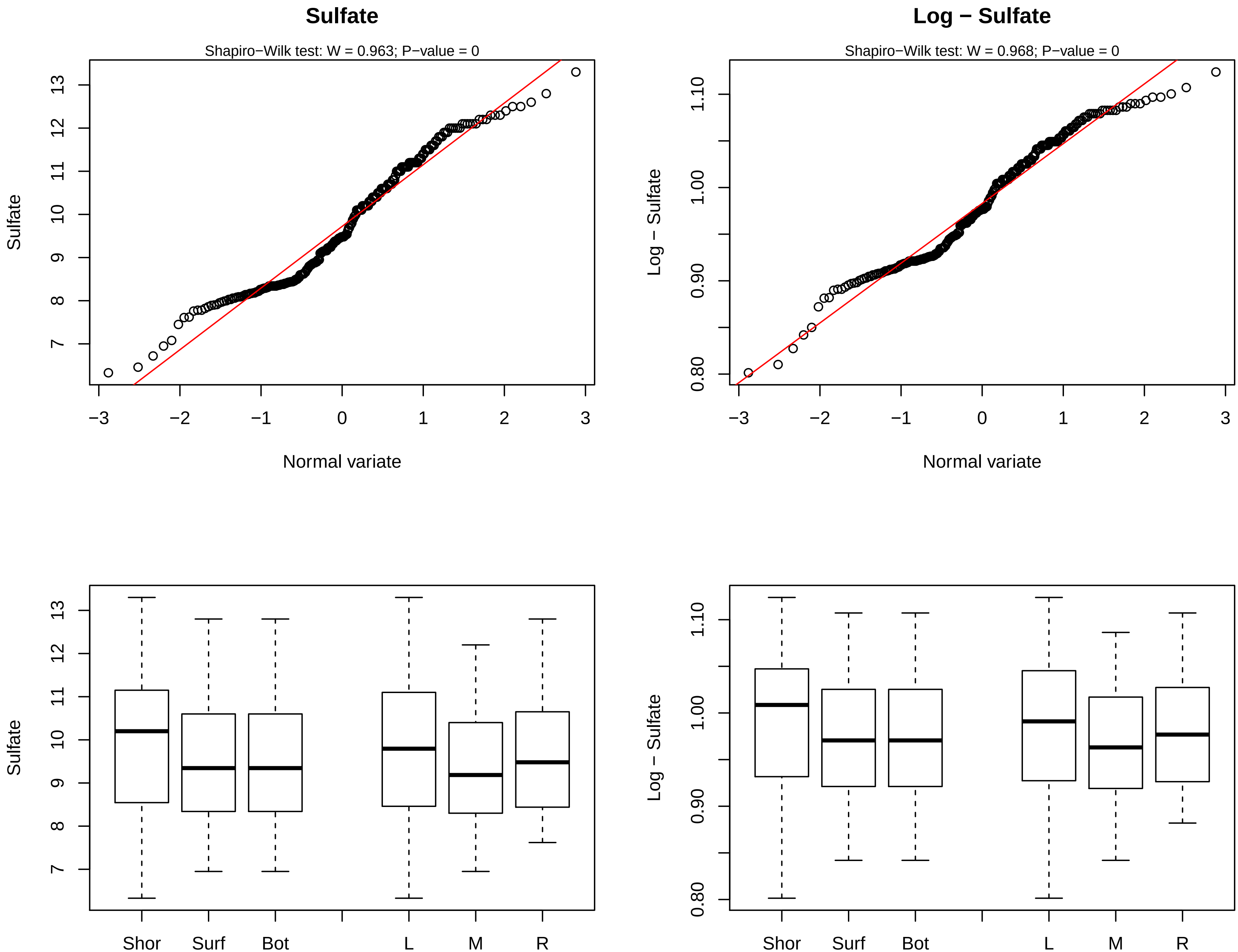


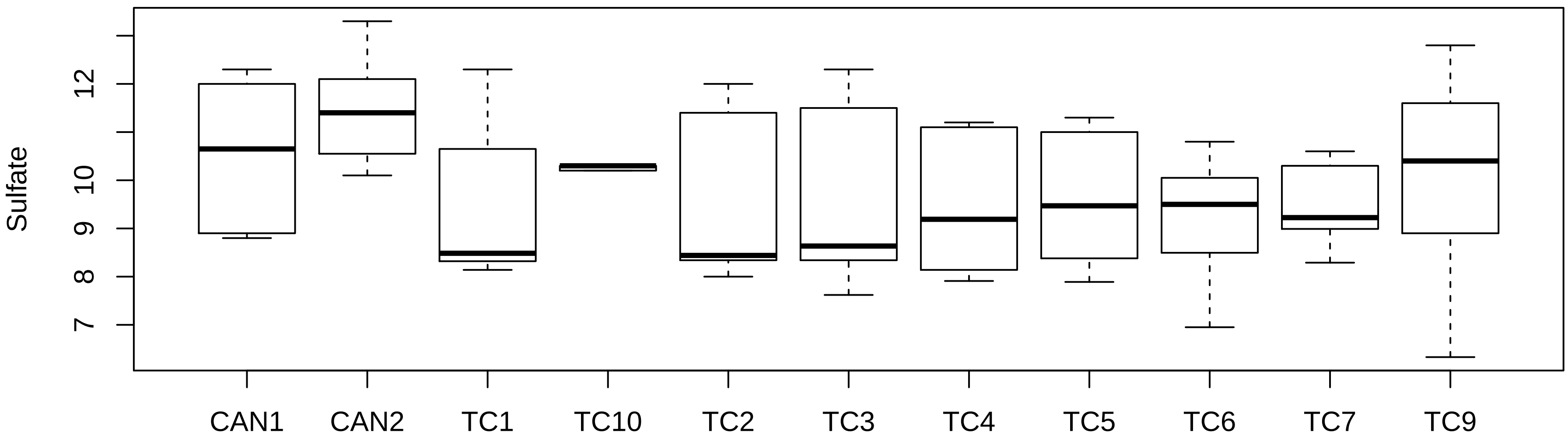


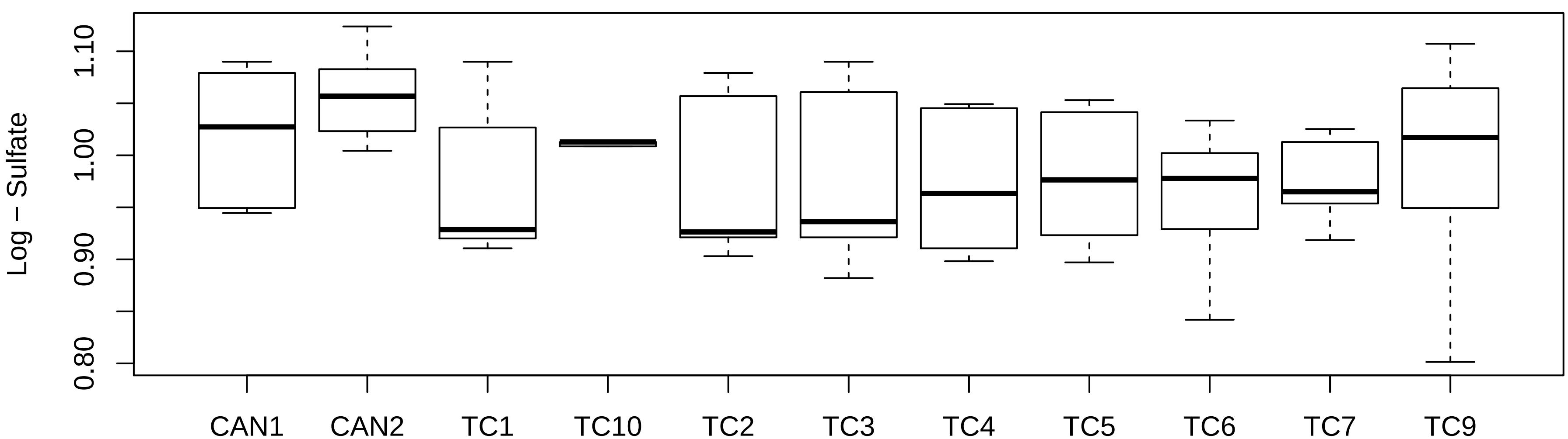


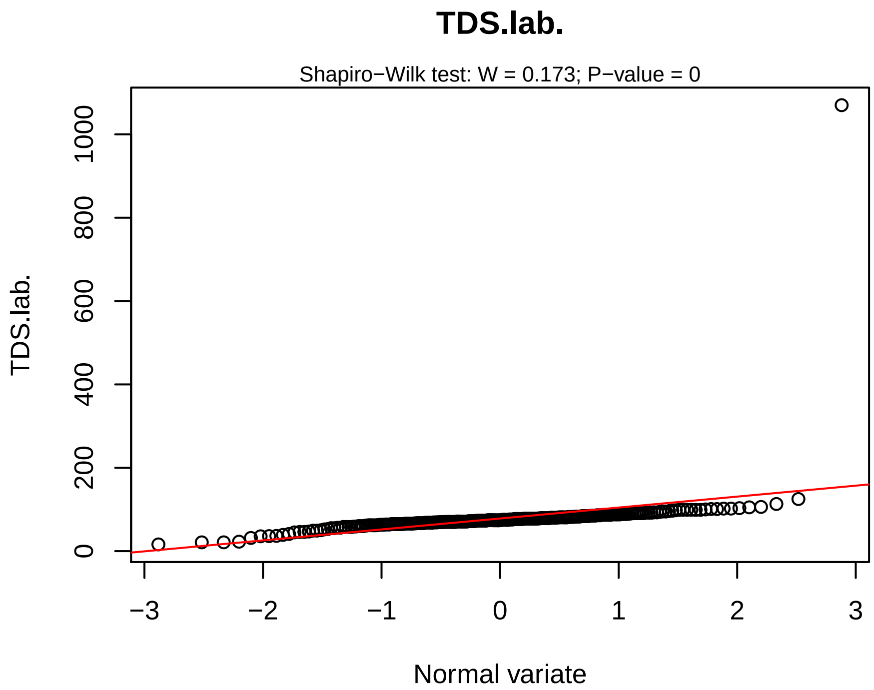

Silicon.tot.
1000
3000
5000
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

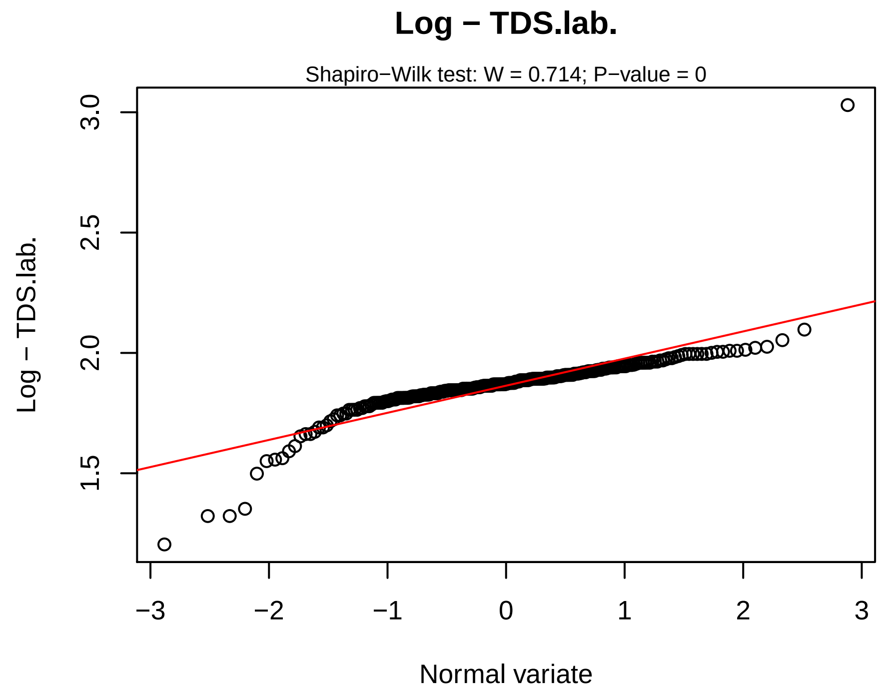

Log – Silicon.tot.
3.0
3.2
3.4
3.6
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

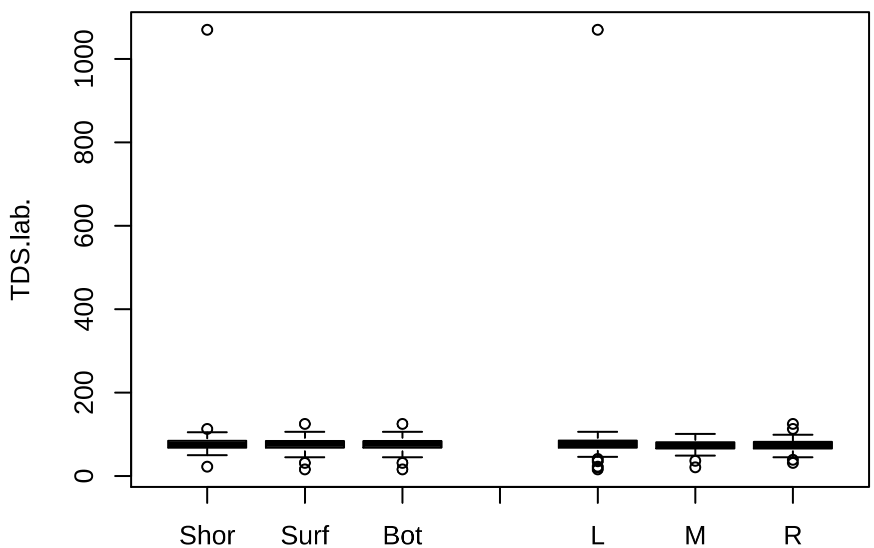

Sulfate
Shapiro−Wilk test: W = 0.963; P−value = 0
Sulfate
7 8 9 10 11 12 13
−3 −2 −1 0 1 2 3
Normal variate
Log − Sulfate
Shapiro−Wilk test: W = 0.968; P−value = 0
Log − Sulfate
0.80 0.90 1.00 1.10
−3 −2 −1 0 1 2 3
Normal variate
Sulfate
7 8 9 10 11 12 13
Shor Surf Bot L M R
Log − Sulfate
0.80 0.90 1.00 1.10
Shor Surf Bot L M R

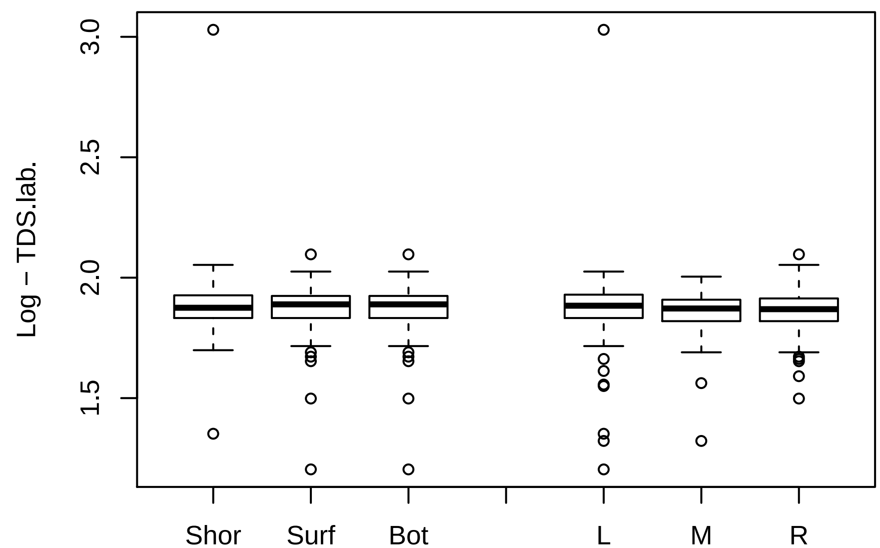

Sulfate
7
8
9
10
12
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

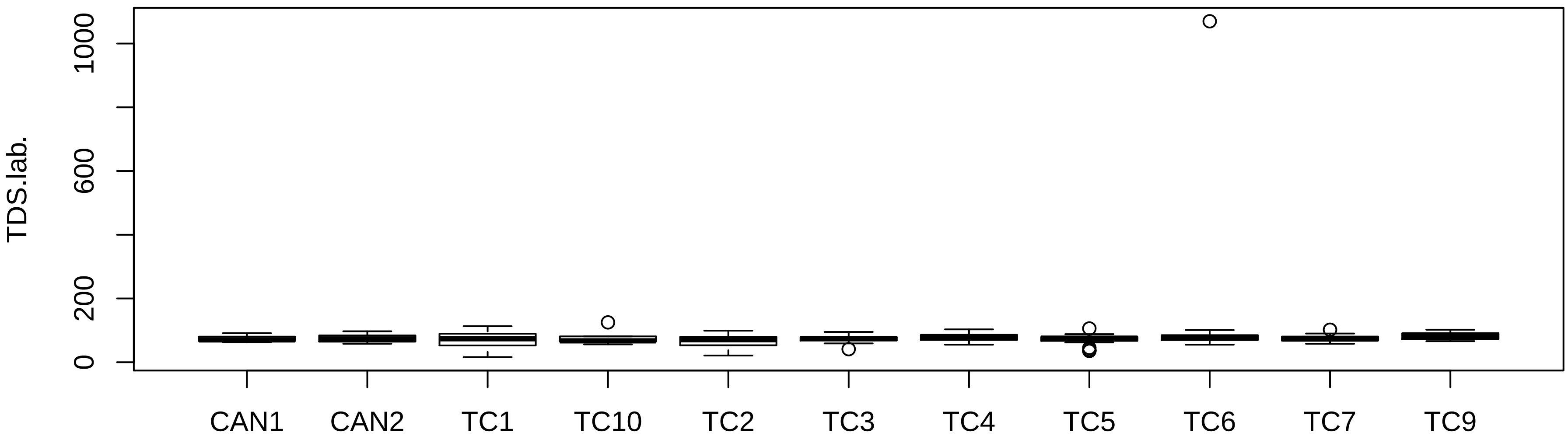

Log – Sulfate
0.80
0.90
1.00
1.10
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

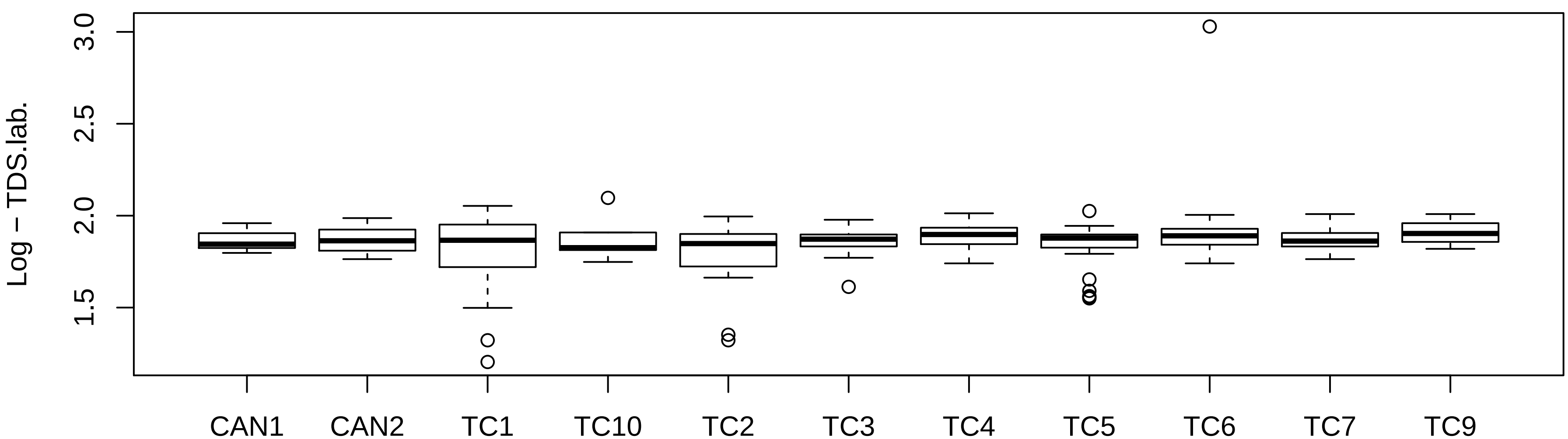

TDS.lab.
Shapiro−Wilk test: W = 0.173; P−value = 0
TDS.lab.
0
200
400
600
800
1000
−3
−2
−1
0
1
2
3
Normal variate

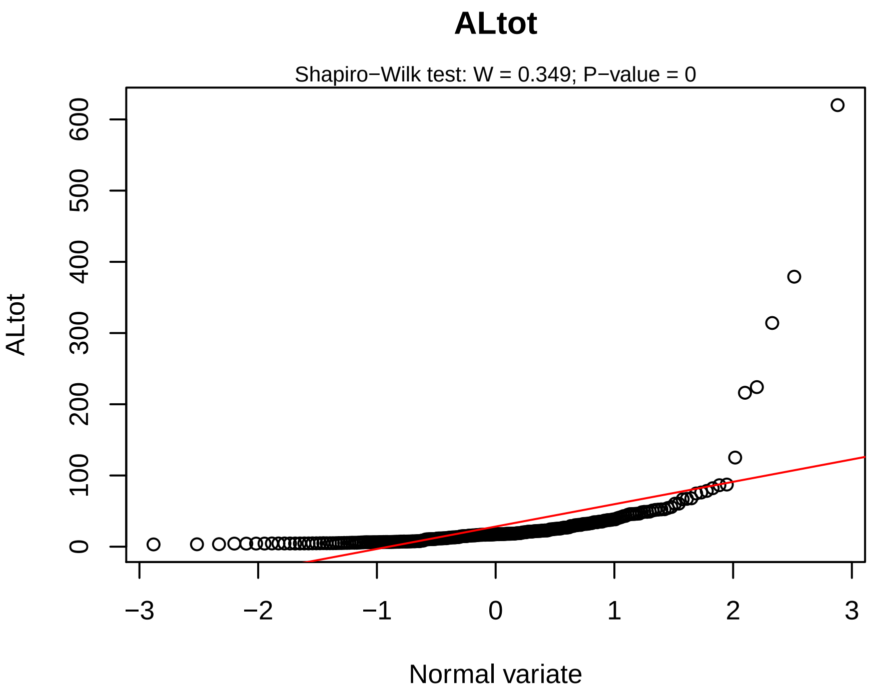

Log − TDS.lab.
Shapiro−Wilk test: W = 0.714; P−value = 0
Log − TDS.lab.
1.5
2.0
2.5
3.0
−3
−2
−1
0
1
2
3
Normal variate

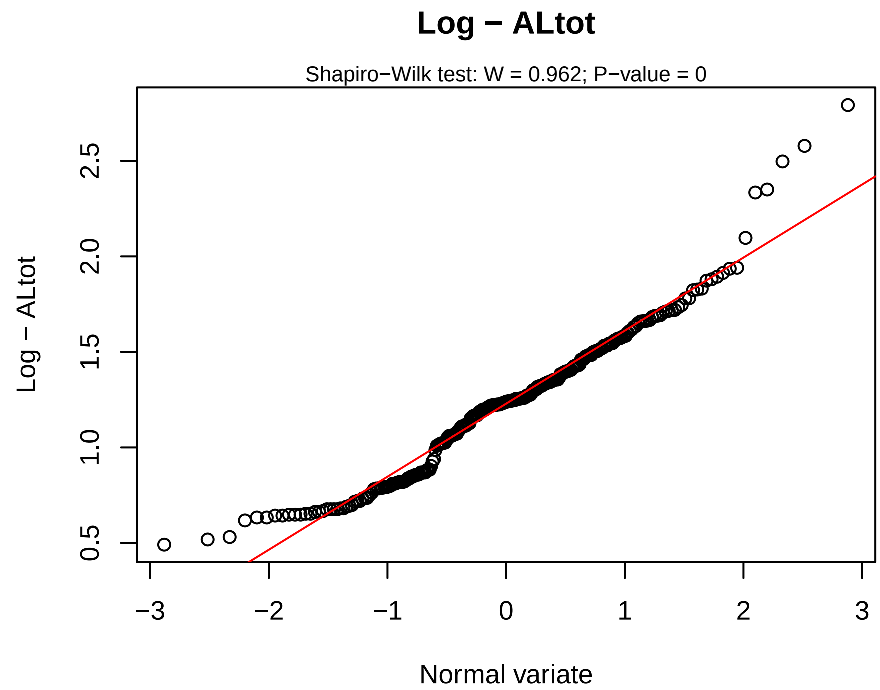

TDS.lab.
0
200
400
600
800
1000
Shor
Surf
Bot
L
M
R

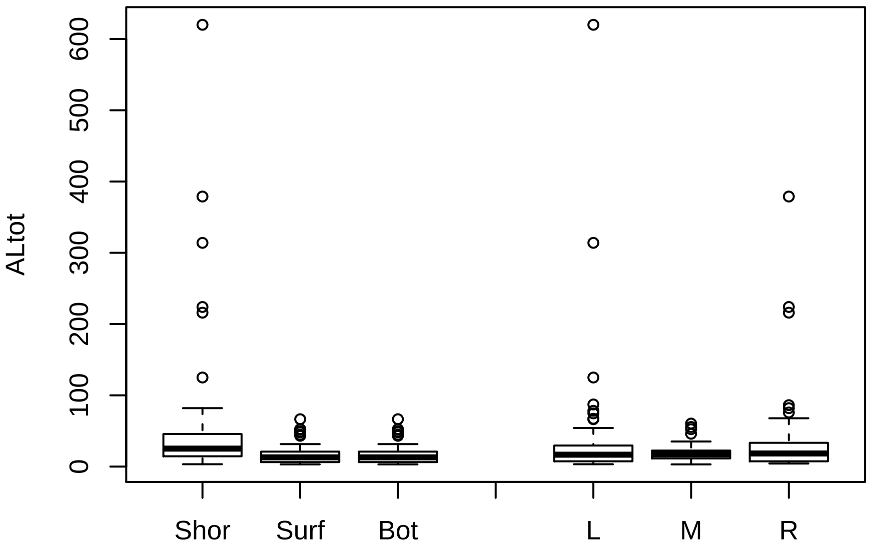

Log − TDS.lab.
1.5
2.0
2.5
3.0
Shor
Surf
Bot
L
M
R

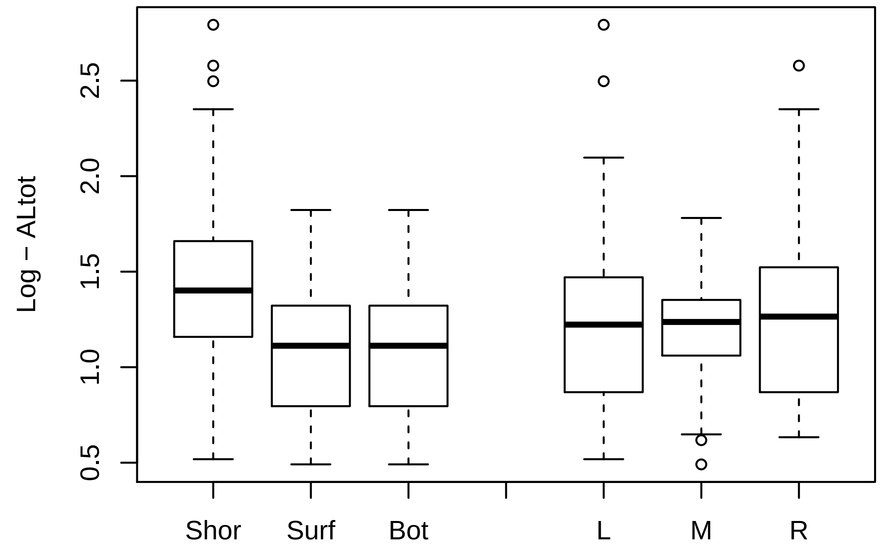

TDS.lab.
0
200
600
1000
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

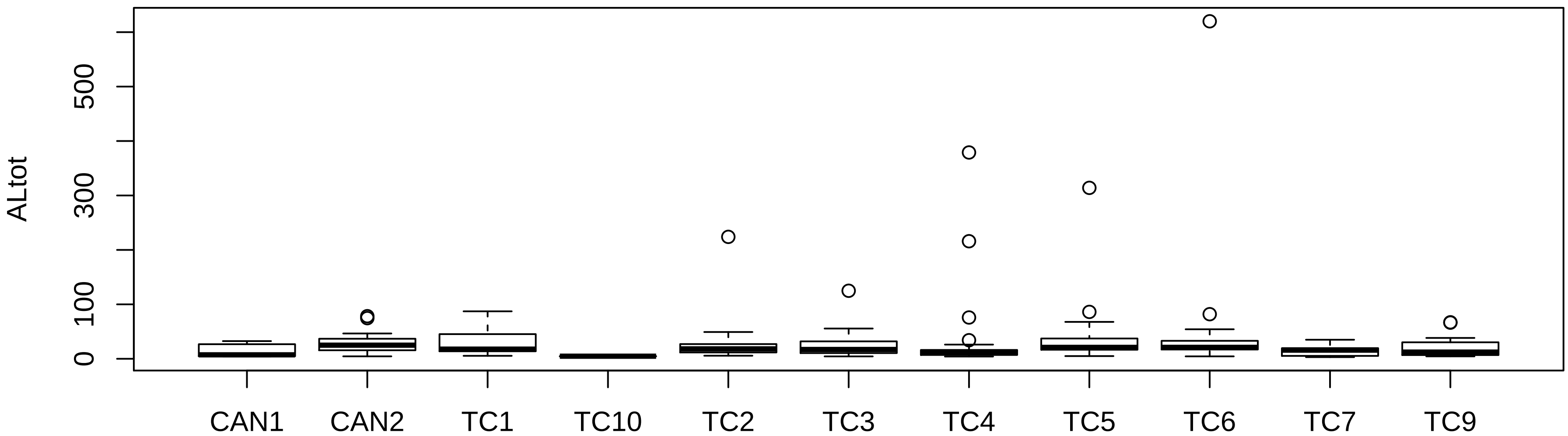

Log – TDS.lab.
1.5
2.0
2.5
3.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

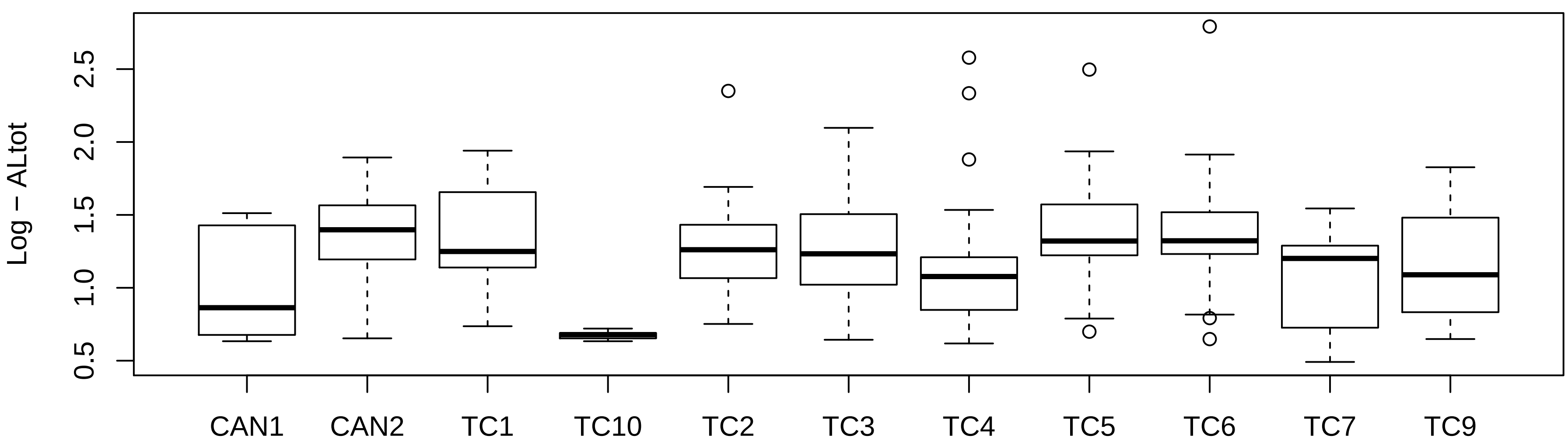

ALtot
Shapiro−Wilk test: W = 0.349; P−value = 0
ALtot
0
100
200
300
400
500
600
−3
−2
−1
0
1
2
3
Normal variate

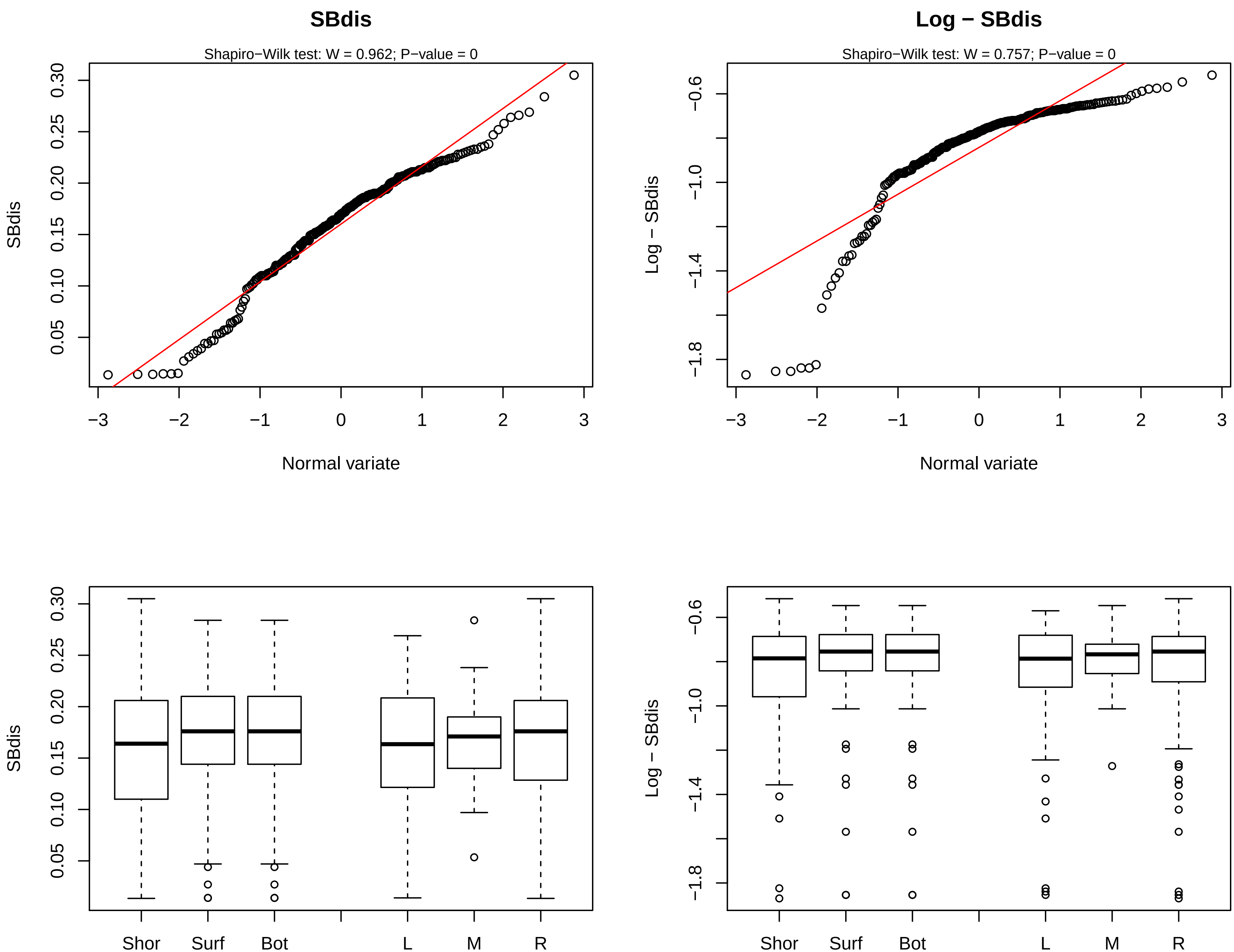

Log − ALtot
Shapiro−Wilk test: W = 0.962; P−value = 0
Log − ALtot
0.5
1.0
1.5
2.0
2.5
−3
−2
−1
0
1
2
3
Normal variate

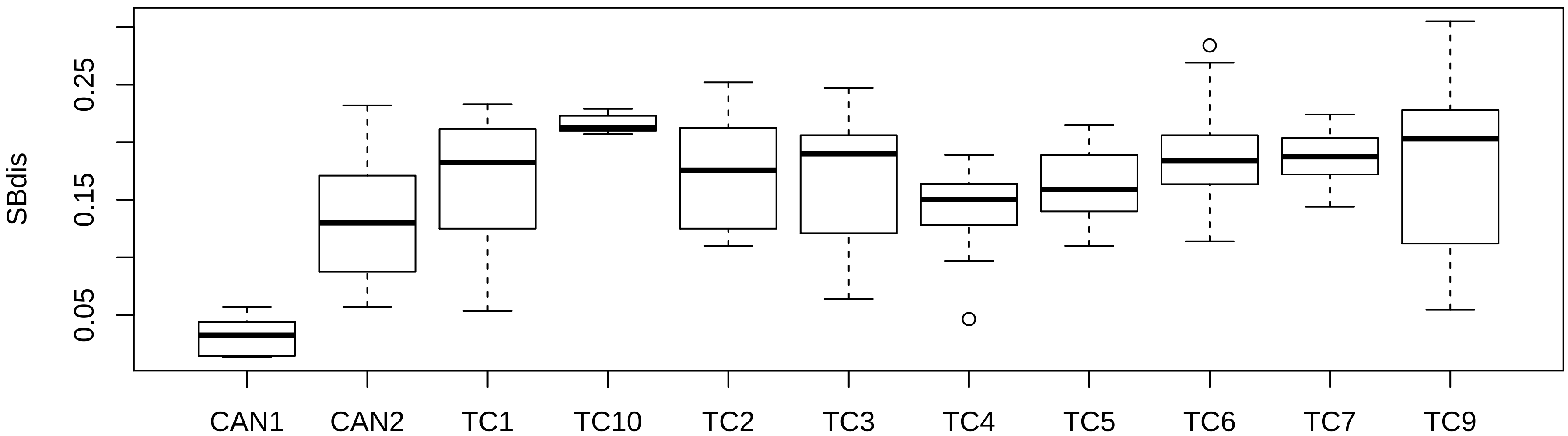

ALtot
0
100
200
300
400
500
600
Shor
Surf
Bot
L
M
R


Log − ALtot
0.5
1.0
1.5
2.0
2.5
Shor
Surf
Bot
L
M
R

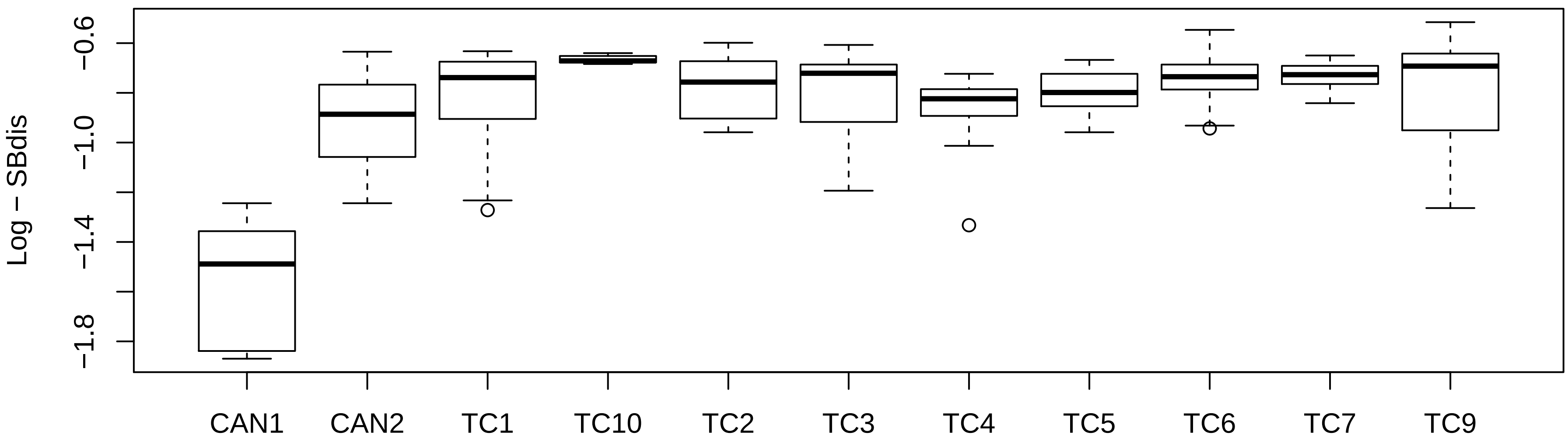

ALtot
0
100
300
500
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


Log – ALtot
0.5
1.0
1.5
2.0
2.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

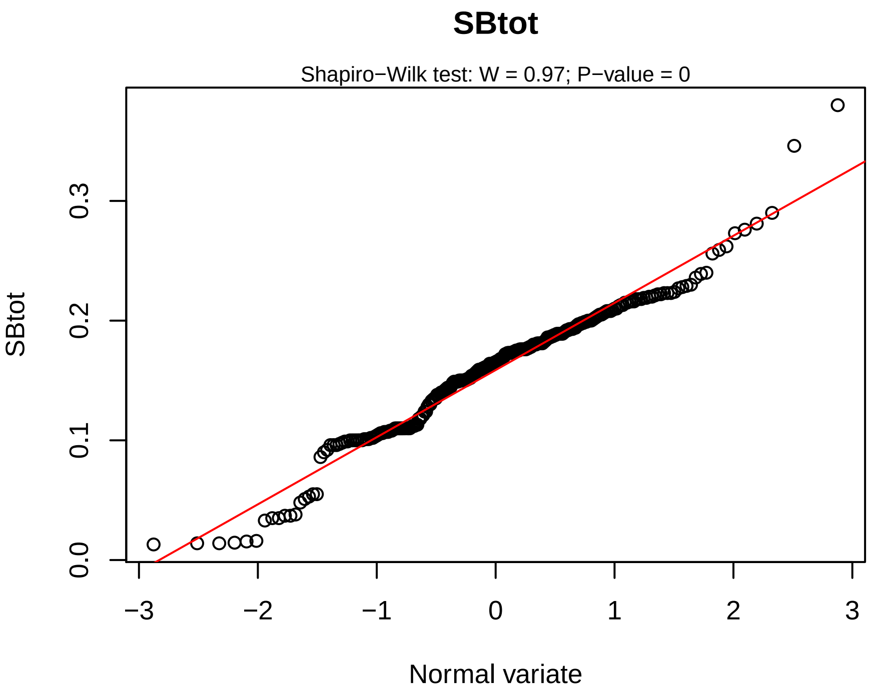

SBdis
Shapiro−Wilk test: W = 0.962; P−value = 0
SBdis
Normal variate
Log − SBdis
Shapiro−Wilk test: W = 0.757; P−value = 0
Log − SBdis
Normal variate
Shor
Surf
Bot
L
M
R

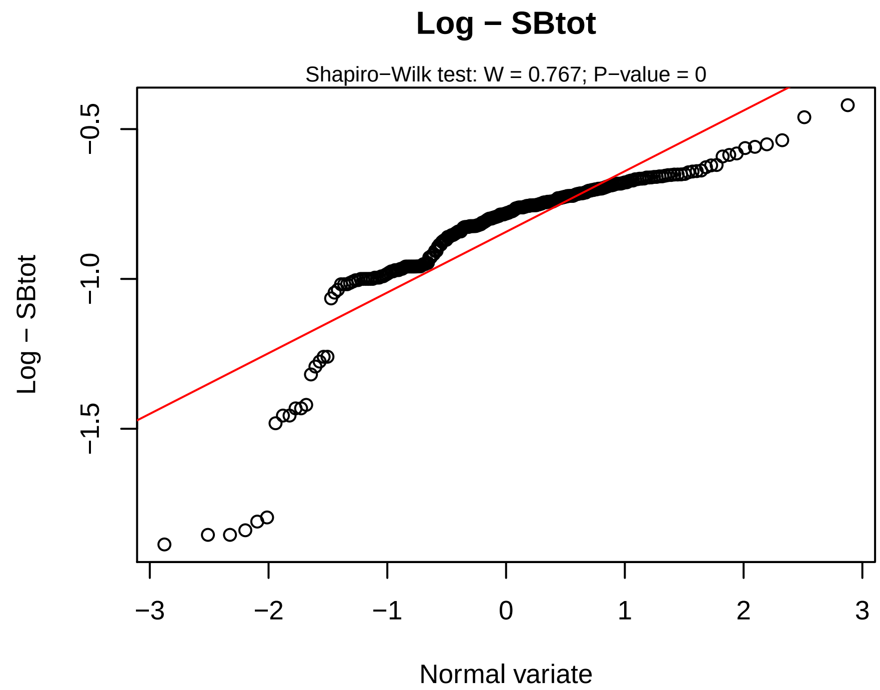


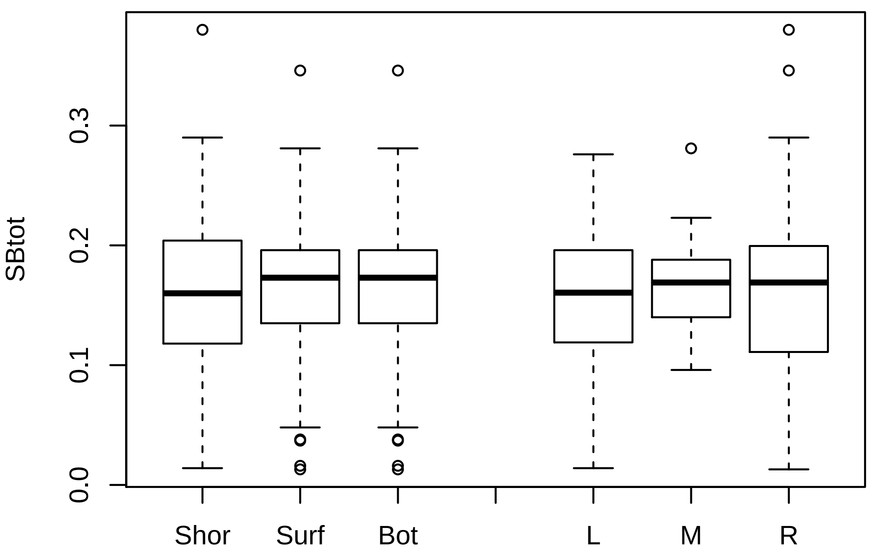
SBdis
0.05
0.15
0.25
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

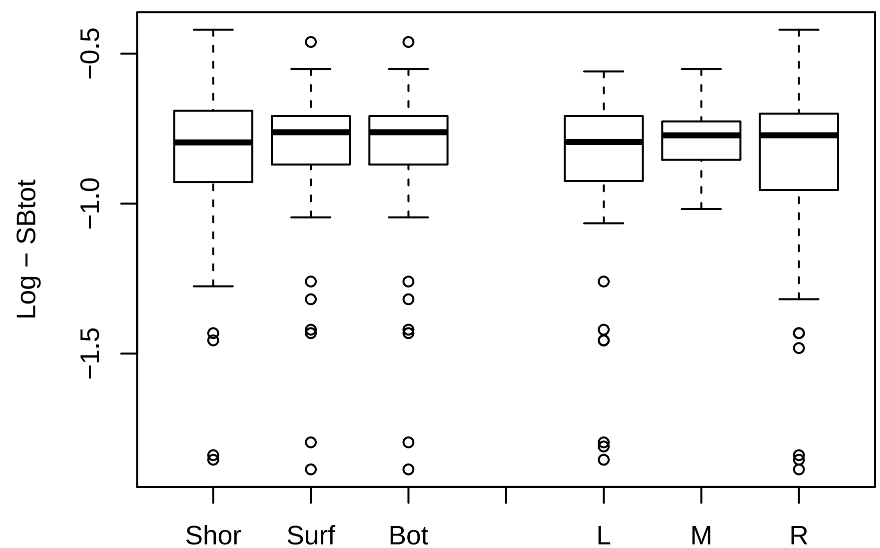


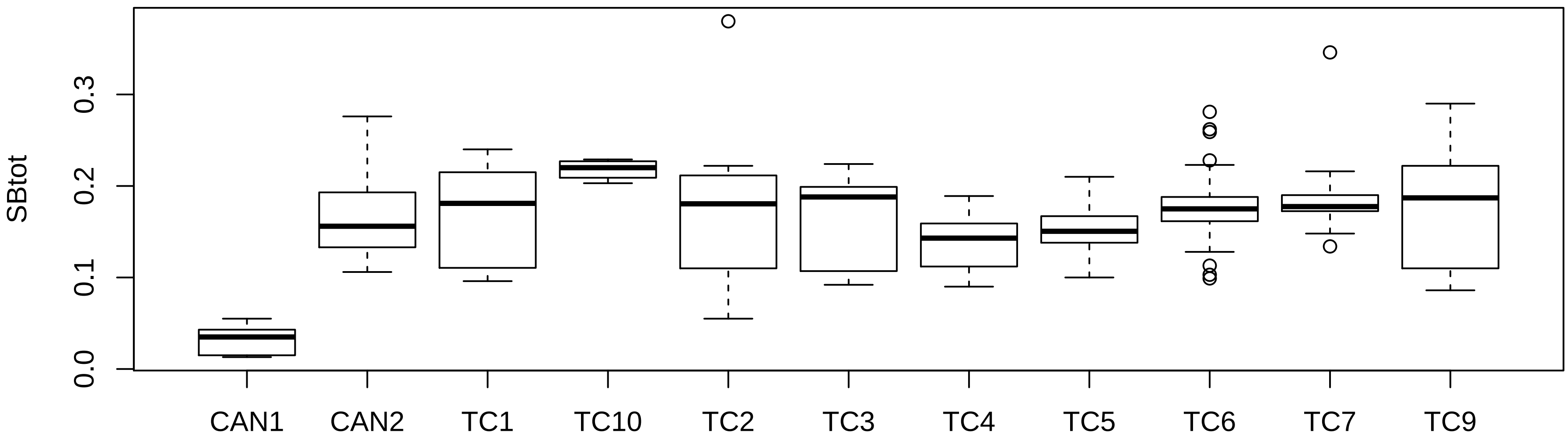
Log – SBdis
−1.8
−1.4
−1.0
−0.6
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


SBtot
Shapiro−Wilk test: W = 0.97; P−value = 0
SBtot
Normal variate
0.0
0.1
0.2
0.3
−3
−2
−1
0
1
2
3

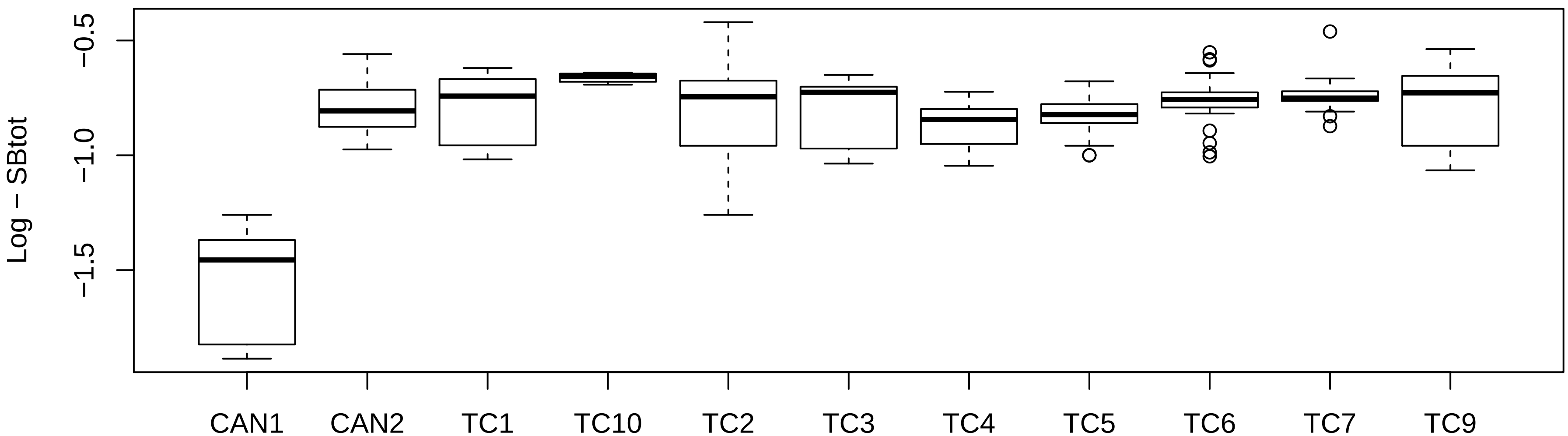

Log − SBtot
Shapiro−Wilk test: W = 0.767; P−value = 0
Log − SBtot
Normal variate
−0.5
−1.0
−1.5
−3
−2
−1
0
1
2
3


SBtot
0.0
0.1
0.2
0.3
Shor
Surf
Bot
L
M
R

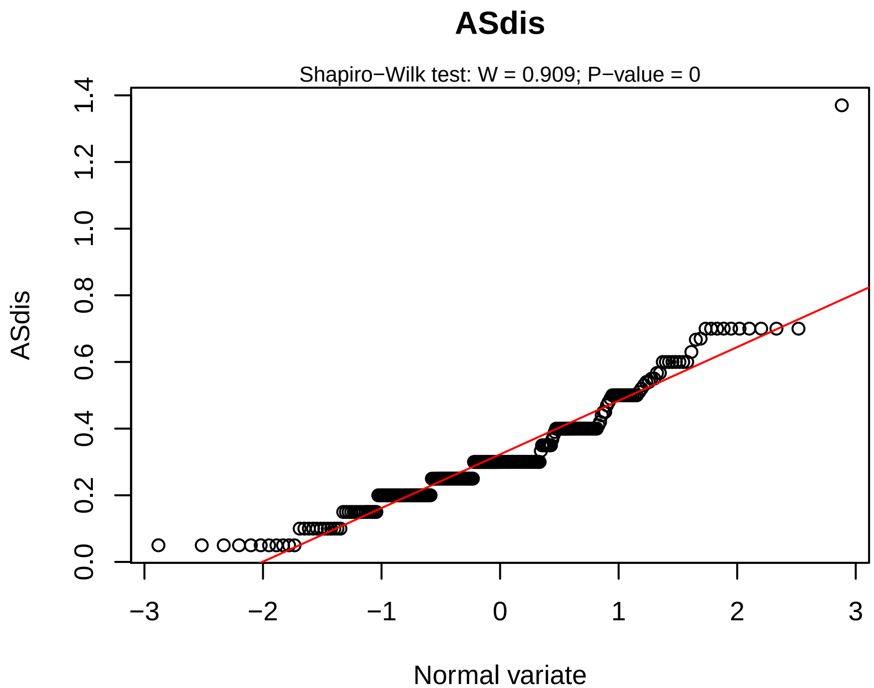

Log − SBtot
−0.5
−1.0
−1.5
Shor
Surf
Bot
L
M
R



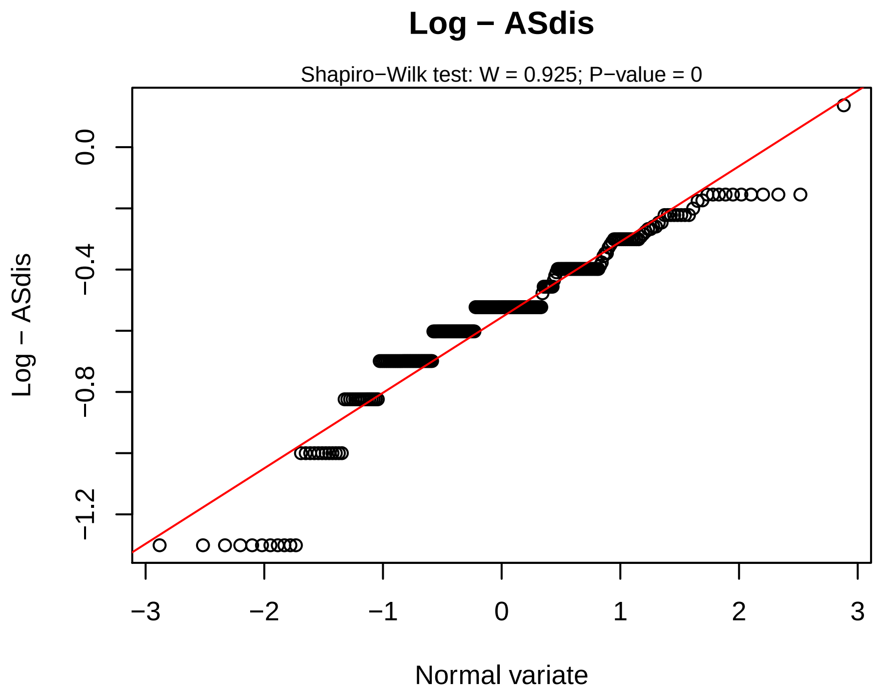
SBtot
0.0
0.1
0.2
0.3
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9



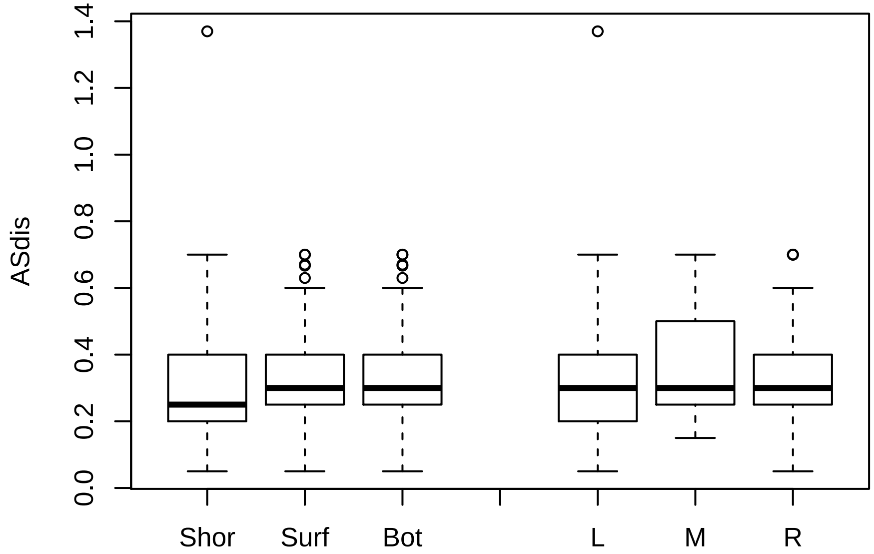
Log – SBtot
−1.5
−1.0
−0.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9



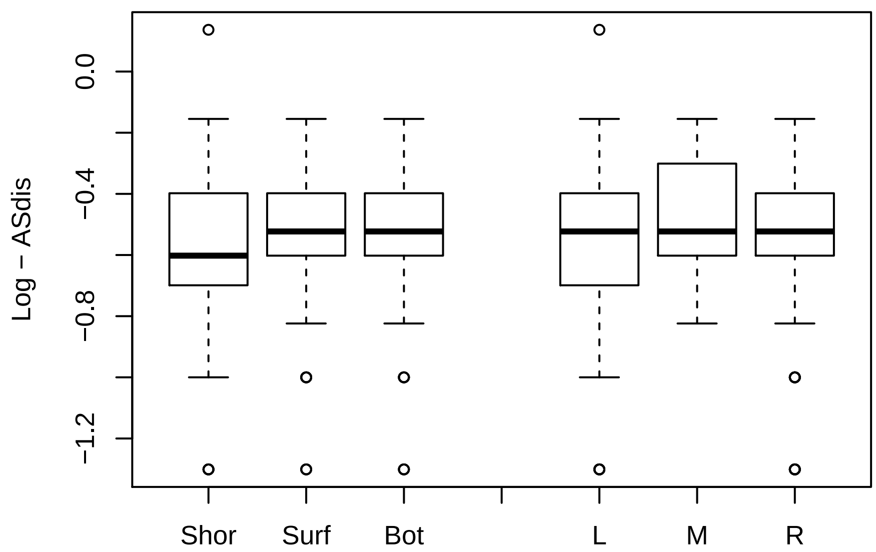
ASdis
Shapiro−Wilk test: W = 0.909; P−value = 0
ASdis
Normal variate



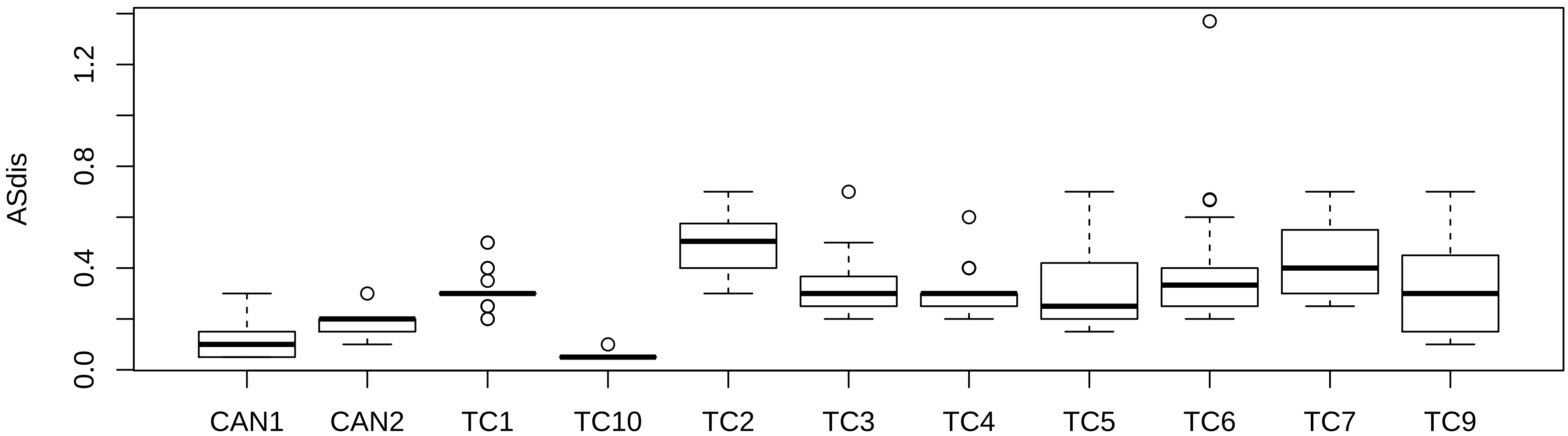
Log − ASdis
Shapiro−Wilk test: W = 0.925; P−value = 0
Log − ASdis
Normal variate

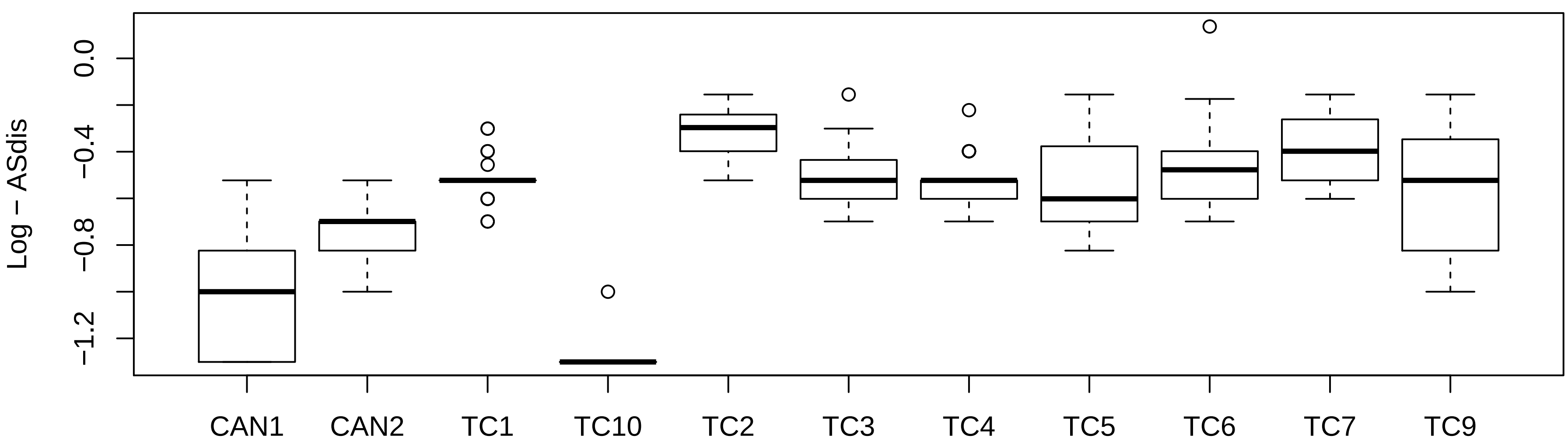


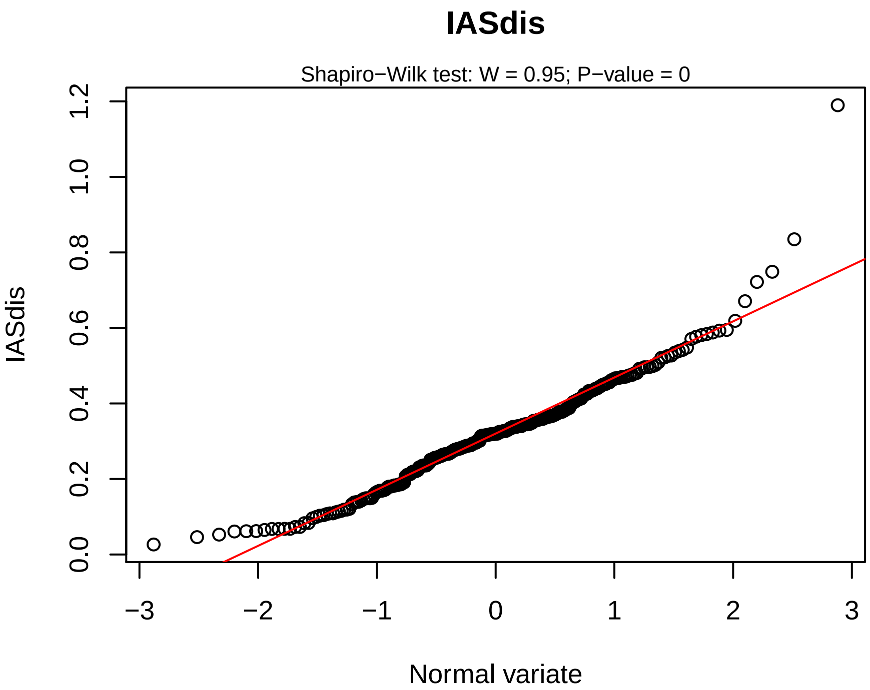
ASdis
Shor
Surf
Bot
L
M
R

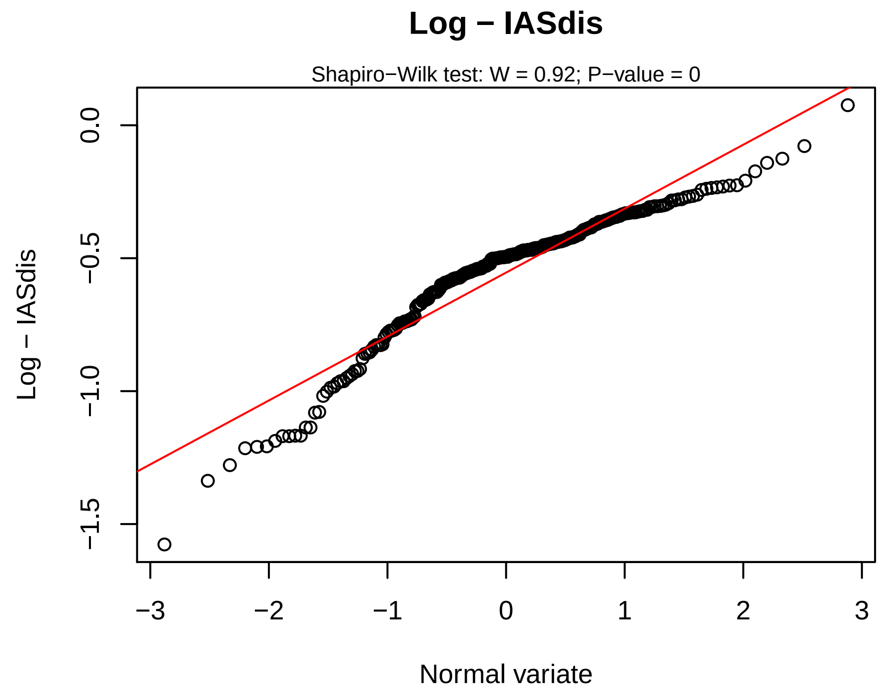


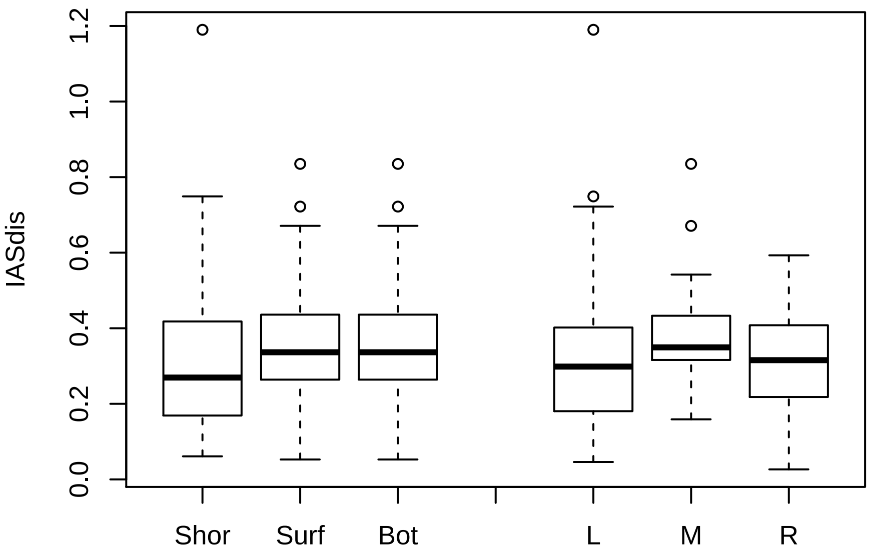
Log − ASdis
Shor
Surf
Bot
L
M
R

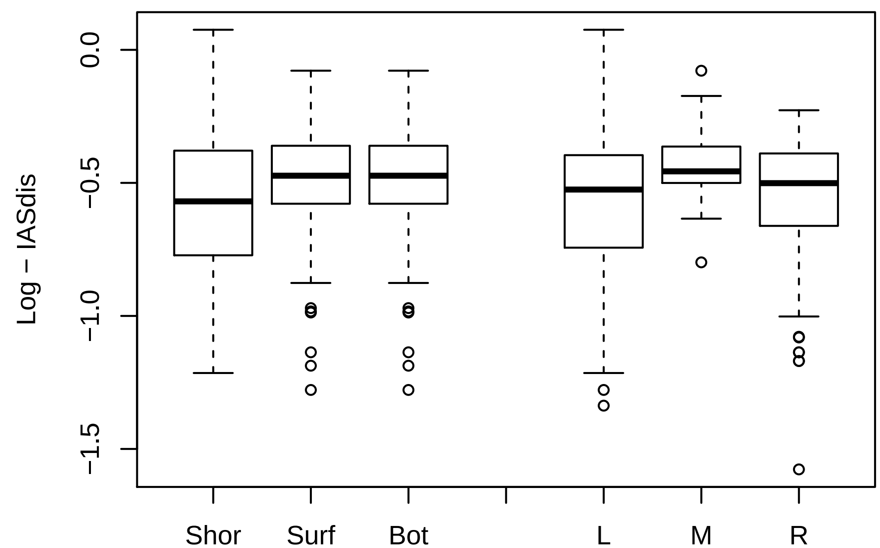

ASdis
0.0
0.4
0.8
1.2
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

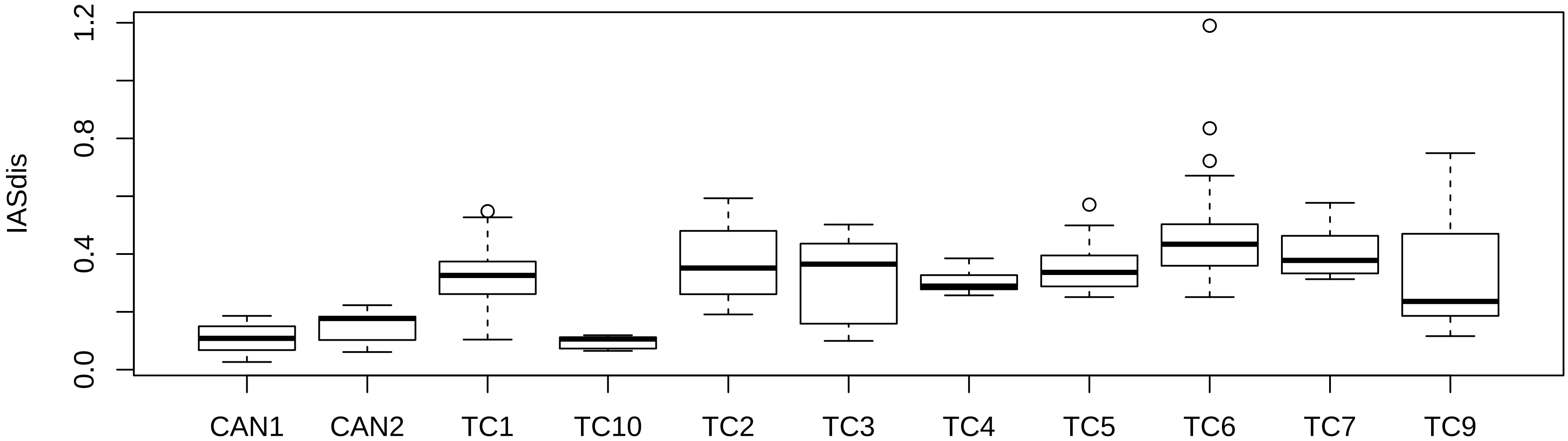

Log – ASdis
−1.2
−0.8
−0.4
0.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


IASdis
Shapiro−Wilk test: W = 0.95; P−value = 0
IASdis
0.0
0.2
0.4
0.6
0.8
1.0
1.2
−3
−2
−1
0
1
2
3
Normal variate

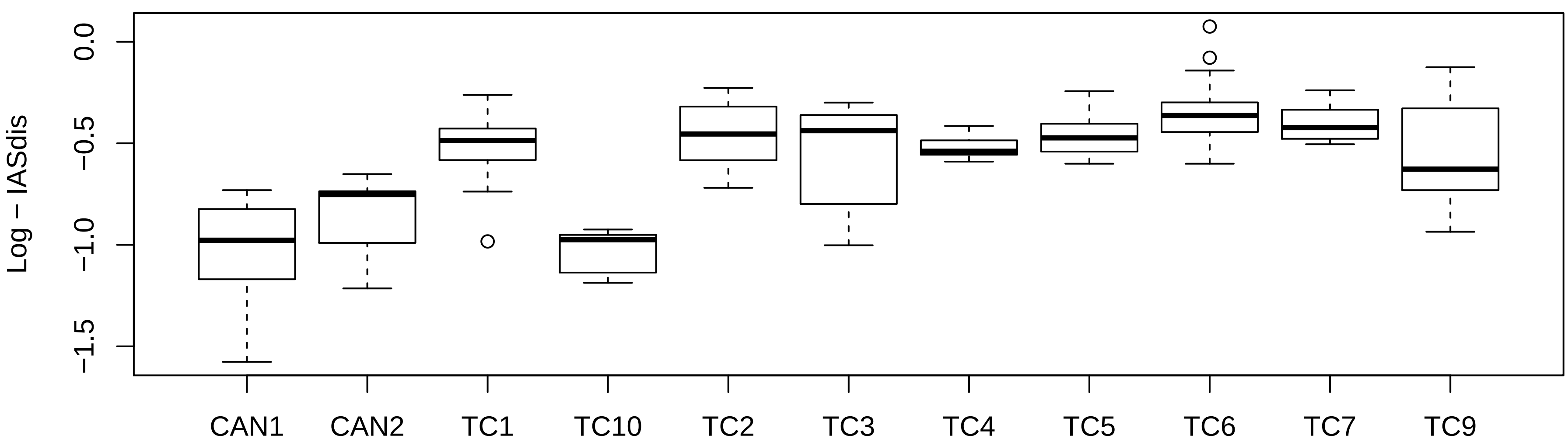

Log − IASdis
Shapiro−Wilk test: W = 0.92; P−value = 0
Log − IASdis
0.0
−0.5
−1.0
−1.5
−3
−2
−1
0
1
2
3
Normal variate


IASdis
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Shor
Surf
Bot
L
M
R

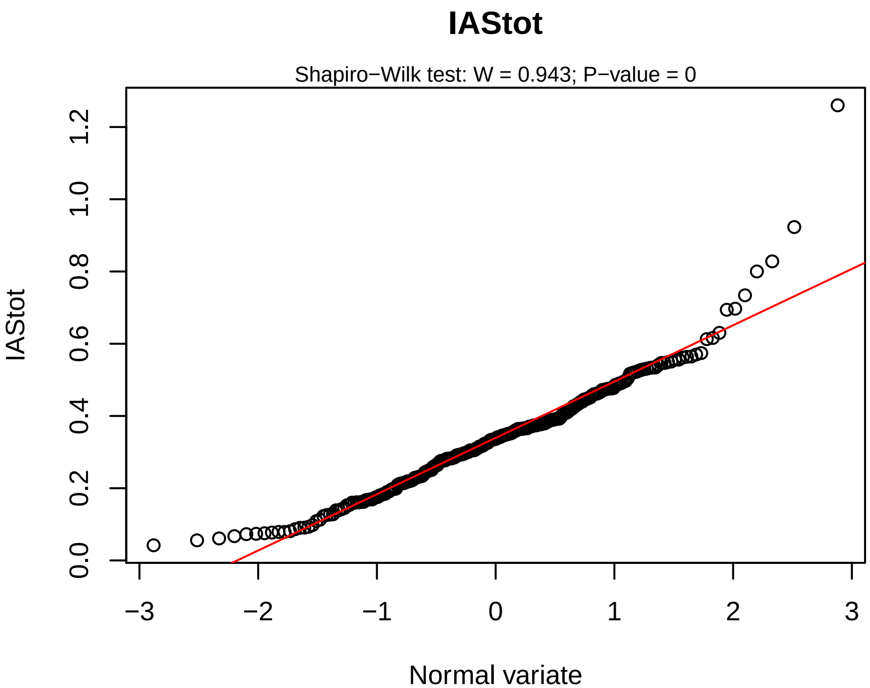

Log − IASdis
0.0
−0.5
−1.0
−1.5
Shor
Surf
Bot
L
M
R

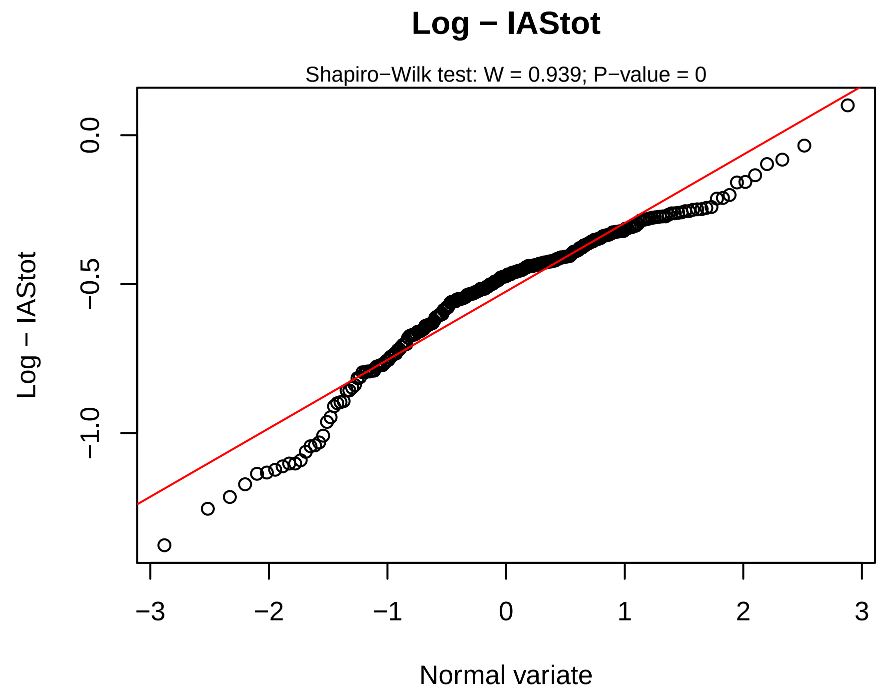


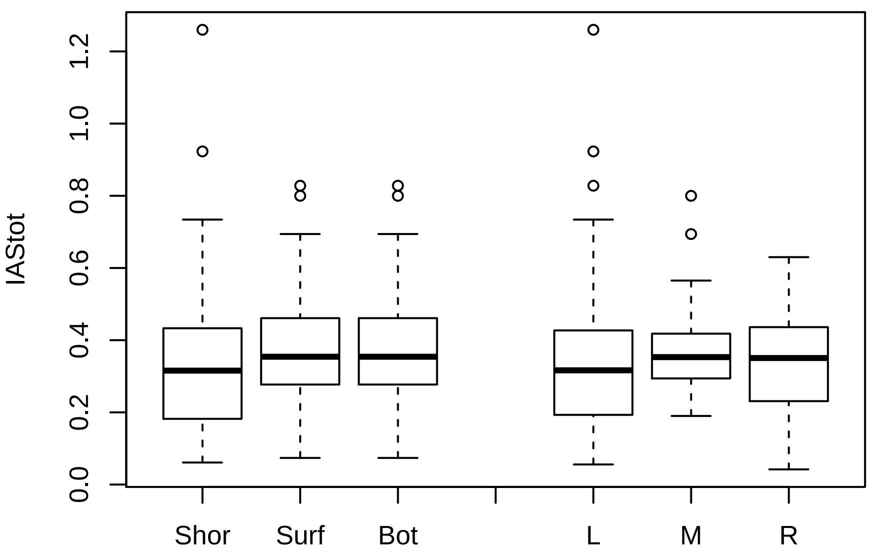
IASdis
0.0
0.4
0.8
1.2
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

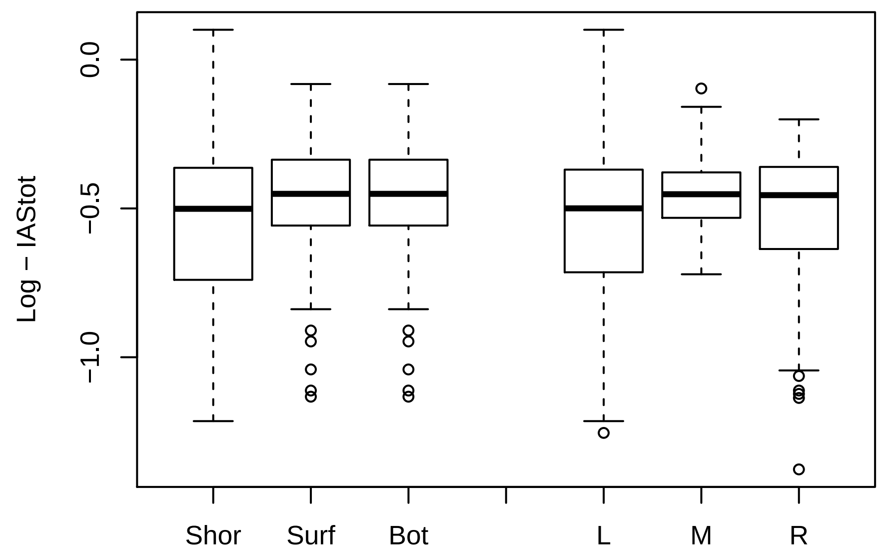


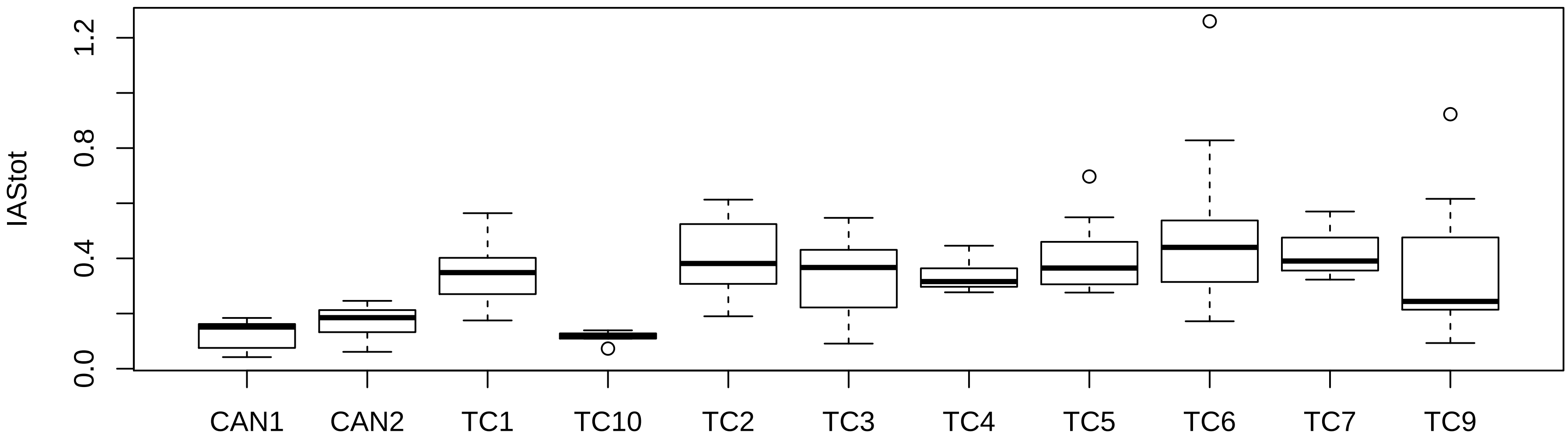
Log – IASdis
−1.5
−1.0
−0.5
0.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

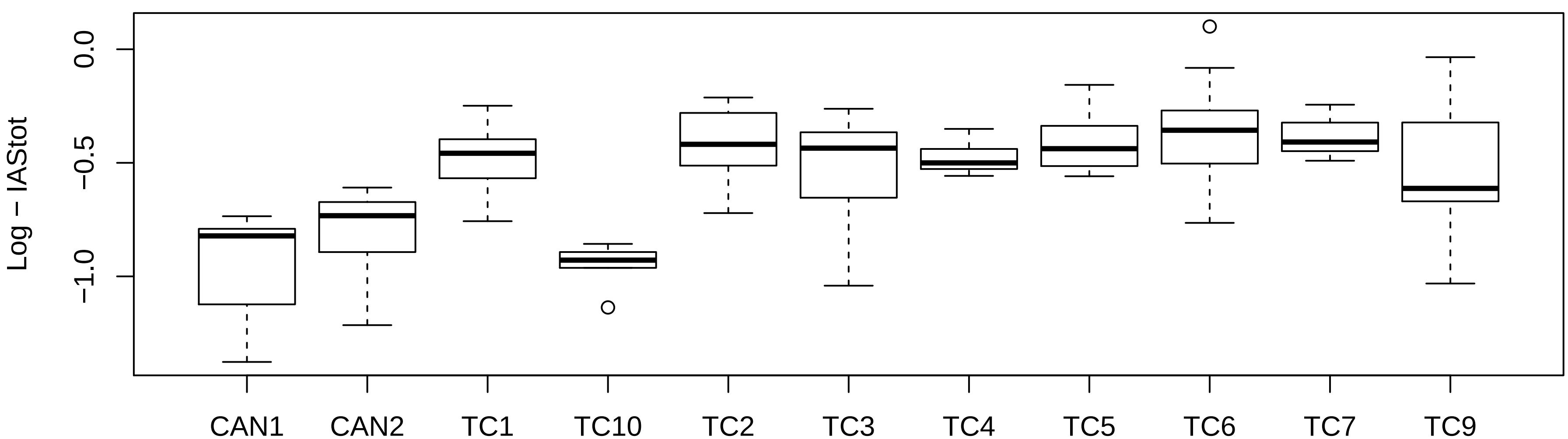

IAStot
Shapiro−Wilk test: W = 0.943; P−value = 0
IAStot
0.0
0.2
0.4
0.6
0.8
1.0
1.2
−3
−2
−1
0
1
2
3
Normal variate

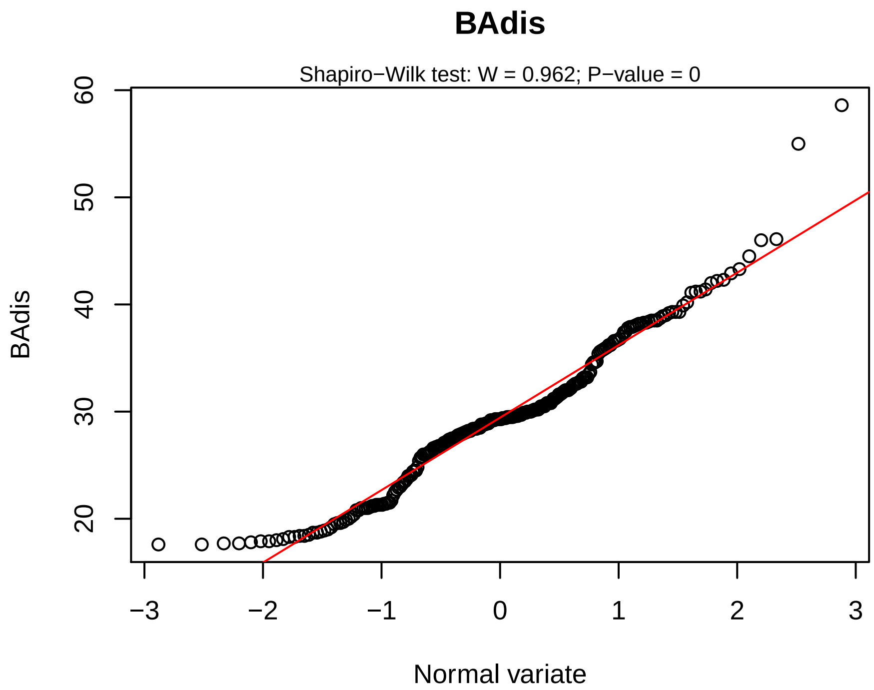

Log − IAStot
Shapiro−Wilk test: W = 0.939; P−value = 0
Log − IAStot
0.0
−0.5
−1.0
−3
−2
−1
0
1
2
3
Normal variate

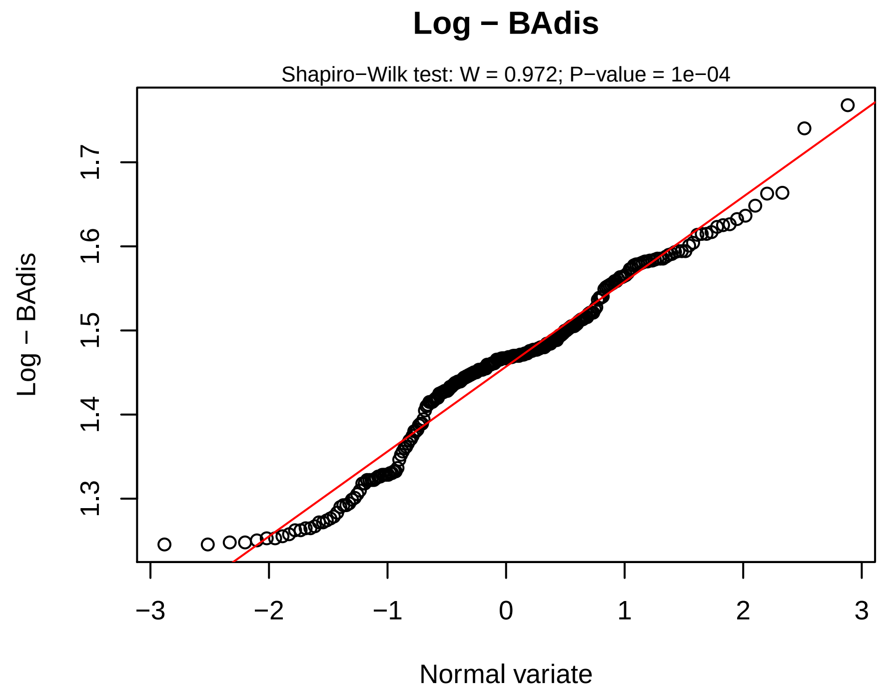

IAStot
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Shor
Surf
Bot
L
M
R

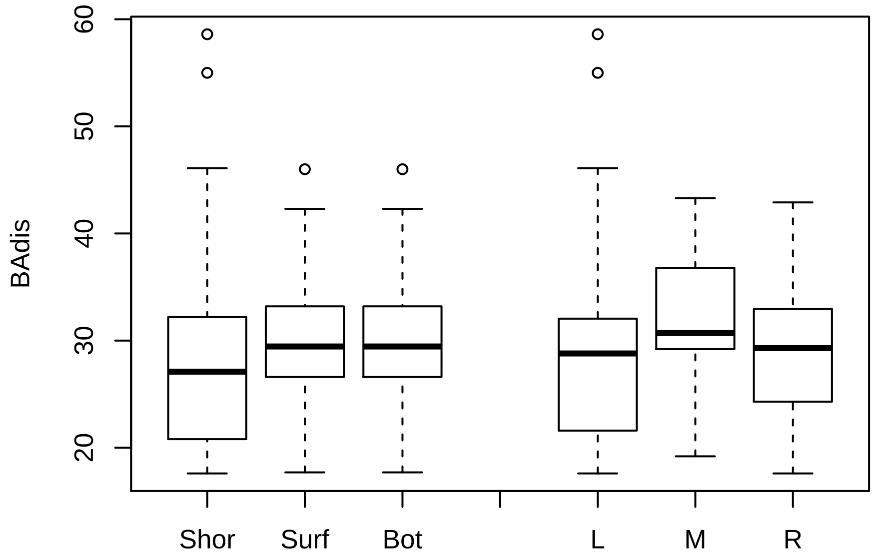

Log − IAStot
0.0
−0.5
−1.0
Shor
Surf
Bot
L
M
R

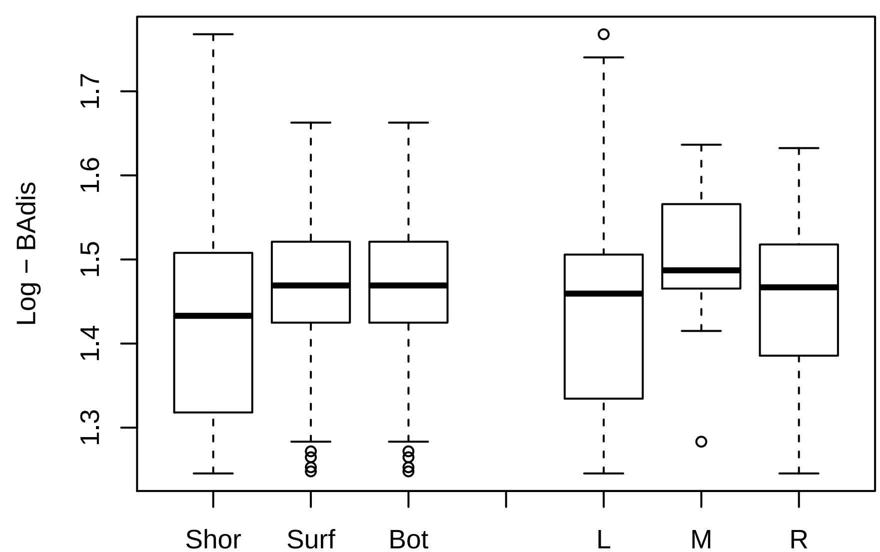

IAStot
0.0
0.4
0.8
1.2
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

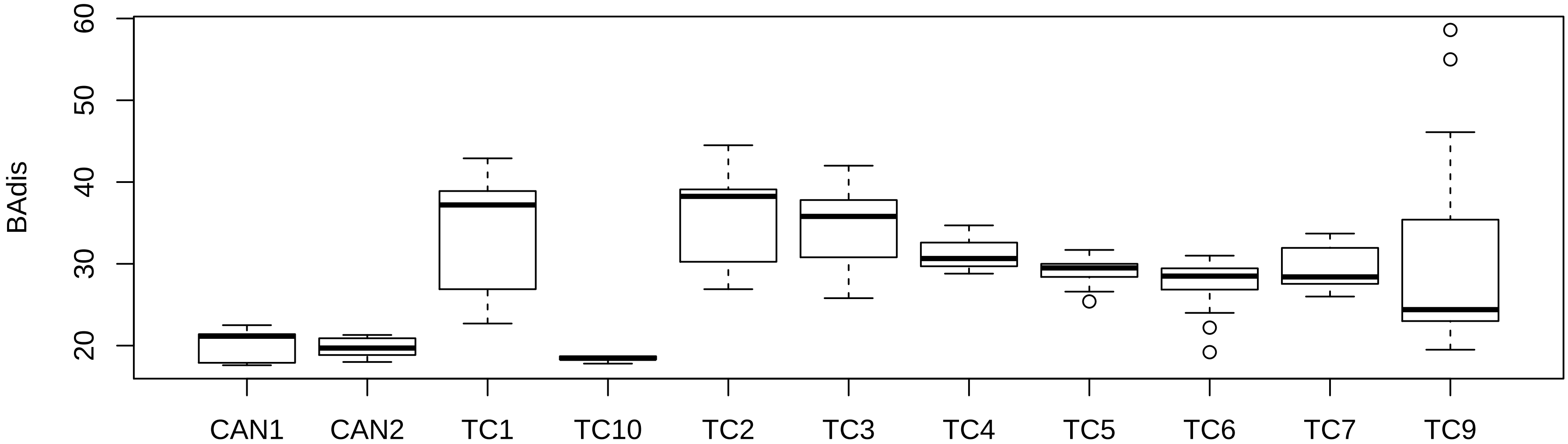

Log − IAStot
−1.0
−0.5
0.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

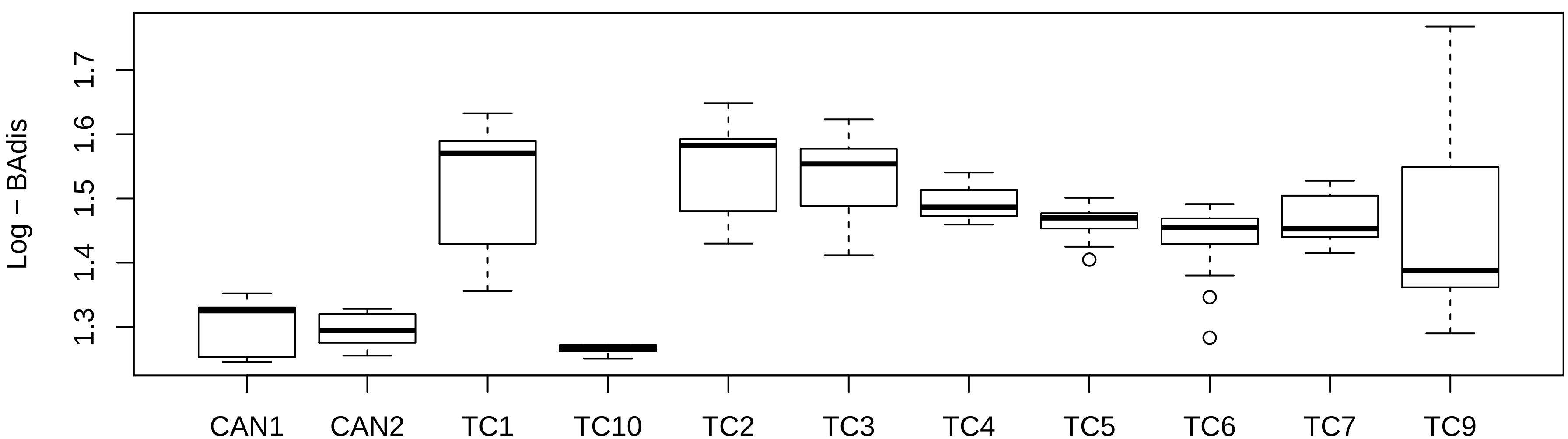

BAdis
Shapiro−Wilk test: W = 0.962; P−value = 0
BAdis
Normal variate

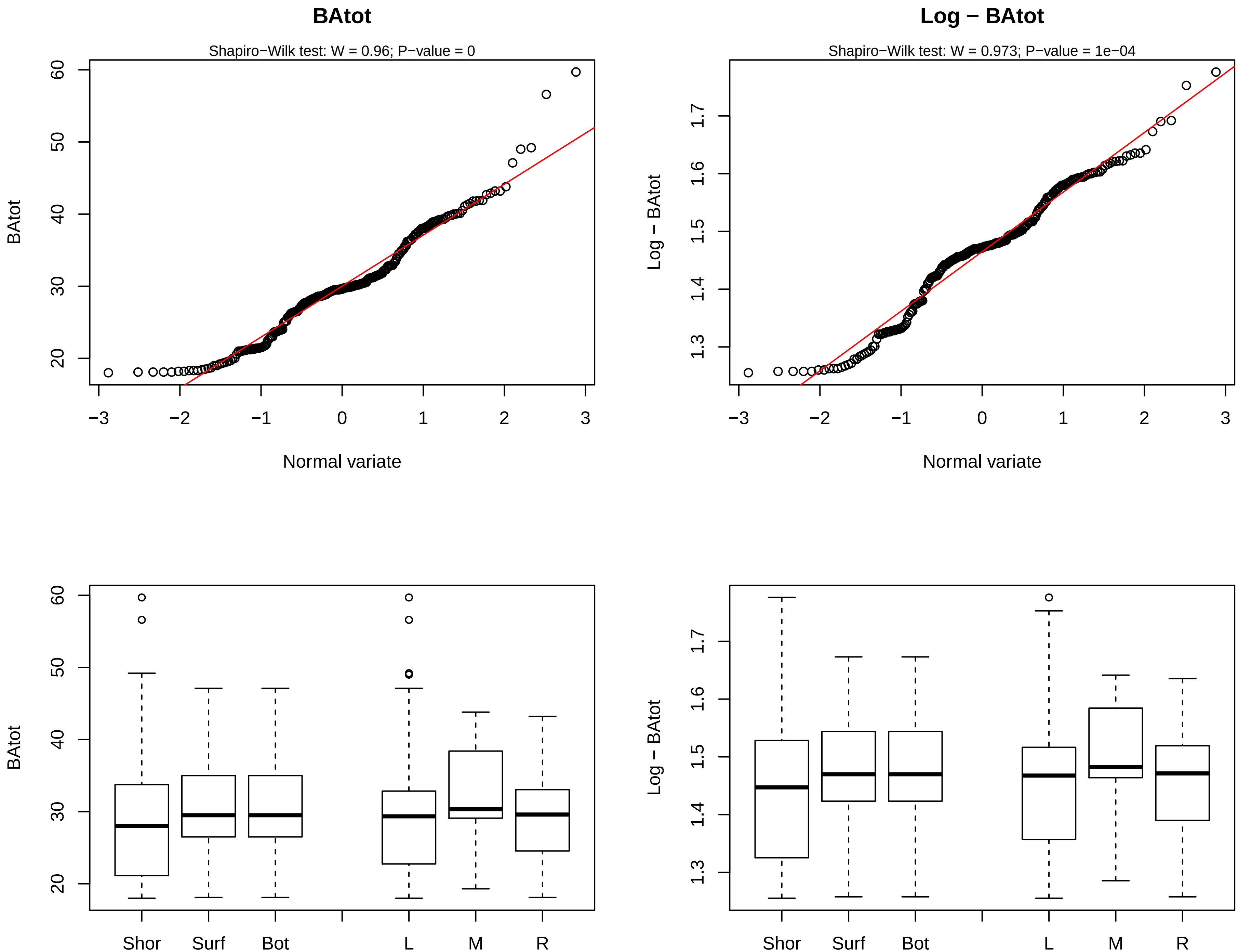

Log − BAdis
Shapiro−Wilk test: W = 0.972; P−value = 1e−04
Log − BAdis
Normal variate


BAdis
Shor
Surf
Bot
L
M
R

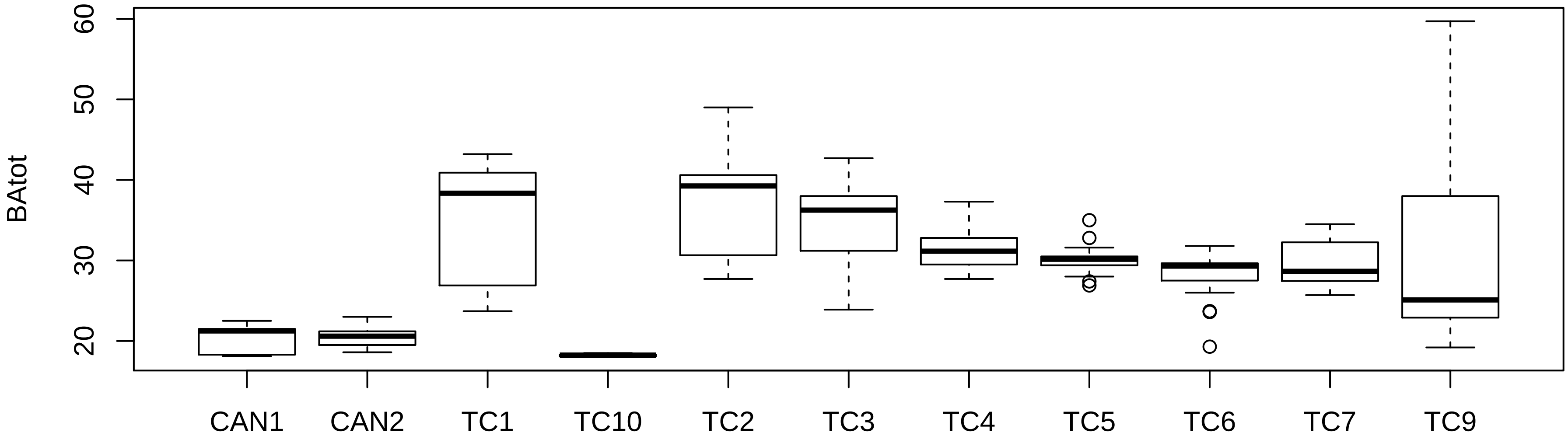

Log − BAdis
Shor
Surf
Bot
L
M
R

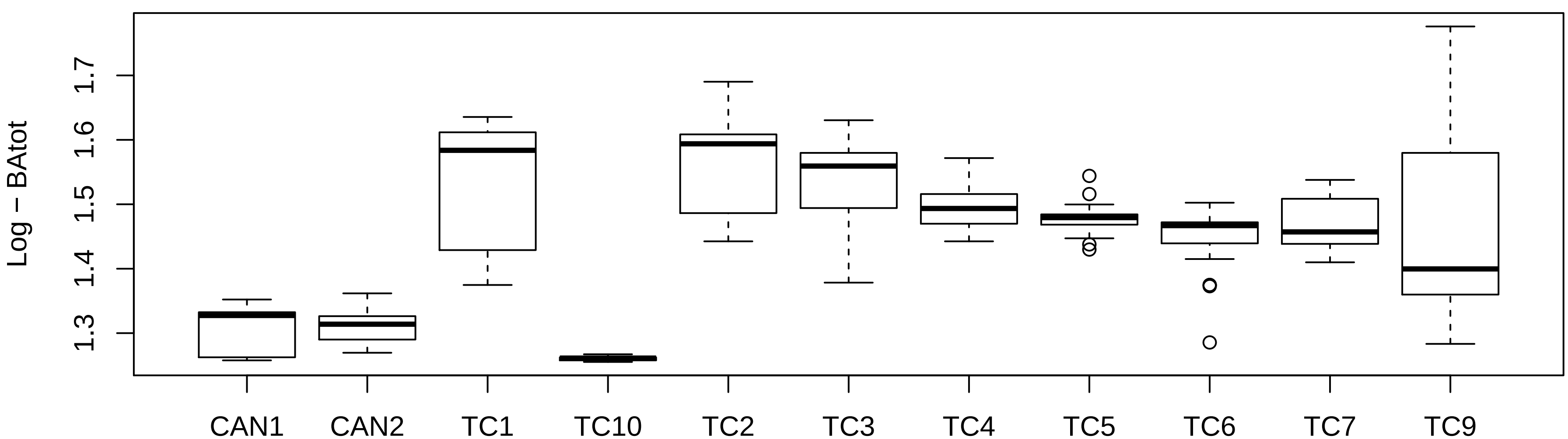

BAdis
20
30
40
50
60
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

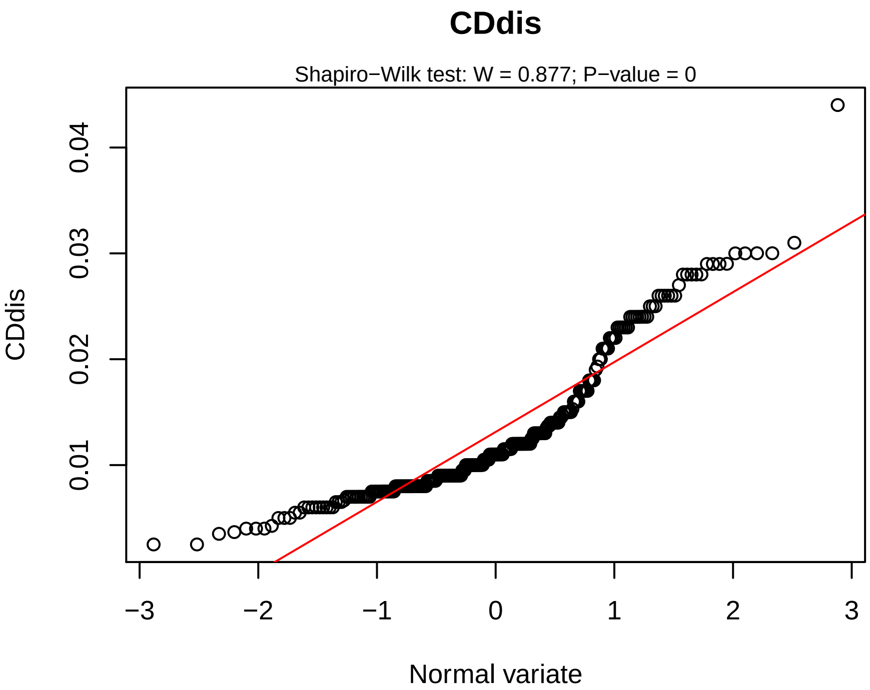

Log – BAdis
1.3
1.4
1.5
1.6
1.7
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

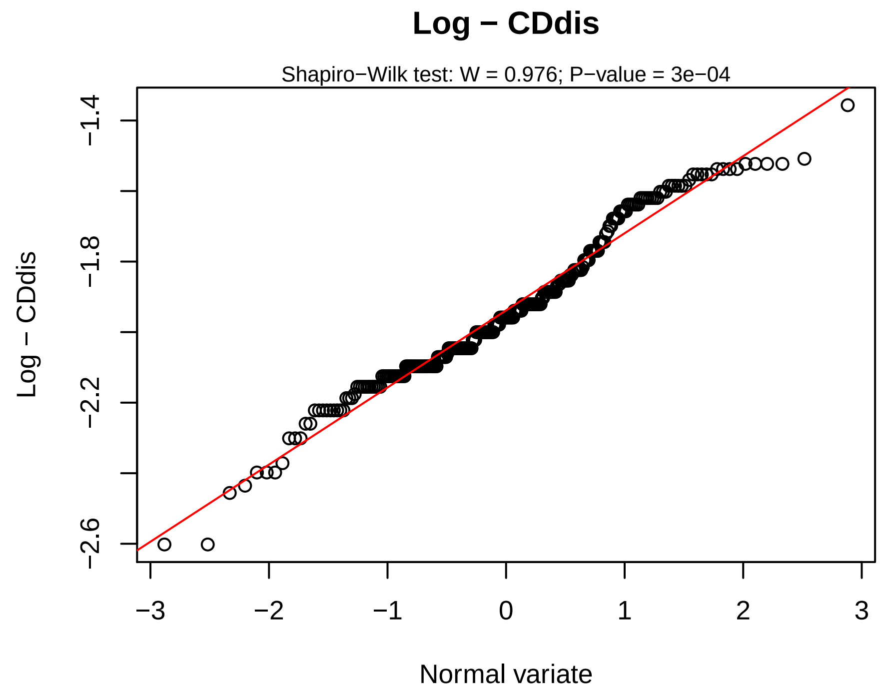


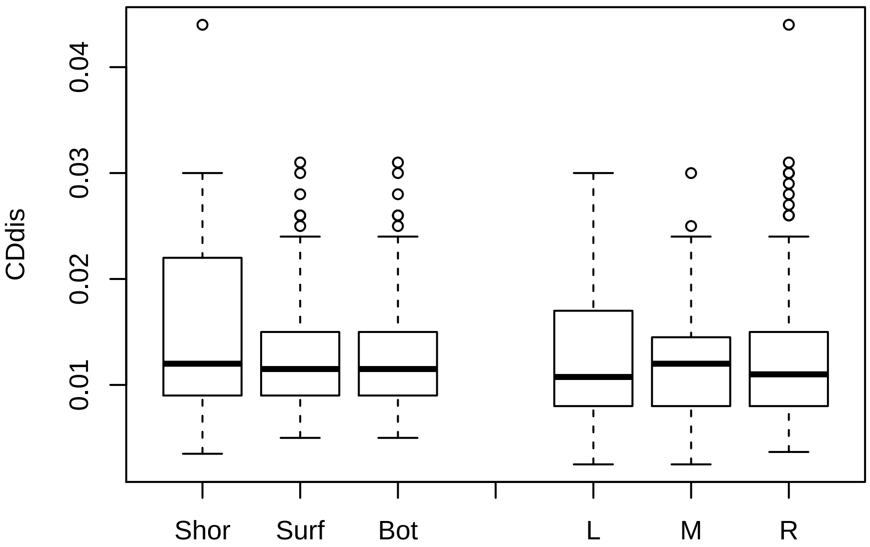
BAtot
Shapiro−Wilk test: W = 0.96; P−value = 0
BAtot
Normal variate
Log − BAtot
Shapiro−Wilk test: W = 0.973; P−value = 1e−04
Log − BAtot
Normal variate
BAtot
Shor
Surf
Bot
L
M
R
Log − BAtot
Shor
Surf
Bot
L
M
R

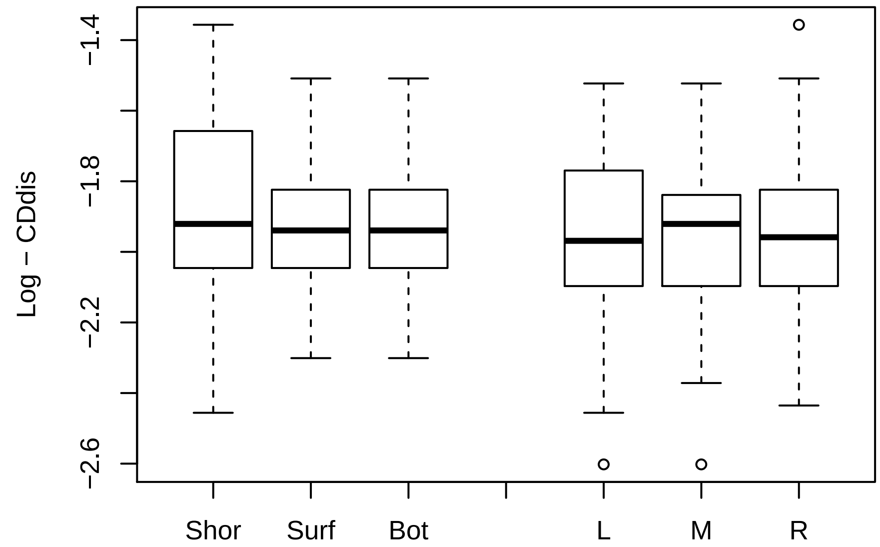

BAtot
60
50
40
30
20
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

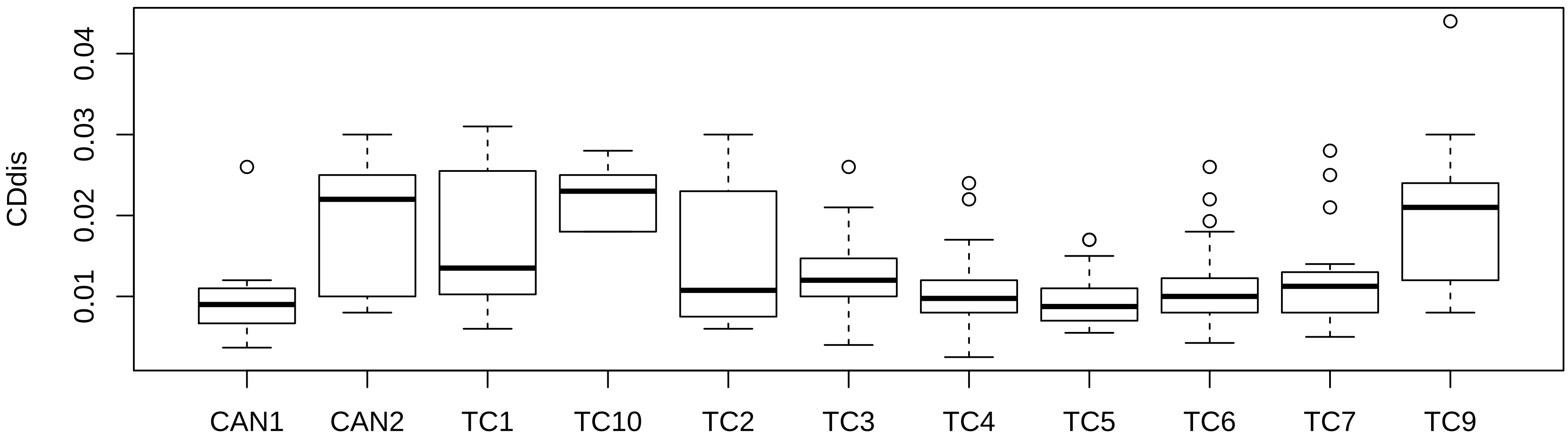

Log – BAtot
1.7
1.6
1.5
1.4
1.3
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

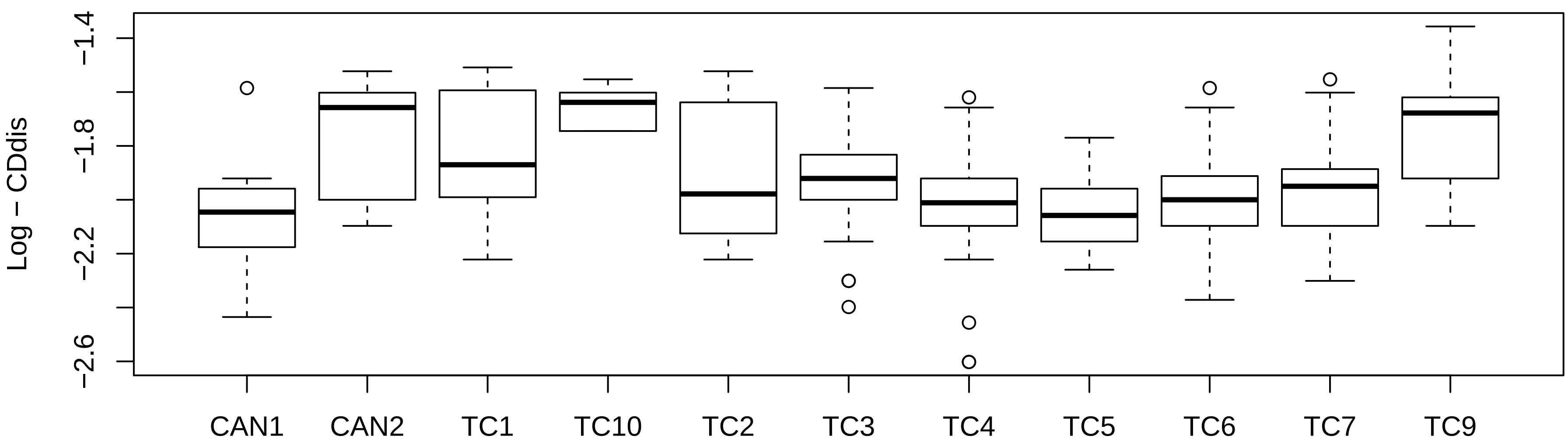

CDdis
Shapiro−Wilk test: W = 0.877; P−value = 0
CDdis
0.01
0.02
0.03
0.04
−3
−2
−1
0
1
2
3
Normal variate

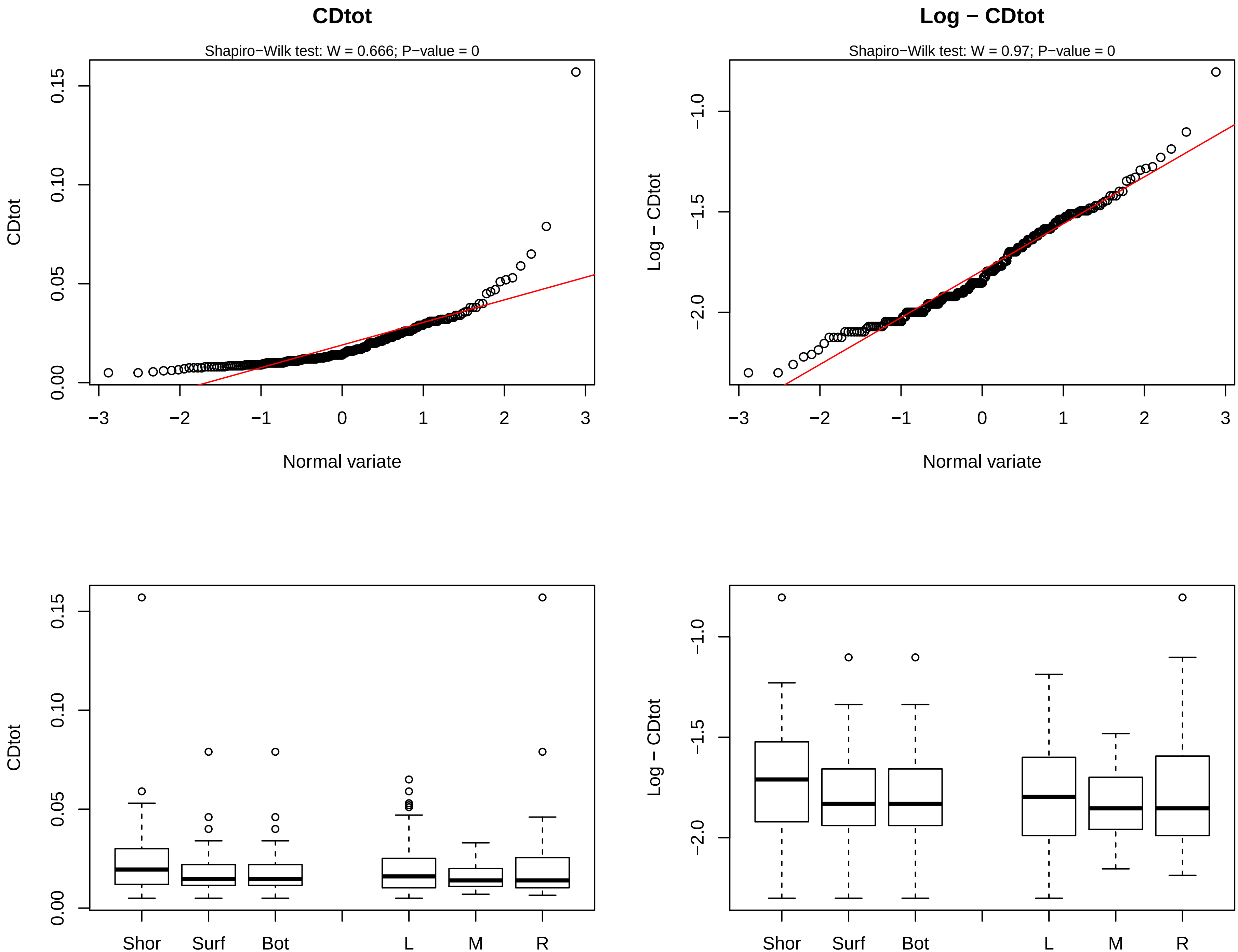

Log − CDdis
Shapiro−Wilk test: W = 0.976; P−value = 3e−04
Log − CDdis
−2.6
−2.2
−1.8
−1.4
−3
−2
−1
0
1
2
3
Normal variate

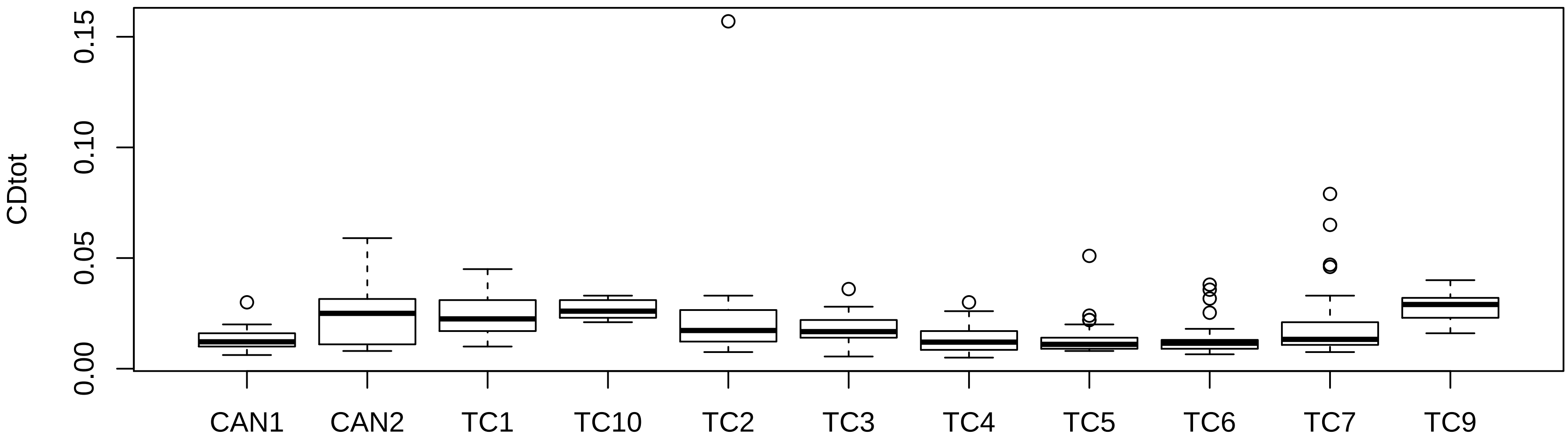

CDdis
0.01
0.02
0.03
0.04
Shor
Surf
Bot
L
M
R

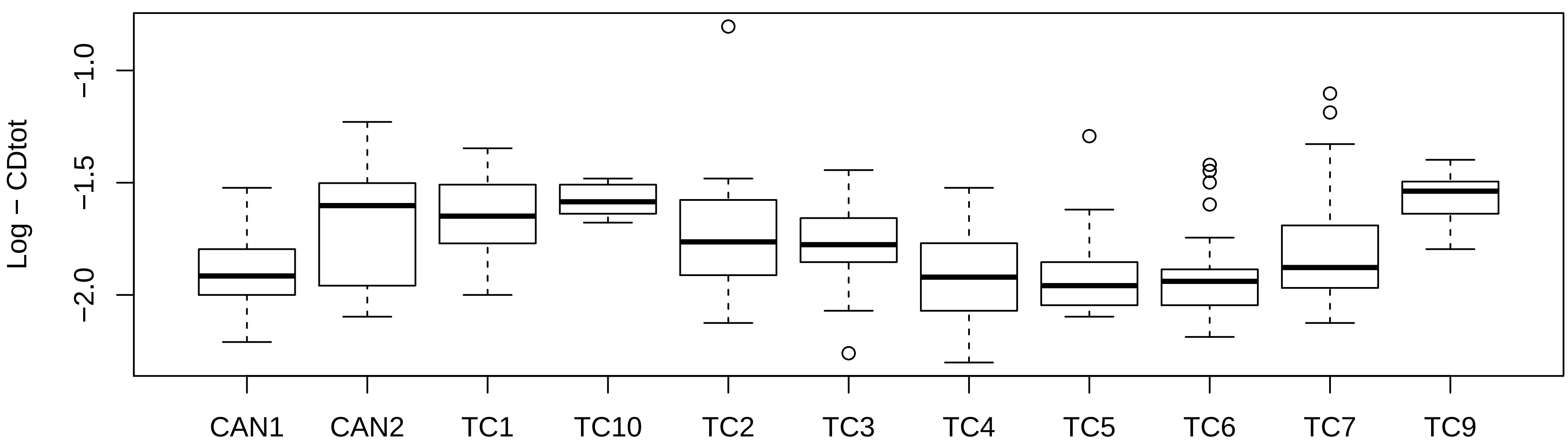

Log − CDdis
−2.6
−2.2
−1.8
−1.4
Shor
Surf
Bot
L
M
R

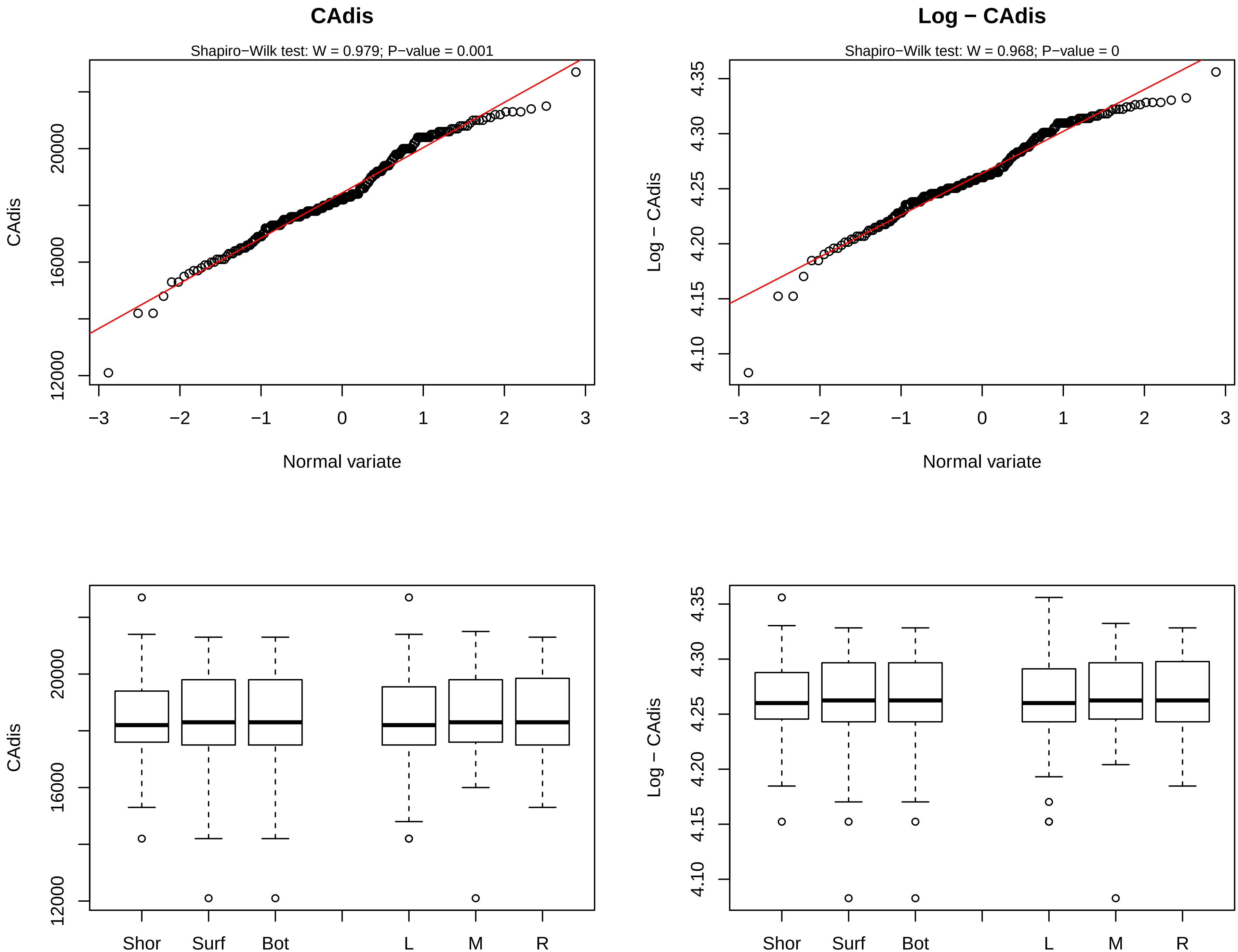

CDdis
0.01
0.02
0.03
0.04
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

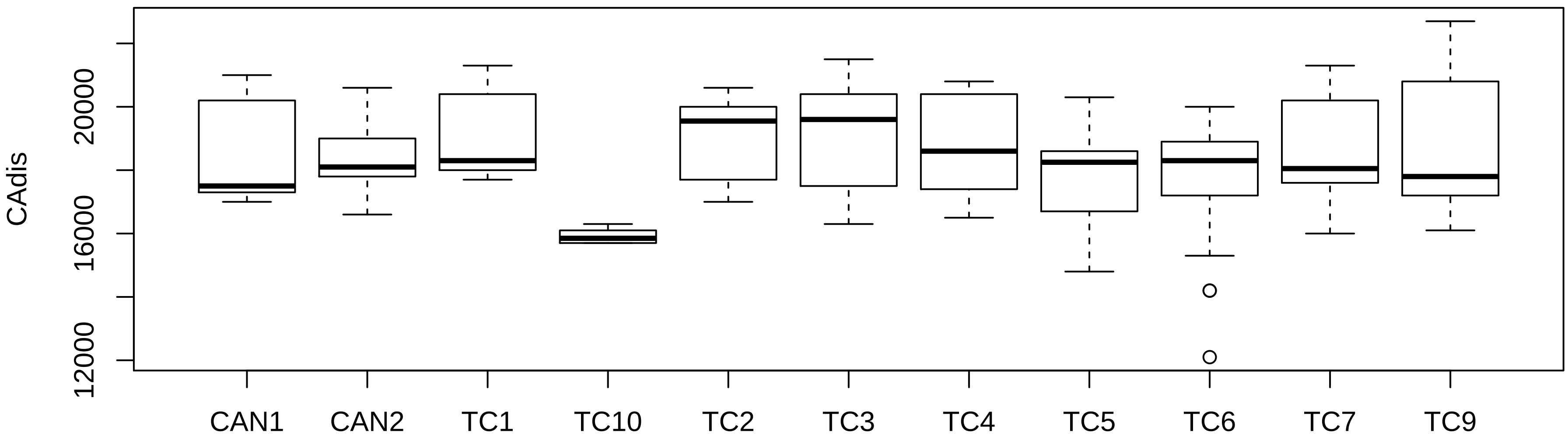

Log − CDdis
−2.6
−2.2
−1.8
−1.4
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

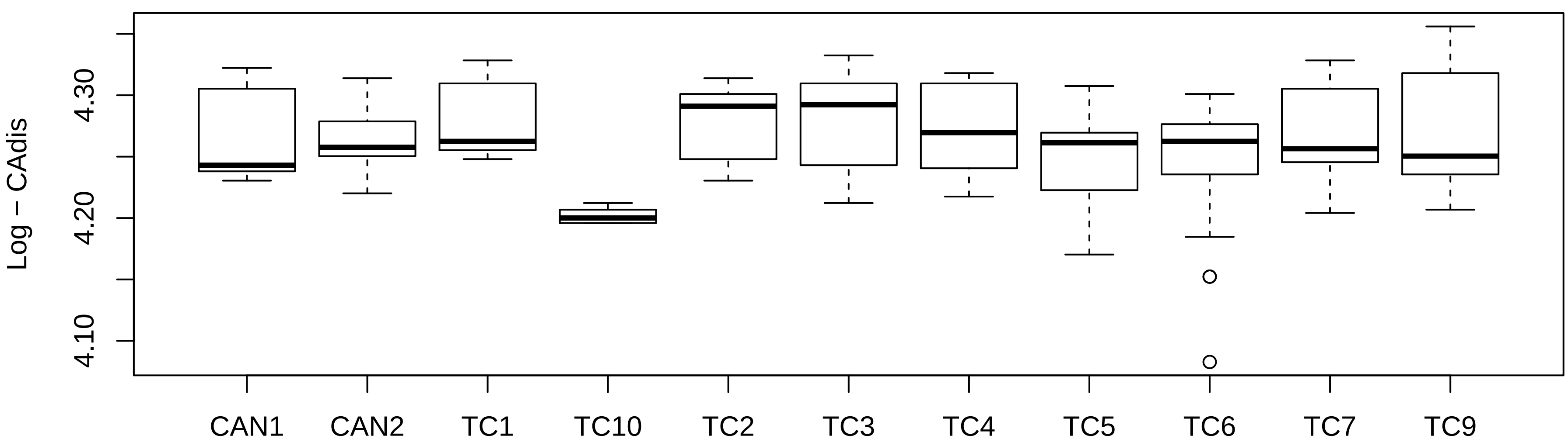

CDtot
Shapiro−Wilk test: W = 0.666; P−value = 0
CDtot
Normal variate
Log − CDtot
Shapiro−Wilk test: W = 0.97; P−value = 0
Log − CDtot
Normal variate
CDtot
Shor
Surf
Bot
L
M
R
Log − CDtot
Shor
Surf
Bot
L
M
R

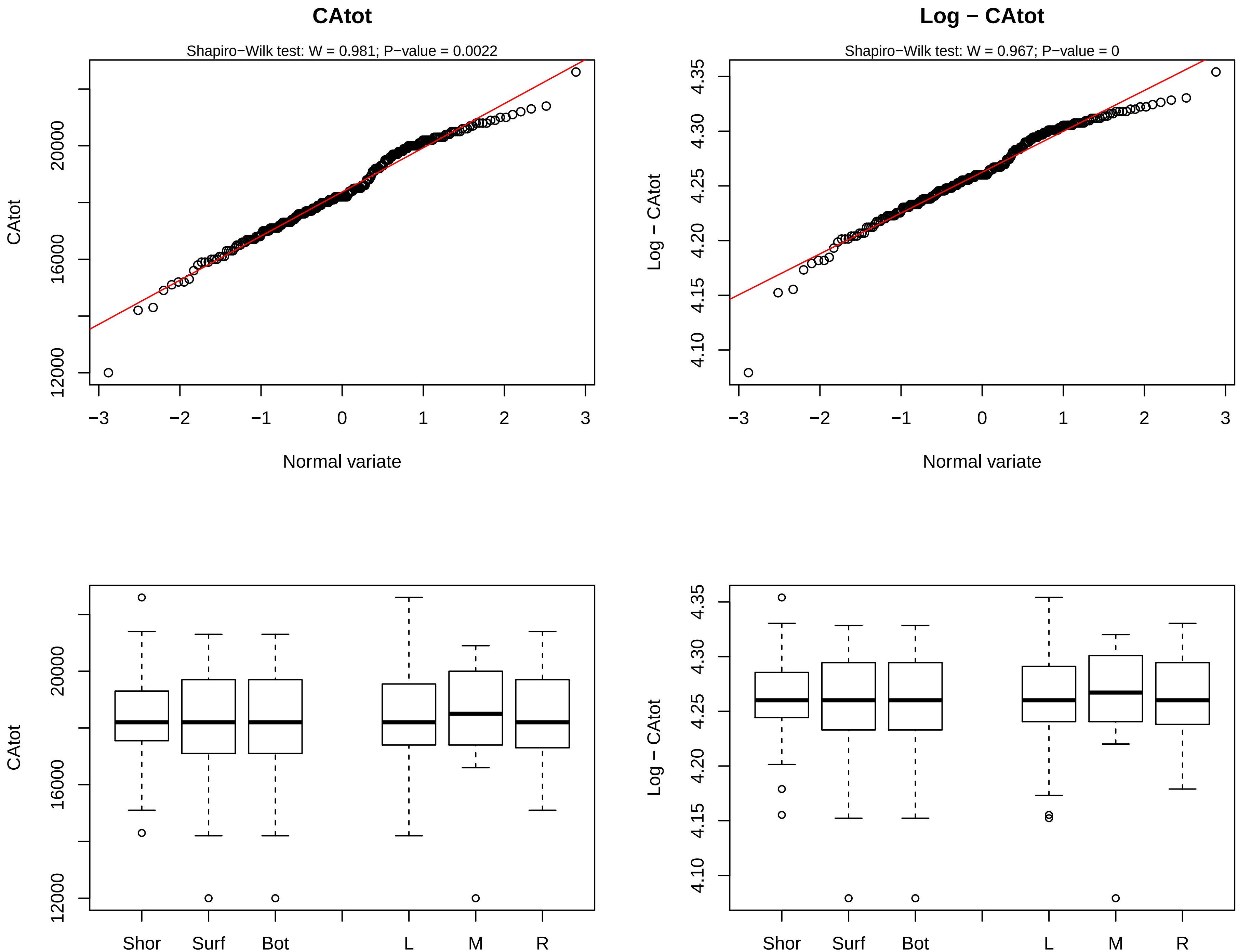

CDtot
0.00
0.05
0.10
0.15
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

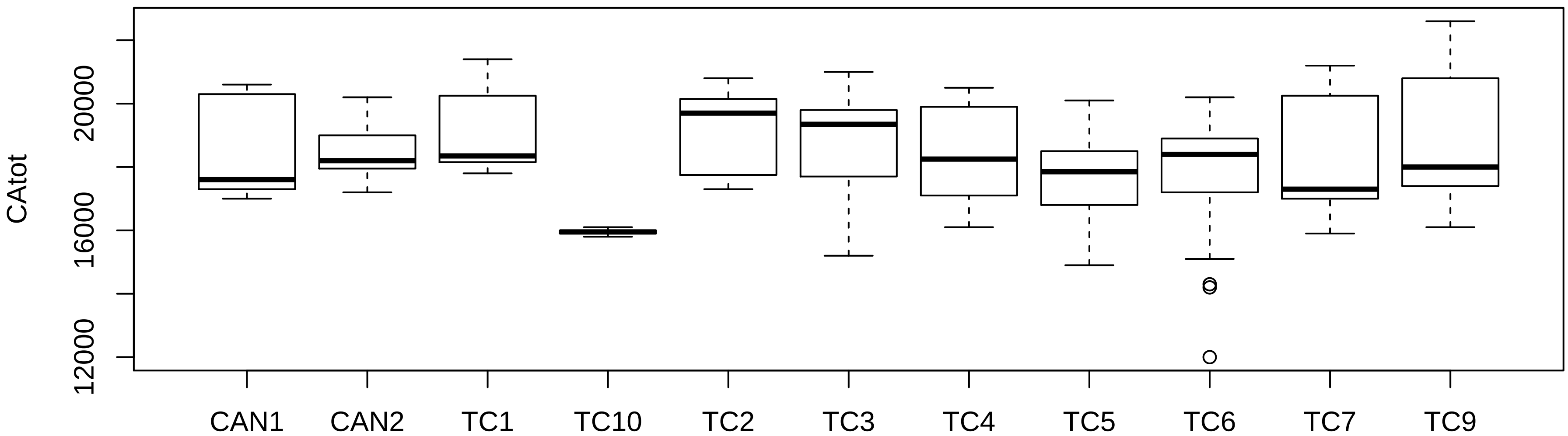

Log − CDtot
−2.0
−1.5
−1.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

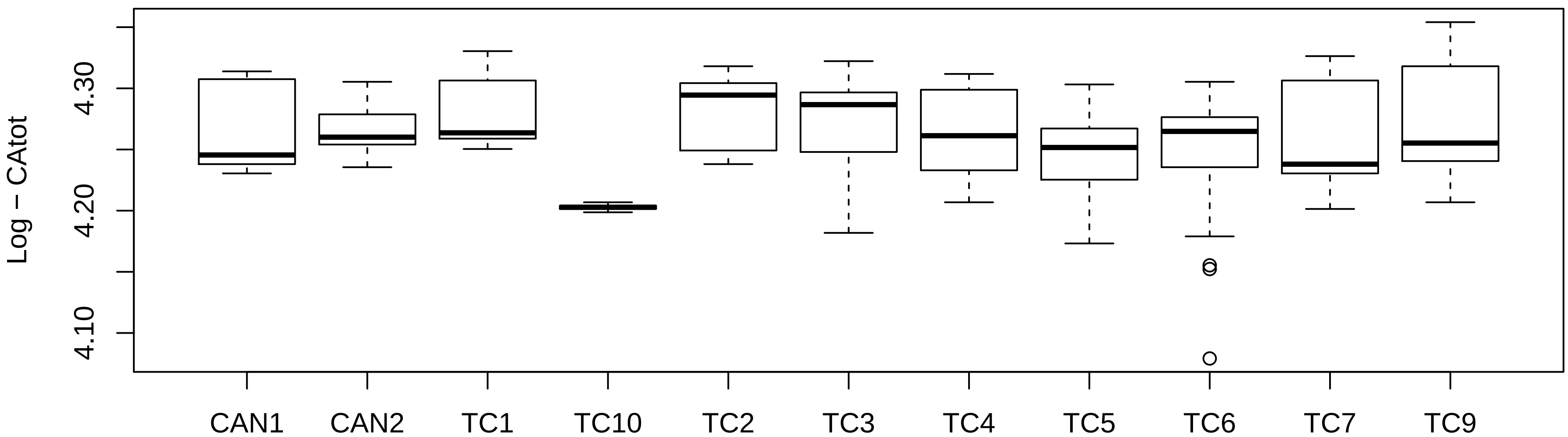

CAdis
Shapiro−Wilk test: W = 0.979; P−value = 0.001
Log − CAdis
Shapiro−Wilk test: W = 0.968; P−value = 0
CAdis
Log − CAdis
Normal variate
Normal variate
12000
16000
20000
4.10
4.15
4.20
4.25
4.30
4.35
−3
−2
−1
0
1
2
3
Shor
Surf
Bot
L
M
R

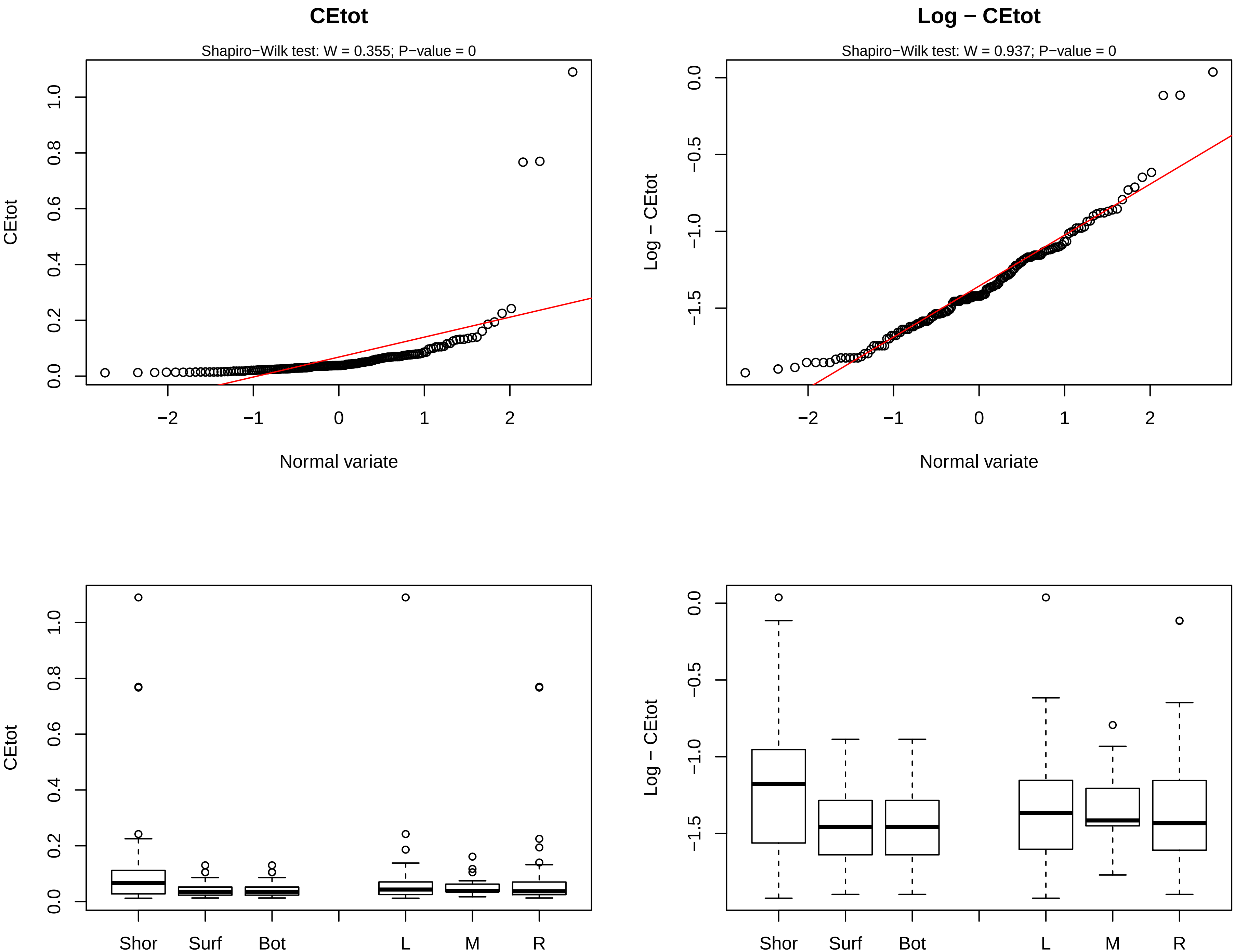

CAdis
12000
16000
20000
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

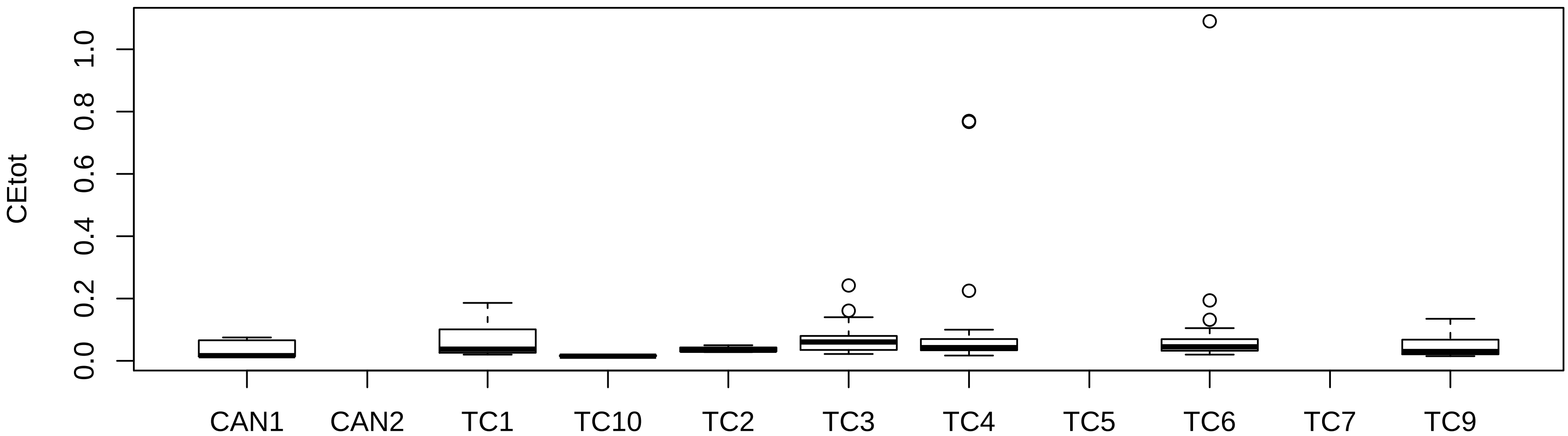

Log – CAdis
4.10
4.20
4.30
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

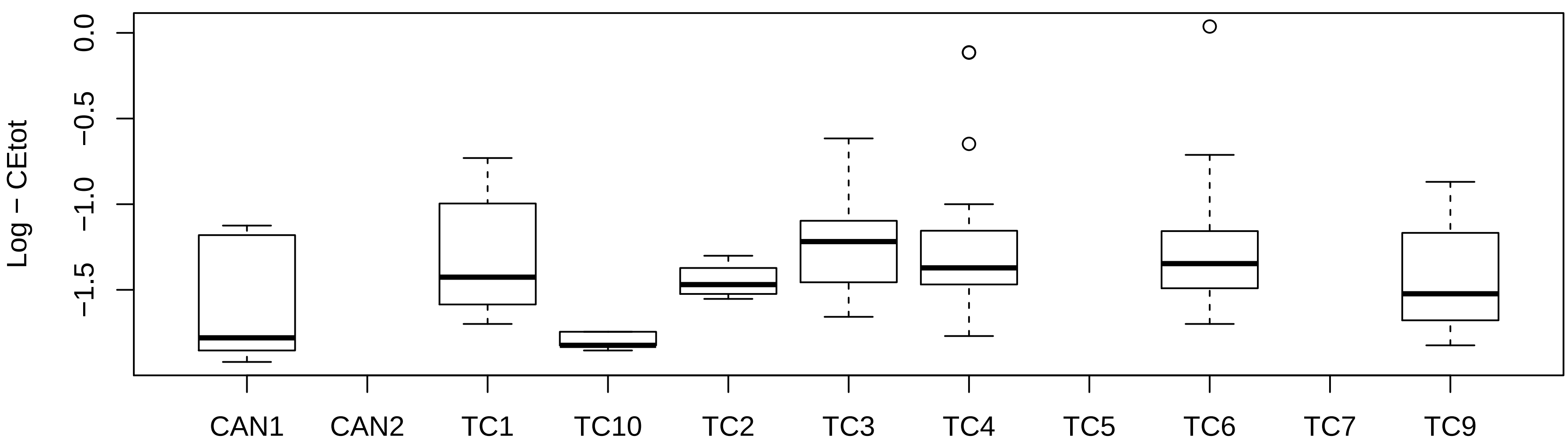

CAtot
Shapiro−Wilk test: W = 0.981; P−value = 0.0022
CAtot
Normal variate
Log − CAtot
Shapiro−Wilk test: W = 0.967; P−value = 0
Log − CAtot
Normal variate
CAtot
Shor
Surf
Bot
L
M
R
Log − CAtot
Shor
Surf
Bot
L
M
R

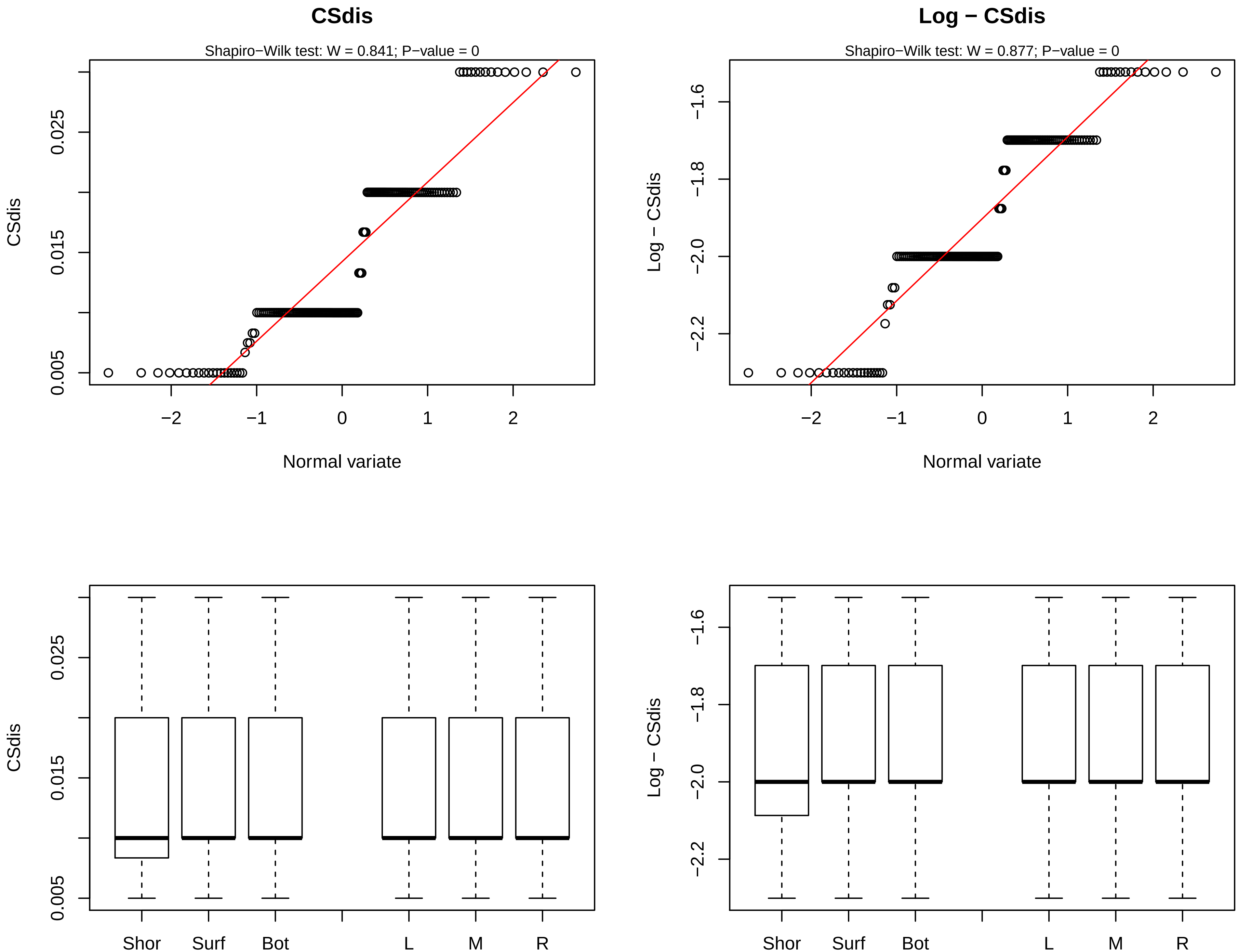

CAtot
12000
16000
20000
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

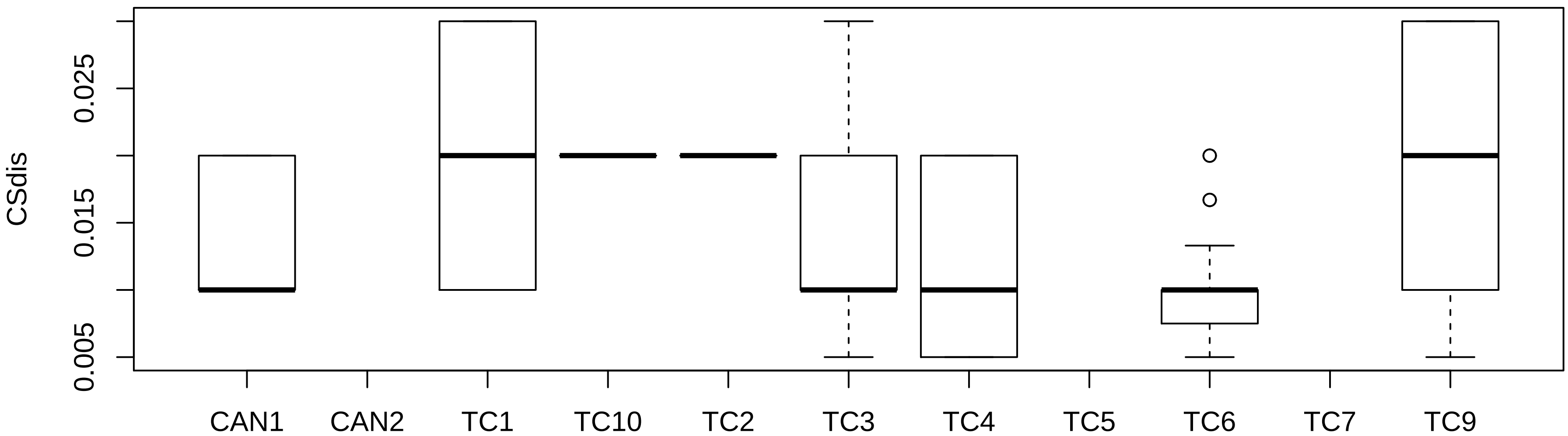

Log − CAtot
4.10
4.20
4.30
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

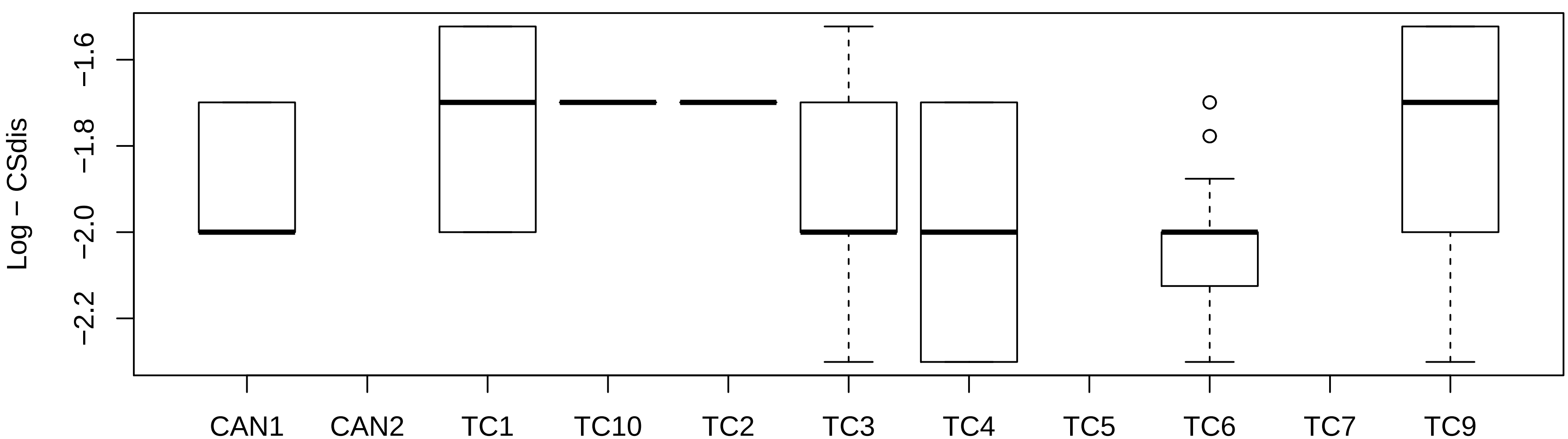

CEtot
Shapiro−Wilk test: W = 0.355; P−value = 0
Normal variate
Log − CEtot
Shapiro−Wilk test: W = 0.937; P−value = 0
Normal variate
Shor
Surf
Bot
L
M
R

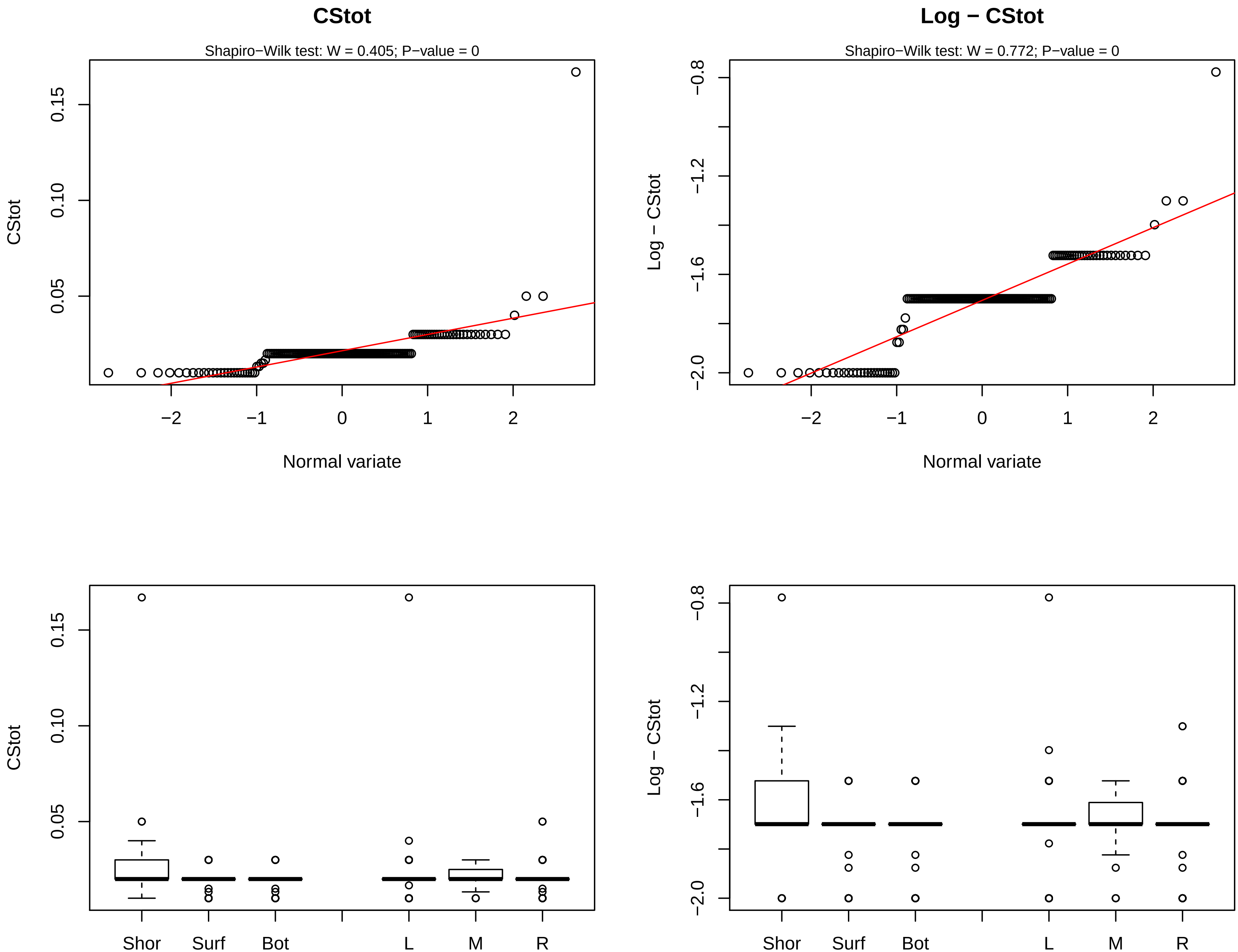

CEtot
0.0
0.2
0.4
0.6
0.8
1.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


Log − CEtot
0.0
−0.5
−1.0
−1.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

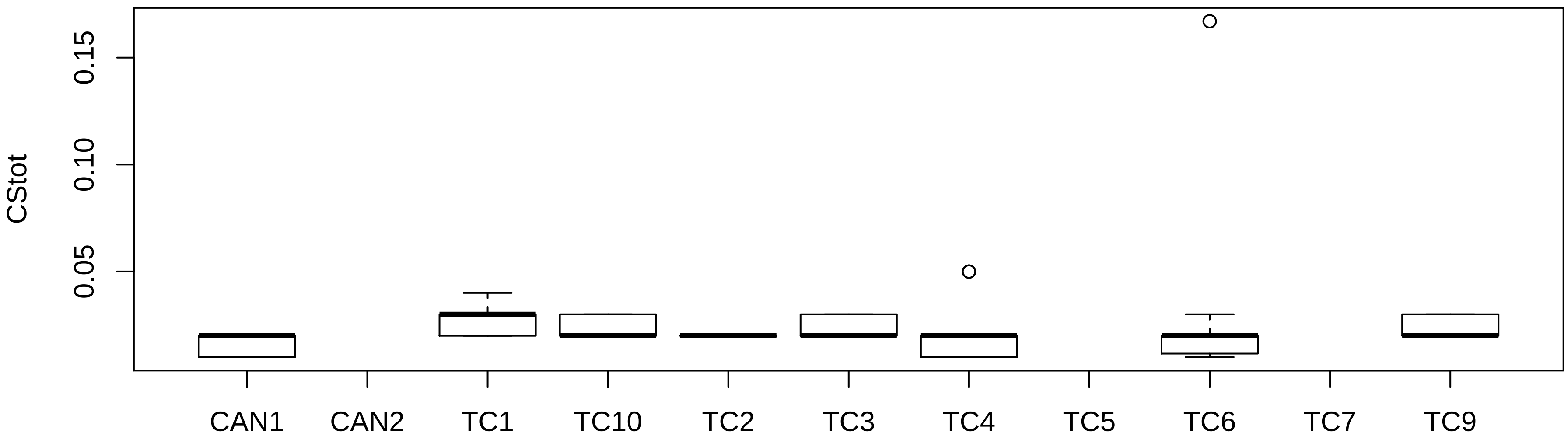

CSdis
Shapiro−Wilk test: W = 0.841; P−value = 0
Log − CSdis
Shapiro−Wilk test: W = 0.877; P−value = 0
CSdis
Log − CSdis
Normal variate
Normal variate
0.005
0.015
0.025
−1.6
−1.8
−2.0
−2.2
−2
−1
0
1
2
Shor
Surf
Bot
L
M
R

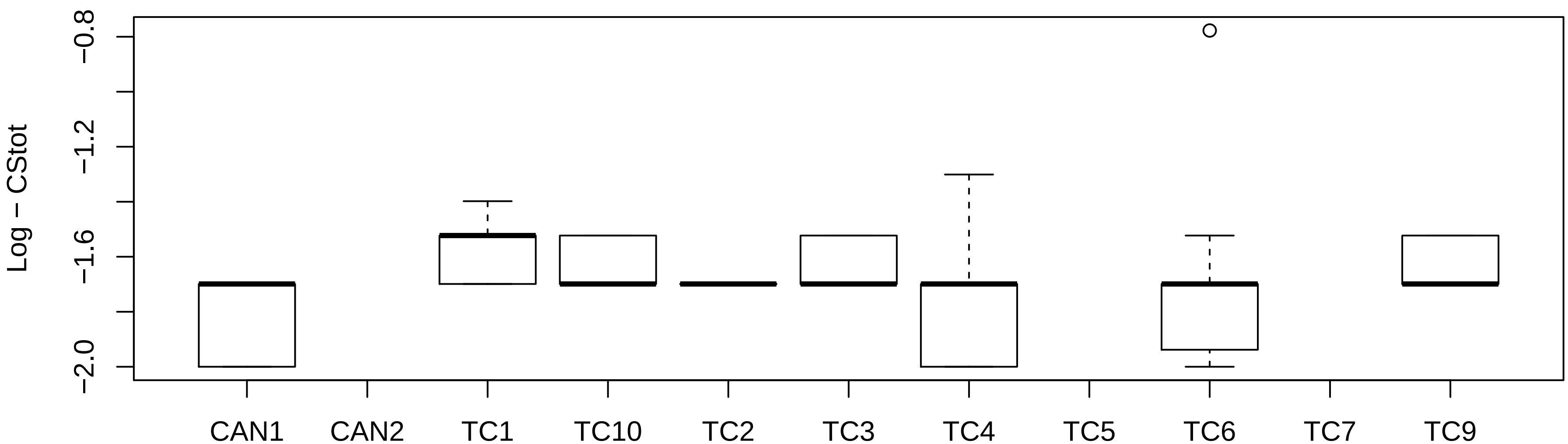

CSdis
0.005
0.015
0.025
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

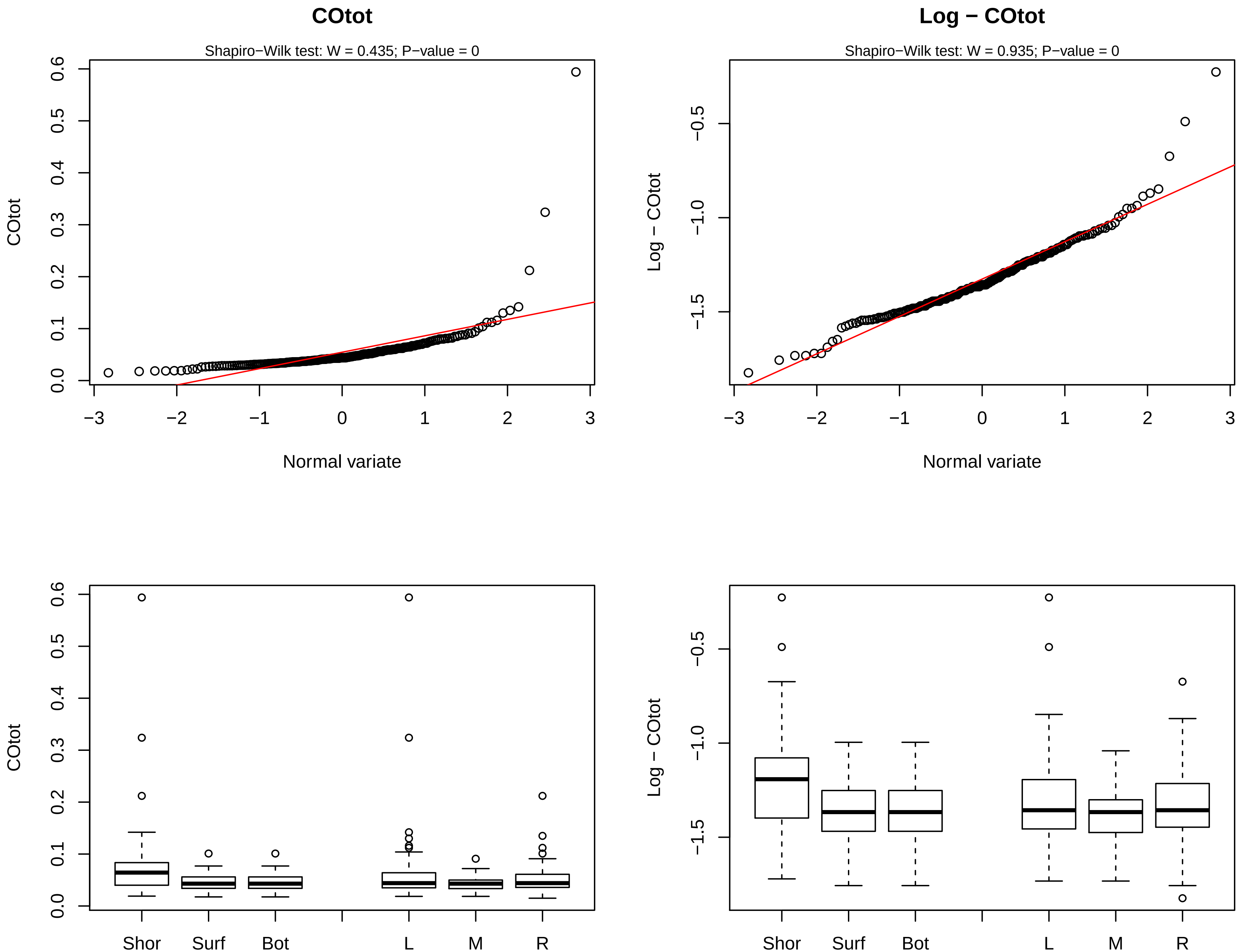

Log − CSdis
−2.2
−2.0
−1.8
−1.6
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

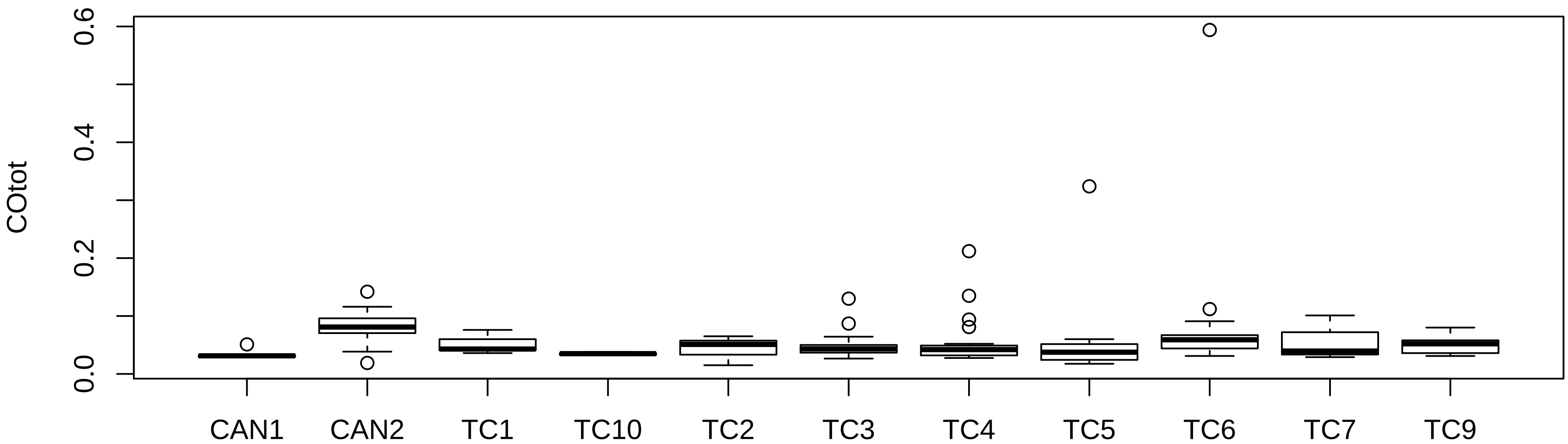


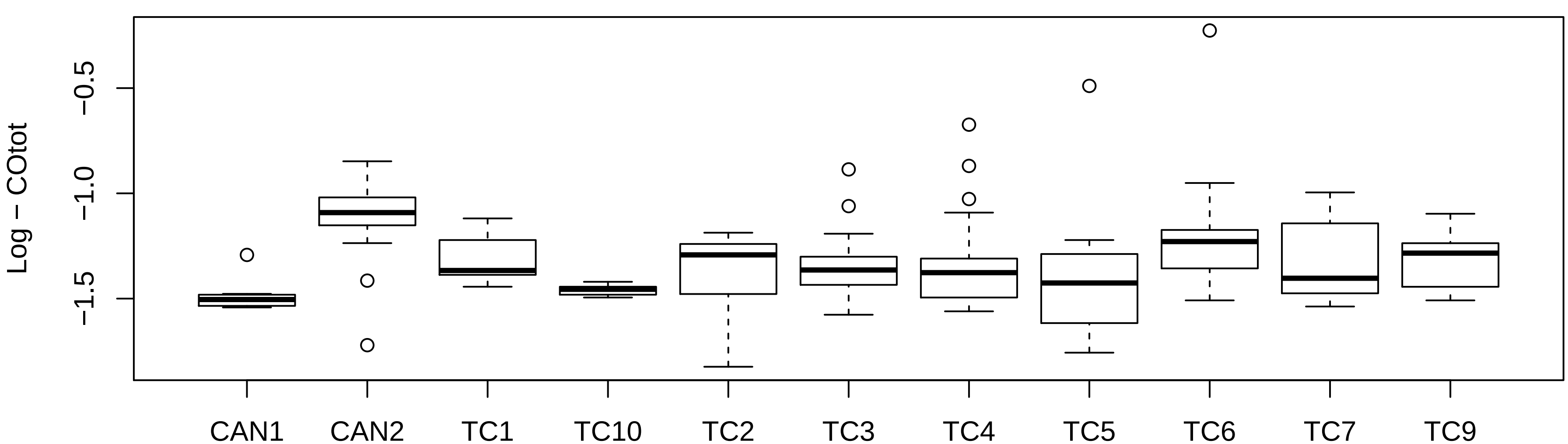
CStot
Shapiro−Wilk test: W = 0.405; P−value = 0
CStot
0.05
0.10
0.15
−2
−1
0
1
2
Normal variate
Log − CStot
Shapiro−Wilk test: W = 0.772; P−value = 0
Log − CStot
−2.0
−1.6
−1.2
−0.8
−2
−1
0
1
2
Normal variate
CStot
0.05
0.10
0.15
Shor
Surf
Bot
L
M
R
Log − CStot
−2.0
−1.6
−1.2
−0.8
Shor
Surf
Bot
L
M
R

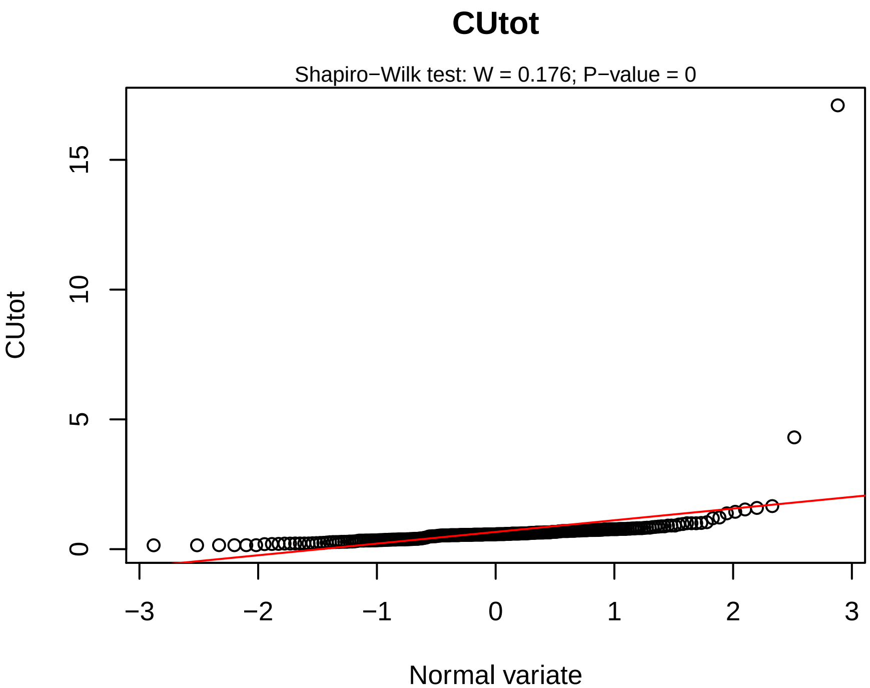

CStot
0.05
0.10
0.15
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

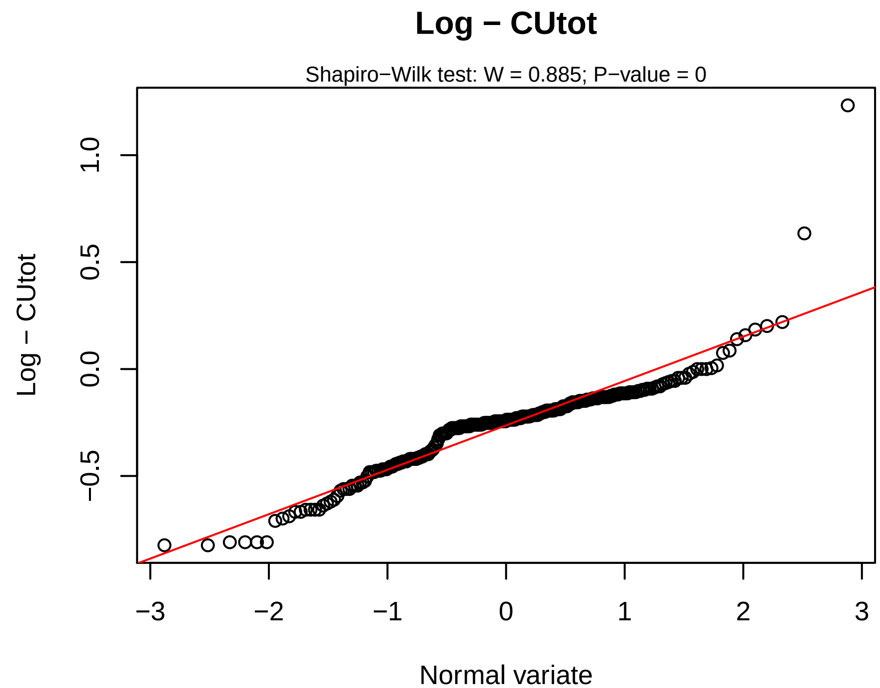

Log − CStot
−2.0
−1.6
−1.2
−0.8
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

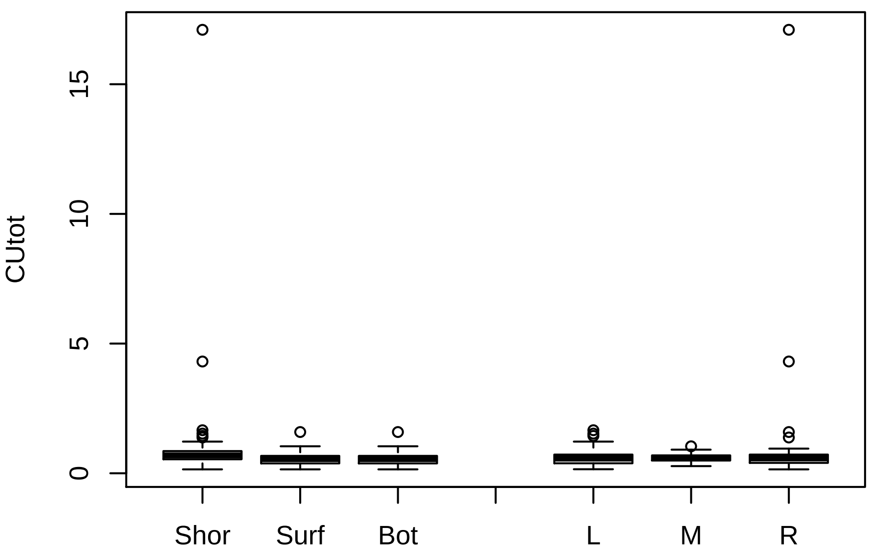

COtot
Shapiro−Wilk test: W = 0.435; P−value = 0
COtot
Normal variate
Log − COtot
Shapiro−Wilk test: W = 0.935; P−value = 0
Log − COtot
Normal variate
COtot
Shor
Surf
Bot
L
M
R
Log − COtot
Shor
Surf
Bot
L
M
R

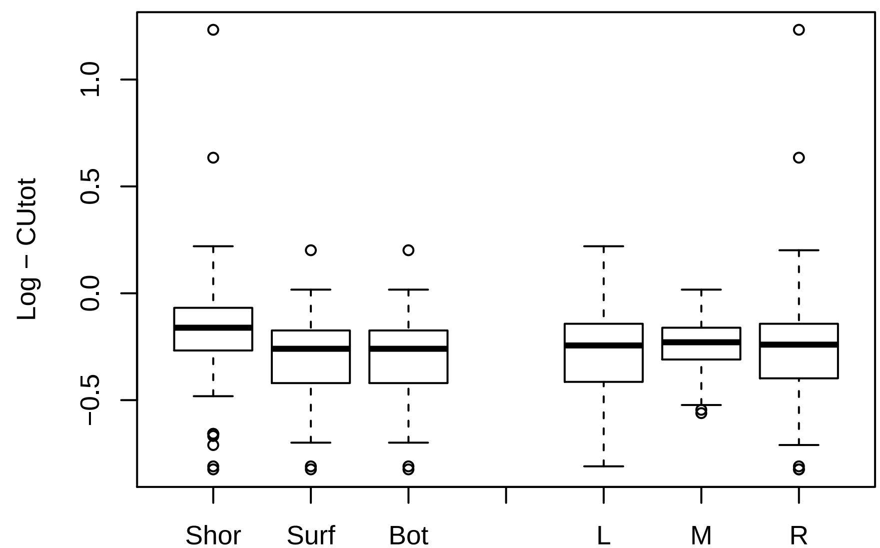

COtot
0.0
0.2
0.4
0.6
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

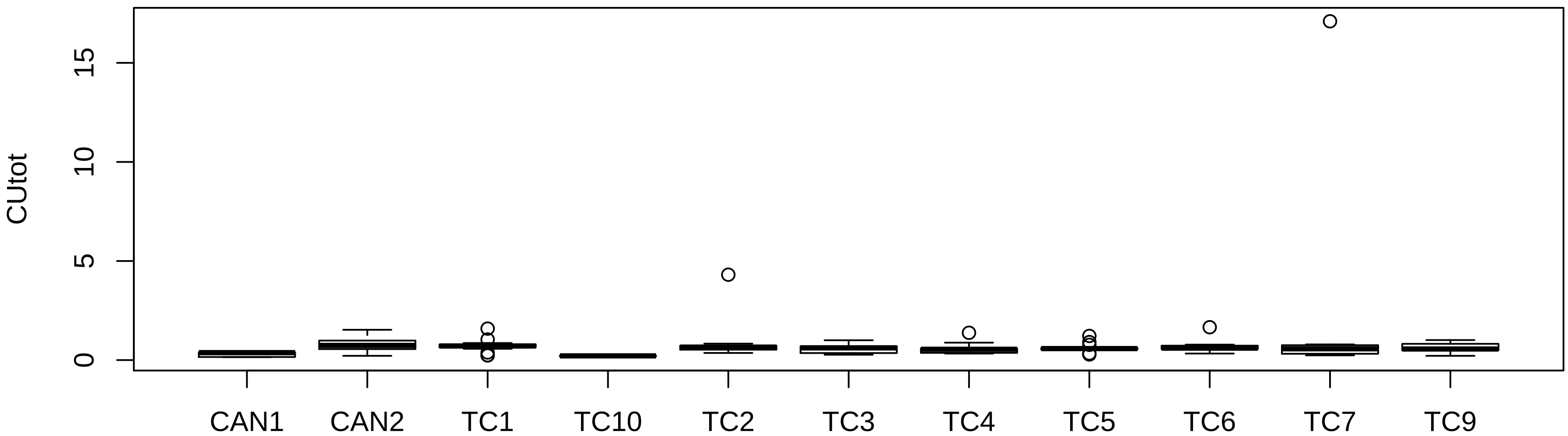

Log – COtot
−1.5
−1.0
−0.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

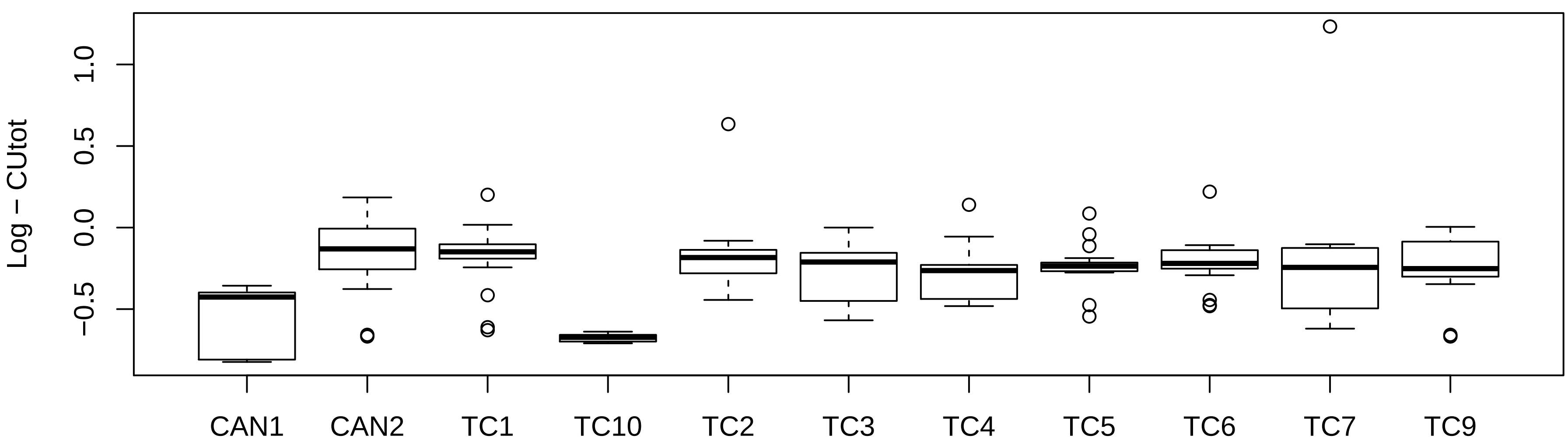

CUtot
Shapiro−Wilk test: W = 0.176; P−value = 0
CUtot
0
5
10
15
−3
−2
−1
0
1
2
3
Normal variate

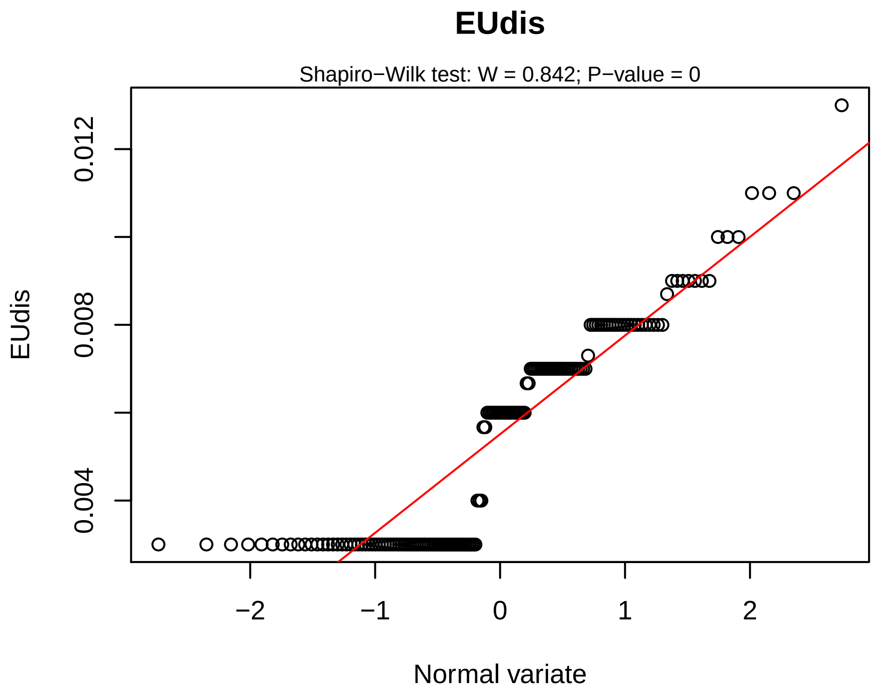

Log − CUtot
Shapiro−Wilk test: W = 0.885; P−value = 0
Log − CUtot
−0.5
0.0
0.5
1.0
−3
−2
−1
0
1
2
3
Normal variate

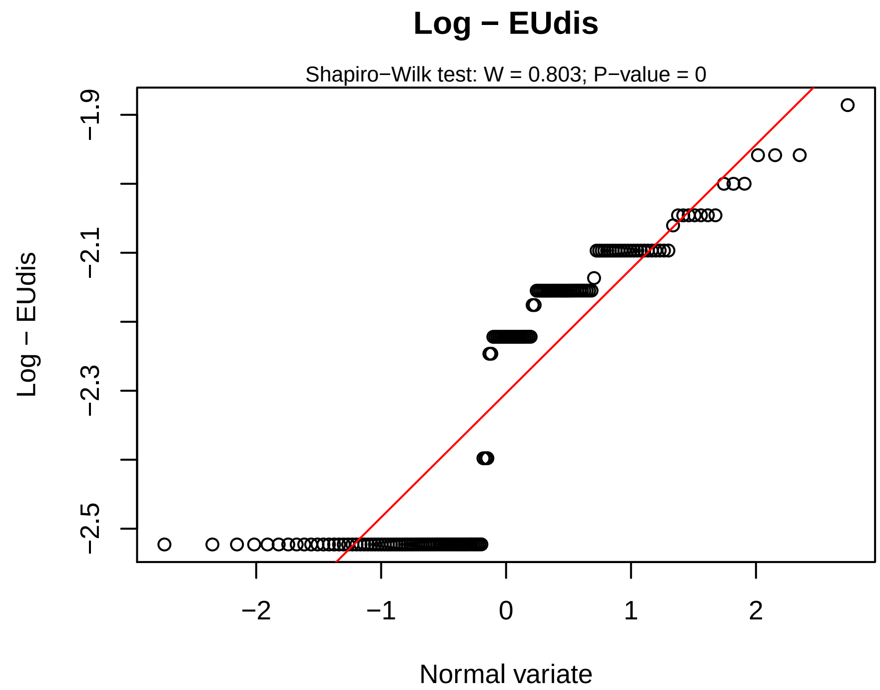

CUtot
0
5
10
15
Shor
Surf
Bot
L
M
R

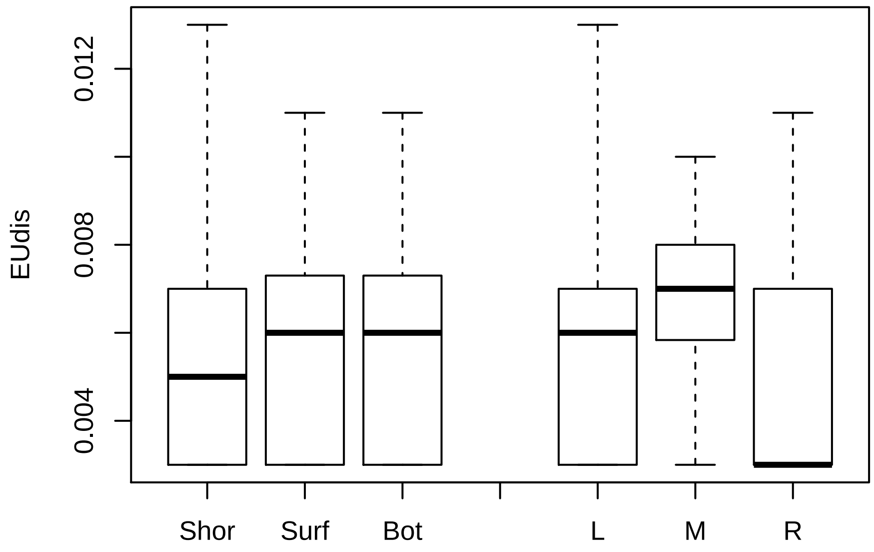

Log − CUtot
−0.5
0.0
0.5
1.0
Shor
Surf
Bot
L
M
R

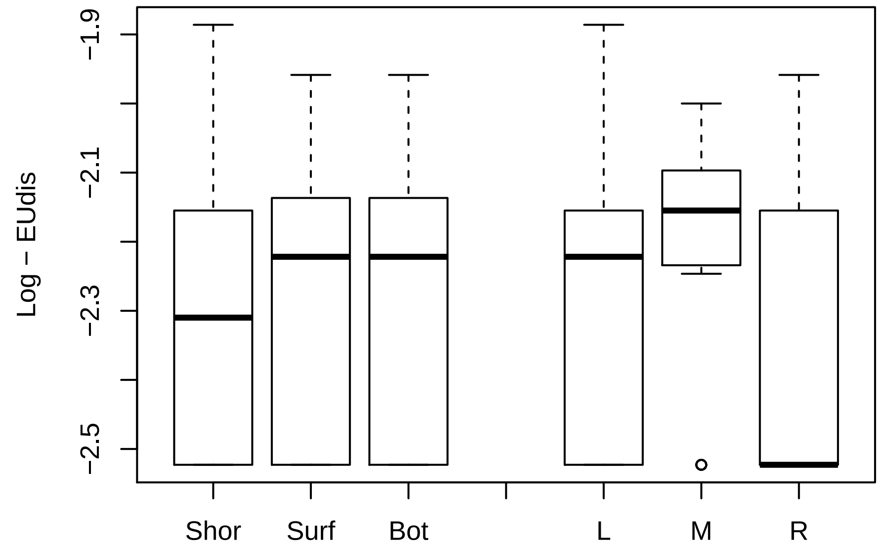

CUtot
0
5
10
15
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

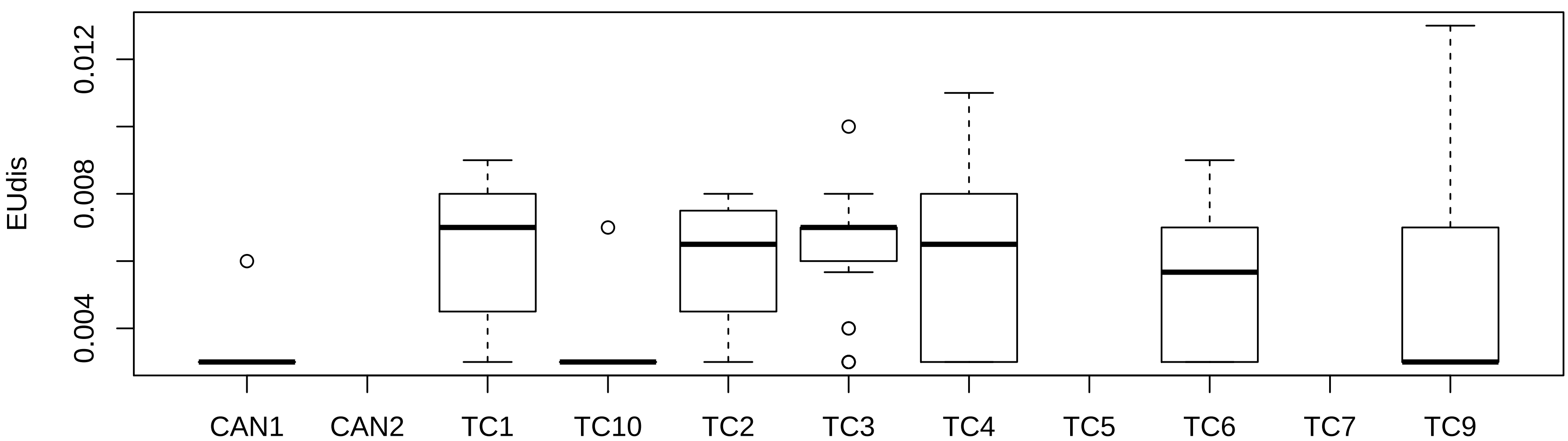

Log − CUtot
−0.5
0.0
0.5
1.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

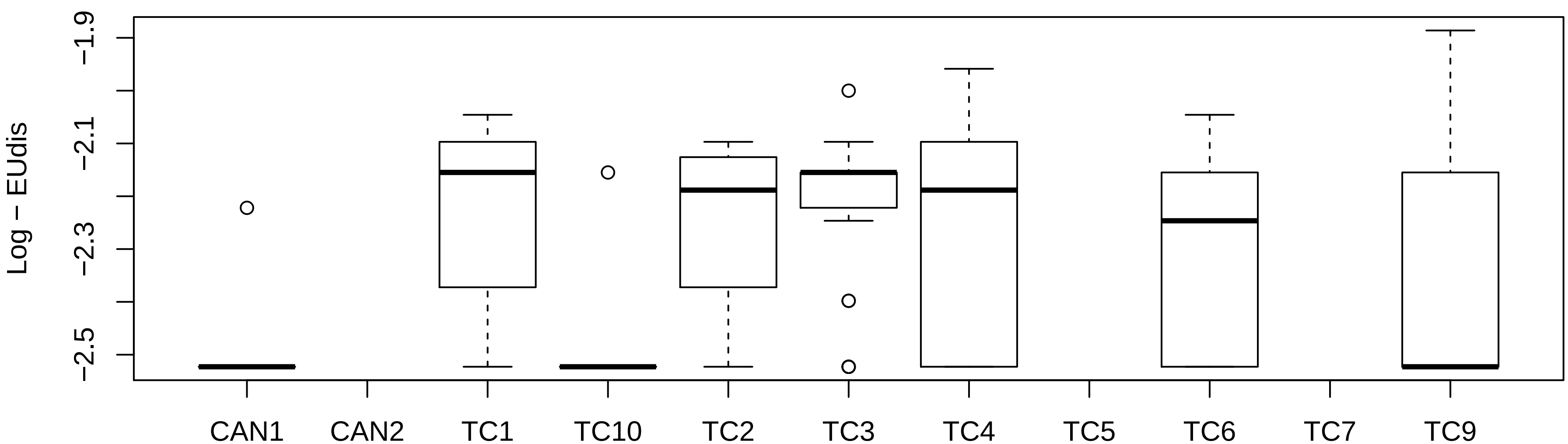

EUdis
Shapiro−Wilk test: W = 0.842; P−value = 0
EUdis
0.004
0.008
0.012
−2
−1
0
1
2
Normal variate

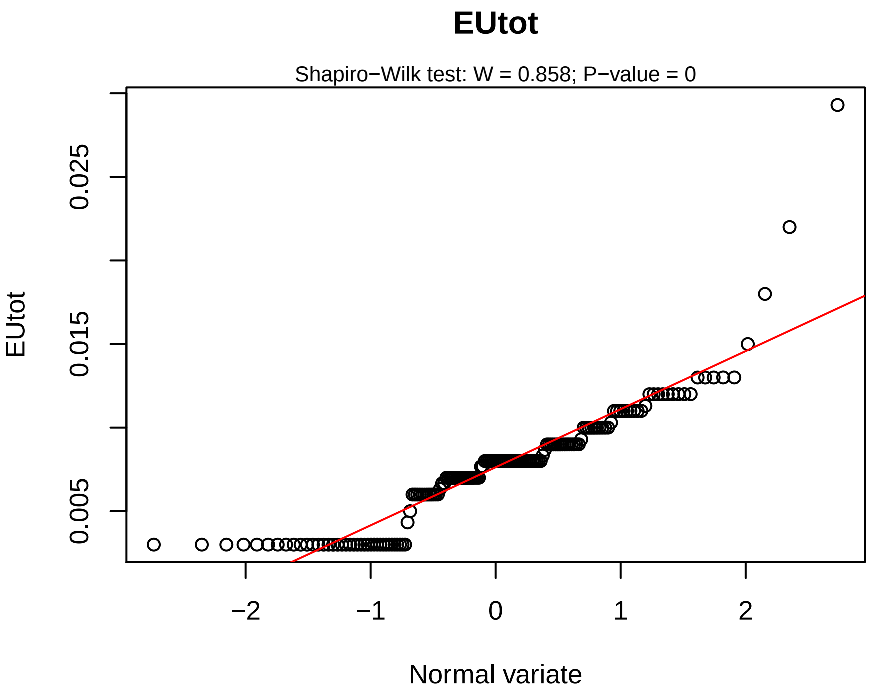
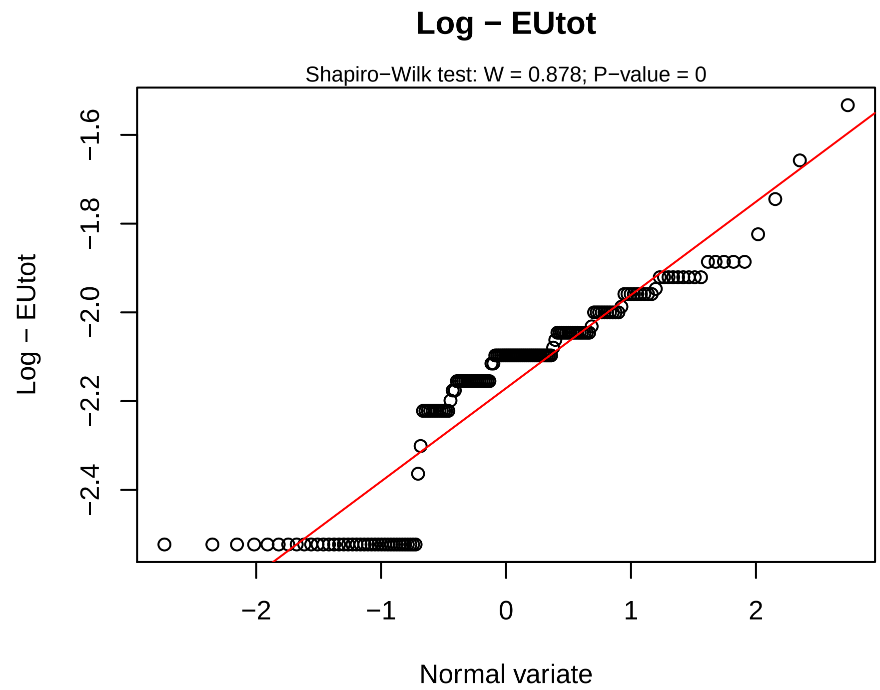
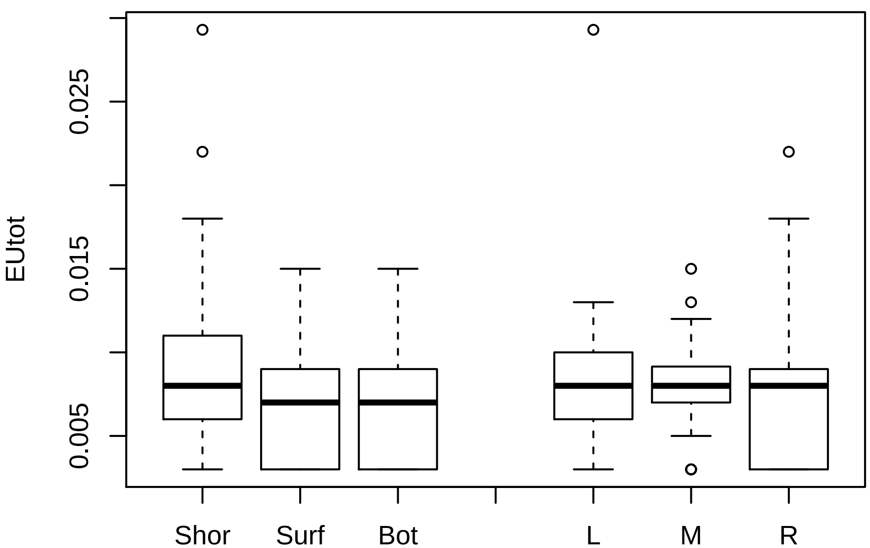
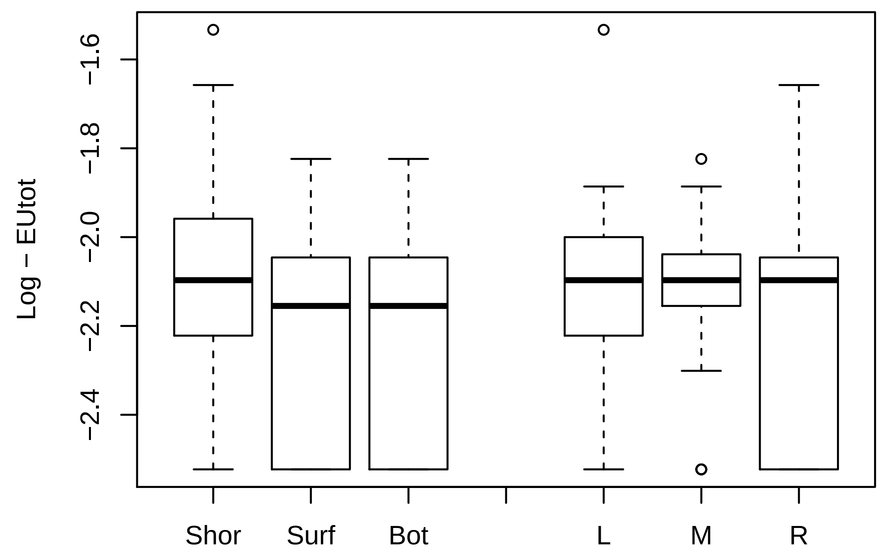

Log − EUdis
Shapiro−Wilk test: W = 0.803; P−value = 0
Log − EUdis
−2.5
−2.3
−2.1
−1.9
−2
−1
0
1
2
Normal variate

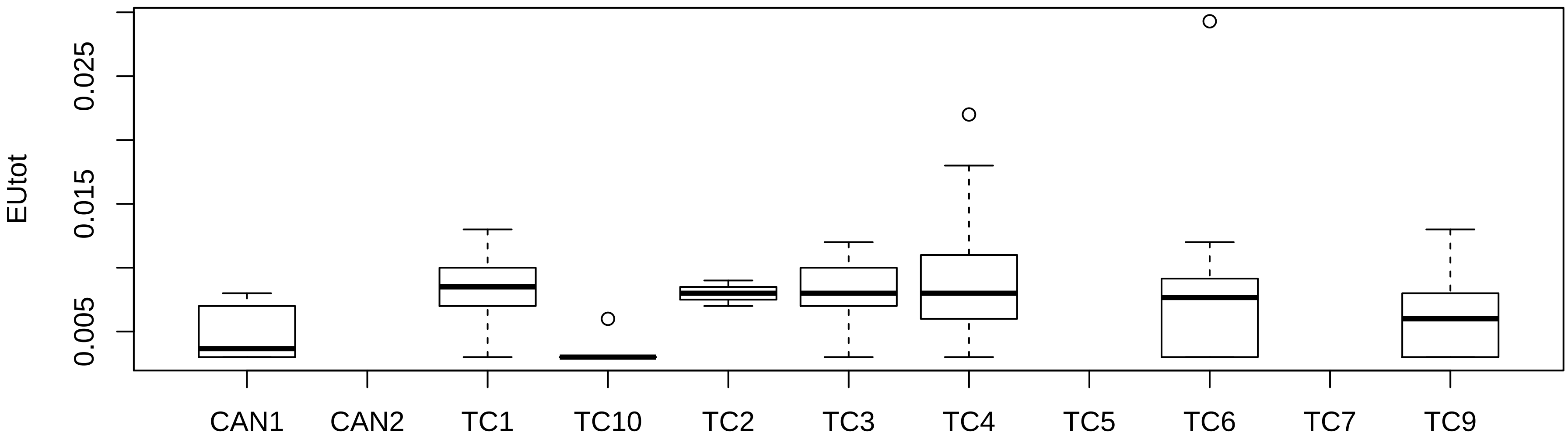

EUdis
0.004
0.008
0.012
Shor
Surf
Bot
L
M
R

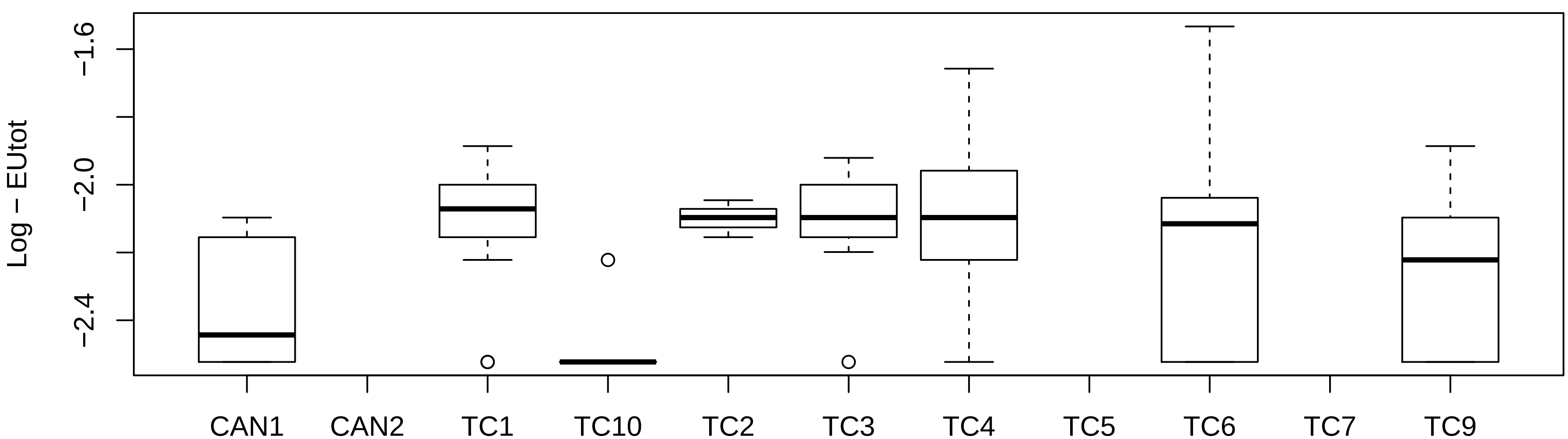

Log − EUdis
−2.5
−2.3
−2.1
−1.9
Shor
Surf
Bot
L
M
R

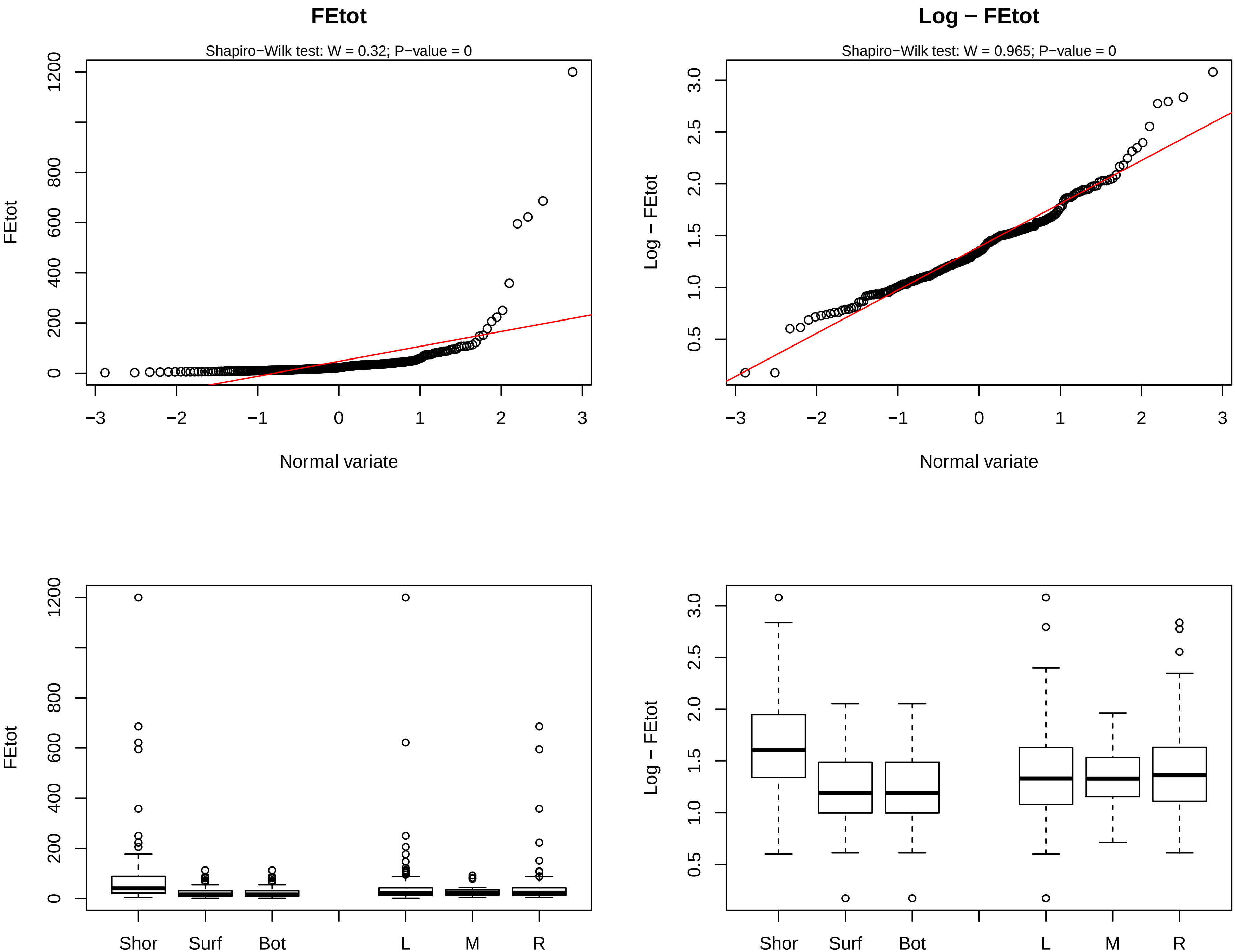

EUdis
0.004
0.008
0.012
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


Log − EUdis
−2.5
−2.3
−2.1
−1.9
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

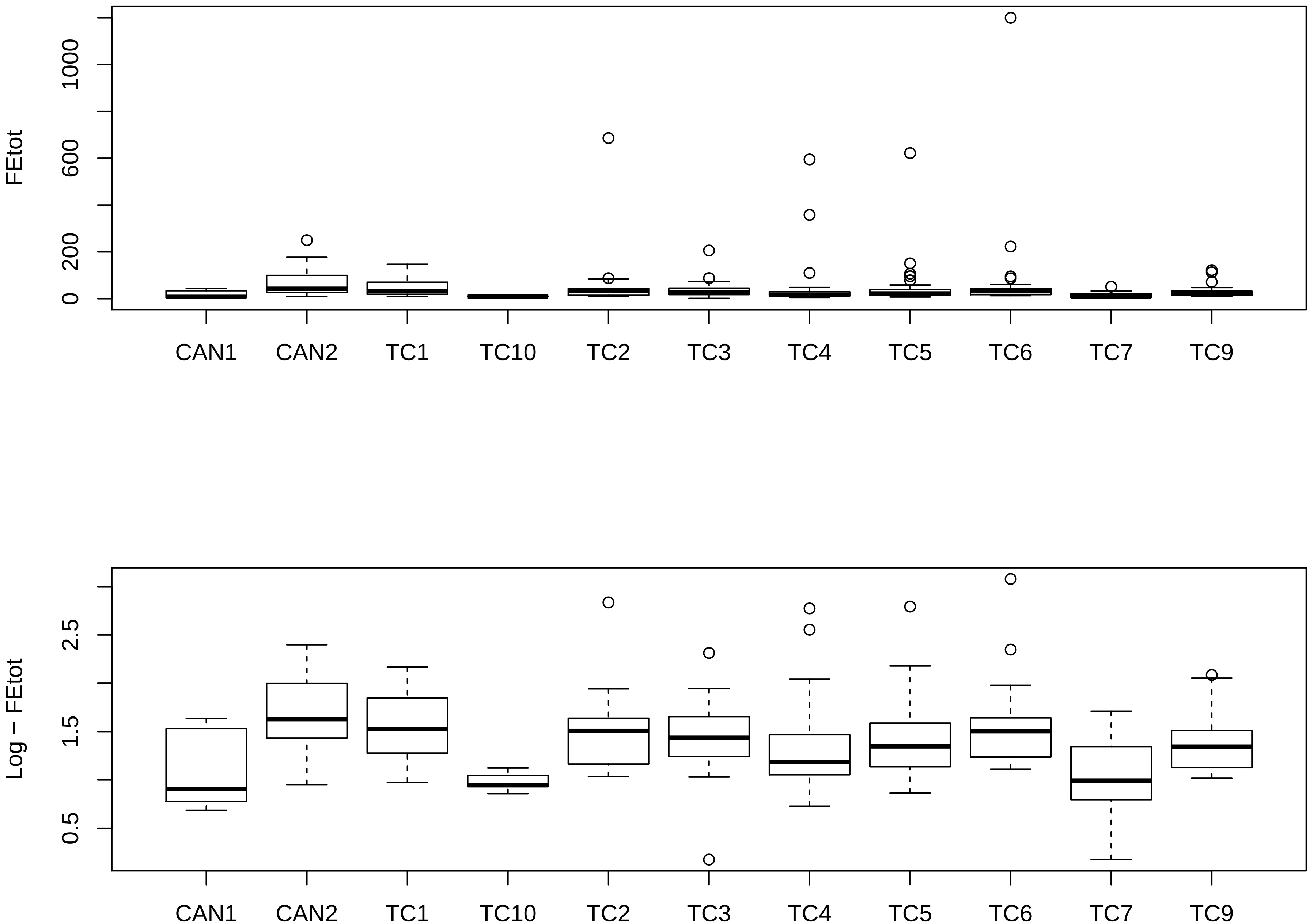

EUtot
Shapiro−Wilk test: W = 0.858; P−value = 0
EUtot
0.005
0.015
0.025
−2
−1
0
1
2
Normal variate

Log − EUtot
Shapiro−Wilk test: W = 0.878; P−value = 0
Log − EUtot
−2.4
−2.2
−2.0
−1.8
−1.6
−2
−1
0
1
2
Normal variate

EUtot
0.005
0.015
0.025
Shor
Surf
Bot
L
M
R

Log − EUtot
−2.4
−2.2
−2.0
−1.8
−1.6
Shor
Surf
Bot
L
M
R

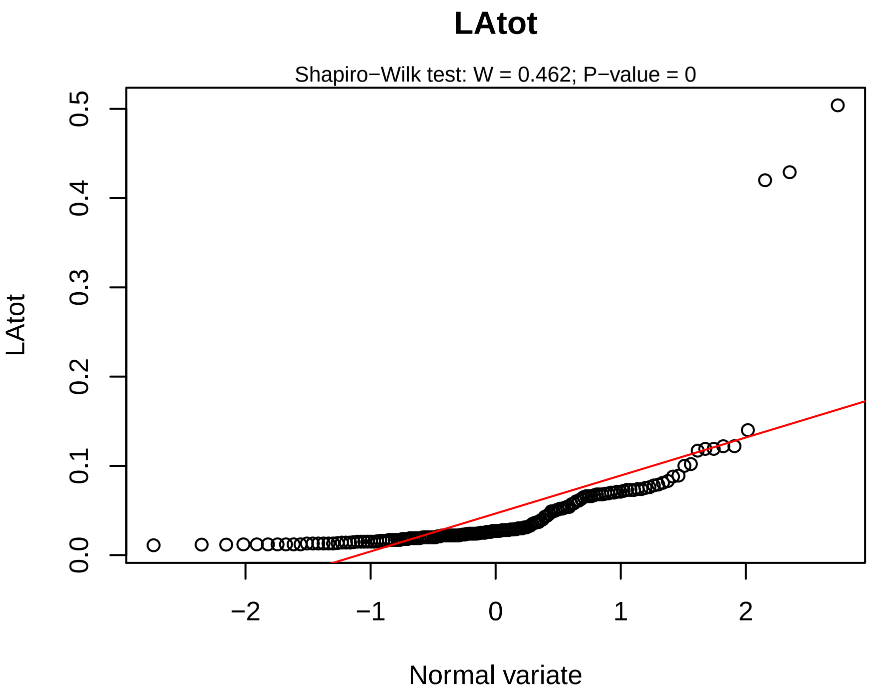

EUtot
0.005
0.015
0.025
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

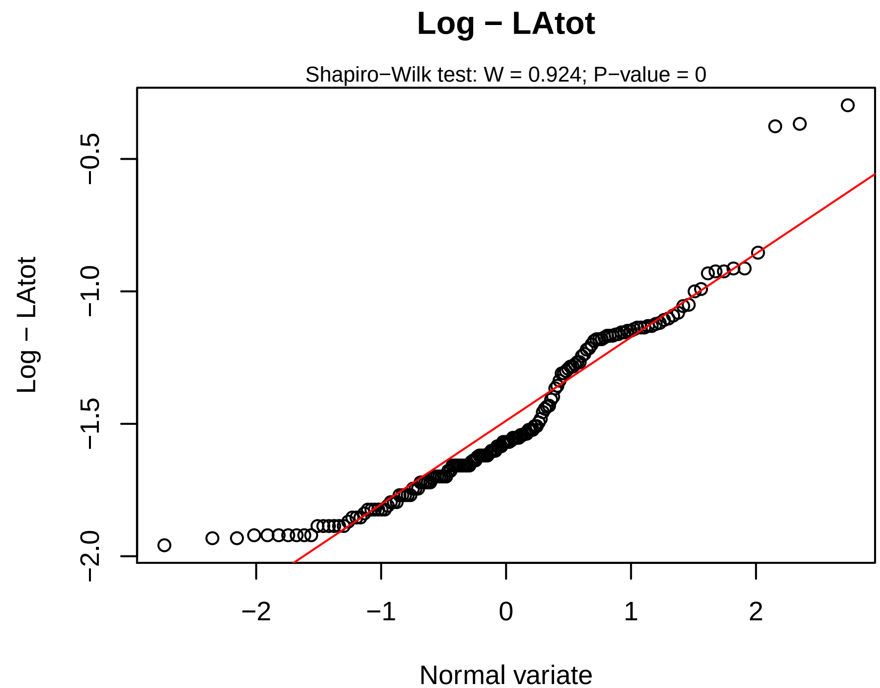

Log – EUtot
−2.4
−2.0
−1.6
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

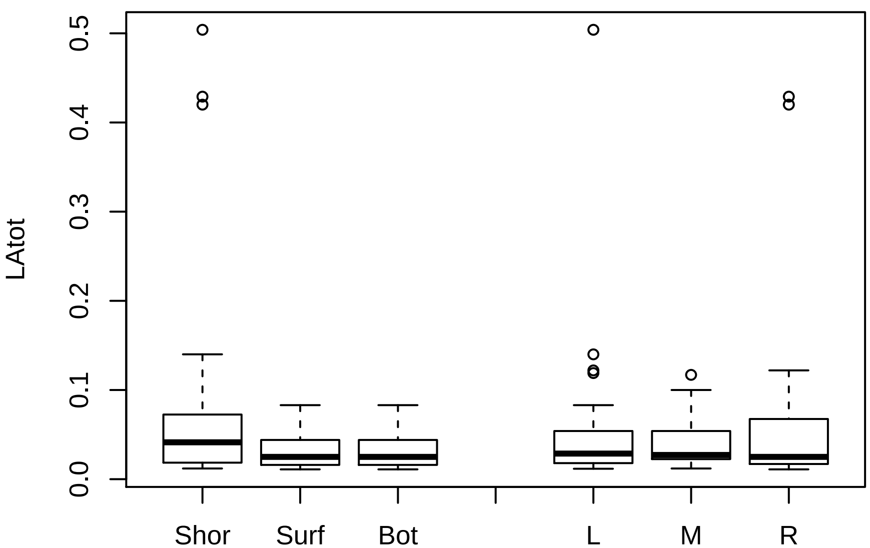


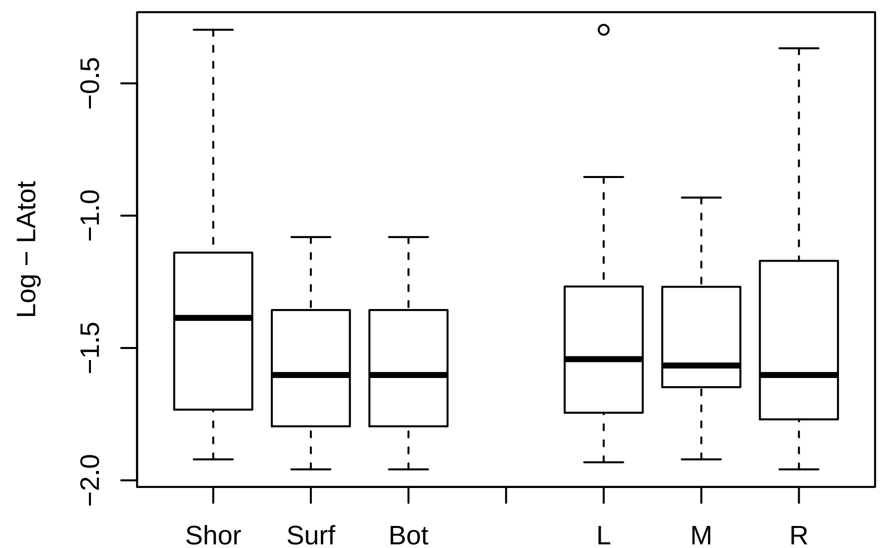
FEtot
Shapiro−Wilk test: W = 0.32; P−value = 0
FEtot
Normal variate
Log − FEtot
Shapiro−Wilk test: W = 0.965; P−value = 0
Log − FEtot
Normal variate
FEtot
Shor
Surf
Bot
L
M
R
Log − FEtot
Shor
Surf
Bot
L
M
R

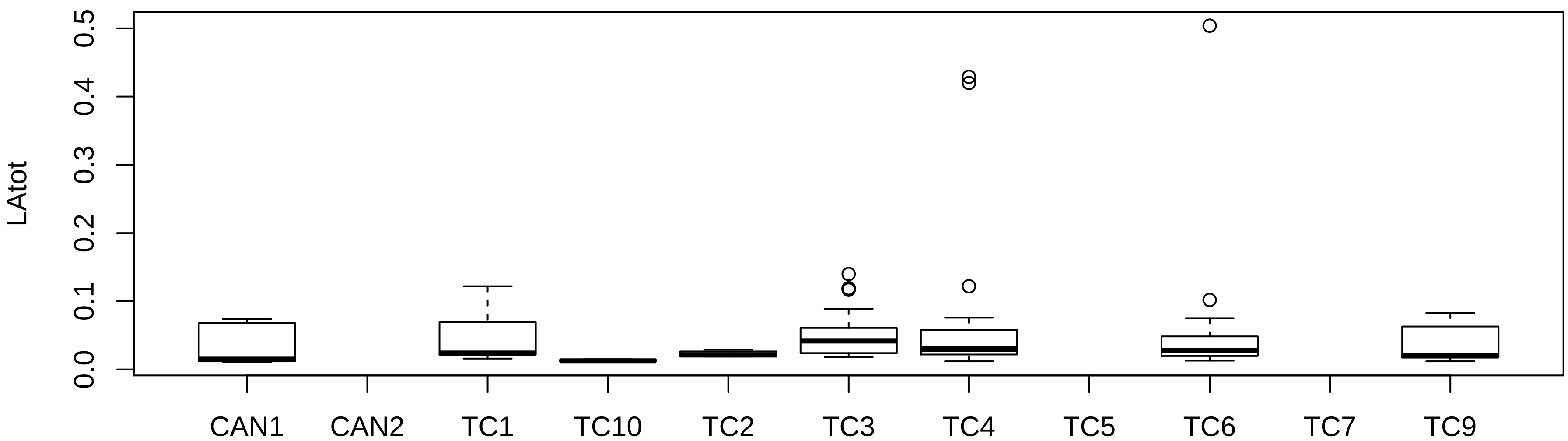

FEtot
0
200
600
1000
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9
Log − FEtot
0.5
1.5
2.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

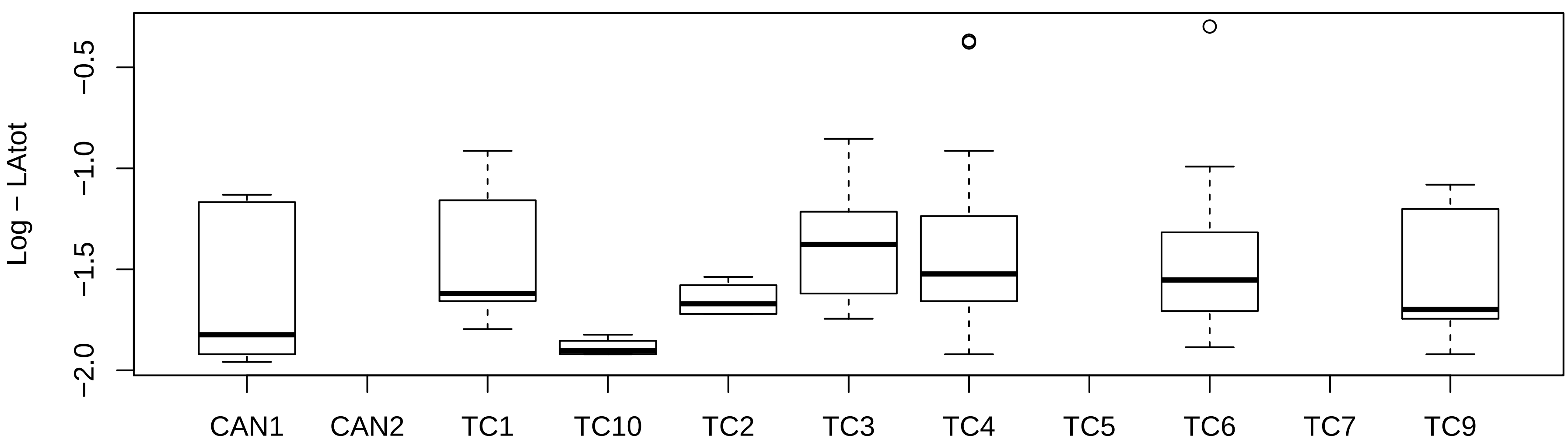

LAtot
Shapiro−Wilk test: W = 0.462; P−value = 0
LAtot
0.0
0.1
0.2
0.3
0.4
0.5
−2
−1
0
1
2
Normal variate

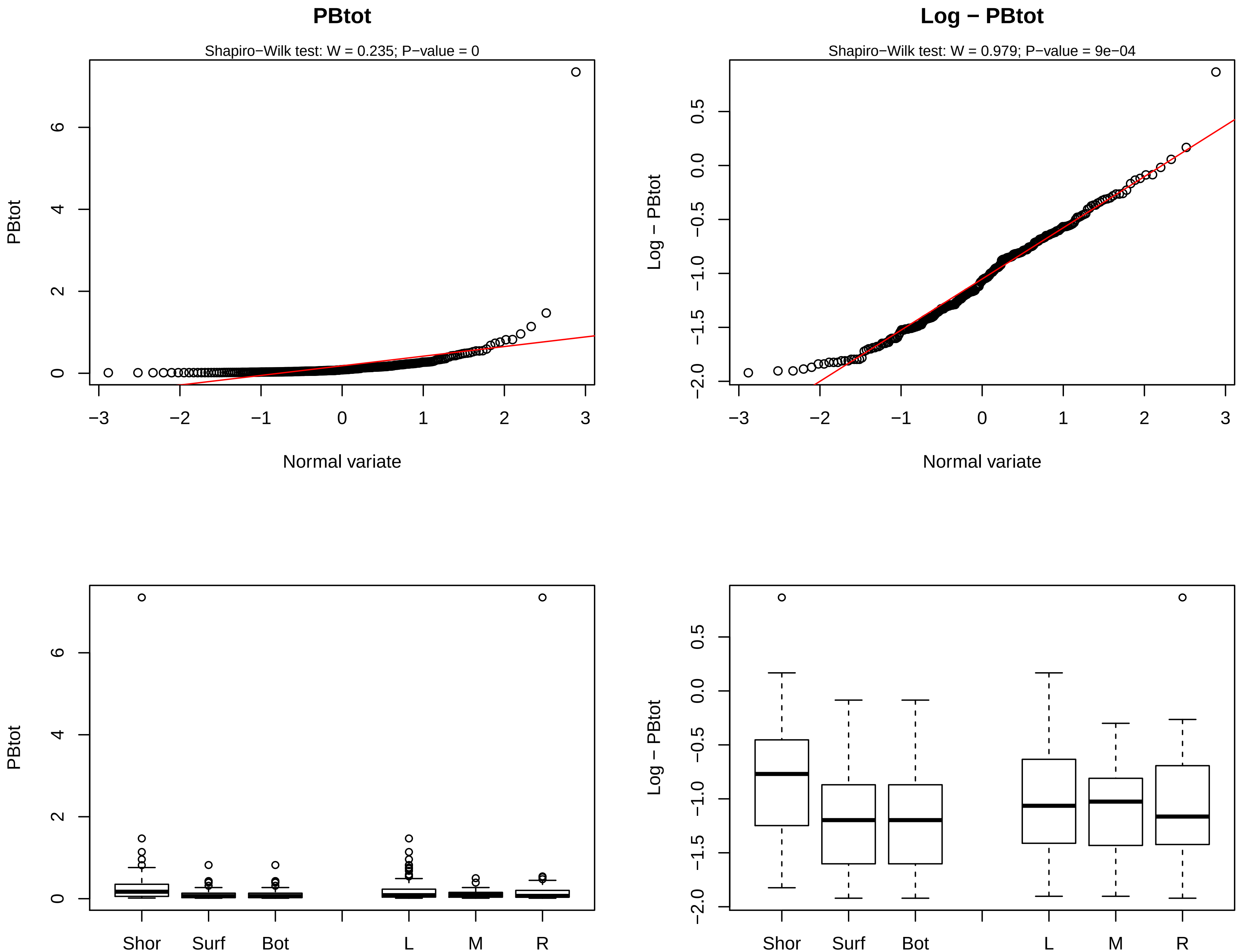

Log − LAtot
Shapiro−Wilk test: W = 0.924; P−value = 0
Log − LAtot
−2.0
−1.5
−1.0
−0.5
−2
−1
0
1
2
Normal variate

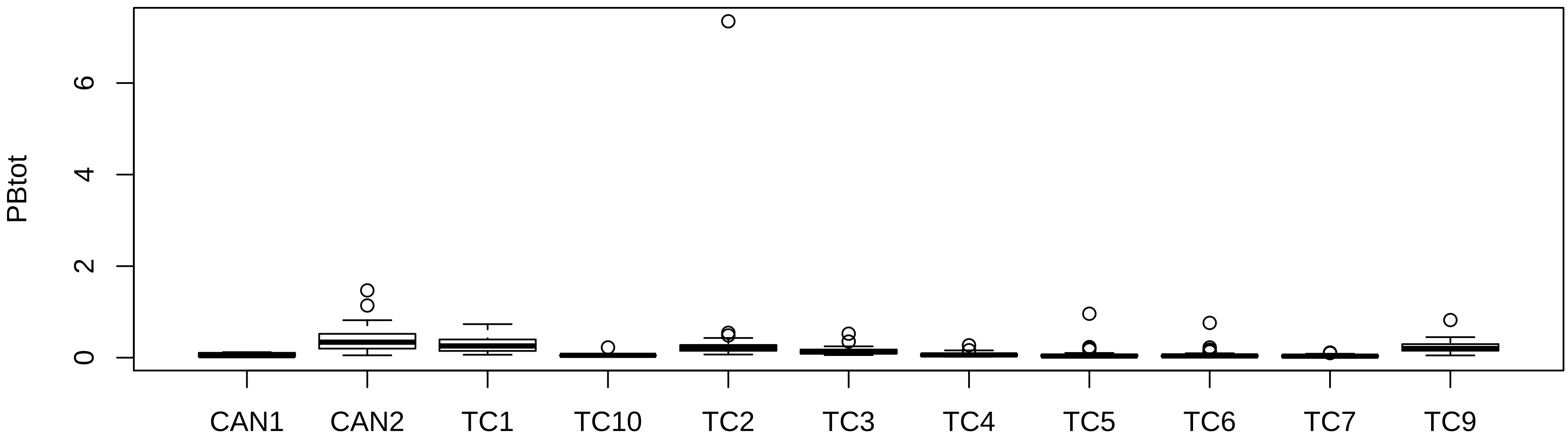

LAtot
0.0
0.1
0.2
0.3
0.4
0.5
Shor
Surf
Bot
L
M
R

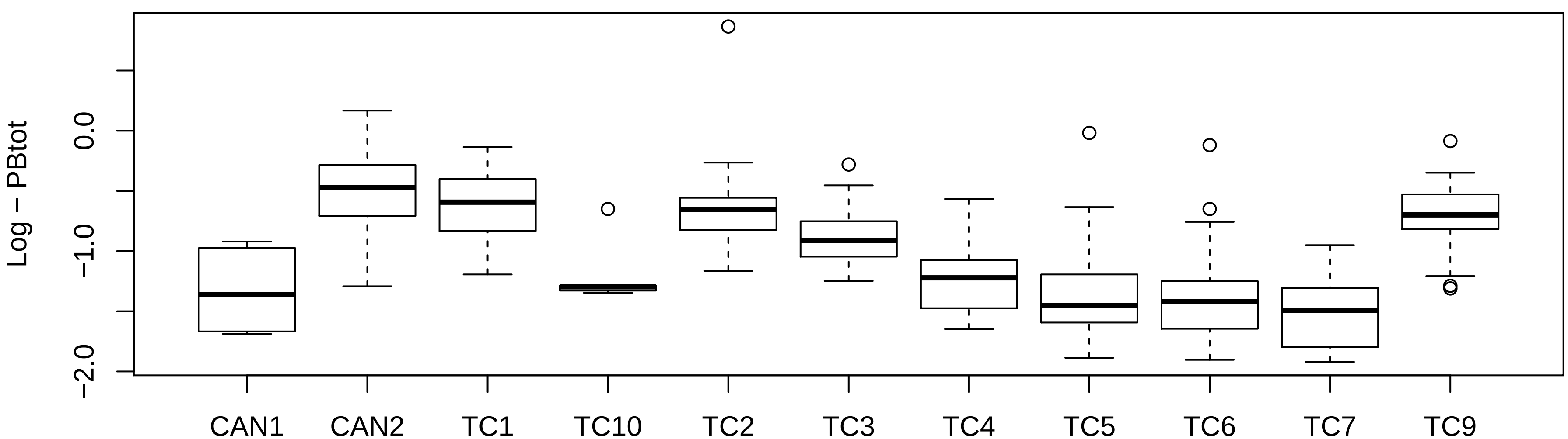

Log − LAtot
−2.0
−1.5
−1.0
−0.5
Shor
Surf
Bot
L
M
R

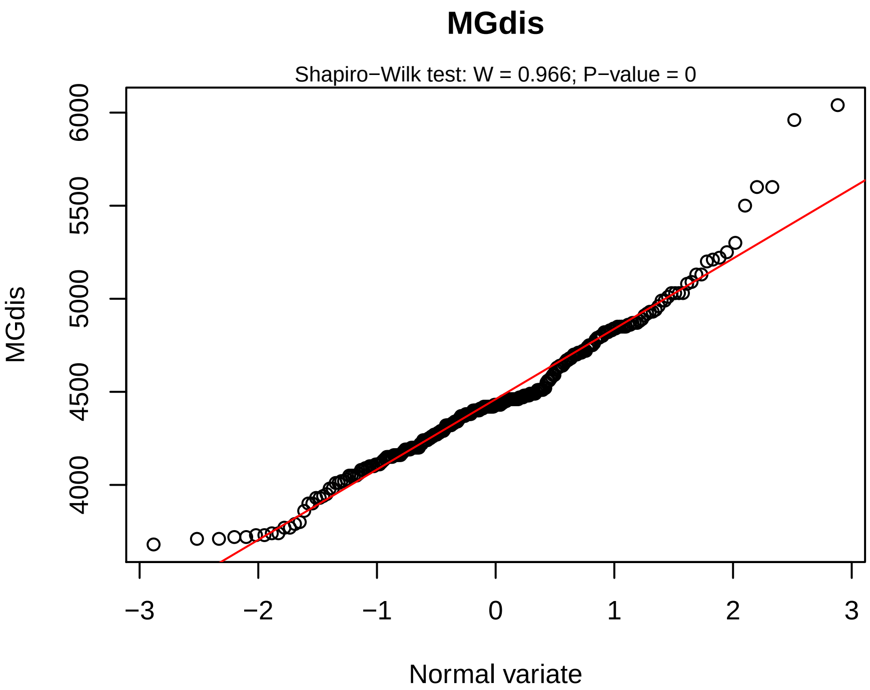

LAtot
0.0
0.1
0.2
0.3
0.4
0.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

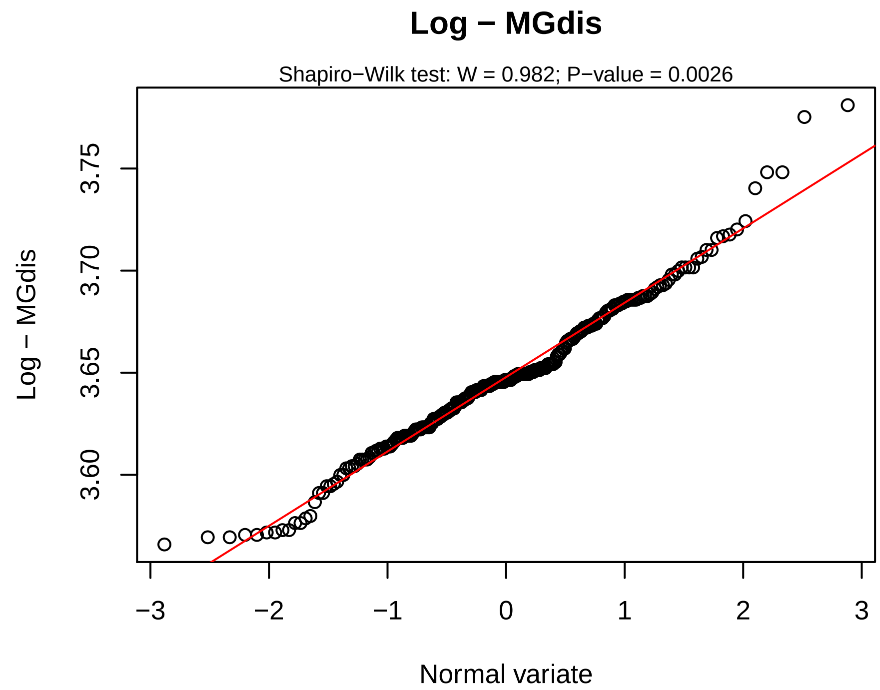

Log – LAtot
−2.0
−1.5
−1.0
−0.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

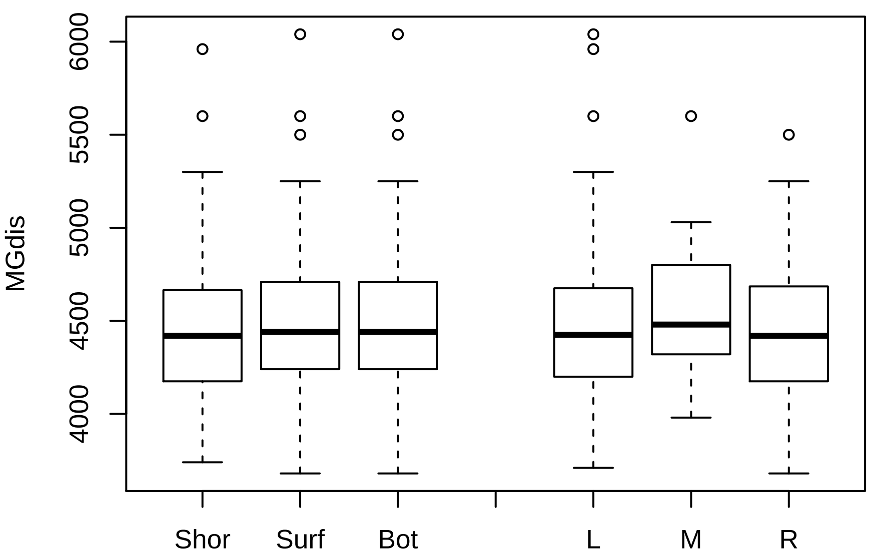

PBtot
Shapiro−Wilk test: W = 0.235; P−value = 0
PBtot
Normal variate
Log − PBtot
Shapiro−Wilk test: W = 0.979; P−value = 9e−04
Log − PBtot
Normal variate
PBtot
Shor
Surf
Bot
L
M
R
Log − PBtot
Shor
Surf
Bot
L
M
R

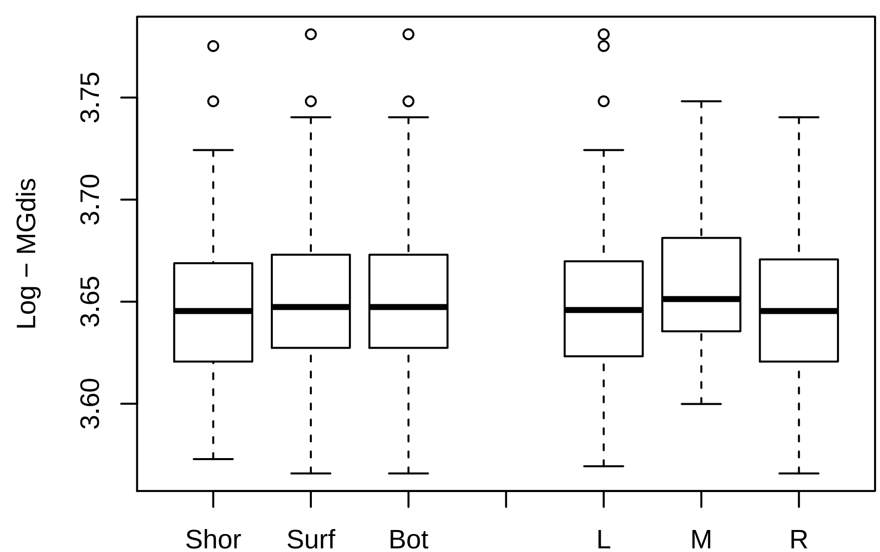

PBtot
0
2
4
6
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

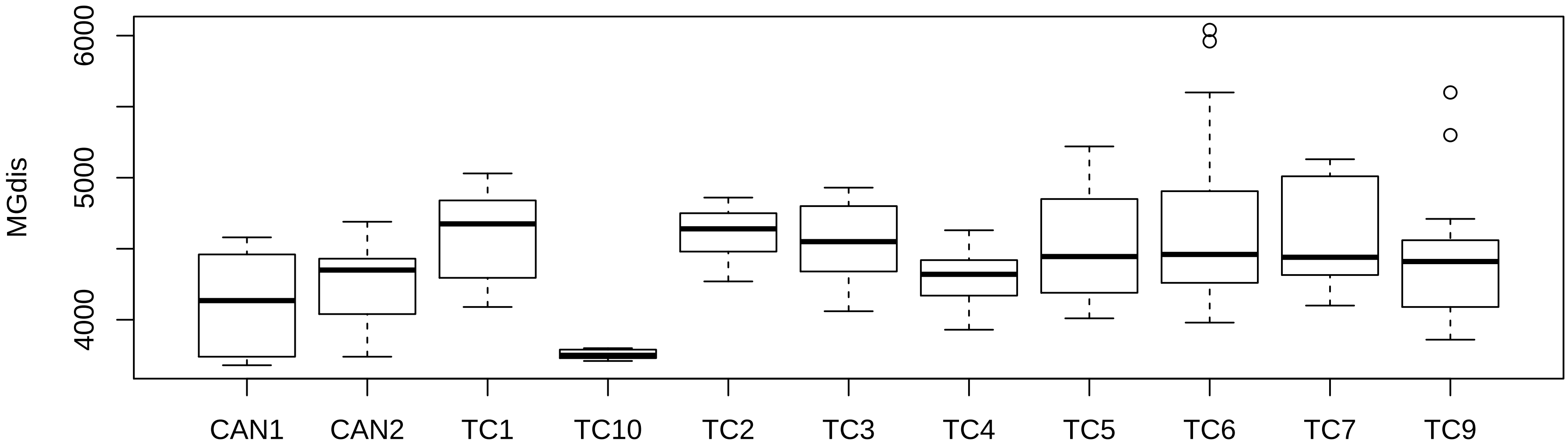

Log – PBtot
−2.0
−1.0
0.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

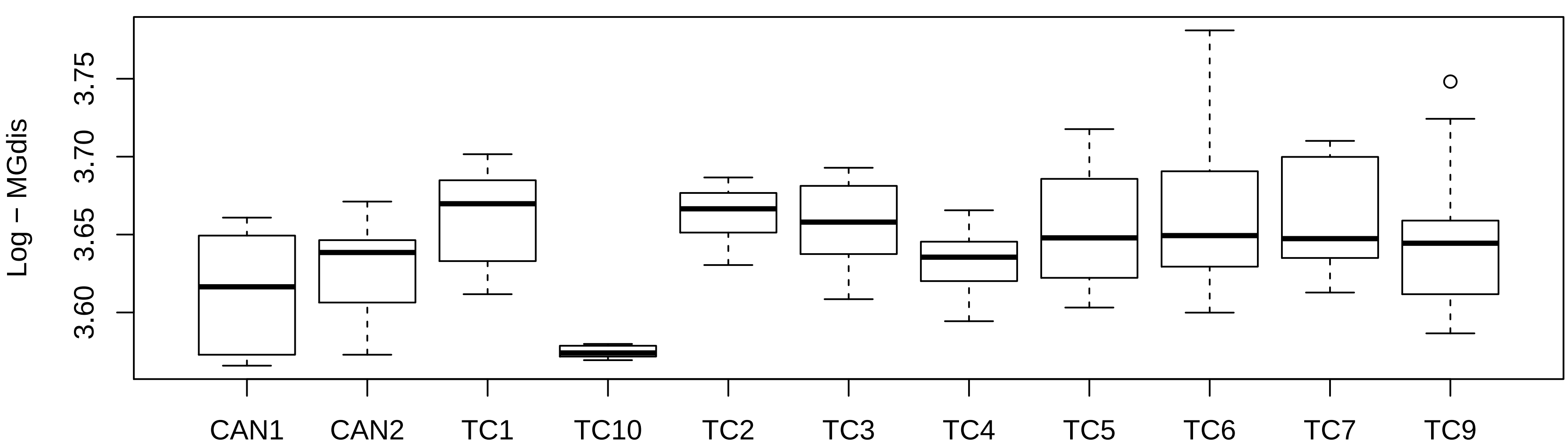

MGdis
Shapiro−Wilk test: W = 0.966; P−value = 0
MGdis
4000
4500
5000
5500
6000
−3
−2
−1
0
1
2
3
Normal variate

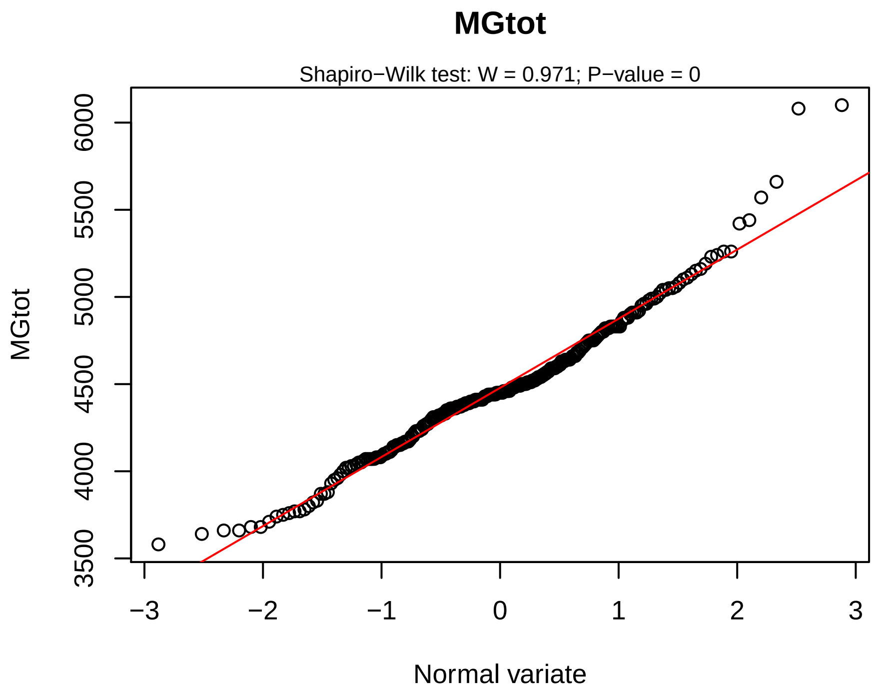

Log − MGdis
Shapiro−Wilk test: W = 0.982; P−value = 0.0026
Log − MGdis
3.60
3.65
3.70
3.75
−3
−2
−1
0
1
2
3
Normal variate

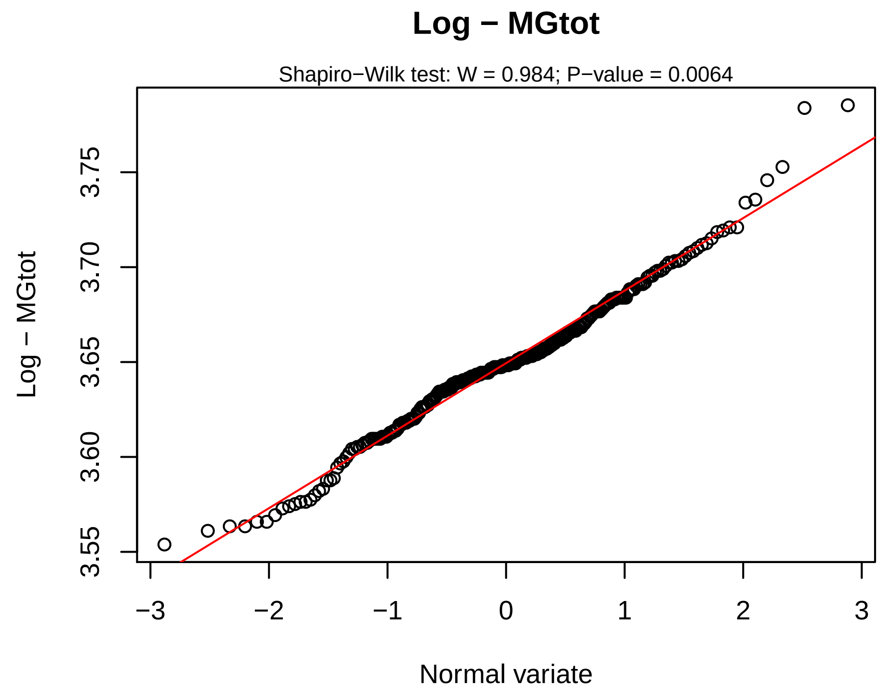

MGdis
4000
4500
5000
5500
6000
Shor
Surf
Bot
L
M
R

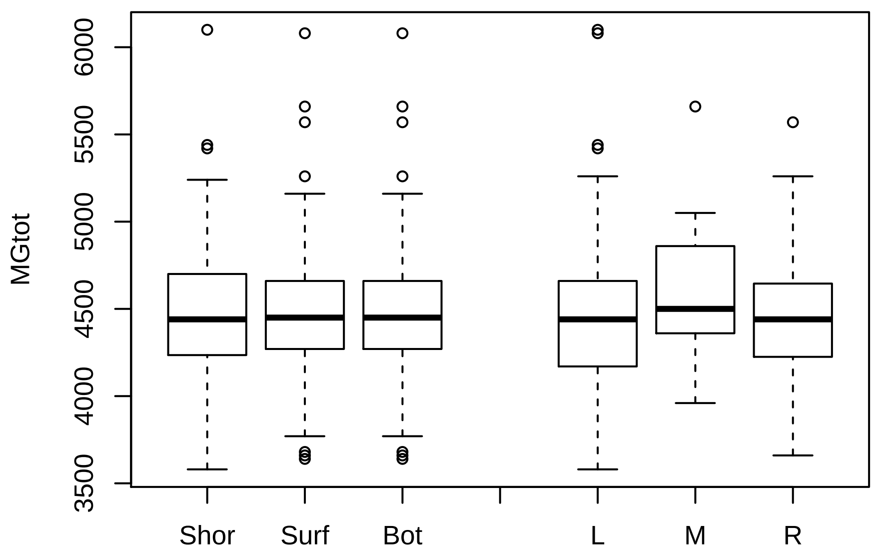

Log − MGdis
3.60
3.65
3.70
3.75
Shor
Surf
Bot
L
M
R

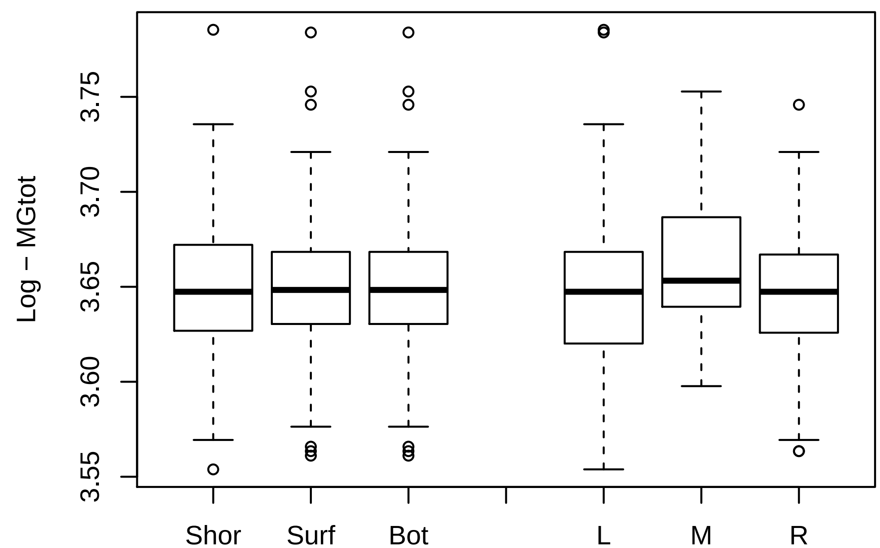

MGdis
6000
5000
4000
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

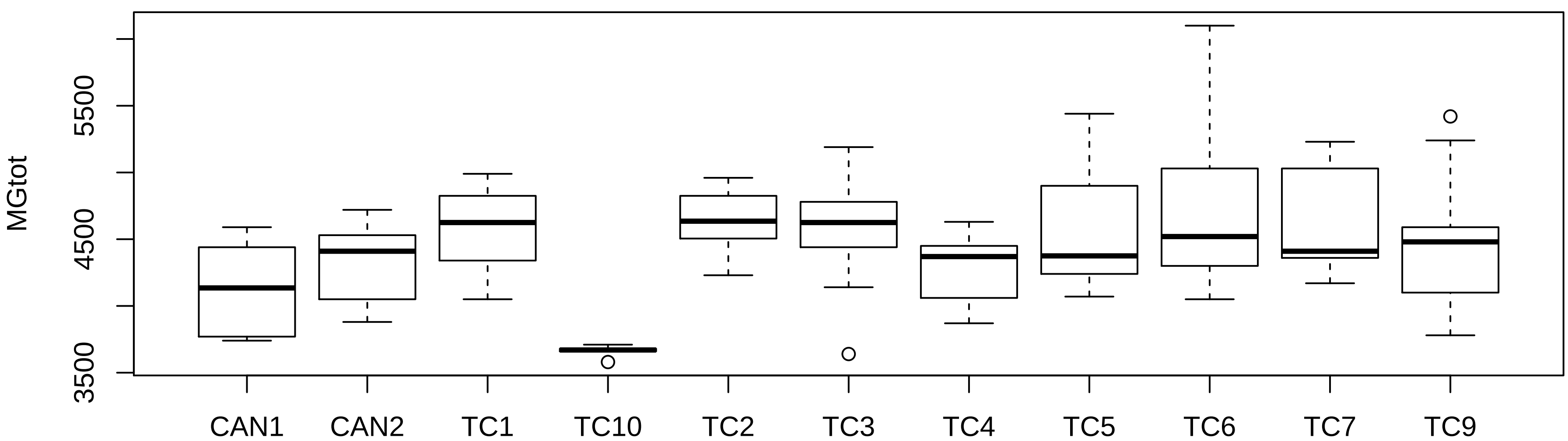

Log − MGdis
3.75
3.70
3.65
3.60
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

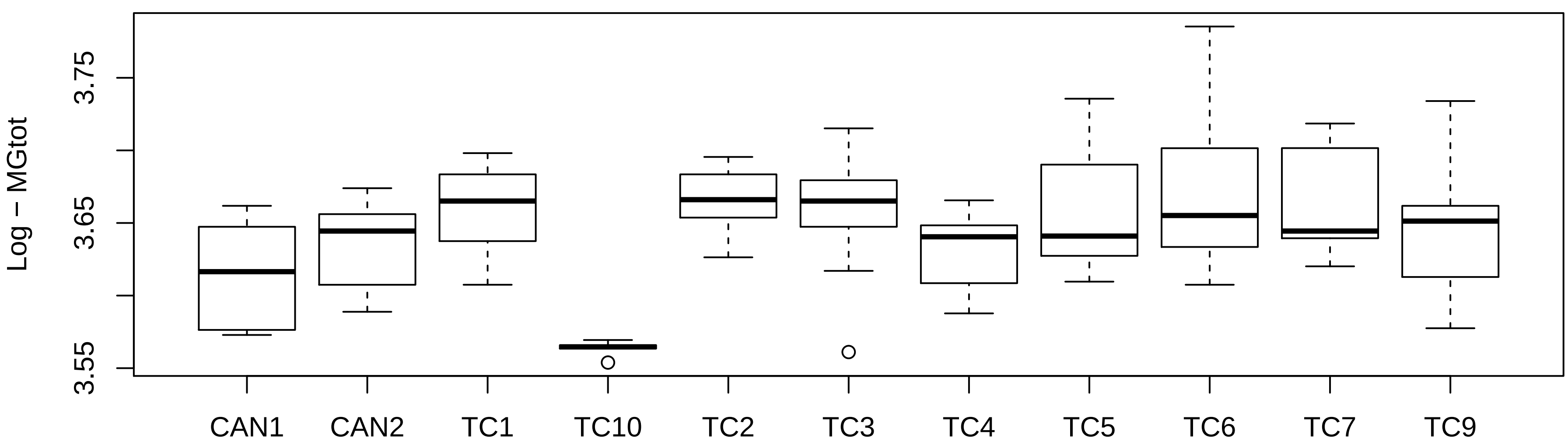

MGtot
Shapiro−Wilk test: W = 0.971; P−value = 0
MGtot
Normal variate

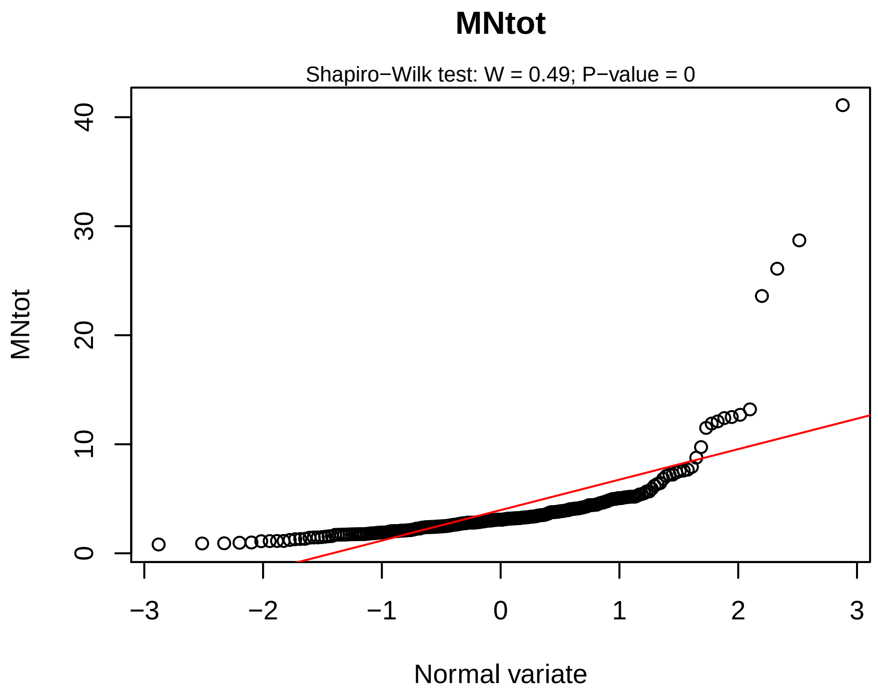

Log − MGtot
Shapiro−Wilk test: W = 0.984; P−value = 0.0064
Log − MGtot
Normal variate


MGtot
Shor
Surf
Bot
L
M
R

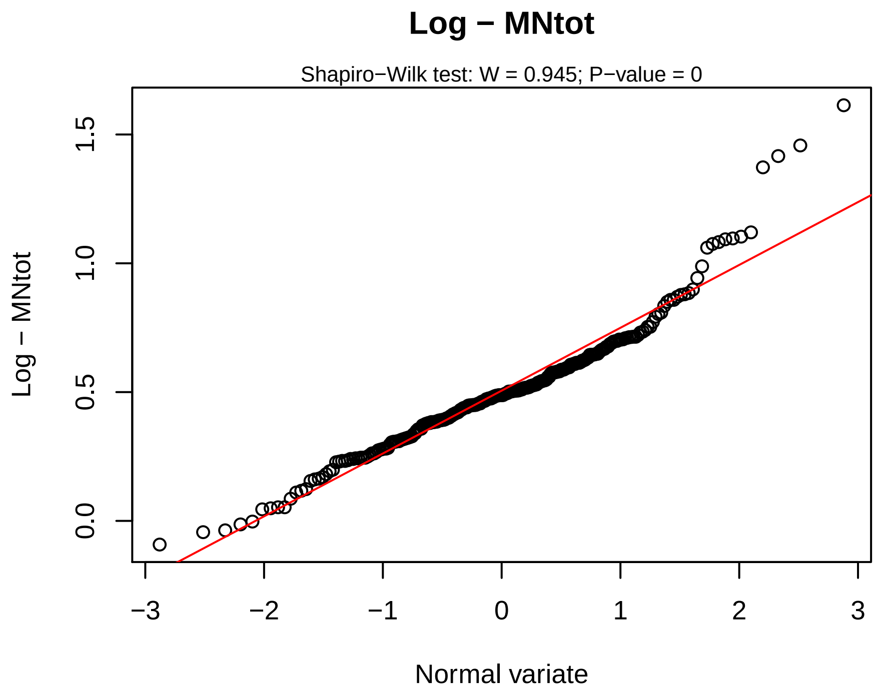

Log − MGtot
Shor
Surf
Bot
L
M
R


MGtot
3500
4500
5500
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

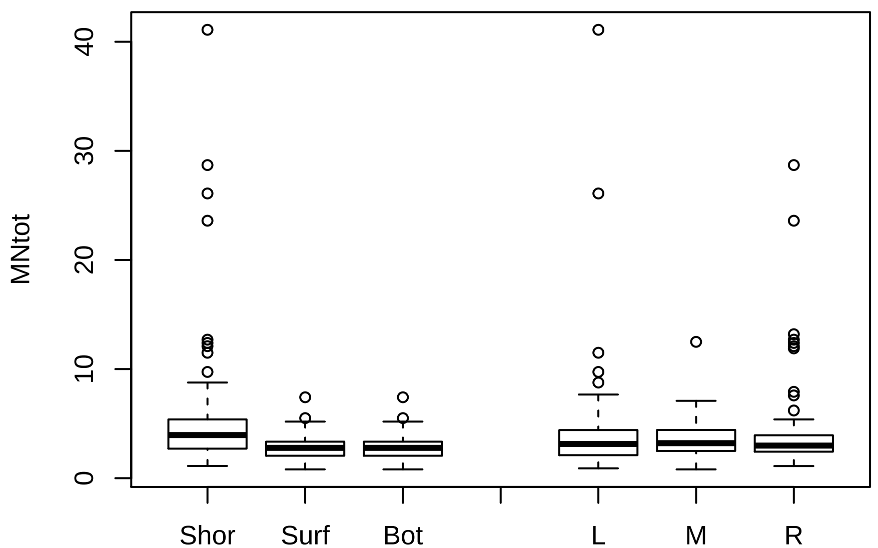

Log – MGtot
3.55
3.65
3.75
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9



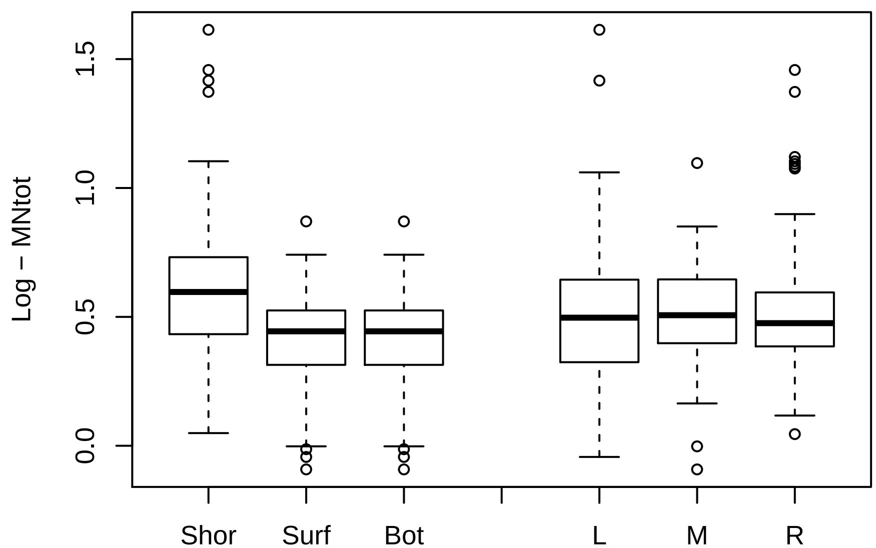
MNtot
Shapiro−Wilk test: W = 0.49; P−value = 0
MNtot
Normal variate



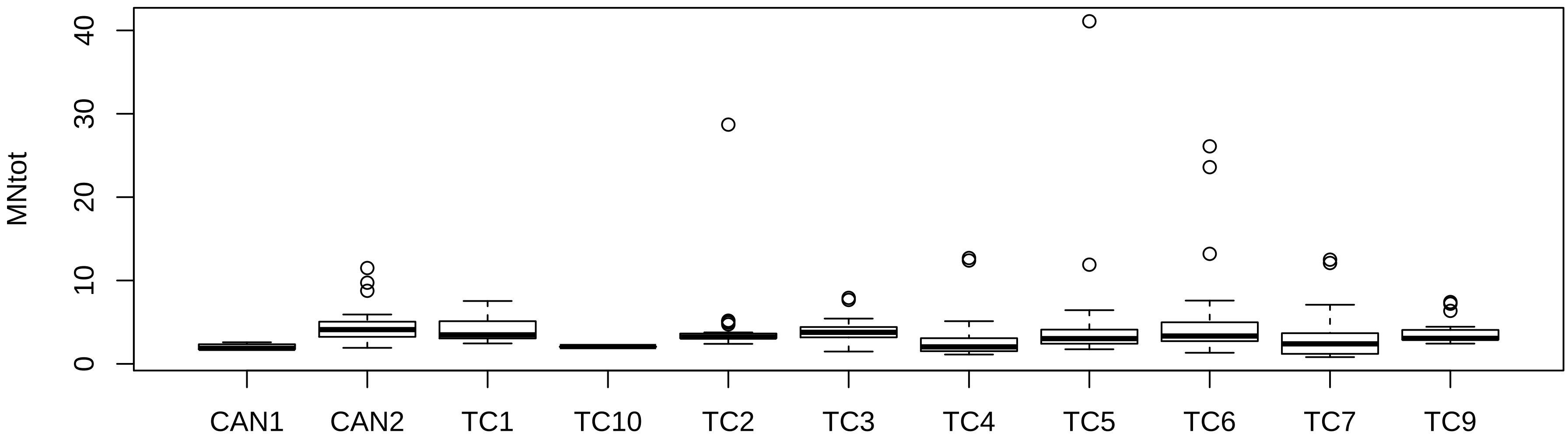
Log − MNtot
Shapiro−Wilk test: W = 0.945; P−value = 0
Log − MNtot
Normal variate



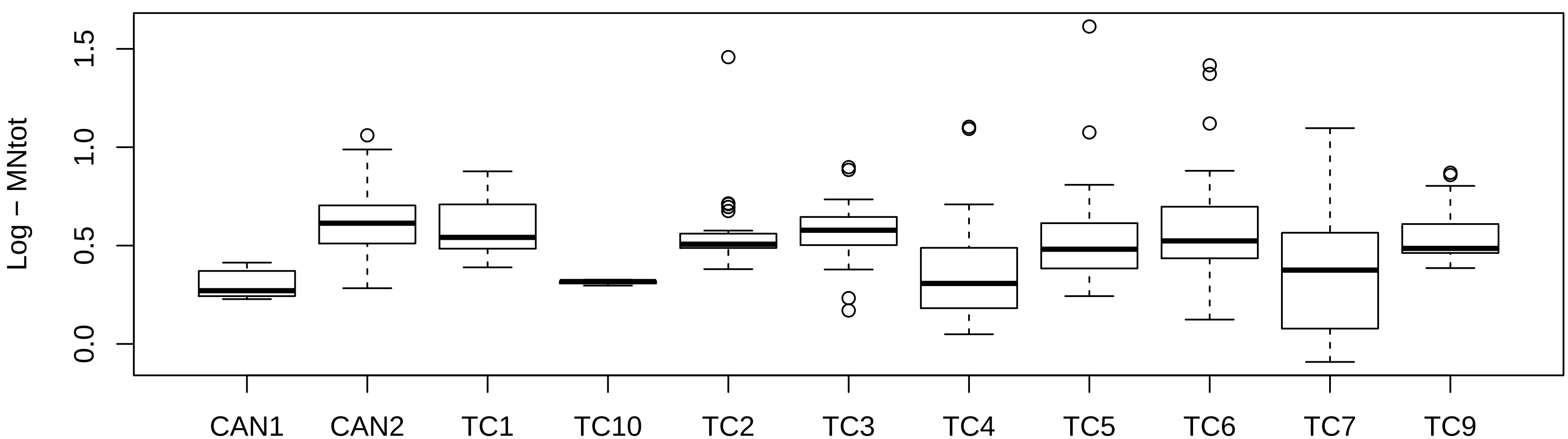
MNtot
Shor
Surf
Bot
L
M
R



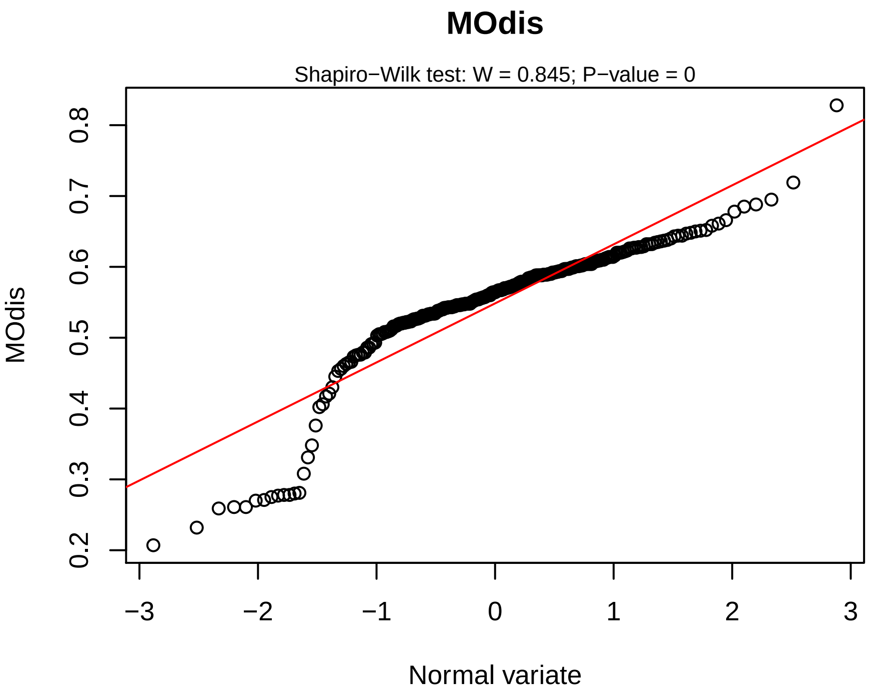
Log − MNtot
Shor
Surf
Bot
L
M
R

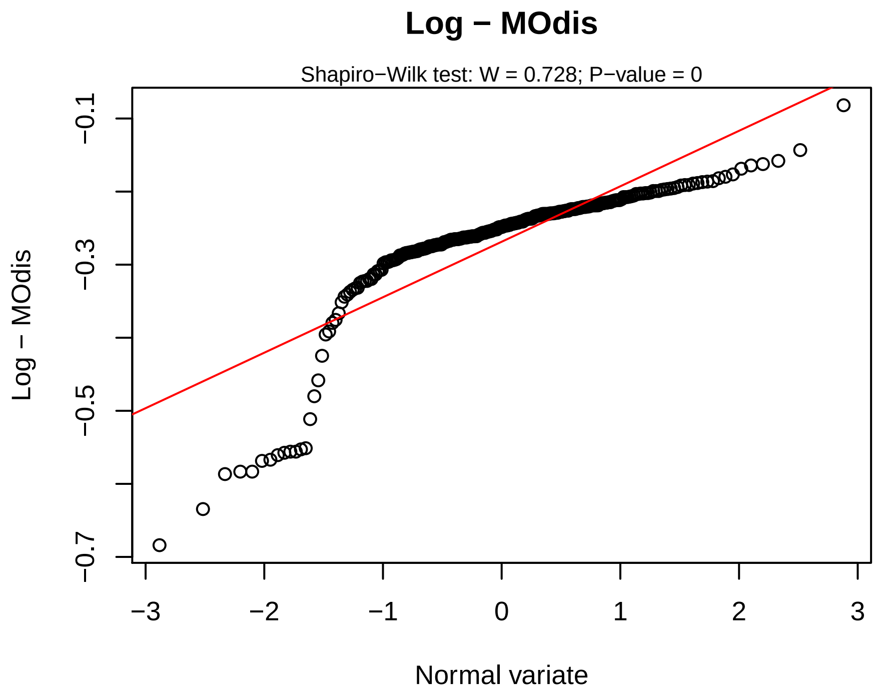


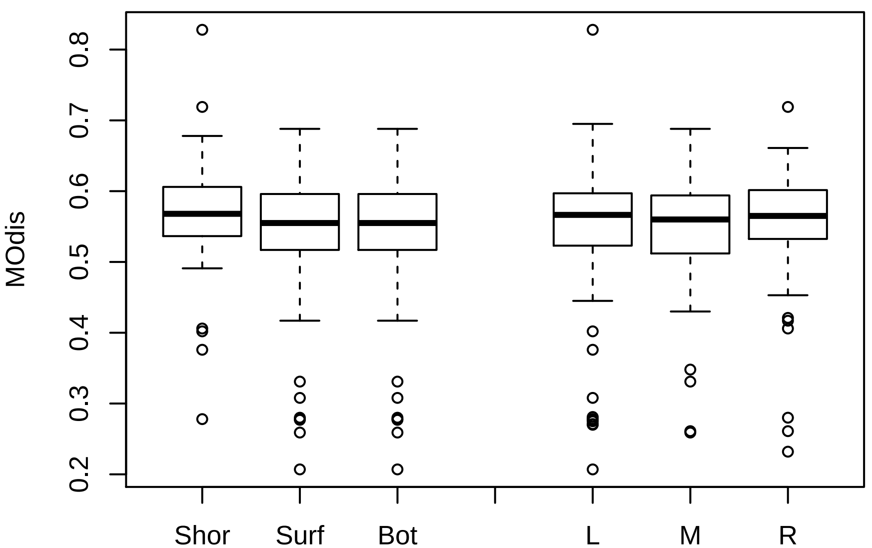
MNtot
0
10
20
30
40
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

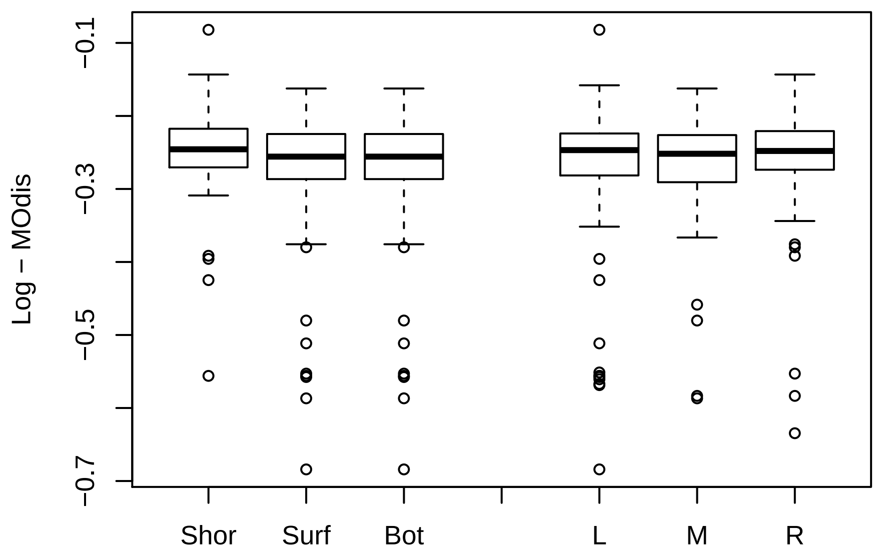


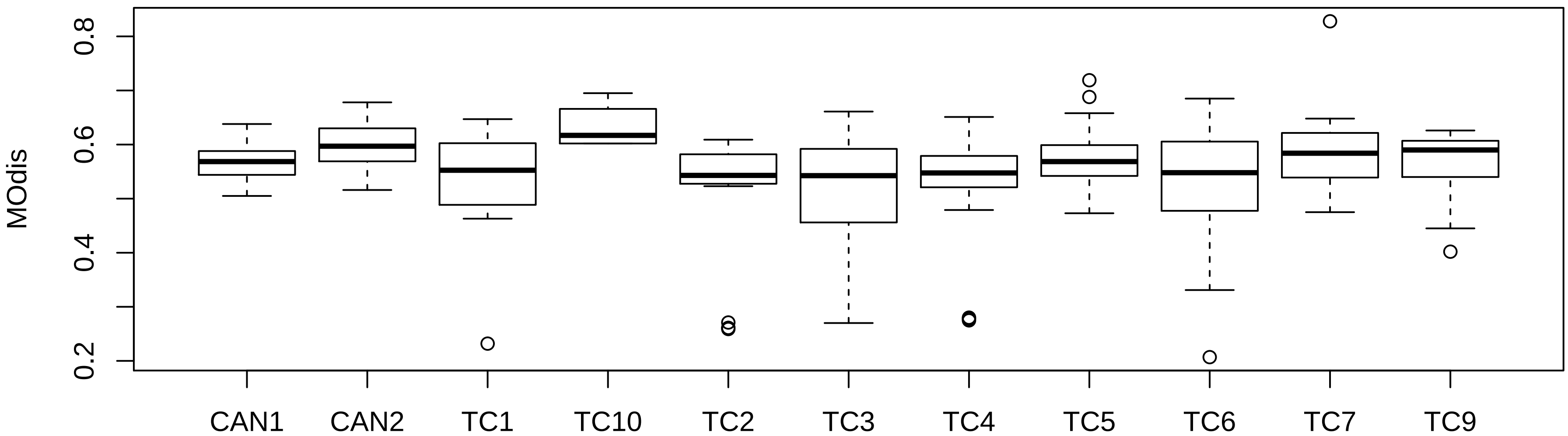
Log – MNtot
0.0
0.5
1.0
1.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

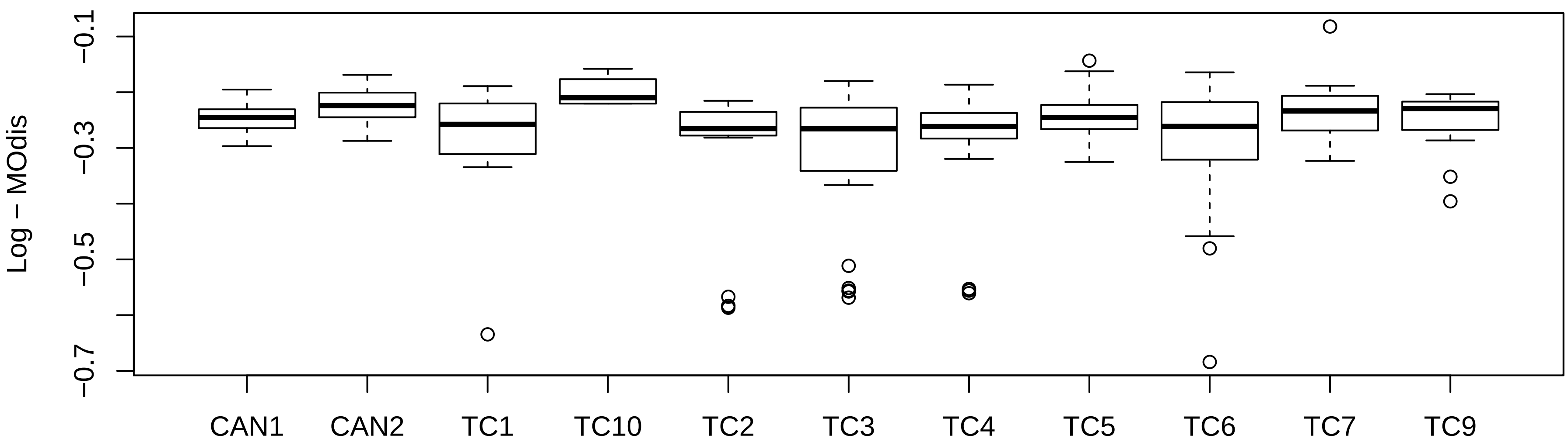

MOdis
Shapiro−Wilk test: W = 0.845; P−value = 0
MOdis
Normal variate

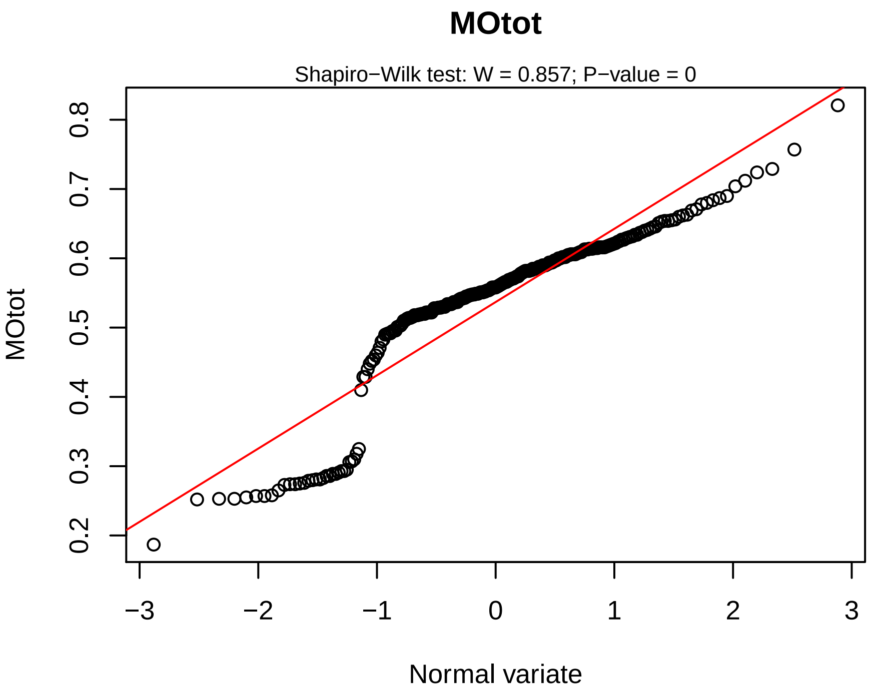

Log − MOdis
Shapiro−Wilk test: W = 0.728; P−value = 0
Log − MOdis
Normal variate

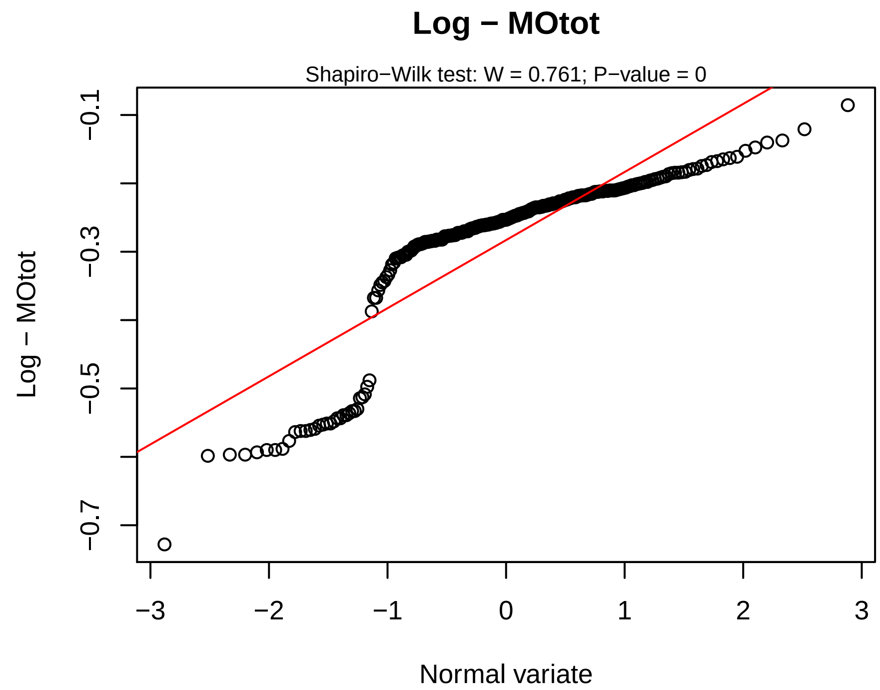

MOdis
Shor
Surf
Bot
L
M
R

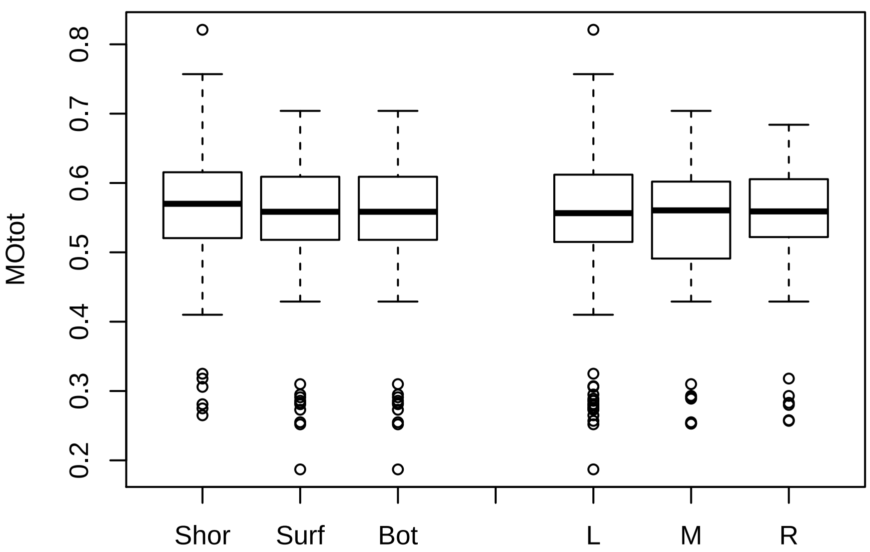

Log − MOdis
Shor
Surf
Bot
L
M
R

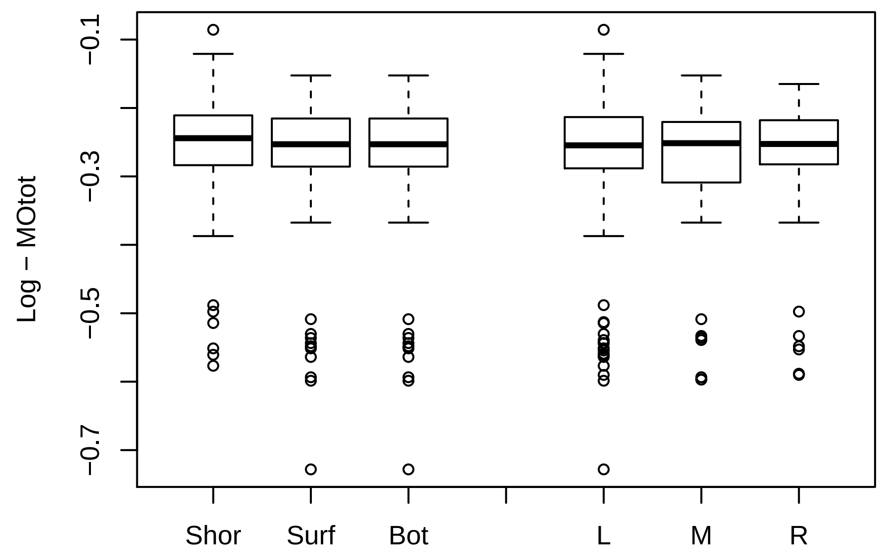

MOdis
0.2
0.4
0.6
0.8
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

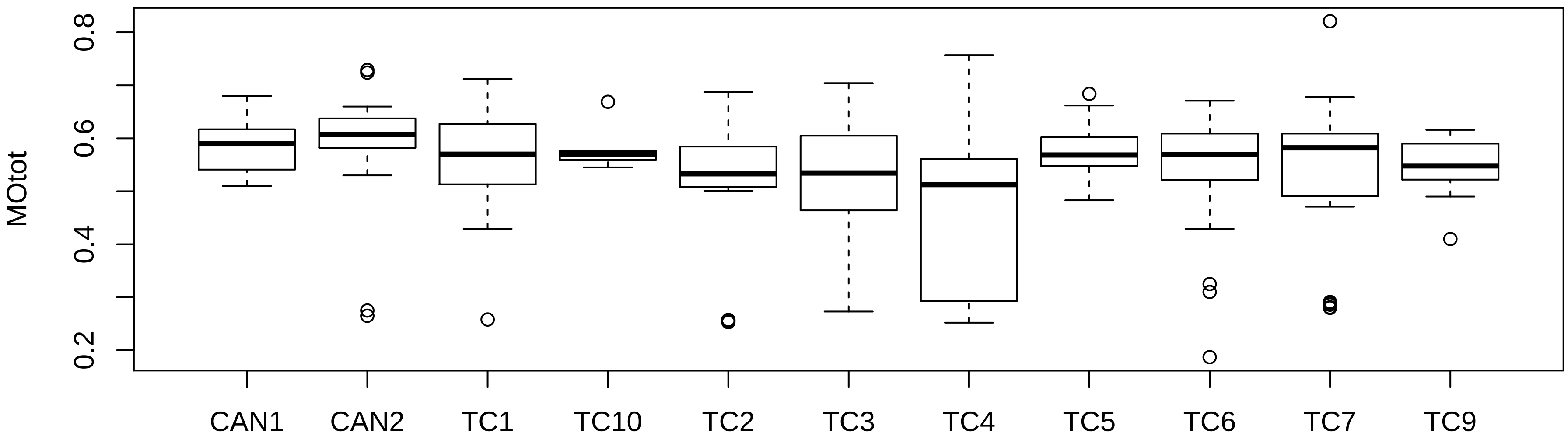

Log – MOdis
−0.7
−0.5
−0.3
−0.1
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


MOtot
Shapiro−Wilk test: W = 0.857; P−value = 0
MOtot
Normal variate

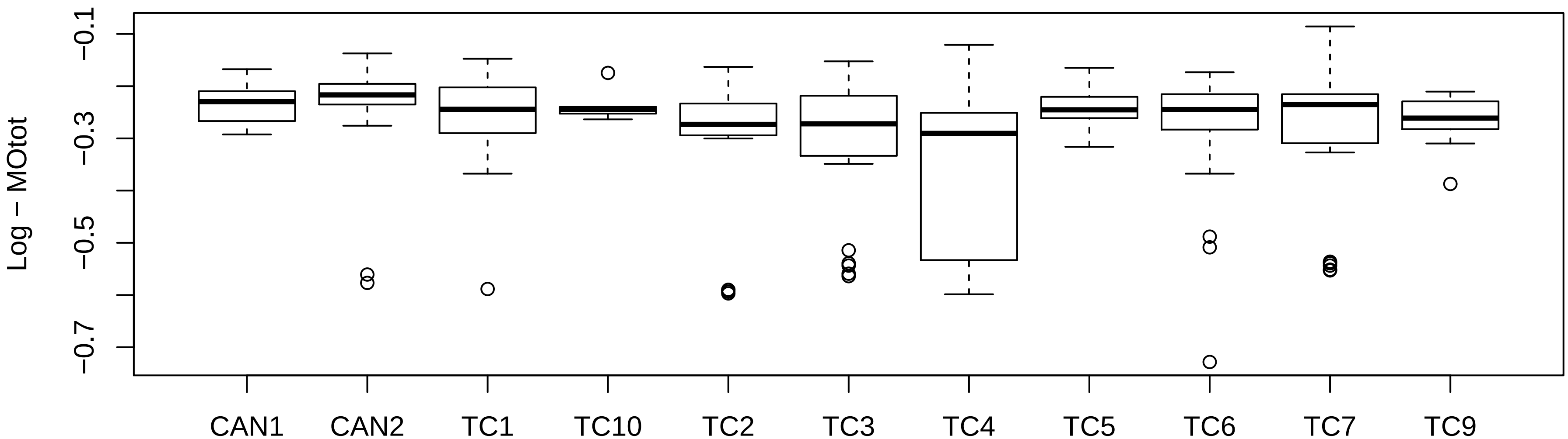

Log − MOtot
Shapiro−Wilk test: W = 0.761; P−value = 0
Log − MOtot
Normal variate


MOtot
Shor
Surf
Bot
L
M
R

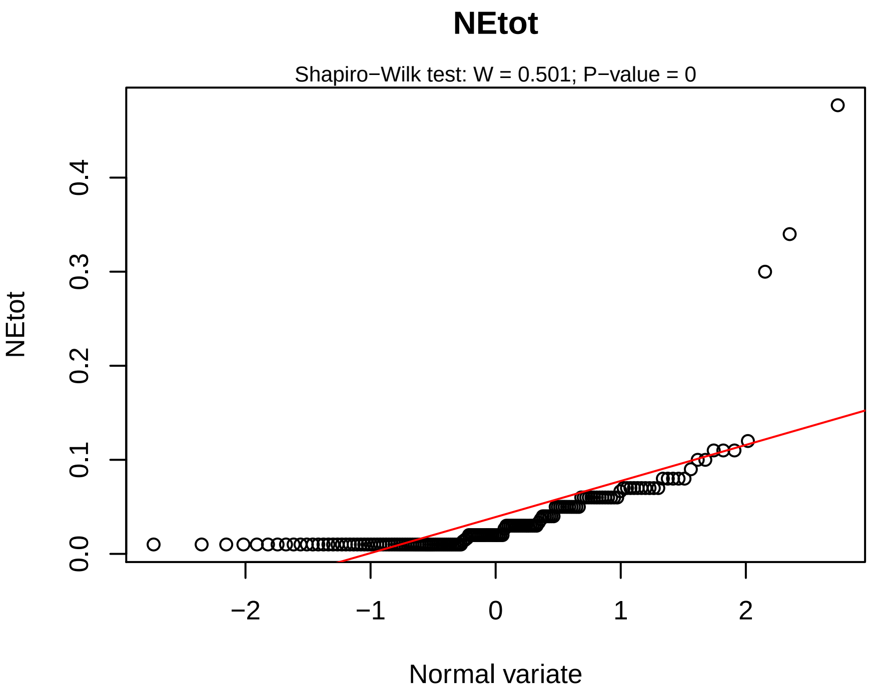

Log − MOtot
Shor
Surf
Bot
L
M
R

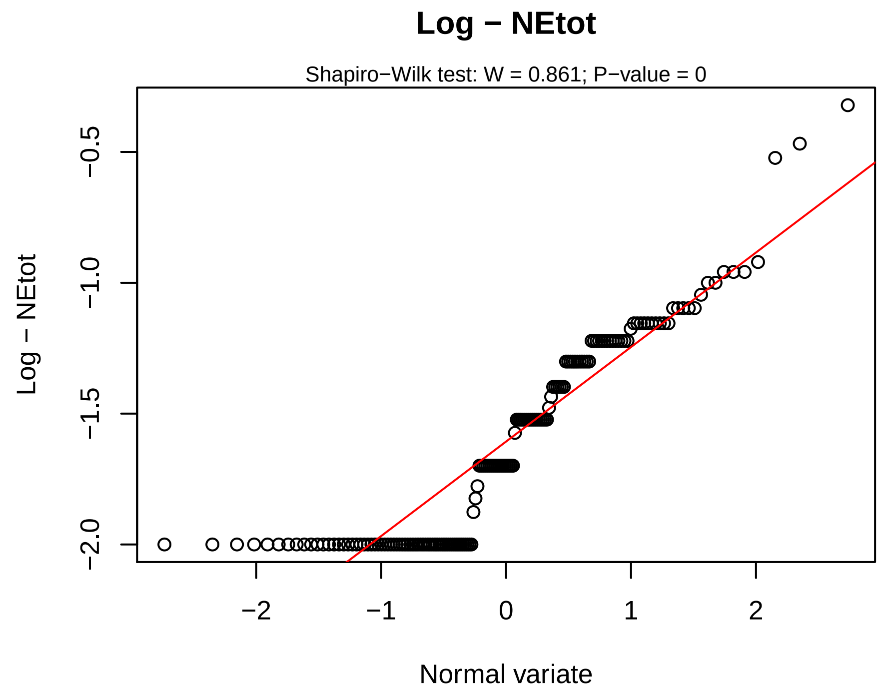


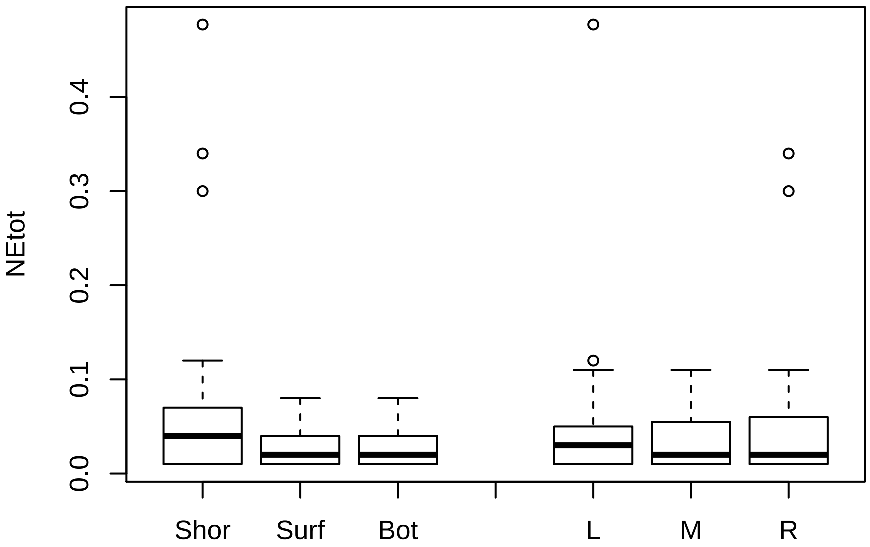
MOtot
0.2
0.4
0.6
0.8
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

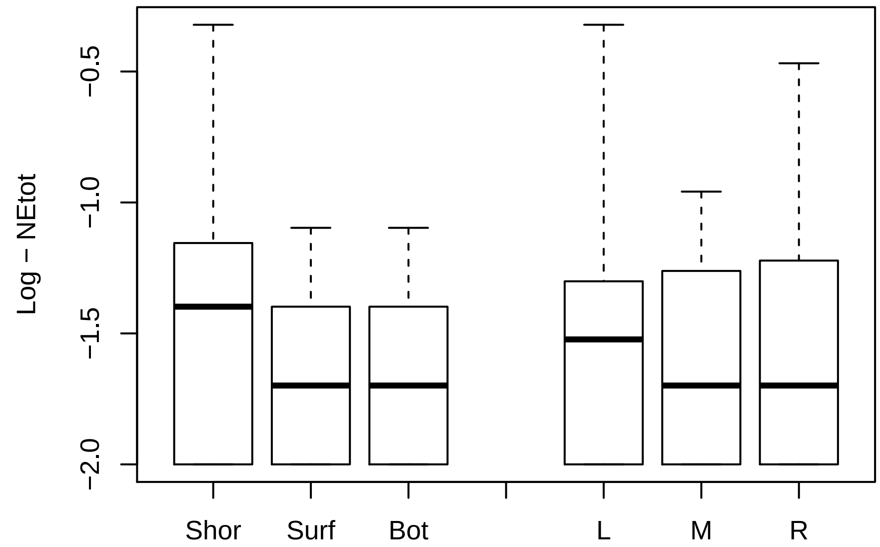


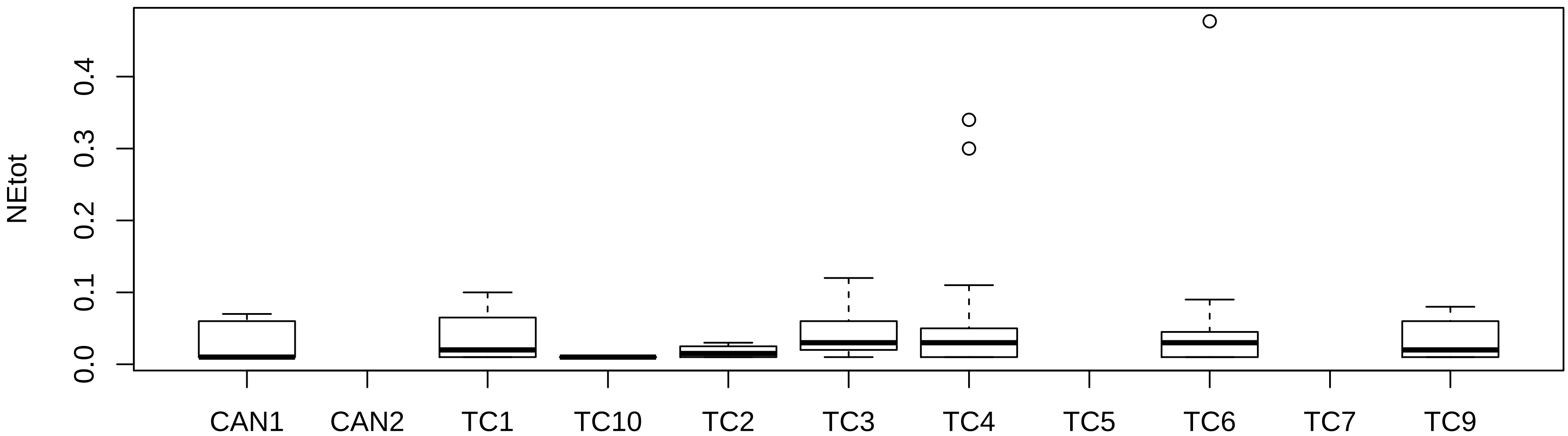
Log – MOtot
−0.7
−0.5
−0.3
−0.1
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

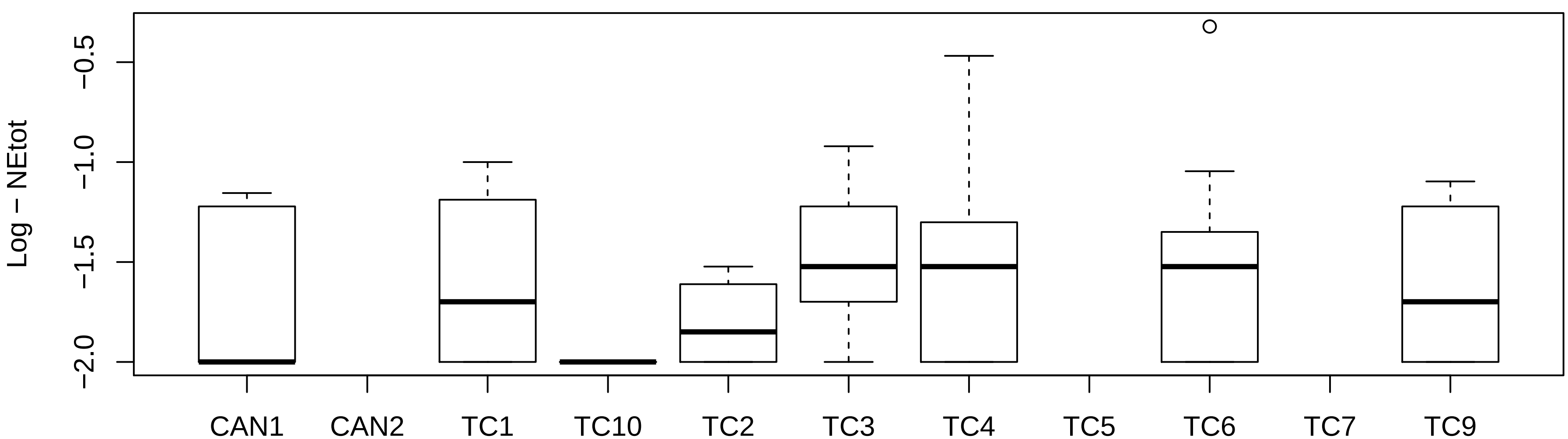

NEtot
Shapiro−Wilk test: W = 0.501; P−value = 0
NEtot
0.0
0.1
0.2
0.3
0.4
−2
−1
0
1
2
Normal variate

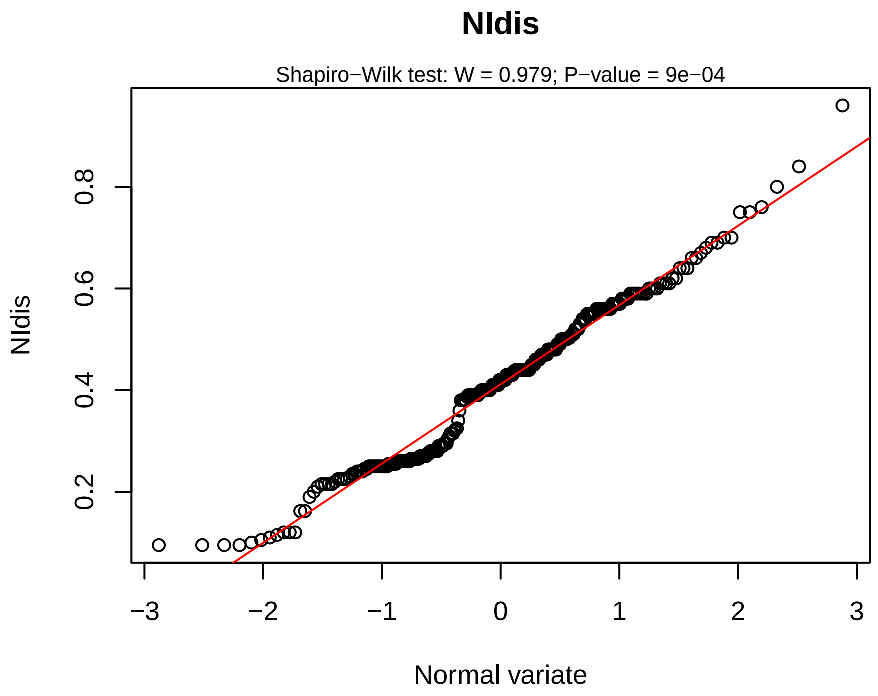

Log − NEtot
Shapiro−Wilk test: W = 0.861; P−value = 0
Log − NEtot
−2.0
−1.5
−1.0
−0.5
−2
−1
0
1
2
Normal variate

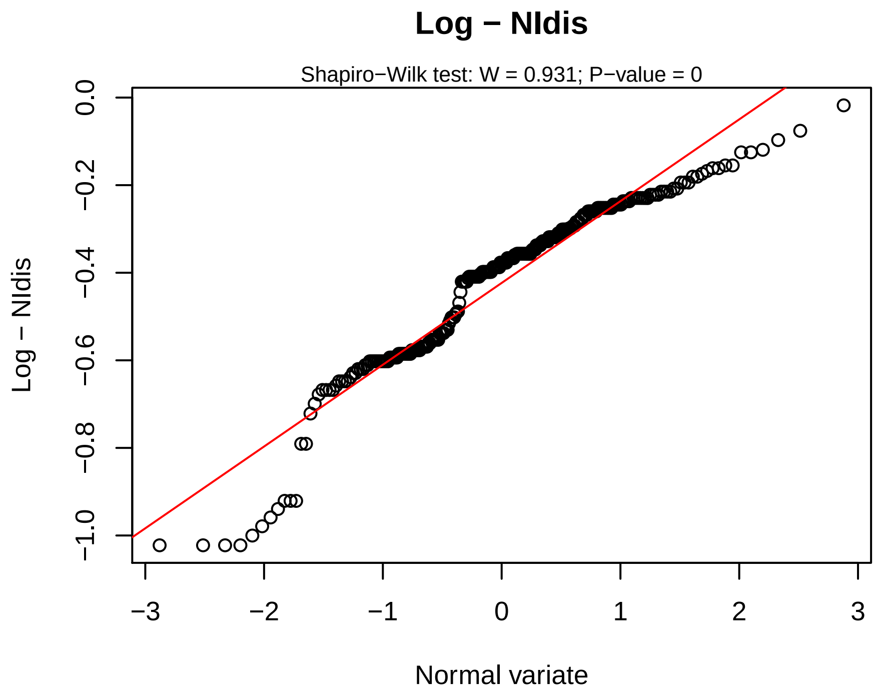

NEtot
0.0
0.1
0.2
0.3
0.4
Shor
Surf
Bot
L
M
R

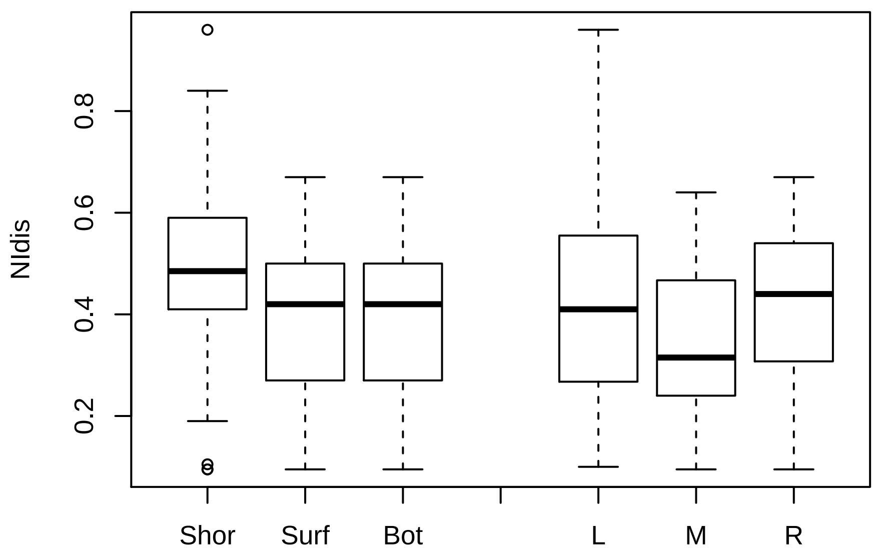

Log − NEtot
−2.0
−1.5
−1.0
−0.5
Shor
Surf
Bot
L
M
R

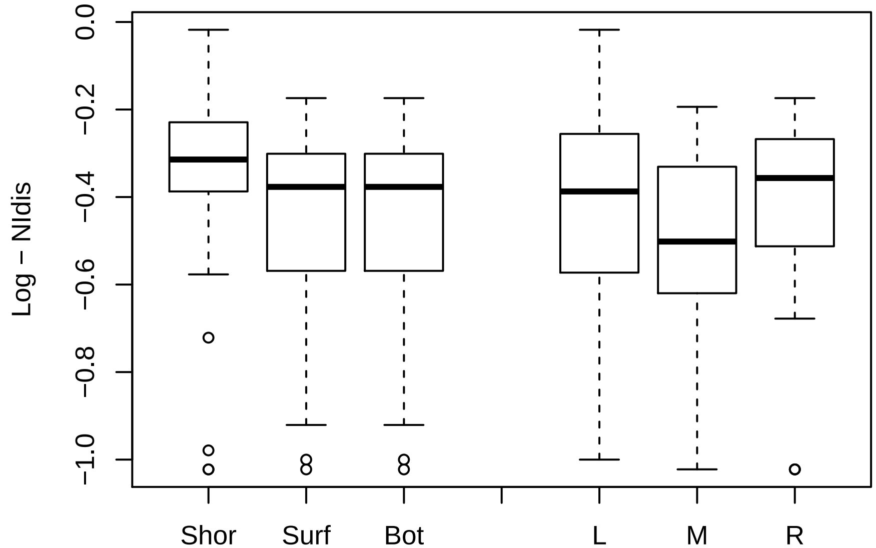

NEtot
0.0
0.1
0.2
0.3
0.4
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

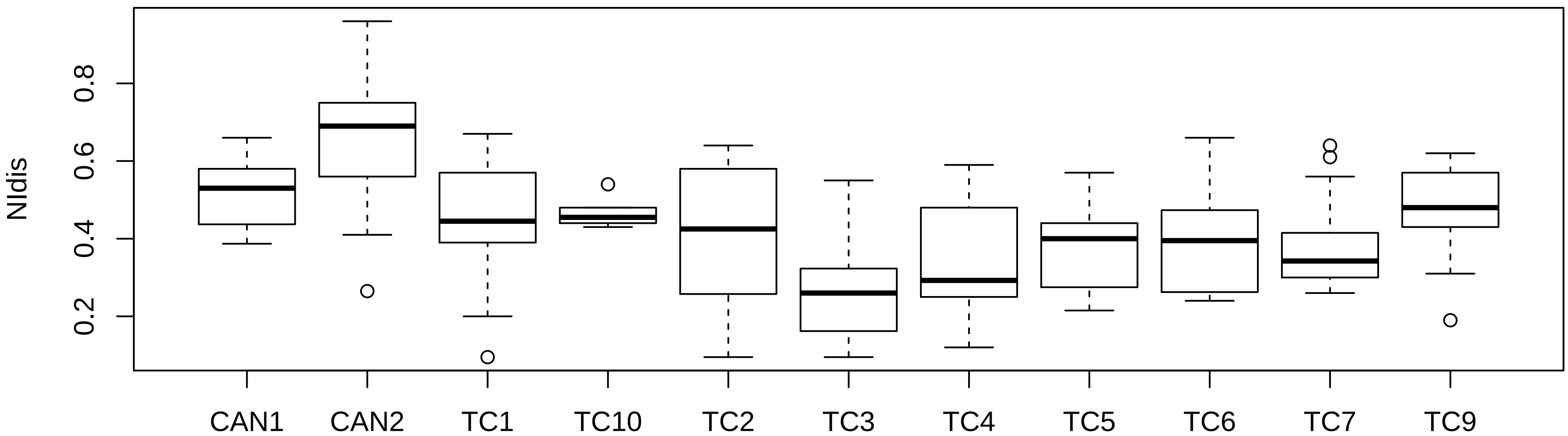

Log − NEtot
−2.0
−1.5
−1.0
−0.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

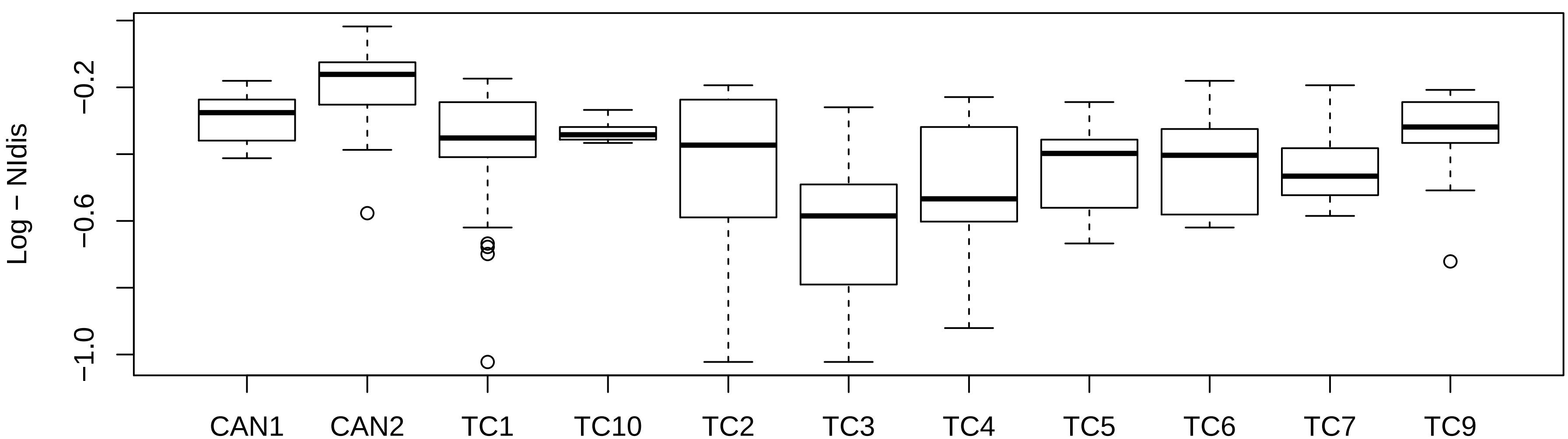

NIdis
Shapiro−Wilk test: W = 0.979; P−value = 9e−04
NIdis
Normal variate

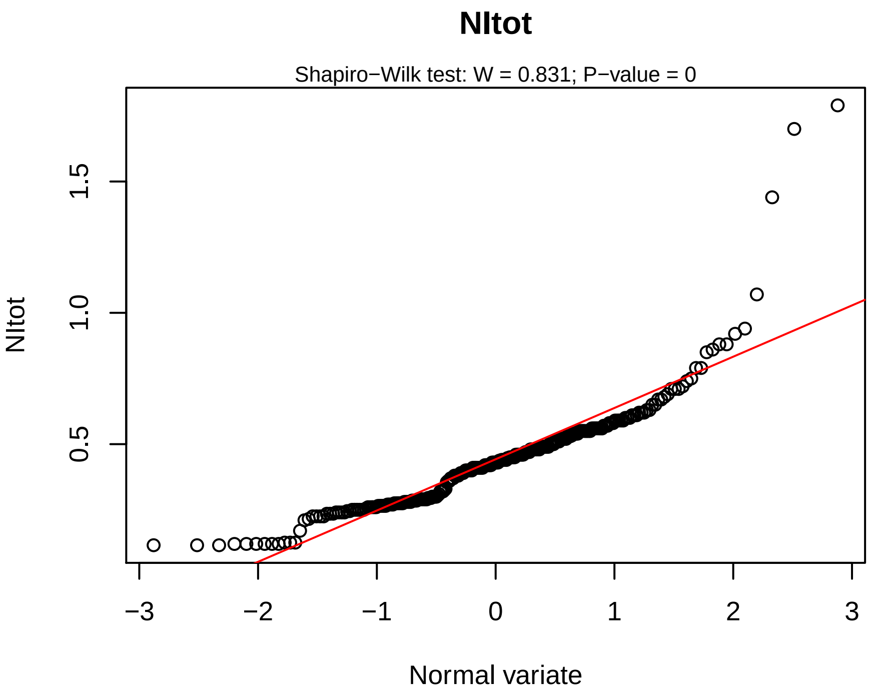

Log − NIdis
Shapiro−Wilk test: W = 0.931; P−value = 0
Log − NIdis
Normal variate

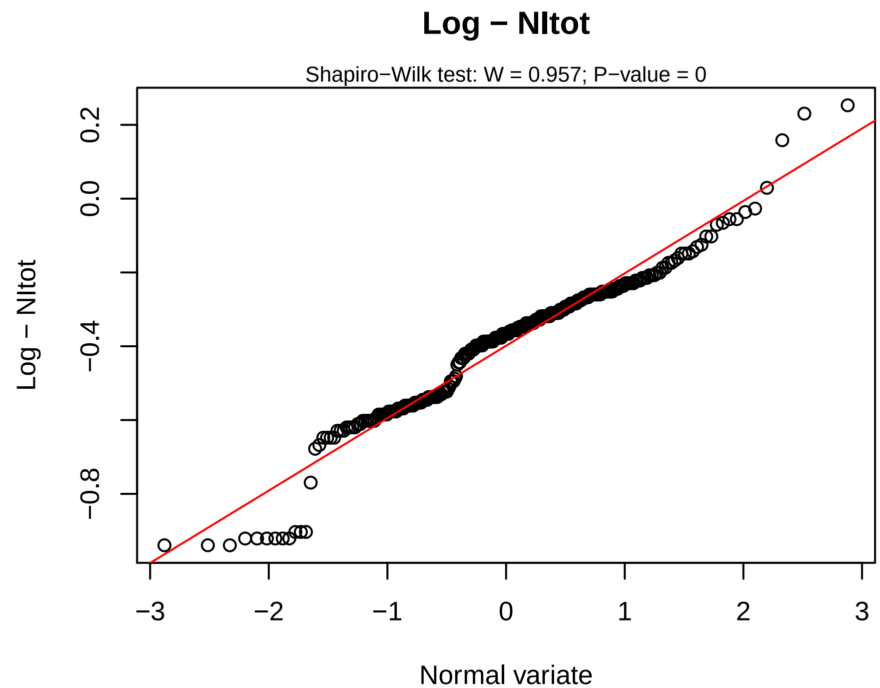

NIdis
Shor
Surf
Bot
L
M
R

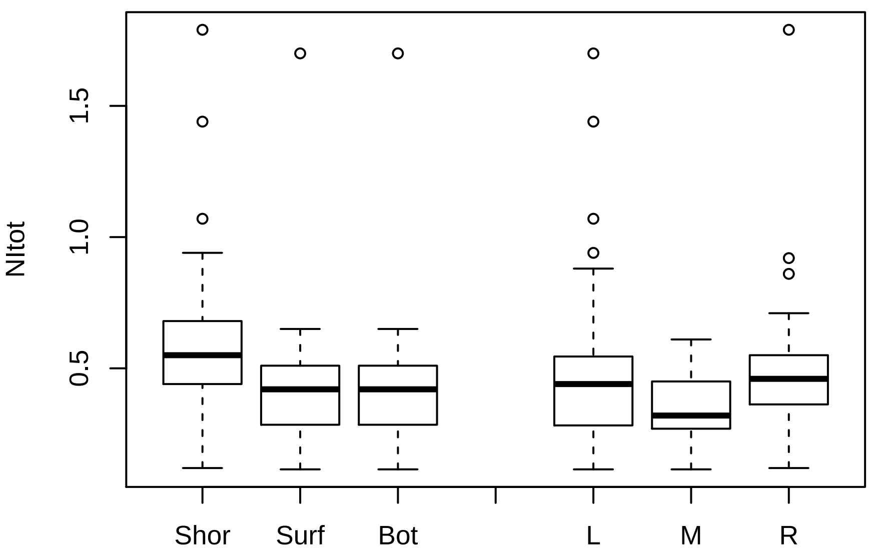

Log − NIdis
Shor
Surf
Bot
L
M
R

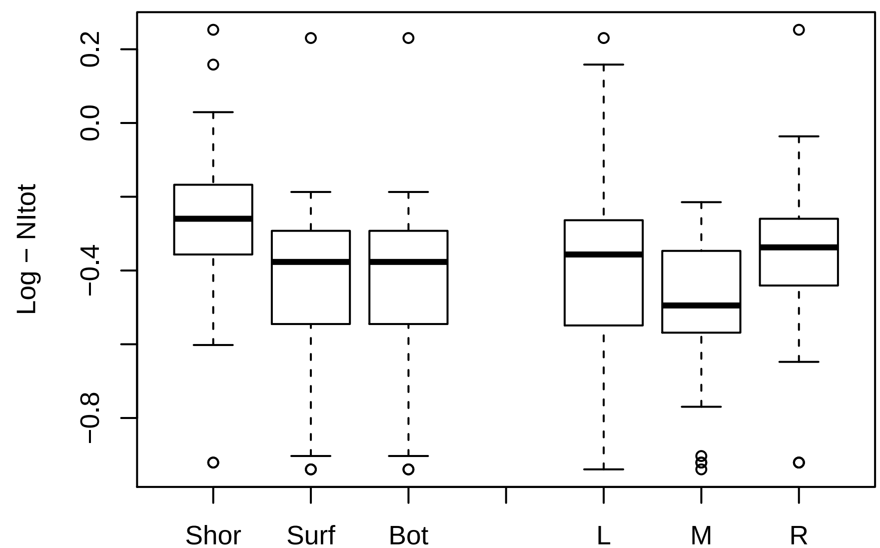

Nldis
0.2
0.4
0.6
0.8
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

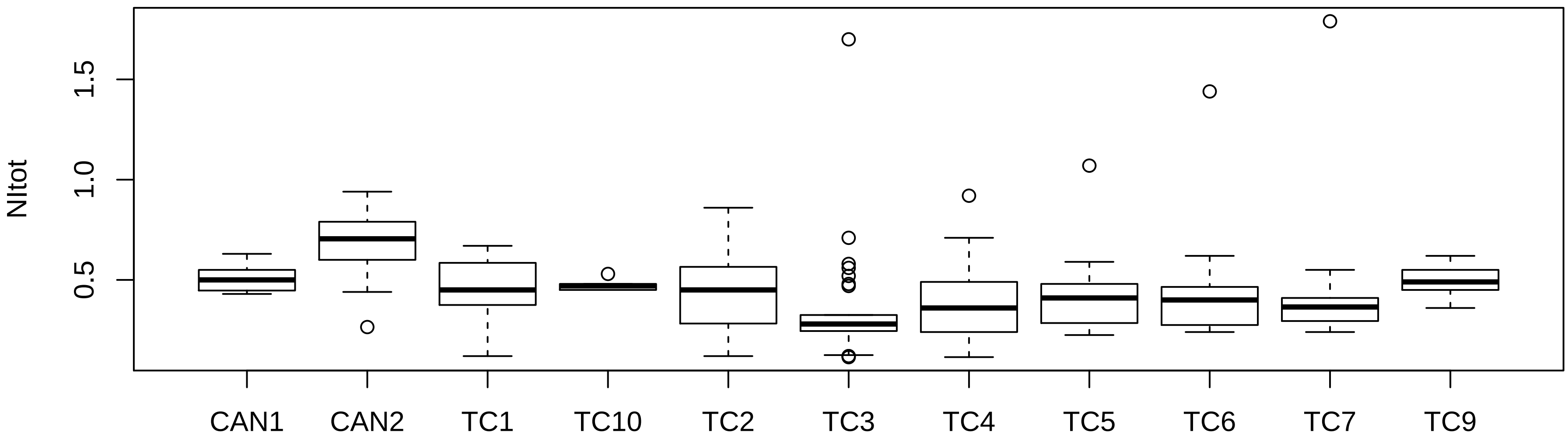

Log − Nldis
−1.0
−0.6
−0.2
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


NItot
Shapiro−Wilk test: W = 0.831; P−value = 0
NItot
0.5
1.0
1.5
−3
−2
−1
0
1
2
3
Normal variate

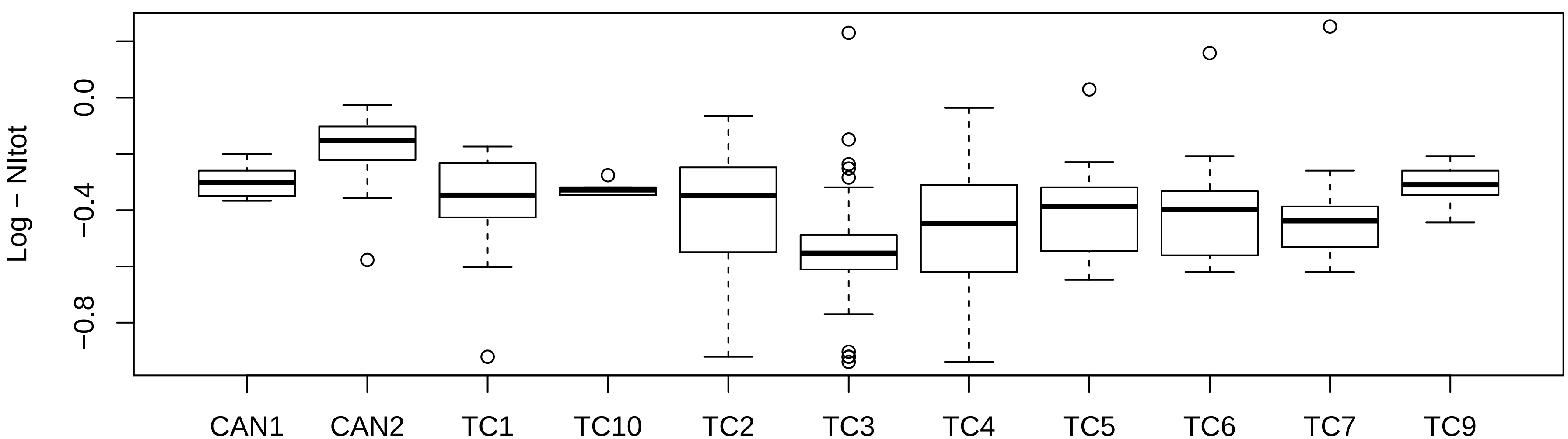

Log − NItot
Shapiro−Wilk test: W = 0.957; P−value = 0
Log − NItot
−0.8
−0.4
0.0
0.2
−3
−2
−1
0
1
2
3
Normal variate


NItot
0.5
1.0
1.5
Shor
Surf
Bot
L
M
R

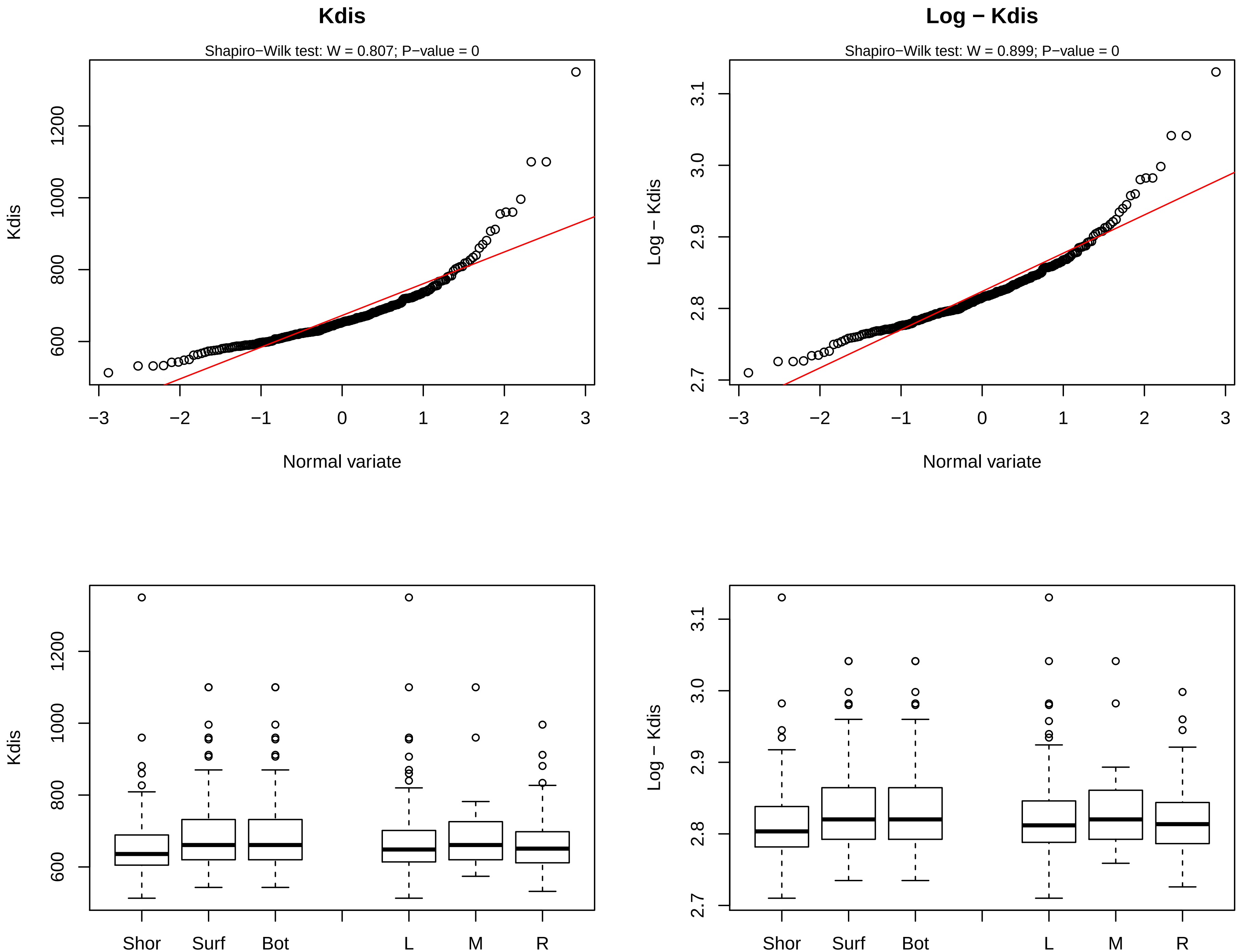

Log − NItot
−0.8
−0.4
0.0
0.2
Shor
Surf
Bot
L
M
R

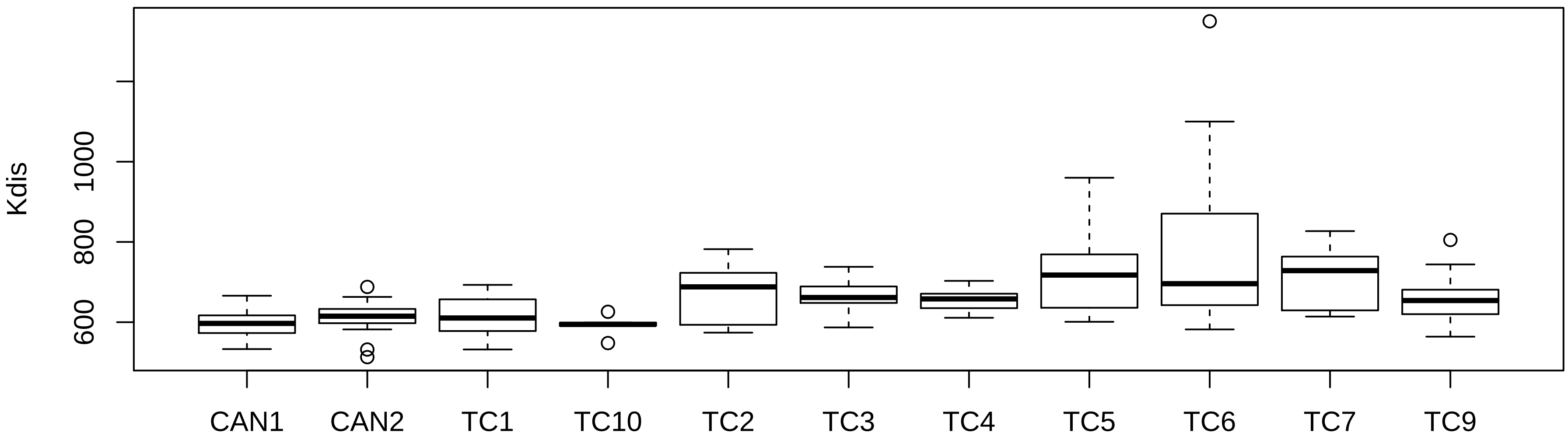


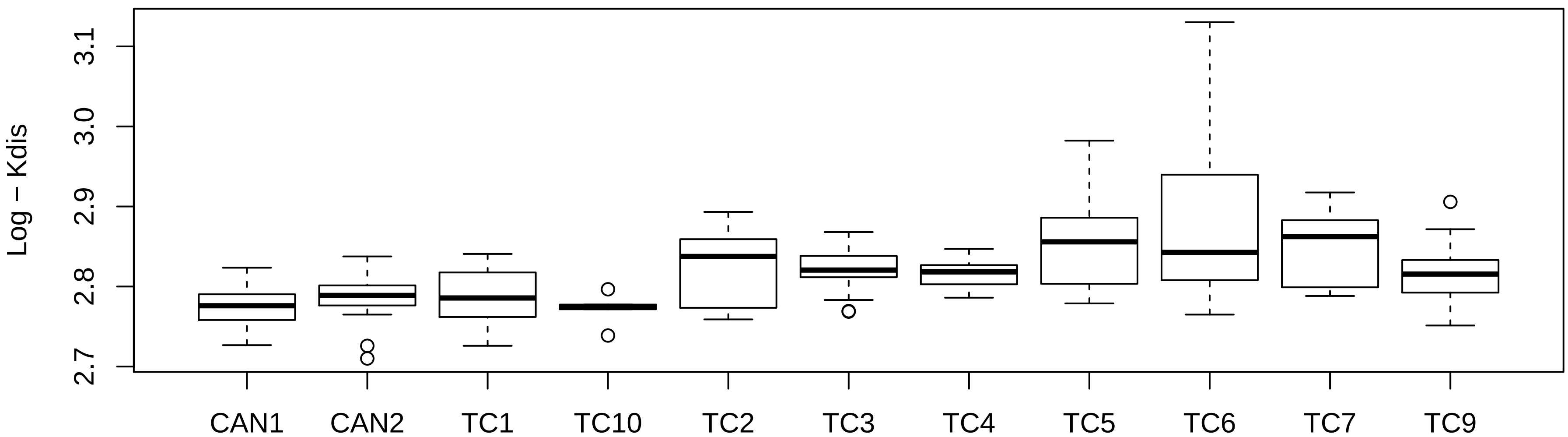
NItot
0.5
1.0
1.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

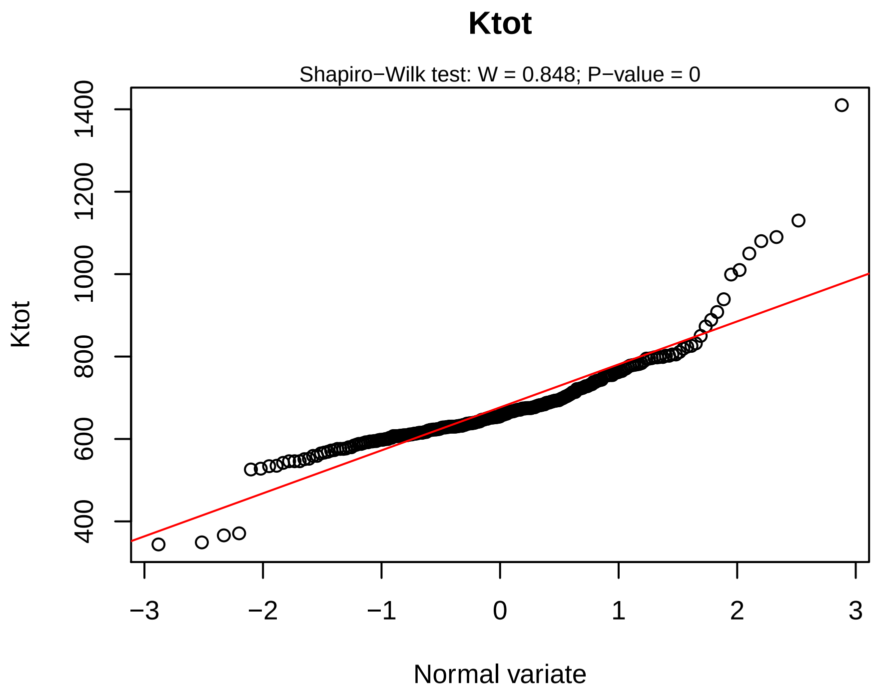


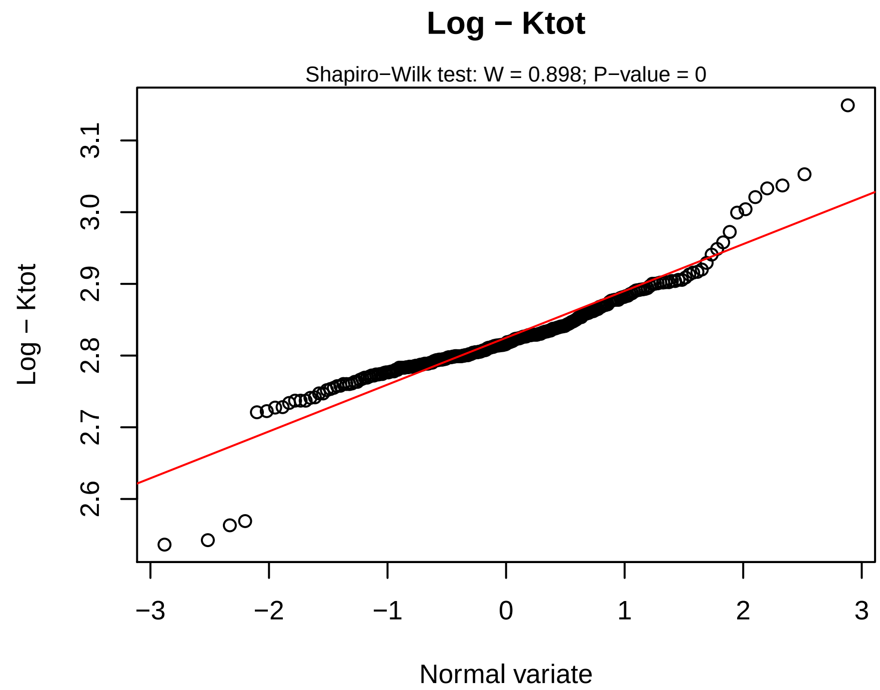
Log − NItot
−0.8
−0.4
0.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

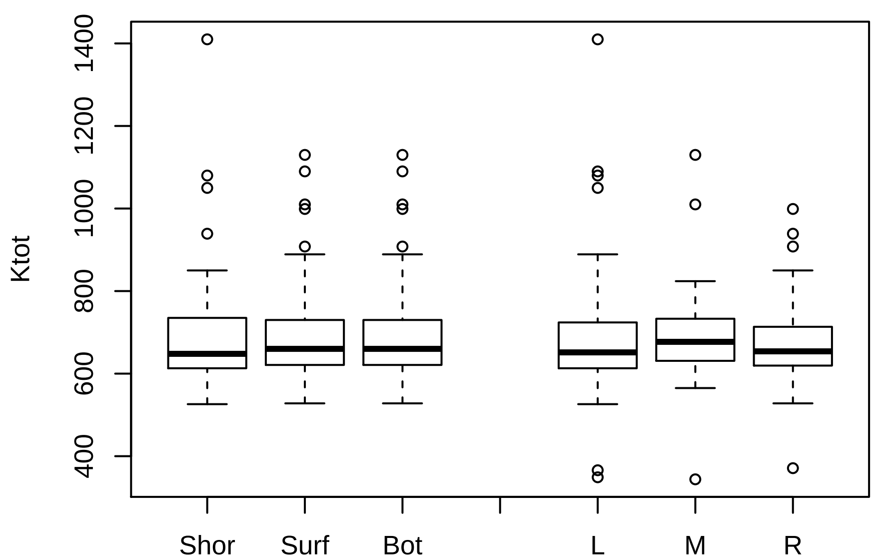

Kdis
Shapiro−Wilk test: W = 0.807; P−value = 0
Kdis
Normal variate
Log − Kdis
Shapiro−Wilk test: W = 0.899; P−value = 0
Log − Kdis
Normal variate
Kdis
Shor
Surf
Bot
L
M
R
Log − Kdis
Shor
Surf
Bot
L
M
R

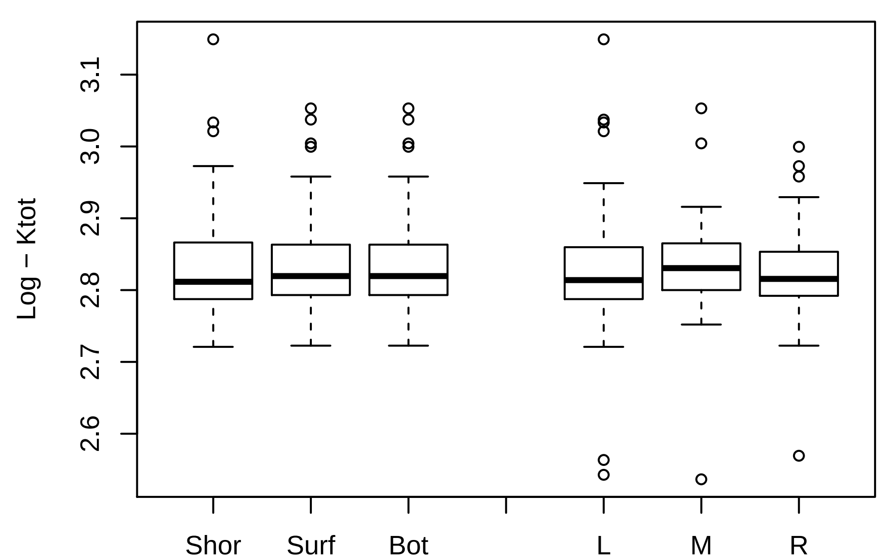

Kdis
600
800
1000
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

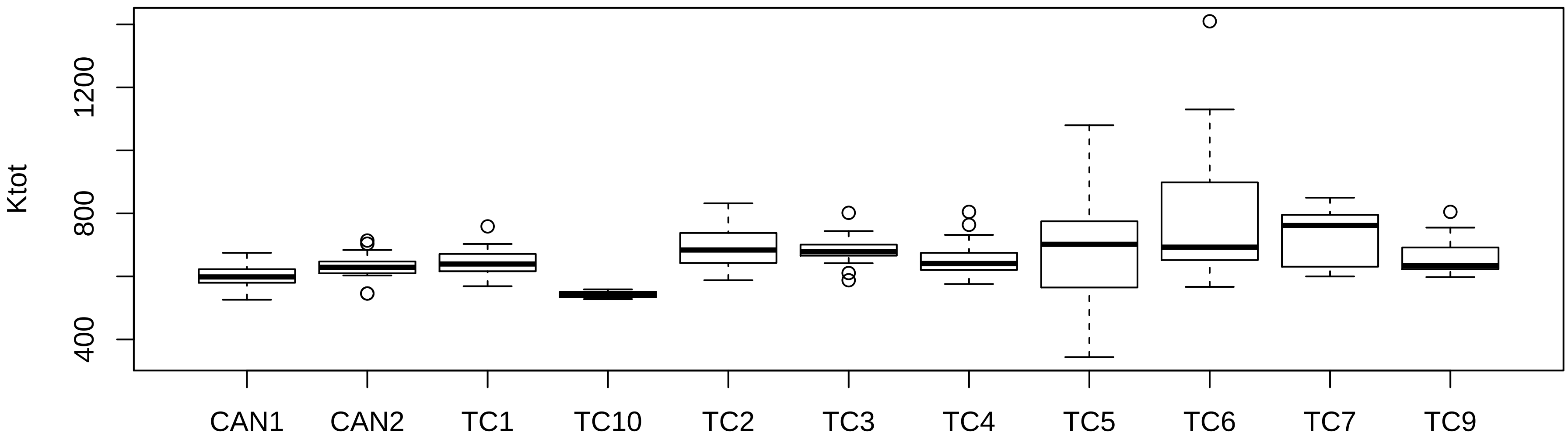

Log − Kdis
2.7
2.8
2.9
3.0
3.1
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


Ktot
Shapiro−Wilk test: W = 0.848; P−value = 0
Ktot
400
600
800
1000
1200
1400
−3
−2
−1
0
1
2
3
Normal variate

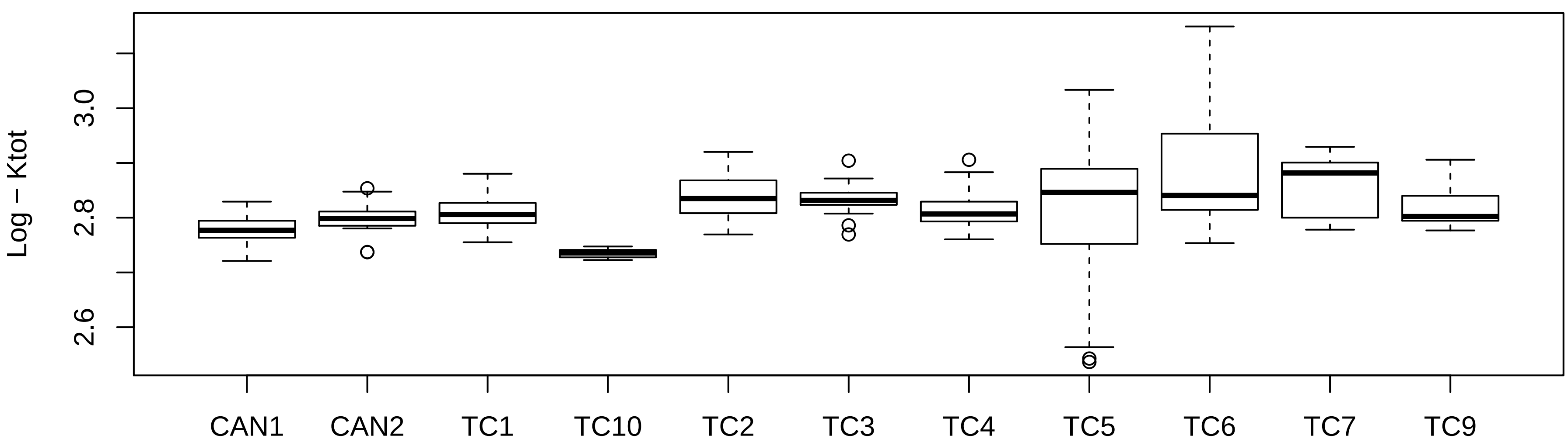

Log − Ktot
Shapiro−Wilk test: W = 0.898; P−value = 0
Log − Ktot
2.6
2.7
2.8
2.9
3.0
3.1
−3
−2
−1
0
1
2
3
Normal variate


Ktot
400
600
800
1000
1200
1400
Shor
Surf
Bot
L
M
R

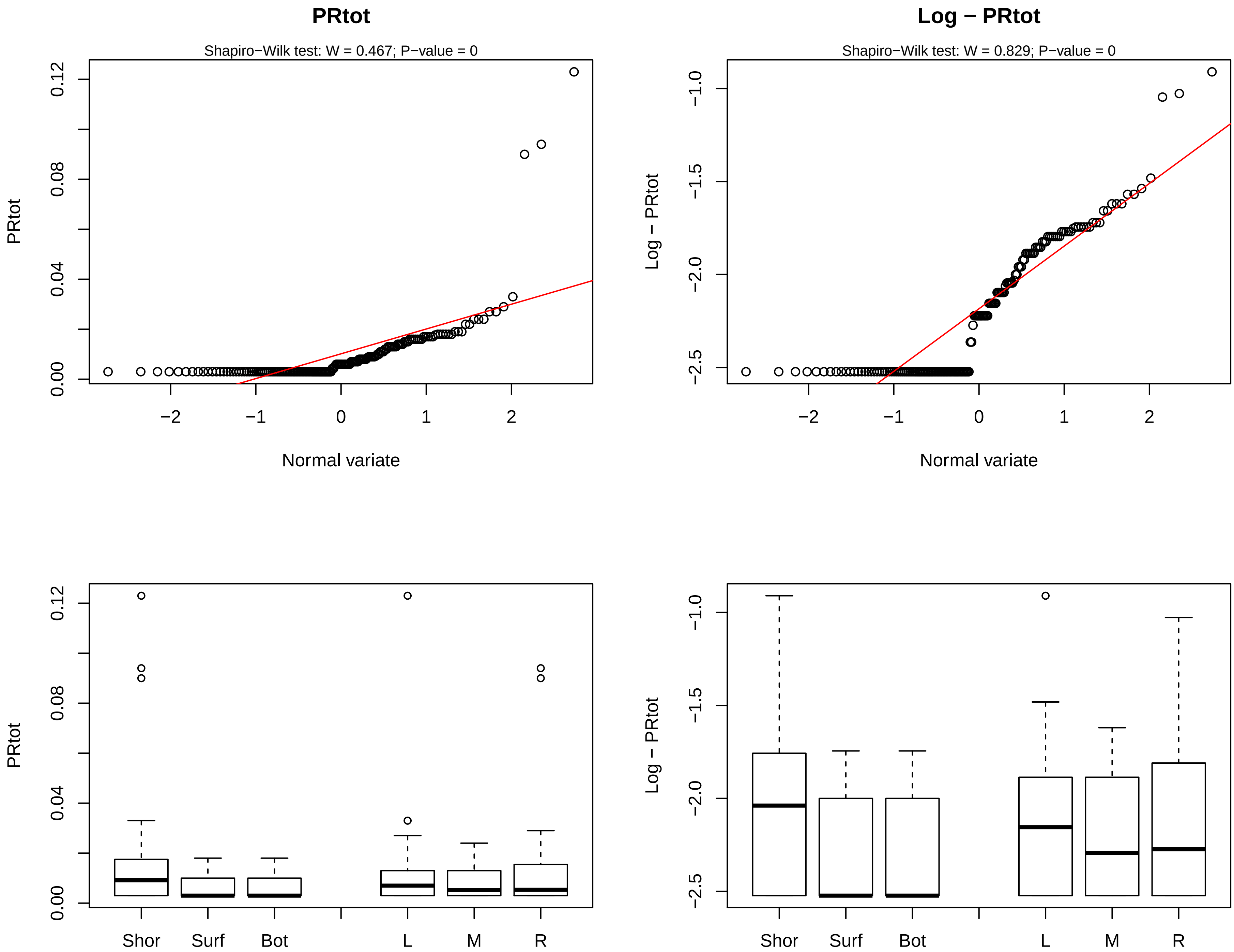

Log − Ktot
2.6
2.7
2.8
2.9
3.0
3.1
Shor
Surf
Bot
L
M
R

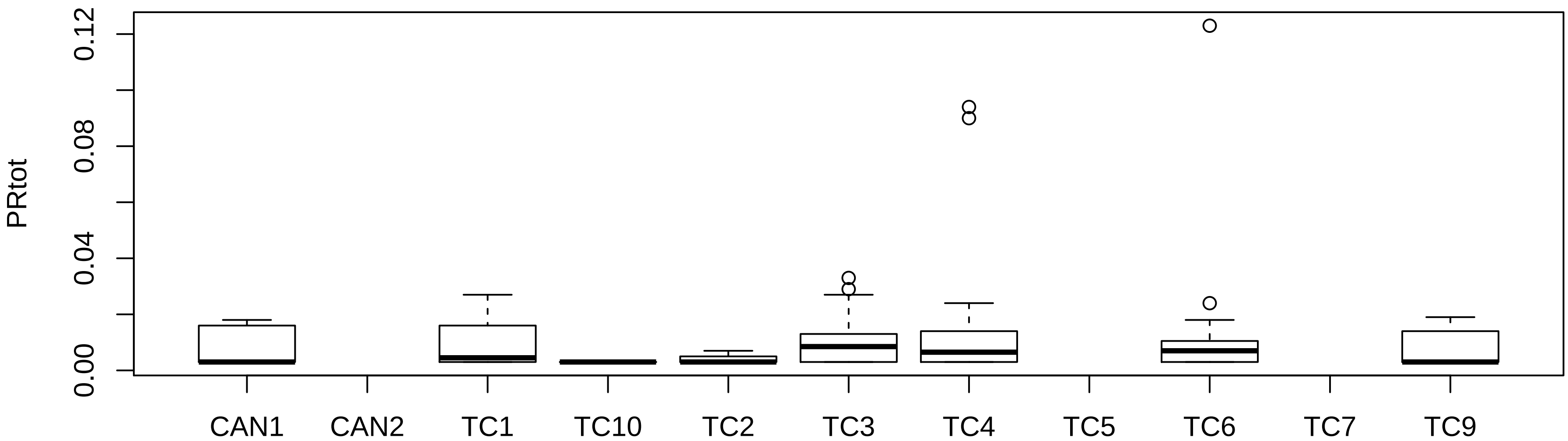


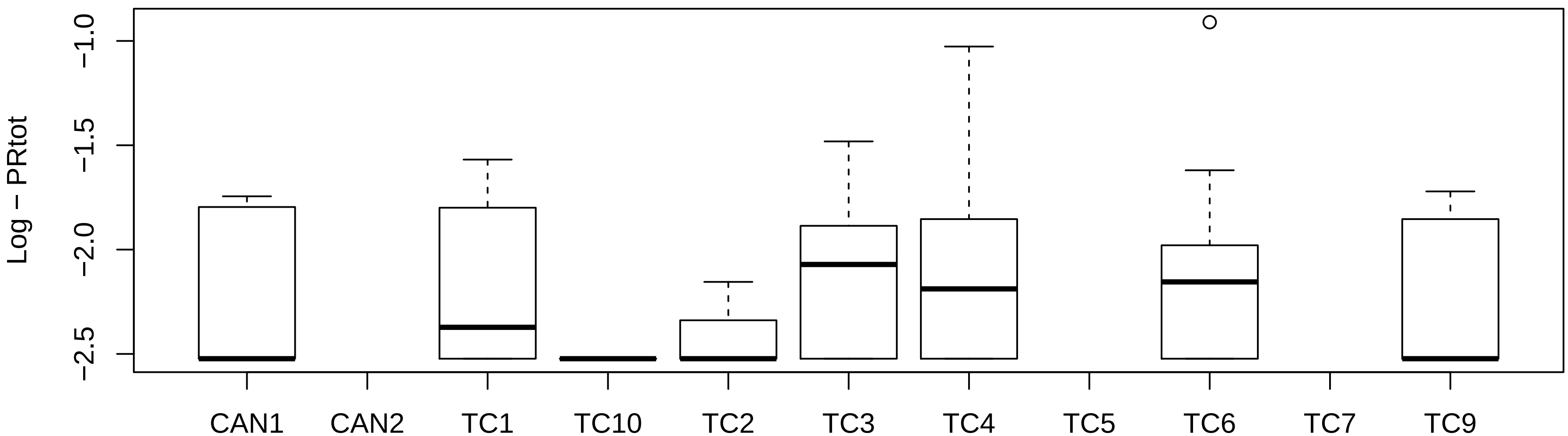
Ktot
400
800
1200
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

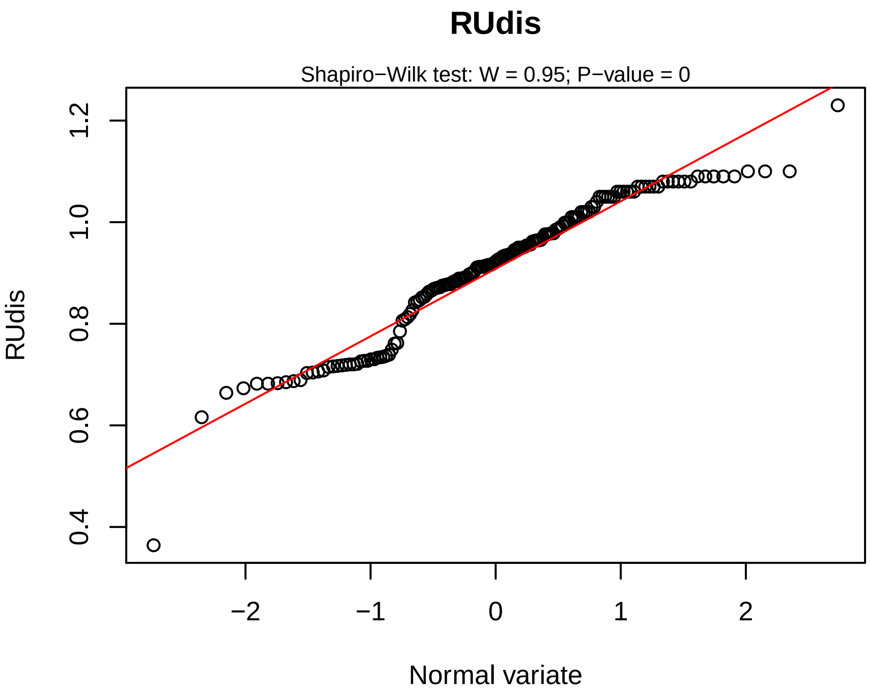


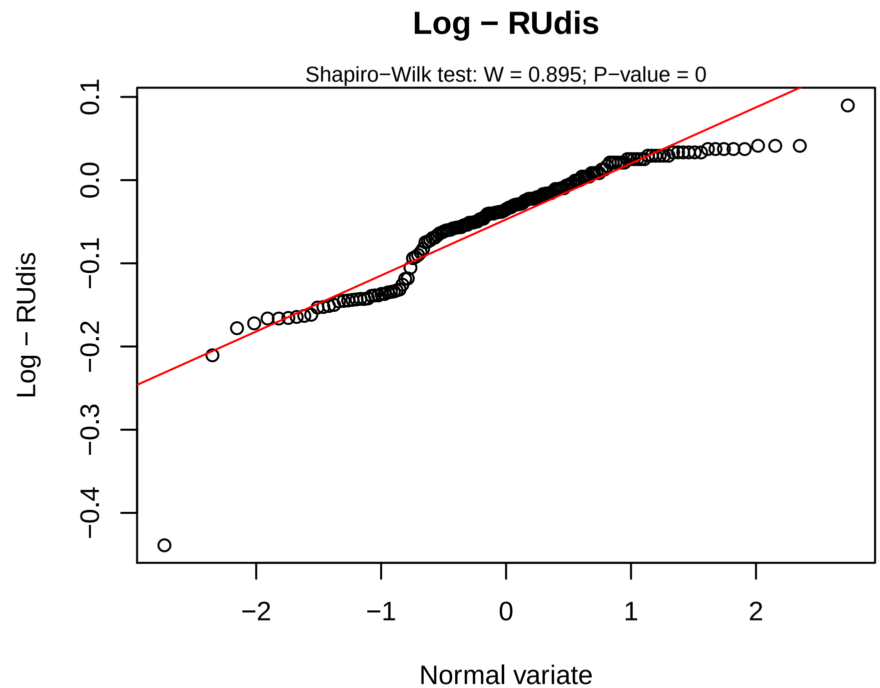
Log − Ktot
2.6
2.8
3.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

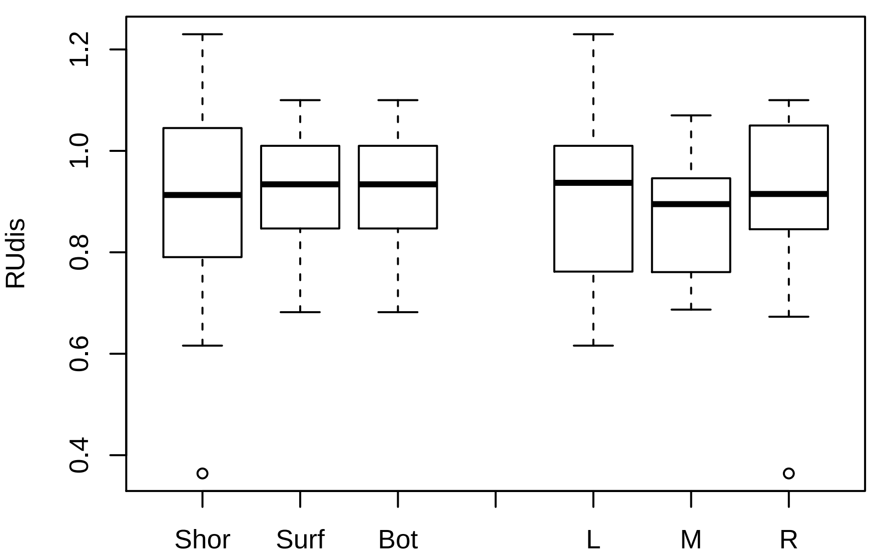

PRtot
Shapiro−Wilk test: W = 0.467; P−value = 0
PRtot
0.00
0.04
0.08
0.12
−2
−1
0
1
2
Normal variate
Log − PRtot
Shapiro−Wilk test: W = 0.829; P−value = 0
Log − PRtot
−2.5
−2.0
−1.5
−1.0
Normal variate
PRtot
Shor
Surf
Bot
L
M
R
Log − PRtot

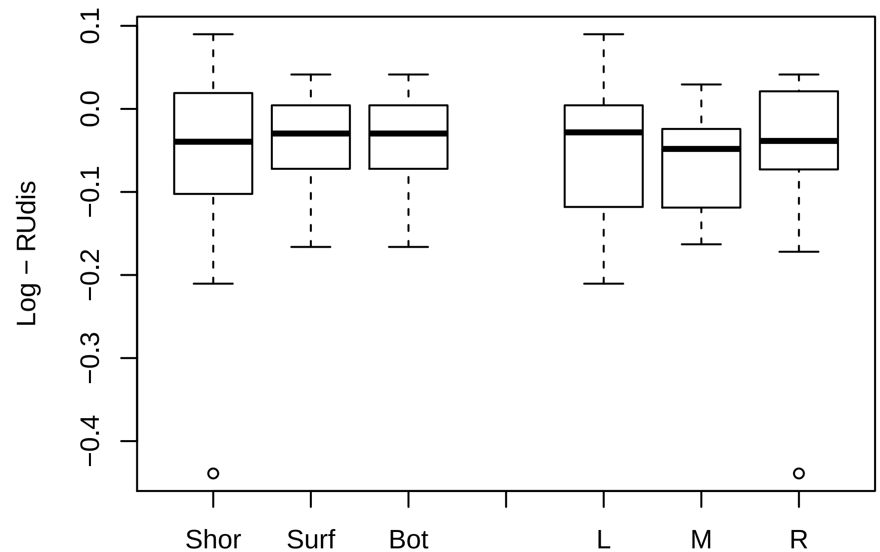

PRtot
0.00
0.04
0.08
0.12
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

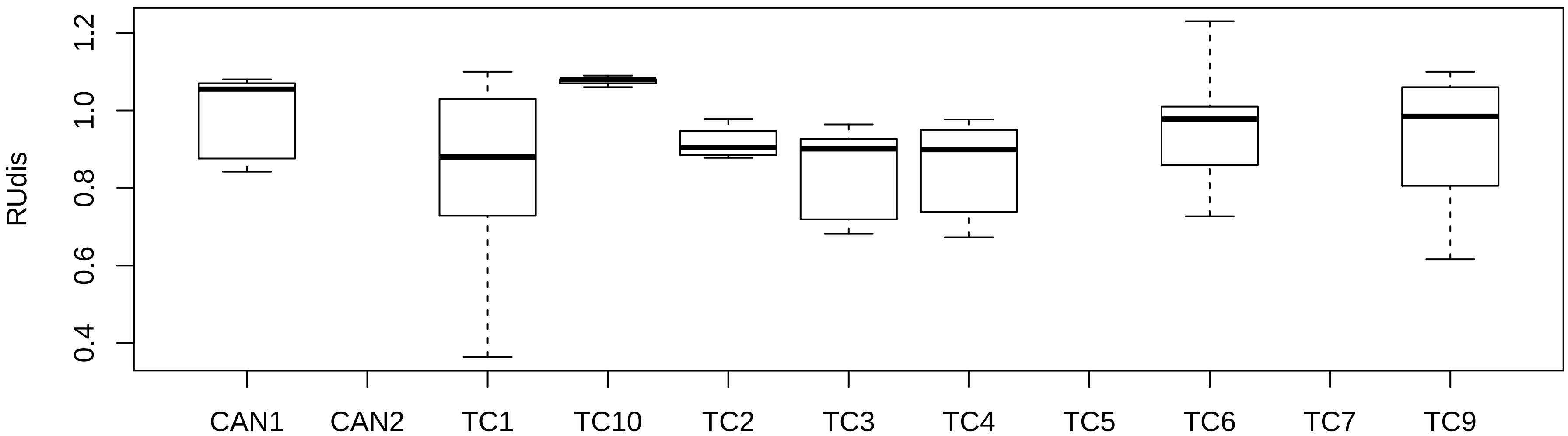

Log − PRtot
−2.5
−2.0
−1.5
−1.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

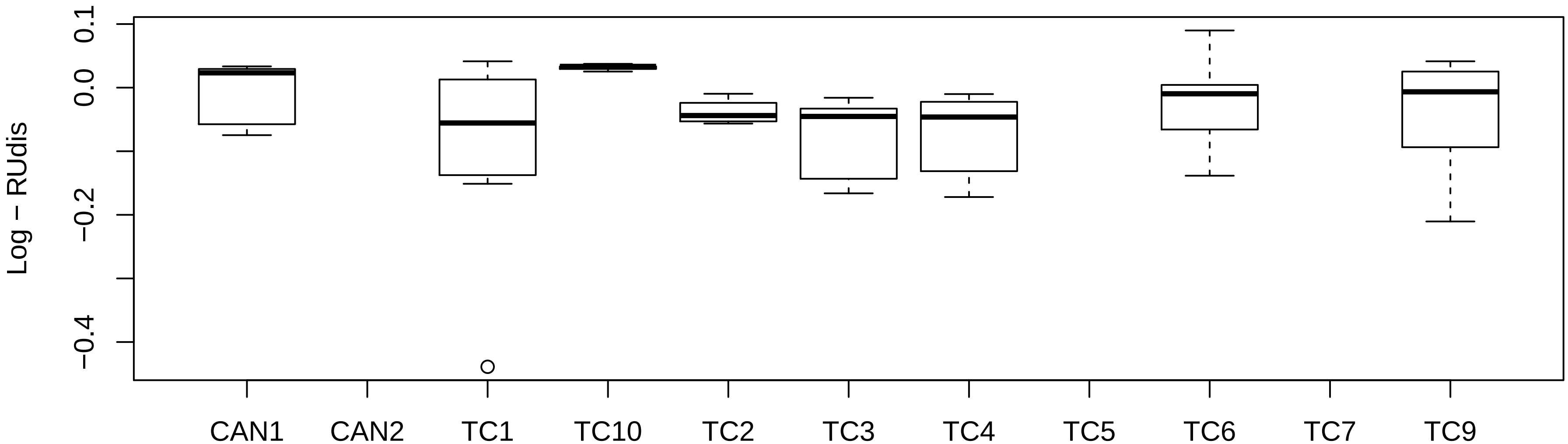

RUdis
Shapiro−Wilk test: W = 0.95; P−value = 0
RUdis
0.4
0.6
0.8
1.0
1.2
−2
−1
0
1
2
Normal variate

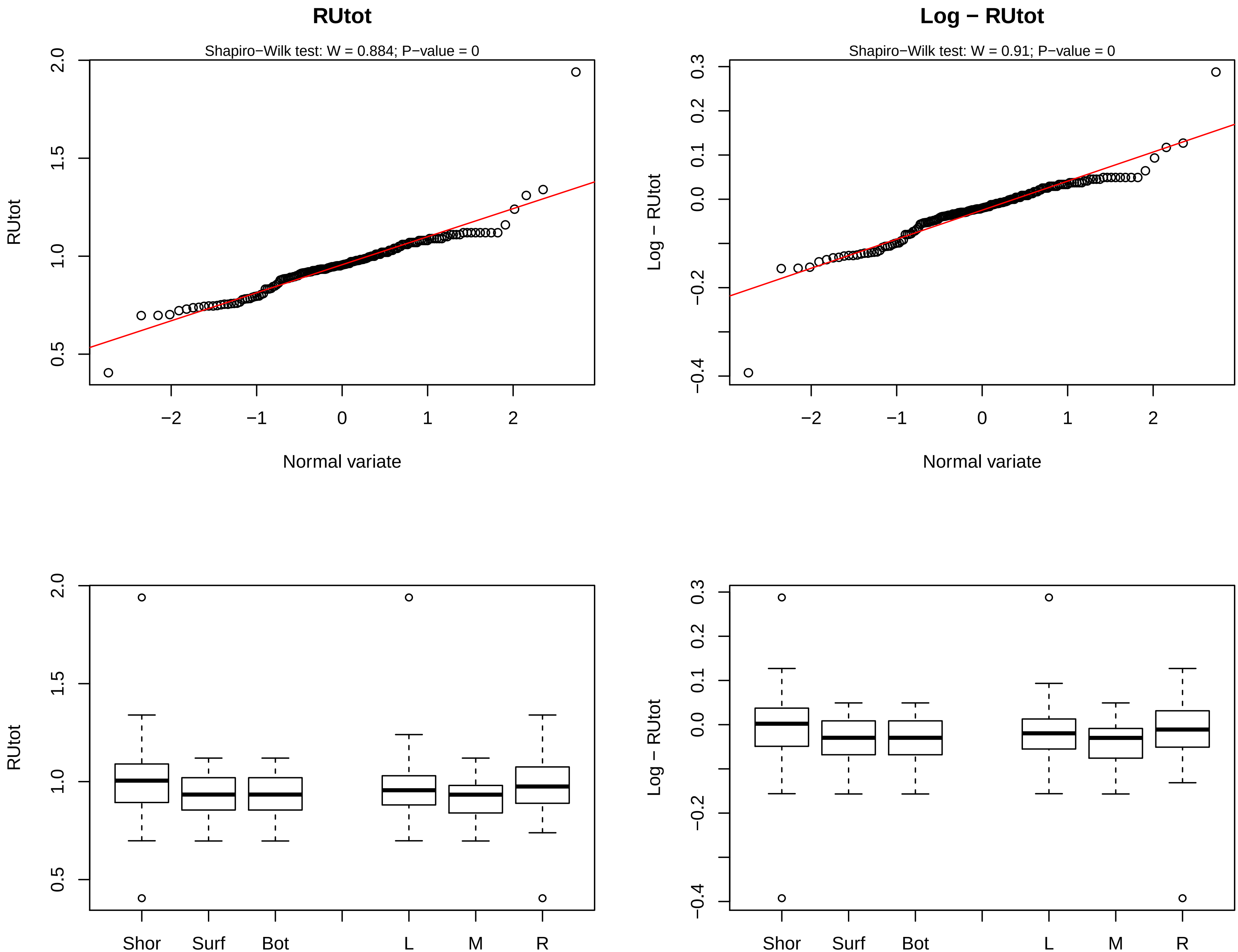

Log − RUdis
Shapiro−Wilk test: W = 0.895; P−value = 0
Log − RUdis
−0.4
−0.3
−0.2
−0.1
0.0
0.1
−2
−1
0
1
2
Normal variate


RUdis
0.4
0.6
0.8
1.0
1.2
Shor
Surf
Bot
L
M
R

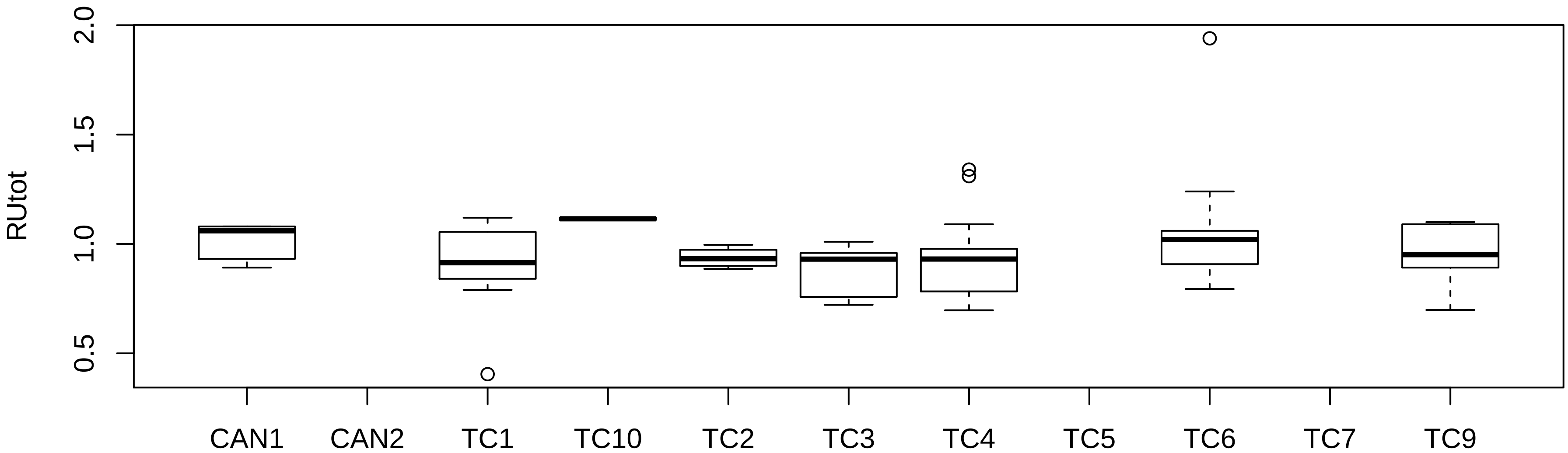

Log − RUdis
−0.4
−0.3
−0.2
−0.1
0.0
0.1
Shor
Surf
Bot
L
M
R

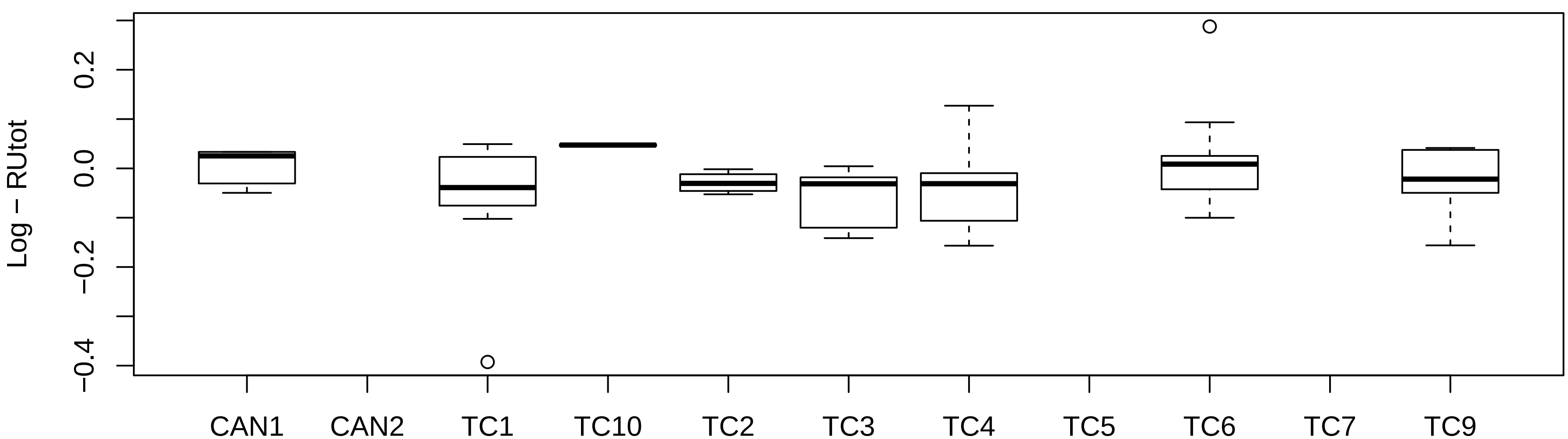

RUdis
0.4
0.6
0.8
1.0
1.2
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

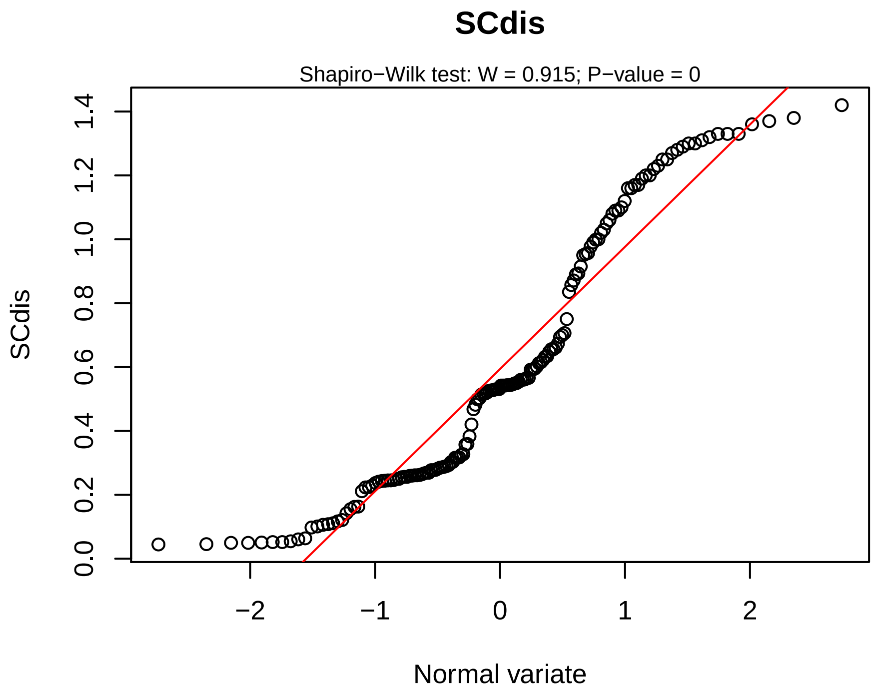

Log – RUdis
−0.4
−0.2
0.0
0.1
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

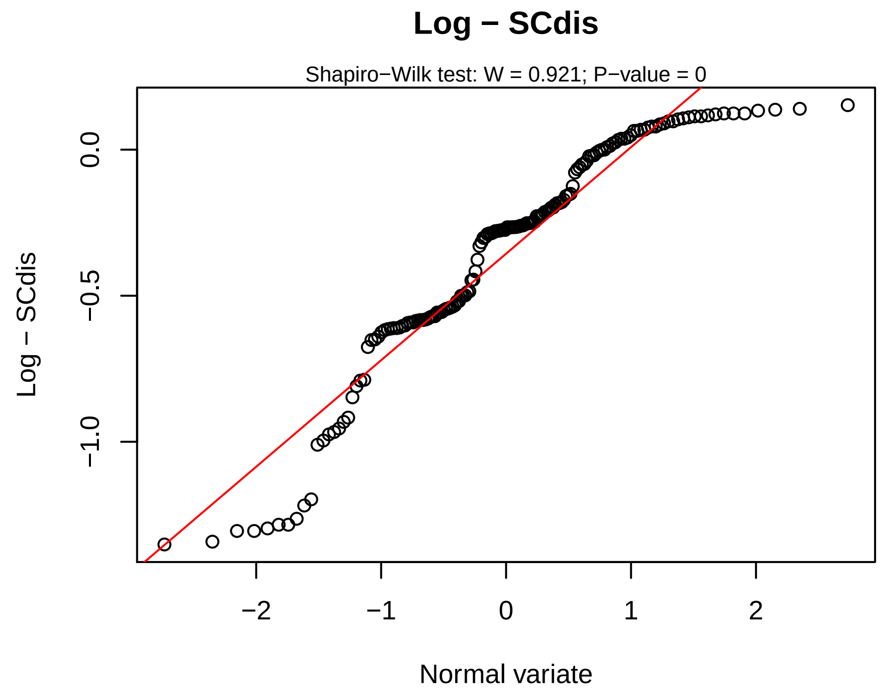


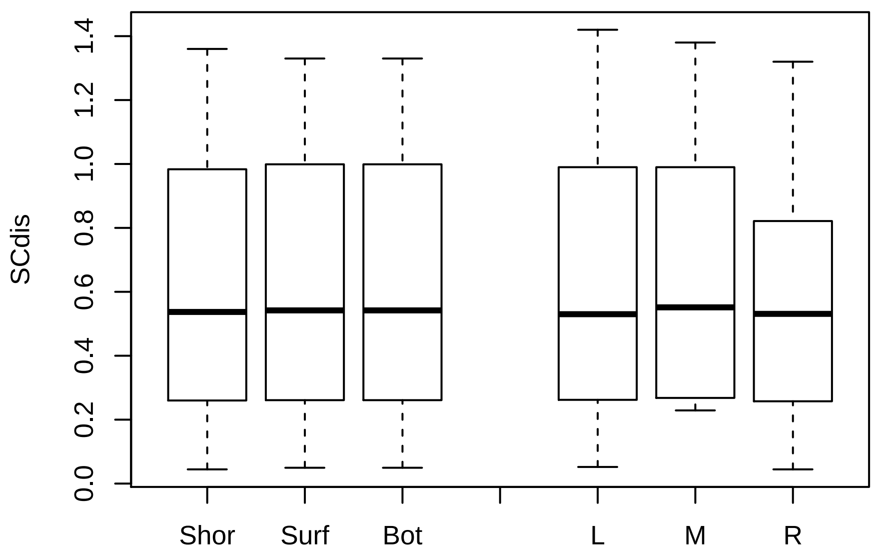
RUtot
Shapiro−Wilk test: W = 0.884; P−value = 0
RUtot
Normal variate
Log − RUtot
Shapiro−Wilk test: W = 0.91; P−value = 0
Log − RUtot
Normal variate
RUtot
Shor
Surf
Bot
L
M
R
Log − RUtot
Shor
Surf
Bot
L
M
R

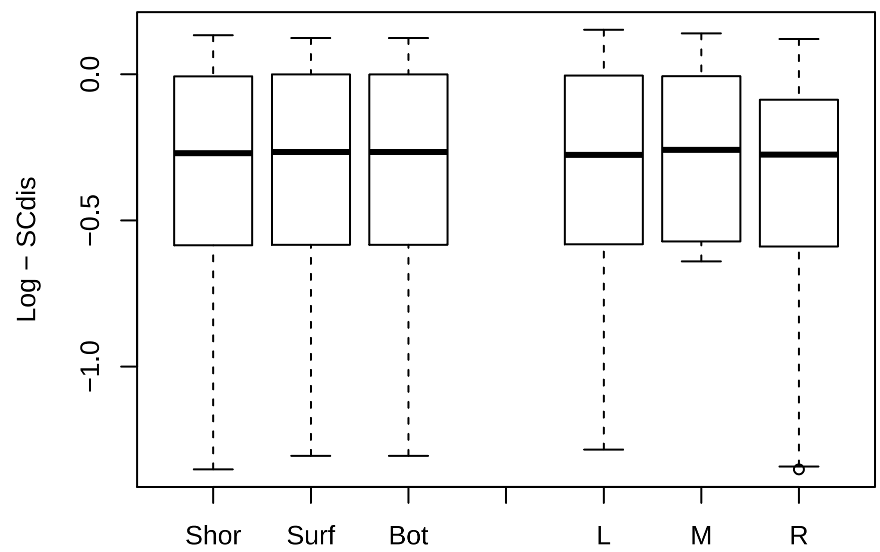

RUtot
2.0
1.5
1.0
0.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

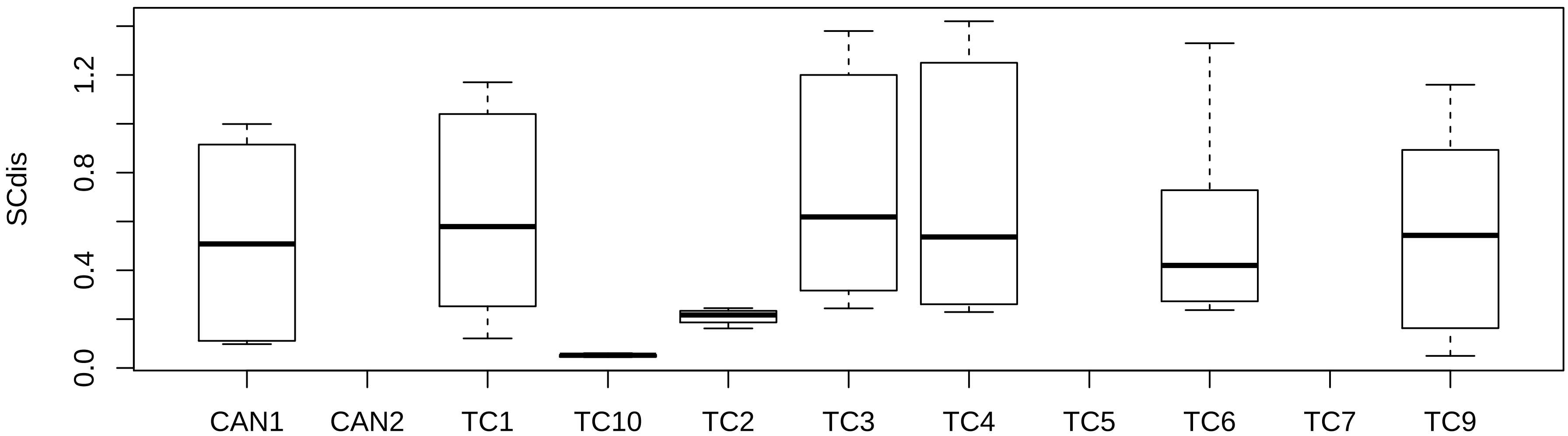

Log − RUtot
0.2
0.0
−0.2
−0.4
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

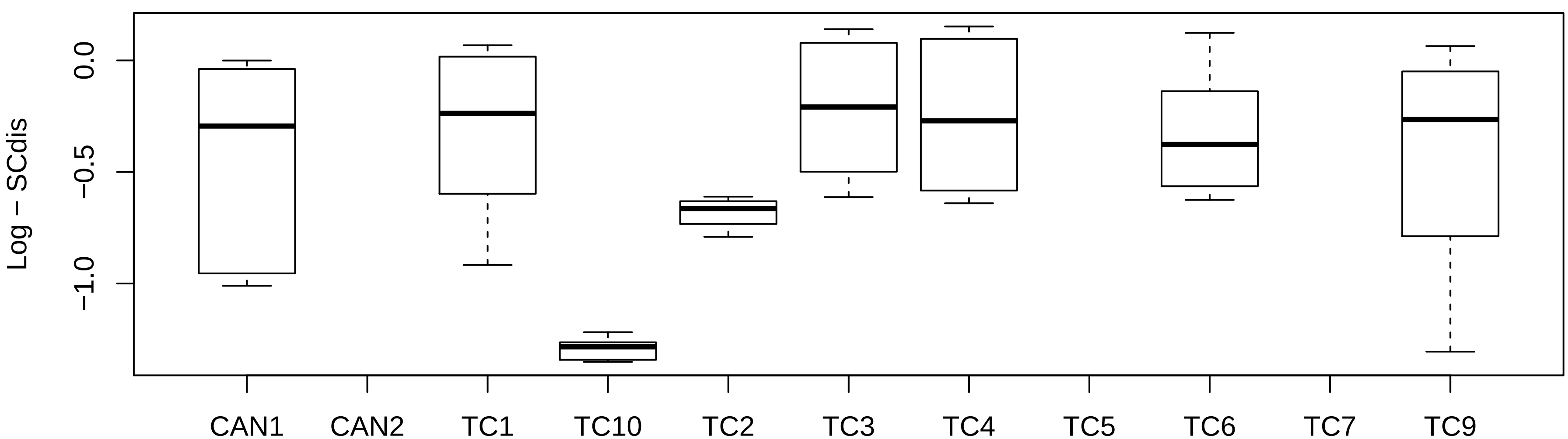

SCdis
Shapiro−Wilk test: W = 0.915; P−value = 0
SCdis
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
−2
−1
0
1
2
Normal variate

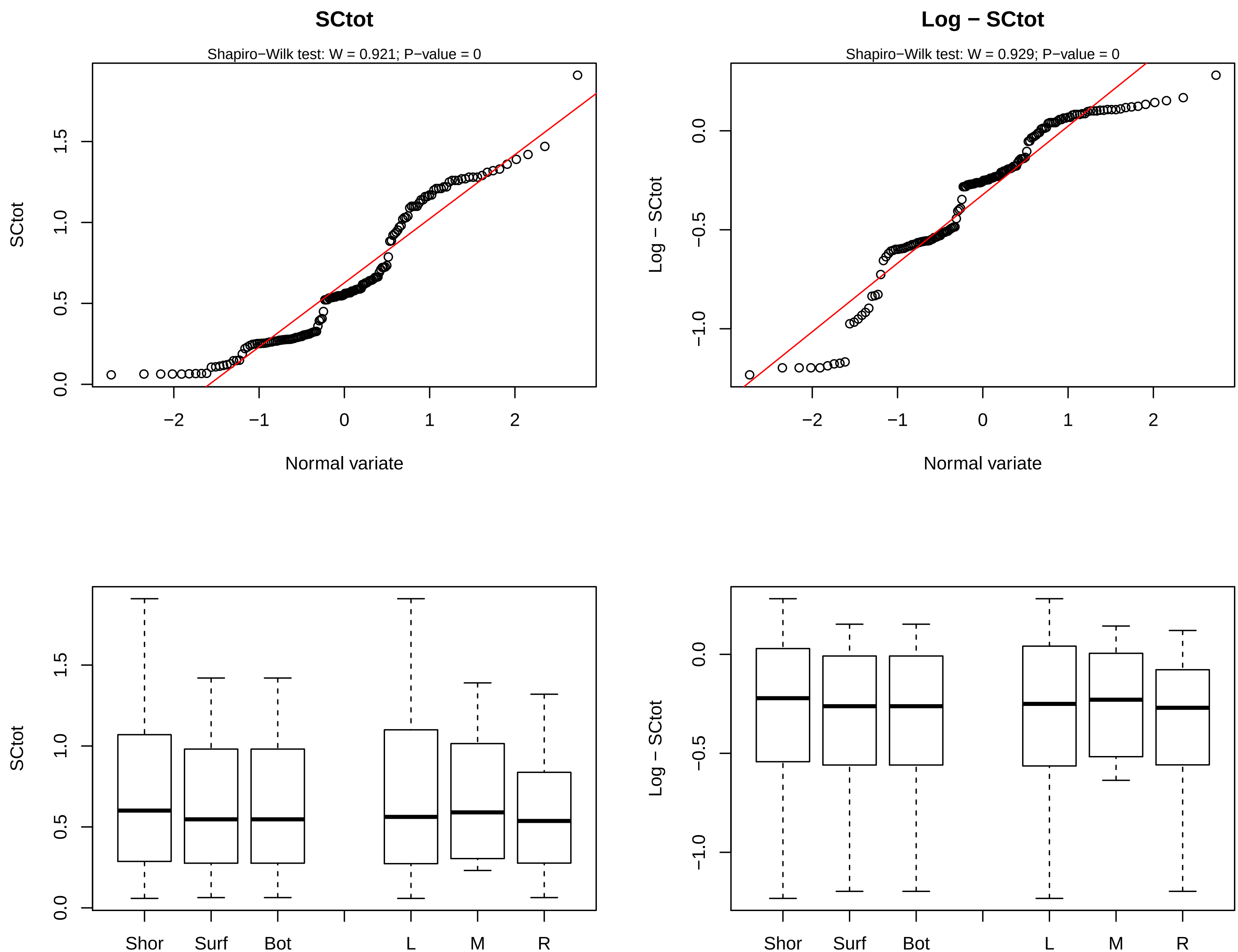

Log − SCdis
Shapiro−Wilk test: W = 0.921; P−value = 0
Log − SCdis
0.0
−0.5
−1.0
−2
−1
0
1
2
Normal variate


SCdis
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
Shor
Surf
Bot
L
M
R

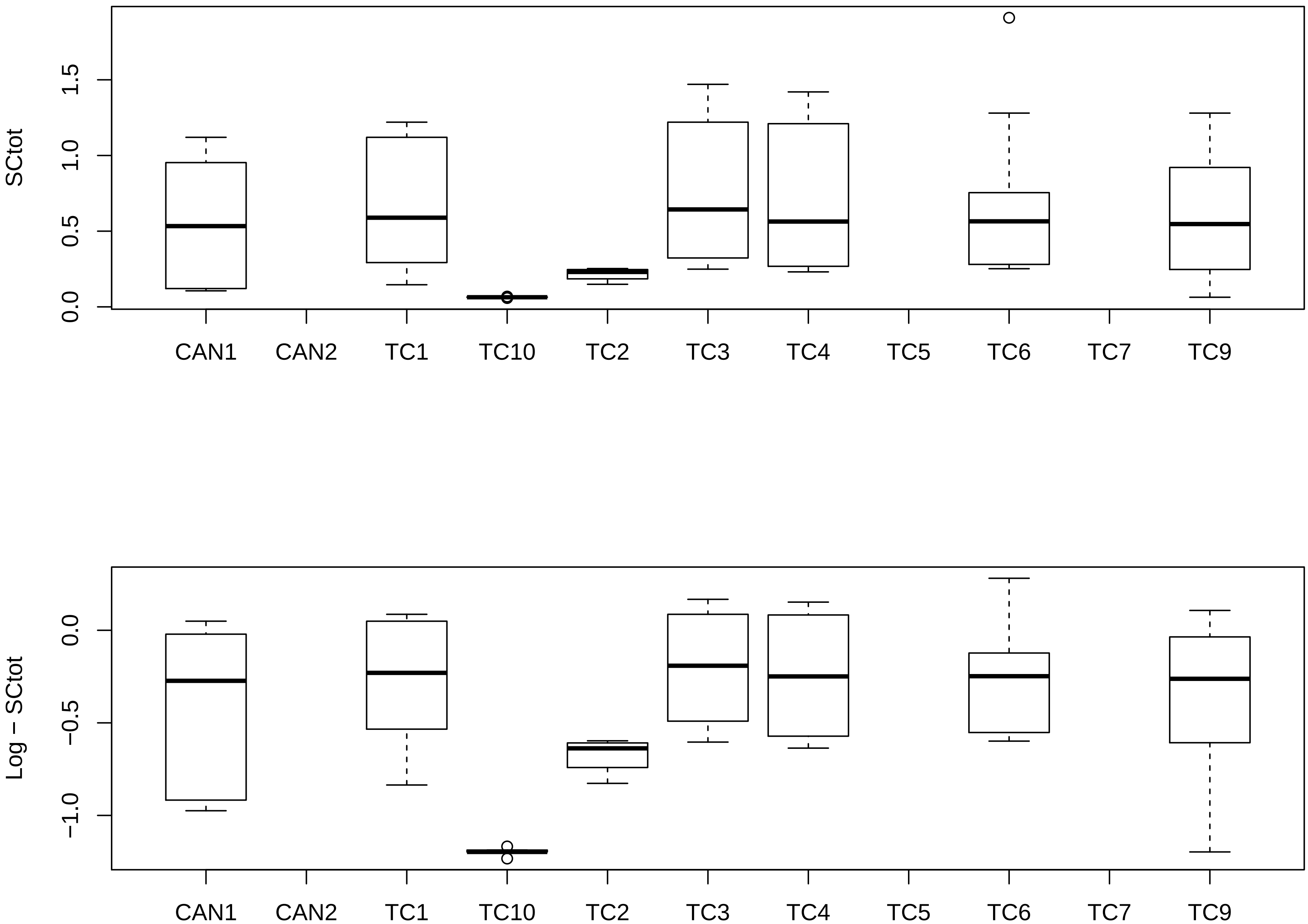

Log − SCdis
0.0
−0.5
−1.0
Shor
Surf
Bot
L
M
R

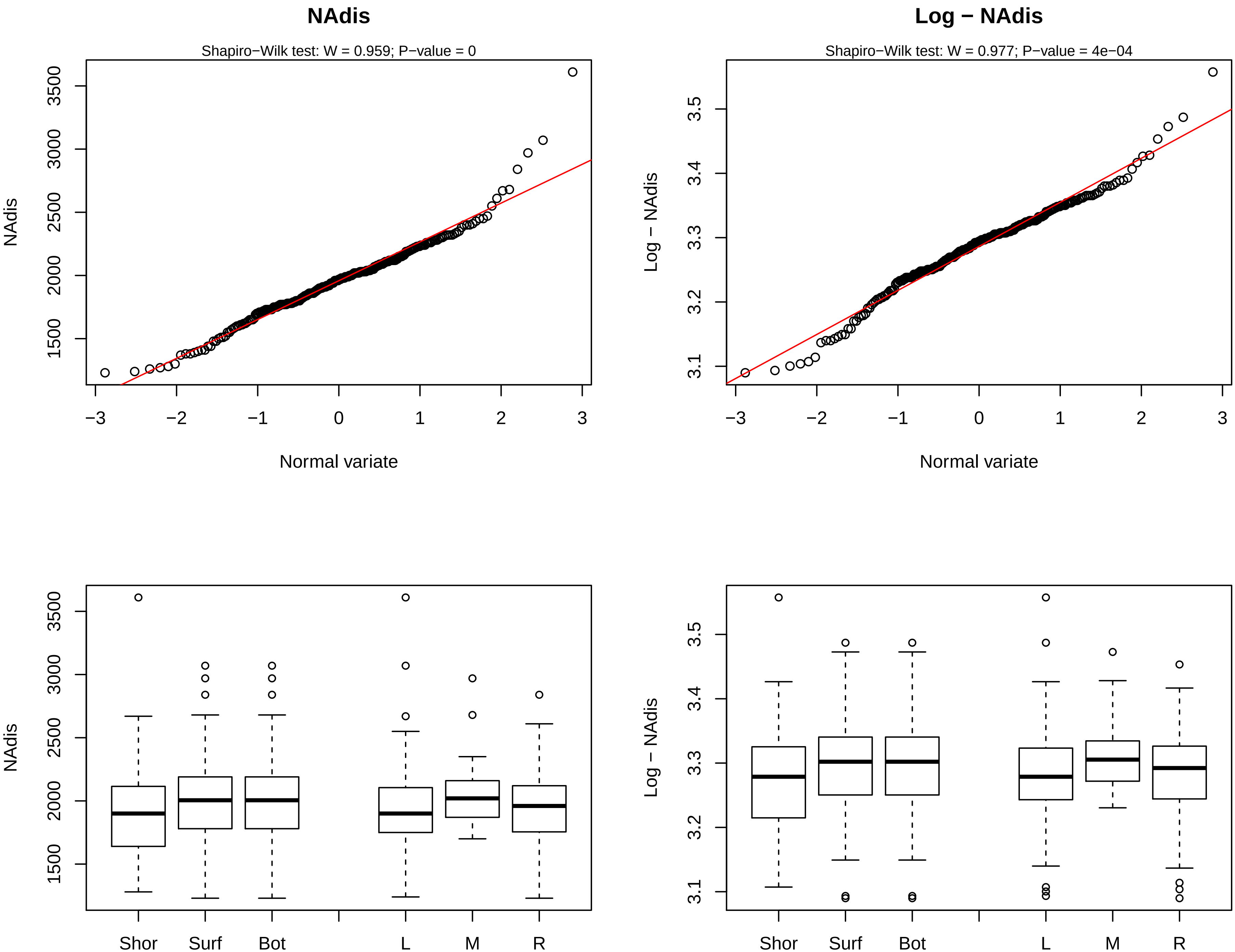

SCdis
0.0
0.4
0.8
1.2
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

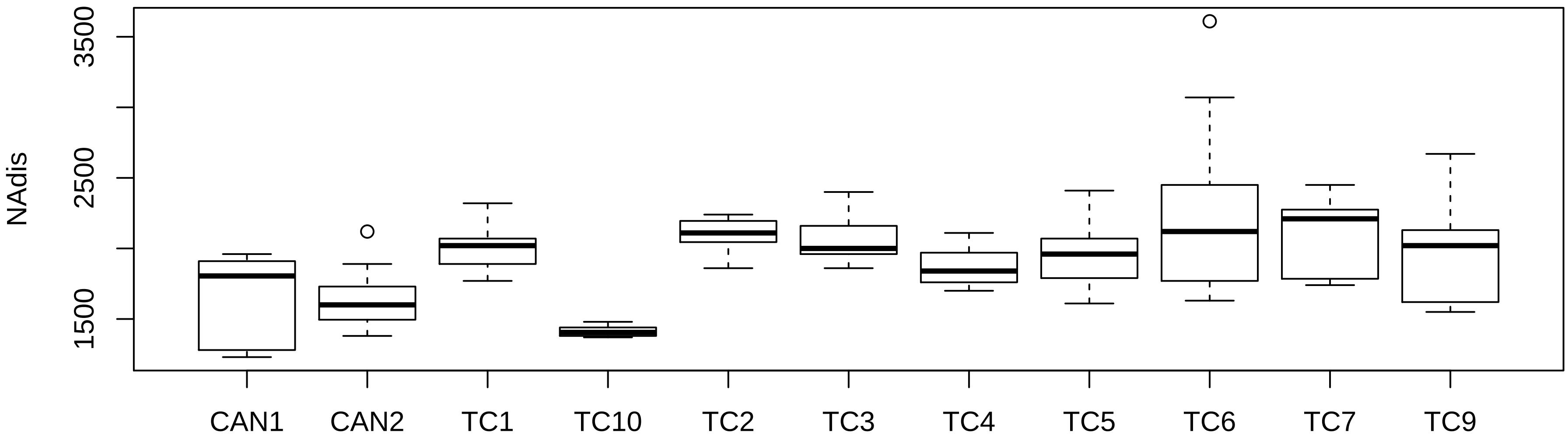

Log − SCdis
−1.0
−0.5
0.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

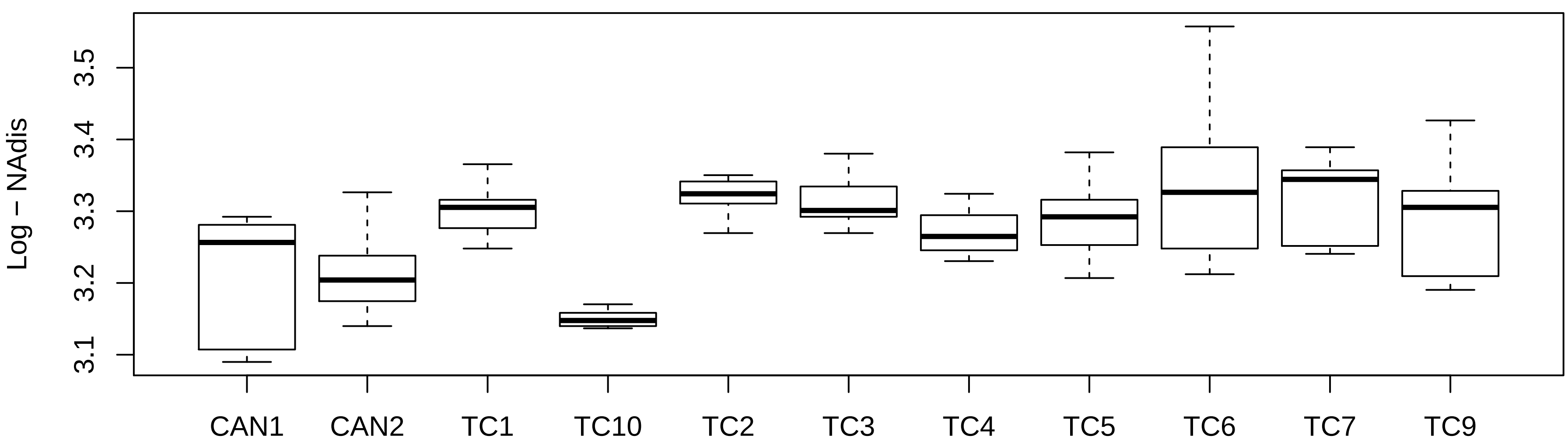


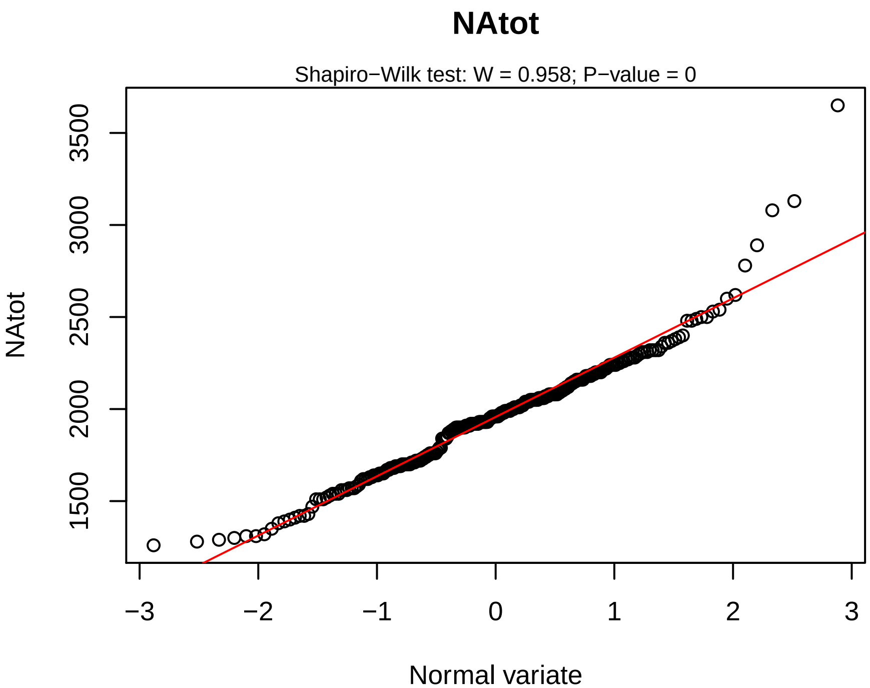
SCtot
Shapiro−Wilk test: W = 0.921; P−value = 0
SCtot
Normal variate
Log − SCtot
Shapiro−Wilk test: W = 0.929; P−value = 0
Log − SCtot
Normal variate
SCtot
Shor
Surf
Bot
L
M
R
Log − SCtot
Shor
Surf
Bot
L
M
R

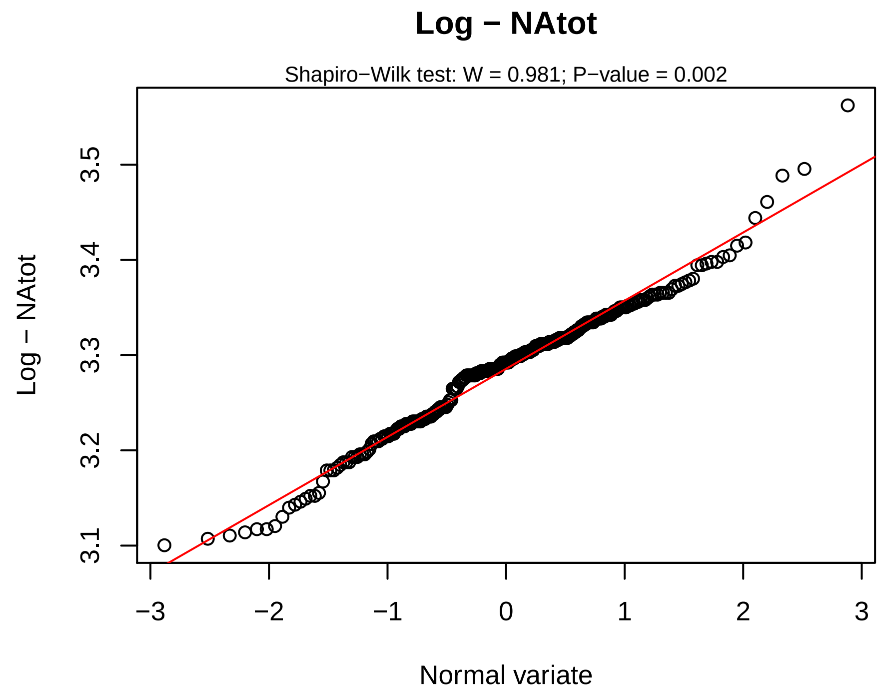

SCtot
0.0
0.5
1.0
1.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9
Log – SCtot
−1.0
−0.5
0.0

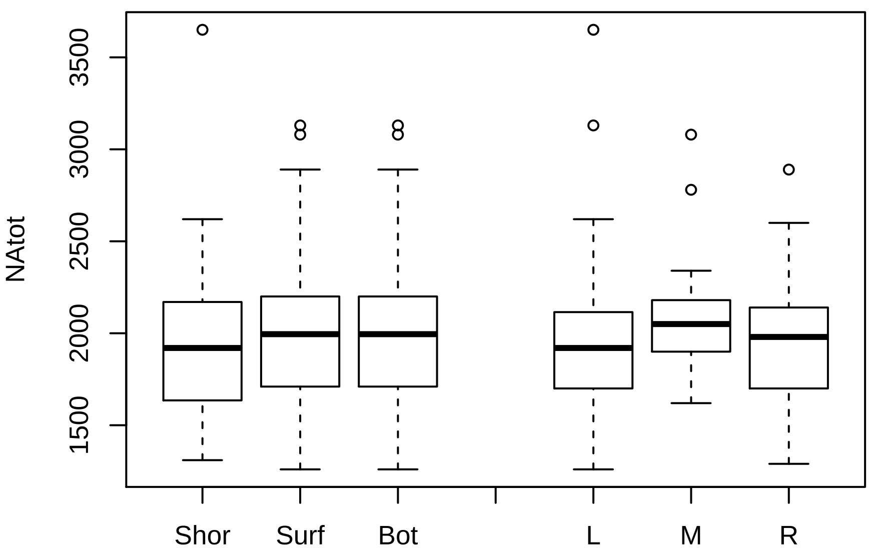

NAdis
Shapiro−Wilk test: W = 0.959; P−value = 0
NAdis
Normal variate
Log − NAdis
Shapiro−Wilk test: W = 0.977; P−value = 4e−04
Log − NAdis
Normal variate
NAdis
Shor
Surf
Bot
L
M
R
Log − NAdis
Shor
Surf
Bot
L
M
R

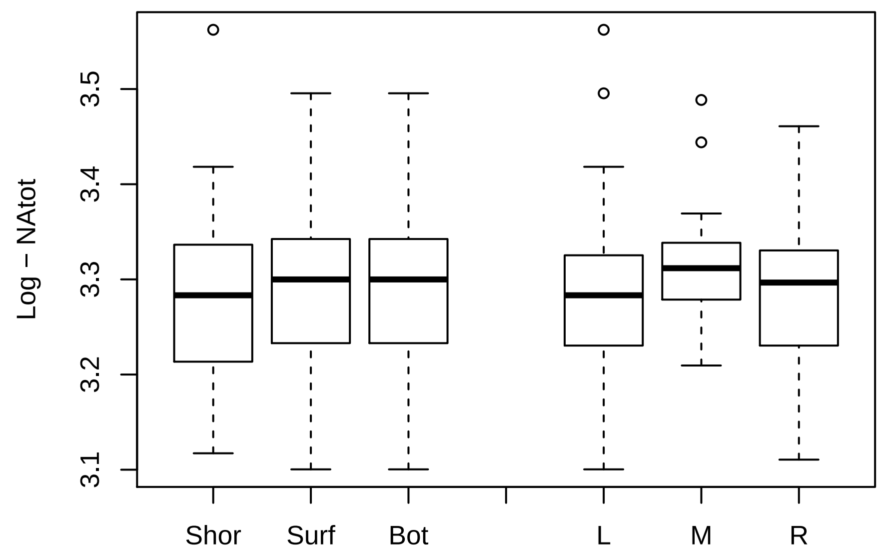

NAdis
3500
2500
1500
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

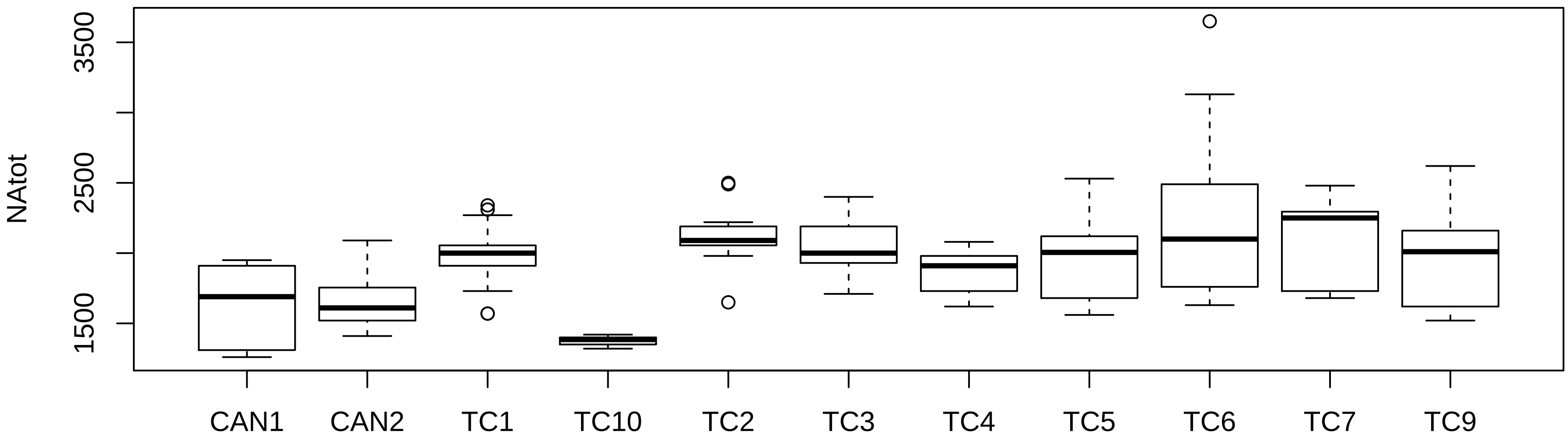

Log – NAdis
3.5
3.4
3.3
3.2
3.1
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


NAtot
Shapiro−Wilk test: W = 0.958; P−value = 0
NAtot
1500
2000
2500
3000
3500
−3
−2
−1
0
1
2
3
Normal variate

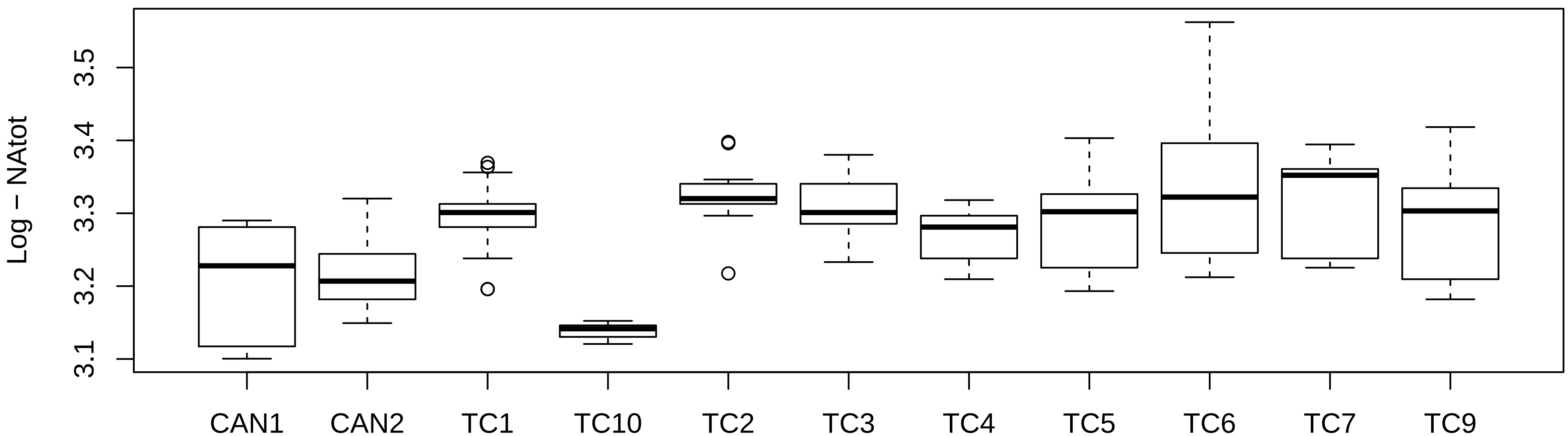

Log − NAtot
Shapiro−Wilk test: W = 0.981; P−value = 0.002
Log − NAtot
3.1
3.2
3.3
3.4
3.5
−3
−2
−1
0
1
2
3
Normal variate


NAtot
1500
2000
2500
3000
3500
Shor
Surf
Bot
L
M
R

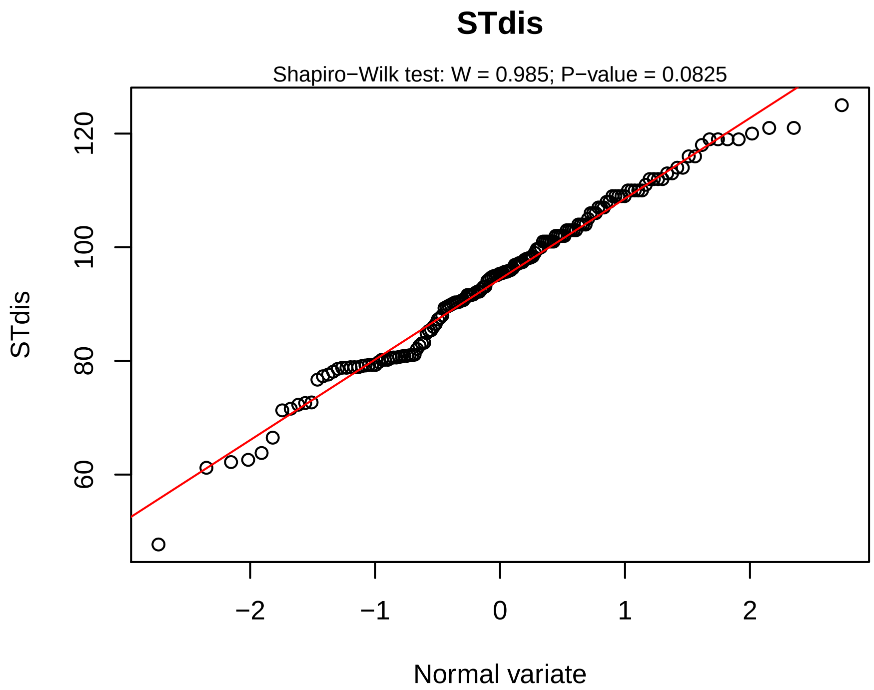

Log − NAtot
3.1
3.2
3.3
3.4
3.5
Shor
Surf
Bot
L
M
R

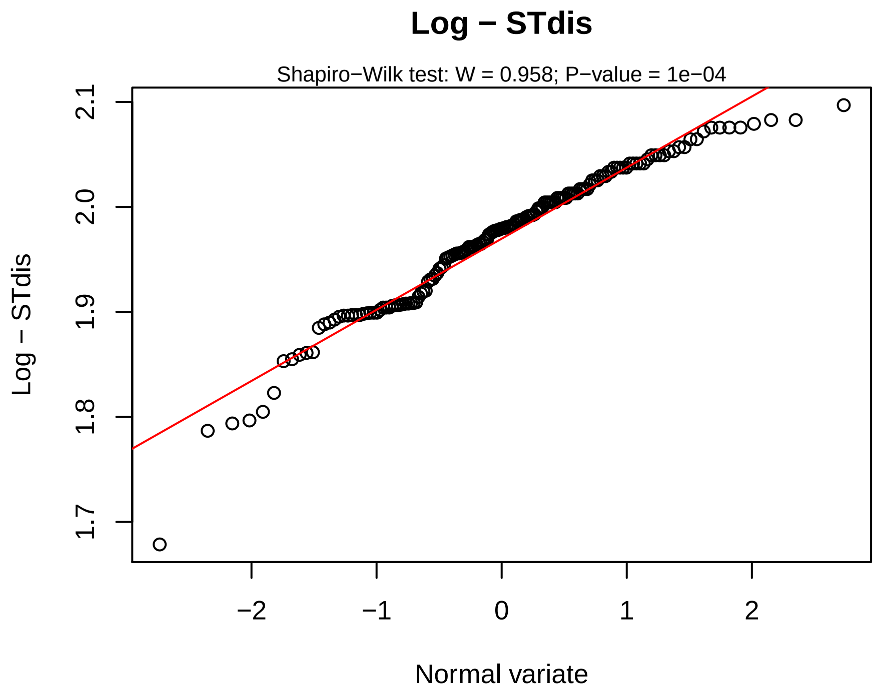


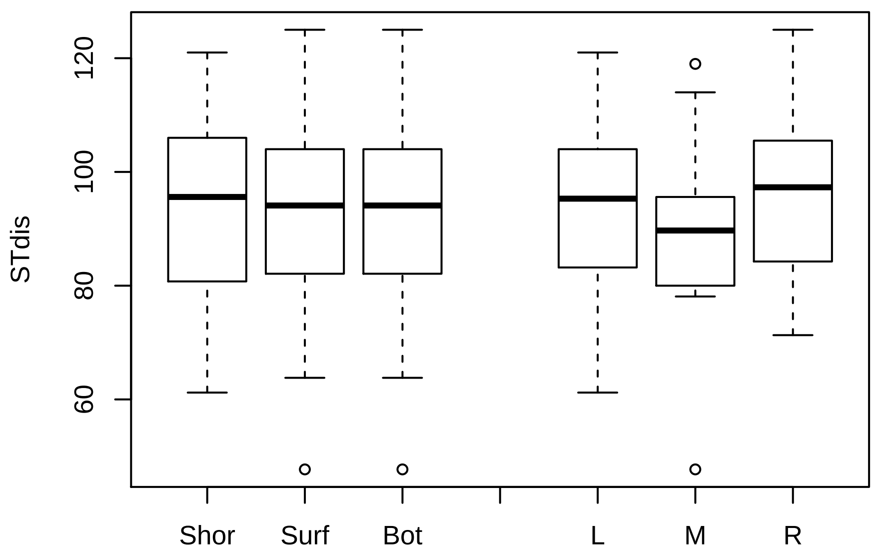
NAtot
3500
2500
1500
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

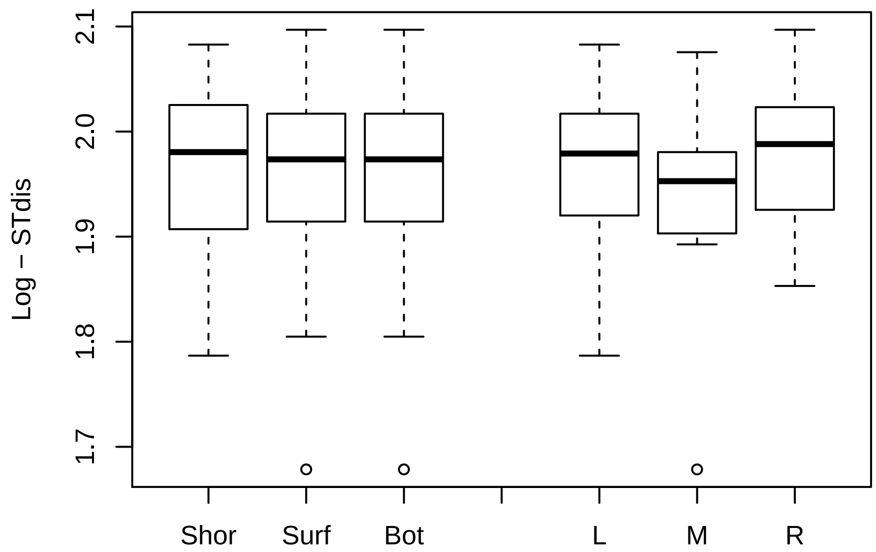


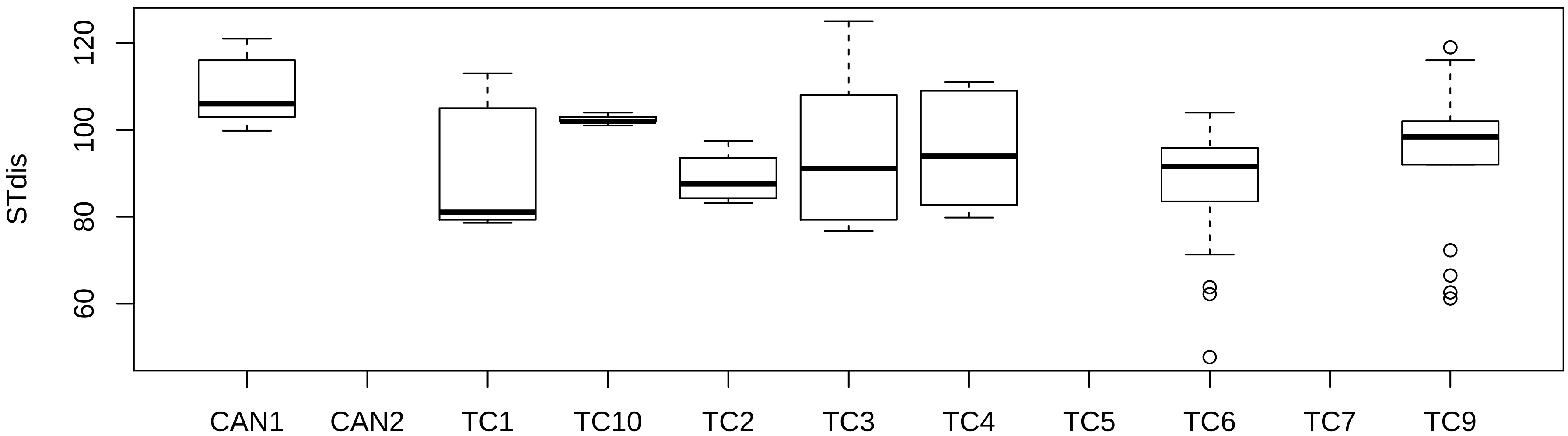
Log − NAtot
3.5
3.4
3.3
3.2
3.1
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

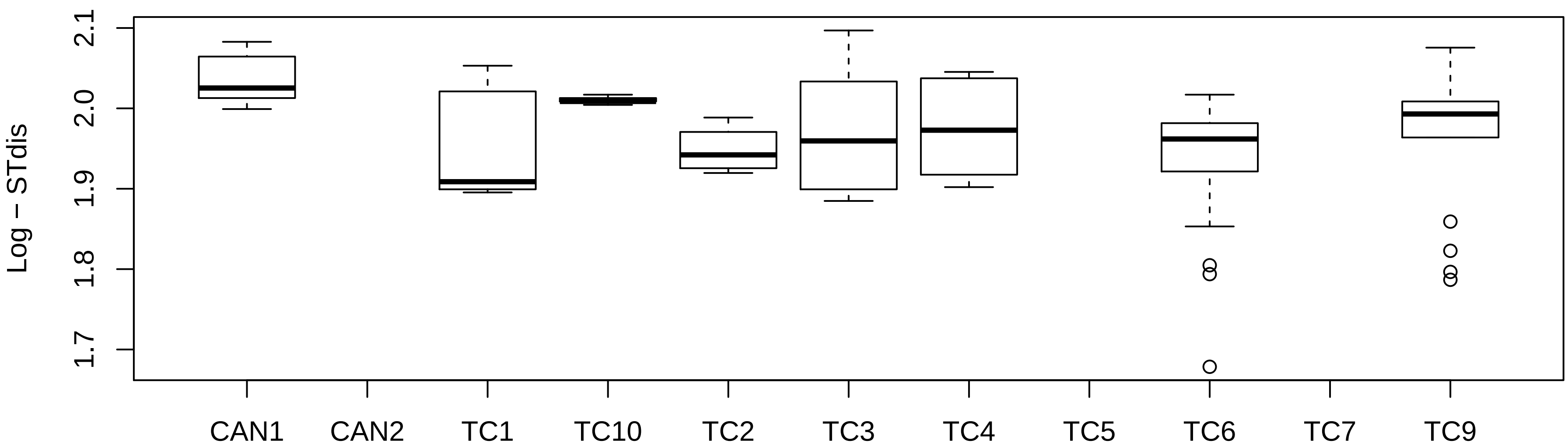

STdis
Shapiro−Wilk test: W = 0.985; P−value = 0.0825
STdis
Normal variate


Log − STdis
Shapiro−Wilk test: W = 0.958; P−value = 1e−04
Log − STdis
Normal variate


STdis
Shor
Surf
Bot
L
M
R

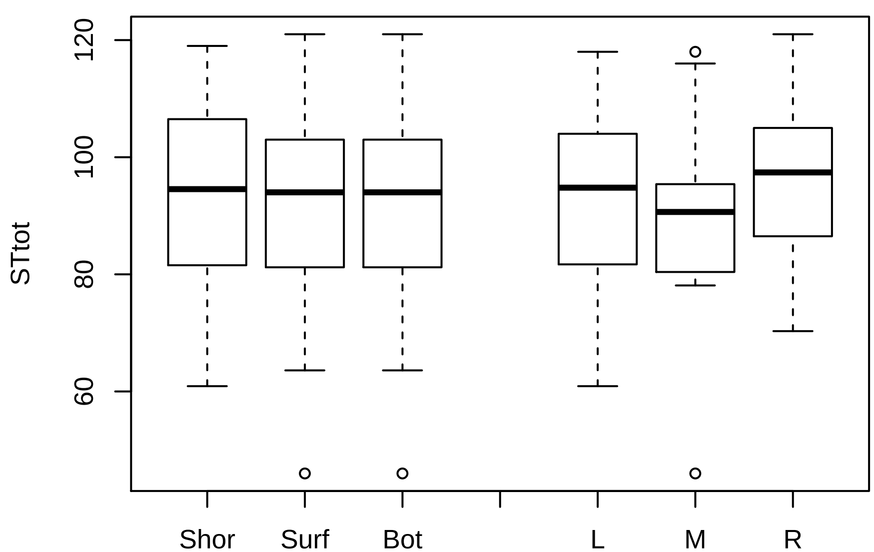

Log − STdis
Shor
Surf
Bot
L
M
R

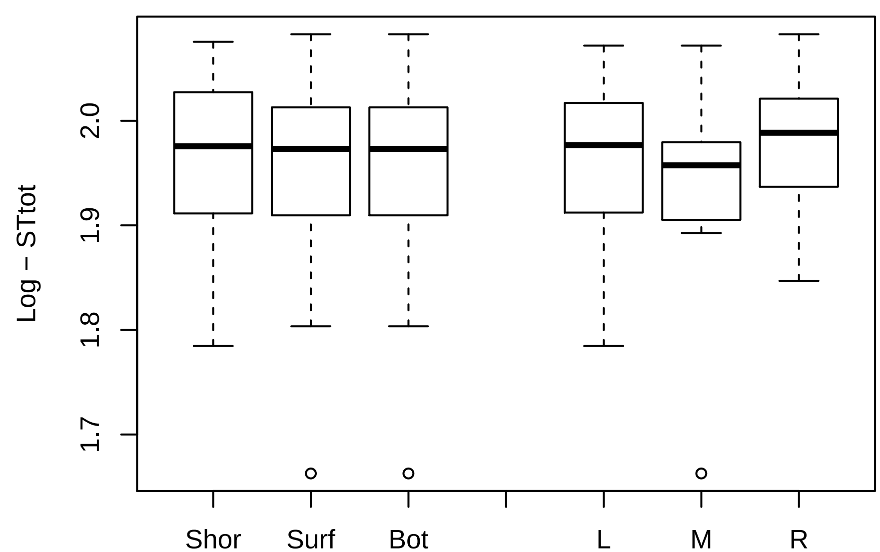

STdis
120
100
80
60
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

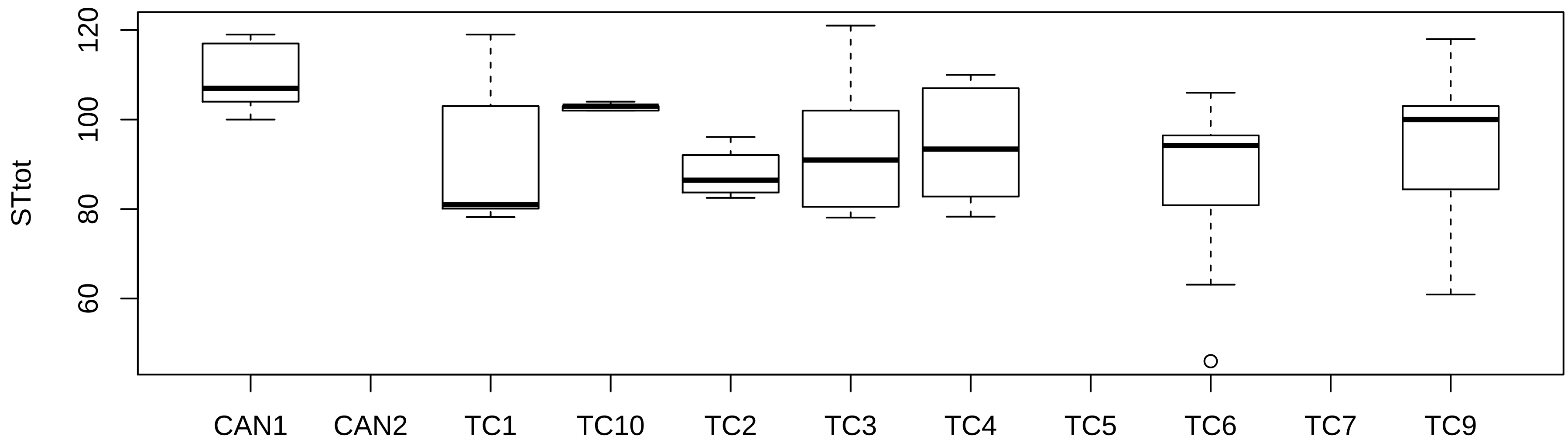

Log – STdis
2.1
2.0
1.9
1.8
1.7
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

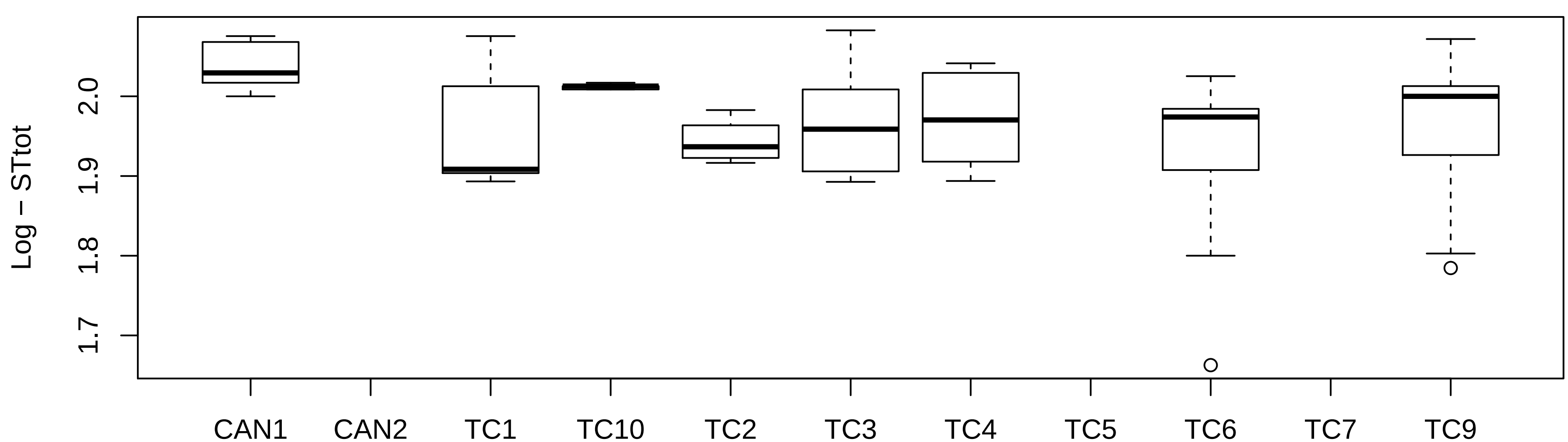

STtot
Shapiro−Wilk test: W = 0.978; P−value = 0.0134
STtot
Normal variate

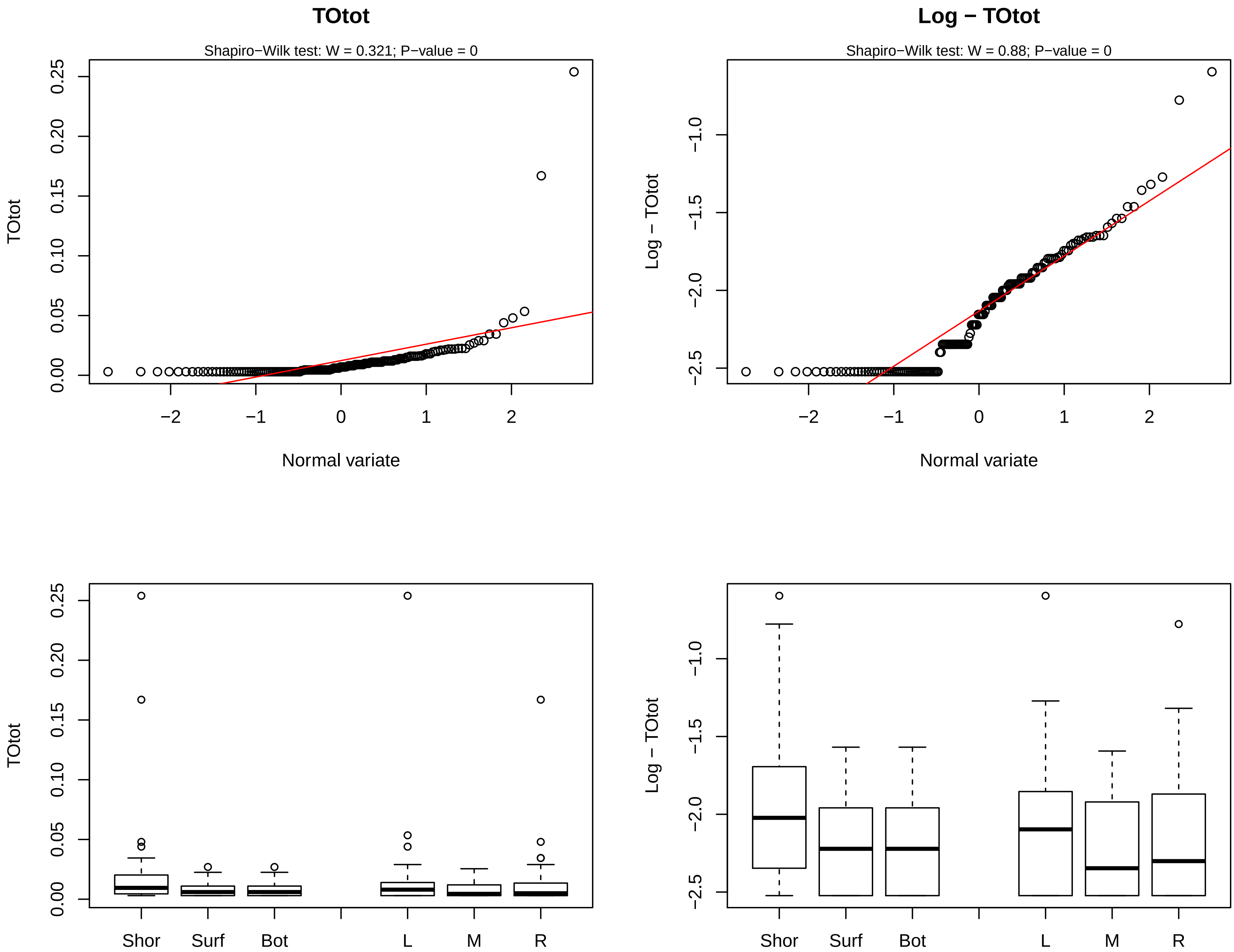

Log − STtot
Shapiro−Wilk test: W = 0.948; P−value = 0
Log − STtot
Normal variate


STtot
Shor
Surf
Bot
L
M
R

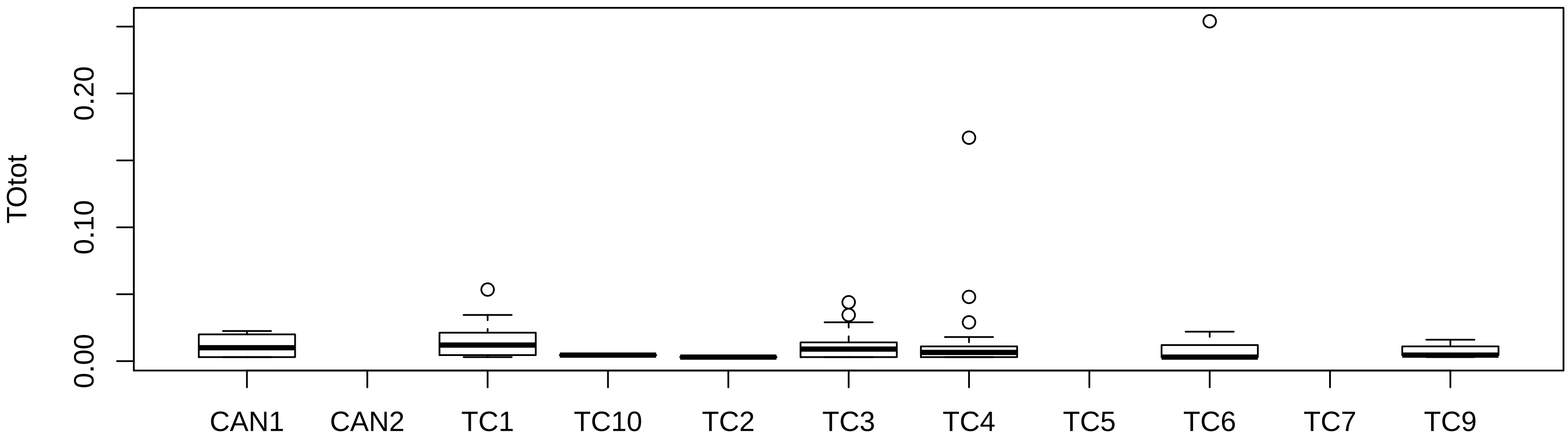

Log − STtot
Shor
Surf
Bot
L
M
R

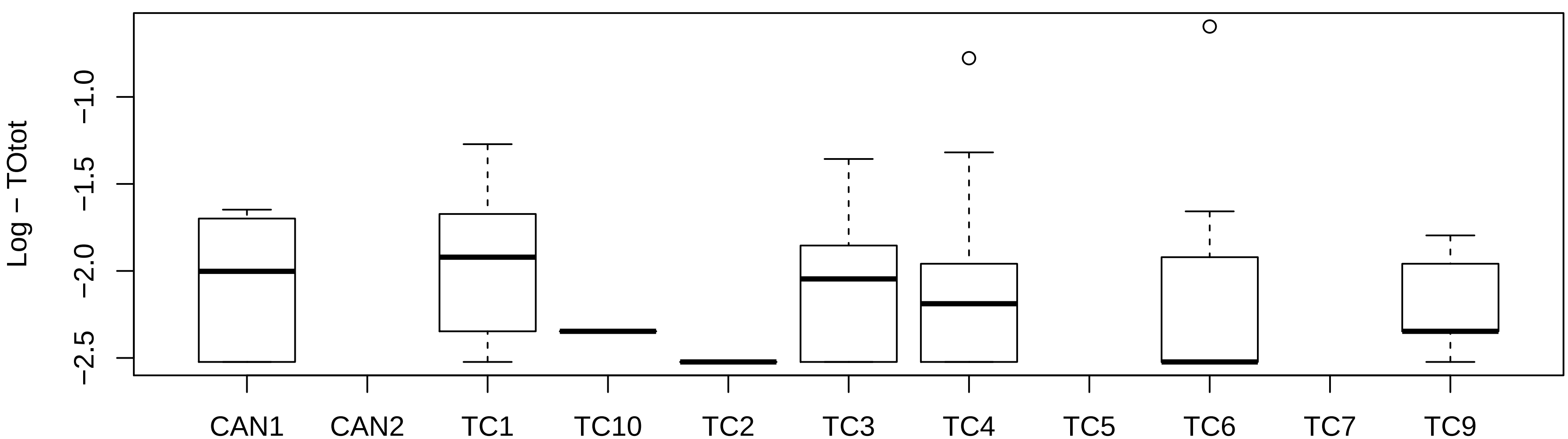

STtot
60
80
100
120
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

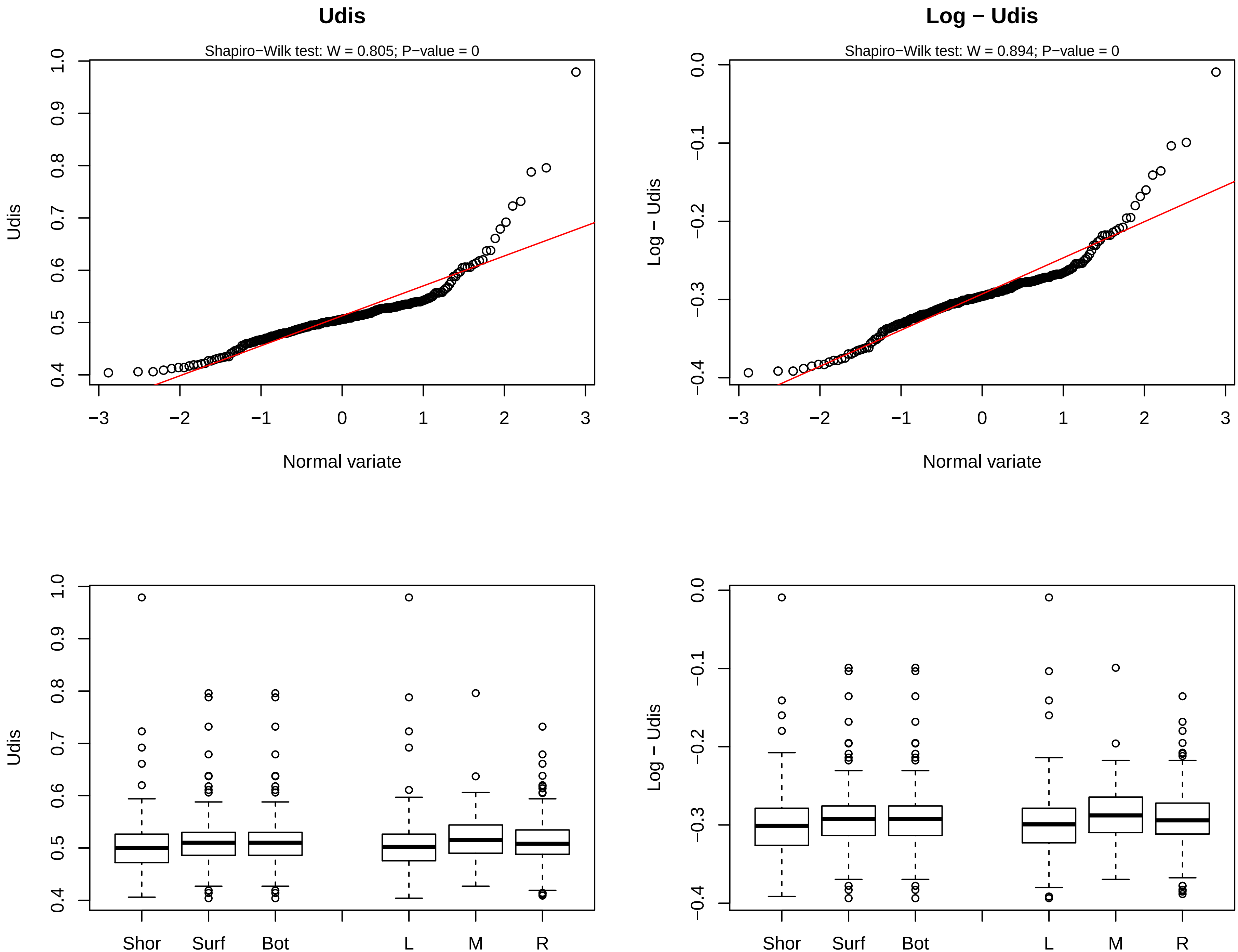

Log – STtot
1.7
1.8
1.9
2.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

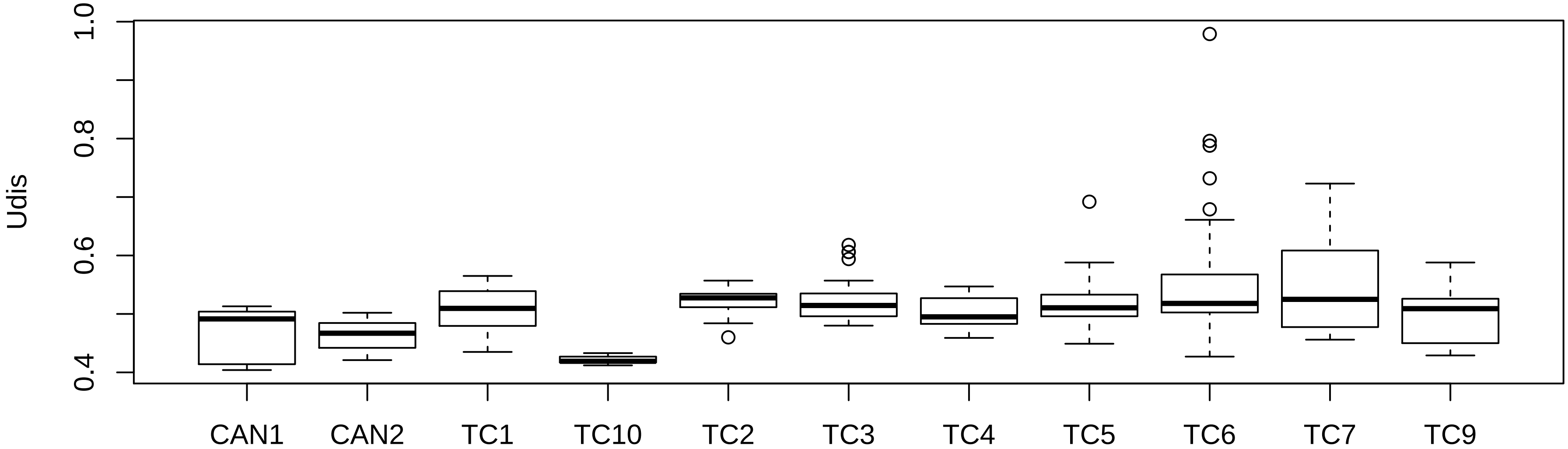


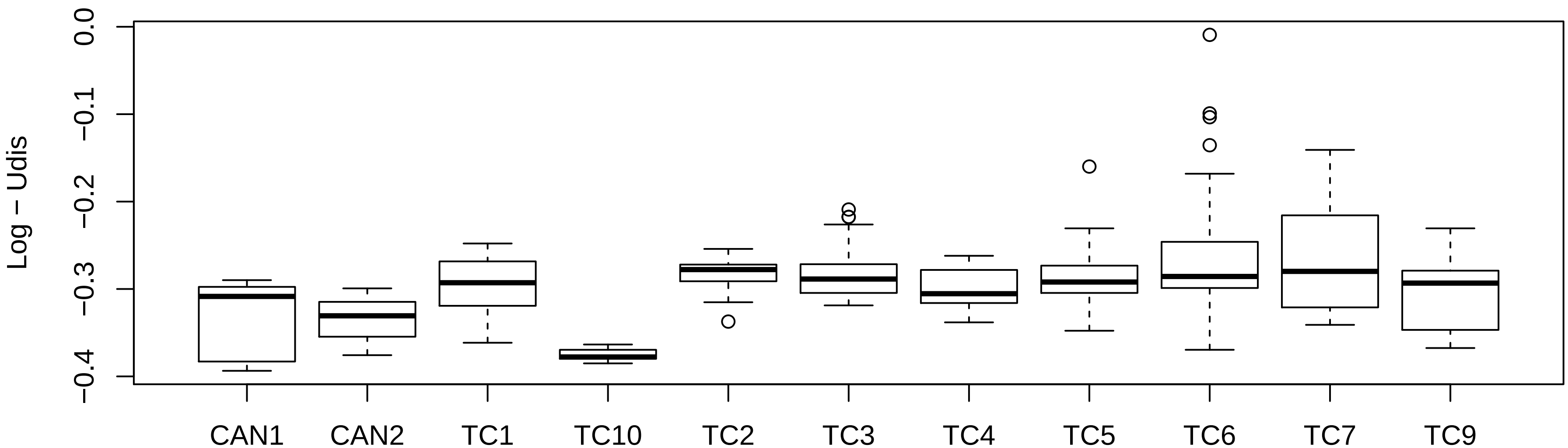
TOtot
Shapiro−Wilk test: W = 0.321; P−value = 0
TOtot
Normal variate
Log − TOtot
Shapiro−Wilk test: W = 0.88; P−value = 0
Log − TOtot
Normal variate
TOtot
Shor
Surf
Bot
L
M
R
Log − TOtot
Shor
Surf
Bot
L
M
R

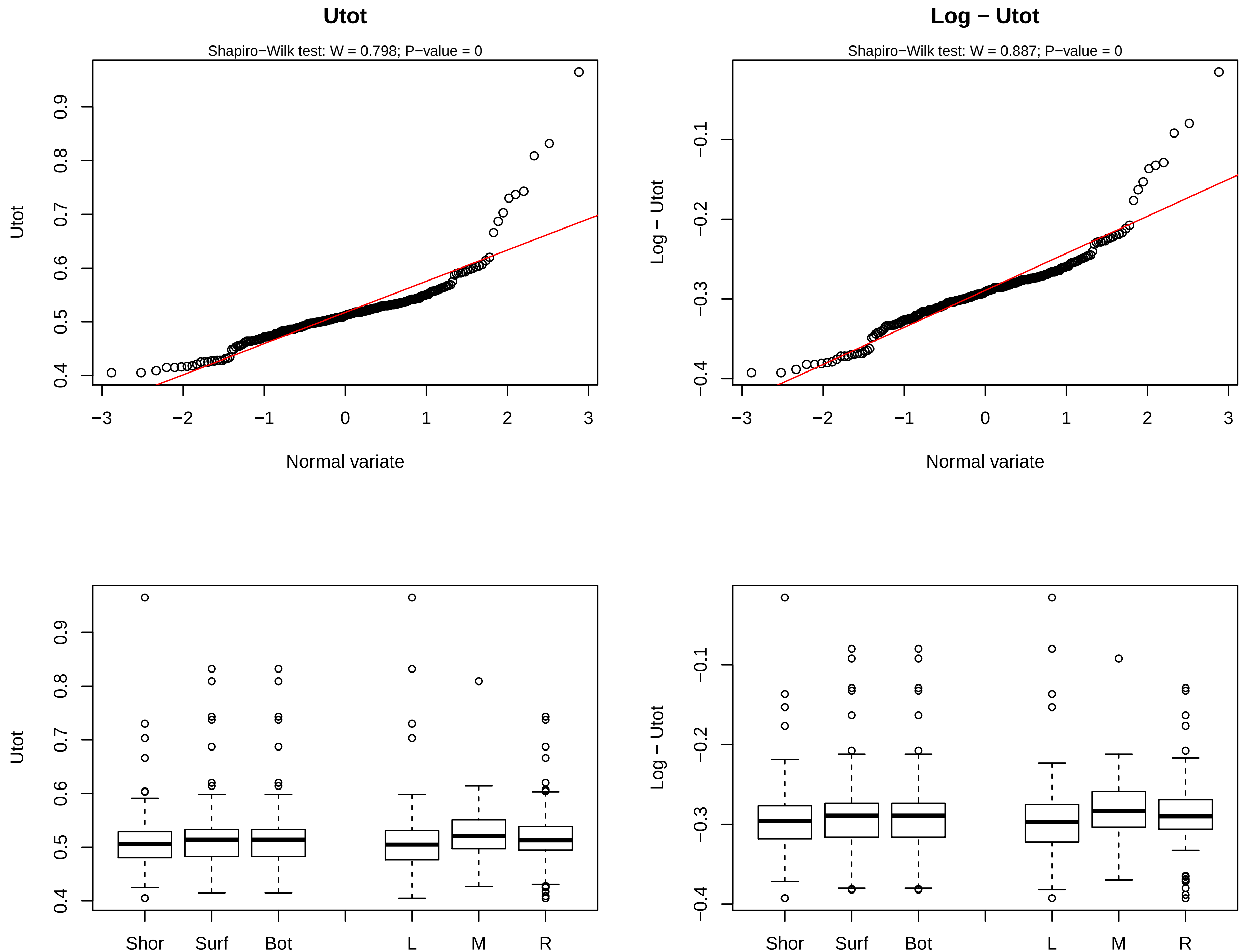

TOtot
0.00
0.10
0.20
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

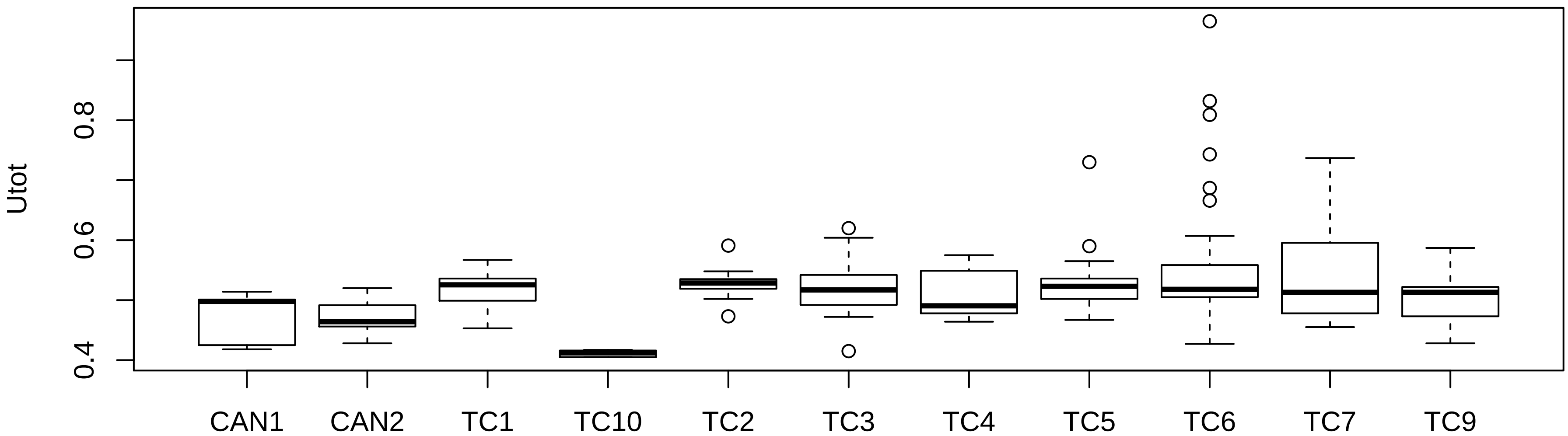

Log – TOtot
−2.5
−2.0
−1.5
−1.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


Udis
Shapiro−Wilk test: W = 0.805; P−value = 0
Log − Udis
Shapiro−Wilk test: W = 0.894; P−value = 0
Normal variate
Normal variate
Udis
Log − Udis
Udis
Log − Udis
Shor
Surf
Bot
L
M
R
Shor
Surf
Bot
L
M
R

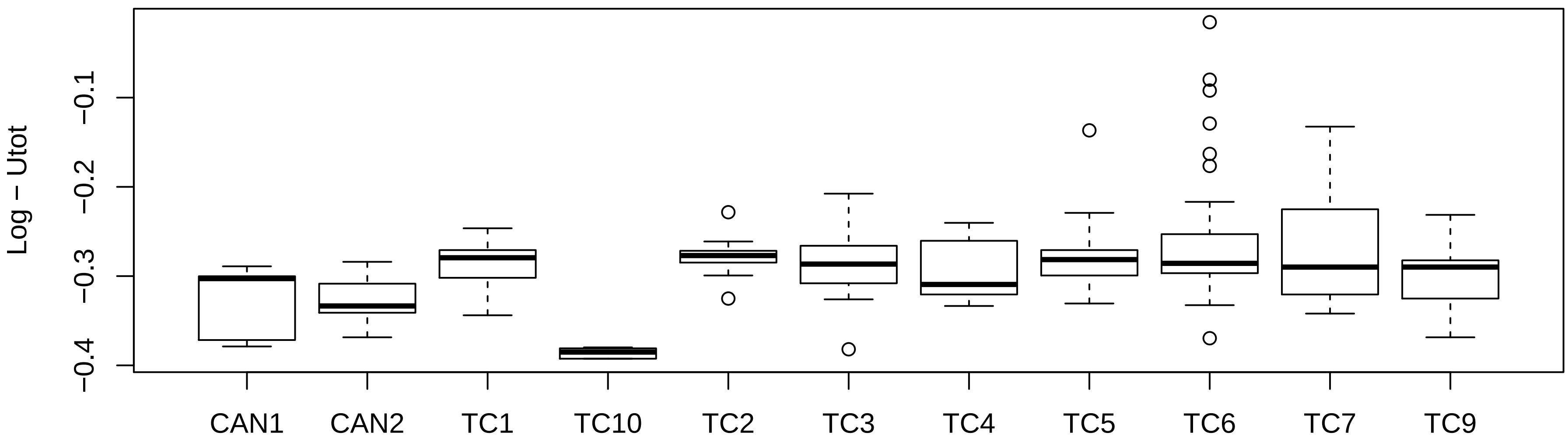

Udis
1.0
0.8
0.6
0.4
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


Log − Udis
0.0
−0.1
−0.2
−0.3
−0.4
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

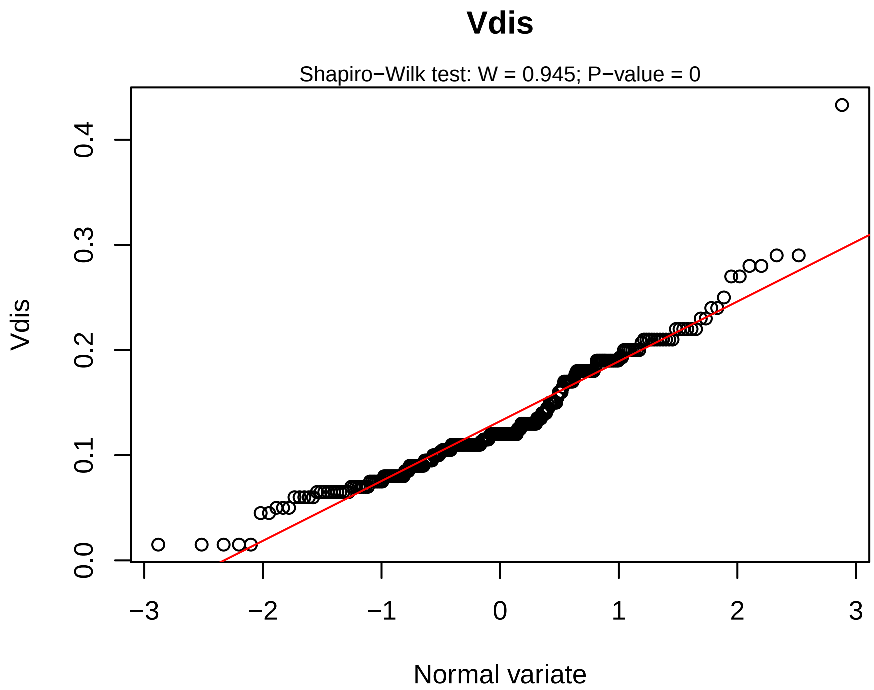

Utot
Shapiro−Wilk test: W = 0.798; P−value = 0
Utot
Normal variate
Log − Utot
Shapiro−Wilk test: W = 0.887; P−value = 0
Log − Utot
Normal variate
Utot
Shor
Surf
Bot
L
M
R
Log − Utot
Shor
Surf
Bot
L
M
R



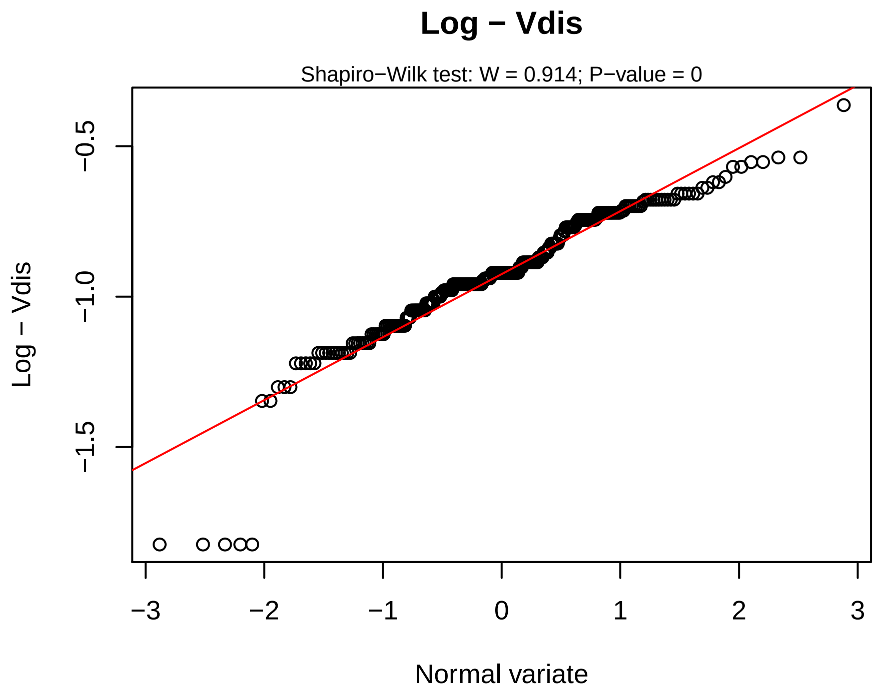
Utot
0.4
0.6
0.8
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9



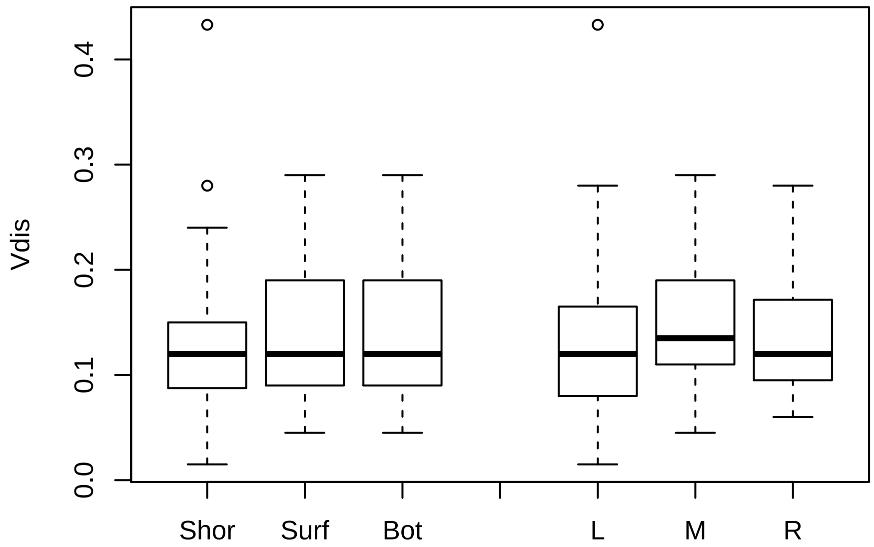
Log – Utot
−0.4
−0.3
−0.2
−0.1
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9



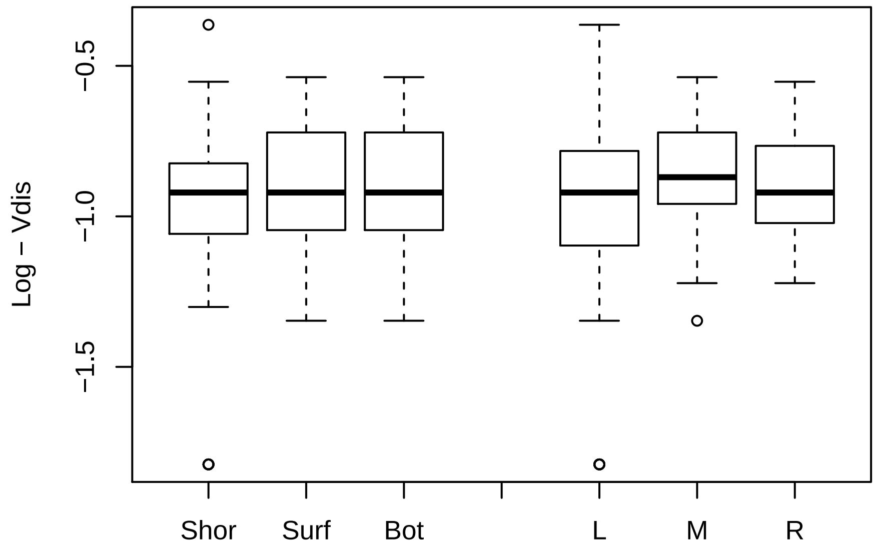
Vdis
Shapiro−Wilk test: W = 0.945; P−value = 0
Vdis
Normal variate



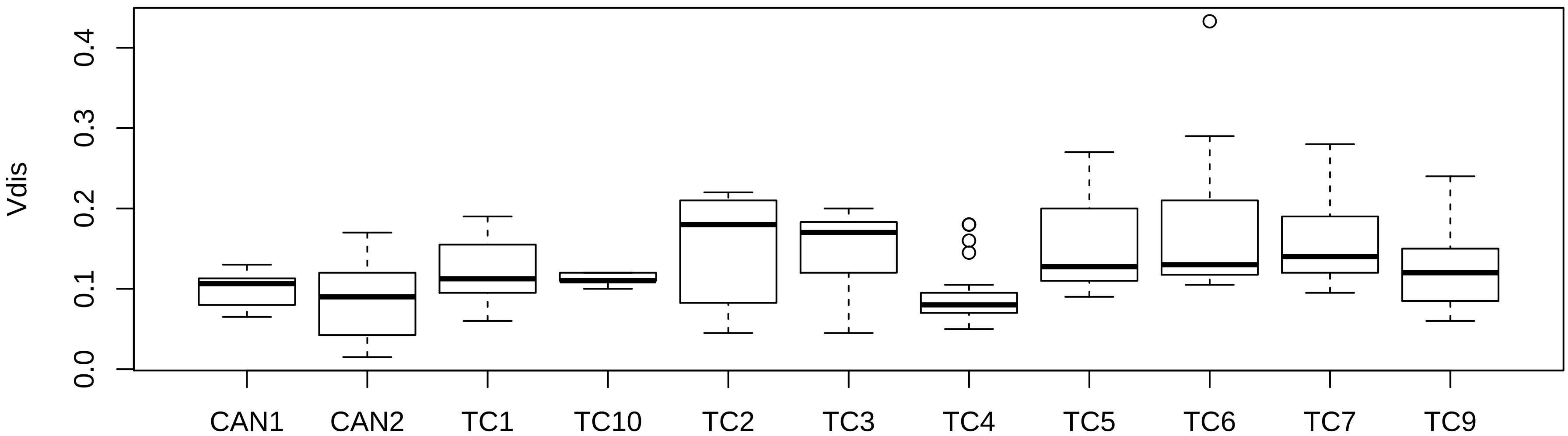
Log − Vdis
Shapiro−Wilk test: W = 0.914; P−value = 0
Log − Vdis
Normal variate

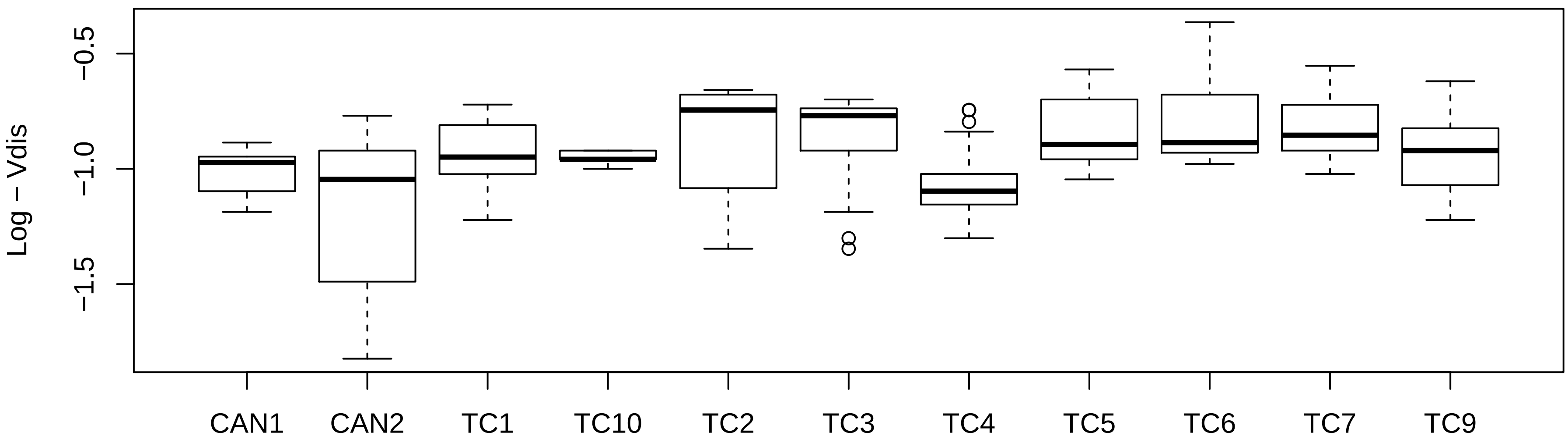


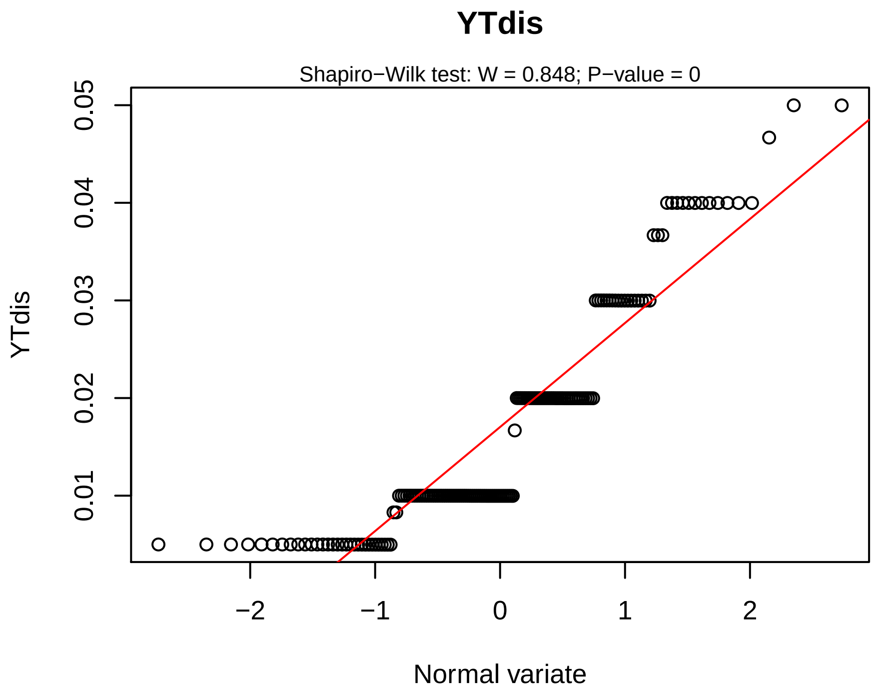
Vdis
Shor
Surf
Bot
L
M
R

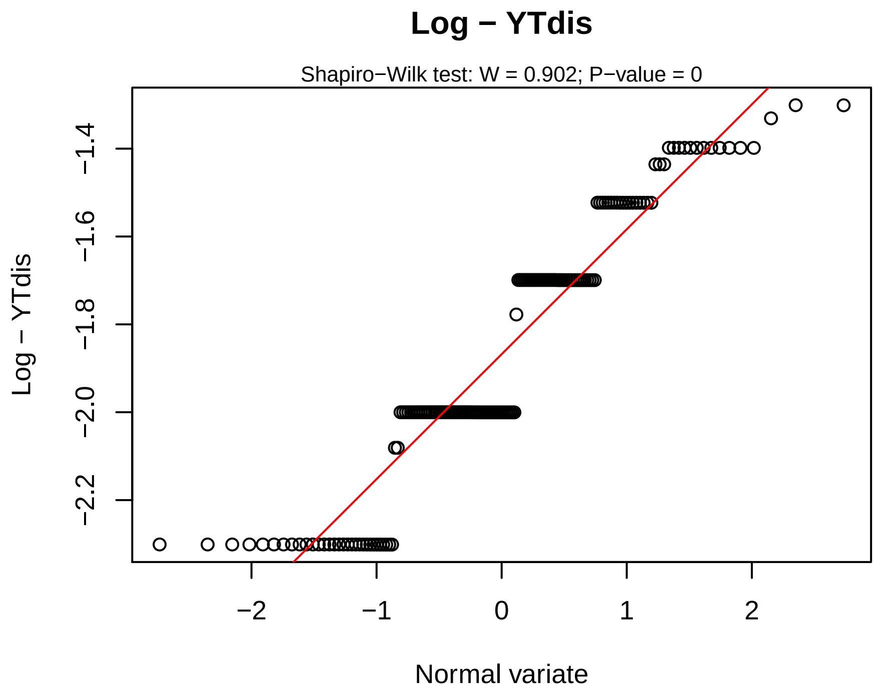


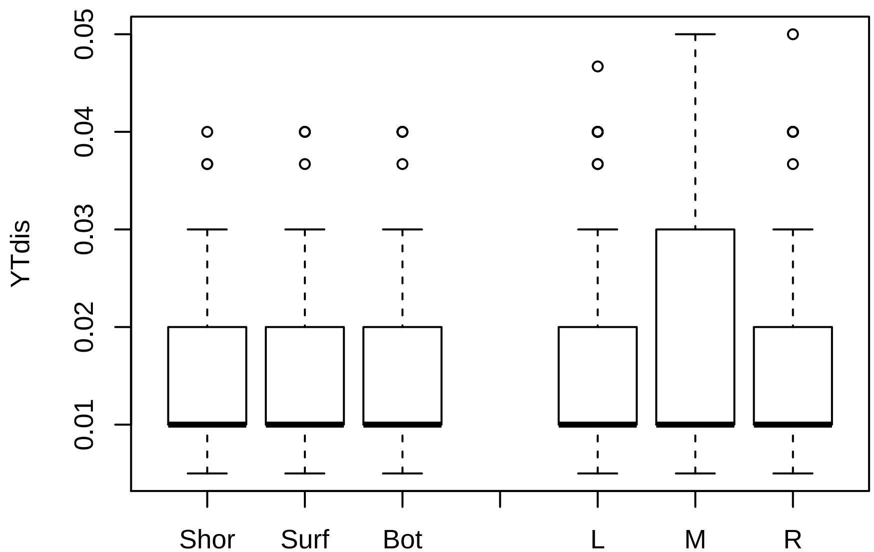
Log − Vdis
Shor
Surf
Bot
L
M
R

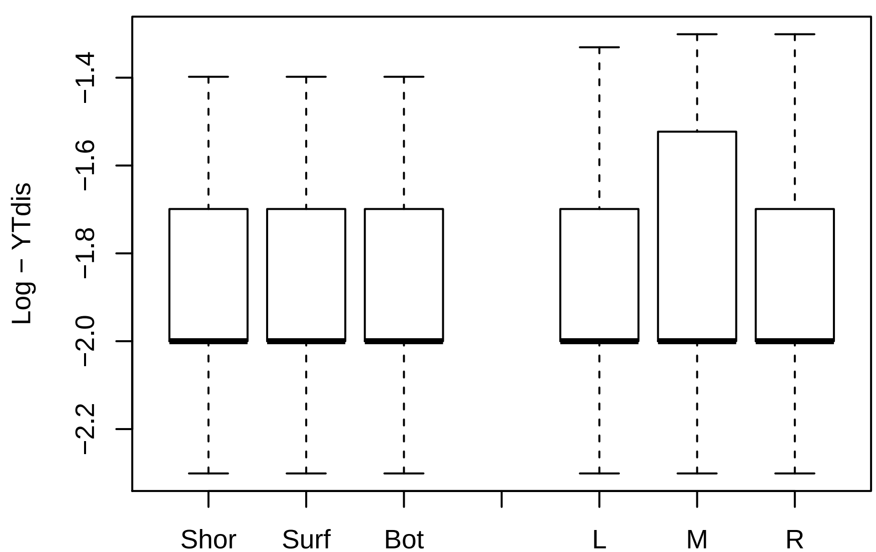

Vdis
0.0
0.1
0.2
0.3
0.4
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

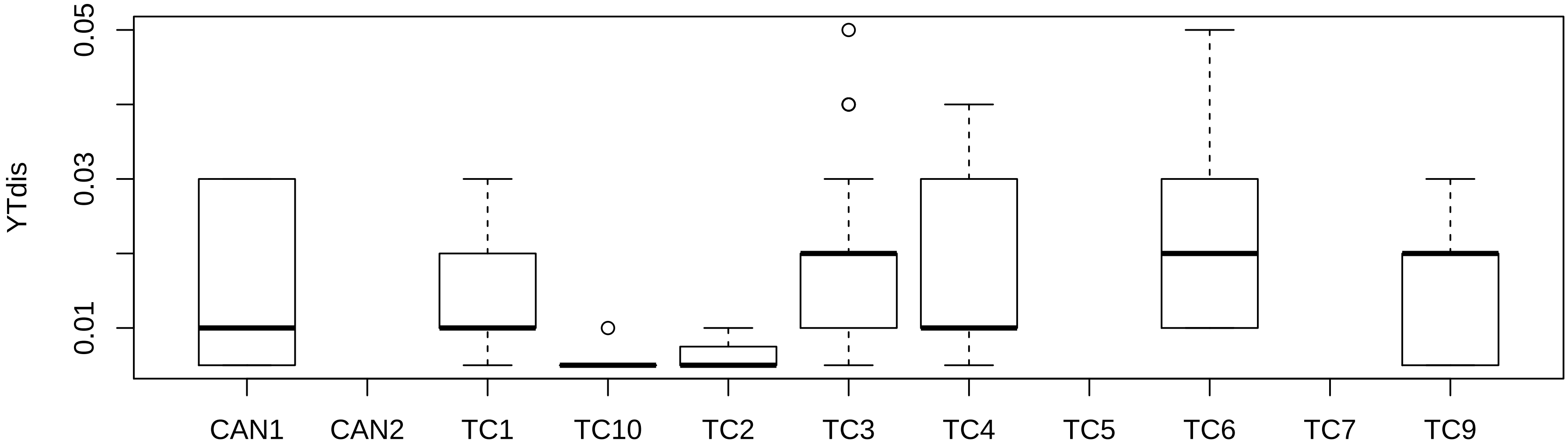

Log − Vdis
−1.5
−1.0
−0.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

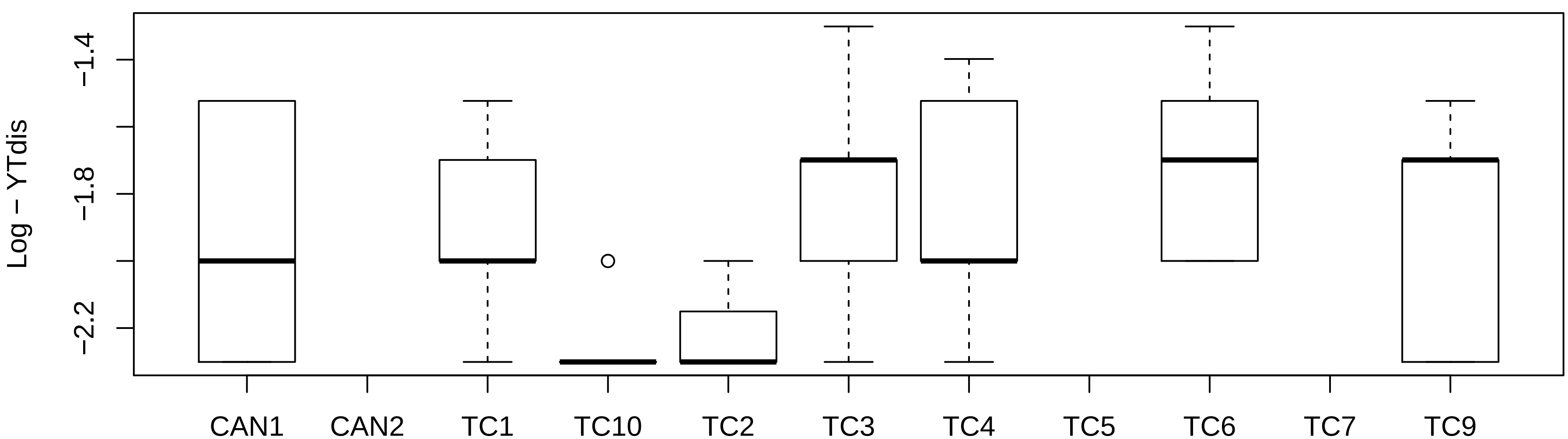

YTdis
Shapiro−Wilk test: W = 0.848; P−value = 0
YTdis
0.01
0.02
0.03
0.04
0.05
−2
−1
0
1
2
Normal variate

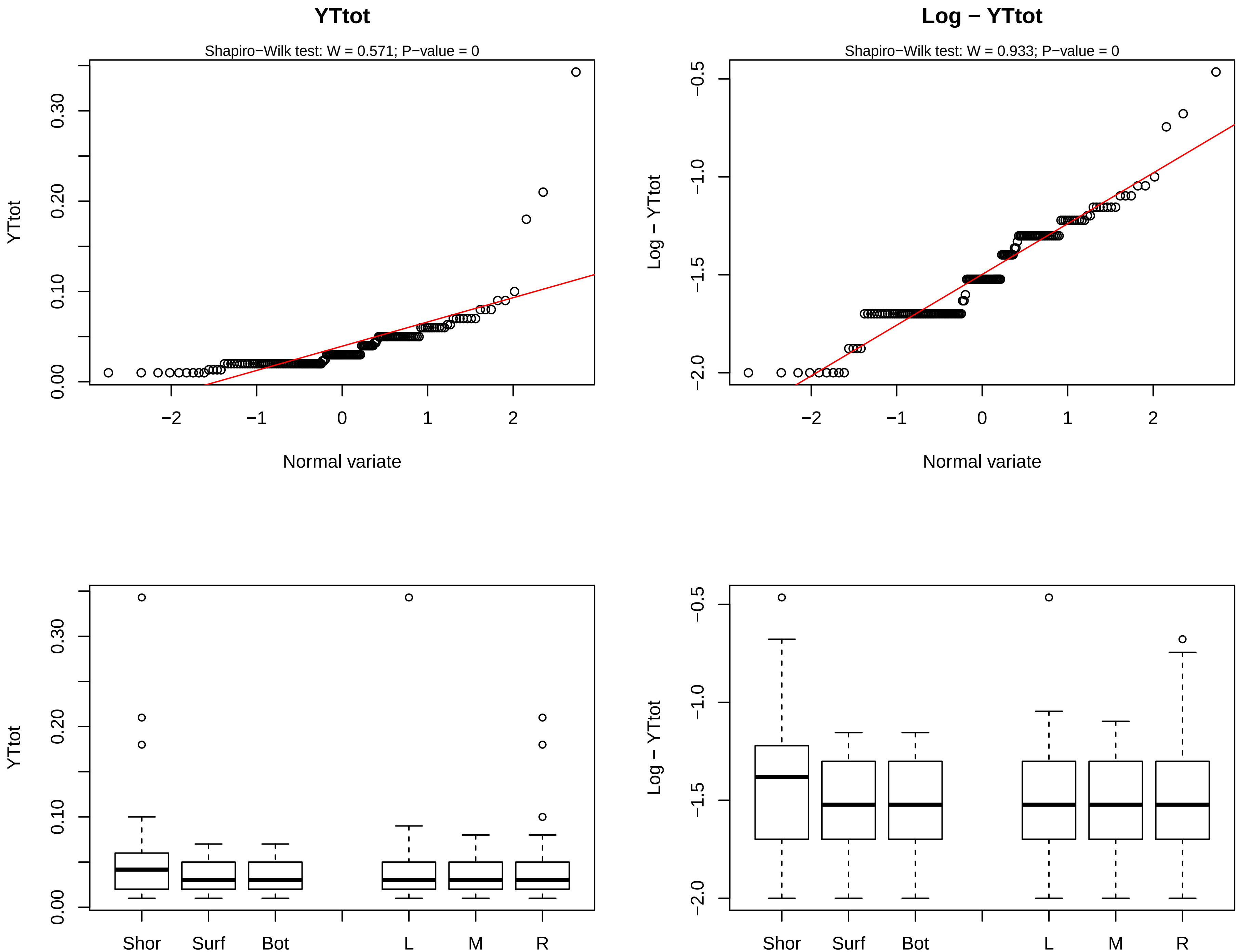

Log − YTdis
Shapiro−Wilk test: W = 0.902; P−value = 0
Log − YTdis
−2.2
−2.0
−1.8
−1.6
−1.4
−2
−1
0
1
2
Normal variate

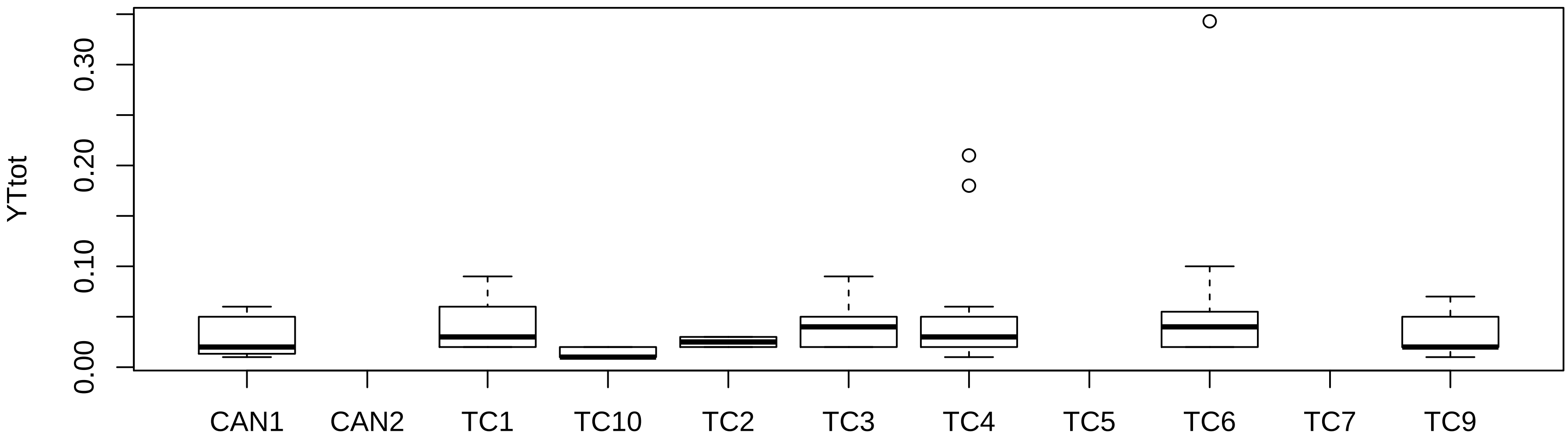

YTdis
0.01
0.02
0.03
0.04
0.05
Shor
Surf
Bot
L
M
R

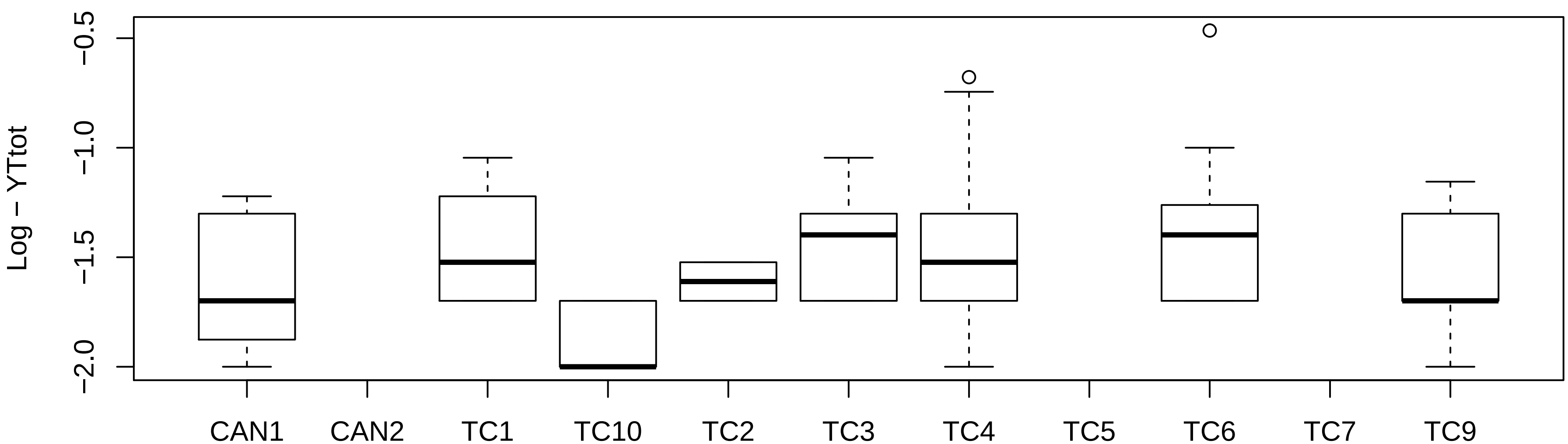

Log − YTdis
−2.2
−2.0
−1.8
−1.6
−1.4
Shor
Surf
Bot
L
M
R

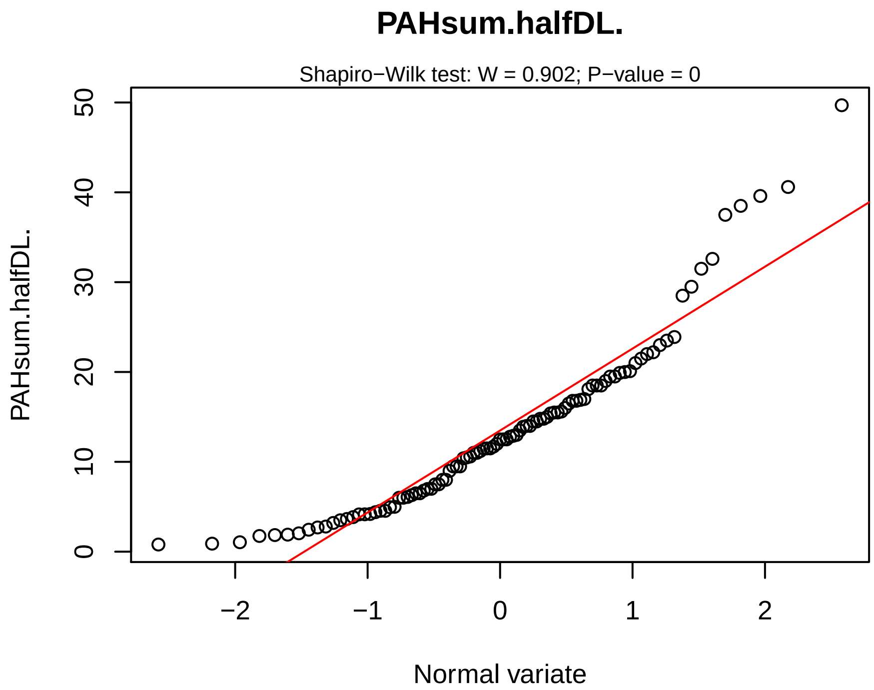

0.05
0.03
0.01
YTdis
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

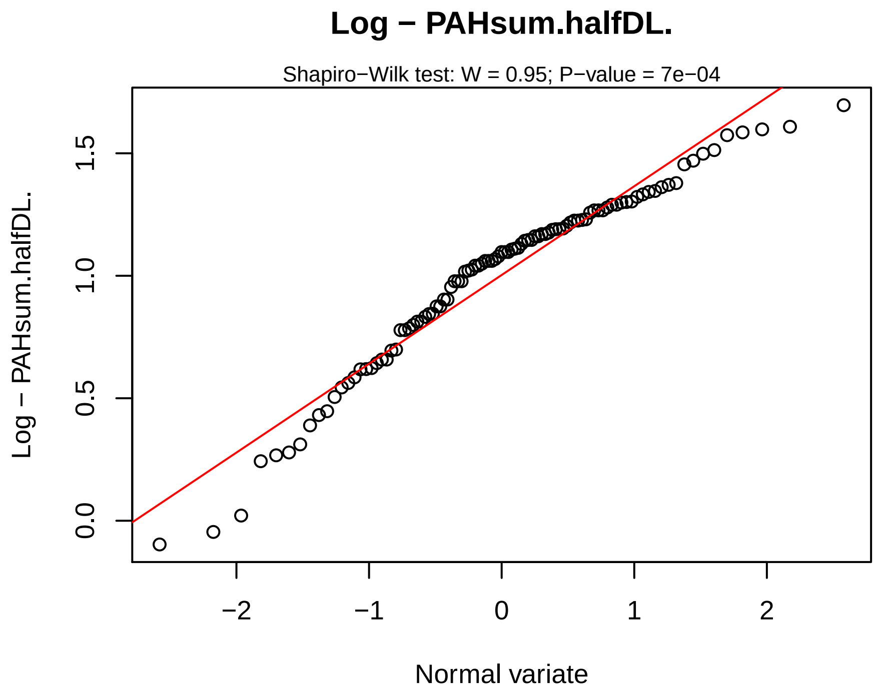

−1.4
−1.8
−2.2
Log − YTdis
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

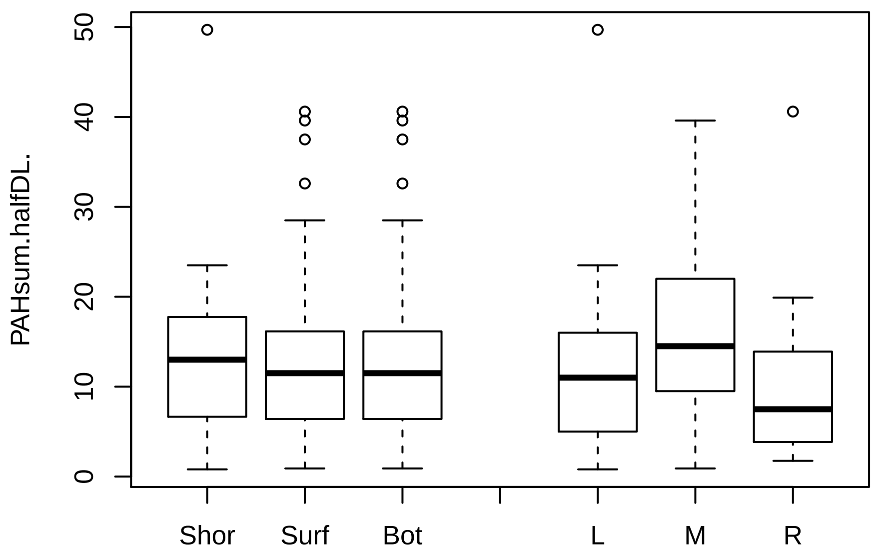

YTtot
Shapiro−Wilk test: W = 0.571; P−value = 0
YTtot
Normal variate
Log − YTtot
Shapiro−Wilk test: W = 0.933; P−value = 0
Log − YTtot
Normal variate
YTtot
Shor
Surf
Bot
L
M
R
Log − YTtot
Shor
Surf
Bot
L
M
R

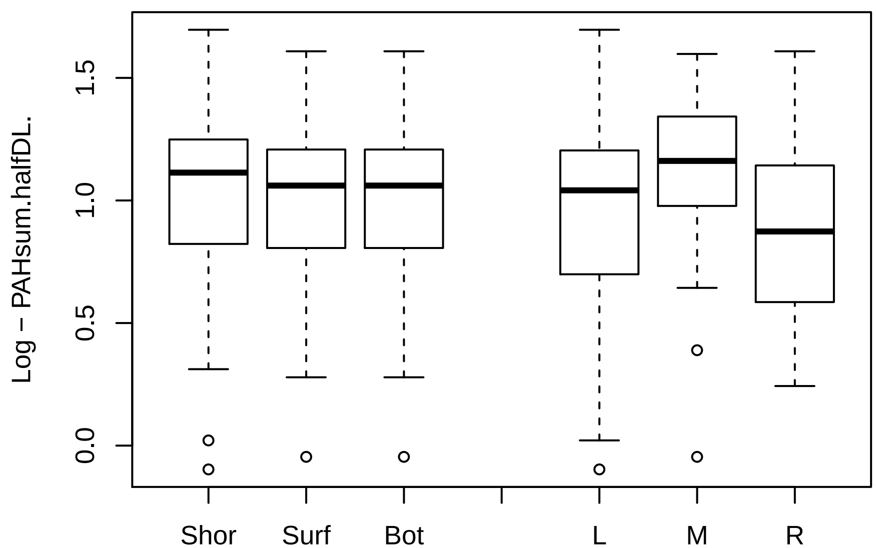

YTtot
0.00
0.10
0.20
0.30
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

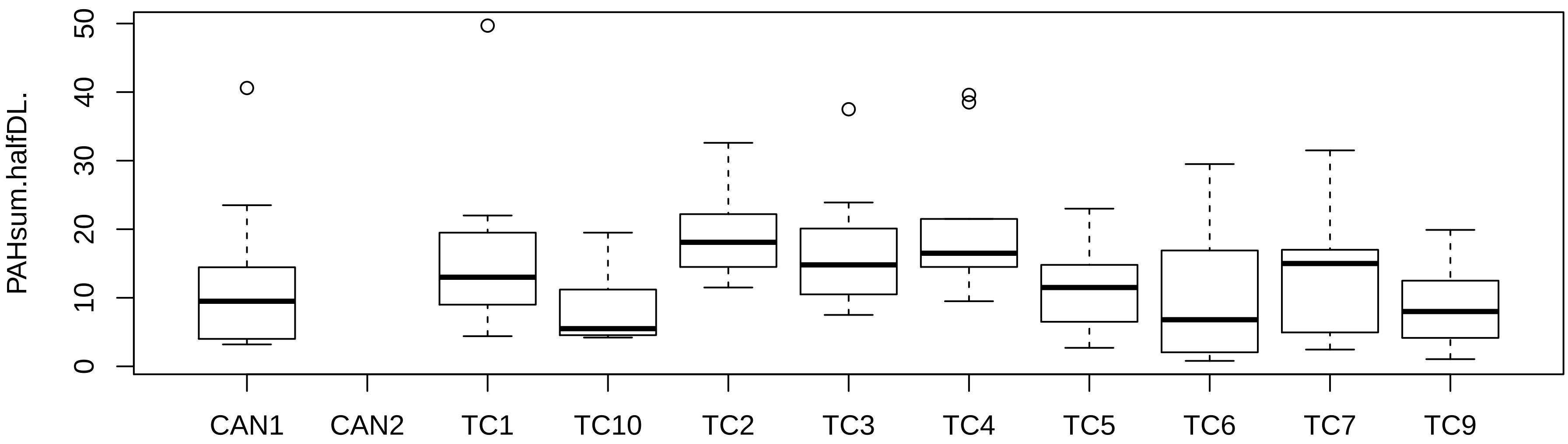

Log – YTtot
−2.0
−1.5
−1.0
−0.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


PAHsum.halfDL.
Shapiro−Wilk test: W = 0.902; P−value = 0
PAHsum.halfDL.
Normal variate

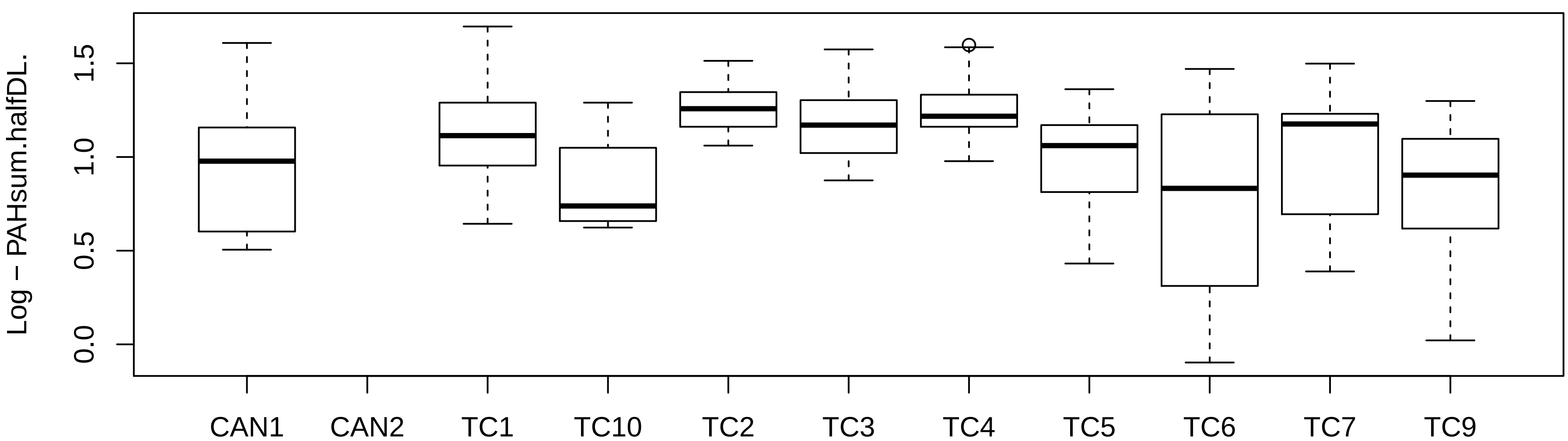

Log − PAHsum.halfDL.
Shapiro−Wilk test: W = 0.95; P−value = 7e−04
Log − PAHsum.halfDL.
Normal variate


PAHsum.halfDL.
Shor
Surf
Bot
L
M
R

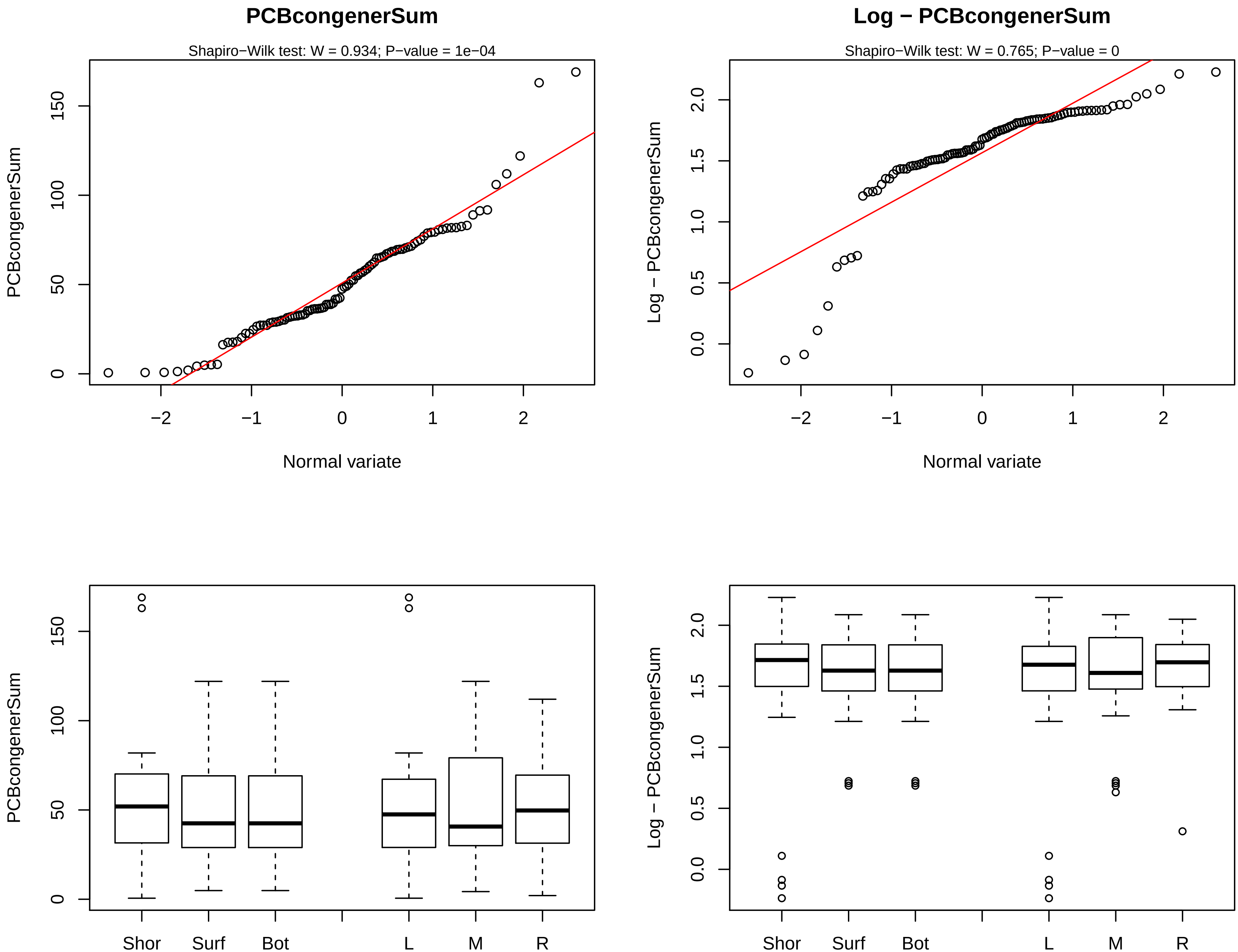

Log − PAHsum.halfDL.
Shor
Surf
Bot
L
M
R

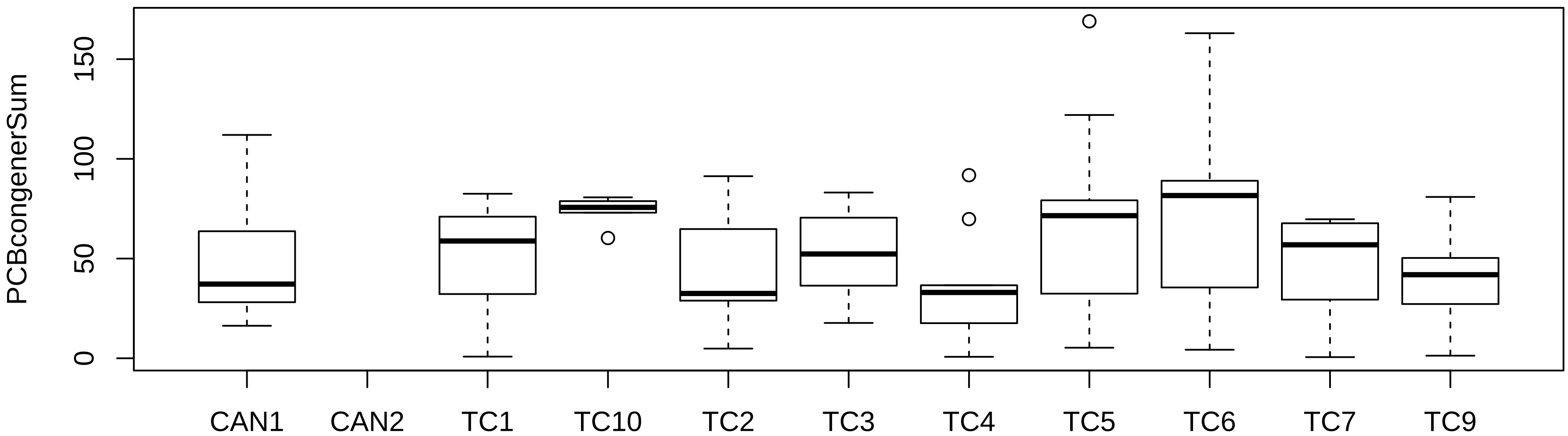


PAHsum.halfDL.
0
10
20
30
40
50
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

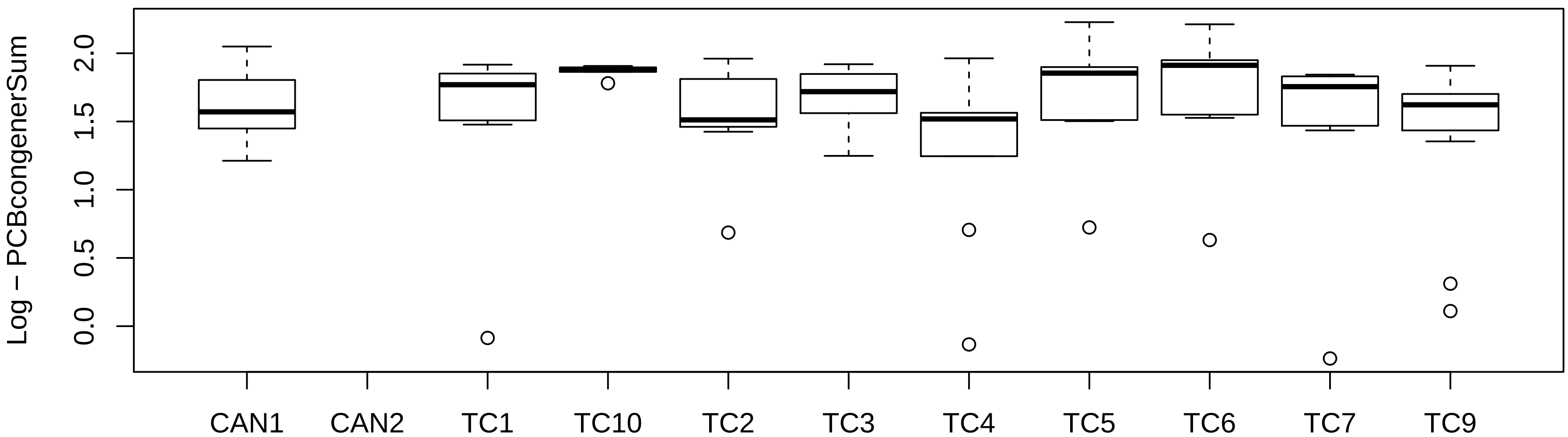


Log – PAHsum.halfDL.
0.0
0.5
1.0
1.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

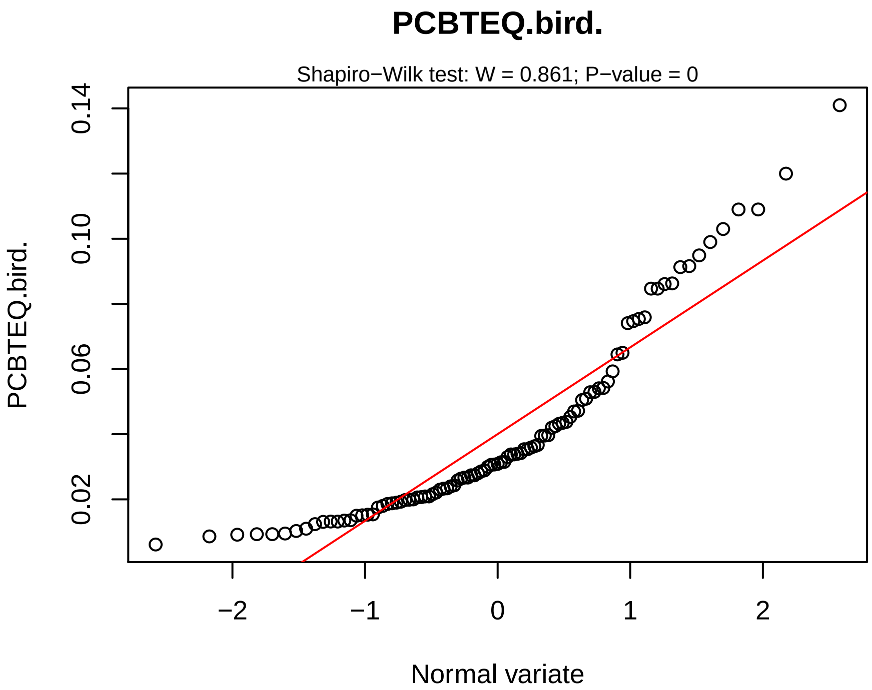

PCBcongenerSum
Shapiro−Wilk test: W = 0.934; P−value = 1e−04
PCBcongenerSum
Normal variate
Log − PCBcongenerSum
Shapiro−Wilk test: W = 0.765; P−value = 0
Log − PCBcongenerSum
Normal variate
PCBcongenerSum
Shor
Surf
Bot
L
M
R
Log − PCBcongenerSum
Shor
Surf
Bot
L
M
R

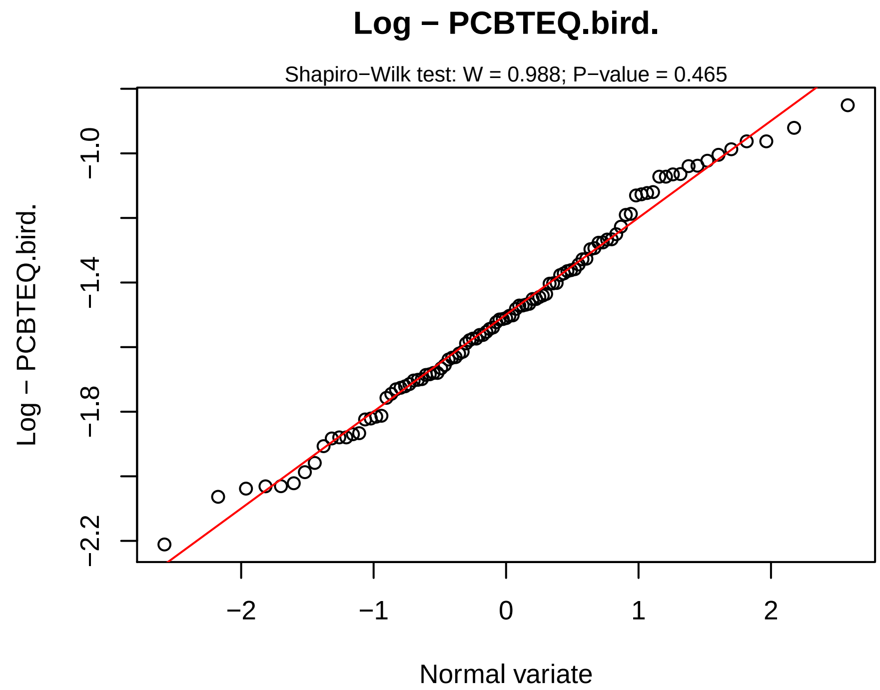


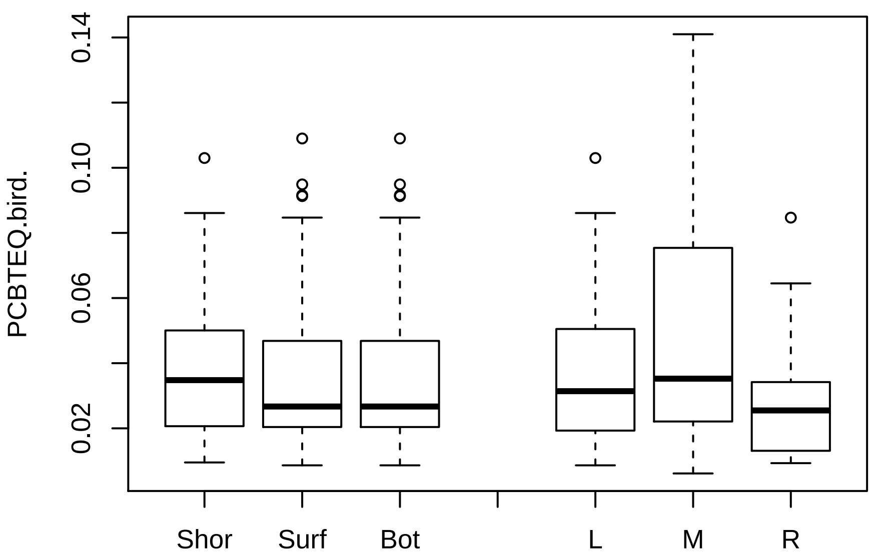
PCBcongenerSum
0
50
100
150
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

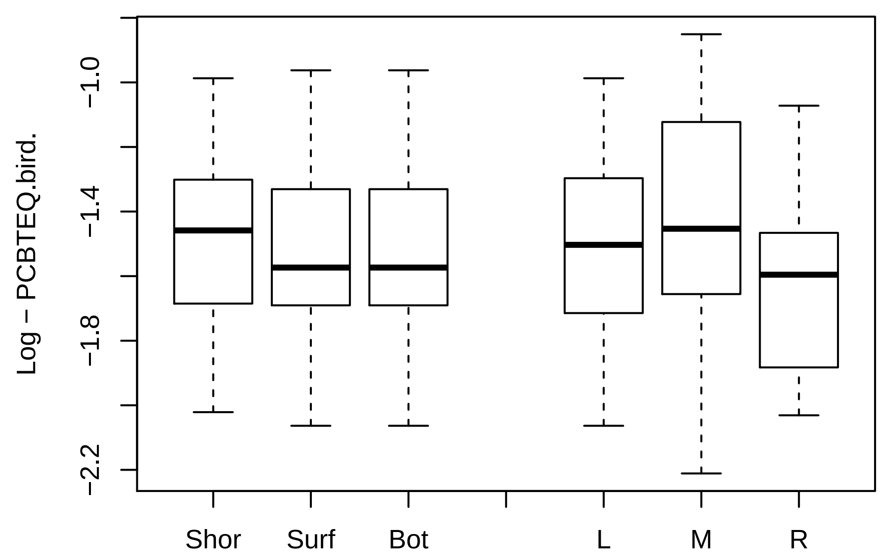


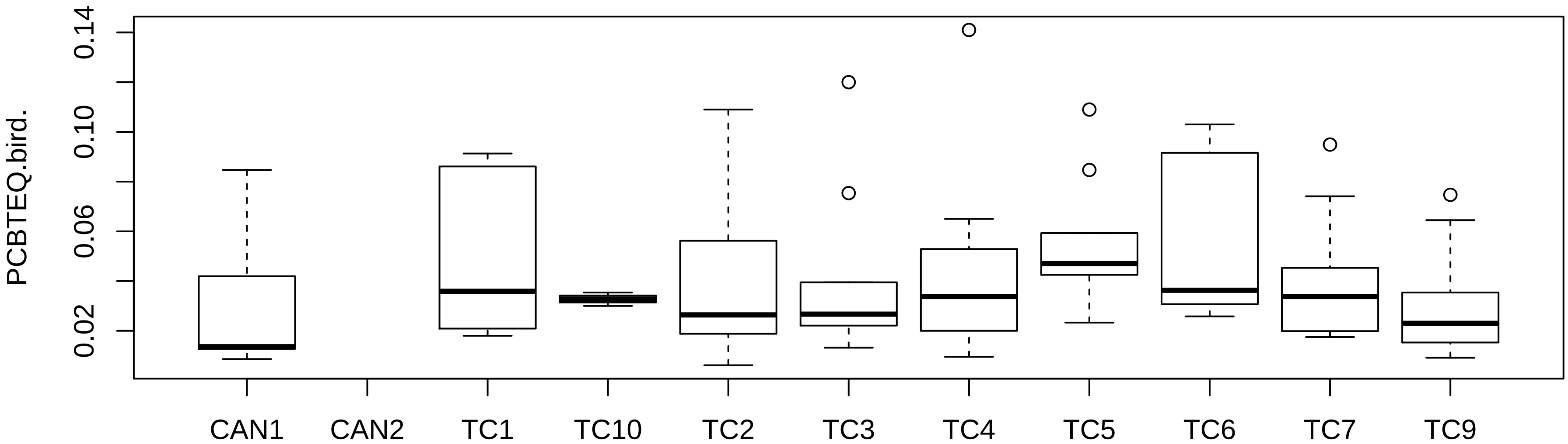
Log – PCBcongenerSum
0.0
0.5
1.0
1.5
2.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

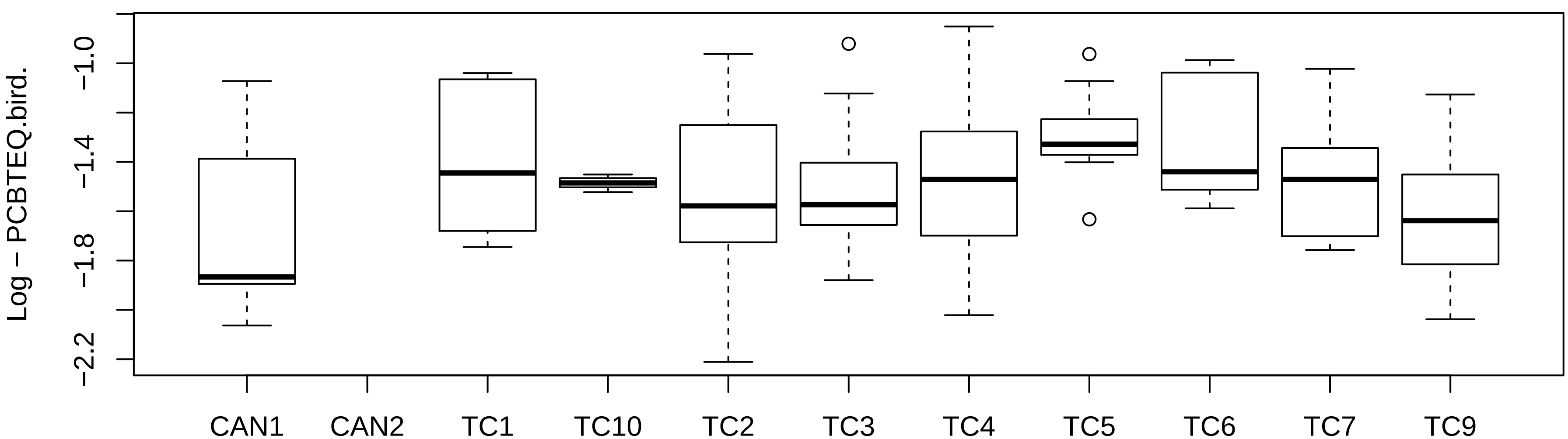

PCBTEQ.bird.
Shapiro−Wilk test: W = 0.861; P−value = 0
PCBTEQ.bird.
0.02
0.06
0.10
0.14
−2
−1
0
1
2
Normal variate

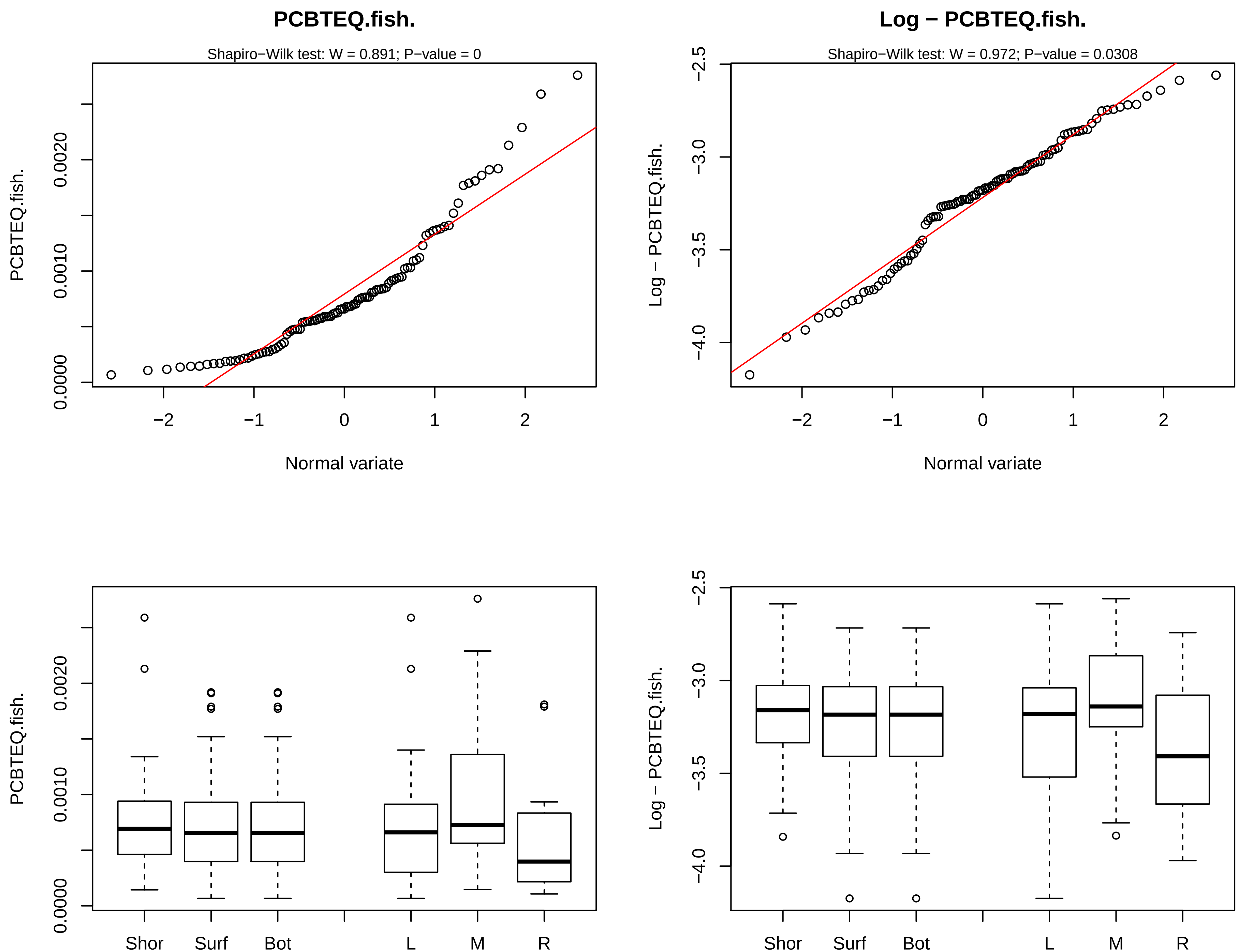

Log − PCBTEQ.bird.
Shapiro−Wilk test: W = 0.988; P−value = 0.465
Log − PCBTEQ.bird.
−2.2
−1.8
−1.4
−1.0
−2
−1
0
1
2
Normal variate


PCBTEQ.bird.
0.02
0.06
0.10
0.14
Shor
Surf
Bot
L
M
R

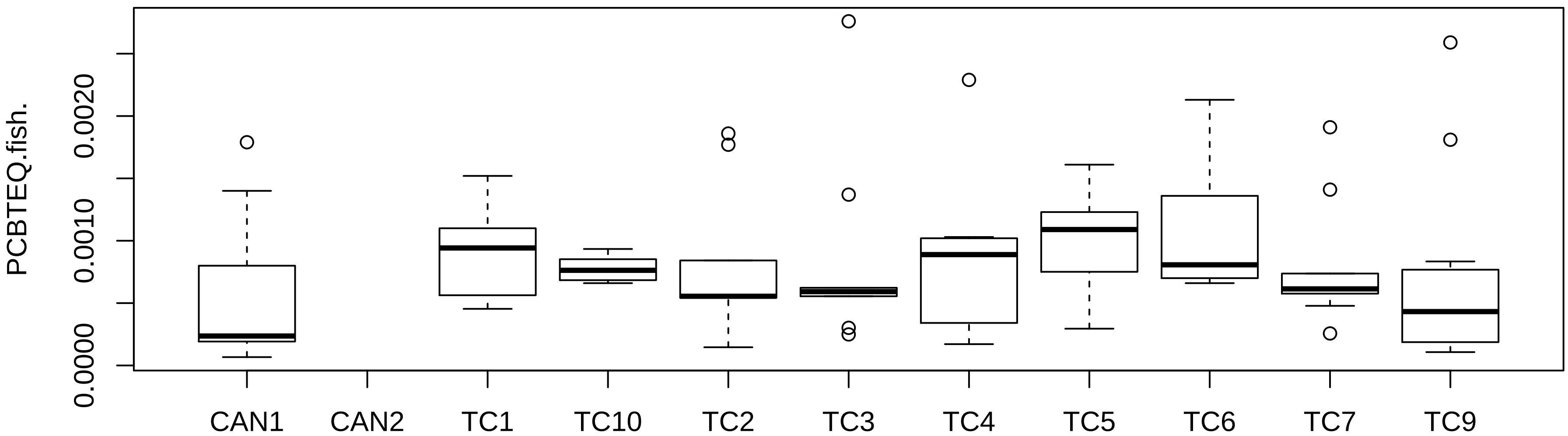

Log − PCBTEQ.bird.
−2.2
−1.8
−1.4
−1.0
Shor
Surf
Bot
L
M
R


PCBTEQ.bird.
0.02
0.06
0.10
0.14
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

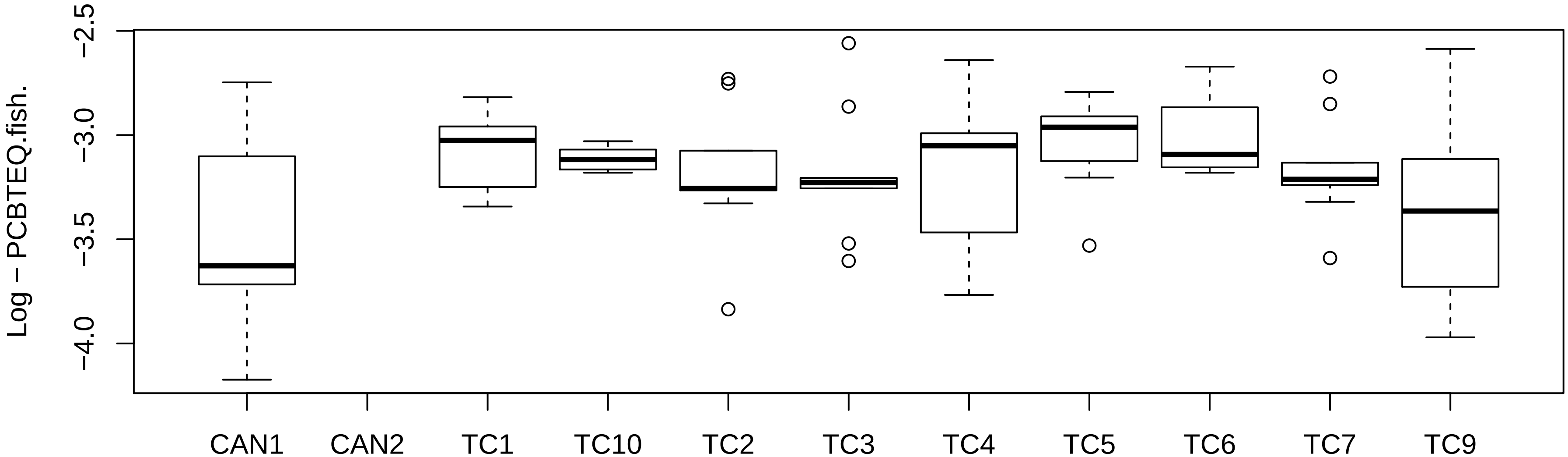

Log − PCBTEQ.bird.
−2.2
−1.8
−1.4
−1.0
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9



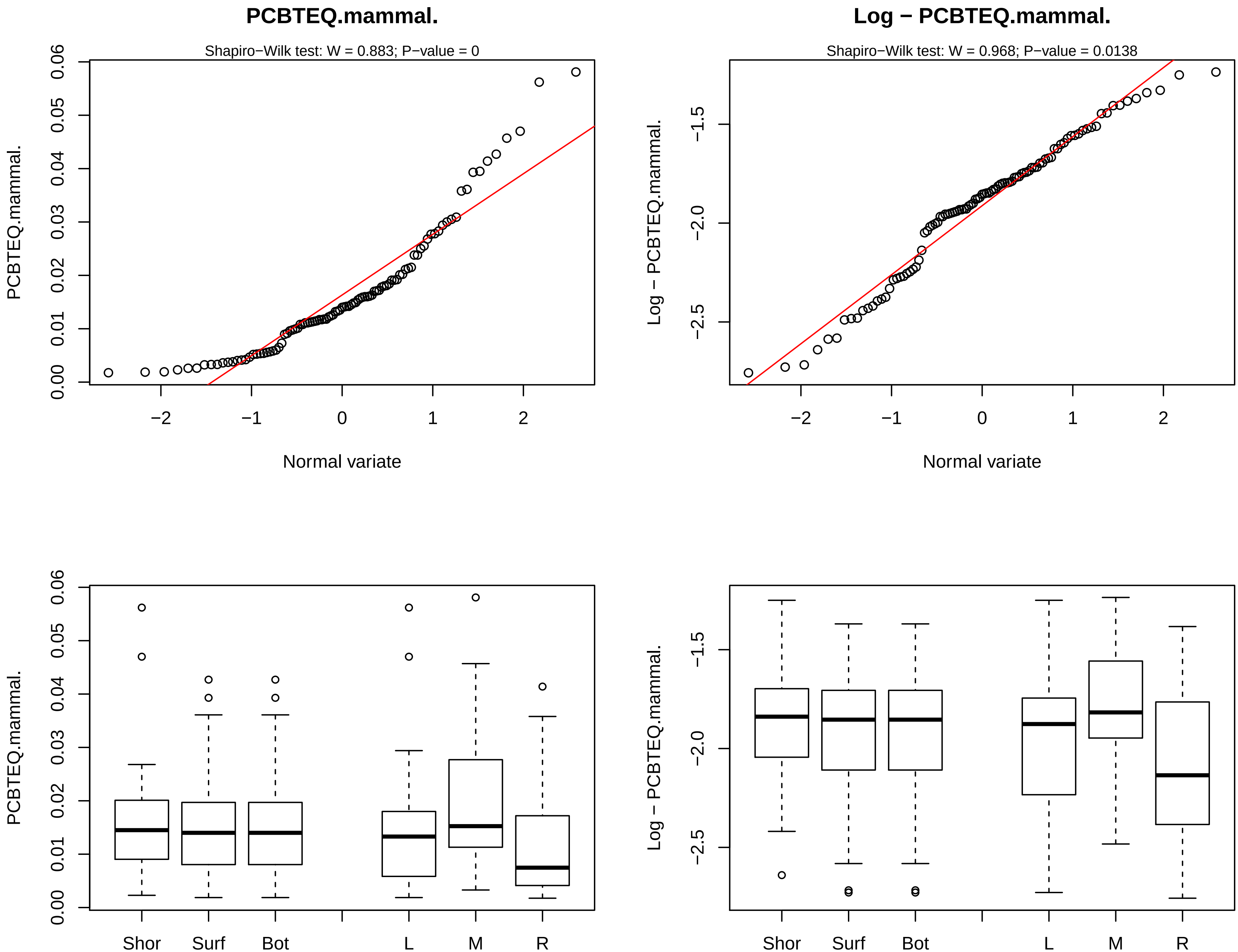
PCBTEQ.fish.
Shapiro−Wilk test: W = 0.891; P−value = 0
PCBTEQ.fish.
0.0000
0.0010
0.0020
−2
−1
0
1
2
Normal variate
Log − PCBTEQ.fish.
Shapiro−Wilk test: W = 0.972; P−value = 0.0308
Log − PCBTEQ.fish.
−4.0
−3.5
−3.0
−2.5
−2
−1
0
1
2
Normal variate
PCBTEQ.fish.
0.0000
0.0010
0.0020
Shor
Surf
Bot
L
M
R
Log − PCBTEQ.fish.
−4.0
−3.5
−3.0
−2.5
Shor
Surf
Bot
L
M
R

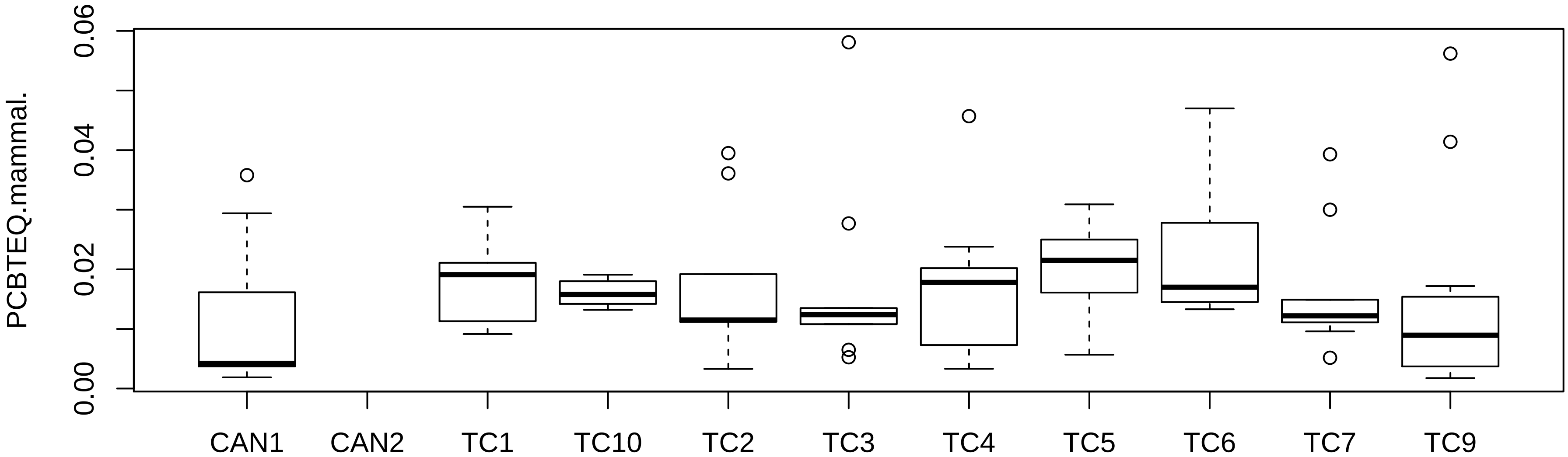


PCBTEQ.fish.
0.0000
0.0010
0.0020
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

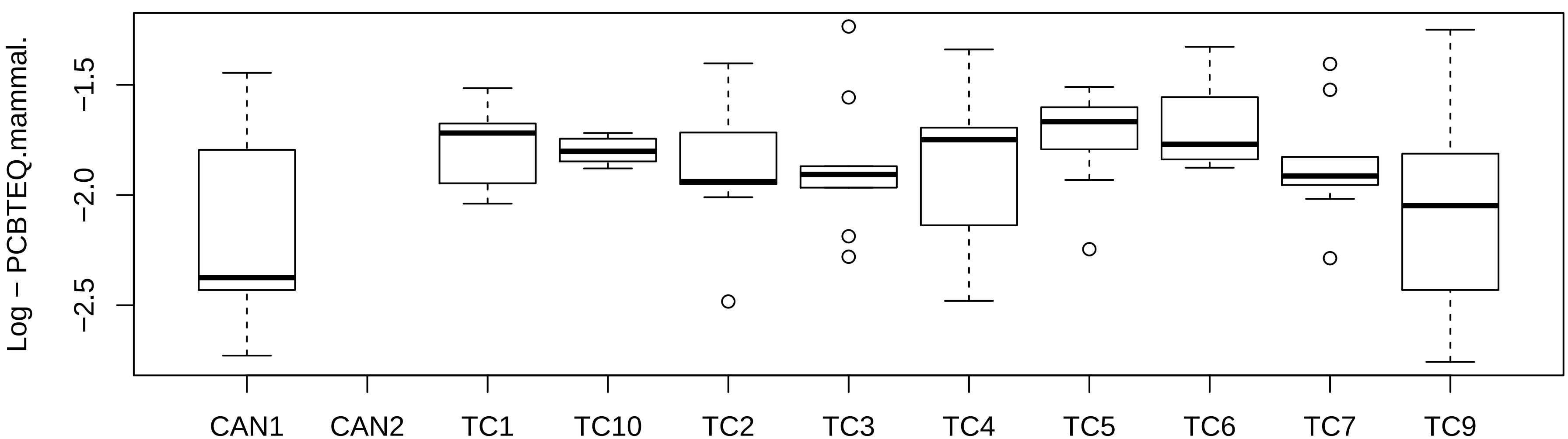


Log − PCBTEQ.fish.
−4.0
−3.5
−3.0
−2.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


PCBTEQ.mammal.
Shapiro−Wilk test: W = 0.883; P−value = 0
Log − PCBTEQ.mammal.
Shapiro−Wilk test: W = 0.968; P−value = 0.0138
Normal variate
PCBTEQ.mammal.
Log − PCBTEQ.mammal.
0.00
0.01
0.02
0.03
0.04
0.05
0.06
−2.5
−2.0
−1.5
−2
−1
0
1
2
Shor
Surf
Bot
L
M
R

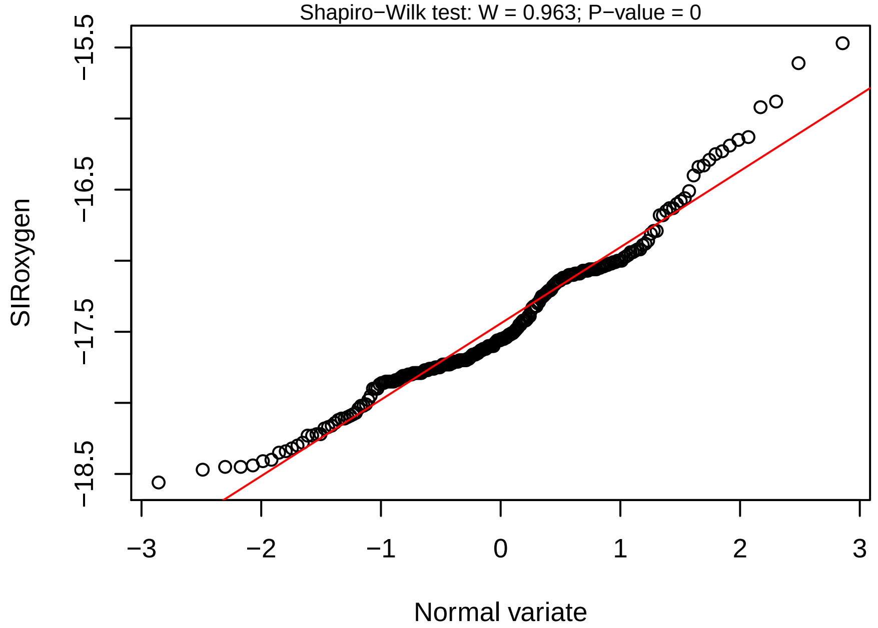


PCBTEQ.mammal.
0.00
0.02
0.04
0.06
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

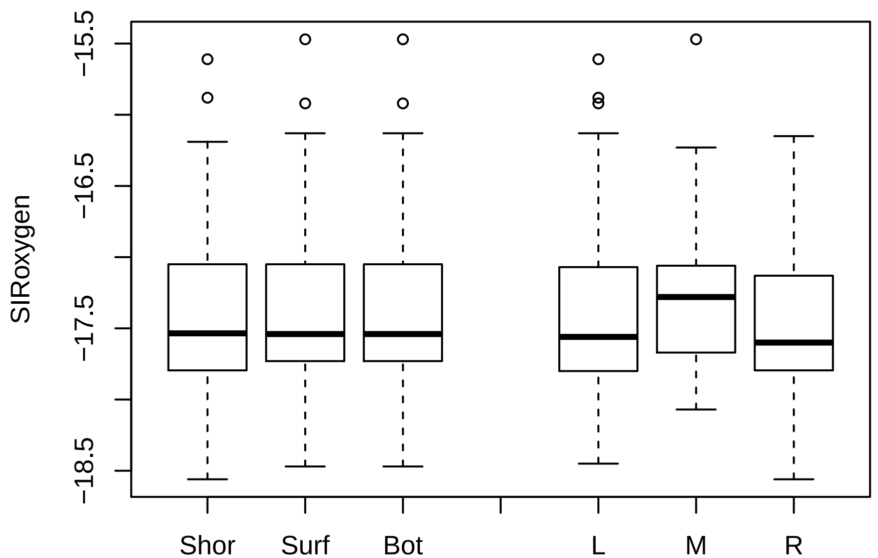


Log − PCBTEQ.mammal.
−2.5
−2.0
−1.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

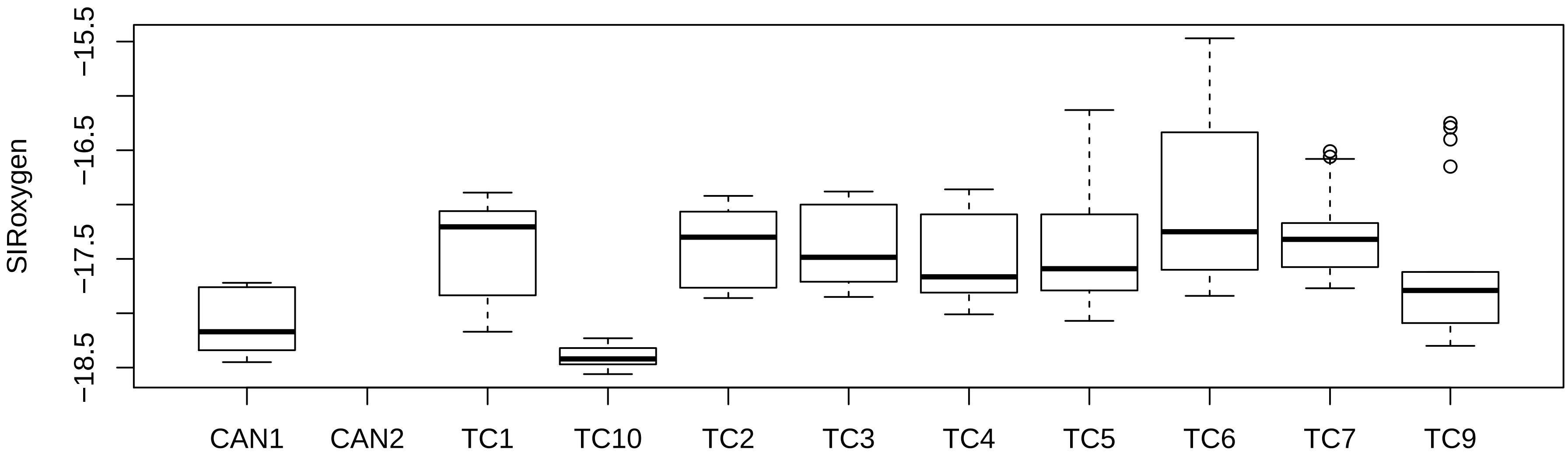
SIRoxygen



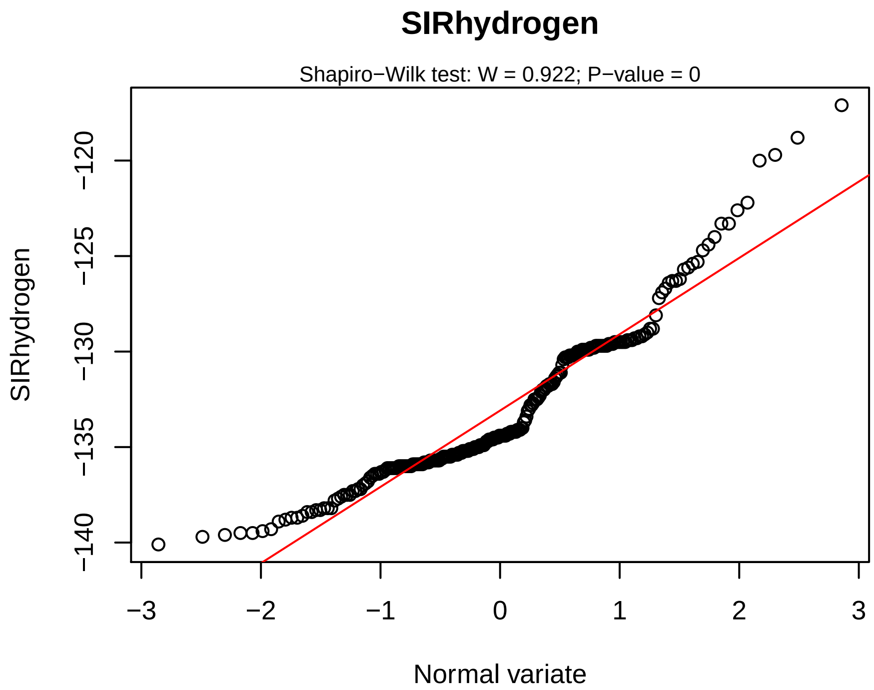
Shapiro−Wilk test: W = 0.963; P−value = 0
SIRoxygen
−15.5
−16.5
−17.5
−18.5
−3
−2
−1
0
1
2
3
Normal variate

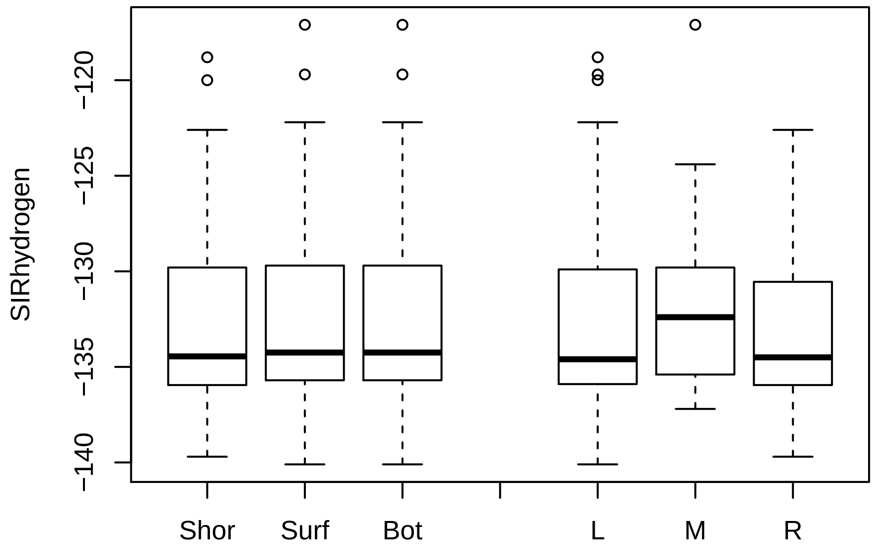


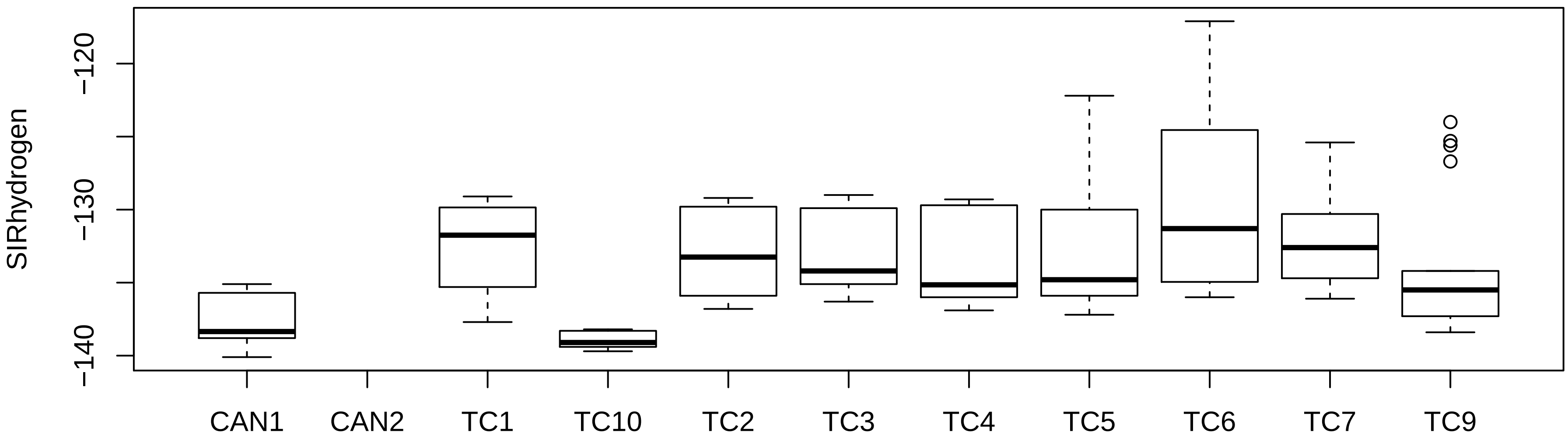
SIRoxygen
−15.5
−16.5
−17.5
−18.5
Shor
Surf
Bot
L
M
R



SIRoxygen
−15.5
−16.5
−17.5
−18.5
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9


SIRhydrogen
Shapiro−Wilk test: W = 0.922; P−value = 0
SIRhydrogen
−140
−135
−130
−125
−120
−3
−2
−1
0
1
2
3
Normal variate


SIRhydrogen
−140
−135
−130
−125
−120
Shor
Surf
Bot
L
M
R


SIRhydrogen
−120
−130
−140
CAN1
CAN2
TC1
TC10
TC2
TC3
TC4
TC5
TC6
TC7
TC9

Appendix G2a.

Tukey's multiple comparisons and Wilcoxon tests to identify specific transect differences

Alkalinity

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 162.5; P-value = 0.8078
CAN1 - TC1: W = 92; P-value = 0.0017
CAN1 - TC10: W = 90; P-value = 0.0178
CAN1 - TC2: W = 60.5; P-value = 1e-04
CAN1 - TC3: W = 107; P-value = 5e-04
CAN1 - TC4: W = 135.5; P-value = 0.0043
CAN1 - TC5: W = 162.5; P-value = 0.0227
CAN1 - TC6: W = 187.5; P-value = 0.0591
CAN1 - TC7: W = 96.5; P-value = 0.0025
CAN1 - TC9: W = 79.5; P-value = 0.016
CAN2 - TC1: W = 99.5; P-value = 0.0017
CAN2 - TC10: W = 97.5; P-value = 0.0108
CAN2 - TC2: W = 43; P-value = 0
CAN2 - TC3: W = 116; P-value = 5e-04
CAN2 - TC4: W = 190.5; P-value = 0.0536
CAN2 - TC5: W = 193; P-value = 0.0603
CAN2 - TC6: W = 188.5; P-value = 0.0349
CAN2 - TC7: W = 139; P-value = 0.0303
CAN2 - TC9: W = 88.5; P-value = 0.0216
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 227; P-value = 0.2119
TC1 - TC3: W = 340.5; P-value = 0.7407
TC1 - TC4: W = 451; P-value = 0.1149
TC1 - TC5: W = 428; P-value = 0.2399
TC1 - TC6: W = 413.5; P-value = 0.4865
TC1 - TC7: W = 291; P-value = 0.9589
TC1 - TC9: W = 207.5; P-value = 0.9367
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 9.5; P-value = 7e-04
TC10 - TC6: W = 25; P-value = 0.0054
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 2; P-value = 1e-04
TC2 - TC3: W = 423.5; P-value = 0.2726
TC2 - TC4: W = 545; P-value = 0.0013
TC2 - TC5: W = 489; P-value = 0.0252
TC2 - TC6: W = 475; P-value = 0.0819
TC2 - TC7: W = 339.5; P-value = 0.2926
TC2 - TC9: W = 233.5; P-value = 0.4427
TC3 - TC4: W = 588.5; P-value = 0.0412
TC3 - TC5: W = 554.5; P-value = 0.1241
TC3 - TC6: W = 533; P-value = 0.3301
TC3 - TC7: W = 388.5; P-value = 0.6258
TC3 - TC9: W = 262.5; P-value = 0.8768
TC4 - TC5: W = 446.5; P-value = 0.9646
TC4 - TC6: W = 426; P-value = 0.5785
TC4 - TC7: W = 306.5; P-value = 0.3559
TC4 - TC9: W = 232.5; P-value = 0.6261
TC5 - TC6: W = 445; P-value = 0.7784
TC5 - TC7: W = 295.5; P-value = 0.265
TC5 - TC9: W = 216; P-value = 0.3939
TC6 - TC7: W = 341.5; P-value = 0.6106
TC6 - TC9: W = 217.5; P-value = 0.3266
TC7 - TC9: W = 202.5; P-value = 0.9789
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Chloride Ion

```
Wilcox Tests between Transects:
 CAN1 - CAN2: W = 209.5; P-value = 0.2478
 CAN1 - TC1: W = 225; P-value = 0.8285
 CAN1 - TC10: W = 72; P-value = 0.2414
 CAN1 - TC2: W = 194; P-value = 0.5842
 CAN1 - TC3: W = 276; P-value = 0.9067
 CAN1 - TC4: W = 338.5; P-value = 0.1474
 CAN1 - TC5: W = 299.5; P-value = 0.5366
 CAN1 - TC6: W = 262; P-value = 0.7321
 CAN1 - TC7: W = 284; P-value = 0.086
 CAN1 - TC9: W = 90; P-value = 0.0386
 CAN2 - TC1: W = 206; P-value = 0.5987
 CAN2 - TC10: W = 93.5; P-value = 0.0214
 CAN2 - TC2: W = 179.5; P-value = 0.24
 CAN2 - TC3: W = 257.5; P-value = 0.5794
 CAN2 - TC4: W = 298; P-value = 0.7975
 CAN2 - TC5: W = 268.5; P-value = 0.7426
 CAN2 - TC6: W = 158.5; P-value = 0.0067
 CAN2 - TC7: W = 274.5; P-value = 0.2604
 CAN2 - TC9: W = 90; P-value = 0.0242
 TC1 - TC10: W = 144; P-value = 2e-04
 TC1 - TC2: W = 229.5; P-value = 0.2313
 TC1 - TC3: W = 289.5; P-value = 0.2227
 TC1 - TC4: W = 327; P-value = 0.5714
 TC1 - TC5: W = 292.5; P-value = 0.2432
 TC1 - TC6: W = 242.5; P-value = 0.0285
 TC1 - TC7: W = 257.5; P-value = 0.536
 TC1 - TC9: W = 143.5; P-value = 0.1117
 TC10 - TC2: W = 0; P-value = 2e-04
 TC10 - TC3: W = 0; P-value = 1e-04
 TC10 - TC4: W = 0; P-value = 1e-04
 TC10 - TC5: W = 0; P-value = 1e-04
 TC10 - TC6: W = 0; P-value = 1e-04
 TC10 - TC7: W = 0; P-value = 2e-04
 TC10 - TC9: W = 0; P-value = 4e-04
 TC2 - TC3: W = 344.5; P-value = 0.7939
 TC2 - TC4: W = 366.5; P-value = 0.9168
 TC2 - TC5: W = 326.5; P-value = 0.5654
 TC2 - TC6: W = 276; P-value = 0.1049
 TC2 - TC7: W = 298.5; P-value = 0.8365
 TC2 - TC9: W = 167.5; P-value = 0.3397
 TC3 - TC4: W = 465; P-value = 0.8302
 TC3 - TC5: W = 410; P-value = 0.5591
 TC3 - TC6: W = 301.5; P-value = 0.0187
 TC3 - TC7: W = 374.5; P-value = 0.8074
 TC3 - TC9: W = 242; P-value = 0.7815
 TC4 - TC5: W = 380; P-value = 0.3038
 TC4 - TC6: W = 258.5; P-value = 0.003
 TC4 - TC7: W = 387.5; P-value = 0.6382
 TC4 - TC9: W = 192; P-value = 0.1661
 TC5 - TC6: W = 305; P-value = 0.0213
 TC5 - TC7: W = 433; P-value = 0.2065
 TC5 - TC9: W = 225; P-value = 0.5133
 TC6 - TC7: W = 589; P-value = 2e-04
 TC6 - TC9: W = 284.5; P-value = 0.6583
 TC7 - TC9: W = 145.5; P-value = 0.1243
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Fluoride

Tukey multiple comparisons of means
95% family-wise confidence level

	diff	lwr	upr	p adj
CAN2-CAN1	3.292398e-03	-6.560872e-03	0.0131456669	0.9915697
TC1-CAN1	4.513889e-03	-4.826723e-03	0.0138545005	0.8931271
TC10-CAN1	1.388889e-02	-2.327885e-04	0.0280105662	0.0584253
TC2-CAN1	5.972222e-03	-3.368389e-03	0.0153128338	0.5942567
TC3-CAN1	1.211222e-02	3.180889e-03	0.0210435552	0.0007922
TC4-CAN1	1.455556e-02	5.624223e-03	0.0234868885	0.0000142
TC5-CAN1	1.022222e-02	1.290889e-03	0.0191535552	0.0110249
TC6-CAN1	6.523297e-03	-2.353851e-03	0.0154004459	0.3786857
TC7-CAN1	9.305556e-03	-3.505603e-05	0.0186461671	0.0518209
TC9-CAN1	3.202614e-03	-6.928701e-03	0.0133339301	0.9945600
TC1-CAN2	1.221491e-03	-7.977588e-03	0.0104205702	0.9999978
TC10-CAN2	1.059649e-02	-3.431973e-03	0.0246249552	0.3367937
TC2-CAN2	2.679825e-03	-6.519254e-03	0.0118789035	0.9972034
TC3-CAN2	8.819825e-03	3.661685e-05	0.0176030323	0.0480417
TC4-CAN2	1.126316e-02	2.479950e-03	0.0200463656	0.0020897
TC5-CAN2	6.929825e-03	-1.853383e-03	0.0157130323	0.2737141
TC6-CAN2	3.230900e-03	-5.497204e-03	0.0119590035	0.9816981
TC7-CAN2	6.013158e-03	-3.185921e-03	0.0152122369	0.5611038
TC9-CAN2	-8.978328e-05	-1.009076e-02	0.0099111961	1.0000000
TC10-TC1	9.375000e-03	-4.298255e-03	0.0230482553	0.4871647
TC2-TC1	1.458333e-03	-7.189393e-03	0.0101060593	0.9999788
TC3-TC1	7.598333e-03	-6.056198e-04	0.0158022865	0.0975748
TC4-TC1	1.004167e-02	1.837713e-03	0.0182456198	0.0043305
TC5-TC1	5.708333e-03	-2.495620e-03	0.0139122865	0.4640560
TC6-TC1	2.009409e-03	-6.135523e-03	0.0101543398	0.9993218
TC7-TC1	4.791667e-03	-3.856059e-03	0.0134393926	0.7787440
TC9-TC1	-1.311275e-03	-1.080757e-02	0.0081850247	0.9999968
TC2-TC10	-7.916667e-03	-2.158992e-02	0.0057565886	0.7287331
TC3-TC10	-1.776667e-03	-1.517367e-02	0.0116203328	0.9999978
TC4-TC10	6.666667e-04	-1.273033e-02	0.0140636661	1.0000000
TC5-TC10	-3.666667e-03	-1.706367e-02	0.0097303328	0.9983420
TC6-TC10	-7.365591e-03	-2.072653e-02	0.0059953461	0.7841246
TC7-TC10	-4.583333e-03	-1.825659e-02	0.0090899220	0.9913590
TC9-TC10	-1.068627e-02	-2.491141e-02	0.0035388597	0.3450370
TC3-TC2	6.140000e-03	-2.063953e-03	0.0143439532	0.3506912
TC4-TC2	8.583333e-03	3.793802e-04	0.0167872865	0.0316988
TC5-TC2	4.250000e-03	-3.953953e-03	0.0124539532	0.8426454
TC6-TC2	5.510753e-04	-7.593856e-03	0.0086960064	1.0000000
TC7-TC2	3.333333e-03	-5.314393e-03	0.0119810593	0.9754661
TC9-TC2	-2.769608e-03	-1.226591e-02	0.0067266913	0.9971765
TC4-TC3	2.443333e-03	-5.291428e-03	0.0101780946	0.9945903
TC5-TC3	-1.890000e-03	-9.624761e-03	0.0058447612	0.9993765
TC6-TC3	-5.588925e-03	-1.326106e-02	0.0020832058	0.3921570
TC7-TC3	-2.806667e-03	-1.101062e-02	0.0053972865	0.9898826
TC9-TC3	-8.909608e-03	-1.800364e-02	0.0001844221	0.0605269
TC5-TC4	-4.333333e-03	-1.206809e-02	0.0034014279	0.7667995
TC6-TC4	-8.032258e-03	-1.570439e-02	-0.0003601275	0.0314756
TC7-TC4	-5.250000e-03	-1.345395e-02	0.0029539532	0.5929766
TC9-TC4	-1.135294e-02	-2.044697e-02	-0.0022589112	0.0032070
TC6-TC5	-3.698925e-03	-1.137106e-02	0.0039732058	0.8945713
TC7-TC5	-9.166667e-04	-9.120620e-03	0.0072872865	0.9999996
TC9-TC5	-7.019608e-03	-1.611364e-02	0.0020744221	0.3048557
TC7-TC6	2.782258e-03	-5.362673e-03	0.0109271892	0.9899998
TC9-TC6	-3.320683e-03	-1.236150e-02	0.0057201375	0.9827180
TC9-TC7	-6.102941e-03	-1.559924e-02	0.0033933580	0.5866531

P-values reported are adjusted for multiple comparisons.

```
Hardness
        Wilcox Tests between Transects:
         CAN1 - CAN2: W = 134; P-value = 0.267
         CAN1 - TC1: W = 85.5; P-value = 0.0037
         CAN1 - TC10: W = 108; P-value = 4e-04
         CAN1 - TC2: W = 77; P-value = 0.0027
         CAN1 - TC3: W = 191; P-value = 0.0945
         CAN1 - TC4: W = 252.5; P-value = 0.7172
         CAN1 - TC5: W = 240.5; P-value = 0.5367
         CAN1 - TC6: W = 231; P-value = 0.3245
         CAN1 - TC7: W = 165; P-value = 0.199
         CAN1 - TC9: W = 111.5; P-value = 0.1758
         CAN2 - TC1: W = 120; P-value = 0.0323
         CAN2 - TC10: W = 114; P-value = 3e-04
         CAN2 - TC2: W = 111; P-value = 0.0273
         CAN2 - TC3: W = 193.5; P-value = 0.0618
         CAN2 - TC4: W = 297; P-value = 0.8134
         CAN2 - TC5: W = 320.5; P-value = 0.4724
         CAN2 - TC6: W = 272.5; P-value = 0.6673
         CAN2 - TC7: W = 230; P-value = 0.9707
         CAN2 - TC9: W = 147; P-value = 0.6571
         TC1 - TC10: W = 126; P-value = 3e-04
         TC1 - TC2: W = 234; P-value = 0.5398
         TC1 - TC3: W = 349; P-value = 0.5213
         TC1 - TC4: W = 437.5; P-value = 0.0195
         TC1 - TC5: W = 483; P-value = 0.0013
         TC1 - TC6: W = 411; P-value = 0.1128
         TC1 - TC7: W = 339.5; P-value = 0.0476
         TC1 - TC9: W = 225; P-value = 0.1767
         TC10 - TC2: W = 0; P-value = 3e-04
         TC10 - TC3: W = 6; P-value = 4e-04
         TC10 - TC4: W = 0; P-value = 1e-04
         TC10 - TC5: W = 6; P-value = 4e-04
         TC10 - TC6: W = 28; P-value = 0.0078
         TC10 - TC7: W = 0; P-value = 2e-04
         TC10 - TC9: W = 0; P-value = 4e-04
         TC2 - TC3: W = 364; P-value = 0.2085
         TC2 - TC4: W = 427; P-value = 0.0122
         TC2 - TC5: W = 439; P-value = 0.0061
         TC2 - TC6: W = 368.5; P-value = 0.263
         TC2 - TC7: W = 301; P-value = 0.1536
         TC2 - TC9: W = 187.5; P-value = 0.6043
         TC3 - TC4: W = 597; P-value = 0.0303
         TC3 - TC5: W = 602; P-value = 0.0251
         TC3 - TC6: W = 539; P-value = 0.289
         TC3 - TC7: W = 399.5; P-value = 0.4971
         TC3 - TC9: W = 256.5; P-value = 0.9823
         TC4 - TC5: W = 496; P-value = 0.5011
         TC4 - TC6: W = 425.5; P-value = 0.5736
         TC4 - TC7: W = 328; P-value = 0.5833
         TC4 - TC9: W = 229; P-value = 0.5723
         TC5 - TC6: W = 387; P-value = 0.2635
         TC5 - TC7: W = 318.5; P-value = 0.4753
         TC5 - TC9: W = 209; P-value = 0.3137
         TC6 - TC7: W = 357.5; P-value = 0.8121
         TC6 - TC9: W = 258.5; P-value = 0.9227
         TC7 - TC9: W = 207; P-value = 0.9472

     P-values reported are not adjusted for multiple comparisons.
     Adjusted significance level is 0.05 / 55 = 0.00091.
```

Silica

```
Wilcox Tests between Transects:
 CAN1 - CAN2: W = 192; P-value = 0.5331
 CAN1 - TC1: W = 96; P-value = 0.0024
 CAN1 - TC10: W = 72; P-value = 0.2428
 CAN1 - TC2: W = 127; P-value = 0.0244
 CAN1 - TC3: W = 120; P-value = 0.0015
 CAN1 - TC4: W = 233; P-value = 0.4369
 CAN1 - TC5: W = 145; P-value = 0.008
 CAN1 - TC6: W = 149; P-value = 0.0072
 CAN1 - TC7: W = 76.5; P-value = 4e-04
 CAN1 - TC9: W = 81.5; P-value = 0.0191
 CAN2 - TC1: W = 85.5; P-value = 5e-04
 CAN2 - TC10: W = 90; P-value = 0.0386
 CAN2 - TC2: W = 125; P-value = 0.0122
 CAN2 - TC3: W = 106; P-value = 2e-04
 CAN2 - TC4: W = 217; P-value = 0.166
 CAN2 - TC5: W = 153.5; P-value = 0.0072
 CAN2 - TC6: W = 155.5; P-value = 0.0056
 CAN2 - TC7: W = 52; P-value = 0
 CAN2 - TC9: W = 88.5; P-value = 0.0216
 TC1 - TC10: W = 144; P-value = 2e-04
 TC1 - TC2: W = 328; P-value = 0.4153
 TC1 - TC3: W = 307.5; P-value = 0.3653
 TC1 - TC4: W = 436.5; P-value = 0.1858
 TC1 - TC5: W = 329.5; P-value = 0.6015
 TC1 - TC6: W = 311; P-value = 0.3045
 TC1 - TC7: W = 171.5; P-value = 0.0167
 TC1 - TC9: W = 215; P-value = 0.7811
 TC10 - TC2: W = 0; P-value = 2e-04
 TC10 - TC3: W = 4; P-value = 3e-04
 TC10 - TC4: W = 0; P-value = 1e-04
 TC10 - TC5: W = 6; P-value = 4e-04
 TC10 - TC6: W = 0; P-value = 1e-04
 TC10 - TC7: W = 0; P-value = 2e-04
 TC10 - TC9: W = 0; P-value = 4e-04
 TC2 - TC3: W = 257; P-value = 0.0743
 TC2 - TC4: W = 361; P-value = 0.9931
 TC2 - TC5: W = 304; P-value = 0.334
 TC2 - TC6: W = 266.5; P-value = 0.0747
 TC2 - TC7: W = 136.5; P-value = 0.0018
 TC2 - TC9: W = 197; P-value = 0.8634
 TC3 - TC4: W = 581.5; P-value = 0.0527
 TC3 - TC5: W = 517; P-value = 0.3255
 TC3 - TC6: W = 454; P-value = 0.8796
 TC3 - TC7: W = 247; P-value = 0.0502
 TC3 - TC9: W = 303; P-value = 0.2929
 TC4 - TC5: W = 387.5; P-value = 0.3593
 TC4 - TC6: W = 308; P-value = 0.024
 TC4 - TC7: W = 153.5; P-value = 3e-04
 TC4 - TC9: W = 234.5; P-value = 0.6578
 TC5 - TC6: W = 358.5; P-value = 0.1262
 TC5 - TC7: W = 244; P-value = 0.0443
 TC5 - TC9: W = 274; P-value = 0.6821
 TC6 - TC7: W = 329; P-value = 0.4707
 TC6 - TC9: W = 326.5; P-value = 0.1779
 TC7 - TC9: W = 275; P-value = 0.062
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Silicon, dissolved

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 92; P-value = 0.0017
CAN1 - TC10: W = 72; P-value = 0.2427
CAN1 - TC2: W = 44; P-value = 0.5225
CAN1 - TC3: W = 132; P-value = 0.0034
CAN1 - TC4: W = 164; P-value = 0.0246
CAN1 - TC6: W = 132; P-value = 0.0024
CAN1 - TC9: W = 92.5; P-value = 0.0475
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 84.5; P-value = 0.018
TC1 - TC3: W = 298; P-value = 0.2843
TC1 - TC4: W = 336; P-value = 0.6824
TC1 - TC6: W = 266.5; P-value = 0.0747
TC1 - TC9: W = 225; P-value = 0.5874
TC10 - TC2: W = 0; P-value = 0.0095
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC9: W = 1; P-value = 0
TC2 - TC3: W = 18; P-value = 0.0265
TC2 - TC4: W = 30; P-value = 0.1146
TC2 - TC6: W = 32; P-value = 0.126
TC2 - TC9: W = 18; P-value = 0.1718
TC3 - TC4: W = 585.5; P-value = 0.0459
TC3 - TC6: W = 400; P-value = 0.352
TC3 - TC9: W = 317.5; P-value = 0.1697
TC4 - TC6: W = 272; P-value = 0.0055
TC4 - TC9: W = 272; P-value = 0.7147
TC6 - TC9: W = 365; P-value = 0.0294
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Silicon, total

Wilcox Tests between Transects:

```
 CAN1 - TC1: W = 94; P-value = 0.002
 CAN1 - TC10: W = 93; P-value = 0.0102
 CAN1 - TC2: W = 36; P-value = 1
 CAN1 - TC3: W = 141.5; P-value = 0.0064
 CAN1 - TC4: W = 163.5; P-value = 0.024
 CAN1 - TC6: W = 134; P-value = 0.0027
 CAN1 - TC9: W = 97; P-value = 0.0669
 TC1 - TC10: W = 144; P-value = 2e-04
 TC1 - TC2: W = 85; P-value = 0.0165
 TC1 - TC3: W = 313.5; P-value = 0.4232
 TC1 - TC4: W = 383; P-value = 0.6952
 TC1 - TC6: W = 271; P-value = 0.0881
 TC1 - TC9: W = 225; P-value = 0.5874
 TC10 - TC2: W = 0; P-value = 0.0139
 TC10 - TC3: W = 0; P-value = 1e-04
 TC10 - TC4: W = 0; P-value = 1e-04
 TC10 - TC6: W = 0; P-value = 1e-04
 TC10 - TC9: W = 1; P-value = 0
 TC2 - TC3: W = 21.5; P-value = 0.0422
 TC2 - TC4: W = 30; P-value = 0.1147
 TC2 - TC6: W = 32; P-value = 0.1261
 TC2 - TC9: W = 17; P-value = 0.1393
 TC3 - TC4: W = 588.5; P-value = 0.0413
 TC3 - TC6: W = 413; P-value = 0.4575
 TC3 - TC9: W = 314; P-value = 0.1952
 TC4 - TC6: W = 286.5; P-value = 0.0102
 TC4 - TC9: W = 269.5; P-value = 0.7565
 TC6 - TC9: W = 353; P-value = 0.055
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Sulfate

```
Wilcox Tests between Transects:
 CAN1 - CAN2: W = 117; P-value = 0.1033
 CAN1 - TC1: W = 320; P-value = 0.0085
 CAN1 - TC10: W = 72; P-value = 0.2413
 CAN1 - TC2: W = 326; P-value = 0.0053
 CAN1 - TC3: W = 405.5; P-value = 0.004
 CAN1 - TC4: W = 360.5; P-value = 0.055
 CAN1 - TC5: W = 366; P-value = 0.0418
 CAN1 - TC6: W = 422; P-value = 0.0031
 CAN1 - TC7: W = 317; P-value = 0.0105
 CAN1 - TC9: W = 178.5; P-value = 0.4088
 CAN2 - TC1: W = 383.5; P-value = 1e-04
 CAN2 - TC10: W = 93; P-value = 0.023
 CAN2 - TC2: W = 379; P-value = 2e-04
 CAN2 - TC3: W = 459; P-value = 4e-04
 CAN2 - TC4: W = 489.5; P-value = 0
 CAN2 - TC5: W = 489.5; P-value = 0
 CAN2 - TC6: W = 561.5; P-value = 0
 CAN2 - TC7: W = 425; P-value = 0
 CAN2 - TC9: W = 230; P-value = 0.031
 TC1 - TC10: W = 36; P-value = 0.0652
 TC1 - TC2: W = 307.5; P-value = 0.6951
 TC1 - TC3: W = 349.5; P-value = 0.8618
 TC1 - TC4: W = 396; P-value = 0.5363
 TC1 - TC5: W = 336; P-value = 0.6823
 TC1 - TC6: W = 377; P-value = 0.9391
 TC1 - TC7: W = 251; P-value = 0.4514
 TC1 - TC9: W = 164.5; P-value = 0.3019
 TC10 - TC2: W = 96; P-value = 0.222
 TC10 - TC3: W = 120; P-value = 0.2101
 TC10 - TC4: W = 120; P-value = 0.2094
 TC10 - TC5: W = 120; P-value = 0.2096
 TC10 - TC6: W = 160; P-value = 0.0061
 TC10 - TC7: W = 107; P-value = 0.073
 TC10 - TC9: W = 48; P-value = 0.8606
 TC2 - TC3: W = 323.5; P-value = 0.5307
 TC2 - TC4: W = 374; P-value = 0.8141
 TC2 - TC5: W = 330.5; P-value = 0.6134
 TC2 - TC6: W = 366.5; P-value = 0.9324
 TC2 - TC7: W = 248.5; P-value = 0.421
 TC2 - TC9: W = 164; P-value = 0.2956
 TC3 - TC4: W = 442.5; P-value = 0.9175
 TC3 - TC5: W = 428.5; P-value = 0.7561
 TC3 - TC6: W = 460.5; P-value = 0.954
 TC3 - TC7: W = 302.5; P-value = 0.321
 TC3 - TC9: W = 208; P-value = 0.3031
 TC4 - TC5: W = 372.5; P-value = 0.2542
 TC4 - TC6: W = 483; P-value = 0.8006
 TC4 - TC7: W = 343; P-value = 0.7738
 TC4 - TC9: W = 210; P-value = 0.3241
 TC5 - TC6: W = 515; P-value = 0.475
 TC5 - TC7: W = 398.5; P-value = 0.5081
 TC5 - TC9: W = 209; P-value = 0.3134
 TC6 - TC7: W = 356; P-value = 0.7924
 TC6 - TC9: W = 194; P-value = 0.1368
 TC7 - TC9: W = 155; P-value = 0.1988
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Aluminum, total

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 95.5; P-value = 0.0226
CAN1 - TC1: W = 117; P-value = 0.0123
CAN1 - TC10: W = 86; P-value = 0.0355
CAN1 - TC2: W = 129.5; P-value = 0.0288
CAN1 - TC3: W = 187.5; P-value = 0.0807
CAN1 - TC4: W = 237; P-value = 0.4888
CAN1 - TC5: W = 152.5; P-value = 0.0127
CAN1 - TC6: W = 170.5; P-value = 0.0251
CAN1 - TC7: W = 219; P-value = 0.9493
CAN1 - TC9: W = 109; P-value = 0.2338
CAN2 - TC1: W = 233; P-value = 0.9124
CAN2 - TC10: W = 109.5; P-value = 9e-04
CAN2 - TC2: W = 258.5; P-value = 0.4631
CAN2 - TC3: W = 336; P-value = 0.3001
CAN2 - TC4: W = 411; P-value = 0.01
CAN2 - TC5: W = 282; P-value = 0.9591
CAN2 - TC6: W = 302.5; P-value = 0.8808
CAN2 - TC7: W = 335.5; P-value = 0.0089
CAN2 - TC9: W = 198; P-value = 0.1332
TC1 - TC10: W = 144; P-value = 0
TC1 - TC2: W = 303; P-value = 0.7649
TC1 - TC3: W = 412; P-value = 0.3699
TC1 - TC4: W = 508; P-value = 0.0102
TC1 - TC5: W = 325; P-value = 0.5481
TC1 - TC6: W = 351; P-value = 0.7279
TC1 - TC7: W = 396.5; P-value = 0.0259
TC1 - TC9: W = 239; P-value = 0.2017
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 6; P-value = 4e-04
TC10 - TC4: W = 10; P-value = 7e-04
TC10 - TC5: W = 1; P-value = 2e-04
TC10 - TC6: W = 5; P-value = 3e-04
TC10 - TC7: W = 27.5; P-value = 0.0225
TC10 - TC9: W = 11.5; P-value = 0.0079
TC2 - TC3: W = 375.5; P-value = 0.794
TC2 - TC4: W = 489.5; P-value = 0.0247
TC2 - TC5: W = 304; P-value = 0.3339
TC2 - TC6: W = 325.5; P-value = 0.435
TC2 - TC7: W = 395; P-value = 0.0281
TC2 - TC9: W = 225; P-value = 0.3695
TC3 - TC4: W = 567.5; P-value = 0.0837
TC3 - TC5: W = 374; P-value = 0.2643
TC3 - TC6: W = 396; P-value = 0.323
TC3 - TC7: W = 469.5; P-value = 0.0577
TC3 - TC9: W = 275.5; P-value = 0.4195
TC4 - TC5: W = 242.5; P-value = 0.0022
TC4 - TC6: W = 261.5; P-value = 0.0034
TC4 - TC7: W = 356; P-value = 0.9514
TC4 - TC9: W = 224.5; P-value = 0.7294
TC5 - TC6: W = 476; P-value = 0.8796
TC5 - TC7: W = 543.5; P-value = 0.0014
TC5 - TC9: W = 303; P-value = 0.1494
TC6 - TC7: W = 560; P-value = 0.0015
TC6 - TC9: W = 298.5; P-value = 0.2616
TC7 - TC9: W = 154.5; P-value = 0.307
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Antimony, dissolved

Wilcox Tests between Transects:

$\boxed{\text{CAN1 - CAN2: W = 0.5; P-value = 0}}$
$\boxed{\text{CAN1 - TC1: W = 1; P-value = 0}}$
$\boxed{\text{CAN1 - TC10: W = 0; P-value = 5e-04}}$
$\boxed{\text{CAN1 - TC2: W = 0; P-value = 0}}$
$\boxed{\text{CAN1 - TC3: W = 0; P-value = 0}}$
$\boxed{\text{CAN1 - TC4: W = 3; P-value = 0}}$
$\boxed{\text{CAN1 - TC5: W = 0; P-value = 0}}$
$\boxed{\text{CAN1 - TC6: W = 0; P-value = 0}}$
$\boxed{\text{CAN1 - TC7: W = 0; P-value = 0}}$
$\boxed{\text{CAN1 - TC9: W = 1; P-value = 0}}$
CAN2 - TC1: W = 132; P-value = 0.0584
CAN2 - TC10: W = 10; P-value = 0.0046
CAN2 - TC2: W = 129; P-value = 0.0485
CAN2 - TC3: W = 161; P-value = 0.0384
CAN2 - TC4: W = 225.5; P-value = 0.5208
CAN2 - TC5: W = 170.5; P-value = 0.0628
CAN2 - TC6: W = 116.5; P-value = 0.0016
$\boxed{\text{CAN2 - TC7: W = 76; P-value = 7e-04}}$
CAN2 - TC9: W = 101.5; P-value = 0.1432
TC1 - TC10: W = 29; P-value = 0.0275
TC1 - TC2: W = 271; P-value = 0.7336
TC1 - TC3: W = 343.5; P-value = 0.7805
TC1 - TC4: W = 492; P-value = 0.0221
TC1 - TC5: W = 418.5; P-value = 0.3126
TC1 - TC6: W = 326; P-value = 0.4399
TC1 - TC7: W = 260.5; P-value = 0.5776
TC1 - TC9: W = 174; P-value = 0.435
TC10 - TC2: W = 109.5; P-value = 0.0548
TC10 - TC3: W = 147.5; P-value = 0.0155
$\boxed{\text{TC10 - TC4: W = 180; P-value = 1e-04}}$
$\boxed{\text{TC10 - TC5: W = 172; P-value = 5e-04}}$
TC10 - TC6: W = 149; P-value = 0.0222
TC10 - TC7: W = 127.5; P-value = 0.0043
TC10 - TC9: W = 62.5; P-value = 0.4411
TC2 - TC3: W = 384; P-value = 0.6824
TC2 - TC4: W = 473; P-value = 0.0501
TC2 - TC5: W = 401.5; P-value = 0.4751
TC2 - TC6: W = 328.5; P-value = 0.4654
TC2 - TC7: W = 252; P-value = 0.464
TC2 - TC9: W = 190; P-value = 0.7208
TC3 - TC4: W = 626; P-value = 0.0095
TC3 - TC5: W = 540; P-value = 0.1856
TC3 - TC6: W = 440; P-value = 0.7237
TC3 - TC7: W = 338.5; P-value = 0.7146
TC3 - TC9: W = 214.5; P-value = 0.3757
TC4 - TC5: W = 315; P-value = 0.0467
$\boxed{\text{TC4 - TC6: W = 166; P-value = 0}}$
$\boxed{\text{TC4 - TC7: W = 74.5; P-value = 0}}$
TC4 - TC9: W = 183.5; P-value = 0.1159
TC5 - TC6: W = 285.5; P-value = 0.0098
TC5 - TC7: W = 175.5; P-value = 0.0014
TC5 - TC9: W = 210; P-value = 0.3244
TC6 - TC7: W = 360; P-value = 0.8452
TC6 - TC9: W = 257.5; P-value = 0.9056
TC7 - TC9: W = 189; P-value = 0.7012

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Antimony, total

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 0; P-value = 0
CAN1 - TC1: W = 0; P-value = 0
CAN1 - TC10: W = 0; P-value = 5e-04
CAN1 - TC2: W = 0.5; P-value = 0
CAN1 - TC3: W = 0; P-value = 0
CAN1 - TC4: W = 0; P-value = 0
CAN1 - TC5: W = 0; P-value = 0
CAN1 - TC6: W = 0; P-value = 0
CAN1 - TC7: W = 0; P-value = 0
CAN1 - TC9: W = 0; P-value = 0
CAN2 - TC1: W = 182; P-value = 0.5693
CAN2 - TC10: W = 10; P-value = 0.0046
CAN2 - TC2: W = 195.5; P-value = 0.8322
CAN2 - TC3: W = 239; P-value = 0.7314
CAN2 - TC4: W = 341; P-value = 0.0582
CAN2 - TC5: W = 283; P-value = 0.5425
CAN2 - TC6: W = 192; P-value = 0.1258
CAN2 - TC7: W = 128.5; P-value = 0.0471
CAN2 - TC9: W = 130; P-value = 0.6296
TC1 - TC10: W = 30; P-value = 0.0313
TC1 - TC2: W = 302; P-value = 0.7805
TC1 - TC3: W = 390; P-value = 0.6075
TC1 - TC4: W = 505.5; P-value = 0.0116
TC1 - TC5: W = 485.5; P-value = 0.0295
TC1 - TC6: W = 388.5; P-value = 0.7859
TC1 - TC7: W = 296; P-value = 0.877
TC1 - TC9: W = 188; P-value = 0.6816
TC10 - TC2: W = 119; P-value = 0.0157
TC10 - TC3: W = 167; P-value = 0.0012
TC10 - TC4: W = 180; P-value = 1e-04
TC10 - TC5: W = 178; P-value = 2e-04
TC10 - TC6: W = 158; P-value = 0.0079
TC10 - TC7: W = 135; P-value = 0.0012
TC10 - TC9: W = 70; P-value = 0.195
TC2 - TC3: W = 404.5; P-value = 0.4435
TC2 - TC4: W = 474; P-value = 0.048
TC2 - TC5: W = 433.5; P-value = 0.2031
TC2 - TC6: W = 345.5; P-value = 0.6589
TC2 - TC7: W = 274.5; P-value = 0.7885
TC2 - TC9: W = 188.5; P-value = 0.6907
TC3 - TC4: W = 632.5; P-value = 0.0071
TC3 - TC5: W = 587.5; P-value = 0.0428
TC3 - TC6: W = 489.5; P-value = 0.7291
TC3 - TC7: W = 381.5; P-value = 0.7146
TC3 - TC9: W = 215; P-value = 0.3817
TC4 - TC5: W = 351; P-value = 0.145
TC4 - TC6: W = 175.5; P-value = 0
TC4 - TC7: W = 85; P-value = 0
TC4 - TC9: W = 171.5; P-value = 0.066
TC5 - TC6: W = 233.5; P-value = 9e-04
TC5 - TC7: W = 126; P-value = 0
TC5 - TC9: W = 191; P-value = 0.1595
TC6 - TC7: W = 324; P-value = 0.42
TC6 - TC9: W = 259; P-value = 0.9313
TC7 - TC9: W = 206.5; P-value = 0.9578
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Arsenic, dissolved

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 79.5; P-value = 0.0045
CAN1 - TC1: W = 25; P-value = 0
CAN1 - TC10: W = 84.5; P-value = 0.0334
CAN1 - TC2: W = 2; P-value = 0
CAN1 - TC3: W = 32; P-value = 0
CAN1 - TC4: W = 37; P-value = 0
CAN1 - TC5: W = 48; P-value = 0
CAN1 - TC6: W = 25; P-value = 0
CAN1 - TC7: W = 12; P-value = 0
CAN1 - TC9: W = 51.5; P-value = 7e-04
CAN2 - TC1: W = 22; P-value = 0
CAN2 - TC10: W = 112.5; P-value = 3e-04
CAN2 - TC2: W = 1; P-value = 0
CAN2 - TC3: W = 35; P-value = 0
CAN2 - TC4: W = 47; P-value = 0
CAN2 - TC5: W = 84; P-value = 0
CAN2 - TC6: W = 22; P-value = 0
CAN2 - TC7: W = 6; P-value = 0
CAN2 - TC9: W = 108; P-value = 0.086
TC1 - TC10: W = 144; P-value = 1e-04
TC1 - TC2: W = 50; P-value = 0
TC1 - TC3: W = 363; P-value = 0.963
TC1 - TC4: W = 403; P-value = 0.4232
TC1 - TC5: W = 435.5; P-value = 0.1839
TC1 - TC6: W = 299; P-value = 0.2053
TC1 - TC7: W = 151; P-value = 0.0039
TC1 - TC9: W = 214; P-value = 0.7938
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 1.5; P-value = 5e-04
TC2 - TC3: W = 642; P-value = 0
TC2 - TC4: W = 658.5; P-value = 0
TC2 - TC5: W = 597; P-value = 0
TC2 - TC6: W = 574; P-value = 6e-04
TC2 - TC7: W = 355; P-value = 0.1654
TC2 - TC9: W = 316; P-value = 0.0029
TC3 - TC4: W = 495.5; P-value = 0.4846
TC3 - TC5: W = 523.5; P-value = 0.2734
TC3 - TC6: W = 382; P-value = 0.2251
TC3 - TC7: W = 190; P-value = 0.0027
TC3 - TC9: W = 270; P-value = 0.7433
TC4 - TC5: W = 493; P-value = 0.5222
TC4 - TC6: W = 336; P-value = 0.0577
TC4 - TC7: W = 165.5; P-value = 6e-04
TC4 - TC9: W = 259; P-value = 0.9365
TC5 - TC6: W = 327; P-value = 0.0447
TC5 - TC7: W = 179; P-value = 0.0015
TC5 - TC9: W = 270.5; P-value = 0.7379
TC6 - TC7: W = 264; P-value = 0.0654
TC6 - TC9: W = 313; P-value = 0.2877
TC7 - TC9: W = 281; P-value = 0.0411
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Inorganic Arsenic, dissolved

```
Wilcox Tests between Transects:
 CAN1 - CAN2: W = 89; P-value = 0.0133
 CAN1 - TC1: W = 10; P-value = 0
 CAN1 - TC10: W = 61.5; P-value = 0.6406
 CAN1 - TC2: W = 0; P-value = 0
 CAN1 - TC3: W = 60.5; P-value = 0
 CAN1 - TC4: W = 0; P-value = 0
 CAN1 - TC5: W = 0; P-value = 0
 CAN1 - TC6: W = 0; P-value = 0
 CAN1 - TC7: W = 0; P-value = 0
 CAN1 - TC9: W = 24; P-value = 0
 CAN2 - TC1: W = 21; P-value = 0
 CAN2 - TC10: W = 84.5; P-value = 0.0856
 CAN2 - TC2: W = 6; P-value = 0
 CAN2 - TC3: W = 101; P-value = 2e-04
 CAN2 - TC4: W = 0; P-value = 0
 CAN2 - TC5: W = 0; P-value = 0
 CAN2 - TC6: W = 0; P-value = 0
 CAN2 - TC7: W = 0; P-value = 0
 CAN2 - TC9: W = 57.5; P-value = 0.001
 TC1 - TC10: W = 141; P-value = 4e-04
 TC1 - TC2: W = 240.5; P-value = 0.3324
 TC1 - TC3: W = 337.5; P-value = 0.7017
 TC1 - TC4: W = 410.5; P-value = 0.2678
 TC1 - TC5: W = 321.5; P-value = 0.5082
 TC1 - TC6: W = 169; P-value = 6e-04
 TC1 - TC7: W = 171; P-value = 0.0163
 TC1 - TC9: W = 262; P-value = 0.1281
 TC10 - TC2: W = 0; P-value = 0
 TC10 - TC3: W = 7.5; P-value = 5e-04
 TC10 - TC4: W = 0; P-value = 2e-04
 TC10 - TC5: W = 0; P-value = 1e-04
 TC10 - TC6: W = 0; P-value = 1e-04
 TC10 - TC7: W = 0; P-value = 2e-04
 TC10 - TC9: W = 1; P-value = 5e-04
 TC2 - TC3: W = 397.5; P-value = 0.5195
 TC2 - TC4: W = 445; P-value = 0.0846
 TC2 - TC5: W = 368; P-value = 0.8961
 TC2 - TC6: W = 227; P-value = 0.0142
 TC2 - TC7: W = 222.5; P-value = 0.1801
 TC2 - TC9: W = 274; P-value = 0.0658
 TC3 - TC4: W = 553; P-value = 0.0748
 TC3 - TC5: W = 456; P-value = 0.9352
 TC3 - TC6: W = 252.5; P-value = 0.0022
 TC3 - TC7: W = 275.5; P-value = 0.1436
 TC3 - TC9: W = 277.5; P-value = 0.6262
 TC4 - TC5: W = 283; P-value = 0.0216
 TC4 - TC6: W = 79; P-value = 0
 TC4 - TC7: W = 81.5; P-value = 0
 TC4 - TC9: W = 334; P-value = 0.0477
 TC5 - TC6: W = 212.5; P-value = 3e-04
 TC5 - TC7: W = 225.5; P-value = 0.0196
 TC5 - TC9: W = 357; P-value = 0.0246
 TC6 - TC7: W = 475.5; P-value = 0.0804
 TC6 - TC9: W = 405; P-value = 0.0024
 TC7 - TC9: W = 294; P-value = 0.0178
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Inorganic Arsenic, total

Wilcox Tests between Transects:

CAN1 - CAN2: W = 73; P-value = 0.003
CAN1 - TC1: W = 3; P-value = 0
CAN1 - TC10: W = 65; P-value = 0.4837
CAN1 - TC2: W = 0; P-value = 0
CAN1 - TC3: W = 65.5; P-value = 0
CAN1 - TC4: W = 0; P-value = 0
CAN1 - TC5: W = 0; P-value = 0
CAN1 - TC6: W = 3; P-value = 0
CAN1 - TC7: W = 0; P-value = 0
CAN1 - TC9: W = 20; P-value = 0
CAN2 - TC1: W = 21; P-value = 0
CAN2 - TC10: W = 88; P-value = 0.0522
CAN2 - TC2: W = 9; P-value = 0
CAN2 - TC3: W = 107; P-value = 3e-04
CAN2 - TC4: W = 0; P-value = 0
CAN2 - TC5: W = 0; P-value = 0
CAN2 - TC6: W = 31.5; P-value = 0
CAN2 - TC7: W = 0; P-value = 0
CAN2 - TC9: W = 57; P-value = 0.001
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 201.5; P-value = 0.0761
TC1 - TC3: W = 368; P-value = 0.8961
TC1 - TC4: W = 380; P-value = 0.5734
TC1 - TC5: W = 276; P-value = 0.1461
TC1 - TC6: W = 263.5; P-value = 0.0668
TC1 - TC7: W = 168; P-value = 0.0137
TC1 - TC9: W = 254.5; P-value = 0.1857
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 9; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 2e-04
TC10 - TC5: W = 0; P-value = 0
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 5.5; P-value = 0.0016
TC2 - TC3: W = 466.5; P-value = 0.065
TC2 - TC4: W = 497.5; P-value = 0.0077
TC2 - TC5: W = 397; P-value = 0.5251
TC2 - TC6: W = 337; P-value = 0.5582
TC2 - TC7: W = 268; P-value = 0.6876
TC2 - TC9: W = 282; P-value = 0.0403
TC3 - TC4: W = 487.5; P-value = 0.4304
TC3 - TC5: W = 360.5; P-value = 0.1882
TC3 - TC6: W = 298.5; P-value = 0.0166
TC3 - TC7: W = 238.5; P-value = 0.0352
TC3 - TC9: W = 267; P-value = 0.799
TC4 - TC5: W = 271; P-value = 0.0132
TC4 - TC6: W = 264.5; P-value = 0.0063
TC4 - TC7: W = 89; P-value = 0
TC4 - TC9: W = 320; P-value = 0.0966
TC5 - TC6: W = 385.5; P-value = 0.2544
TC5 - TC7: W = 259.5; P-value = 0.0817
TC5 - TC9: W = 351; P-value = 0.0345
TC6 - TC7: W = 392; P-value = 0.7407
TC6 - TC9: W = 364; P-value = 0.0311
TC7 - TC9: W = 284.5; P-value = 0.0342

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Barium, dissolved

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 209.5; P-value = 0.2475
CAN1 - TC1: W = 0; P-value = 0
CAN1 - TC10: W = 74; P-value = 0.1929
CAN1 - TC2: W = 0; P-value = 0
CAN1 - TC3: W = 0; P-value = 0
CAN1 - TC4: W = 0; P-value = 0
CAN1 - TC5: W = 0; P-value = 0
CAN1 - TC6: W = 13; P-value = 0
CAN1 - TC7: W = 0; P-value = 0
CAN1 - TC9: W = 28.5; P-value = 0
CAN2 - TC1: W = 0; P-value = 0
CAN2 - TC10: W = 96; P-value = 0.0141
CAN2 - TC2: W = 0; P-value = 0
CAN2 - TC3: W = 0; P-value = 0
CAN2 - TC4: W = 0; P-value = 0
CAN2 - TC5: W = 0; P-value = 0
CAN2 - TC6: W = 12; P-value = 0
CAN2 - TC7: W = 0; P-value = 0
CAN2 - TC9: W = 19; P-value = 0
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 227; P-value = 0.2122
TC1 - TC3: W = 396.5; P-value = 0.5308
TC1 - TC4: W = 459.5; P-value = 0.0848
TC1 - TC5: W = 487.5; P-value = 0.027
TC1 - TC6: W = 534; P-value = 0.0061
TC1 - TC7: W = 391.5; P-value = 0.0337
TC1 - TC9: W = 271; P-value = 0.0784
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 0; P-value = 4e-04
TC2 - TC3: W = 449.5; P-value = 0.1213
TC2 - TC4: W = 519; P-value = 0.0058
TC2 - TC5: W = 586.5; P-value = 1e-04
TC2 - TC6: W = 647.5; P-value = 0
TC2 - TC7: W = 478; P-value = 1e-04
TC2 - TC9: W = 298; P-value = 0.0133
TC3 - TC4: W = 645.5; P-value = 0.0039
TC3 - TC5: W = 713.5; P-value = 1e-04
TC3 - TC6: W = 776.5; P-value = 0
TC3 - TC7: W = 559; P-value = 5e-04
TC3 - TC9: W = 362; P-value = 0.0184
TC4 - TC5: W = 727.5; P-value = 0
TC4 - TC6: W = 833.5; P-value = 0
TC4 - TC7: W = 519; P-value = 0.0058
TC4 - TC9: W = 360; P-value = 0.0207
TC5 - TC6: W = 615.5; P-value = 0.0303
TC5 - TC7: W = 361.5; P-value = 0.9861
TC5 - TC9: W = 341.5; P-value = 0.0567
TC6 - TC7: W = 299; P-value = 0.2184
TC6 - TC9: W = 321; P-value = 0.2191
TC7 - TC9: W = 264.5; P-value = 0.1122
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Barium, total

Wilcox Tests between Transects:

CAN1 - CAN2: W = 183; P-value = 0.7264
CAN1 - TC1: W = 0; P-value = 0
CAN1 - TC10: W = 88; P-value = 0.0249
CAN1 - TC2: W = 0; P-value = 0
CAN1 - TC3: W = 0; P-value = 0
CAN1 - TC4: W = 0; P-value = 0
CAN1 - TC5: W = 0; P-value = 0
CAN1 - TC6: W = 12; P-value = 0
CAN1 - TC7: W = 0; P-value = 0
CAN1 - TC9: W = 32; P-value = 1e-04
CAN2 - TC1: W = 0; P-value = 0
CAN2 - TC10: W = 114; P-value = 3e-04
CAN2 - TC2: W = 0; P-value = 0
CAN2 - TC3: W = 0; P-value = 0
CAN2 - TC4: W = 0; P-value = 0
CAN2 - TC5: W = 0; P-value = 0
CAN2 - TC6: W = 15; P-value = 0
CAN2 - TC7: W = 0; P-value = 0
CAN2 - TC9: W = 35.5; P-value = 1e-04
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 226.5; P-value = 0.2084
TC1 - TC3: W = 414; P-value = 0.3516
TC1 - TC4: W = 471; P-value = 0.0544
TC1 - TC5: W = 488; P-value = 0.0264
TC1 - TC6: W = 552.5; P-value = 0.0022
TC1 - TC7: W = 401.5; P-value = 0.0198
TC1 - TC9: W = 271; P-value = 0.0784
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 0; P-value = 4e-04
TC2 - TC3: W = 491; P-value = 0.0231
TC2 - TC4: W = 547; P-value = 0.0012
TC2 - TC5: W = 574.5; P-value = 2e-04
TC2 - TC6: W = 652; P-value = 0
TC2 - TC7: W = 494.5; P-value = 0
TC2 - TC9: W = 293; P-value = 0.0192
TC3 - TC4: W = 655.5; P-value = 0.0024
TC3 - TC5: W = 700.5; P-value = 2e-04
TC3 - TC6: W = 773; P-value = 0
TC3 - TC7: W = 569.5; P-value = 3e-04
TC3 - TC9: W = 345; P-value = 0.0475
TC4 - TC5: W = 583.5; P-value = 0.0491
TC4 - TC6: W = 771; P-value = 0
TC4 - TC7: W = 515.5; P-value = 0.007
TC4 - TC9: W = 328.5; P-value = 0.106
TC5 - TC6: W = 703.5; P-value = 6e-04
TC5 - TC7: W = 438.5; P-value = 0.1744
TC5 - TC9: W = 323; P-value = 0.1349
TC6 - TC7: W = 327; P-value = 0.4499
TC6 - TC9: W = 303; P-value = 0.4003
TC7 - TC9: W = 245; P-value = 0.2837

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Cadmium, dissolved

Tukey multiple comparisons of means

95% family-wise confidence level

	diff	lwr	upr	p adj
CAN2-CAN1	0.30893222	0.10103249	0.516831944	0.0001273
TC1-CAN1	0.25388606	0.05680319	0.450968926	0.0019384
TC10-CAN1	0.42719426	0.12923297	0.725155551	0.0002705
TC2-CAN1	0.16656512	-0.03051775	0.363647994	0.1858238
TC3-CAN1	0.13449504	-0.05395223	0.322942304	0.4241308
TC4-CAN1	0.04970023	-0.13874704	0.238147500	0.9987911
TC5-CAN1	0.02370491	-0.16474236	0.212152176	0.9999987
TC6-CAN1	0.08854334	-0.09876066	0.275847340	0.9061139
TC7-CAN1	0.11149358	-0.08558929	0.308576453	0.7559219
TC9-CAN1	0.34386760	0.13010122	0.557633987	0.0000198
TC1-CAN2	-0.05504616	-0.24914276	0.139050430	0.9977632
TC10-CAN2	0.11826204	-0.17773249	0.414256569	0.9684027
TC2-CAN2	-0.14236709	-0.33646369	0.051729499	0.3815354
TC3-CAN2	-0.17443718	-0.35975907	0.010884707	0.0856353
TC4-CAN2	-0.25923199	-0.44455388	-0.073910097	0.0004416
TC5-CAN2	-0.28522731	-0.47054920	-0.099905421	0.0000577
TC6-CAN2	-0.22038888	-0.40454809	-0.036229658	0.0060142
TC7-CAN2	-0.19743864	-0.39153523	-0.003342043	0.0423321
TC9-CAN2	0.03493538	-0.17608096	0.245951727	0.9999822
TC10-TC1	0.17330820	-0.11519158	0.461807984	0.6819943
TC2-TC1	-0.08732093	-0.26978421	0.095142351	0.8990404
TC3-TC1	-0.11939102	-0.29249089	0.053708849	0.4778540
TC4-TC1	-0.20418582	-0.37728569	-0.031085955	0.0073633
TC5-TC1	-0.23018115	-0.40328102	-0.057081278	0.0011274
TC6-TC1	-0.16534271	-0.33719724	0.006511817	0.0711318
TC7-TC1	-0.14239247	-0.32485576	0.040070810	0.2891284
TC9-TC1	0.08998155	-0.11038627	0.290349356	0.9314202
TC2-TC10	-0.26062913	-0.54912891	0.027870647	0.1181055
TC3-TC10	-0.29269922	-0.57537012	-0.010028320	0.0353334
TC4-TC10	-0.37749403	-0.66016493	-0.094823124	0.0010453
TC5-TC10	-0.40348935	-0.68616025	-0.120818448	0.0002958
TC6-TC10	-0.33865092	-0.62056093	-0.056740906	0.0056971
TC7-TC10	-0.31570068	-0.60420046	-0.027200895	0.0191916
TC9-TC10	-0.08332666	-0.38347085	0.216817531	0.9981297
TC3-TC2	-0.03207009	-0.20516996	0.141029780	0.9999490
TC4-TC2	-0.11686489	-0.28996476	0.056234976	0.5113362
TC5-TC2	-0.14286022	-0.31596008	0.030239653	0.2143007
TC6-TC2	-0.07802178	-0.24987631	0.093832748	0.9265898
TC7-TC2	-0.05507154	-0.23753482	0.127391741	0.9962571
TC9-TC2	0.17730248	-0.02306533	0.377670288	0.1371577
TC4-TC3	-0.08479480	-0.24799493	0.078405317	0.8401593
TC5-TC3	-0.11079013	-0.27399025	0.052409994	0.5027364
TC6-TC3	-0.04595169	-0.20783033	0.115926947	0.9977457
TC7-TC3	-0.02300145	-0.19610132	0.150098415	0.9999978
TC9-TC3	0.20937256	0.01749246	0.401252670	0.0198443
TC5-TC4	-0.02599532	-0.18919544	0.137204798	0.9999876
TC6-TC4	0.03884311	-0.12303553	0.200721751	0.9994685
TC7-TC4	0.06179335	-0.11130652	0.234893219	0.9860203
TC9-TC4	0.29416737	0.10228726	0.486047474	0.0000632
TC6-TC5	0.06483843	-0.09704021	0.226717075	0.9678512
TC7-TC5	0.08778867	-0.08531119	0.260888542	0.8596782
TC9-TC5	0.32016269	0.12828259	0.512042797	0.0000077
TC7-TC6	0.02295024	-0.14890429	0.194804770	0.9999977
TC9-TC6	0.25532426	0.06456685	0.446081669	0.0010041
TC9-TC7	0.23237402	0.03200621	0.432741829	0.0092698

P-values reported are adjusted for multiple comparisons.

Cadmium, total

Wilcox Tests between Transects:

CAN1 - CAN2: W = 85; P-value = 0.0093
CAN1 - TC1: W = 58; P-value = 1e-04
CAN1 - TC10: W = 4; P-value = 9e-04
CAN1 - TC2: W = 119.5; P-value = 0.0145
CAN1 - TC3: W = 151; P-value = 0.0115
CAN1 - TC4: W = 263.5; P-value = 0.8981
CAN1 - TC5: W = 285.5; P-value = 0.7487
CAN1 - TC6: W = 311.5; P-value = 0.506
CAN1 - TC7: W = 167.5; P-value = 0.2217
CAN1 - TC9: W = 15; P-value = 0
CAN2 - TC1: W = 215.5; P-value = 0.769
CAN2 - TC10: W = 47.5; P-value = 0.5664
CAN2 - TC2: W = 258; P-value = 0.4702
CAN2 - TC3: W = 364.5; P-value = 0.1048
CAN2 - TC4: W = 423; P-value = 0.0047
CAN2 - TC5: W = 431.5; P-value = 0.0027
CAN2 - TC6: W = 438; P-value = 0.0042
CAN2 - TC7: W = 280.5; P-value = 0.203
CAN2 - TC9: W = 125.5; P-value = 0.26
TC1 - TC10: W = 53.5; P-value = 0.3496
TC1 - TC2: W = 380; P-value = 0.0587
TC1 - TC3: W = 496.5; P-value = 0.0178
TC1 - TC4: W = 593.5; P-value = 0
TC1 - TC5: W = 622; P-value = 0
TC1 - TC6: W = 636.5; P-value = 0
TC1 - TC7: W = 410; P-value = 0.0122
TC1 - TC9: W = 138; P-value = 0.0825
TC10 - TC2: W = 110.5; P-value = 0.0485
TC10 - TC3: W = 156; P-value = 0.0054
TC10 - TC4: W = 167.5; P-value = 0.0011
TC10 - TC5: W = 170; P-value = 7e-04
TC10 - TC6: W = 167; P-value = 0.0024
TC10 - TC7: W = 111.5; P-value = 0.0429
TC10 - TC9: W = 43; P-value = 0.5976
TC2 - TC3: W = 378; P-value = 0.7605
TC2 - TC4: W = 501; P-value = 0.0143
TC2 - TC5: W = 547; P-value = 0.0011
TC2 - TC6: W = 557.5; P-value = 0.0017
TC2 - TC7: W = 345.5; P-value = 0.2393
TC2 - TC9: W = 87.5; P-value = 0.0021
TC3 - TC4: W = 611; P-value = 0.0175
TC3 - TC5: W = 656.5; P-value = 0.0023
TC3 - TC6: W = 688; P-value = 0.0013
TC3 - TC7: W = 432; P-value = 0.2129
TC3 - TC9: W = 69; P-value = 0
TC4 - TC5: W = 478; P-value = 0.6838
TC4 - TC6: W = 503.5; P-value = 0.5829
TC4 - TC7: W = 297; P-value = 0.2758
TC4 - TC9: W = 37.5; P-value = 0
TC5 - TC6: W = 482; P-value = 0.8113
TC5 - TC7: W = 247.5; P-value = 0.0508
TC5 - TC9: W = 34; P-value = 0
TC6 - TC7: W = 242; P-value = 0.0277
TC6 - TC9: W = 48; P-value = 0
TC7 - TC9: W = 88.5; P-value = 0.0023

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Calcium, dissolved

Tukey multiple comparisons of means

95% family-wise confidence level

	diff	lwr	upr	p adj
CAN2-CAN1	-36.25731	-1649.1243	1576.60966	1.0000000
TC1-CAN1	627.77778	-901.1730	2156.72858	0.9618734
TC10-CAN1	-2472.22222	-4783.7786	-160.66588	0.0249486
TC2-CAN1	648.61111	-880.3397	2177.56192	0.9525230
TC3-CAN1	731.11111	-730.8455	2193.06771	0.8701358
TC4-CAN1	294.44444	-1167.5122	1756.40104	0.9998899
TC5-CAN1	-582.22222	-2044.1788	879.73437	0.9691080
TC6-CAN1	-717.92115	-2171.0084	735.16606	0.8786766
TC7-CAN1	69.44444	-1459.5064	1598.39525	1.0000000
TC9-CAN1	328.75817	-1329.6218	1987.13816	0.9999047
TC1-CAN2	664.03509	-841.7485	2169.81863	0.9388881
TC10-CAN2	-2435.96491	-4732.2633	-139.66654	0.0273027
TC2-CAN2	684.86842	-820.9151	2190.65196	0.9257561
TC3-CAN2	767.36842	-670.3418	2205.07861	0.8161794
TC4-CAN2	330.70175	-1107.0084	1768.41195	0.9996345
TC5-CAN2	-545.96491	-1983.6751	891.74528	0.9779598
TC6-CAN2	-681.66384	-2110.3541	747.02646	0.9008172
TC7-CAN2	105.70175	-1400.0818	1611.48530	1.0000000
TC9-CAN2	365.01548	-1272.0299	2002.06090	0.9997232
TC10-TC1	-3100.00000	-5338.1548	-861.84520	0.0005341
TC2-TC1	20.83333	-1394.7001	1436.36672	1.0000000
TC3-TC1	103.33333	-1239.5595	1446.22621	1.0000000
TC4-TC1	-333.33333	-1676.2262	1009.55955	0.9992846
TC5-TC1	-1210.00000	-2552.8929	132.89288	0.1204077
TC6-TC1	-1345.69892	-2678.9306	-12.46727	0.0456996
TC7-TC1	-558.33333	-1973.8667	857.20005	0.9711210
TC9-TC1	-299.01961	-1853.4547	1255.41546	0.9999278
TC2-TC10	3120.83333	882.6785	5358.98814	0.0004697
TC3-TC10	3203.33333	1010.3984	5396.26823	0.0001837
TC4-TC10	2766.66667	573.7318	4959.60156	0.0027178
TC5-TC10	1890.00000	-302.9349	4082.93489	0.1640294
TC6-TC10	1754.30108	-432.7309	3941.33304	0.2511182
TC7-TC10	2541.66667	303.5119	4779.82147	0.0121918
TC9-TC10	2800.98039	472.4893	5129.47144	0.0055863
TC3-TC2	82.50000	-1260.3929	1425.39288	1.0000000
TC4-TC2	-354.16667	-1697.0595	988.72621	0.9987911
TC5-TC2	-1230.83333	-2573.7262	112.05955	0.1058694
TC6-TC2	-1366.53226	-2699.7639	-33.30060	0.0392233
TC7-TC2	-579.16667	-1994.7001	836.36672	0.9627778
TC9-TC2	-319.85294	-1874.2880	1234.58213	0.9998661
TC4-TC3	-436.66667	-1702.7582	829.42488	0.9892338
TC5-TC3	-1313.33333	-2579.4249	-47.24178	0.0346889
TC6-TC3	-1449.03226	-2704.8719	-193.19263	0.0099183
TC7-TC3	-661.66667	-2004.5595	681.22621	0.8805408
TC9-TC3	-402.35294	-1890.9412	1086.23529	0.9985090
TC5-TC4	-876.66667	-2142.7582	389.42488	0.4717217
TC6-TC4	-1012.36559	-2268.2052	243.47404	0.2445062
TC7-TC4	-225.00000	-1567.8929	1117.89288	0.9999801
TC9-TC4	34.31373	-1454.2745	1522.90196	1.0000000
TC6-TC5	-135.69892	-1391.5386	1120.14070	0.9999997
TC7-TC5	651.66667	-691.2262	1994.55955	0.8905175
TC9-TC5	910.98039	-577.6078	2399.56862	0.6569262
TC7-TC6	787.36559	-545.8661	2120.59725	0.7041354
TC9-TC6	1046.67932	-433.1991	2526.55778	0.4383346
TC9-TC7	259.31373	-1295.1213	1813.74880	0.9999809

P-values reported are adjusted for multiple comparisons.

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Calcium, total
        Wilcox Tests between Transects:
         CAN1 - CAN2: W = 131.5; P-value = 0.2352
         CAN1 - TC1: W = 114.5; P-value = 0.0101
         CAN1 - TC10: W = 108; P-value = 3e-04
         CAN1 - TC2: W = 147; P-value = 0.0811
         CAN1 - TC3: W = 232; P-value = 0.4239
         CAN1 - TC4: W = 273.5; P-value = 0.949
         CAN1 - TC5: W = 309; P-value = 0.4117
         CAN1 - TC6: W = 287; P-value = 0.8762
         CAN1 - TC7: W = 261.5; P-value = 0.2516
         CAN1 - TC9: W = 124; P-value = 0.3461
         CAN2 - TC1: W = 163; P-value = 0.1138
         CAN2 - TC10: W = 114; P-value = 3e-04
         CAN2 - TC2: W = 162; P-value = 0.1089
         CAN2 - TC3: W = 226; P-value = 0.2296
         CAN2 - TC4: W = 293; P-value = 0.8774
         CAN2 - TC5: W = 389; P-value = 0.0335
         CAN2 - TC6: W = 320; P-value = 0.6168
         CAN2 - TC7: W = 272.5; P-value = 0.2813
         CAN2 - TC9: W = 170; P-value = 0.7996
         TC1 - TC10: W = 144; P-value = 2e-04
         TC1 - TC2: W = 305; P-value = 0.7333
         TC1 - TC3: W = 383; P-value = 0.6951
         TC1 - TC4: W = 452; P-value = 0.1101
         TC1 - TC5: W = 565; P-value = 4e-04
         TC1 - TC6: W = 463; P-value = 0.1232
         TC1 - TC7: W = 390.5; P-value = 0.0352
         TC1 - TC9: W = 252; P-value = 0.208
         TC10 - TC2: W = 0; P-value = 2e-04
         TC10 - TC3: W = 6; P-value = 4e-04
         TC10 - TC4: W = 0.5; P-value = 2e-04
         TC10 - TC5: W = 12; P-value = 0.001
         TC10 - TC6: W = 38; P-value = 0.0244
         TC10 - TC7: W = 4; P-value = 4e-04
         TC10 - TC9: W = 0.5; P-value = 5e-04
         TC2 - TC3: W = 427.5; P-value = 0.2429
         TC2 - TC4: W = 466; P-value = 0.0659
         TC2 - TC5: W = 551; P-value = 9e-04
         TC2 - TC6: W = 529.5; P-value = 0.0076
         TC2 - TC7: W = 375; P-value = 0.0742
         TC2 - TC9: W = 221.5; P-value = 0.6524
         TC3 - TC4: W = 517; P-value = 0.325
         TC3 - TC5: W = 630; P-value = 0.0079
         TC3 - TC6: W = 629.5; P-value = 0.0179
         TC3 - TC7: W = 410; P-value = 0.3886
         TC3 - TC9: W = 262; P-value = 0.8855
         TC4 - TC5: W = 564.5; P-value = 0.0915
         TC4 - TC6: W = 519; P-value = 0.4391
         TC4 - TC7: W = 376; P-value = 0.7869
         TC4 - TC9: W = 238.5; P-value = 0.7228
         TC5 - TC6: W = 388; P-value = 0.2694
         TC5 - TC7: W = 325.5; P-value = 0.5536
         TC5 - TC9: W = 206; P-value = 0.2826
         TC6 - TC7: W = 350.5; P-value = 0.7212
         TC6 - TC9: W = 228; P-value = 0.4501
         TC7 - TC9: W = 168; P-value = 0.3469

     P-values reported are not adjusted for multiple comparisons.
     Adjusted significance level is 0.05 / 55 = 0.00091.
```

```
Cerium, total
        Wilcox Tests between Transects:
         CAN1 - TC1: W = 96; P-value = 0.0024
         CAN1 - TC10: W = 61; P-value = 0.6627
         CAN1 - TC2: W = 24; P-value = 0.3269
         CAN1 - TC3: W = 113.5; P-value = 9e-04
         CAN1 - TC4: W = 143; P-value = 0.007
         CAN1 - TC6: W = 141; P-value = 0.0043
         CAN1 - TC9: W = 91; P-value = 0.0422
         TC1 - TC10: W = 144; P-value = 2e-04
         TC1 - TC2: W = 54.5; P-value = 0.6933
         TC1 - TC3: W = 302.5; P-value = 0.3208
         TC1 - TC4: W = 332.5; P-value = 0.6382
         TC1 - TC6: W = 350; P-value = 0.715
         TC1 - TC9: W = 251; P-value = 0.2183
         TC10 - TC2: W = 0; P-value = 0.0128
         TC10 - TC3: W = 0; P-value = 1e-04
         TC10 - TC4: W = 2; P-value = 2e-04
         TC10 - TC6: W = 0; P-value = 1e-04
         TC10 - TC9: W = 8.5; P-value = 0.0032
         TC2 - TC3: W = 32; P-value = 0.1414
         TC2 - TC4: W = 39; P-value = 0.2727
         TC2 - TC6: W = 43; P-value = 0.3372
         TC2 - TC9: W = 38; P-value = 0.7538
         TC3 - TC4: W = 516.5; P-value = 0.3289
         TC3 - TC6: W = 533.5; P-value = 0.3264
         TC3 - TC9: W = 351; P-value = 0.0344
         TC4 - TC6: W = 456.5; P-value = 0.9081
         TC4 - TC9: W = 318.5; P-value = 0.1628
         TC6 - TC9: W = 327.5; P-value = 0.1709

     P-values reported are not adjusted for multiple comparisons.
     Adjusted significance level is 0.05 / 28 = 0.00179.
```

```
Cesium, dissolved
        Wilcox Tests between Transects:
         CAN1 - TC1: W = 150; P-value = 0.0641
         CAN1 - TC10: W = 18; P-value = 0.0063
         CAN1 - TC2: W = 12; P-value = 0.0205
         CAN1 - TC3: W = 261; P-value = 0.8407
         CAN1 - TC4: W = 327; P-value = 0.185
         CAN1 - TC6: W = 396; P-value = 0.0086
         CAN1 - TC9: W = 108; P-value = 0.117
         TC1 - TC10: W = 60; P-value = 0.5238
         TC1 - TC2: W = 40; P-value = 0.5995
         TC1 - TC3: W = 454; P-value = 0.0818
         TC1 - TC4: W = 522.5; P-value = 0.0027
         TC1 - TC6: W = 595; P-value = 1e-04
         TC1 - TC9: W = 205; P-value = 0.9889
         TC10 - TC2: W = 12; P-value = NaN
         TC10 - TC3: W = 141; P-value = 0.0215
         TC10 - TC4: W = 153; P-value = 0.0045
         TC10 - TC6: W = 180; P-value = 2e-04
         TC10 - TC9: W = 54; P-value = 0.849
         TC2 - TC3: W = 94; P-value = 0.0555
         TC2 - TC4: W = 102; P-value = 0.0178
         TC2 - TC6: W = 120; P-value = 0.0019
         TC2 - TC9: W = 36; P-value = 0.8858
         TC3 - TC4: W = 546.5; P-value = 0.1294
         TC3 - TC6: W = 647; P-value = 0.0056
         TC3 - TC9: W = 189.5; P-value = 0.1325
         TC4 - TC6: W = 528; P-value = 0.3407
         TC4 - TC9: W = 151.5; P-value = 0.0171
         TC6 - TC9: W = 129; P-value = 0.0029

     P-values reported are not adjusted for multiple comparisons.
     Adjusted significance level is 0.05 / 28 = 0.00179.
```

Cesium, total

Tukey multiple comparisons of means

95% family-wise confidence level

	diff	lwr	upr	p adj
TC1-CAN1	0.222006518	0.07410537	0.369907662	0.0002208
TC10-CAN1	0.180115058	-0.04349045	0.403720571	0.2138866
TC2-CAN1	0.121417972	-0.14078273	0.383618677	0.8451739
TC3-CAN1	0.168375641	0.02695510	0.309796184	0.0081658
TC4-CAN1	0.047603974	-0.09381657	0.189024517	0.9683933
TC6-CAN1	0.065333935	-0.07522864	0.205896509	0.8426314
TC9-CAN1	0.173209519	0.01278820	0.333630834	0.0244527
TC10-TC1	-0.041891460	-0.25839657	0.174613647	0.9989014
TC2-TC1	-0.100588546	-0.35676084	0.155583751	0.9288182
TC3-TC1	-0.053630877	-0.18353394	0.076272187	0.9088386
TC4-TC1	-0.174402544	-0.30430561	-0.044499480	0.0015286
TC6-TC1	-0.156672583	-0.28564108	-0.027704086	0.0063332
TC9-TC1	-0.048796999	-0.19916333	0.101569334	0.9742012
TC2-TC10	-0.058697086	-0.36488154	0.247487372	0.9989655
TC3-TC10	-0.011739417	-0.22387023	0.200391398	0.9999998
TC4-TC10	-0.132511084	-0.34464190	0.079619731	0.5394604
TC6-TC10	-0.114781124	-0.32634093	0.096778679	0.7080040
TC9-TC10	-0.006905540	-0.23214921	0.218338131	1.0000000
TC3-TC2	0.046957669	-0.20552850	0.299443841	0.9991505
TC4-TC2	-0.073813998	-0.32630017	0.178672174	0.9858092
TC6-TC2	-0.056084037	-0.30809065	0.195922579	0.9973110
TC9-TC2	0.051791547	-0.21180757	0.315390666	0.9987870
TC4-TC3	-0.120771667	-0.24324545	0.001702116	0.0562625
TC6-TC3	-0.103041706	-0.22452378	0.018440370	0.1615055
TC9-TC3	0.004833878	-0.13916284	0.148830599	1.0000000
TC6-TC4	0.017729961	-0.10375212	0.139212037	0.9998290
TC9-TC4	0.125605545	-0.01839118	0.269602266	0.1364976
TC9-TC6	0.107875584	-0.03527861	0.251029777	0.2917663

P-values reported are adjusted for multiple comparisons.

```
Cobalt, total
        Wilcox Tests between Transects:
         CAN1 - CAN2: W = 8; P-value = 0.0015
         CAN1 - TC1: W = 12; P-value = 0.0022
         CAN1 - TC10: W = 9; P-value = 0.0995
         CAN1 - TC2: W = 26.5; P-value = 0.0221
         CAN1 - TC3: W = 39.5; P-value = 0.0167
         CAN1 - TC4: W = 58; P-value = 0.125
         CAN1 - TC5: W = 84.5; P-value = 0.6856
         CAN1 - TC6: W = 15.5; P-value = 6e-04
         CAN1 - TC7: W = 30; P-value = 0.0114
         CAN1 - TC9: W = 8; P-value = 0.0066
         CAN2 - TC1: W = 246; P-value = 5e-04
         CAN2 - TC10: W = 90; P-value = 0.0022
         CAN2 - TC2: W = 270; P-value = 1e-04
         CAN2 - TC3: W = 375; P-value = 2e-04
         CAN2 - TC4: W = 347; P-value = 0.001
         CAN2 - TC5: W = 380.5; P-value = 0
         CAN2 - TC6: W = 358; P-value = 0.0067
         CAN2 - TC7: W = 300; P-value = 0.003
         CAN2 - TC9: W = 150.5; P-value = 0.0022
         TC1 - TC10: W = 104.5; P-value = 8e-04
         TC1 - TC2: W = 197.5; P-value = 0.4289
         TC1 - TC3: W = 286; P-value = 0.4507
         TC1 - TC4: W = 300.5; P-value = 0.1863
         TC1 - TC5: W = 329; P-value = 0.0474
         TC1 - TC6: W = 181.5; P-value = 0.0607
         TC1 - TC7: W = 246; P-value = 0.4529
         TC1 - TC9: W = 104.5; P-value = 0.8219
         TC10 - TC2: W = 34.5; P-value = 0.1605
         TC10 - TC3: W = 29.5; P-value = 0.0147
         TC10 - TC4: W = 58; P-value = 0.2932
         TC10 - TC5: W = 77; P-value = 0.8702
         TC10 - TC6: W = 9; P-value = 6e-04
         TC10 - TC7: W = 44; P-value = 0.1535
         TC10 - TC9: W = 14; P-value = 0.0623
         TC2 - TC3: W = 280; P-value = 0.7696
         TC2 - TC4: W = 297.5; P-value = 0.3659
         TC2 - TC5: W = 342.5; P-value = 0.0563
         TC2 - TC6: W = 166.5; P-value = 0.0154
         TC2 - TC7: W = 194.5; P-value = 0.4193
         TC2 - TC9: W = 95.5; P-value = 0.7138
         TC3 - TC4: W = 425.5; P-value = 0.4286
         TC3 - TC5: W = 475.5; P-value = 0.1024
         TC3 - TC6: W = 239; P-value = 0.005
         TC3 - TC7: W = 333.5; P-value = 0.9707
         TC3 - TC9: W = 133; P-value = 0.5222
         TC4 - TC5: W = 427; P-value = 0.2832
         TC4 - TC6: W = 217; P-value = 0.0027
         TC4 - TC7: W = 286.5; P-value = 0.4849
         TC4 - TC9: W = 108; P-value = 0.1978
         TC5 - TC6: W = 162.5; P-value = 1e-04
         TC5 - TC7: W = 215; P-value = 0.0406
         TC5 - TC9: W = 86; P-value = 0.0458
         TC6 - TC7: W = 448; P-value = 0.1276
         TC6 - TC9: W = 220.5; P-value = 0.1054
         TC7 - TC9: W = 133.5; P-value = 0.9716

     P-values reported are not adjusted for multiple comparisons.
     Adjusted significance level is 0.05 / 55 = 0.00091.
```

Copper, total

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 26; P-value = 0
CAN1 - TC1: W = 30; P-value = 0
CAN1 - TC10: W = 72; P-value = 0.2412
CAN1 - TC2: W = 38.5; P-value = 0
CAN1 - TC3: W = 120.5; P-value = 0.0015
CAN1 - TC4: W = 103.5; P-value = 4e-04
CAN1 - TC5: W = 24; P-value = 0
CAN1 - TC6: W = 36; P-value = 0
CAN1 - TC7: W = 84; P-value = 8e-04
CAN1 - TC9: W = 24; P-value = 0
CAN2 - TC1: W = 242.5; P-value = 0.7319
CAN2 - TC10: W = 109; P-value = 0.001
CAN2 - TC2: W = 283; P-value = 0.1824
CAN2 - TC3: W = 386; P-value = 0.0391
CAN2 - TC4: W = 410; P-value = 0.0106
CAN2 - TC5: W = 352; P-value = 0.1087
CAN2 - TC6: W = 355.5; P-value = 0.2263
CAN2 - TC7: W = 298.5; P-value = 0.0867
CAN2 - TC9: W = 201; P-value = 0.2162
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 356; P-value = 0.1637
TC1 - TC3: W = 515.5; P-value = 0.0069
TC1 - TC4: W = 572; P-value = 2e-04
TC1 - TC5: W = 530; P-value = 0.0012
TC1 - TC6: W = 506.5; P-value = 0.0229
TC1 - TC7: W = 384; P-value = 0.0488
TC1 - TC9: W = 252; P-value = 0.2086
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 5; P-value = 0.0014
TC2 - TC3: W = 458; P-value = 0.0895
TC2 - TC4: W = 500; P-value = 0.0151
TC2 - TC5: W = 411.5; P-value = 0.2597
TC2 - TC6: W = 382; P-value = 0.8718
TC2 - TC7: W = 333.5; P-value = 0.3531
TC2 - TC9: W = 210; P-value = 0.8842
TC3 - TC4: W = 488; P-value = 0.5792
TC3 - TC5: W = 432.5; P-value = 0.9758
TC3 - TC6: W = 393; P-value = 0.3022
TC3 - TC7: W = 358.5; P-value = 0.9861
TC3 - TC9: W = 210; P-value = 0.3243
TC4 - TC5: W = 312; P-value = 0.0628
TC4 - TC6: W = 268; P-value = 0.0046
TC4 - TC7: W = 326; P-value = 0.5595
TC4 - TC9: W = 204.5; P-value = 0.268
TC5 - TC6: W = 347.5; P-value = 0.1326
TC5 - TC7: W = 364.5; P-value = 0.7746
TC5 - TC9: W = 246.5; P-value = 1
TC6 - TC7: W = 424.5; P-value = 0.3772
TC6 - TC9: W = 282.5; P-value = 0.6899
TC7 - TC9: W = 185; P-value = 0.6243
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Europium, dissolved

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 59; P-value = 0
CAN1 - TC10: W = 47.5; P-value = 0.4042
CAN1 - TC2: W = 10; P-value = 0.0012
CAN1 - TC3: W = 44.5; P-value = 0
CAN1 - TC4: W = 106.5; P-value = 1e-04
CAN1 - TC6: W = 136.5; P-value = 6e-04
CAN1 - TC9: W = 95; P-value = 0.0098
TC1 - TC10: W = 117; P-value = 0.0165
TC1 - TC2: W = 55; P-value = 0.6599
TC1 - TC3: W = 404; P-value = 0.4389
TC1 - TC4: W = 365; P-value = 0.9359
TC1 - TC6: W = 481; P-value = 0.0571
TC1 - TC9: W = 252; P-value = 0.1911
TC10 - TC2: W = 5; P-value = 0.117
TC10 - TC3: W = 29; P-value = 0.0083
TC10 - TC4: W = 44; P-value = 0.0424
TC10 - TC6: W = 58; P-value = 0.1255
TC10 - TC9: W = 36.5; P-value = 0.2475
TC2 - TC3: W = 58.5; P-value = 0.9562
TC2 - TC4: W = 55.5; P-value = 0.8259
TC2 - TC6: W = 74.5; P-value = 0.5153
TC2 - TC9: W = 40; P-value = 0.5931
TC3 - TC4: W = 438.5; P-value = 0.8685
TC3 - TC6: W = 589; P-value = 0.0684
TC3 - TC9: W = 316.5; P-value = 0.1654
TC4 - TC6: W = 566; P-value = 0.1316
TC4 - TC9: W = 298.5; P-value = 0.3171
TC6 - TC9: W = 268; P-value = 0.9264
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Europium, total

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 63.5; P-value = 1e-04
CAN1 - TC10: W = 74; P-value = 0.1445
CAN1 - TC2: W = 8.5; P-value = 0.016
CAN1 - TC3: W = 64; P-value = 0
CAN1 - TC4: W = 110.5; P-value = 6e-04
CAN1 - TC6: W = 162; P-value = 0.0131
CAN1 - TC9: W = 120.5; P-value = 0.2646
TC1 - TC10: W = 136; P-value = 9e-04
TC1 - TC2: W = 57; P-value = 0.5711
TC1 - TC3: W = 359; P-value = 0.993
TC1 - TC4: W = 358; P-value = 0.979
TC1 - TC6: W = 450; P-value = 0.1848
TC1 - TC9: W = 277; P-value = 0.0525
TC10 - TC2: W = 0; P-value = 0.0087
TC10 - TC3: W = 3.5; P-value = 2e-04
TC10 - TC4: W = 19; P-value = 0.0024
TC10 - TC6: W = 33; P-value = 0.0116
TC10 - TC9: W = 25.5; P-value = 0.0584
TC2 - TC3: W = 50; P-value = 0.6037
TC2 - TC4: W = 53.5; P-value = 0.7465
TC2 - TC6: W = 68; P-value = 0.7731
TC2 - TC9: W = 47; P-value = 0.2515
TC3 - TC4: W = 458.5; P-value = 0.9049
TC3 - TC6: W = 571; P-value = 0.1253
TC3 - TC9: W = 355; P-value = 0.0258
TC4 - TC6: W = 554; P-value = 0.198
TC4 - TC9: W = 333; P-value = 0.0825
TC6 - TC9: W = 298.5; P-value = 0.448
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Iron, total

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 48.5; P-value = 2e-04
CAN1 - TC1: W = 92; P-value = 0.0012
CAN1 - TC10: W = 49; P-value = 0.7641
CAN1 - TC2: W = 93.5; P-value = 0.0019
CAN1 - TC3: W = 132.5; P-value = 0.0035
CAN1 - TC4: W = 178; P-value = 0.071
CAN1 - TC5: W = 142; P-value = 0.0066
CAN1 - TC6: W = 109; P-value = 3e-04
CAN1 - TC7: W = 219; P-value = 0.9493
CAN1 - TC9: W = 84; P-value = 0.0224
CAN2 - TC1: W = 294; P-value = 0.1092
CAN2 - TC10: W = 110; P-value = 8e-04
CAN2 - TC2: W = 294; P-value = 0.1092
CAN2 - TC3: W = 387; P-value = 0.0373
CAN2 - TC4: W = 425.5; P-value = 0.0016
CAN2 - TC5: W = 396.5; P-value = 0.0227
CAN2 - TC6: W = 376.5; P-value = 0.1033
CAN2 - TC7: W = 403; P-value = 0
CAN2 - TC9: W = 232; P-value = 0.0265
TC1 - TC10: W = 138; P-value = 7e-04
TC1 - TC2: W = 294; P-value = 0.9097
TC1 - TC3: W = 393; P-value = 0.5745
TC1 - TC4: W = 496; P-value = 0.0084
TC1 - TC5: W = 426; P-value = 0.2542
TC1 - TC6: W = 379; P-value = 0.9129
TC1 - TC7: W = 478.5; P-value = 1e-04
TC1 - TC9: W = 248.5; P-value = 0.2443
TC10 - TC2: W = 4; P-value = 5e-04
TC10 - TC3: W = 10; P-value = 7e-04
TC10 - TC4: W = 33.5; P-value = 0.0203
TC10 - TC5: W = 18; P-value = 0.0024
TC10 - TC6: W = 1; P-value = 2e-04
TC10 - TC7: W = 61.5; P-value = 0.604
TC10 - TC9: W = 7; P-value = 0.0023
TC2 - TC3: W = 371; P-value = 0.855
TC2 - TC4: W = 496.5; P-value = 0.0082
TC2 - TC5: W = 415; P-value = 0.3428
TC2 - TC6: W = 347.5; P-value = 0.6838
TC2 - TC7: W = 473; P-value = 1e-04
TC2 - TC9: W = 247; P-value = 0.2607
TC3 - TC4: W = 603; P-value = 0.0111
TC3 - TC5: W = 506; P-value = 0.4119
TC3 - TC6: W = 448.5; P-value = 0.8175
TC3 - TC7: W = 577; P-value = 2e-04
TC3 - TC9: W = 299; P-value = 0.3355
TC4 - TC5: W = 334.5; P-value = 0.1295
TC4 - TC6: W = 242.5; P-value = 0.0023
TC4 - TC7: W = 459; P-value = 0.0483
TC4 - TC9: W = 189.5; P-value = 0.1985
TC5 - TC6: W = 372; P-value = 0.1834
TC5 - TC7: W = 538.5; P-value = 0.0019
TC5 - TC9: W = 261; P-value = 0.9041
TC6 - TC7: W = 610.5; P-value = 1e-04
TC6 - TC9: W = 315; P-value = 0.2747
TC7 - TC9: W = 99.5; P-value = 0.0059
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Lanthanum, total

Wilcox Tests between Transects:

CAN1 - TC1: W = 114; P-value = 0.0097
CAN1 - TC10: W = 73.5; P-value = 0.2021
CAN1 - TC2: W = 25; P-value = 0.3701
CAN1 - TC3: W = 144.5; P-value = 0.0078
CAN1 - TC4: W = 164.5; P-value = 0.0253
CAN1 - TC6: W = 183; P-value = 0.0475
CAN1 - TC9: W = 107; P-value = 0.1325
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 62; P-value = 0.3725
TC1 - TC3: W = 290.5; P-value = 0.2289
TC1 - TC4: W = 331.5; P-value = 0.6255
TC1 - TC6: W = 372.5; P-value = 1
TC1 - TC9: W = 259.5; P-value = 0.1446
TC10 - TC2: W = 0; P-value = 0.0128
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 5.5; P-value = 4e-04
TC10 - TC6: W = 8.5; P-value = 5e-04
TC10 - TC9: W = 8.5; P-value = 0.0031
TC2 - TC3: W = 21.5; P-value = 0.0422
TC2 - TC4: W = 32.5; P-value = 0.1488
TC2 - TC6: W = 43; P-value = 0.3373
TC2 - TC9: W = 31.5; P-value = 0.8572
TC3 - TC4: W = 495; P-value = 0.5105
TC3 - TC6: W = 571; P-value = 0.128
TC3 - TC9: W = 352.5; P-value = 0.0316
TC4 - TC6: W = 510.5; P-value = 0.5161
TC4 - TC9: W = 314.5; P-value = 0.1911
TC6 - TC9: W = 299.5; P-value = 0.4439

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Lead, total

Wilcox Tests between Transects:

CAN1 - CAN2: W = 12; P-value = 0
CAN1 - TC1: W = 24; P-value = 0
CAN1 - TC10: W = 34; P-value = 0.1931
CAN1 - TC2: W = 6; P-value = 0
CAN1 - TC3: W = 86; P-value = 1e-04
CAN1 - TC4: W = 210; P-value = 0.205
CAN1 - TC5: W = 293; P-value = 0.6317
CAN1 - TC6: W = 320; P-value = 0.4009
CAN1 - TC7: W = 301; P-value = 0.0317
CAN1 - TC9: W = 19; P-value = 0
CAN2 - TC1: W = 289; P-value = 0.139
CAN2 - TC10: W = 107.5; P-value = 0.0015
CAN2 - TC2: W = 301; P-value = 0.0762
CAN2 - TC3: W = 469.5; P-value = 2e-04
CAN2 - TC4: W = 530.5; P-value = 0
CAN2 - TC5: W = 528; P-value = 0
CAN2 - TC6: W = 553.5; P-value = 0
CAN2 - TC7: W = 448.5; P-value = 0
CAN2 - TC9: W = 228; P-value = 0.0353
TC1 - TC10: W = 133; P-value = 0.0017
TC1 - TC2: W = 311; P-value = 0.6427
TC1 - TC3: W = 538; P-value = 0.002
TC1 - TC4: W = 647.5; P-value = 0
TC1 - TC5: W = 657.5; P-value = 0
TC1 - TC6: W = 686; P-value = 0
TC1 - TC7: W = 564; P-value = 0
TC1 - TC9: W = 235; P-value = 0.4195
TC10 - TC2: W = 12; P-value = 0.002
TC10 - TC3: W = 26; P-value = 0.007
TC10 - TC4: W = 83.5; P-value = 0.7989
TC10 - TC5: W = 121.5; P-value = 0.1881
TC10 - TC6: W = 137.5; P-value = 0.0698
TC10 - TC7: W = 116.5; P-value = 0.0225
TC10 - TC9: W = 14.5; P-value = 0.0117
TC2 - TC3: W = 571; P-value = 2e-04
TC2 - TC4: W = 674; P-value = 0
TC2 - TC5: W = 664; P-value = 0
TC2 - TC6: W = 695; P-value = 0
TC2 - TC7: W = 573; P-value = 0
TC2 - TC9: W = 225; P-value = 0.5875
TC3 - TC4: W = 747.5; P-value = 0
TC3 - TC5: W = 766.5; P-value = 0
TC3 - TC6: W = 804; P-value = 0
TC3 - TC7: W = 687; P-value = 0
TC3 - TC9: W = 158; P-value = 0.0326
TC4 - TC5: W = 565.5; P-value = 0.089
TC4 - TC6: W = 611.5; P-value = 0.0352
TC4 - TC7: W = 552.5; P-value = 8e-04
TC4 - TC9: W = 70.5; P-value = 0
TC5 - TC6: W = 491; P-value = 0.7129
TC5 - TC7: W = 450; P-value = 0.1191
TC5 - TC9: W = 63; P-value = 0
TC6 - TC7: W = 439.5; P-value = 0.2554
TC6 - TC9: W = 51; P-value = 0
TC7 - TC9: W = 13.5; P-value = 0

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Magnesium, dissolved

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 132; P-value = 0.2417
CAN1 - TC1: W = 70.5; P-value = 2e-04
CAN1 - TC10: W = 81; P-value = 0.0769
CAN1 - TC2: W = 39; P-value = 0
CAN1 - TC3: W = 91.5; P-value = 1e-04
CAN1 - TC4: W = 193.5; P-value = 0.1054
CAN1 - TC5: W = 129; P-value = 0.0028
CAN1 - TC6: W = 116; P-value = 7e-04
CAN1 - TC7: W = 86; P-value = 0.001
CAN1 - TC9: W = 96; P-value = 0.0621
CAN2 - TC1: W = 118; P-value = 0.0074
CAN2 - TC10: W = 111; P-value = 7e-04
CAN2 - TC2: W = 57; P-value = 0
CAN2 - TC3: W = 129; P-value = 0.0014
CAN2 - TC4: W = 279; P-value = 0.9101
CAN2 - TC5: W = 173.5; P-value = 0.0227
CAN2 - TC6: W = 158; P-value = 0.0065
CAN2 - TC7: W = 121; P-value = 0.0092
CAN2 - TC9: W = 131; P-value = 0.3416
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 273.5; P-value = 0.7728
TC1 - TC3: W = 372; P-value = 0.8413
TC1 - TC4: W = 530; P-value = 0.0032
TC1 - TC5: W = 401.5; P-value = 0.4753
TC1 - TC6: W = 373.5; P-value = 0.9865
TC1 - TC7: W = 268.5; P-value = 0.6951
TC1 - TC9: W = 268; P-value = 0.0928
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 0; P-value = 4e-04
TC2 - TC3: W = 402; P-value = 0.4699
TC2 - TC4: W = 658; P-value = 0
TC2 - TC5: W = 444.5; P-value = 0.1435
TC2 - TC6: W = 443.5; P-value = 0.228
TC2 - TC7: W = 337.5; P-value = 0.3121
TC2 - TC9: W = 311; P-value = 0.0048
TC3 - TC4: W = 698; P-value = 3e-04
TC3 - TC5: W = 491.5; P-value = 0.5442
TC3 - TC6: W = 469.5; P-value = 0.954
TC3 - TC7: W = 346.5; P-value = 0.8209
TC3 - TC9: W = 339; P-value = 0.0644
TC4 - TC5: W = 301.5; P-value = 0.0286
TC4 - TC6: W = 264; P-value = 0.0038
TC4 - TC7: W = 192; P-value = 0.0035
TC4 - TC9: W = 226; P-value = 0.5279
TC5 - TC6: W = 405.5; P-value = 0.3945
TC5 - TC7: W = 306.5; P-value = 0.3559
TC5 - TC9: W = 304; P-value = 0.2827
TC6 - TC7: W = 385.5; P-value = 0.8253
TC6 - TC9: W = 336.5; P-value = 0.1179
TC7 - TC9: W = 257.5; P-value = 0.1605
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Magnesium, total

Wilcox Tests between Transects:

CAN1 - CAN2: W = 114; P-value = 0.0859
CAN1 - TC1: W = 67.5; P-value = 2e-04
CAN1 - TC10: W = 108; P-value = 4e-04
CAN1 - TC2: W = 27.5; P-value = 0
CAN1 - TC3: W = 80.5; P-value = 1e-04
CAN1 - TC4: W = 197; P-value = 0.1224
CAN1 - TC5: W = 135; P-value = 0.0042
CAN1 - TC6: W = 113; P-value = 6e-04
CAN1 - TC7: W = 85.5; P-value = 9e-04
CAN1 - TC9: W = 86; P-value = 0.0281
CAN2 - TC1: W = 126.5; P-value = 0.0135
CAN2 - TC10: W = 114; P-value = 3e-04
CAN2 - TC2: W = 74.5; P-value = 2e-04
CAN2 - TC3: W = 141.5; P-value = 0.0033
CAN2 - TC4: W = 327; P-value = 0.3942
CAN2 - TC5: W = 229.5; P-value = 0.259
CAN2 - TC6: W = 191; P-value = 0.0395
CAN2 - TC7: W = 163; P-value = 0.1146
CAN2 - TC9: W = 142; P-value = 0.5471
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 242.5; P-value = 0.3531
TC1 - TC3: W = 357.5; P-value = 0.9722
TC1 - TC4: W = 550; P-value = 0.001
TC1 - TC5: W = 403.5; P-value = 0.454
TC1 - TC6: W = 378; P-value = 0.9256
TC1 - TC7: W = 276; P-value = 0.8125
TC1 - TC9: W = 265; P-value = 0.1092
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 5; P-value = 3e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 0; P-value = 4e-04
TC2 - TC3: W = 417; P-value = 0.3251
TC2 - TC4: W = 659; P-value = 0
TC2 - TC5: W = 477; P-value = 0.0425
TC2 - TC6: W = 445.5; P-value = 0.2153
TC2 - TC7: W = 347; P-value = 0.2276
TC2 - TC9: W = 298; P-value = 0.0133
TC3 - TC4: W = 726; P-value = 0
TC3 - TC5: W = 526; P-value = 0.2642
TC3 - TC6: W = 488.5; P-value = 0.74
TC3 - TC7: W = 371.5; P-value = 0.8481
TC3 - TC9: W = 338.5; P-value = 0.066
TC4 - TC5: W = 341.5; P-value = 0.1103
TC4 - TC6: W = 260; P-value = 0.0032
TC4 - TC7: W = 220.5; P-value = 0.0155
TC4 - TC9: W = 195.5; P-value = 0.1913
TC5 - TC6: W = 384; P-value = 0.2455
TC5 - TC7: W = 289; P-value = 0.2195
TC5 - TC9: W = 285; P-value = 0.5136
TC6 - TC7: W = 399.5; P-value = 0.6467
TC6 - TC9: W = 323; P-value = 0.2034
TC7 - TC9: W = 243; P-value = 0.3082

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Manganese, total

Wilcox Tests between Transects:

CAN1 - CAN2: W = 24; P-value = 0
CAN1 - TC1: W = 1; P-value = 0
CAN1 - TC10: W = 36; P-value = 0.2431
CAN1 - TC2: W = 5.5; P-value = 0
CAN1 - TC3: W = 38.5; P-value = 0
CAN1 - TC4: W = 257.5; P-value = 0.7983
CAN1 - TC5: W = 57.5; P-value = 0
CAN1 - TC6: W = 31.5; P-value = 0
CAN1 - TC7: W = 173.5; P-value = 0.2857
CAN1 - TC9: W = 3; P-value = 0
CAN2 - TC1: W = 218; P-value = 0.7209
CAN2 - TC10: W = 90; P-value = 0.0045
CAN2 - TC2: W = 260.5; P-value = 0.1383
CAN2 - TC3: W = 297.5; P-value = 0.3524
CAN2 - TC4: W = 410; P-value = 6e-04
CAN2 - TC5: W = 325; P-value = 0.1238
CAN2 - TC6: W = 292.5; P-value = 0.5389
CAN2 - TC7: W = 299; P-value = 0.0112
CAN2 - TC9: W = 178.5; P-value = 0.2484
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 364.5; P-value = 0.1171
TC1 - TC3: W = 375; P-value = 0.8007
TC1 - TC4: W = 593.5; P-value = 0
TC1 - TC5: W = 482.5; P-value = 0.0337
TC1 - TC6: W = 424; P-value = 0.3821
TC1 - TC7: W = 407; P-value = 0.0145
TC1 - TC9: W = 258.5; P-value = 0.1529
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 12; P-value = 2e-04
TC10 - TC4: W = 90; P-value = 1
TC10 - TC5: W = 21; P-value = 0.0019
TC10 - TC6: W = 6; P-value = 4e-04
TC10 - TC7: W = 68.5; P-value = 0.8764
TC10 - TC9: W = 0; P-value = 4e-04
TC2 - TC3: W = 283; P-value = 0.1829
TC2 - TC4: W = 564; P-value = 4e-04
TC2 - TC5: W = 424.5; P-value = 0.2652
TC2 - TC6: W = 363; P-value = 0.8853
TC2 - TC7: W = 383; P-value = 0.0513
TC2 - TC9: W = 227.5; P-value = 0.5427
TC3 - TC4: W = 717; P-value = 1e-04
TC3 - TC5: W = 567.5; P-value = 0.0837
TC3 - TC6: W = 502.5; P-value = 0.5935
TC3 - TC7: W = 507; P-value = 0.0108
TC3 - TC9: W = 306; P-value = 0.2635
TC4 - TC5: W = 249; P-value = 0.003
TC4 - TC6: W = 220; P-value = 4e-04
TC4 - TC7: W = 347; P-value = 0.8277
TC4 - TC9: W = 120; P-value = 0.0029
TC5 - TC6: W = 369.5; P-value = 0.1705
TC5 - TC7: W = 455.5; P-value = 0.0982
TC5 - TC9: W = 218; P-value = 0.419
TC6 - TC7: W = 504; P-value = 0.0256
TC6 - TC9: W = 266.5; P-value = 0.957
TC7 - TC9: W = 143; P-value = 0.1093

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Molybdenum, dissolved

Wilcox Tests between Transects:

CAN1 - CAN2: W = 101.5; P-value = 0.036
CAN1 - TC1: W = 248.5; P-value = 0.416
CAN1 - TC10: W = 11; P-value = 0.0046
CAN1 - TC2: W = 262.5; P-value = 0.2421
CAN1 - TC3: W = 348.5; P-value = 0.0966
CAN1 - TC4: W = 329.5; P-value = 0.2088
CAN1 - TC5: W = 254.5; P-value = 0.7493
CAN1 - TC6: W = 310; P-value = 0.527
CAN1 - TC7: W = 183.5; P-value = 0.4159
CAN1 - TC9: W = 137; P-value = 0.6089
CAN2 - TC1: W = 329.5; P-value = 0.0135
CAN2 - TC10: W = 33; P-value = 0.1348
CAN2 - TC2: W = 356.5; P-value = 0.0017
CAN2 - TC3: W = 440; P-value = 0.0015
CAN2 - TC4: W = 448; P-value = 9e-04
CAN2 - TC5: W = 375; P-value = 0.0662
CAN2 - TC6: W = 409; P-value = 0.0227
CAN2 - TC7: W = 274; P-value = 0.2657
CAN2 - TC9: W = 208.5; P-value = 0.1406
TC1 - TC10: W = 20; P-value = 0.0076
TC1 - TC2: W = 319; P-value = 0.5293
TC1 - TC3: W = 419.5; P-value = 0.3043
TC1 - TC4: W = 385; P-value = 0.6697
TC1 - TC5: W = 295; P-value = 0.2614
TC1 - TC6: W = 384; P-value = 0.8453
TC1 - TC7: W = 206; P-value = 0.0928
TC1 - TC9: W = 176.5; P-value = 0.4749
TC10 - TC2: W = 142; P-value = 3e-04
TC10 - TC3: W = 165; P-value = 0.0016
TC10 - TC4: W = 174; P-value = 4e-04
TC10 - TC5: W = 159; P-value = 0.0036
TC10 - TC6: W = 156; P-value = 0.01
TC10 - TC7: W = 108; P-value = 0.0656
TC10 - TC9: W = 88; P-value = 0.0106
TC2 - TC3: W = 363.5; P-value = 0.9583
TC2 - TC4: W = 359; P-value = 0.9931
TC2 - TC5: W = 256; P-value = 0.0715
TC2 - TC6: W = 329; P-value = 0.4707
TC2 - TC7: W = 184; P-value = 0.0328
TC2 - TC9: W = 133; P-value = 0.062
TC3 - TC4: W = 417; P-value = 0.6308
TC3 - TC5: W = 300.5; P-value = 0.0276
TC3 - TC6: W = 400.5; P-value = 0.3558
TC3 - TC7: W = 220; P-value = 0.0152
TC3 - TC9: W = 177.5; P-value = 0.0882
TC4 - TC5: W = 318; P-value = 0.0518
TC4 - TC6: W = 429.5; P-value = 0.6136
TC4 - TC7: W = 236; P-value = 0.0315
TC4 - TC9: W = 172.5; P-value = 0.0694
TC5 - TC6: W = 542.5; P-value = 0.2666
TC5 - TC7: W = 312; P-value = 0.4082
TC5 - TC9: W = 241.5; P-value = 0.7734
TC6 - TC7: W = 284; P-value = 0.1375
TC6 - TC9: W = 235.5; P-value = 0.5533
TC7 - TC9: W = 228; P-value = 0.534

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Molybdenum, total

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 134; P-value = 0.2673
CAN1 - TC1: W = 246; P-value = 0.4533
CAN1 - TC10: W = 55; P-value = 0.9734
CAN1 - TC2: W = 302.5; P-value = 0.0288
CAN1 - TC3: W = 364; P-value = 0.0464
CAN1 - TC4: W = 425.5; P-value = 0.001
CAN1 - TC5: W = 292; P-value = 0.647
CAN1 - TC6: W = 336; P-value = 0.2412
CAN1 - TC7: W = 266.5; P-value = 0.2037
CAN1 - TC9: W = 207.5; P-value = 0.0746
CAN2 - TC1: W = 287.5; P-value = 0.149
CAN2 - TC10: W = 76.5; P-value = 0.2266
CAN2 - TC2: W = 352; P-value = 0.0025
CAN2 - TC3: W = 406.5; P-value = 0.013
CAN2 - TC4: W = 467; P-value = 2e-04
CAN2 - TC5: W = 384.5; P-value = 0.0422
CAN2 - TC6: W = 397; P-value = 0.0415
CAN2 - TC7: W = 305; P-value = 0.0613
CAN2 - TC9: W = 247.5; P-value = 0.0067
TC1 - TC10: W = 64; P-value = 0.7047
TC1 - TC2: W = 354.5; P-value = 0.1735
TC1 - TC3: W = 427; P-value = 0.247
TC1 - TC4: W = 510.5; P-value = 0.009
TC1 - TC5: W = 338.5; P-value = 0.7147
TC1 - TC6: W = 396; P-value = 0.69
TC1 - TC7: W = 316.5; P-value = 0.5637
TC1 - TC9: W = 235; P-value = 0.4195
TC10 - TC2: W = 101; P-value = 0.1395
TC10 - TC3: W = 125; P-value = 0.143
TC10 - TC4: W = 144; P-value = 0.0231
TC10 - TC5: W = 94; P-value = 0.8819
TC10 - TC6: W = 101; P-value = 0.7572
TC10 - TC7: W = 74; P-value = 0.9397
TC10 - TC9: W = 69; P-value = 0.2204
TC2 - TC3: W = 340.5; P-value = 0.7408
TC2 - TC4: W = 425.5; P-value = 0.2578
TC2 - TC5: W = 225; P-value = 0.0192
TC2 - TC6: W = 298; P-value = 0.2122
TC2 - TC7: W = 237; P-value = 0.2977
TC2 - TC9: W = 176; P-value = 0.4667
TC3 - TC4: W = 558; P-value = 0.112
TC3 - TC5: W = 305.5; P-value = 0.0332
TC3 - TC6: W = 390; P-value = 0.2824
TC3 - TC7: W = 324; P-value = 0.5366
TC3 - TC9: W = 225; P-value = 0.5136
TC4 - TC5: W = 205.5; P-value = 3e-04
TC4 - TC6: W = 266; P-value = 0.0042
TC4 - TC7: W = 228.5; P-value = 0.0226
TC4 - TC9: W = 160.5; P-value = 0.0374
TC5 - TC6: W = 506; P-value = 0.559
TC5 - TC7: W = 395.5; P-value = 0.5423
TC5 - TC9: W = 330.5; P-value = 0.0967
TC6 - TC7: W = 389.5; P-value = 0.7729
TC6 - TC9: W = 296.5; P-value = 0.4834
TC7 - TC9: W = 217.5; P-value = 0.7308
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Nickel, dissolved

Wilcox Tests between Transects:

CAN1 - CAN2: W = 65.5; P-value = 0.0023
CAN1 - TC1: W = 268; P-value = 0.19
CAN1 - TC10: W = 71.5; P-value = 0.2561
CAN1 - TC2: W = 277.5; P-value = 0.1207
CAN1 - TC3: W = 492.5; P-value = 0
CAN1 - TC4: W = 445; P-value = 2e-04
CAN1 - TC5: W = 428; P-value = 3e-04
CAN1 - TC6: W = 458.5; P-value = 2e-04
CAN1 - TC7: W = 367.5; P-value = 1e-04
CAN1 - TC9: W = 181; P-value = 0.3633
CAN2 - TC1: W = 364; P-value = 2e-04
CAN2 - TC10: W = 91.5; P-value = 0.0135
CAN2 - TC2: W = 365.5; P-value = 2e-04
CAN2 - TC3: W = 515.5; P-value = 0
CAN2 - TC4: W = 492; P-value = 0
CAN2 - TC5: W = 474; P-value = 0
CAN2 - TC6: W = 508.5; P-value = 0
CAN2 - TC7: W = 391; P-value = 0
CAN2 - TC9: W = 253; P-value = 0.001
TC1 - TC10: W = 66.5; P-value = 0.7952
TC1 - TC2: W = 302; P-value = 0.7806
TC1 - TC3: W = 541; P-value = 0.0017
TC1 - TC4: W = 461; P-value = 0.08
TC1 - TC5: W = 434; P-value = 0.126
TC1 - TC6: W = 462.5; P-value = 0.1264
TC1 - TC7: W = 380; P-value = 0.059
TC1 - TC9: W = 185.5; P-value = 0.6333
TC10 - TC2: W = 78.5; P-value = 0.7556
TC10 - TC3: W = 151; P-value = 0.0101
TC10 - TC4: W = 131; P-value = 0.0851
TC10 - TC5: W = 131; P-value = 0.0565
TC10 - TC6: W = 138.5; P-value = 0.0635
TC10 - TC7: W = 119; P-value = 0.0158
TC10 - TC9: W = 46; P-value = 0.7516
TC2 - TC3: W = 522.5; P-value = 0.0048
TC2 - TC4: W = 430.5; P-value = 0.2227
TC2 - TC5: W = 403; P-value = 0.3297
TC2 - TC6: W = 410; P-value = 0.5242
TC2 - TC7: W = 321.5; P-value = 0.4958
TC2 - TC9: W = 172; P-value = 0.4042
TC3 - TC4: W = 305; P-value = 0.0325
TC3 - TC5: W = 262.5; P-value = 0.0091
TC3 - TC6: W = 271; P-value = 0.0052
TC3 - TC7: W = 169; P-value = 9e-04
TC3 - TC9: W = 74; P-value = 1e-04
TC4 - TC5: W = 413; P-value = 0.7443
TC4 - TC6: W = 425.5; P-value = 0.5732
TC4 - TC7: W = 295.5; P-value = 0.2649
TC4 - TC9: W = 129.5; P-value = 0.0056
TC5 - TC6: W = 449; P-value = 1
TC5 - TC7: W = 357.5; P-value = 0.8721
TC5 - TC9: W = 131; P-value = 0.0087
TC6 - TC7: W = 366; P-value = 0.9256
TC6 - TC9: W = 138.5; P-value = 0.0072
TC7 - TC9: W = 97; P-value = 0.0048

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Nickel, total

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 53; P-value = 6e-04
CAN1 - TC1: W = 255.5; P-value = 0.3213
CAN1 - TC10: W = 68; P-value = 0.3674
CAN1 - TC2: W = 265.5; P-value = 0.2126
CAN1 - TC3: W = 452.5; P-value = 1e-04
CAN1 - TC4: W = 426; P-value = 9e-04
CAN1 - TC5: W = 401.5; P-value = 0.0022
CAN1 - TC6: W = 445.5; P-value = 6e-04
CAN1 - TC7: W = 387; P-value = 0
CAN1 - TC9: W = 168; P-value = 0.6317
CAN2 - TC1: W = 369.5; P-value = 1e-04
CAN2 - TC10: W = 92; P-value = 0.0123
CAN2 - TC2: W = 366.5; P-value = 1e-04
CAN2 - TC3: W = 483.5; P-value = 0
CAN2 - TC4: W = 476; P-value = 0
CAN2 - TC5: W = 458.5; P-value = 0
CAN2 - TC6: W = 495.5; P-value = 0
CAN2 - TC7: W = 385.5; P-value = 0
CAN2 - TC9: W = 258; P-value = 6e-04
TC1 - TC10: W = 66; P-value = 0.7754
TC1 - TC2: W = 313.5; P-value = 0.606
TC1 - TC3: W = 524; P-value = 0.0044
TC1 - TC4: W = 482; P-value = 0.0343
TC1 - TC5: W = 423.5; P-value = 0.1799
TC1 - TC6: W = 468.5; P-value = 0.1031
TC1 - TC7: W = 393; P-value = 0.0311
TC1 - TC9: W = 177.5; P-value = 0.4912
TC10 - TC2: W = 74; P-value = 0.9379
TC10 - TC3: W = 143.5; P-value = 0.0243
TC10 - TC4: W = 130.5; P-value = 0.0893
TC10 - TC5: W = 124.5; P-value = 0.105
TC10 - TC6: W = 139.5; P-value = 0.0579
TC10 - TC7: W = 122.5; P-value = 0.0095
TC10 - TC9: W = 38; P-value = 0.3803
TC2 - TC3: W = 498.5; P-value = 0.0162
TC2 - TC4: W = 460; P-value = 0.0831
TC2 - TC5: W = 390.5; P-value = 0.4527
TC2 - TC6: W = 439; P-value = 0.259
TC2 - TC7: W = 347.5; P-value = 0.2233
TC2 - TC9: W = 165; P-value = 0.3078
TC3 - TC4: W = 408; P-value = 0.5393
TC3 - TC5: W = 283.5; P-value = 0.022
TC3 - TC6: W = 326; P-value = 0.0456
TC3 - TC7: W = 209; P-value = 0.0088
TC3 - TC9: W = 85.5; P-value = 2e-04
TC4 - TC5: W = 361; P-value = 0.2648
TC4 - TC6: W = 394; P-value = 0.3089
TC4 - TC7: W = 331.5; P-value = 0.6258
TC4 - TC9: W = 122.5; P-value = 0.0035
TC5 - TC6: W = 476; P-value = 0.7004
TC5 - TC7: W = 401; P-value = 0.3479
TC5 - TC9: W = 132; P-value = 0.0094
TC6 - TC7: W = 396.5; P-value = 0.6837
TC6 - TC9: W = 119.5; P-value = 0.002
TC7 - TC9: W = 56.5; P-value = 1e-04
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Potassium, dissolved

Wilcox Tests between Transects:

CAN1 - CAN2: W = 118.5; P-value = 0.114
CAN1 - TC1: W = 159; P-value = 0.1509
CAN1 - TC10: W = 57; P-value = 0.8675
CAN1 - TC2: W = 91; P-value = 0.0016
CAN1 - TC3: W = 51; P-value = 0
CAN1 - TC4: W = 43.5; P-value = 0
CAN1 - TC5: W = 34; P-value = 0
CAN1 - TC6: W = 45.5; P-value = 0
CAN1 - TC7: W = 26.5; P-value = 0
CAN1 - TC9: W = 56.5; P-value = 0.0015
CAN2 - TC1: W = 219; P-value = 0.8353
CAN2 - TC10: W = 81.5; P-value = 0.1267
CAN2 - TC2: W = 129; P-value = 0.016
CAN2 - TC3: W = 92.5; P-value = 1e-04
CAN2 - TC4: W = 99.5; P-value = 1e-04
CAN2 - TC5: W = 71.5; P-value = 0
CAN2 - TC6: W = 83.5; P-value = 0
CAN2 - TC7: W = 60; P-value = 0
CAN2 - TC9: W = 91; P-value = 0.0265
TC1 - TC10: W = 91.5; P-value = 0.3245
TC1 - TC2: W = 152; P-value = 0.0052
TC1 - TC3: W = 171; P-value = 0.001
TC1 - TC4: W = 202; P-value = 0.0061
TC1 - TC5: W = 111; P-value = 0
TC1 - TC6: W = 133; P-value = 1e-04
TC1 - TC7: W = 88.5; P-value = 0
TC1 - TC9: W = 133.5; P-value = 0.0639
TC10 - TC2: W = 33.5; P-value = 0.0488
TC10 - TC3: W = 13; P-value = 0.0012
TC10 - TC4: W = 7; P-value = 5e-04
TC10 - TC5: W = 6; P-value = 4e-04
TC10 - TC6: W = 10; P-value = 7e-04
TC10 - TC7: W = 5; P-value = 6e-04
TC10 - TC9: W = 17.5; P-value = 0.0208
TC2 - TC3: W = 406; P-value = 0.4283
TC2 - TC4: W = 437; P-value = 0.1829
TC2 - TC5: W = 249; P-value = 0.0544
TC2 - TC6: W = 255.5; P-value = 0.049
TC2 - TC7: W = 193.5; P-value = 0.0525
TC2 - TC9: W = 232; P-value = 0.4667
TC3 - TC4: W = 530; P-value = 0.2397
TC3 - TC5: W = 290; P-value = 0.0184
TC3 - TC6: W = 328.5; P-value = 0.0497
TC3 - TC7: W = 226.5; P-value = 0.0206
TC3 - TC9: W = 288.5; P-value = 0.465
TC4 - TC5: W = 258; P-value = 0.0046
TC4 - TC6: W = 299; P-value = 0.0169
TC4 - TC7: W = 204; P-value = 0.0068
TC4 - TC9: W = 260.5; P-value = 0.9118
TC5 - TC6: W = 424.5; P-value = 0.5639
TC5 - TC7: W = 369.5; P-value = 0.8755
TC5 - TC9: W = 358; P-value = 0.0232
TC6 - TC7: W = 419.5; P-value = 0.425
TC6 - TC9: W = 366; P-value = 0.0279
TC7 - TC9: W = 284.5; P-value = 0.0342

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Potassium, total

Wilcox Tests between Transects:

CAN1 - CAN2: W = 88.5; P-value = 0.0127
CAN1 - TC1: W = 92; P-value = 0.0017
CAN1 - TC10: W = 102; P-value = 4e-04
CAN1 - TC2: W = 46.5; P-value = 0
CAN1 - TC3: W = 29.5; P-value = 0
CAN1 - TC4: W = 89; P-value = 1e-04
CAN1 - TC5: W = 180.5; P-value = 0.058
CAN1 - TC6: W = 66.5; P-value = 0
CAN1 - TC7: W = 33.5; P-value = 0
CAN1 - TC9: W = 49; P-value = 6e-04
CAN2 - TC1: W = 185.5; P-value = 0.3043
CAN2 - TC10: W = 109; P-value = 0.001
CAN2 - TC2: W = 113; P-value = 0.0051
CAN2 - TC3: W = 102; P-value = 2e-04
CAN2 - TC4: W = 212.5; P-value = 0.1395
CAN2 - TC5: W = 213.5; P-value = 0.1451
CAN2 - TC6: W = 125; P-value = 7e-04
CAN2 - TC7: W = 89; P-value = 7e-04
CAN2 - TC9: W = 119.5; P-value = 0.1883
TC1 - TC10: W = 144; P-value = 0
TC1 - TC2: W = 173; P-value = 0.0182
TC1 - TC3: W = 172.5; P-value = 0.0011
TC1 - TC4: W = 332; P-value = 0.6321
TC1 - TC5: W = 300.5; P-value = 0.3044
TC1 - TC6: W = 198.5; P-value = 0.0033
TC1 - TC7: W = 137.5; P-value = 0.002
TC1 - TC9: W = 176; P-value = 0.4667
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 29.5; P-value = 0.0109
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 0; P-value = 0
TC2 - TC3: W = 361.5; P-value = 0.9861
TC2 - TC4: W = 486.5; P-value = 0.0283
TC2 - TC5: W = 384; P-value = 0.6825
TC2 - TC6: W = 290.5; P-value = 0.1692
TC2 - TC7: W = 222.5; P-value = 0.1801
TC2 - TC9: W = 258; P-value = 0.1568
TC3 - TC4: W = 660; P-value = 0.0019
TC3 - TC5: W = 444; P-value = 0.9352
TC3 - TC6: W = 378.5; P-value = 0.2147
TC3 - TC7: W = 248.5; P-value = 0.0533
TC3 - TC9: W = 340.5; P-value = 0.0598
TC4 - TC5: W = 398; P-value = 0.4464
TC4 - TC6: W = 255.5; P-value = 0.0026
TC4 - TC7: W = 200; P-value = 0.0055
TC4 - TC9: W = 245.5; P-value = 0.842
TC5 - TC6: W = 329.5; P-value = 0.0515
TC5 - TC7: W = 269; P-value = 0.1151
TC5 - TC9: W = 277.5; P-value = 0.6262
TC6 - TC7: W = 388.5; P-value = 0.786
TC6 - TC9: W = 362; P-value = 0.0346
TC7 - TC9: W = 296; P-value = 0.0154

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Rubidium, dissolved

Wilcox Tests between Transects:

CAN1 - TC1: W = 299; P-value = 0.0358
CAN1 - TC10: W = 14.5; P-value = 0.0086
CAN1 - TC2: W = 48.5; P-value = 0.3047
CAN1 - TC3: W = 427; P-value = 9e-04
CAN1 - TC4: W = 425; P-value = 0.001
CAN1 - TC6: W = 393.5; P-value = 0.0179
CAN1 - TC9: W = 184.5; P-value = 0.305
TC1 - TC10: W = 22.5; P-value = 0.0109
TC1 - TC2: W = 43; P-value = 0.7675
TC1 - TC3: W = 425; P-value = 0.2615
TC1 - TC4: W = 394; P-value = 0.5597
TC1 - TC6: W = 314.5; P-value = 0.3331
TC1 - TC9: W = 180.5; P-value = 0.5424
TC10 - TC2: W = 24; P-value = 0.0131
TC10 - TC3: W = 180; P-value = 1e-04
TC10 - TC4: W = 180; P-value = 1e-04
TC10 - TC6: W = 178; P-value = 5e-04
TC10 - TC9: W = 80.5; P-value = 0.0416
TC2 - TC3: W = 76; P-value = 0.4073
TC2 - TC4: W = 74.5; P-value = 0.4542
TC2 - TC6: W = 44.5; P-value = 0.3778
TC2 - TC9: W = 28; P-value = 0.6221
TC3 - TC4: W = 405; P-value = 0.5106
TC3 - TC6: W = 204; P-value = 2e-04
TC3 - TC9: W = 173; P-value = 0.0711
TC4 - TC6: W = 223.5; P-value = 5e-04
TC4 - TC9: W = 180.5; P-value = 0.1013
TC6 - TC9: W = 261.5; P-value = 0.9742

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Rubidium, total

```
Wilcox Tests between Transects:
 CAN1 - TC1: W = 294; P-value = 0.0486
 CAN1 - TC10: W = 0; P-value = 3e-04
 CAN1 - TC2: W = 56; P-value = 0.0946
 CAN1 - TC3: W = 433.5; P-value = 5e-04
 CAN1 - TC4: W = 390; P-value = 0.0109
 CAN1 - TC6: W = 332; P-value = 0.2755
 CAN1 - TC9: W = 172.5; P-value = 0.5294
 TC1 - TC10: W = 15; P-value = 0.0032
 TC1 - TC2: W = 45; P-value = 0.8695
 TC1 - TC3: W = 434.5; P-value = 0.1976
 TC1 - TC4: W = 402.5; P-value = 0.4646
 TC1 - TC6: W = 290; P-value = 0.1663
 TC1 - TC9: W = 193; P-value = 0.781
 TC10 - TC2: W = 24; P-value = 0.012
 TC10 - TC3: W = 180; P-value = 1e-04
 TC10 - TC4: W = 168; P-value = 0.001
 TC10 - TC6: W = 159; P-value = 0.0068
 TC10 - TC9: W = 102; P-value = 4e-04
 TC2 - TC3: W = 68; P-value = 0.6885
 TC2 - TC4: W = 63.5; P-value = 0.8726
 TC2 - TC6: W = 37; P-value = 0.2035
 TC2 - TC9: W = 26.5; P-value = 0.5292
 TC3 - TC4: W = 411.5; P-value = 0.5742
 TC3 - TC6: W = 191.5; P-value = 1e-04
 TC3 - TC9: W = 171; P-value = 0.0644
 TC4 - TC6: W = 257.5; P-value = 0.0028
 TC4 - TC9: W = 195.5; P-value = 0.1912
 TC6 - TC9: W = 301; P-value = 0.4246
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Scandium, dissolved

Wilcox Tests between Transects:

CAN1 - TC1: W = 145; P-value = 0.0731
CAN1 - TC10: W = 108; P-value = 4e-04
CAN1 - TC2: W = 48; P-value = 0.342
CAN1 - TC3: W = 180; P-value = 0.0566
CAN1 - TC4: W = 184; P-value = 0.0686
CAN1 - TC6: W = 257.5; P-value = 0.6632
CAN1 - TC9: W = 140; P-value = 0.6799
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 81.5; P-value = 0.0302
TC1 - TC3: W = 276; P-value = 0.146
TC1 - TC4: W = 322.5; P-value = 0.5195
TC1 - TC6: W = 396.5; P-value = 0.6838
TC1 - TC9: W = 235.5; P-value = 0.4119
TC10 - TC2: W = 0; P-value = 0.0139
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC9: W = 12; P-value = 0.007
TC2 - TC3: W = 1; P-value = 0.0018
TC2 - TC4: W = 1; P-value = 0.0018
TC2 - TC6: W = 2; P-value = 2e-04
TC2 - TC9: W = 19; P-value = 0.1936
TC3 - TC4: W = 527.5; P-value = 0.2549
TC3 - TC6: W = 612.5; P-value = 0.0339
TC3 - TC9: W = 321; P-value = 0.1469
TC4 - TC6: W = 520; P-value = 0.4317
TC4 - TC9: W = 295; P-value = 0.3817
TC6 - TC9: W = 263; P-value = 1

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Scandium, total

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 149; P-value = 0.0909
CAN1 - TC10: W = 108; P-value = 4e-04
CAN1 - TC2: W = 48; P-value = 0.3273
CAN1 - TC3: W = 182; P-value = 0.0624
CAN1 - TC4: W = 182; P-value = 0.0624
CAN1 - TC6: W = 245; P-value = 0.4872
CAN1 - TC9: W = 146.5; P-value = 0.843
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 88; P-value = 0.0095
TC1 - TC3: W = 292; P-value = 0.2399
TC1 - TC4: W = 353; P-value = 0.9099
TC1 - TC6: W = 413; P-value = 0.4918
TC1 - TC9: W = 234.5; P-value = 0.4272
TC10 - TC2: W = 0; P-value = 0.0131
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC9: W = 5.5; P-value = 0.0016
TC2 - TC3: W = 1; P-value = 0.0018
TC2 - TC4: W = 3; P-value = 0.0025
TC2 - TC6: W = 1; P-value = 0.0017
TC2 - TC9: W = 16; P-value = 0.12
TC3 - TC4: W = 505; P-value = 0.4203
TC3 - TC6: W = 592.5; P-value = 0.0669
TC3 - TC9: W = 305.5; P-value = 0.2682
TC4 - TC6: W = 493.5; P-value = 0.6862
TC4 - TC9: W = 309.5; P-value = 0.2318
TC6 - TC9: W = 276.5; P-value = 0.7876
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Sodium, dissolved

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 182.5; P-value = 0.7381
CAN1 - TC1: W = 54.5; P-value = 0
CAN1 - TC10: W = 72; P-value = 0.2431
CAN1 - TC2: W = 6.5; P-value = 0
CAN1 - TC3: W = 21; P-value = 0
CAN1 - TC4: W = 173.5; P-value = 0.0408
CAN1 - TC5: W = 124.5; P-value = 0.002
CAN1 - TC6: W = 109; P-value = 4e-04
CAN1 - TC7: W = 78; P-value = 5e-04
CAN1 - TC9: W = 77; P-value = 0.0127
CAN2 - TC1: W = 32; P-value = 0
CAN2 - TC10: W = 101; P-value = 0.0056
CAN2 - TC2: W = 15.5; P-value = 0
CAN2 - TC3: W = 22; P-value = 0
CAN2 - TC4: W = 88; P-value = 1e-04
CAN2 - TC5: W = 67.5; P-value = 0
CAN2 - TC6: W = 64.5; P-value = 0
CAN2 - TC7: W = 31; P-value = 0
CAN2 - TC9: W = 66; P-value = 0.0026
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 147; P-value = 0.0037
TC1 - TC3: W = 287.5; P-value = 0.2098
TC1 - TC4: W = 563.5; P-value = 4e-04
TC1 - TC5: W = 422.5; P-value = 0.2802
TC1 - TC6: W = 320; P-value = 0.3818
TC1 - TC7: W = 234.5; P-value = 0.274
TC1 - TC9: W = 229.5; P-value = 0.5077
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 0; P-value = 0
TC2 - TC3: W = 472.5; P-value = 0.0511
TC2 - TC4: W = 681; P-value = 0
TC2 - TC5: W = 565.5; P-value = 4e-04
TC2 - TC6: W = 373; P-value = 0.9932
TC2 - TC7: W = 242; P-value = 0.3477
TC2 - TC9: W = 274.5; P-value = 0.0637
TC3 - TC4: W = 770; P-value = 0
TC3 - TC5: W = 591.5; P-value = 0.037
TC3 - TC6: W = 430.5; P-value = 0.6237
TC3 - TC7: W = 329; P-value = 0.5952
TC3 - TC9: W = 305; P-value = 0.2729
TC4 - TC5: W = 317.5; P-value = 0.0508
TC4 - TC6: W = 291.5; P-value = 0.0125
TC4 - TC7: W = 172.5; P-value = 0.0011
TC4 - TC9: W = 224; P-value = 0.4993
TC5 - TC6: W = 356; P-value = 0.1174
TC5 - TC7: W = 240.5; P-value = 0.0382
TC5 - TC9: W = 263.5; P-value = 0.8594
TC6 - TC7: W = 390; P-value = 0.7663
TC6 - TC9: W = 344.5; P-value = 0.0826
TC7 - TC9: W = 271.5; P-value = 0.076
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

```
Sodium, total
    Wilcox Tests between Transects:
     CAN1 - CAN2: W = 170.5; P-value = 1
     CAN1 - TC1: W = 58.5; P-value = 1e-04
     CAN1 - TC10: W = 72; P-value = 0.243
     CAN1 - TC2: W = 10; P-value = 0
     CAN1 - TC3: W = 42.5; P-value = 0
     CAN1 - TC4: W = 126.5; P-value = 0.0023
     CAN1 - TC5: W = 118; P-value = 0.0012
     CAN1 - TC6: W = 97.5; P-value = 2e-04
     CAN1 - TC7: W = 67.5; P-value = 2e-04
     CAN1 - TC9: W = 68; P-value = 0.0053
     CAN2 - TC1: W = 48; P-value = 0
     CAN2 - TC10: W = 112.5; P-value = 5e-04
     CAN2 - TC2: W = 19; P-value = 0
     CAN2 - TC3: W = 31; P-value = 0
     CAN2 - TC4: W = 92.5; P-value = 1e-04
     CAN2 - TC5: W = 95.5; P-value = 1e-04
     CAN2 - TC6: W = 68; P-value = 0
     CAN2 - TC7: W = 53; P-value = 0
     CAN2 - TC9: W = 70; P-value = 0.0039
     TC1 - TC10: W = 144; P-value = 2e-04
     TC1 - TC2: W = 136; P-value = 0.0018
     TC1 - TC3: W = 301; P-value = 0.3083
     TC1 - TC4: W = 478; P-value = 0.0406
     TC1 - TC5: W = 390; P-value = 0.6073
     TC1 - TC6: W = 309; P-value = 0.2887
     TC1 - TC7: W = 209; P-value = 0.1054
     TC1 - TC9: W = 209; P-value = 0.9052
     TC10 - TC2: W = 0; P-value = 2e-04
     TC10 - TC3: W = 0; P-value = 1e-04
     TC10 - TC4: W = 0; P-value = 1e-04
     TC10 - TC5: W = 0; P-value = 1e-04
     TC10 - TC6: W = 0; P-value = 1e-04
     TC10 - TC7: W = 0; P-value = 2e-04
     TC10 - TC9: W = 0; P-value = 4e-04
     TC2 - TC3: W = 465.5; P-value = 0.0674
     TC2 - TC4: W = 655; P-value = 0
     TC2 - TC5: W = 528; P-value = 0.0035
     TC2 - TC6: W = 379.5; P-value = 0.9054
     TC2 - TC7: W = 236; P-value = 0.2879
     TC2 - TC9: W = 267; P-value = 0.0979
     TC3 - TC4: W = 687.5; P-value = 5e-04
     TC3 - TC5: W = 563.5; P-value = 0.0947
     TC3 - TC6: W = 437.5; P-value = 0.6968
     TC3 - TC7: W = 306; P-value = 0.3515
     TC3 - TC9: W = 295.5; P-value = 0.3756
     TC4 - TC5: W = 385; P-value = 0.34
     TC4 - TC6: W = 304.5; P-value = 0.0209
     TC4 - TC7: W = 197; P-value = 0.0046
     TC4 - TC9: W = 214.5; P-value = 0.3755
     TC5 - TC6: W = 331; P-value = 0.0541
     TC5 - TC7: W = 205.5; P-value = 0.0073
     TC5 - TC9: W = 257.5; P-value = 0.9647
     TC6 - TC7: W = 401.5; P-value = 0.6225
     TC6 - TC9: W = 344.5; P-value = 0.0826
     TC7 - TC9: W = 282.5; P-value = 0.0389

  P-values reported are not adjusted for multiple comparisons.
  Adjusted significance level is 0.05 / 55 = 0.00091.
```

Strontium, dissolved

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 354; P-value = 5e-04
CAN1 - TC10: W = 87.5; P-value = 0.0272
CAN1 - TC2: W = 72; P-value = 0.0025
CAN1 - TC3: W = 430; P-value = 7e-04
CAN1 - TC4: W = 426.5; P-value = 9e-04
CAN1 - TC6: W = 544.5; P-value = 0
CAN1 - TC9: W = 243.5; P-value = 0.0029
TC1 - TC10: W = 40.5; P-value = 0.1075
TC1 - TC2: W = 42; P-value = 0.7177
TC1 - TC3: W = 342.5; P-value = 0.7672
TC1 - TC4: W = 280.5; P-value = 0.1687
TC1 - TC6: W = 405.5; P-value = 0.5754
TC1 - TC9: W = 172; P-value = 0.4043
TC10 - TC2: W = 24; P-value = 0.0131
TC10 - TC3: W = 131.5; P-value = 0.0817
TC10 - TC4: W = 120.5; P-value = 0.2021
TC10 - TC6: W = 175; P-value = 8e-04
TC10 - TC9: W = 73; P-value = 0.1302
TC2 - TC3: W = 50; P-value = 0.6115
TC2 - TC4: W = 49; P-value = 0.574
TC2 - TC6: W = 55; P-value = 0.7361
TC2 - TC9: W = 19; P-value = 0.1938
TC3 - TC4: W = 394; P-value = 0.4117
TC3 - TC6: W = 523.5; P-value = 0.4027
TC3 - TC9: W = 217.5; P-value = 0.4126
TC4 - TC6: W = 571.5; P-value = 0.1261
TC4 - TC9: W = 228.5; P-value = 0.5646
TC6 - TC9: W = 174; P-value = 0.055
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Strontium, total

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 365; P-value = 2e-04
CAN1 - TC10: W = 86; P-value = 0.0341
CAN1 - TC2: W = 72; P-value = 0.0024
CAN1 - TC3: W = 449.5; P-value = 1e-04
CAN1 - TC4: W = 444.5; P-value = 2e-04
CAN1 - TC6: W = 542.5; P-value = 0
CAN1 - TC9: W = 238.5; P-value = 0.0049
TC1 - TC10: W = 36; P-value = 0.0654
TC1 - TC2: W = 41; P-value = 0.6693
TC1 - TC3: W = 334.5; P-value = 0.6634
TC1 - TC4: W = 300.5; P-value = 0.3041
TC1 - TC6: W = 399; P-value = 0.6528
TC1 - TC9: W = 170; P-value = 0.3751
TC10 - TC2: W = 24; P-value = 0.0128
TC10 - TC3: W = 139.5; P-value = 0.0373
TC10 - TC4: W = 120.5; P-value = 0.2024
TC10 - TC6: W = 173; P-value = 0.001
TC10 - TC9: W = 72.5; P-value = 0.1394
TC2 - TC3: W = 49.5; P-value = 0.5928
TC2 - TC4: W = 45; P-value = 0.438
TC2 - TC6: W = 51.5; P-value = 0.6041
TC2 - TC9: W = 20; P-value = 0.2263
TC3 - TC4: W = 421.5; P-value = 0.6788
TC3 - TC6: W = 499; P-value = 0.6288
TC3 - TC9: W = 217; P-value = 0.4062
TC4 - TC6: W = 549.5; P-value = 0.2255
TC4 - TC9: W = 227; P-value = 0.5425
TC6 - TC9: W = 177.5; P-value = 0.0653
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Thorium, total

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 170; P-value = 0.2457
CAN1 - TC10: W = 72; P-value = 0.2358
CAN1 - TC2: W = 60; P-value = 0.0355
CAN1 - TC3: W = 289.5; P-value = 0.6814
CAN1 - TC4: W = 327.5; P-value = 0.2073
CAN1 - TC6: W = 352; P-value = 0.1148
CAN1 - TC9: W = 181; P-value = 0.3578
TC1 - TC10: W = 117; P-value = 0.0179
TC1 - TC2: W = 94; P-value = 0.0026
TC1 - TC3: W = 455; P-value = 0.0988
TC1 - TC4: W = 510.5; P-value = 0.0082
TC1 - TC6: W = 553; P-value = 0.0019
TC1 - TC9: W = 290.5; P-value = 0.0206
TC10 - TC2: W = 24; P-value = 0.004
TC10 - TC3: W = 48; P-value = 0.0754
TC10 - TC4: W = 84; P-value = 0.8093
TC10 - TC6: W = 102; P-value = 0.7142
TC10 - TC9: W = 36; P-value = 0.2484
TC2 - TC3: W = 16; P-value = 0.0172
TC2 - TC4: W = 28; P-value = 0.068
TC2 - TC6: W = 32; P-value = 0.0898
TC2 - TC9: W = 4; P-value = 0.0059
TC3 - TC4: W = 537; P-value = 0.1893
TC3 - TC6: W = 570.5; P-value = 0.1179
TC3 - TC9: W = 296; P-value = 0.366
TC4 - TC6: W = 484.5; P-value = 0.7702
TC4 - TC9: W = 226.5; P-value = 0.5258
TC6 - TC9: W = 214.5; P-value = 0.2814
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

Uranium, dissolved

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 210; P-value = 0.2418
CAN1 - TC1: W = 110.5; P-value = 0.0076
CAN1 - TC10: W = 74; P-value = 0.193
CAN1 - TC2: W = 41; P-value = 0
CAN1 - TC3: W = 102.5; P-value = 4e-04
CAN1 - TC4: W = 190.5; P-value = 0.0924
CAN1 - TC5: W = 120; P-value = 0.0014
CAN1 - TC6: W = 97.5; P-value = 2e-04
CAN1 - TC7: W = 96.5; P-value = 0.0025
CAN1 - TC9: W = 83; P-value = 0.0217
CAN2 - TC1: W = 77.5; P-value = 2e-04
CAN2 - TC10: W = 109; P-value = 0.001
CAN2 - TC2: W = 19; P-value = 0
CAN2 - TC3: W = 32; P-value = 0
CAN2 - TC4: W = 87.5; P-value = 1e-04
CAN2 - TC5: W = 57.5; P-value = 0
CAN2 - TC6: W = 57.5; P-value = 0
CAN2 - TC7: W = 74.5; P-value = 2e-04
CAN2 - TC9: W = 79; P-value = 0.0094
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 226.5; P-value = 0.2083
TC1 - TC3: W = 299.5; P-value = 0.2961
TC1 - TC4: W = 412; P-value = 0.3699
TC1 - TC5: W = 337.5; P-value = 0.7017
TC1 - TC6: W = 276.5; P-value = 0.1068
TC1 - TC7: W = 221.5; P-value = 0.1735
TC1 - TC9: W = 232; P-value = 0.4666
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 1.5; P-value = 2e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 2; P-value = 7e-04
TC2 - TC3: W = 410.5; P-value = 0.3839
TC2 - TC4: W = 520.5; P-value = 0.0053
TC2 - TC5: W = 439; P-value = 0.1716
TC2 - TC6: W = 362.5; P-value = 0.8786
TC2 - TC7: W = 268; P-value = 0.6875
TC2 - TC9: W = 290.5; P-value = 0.0228
TC3 - TC4: W = 605; P-value = 0.0223
TC3 - TC5: W = 484; P-value = 0.6203
TC3 - TC6: W = 407.5; P-value = 0.4108
TC3 - TC7: W = 333.5; P-value = 0.6508
TC3 - TC9: W = 311.5; P-value = 0.2149
TC4 - TC5: W = 334.5; P-value = 0.089
TC4 - TC6: W = 293; P-value = 0.0133
TC4 - TC7: W = 271; P-value = 0.1234
TC4 - TC9: W = 254; P-value = 0.9912
TC5 - TC6: W = 379.5; P-value = 0.22
TC5 - TC7: W = 305.5; P-value = 0.3472
TC5 - TC9: W = 304; P-value = 0.2827
TC6 - TC7: W = 386.5; P-value = 0.8122
TC6 - TC9: W = 346; P-value = 0.077
TC7 - TC9: W = 274.5; P-value = 0.0639
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Uranium, total

Wilcox Tests between Transects:

CAN1 - CAN2: W = 198.5; P-value = 0.4117
CAN1 - TC1: W = 79.5; P-value = 5e-04
CAN1 - TC10: W = 108; P-value = 4e-04
CAN1 - TC2: W = 20.5; P-value = 0
CAN1 - TC3: W = 117; P-value = 0.0012
CAN1 - TC4: W = 212.5; P-value = 0.2245
CAN1 - TC5: W = 79; P-value = 0
CAN1 - TC6: W = 84.5; P-value = 1e-04
CAN1 - TC7: W = 103; P-value = 0.0042
CAN1 - TC9: W = 74.5; P-value = 0.01
CAN2 - TC1: W = 52; P-value = 0
CAN2 - TC10: W = 114; P-value = 3e-04
CAN2 - TC2: W = 16.5; P-value = 0
CAN2 - TC3: W = 80.5; P-value = 0
CAN2 - TC4: W = 133; P-value = 0.0019
CAN2 - TC5: W = 47; P-value = 0
CAN2 - TC6: W = 69; P-value = 0
CAN2 - TC7: W = 84.5; P-value = 5e-04
CAN2 - TC9: W = 88.5; P-value = 0.0215
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 242; P-value = 0.3478
TC1 - TC3: W = 369.5; P-value = 0.8755
TC1 - TC4: W = 439.5; P-value = 0.1689
TC1 - TC5: W = 343; P-value = 0.7738
TC1 - TC6: W = 331; P-value = 0.4918
TC1 - TC7: W = 271.5; P-value = 0.7414
TC1 - TC9: W = 259; P-value = 0.1491
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 2.5; P-value = 2e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 0; P-value = 4e-04
TC2 - TC3: W = 430.5; P-value = 0.2228
TC2 - TC4: W = 467.5; P-value = 0.0625
TC2 - TC5: W = 410; P-value = 0.3886
TC2 - TC6: W = 394; P-value = 0.7151
TC2 - TC7: W = 312.5; P-value = 0.6206
TC2 - TC9: W = 301.5; P-value = 0.0102
TC3 - TC4: W = 557; P-value = 0.1152
TC3 - TC5: W = 420; P-value = 0.6627
TC3 - TC6: W = 401; P-value = 0.3595
TC3 - TC7: W = 355.5; P-value = 0.9445
TC3 - TC9: W = 307.5; P-value = 0.2494
TC4 - TC5: W = 322; P-value = 0.0594
TC4 - TC6: W = 316; P-value = 0.0321
TC4 - TC7: W = 282.5; P-value = 0.18
TC4 - TC9: W = 266.5; P-value = 0.8075
TC5 - TC6: W = 434.5; P-value = 0.6651
TC5 - TC7: W = 367; P-value = 0.9099
TC5 - TC9: W = 331.5; P-value = 0.0923
TC6 - TC7: W = 416; P-value = 0.4602
TC6 - TC9: W = 344.5; P-value = 0.0826
TC7 - TC9: W = 249.5; P-value = 0.2336

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Vanadium, dissolved

Wilcox Tests between Transects:

```
CAN1 - CAN2: W = 188.5; P-value = 0.6028
CAN1 - TC1: W = 146.5; P-value = 0.0776
CAN1 - TC10: W = 35.5; P-value = 0.2233
CAN1 - TC2: W = 128.5; P-value = 0.0266
CAN1 - TC3: W = 106; P-value = 5e-04
CAN1 - TC4: W = 370; P-value = 0.0332
CAN1 - TC5: W = 112.5; P-value = 8e-04
CAN1 - TC6: W = 60.5; P-value = 0
CAN1 - TC7: W = 48; P-value = 0
CAN1 - TC9: W = 113; P-value = 0.1911
CAN2 - TC1: W = 138; P-value = 0.0277
CAN2 - TC10: W = 39.5; P-value = 0.2708
CAN2 - TC2: W = 106; P-value = 0.0029
CAN2 - TC3: W = 97; P-value = 1e-04
CAN2 - TC4: W = 300.5; P-value = 0.7573
CAN2 - TC5: W = 109.5; P-value = 3e-04
CAN2 - TC6: W = 85.5; P-value = 0
CAN2 - TC7: W = 64.5; P-value = 1e-04
CAN2 - TC9: W = 104.5; P-value = 0.072
TC1 - TC10: W = 81; P-value = 0.6555
TC1 - TC2: W = 212.5; P-value = 0.1204
TC1 - TC3: W = 247; P-value = 0.0496
TC1 - TC4: W = 535; P-value = 0.0023
TC1 - TC5: W = 261; P-value = 0.0853
TC1 - TC6: W = 216.5; P-value = 0.0083
TC1 - TC7: W = 180; P-value = 0.0264
TC1 - TC9: W = 212; P-value = 0.8421
TC10 - TC2: W = 49; P-value = 0.2408
TC10 - TC3: W = 41.5; P-value = 0.041
TC10 - TC4: W = 149; P-value = 0.0126
TC10 - TC5: W = 56; P-value = 0.1527
TC10 - TC6: W = 32; P-value = 0.0121
TC10 - TC7: W = 26; P-value = 0.0179
TC10 - TC9: W = 46; P-value = 0.7513
TC2 - TC3: W = 408; P-value = 0.4071
TC2 - TC4: W = 528; P-value = 0.0034
TC2 - TC5: W = 341.5; P-value = 0.7533
TC2 - TC6: W = 329.5; P-value = 0.4748
TC2 - TC7: W = 292.5; P-value = 0.9341
TC2 - TC9: W = 249; P-value = 0.2378
TC3 - TC4: W = 715; P-value = 1e-04
TC3 - TC5: W = 439.5; P-value = 0.8822
TC3 - TC6: W = 426.5; P-value = 0.583
TC3 - TC7: W = 369.5; P-value = 0.8753
TC3 - TC9: W = 343; P-value = 0.0523
TC4 - TC5: W = 117; P-value = 0
TC4 - TC6: W = 95; P-value = 0
TC4 - TC7: W = 85; P-value = 0
TC4 - TC9: W = 162; P-value = 0.0399
TC5 - TC6: W = 381; P-value = 0.2271
TC5 - TC7: W = 323.5; P-value = 0.53
TC5 - TC9: W = 322; P-value = 0.1401
TC6 - TC7: W = 391.5; P-value = 0.7466
TC6 - TC9: W = 367; P-value = 0.026
TC7 - TC9: W = 277.5; P-value = 0.0529
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 55 = 0.00091.

Yttrium, dissolved

Tukey multiple comparisons of means

95% family-wise confidence level

	diff	lwr	upr	p adj
TC1-CAN1	0.028474615	-0.23706701	0.29401624	0.9999788
TC10-CAN1	-0.299772568	-0.70123377	0.10168863	0.3031793
TC2-CAN1	-0.274686735	-0.74544172	0.19606825	0.6254687
TC3-CAN1	0.145443341	-0.10846302	0.39934970	0.6474494
TC4-CAN1	0.109175552	-0.14473081	0.36308191	0.8893581
TC6-CAN1	0.236795408	-0.01557055	0.48916137	0.0830951
TC9-CAN1	0.032274658	-0.25574567	0.32029499	0.9999714
TC10-TC1	-0.328247184	-0.71696032	0.06046595	0.1656991
TC2-TC1	-0.303161351	-0.76309294	0.15677024	0.4680244
TC3-TC1	0.116968725	-0.11625916	0.35019661	0.7836574
TC4-TC1	0.080700937	-0.15252695	0.31392882	0.9632588
TC6-TC1	0.208320792	-0.02322917	0.43987075	0.1117712
TC9-TC1	0.003800043	-0.26616758	0.27376767	1.0000000
TC2-TC10	0.025085833	-0.52463756	0.57480922	0.9999999
TC3-TC10	0.445215909	0.06435637	0.82607545	0.0102028
TC4-TC10	0.408948120	0.02808858	0.78980766	0.0258541
TC6-TC10	0.536567976	0.15673363	0.91640232	0.0006643
TC9-TC10	0.332047226	-0.07235512	0.73644958	0.1935622
TC3-TC2	0.420130076	-0.03318344	0.87344360	0.0909275
TC4-TC2	0.383862287	-0.06945123	0.83717581	0.1630725
TC6-TC2	0.511482143	0.05902962	0.96393467	0.0150121
TC9-TC2	0.306961393	-0.16630430	0.78022709	0.4896577
TC4-TC3	-0.036267789	-0.25615714	0.18362157	0.9996139
TC6-TC3	0.091352067	-0.12675678	0.30946091	0.9022992
TC9-TC3	-0.113168683	-0.37170031	0.14536294	0.8797744
TC6-TC4	0.127619856	-0.09048899	0.34572870	0.6221198
TC9-TC4	-0.076900894	-0.33543252	0.18163073	0.9843036
TC9-TC6	-0.204520750	-0.46153970	0.05249820	0.2273412

P-values reported are adjusted for multiple comparisons.

Yttrium, total

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 117; P-value = 0.0105
CAN1 - TC10: W = 86; P-value = 0.0299
CAN1 - TC2: W = 30; P-value = 0.6282
CAN1 - TC3: W = 162; P-value = 0.0197
CAN1 - TC4: W = 178; P-value = 0.0441
CAN1 - TC6: W = 155.5; P-value = 0.0094
CAN1 - TC9: W = 125.5; P-value = 0.3565
TC1 - TC10: W = 137; P-value = 6e-04
TC1 - TC2: W = 67; P-value = 0.2045
TC1 - TC3: W = 351.5; P-value = 0.887
TC1 - TC4: W = 403.5; P-value = 0.4399
TC1 - TC6: W = 354; P-value = 0.7624
TC1 - TC9: W = 256; P-value = 0.1604
TC10 - TC2: W = 2; P-value = 0.0302
TC10 - TC3: W = 8; P-value = 4e-04
TC10 - TC4: W = 15; P-value = 0.0011
TC10 - TC6: W = 9; P-value = 5e-04
TC10 - TC9: W = 15; P-value = 0.0096
TC2 - TC3: W = 31; P-value = 0.1199
TC2 - TC4: W = 43; P-value = 0.3585
TC2 - TC6: W = 34; P-value = 0.1464
TC2 - TC9: W = 31; P-value = 0.8146
TC3 - TC4: W = 493; P-value = 0.5199
TC3 - TC6: W = 447.5; P-value = 0.8034
TC3 - TC9: W = 323; P-value = 0.1266
TC4 - TC6: W = 402; P-value = 0.3563
TC4 - TC9: W = 295; P-value = 0.3642
TC6 - TC9: W = 337; P-value = 0.1077
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 28 = 0.00179.

PAH summed (half DL)

Tukey multiple comparisons of means

95% family-wise confidence level

	diff	lwr	upr	p adj
TC1-CAN1	0.18630642	-0.2816424	0.654255233	0.9531666
TC10-CAN1	-0.09613644	-0.6322392	0.439966281	0.9998812
TC2-CAN1	0.31923446	-0.1487144	0.787183278	0.4559115
TC3-CAN1	0.24432538	-0.2236234	0.712274191	0.7962131
TC4-CAN1	0.33113901	-0.1368098	0.799087827	0.4022115
TC5-CAN1	0.01853215	-0.4494167	0.486480966	1.0000000
TC6-CAN1	-0.18896779	-0.6569166	0.278981027	0.9489145
TC7-CAN1	0.04861723	-0.4193316	0.516566048	0.9999989
TC9-CAN1	-0.13342543	-0.5265811	0.259730213	0.9834676
TC10-TC1	-0.28244285	-0.8673789	0.302493166	0.8606025
TC2-TC1	0.13292805	-0.3902546	0.656110726	0.9980190
TC3-TC1	0.05801896	-0.4651637	0.581201639	0.9999981
TC4-TC1	0.14483259	-0.3783501	0.668015275	0.9961884
TC5-TC1	-0.16777427	-0.6909569	0.355408414	0.9888529
TC6-TC1	-0.37527421	-0.8984569	0.147908475	0.3825469
TC7-TC1	-0.13768918	-0.6608719	0.385493496	0.9974030
TC9-TC1	-0.31973185	-0.7772418	0.137778134	0.4204752
TC2-TC10	0.41537090	-0.1695651	1.000306917	0.3971299
TC3-TC10	0.34046181	-0.2444742	0.925397830	0.6770280
TC4-TC10	0.42727545	-0.1576606	1.012211467	0.3564392
TC5-TC10	0.11466859	-0.4702674	0.699604606	0.9997514
TC6-TC10	-0.09283135	-0.6777674	0.492104666	0.9999575
TC7-TC10	0.14475367	-0.4401824	0.729689688	0.9983857
TC9-TC10	-0.03728900	-0.5643046	0.489726577	1.0000000
TC3-TC2	-0.07490909	-0.5980918	0.448273593	0.9999824
TC4-TC2	0.01190455	-0.5112781	0.535087230	1.0000000
TC5-TC2	-0.30070231	-0.8238850	0.222480369	0.6925466
TC6-TC2	-0.50820225	-1.0313849	0.014980429	0.0642549
TC7-TC2	-0.27061723	-0.7937999	0.252565451	0.8048756
TC9-TC2	-0.45265989	-0.9101699	0.004850089	0.0549228
TC4-TC3	0.08681364	-0.4363690	0.609996317	0.9999381
TC5-TC3	-0.22579322	-0.7489759	0.297389456	0.9242657
TC6-TC3	-0.43329316	-0.9564758	0.089889517	0.1950475
TC7-TC3	-0.19570814	-0.7188908	0.327474538	0.9683939
TC9-TC3	-0.37775081	-0.8352608	0.079759176	0.1984361
TC5-TC4	-0.31260686	-0.8357895	0.210575820	0.6435098
TC6-TC4	-0.52010680	-1.0432895	0.003075880	0.0526808
TC7-TC4	-0.28252178	-0.8057045	0.240660902	0.7629059
TC9-TC4	-0.46456444	-0.9220744	-0.007054460	0.0435236
TC6-TC5	-0.20749994	-0.7306826	0.315682741	0.9542615
TC7-TC5	0.03008508	-0.4930976	0.553267763	1.0000000
TC9-TC5	-0.15195758	-0.6094676	0.305552401	0.9857482
TC7-TC6	0.23758502	-0.2855977	0.760767702	0.8992343
TC9-TC6	0.05554236	-0.4019676	0.513052340	0.9999958
TC9-TC7	-0.18204266	-0.6395526	0.275467319	0.9533370

P-values reported are adjusted for multiple comparisons.

PCB TEQ, fish

Tukey multiple comparisons of means
95% family-wise confidence level

	diff	lwr	upr	p adj
TC1-CAN1	0.36700965	-0.07251928	0.80653858	0.1860863
TC10-CAN1	0.34728898	-0.15625467	0.85083263	0.4398489
TC2-CAN1	0.28480639	-0.15472254	0.72433532	0.5311689
TC3-CAN1	0.27264415	-0.16688478	0.71217308	0.5930180
TC4-CAN1	0.25330881	-0.18622012	0.69283774	0.6892393
TC5-CAN1	0.42256451	-0.01696442	0.86209344	0.0699673
TC6-CAN1	0.45567238	0.01614345	0.89520131	0.0357848
TC7-CAN1	0.29873544	-0.14079349	0.73826437	0.4613731
TC9-CAN1	0.06964812	-0.29963005	0.43892628	0.9998193
TC10-TC1	-0.01972067	-0.56913183	0.52969049	1.0000000
TC2-TC1	-0.08220327	-0.57361155	0.40920502	0.9999337
TC3-TC1	-0.09436551	-0.58577379	0.39704277	0.9997903
TC4-TC1	-0.11370084	-0.60510913	0.37770744	0.9990491
TC5-TC1	0.05555485	-0.43585343	0.54696314	0.9999977
TC6-TC1	0.08866273	-0.40274556	0.58007101	0.9998750
TC7-TC1	-0.06827422	-0.55968250	0.42313406	0.9999864
TC9-TC1	-0.29736154	-0.72708562	0.13236254	0.4349716
TC2-TC10	-0.06248260	-0.61189376	0.48692857	0.9999976
TC3-TC10	-0.07464484	-0.62405600	0.47476633	0.9999888
TC4-TC10	-0.09398017	-0.64339133	0.45543099	0.9999200
TC5-TC10	0.07527553	-0.47413564	0.62468669	0.9999879
TC6-TC10	0.10838340	-0.44102776	0.65779456	0.9997382
TC7-TC10	-0.04855355	-0.59796471	0.50085762	0.9999997
TC9-TC10	-0.27764087	-0.77264926	0.21736753	0.7214174
TC3-TC2	-0.01216224	-0.50357052	0.47924604	1.0000000
TC4-TC2	-0.03149758	-0.52290586	0.45991071	1.0000000
TC5-TC2	0.13775812	-0.35365016	0.62916640	0.9958114
TC6-TC2	0.17086599	-0.32054229	0.66227428	0.9804990
TC7-TC2	0.01392905	-0.47747923	0.50533733	1.0000000
TC9-TC2	-0.21515827	-0.64488235	0.21456581	0.8329495
TC4-TC3	-0.01933534	-0.51074362	0.47207295	1.0000000
TC5-TC3	0.14992036	-0.34148792	0.64132864	0.9921937
TC6-TC3	0.18302823	-0.30838005	0.67443652	0.9692654
TC7-TC3	0.02609129	-0.46531699	0.51749957	1.0000000
TC9-TC3	-0.20299603	-0.63272011	0.22672805	0.8755450
TC5-TC4	0.16925570	-0.32215258	0.66066398	0.9817110
TC6-TC4	0.20236357	-0.28904471	0.69377185	0.9424997
TC7-TC4	0.04542663	-0.44598166	0.53683491	0.9999996
TC9-TC4	-0.18366069	-0.61338477	0.24606338	0.9284094
TC6-TC5	0.03310787	-0.45830041	0.52451615	1.0000000
TC7-TC5	-0.12382907	-0.61523735	0.36757921	0.9981417
TC9-TC5	-0.35291639	-0.78264047	0.07680769	0.2044572
TC7-TC6	-0.15693694	-0.64834523	0.33447134	0.9891728
TC9-TC6	-0.38602426	-0.81574834	0.04369981	0.1168410
TC9-TC7	-0.22908732	-0.65881140	0.20063676	0.7760251

P-values reported are adjusted for multiple comparisons.

PCB TEQ, mammal

Tukey multiple comparisons of means

95% family-wise confidence level

	diff	lwr	upr	p adj
TC1-CAN1	0.371137638	-0.08054559	0.82282087	0.2038857
TC10-CAN1	0.362261801	-0.15520635	0.87972995	0.4179334
TC2-CAN1	0.308240347	-0.14344288	0.75992358	0.4554233
TC3-CAN1	0.291091016	-0.16059221	0.74277425	0.5390293
TC4-CAN1	0.267215172	-0.18446806	0.71889840	0.6564144
TC5-CAN1	0.425938577	-0.02574465	0.87762181	0.0816442
TC6-CAN1	0.477349116	0.02566589	0.92903235	0.0296274
TC7-CAN1	0.306805673	-0.14487756	0.75848890	0.4622873
TC9-CAN1	0.057123439	-0.32236638	0.43661326	0.9999729
TC10-TC1	-0.008875837	-0.57347987	0.55572820	1.0000000
TC2-TC1	-0.062897290	-0.56789449	0.44209991	0.9999947
TC3-TC1	-0.080046622	-0.58504383	0.42495058	0.9999580
TC4-TC1	-0.103922465	-0.60891967	0.40107474	0.9996299
TC5-TC1	0.054800940	-0.45019626	0.55979814	0.9999984
TC6-TC1	0.106211478	-0.39878573	0.61120868	0.9995581
TC7-TC1	-0.064331965	-0.56932917	0.44066524	0.9999936
TC9-TC1	-0.314014198	-0.75562144	0.12759305	0.3951700
TC2-TC10	-0.054021453	-0.61862549	0.51058258	0.9999995
TC3-TC10	-0.071170785	-0.63577482	0.49343325	0.9999941
TC4-TC10	-0.095046628	-0.65965067	0.46955741	0.9999301
TC5-TC10	0.063676777	-0.50092726	0.62828081	0.9999978
TC6-TC10	0.115087315	-0.44951672	0.67969135	0.9996576
TC7-TC10	-0.055456128	-0.62006017	0.50914791	0.9999993
TC9-TC10	-0.305138361	-0.81383523	0.20355851	0.6383903
TC3-TC2	-0.017149332	-0.52214654	0.48784787	1.0000000
TC4-TC2	-0.041025175	-0.54602238	0.46397203	0.9999999
TC5-TC2	0.117698230	-0.38729897	0.62269543	0.9989926
TC6-TC2	0.169108768	-0.33588844	0.67410597	0.9849177
TC7-TC2	-0.001434674	-0.50643188	0.50356253	1.0000000
TC9-TC2	-0.251116908	-0.69272415	0.19049034	0.7053785
TC4-TC3	-0.023875843	-0.52887305	0.48112136	1.0000000
TC5-TC3	0.134847561	-0.37014964	0.63984477	0.9970985
TC6-TC3	0.186258100	-0.31873910	0.69125530	0.9711568
TC7-TC3	0.015714657	-0.48928255	0.52071186	1.0000000
TC9-TC3	-0.233967576	-0.67557482	0.20763967	0.7821707
TC5-TC4	0.158723405	-0.34627380	0.66372061	0.9903329
TC6-TC4	0.210133943	-0.29486326	0.71513115	0.9388172
TC7-TC4	0.039590500	-0.46540670	0.54458770	0.9999999
TC9-TC4	-0.210091733	-0.65169898	0.23151551	0.8708638
TC6-TC5	0.051410538	-0.45358667	0.55640774	0.9999991
TC7-TC5	-0.119132904	-0.62413011	0.38586430	0.9988912
TC9-TC5	-0.368815138	-0.81042238	0.07279211	0.1858813
TC7-TC6	-0.170543443	-0.67554065	0.33445376	0.9840142
TC9-TC6	-0.420225676	-0.86183292	0.02138157	0.0760115
TC9-TC7	-0.249682233	-0.69128948	0.19192501	0.7121278

P-values reported are adjusted for multiple comparisons.

SIR, oxygen

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 52; P-value = 0
CAN1 - TC10: W = 91.5; P-value = 0.0136
CAN1 - TC2: W = 40.5; P-value = 0
CAN1 - TC3: W = 20; P-value = 0
CAN1 - TC4: W = 68; P-value = 0
CAN1 - TC5: W = 54.5; P-value = 0
CAN1 - TC6: W = 10.5; P-value = 0
CAN1 - TC7: W = 5; P-value = 0
CAN1 - TC9: W = 65.5; P-value = 0.0041
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 281; P-value = 0.8934
TC1 - TC3: W = 320.5; P-value = 0.4971
TC1 - TC4: W = 400.5; P-value = 0.4861
TC1 - TC5: W = 367.5; P-value = 0.903
TC1 - TC6: W = 296.5; P-value = 0.203
TC1 - TC7: W = 261; P-value = 0.5847
TC1 - TC9: W = 252; P-value = 0.2087
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 1; P-value = 0
TC2 - TC3: W = 319; P-value = 0.4806
TC2 - TC4: W = 434; P-value = 0.2006
TC2 - TC5: W = 387; P-value = 0.6445
TC2 - TC6: W = 296; P-value = 0.2
TC2 - TC7: W = 251.5; P-value = 0.4578
TC2 - TC9: W = 274; P-value = 0.0658
TC3 - TC4: W = 595.5; P-value = 0.032
TC3 - TC5: W = 513; P-value = 0.3554
TC3 - TC6: W = 376; P-value = 0.2016
TC3 - TC7: W = 292.5; P-value = 0.2434
TC3 - TC9: W = 353; P-value = 0.0308
TC4 - TC5: W = 404.5; P-value = 0.5058
TC4 - TC6: W = 267; P-value = 0.0044
TC4 - TC7: W = 227; P-value = 0.0211
TC4 - TC9: W = 316; P-value = 0.1803
TC5 - TC6: W = 310; P-value = 0.0258
TC5 - TC7: W = 267; P-value = 0.1072
TC5 - TC9: W = 326.5; P-value = 0.1159
TC6 - TC7: W = 414.5; P-value = 0.4758
TC6 - TC9: W = 420.5; P-value = 7e-04
TC7 - TC9: W = 304.5; P-value = 0.0081
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 45 = 0.00111.

SIR, hydrogen

Wilcox Tests between Transects:

```
CAN1 - TC1: W = 34; P-value = 0
CAN1 - TC10: W = 74.5; P-value = 0.1817
CAN1 - TC2: W = 43; P-value = 0
CAN1 - TC3: W = 30.5; P-value = 0
CAN1 - TC4: W = 75.5; P-value = 0
CAN1 - TC5: W = 66; P-value = 0
CAN1 - TC6: W = 16; P-value = 0
CAN1 - TC7: W = 10; P-value = 0
CAN1 - TC9: W = 52.5; P-value = 0.001
TC1 - TC10: W = 144; P-value = 2e-04
TC1 - TC2: W = 302.5; P-value = 0.7727
TC1 - TC3: W = 373.5; P-value = 0.8209
TC1 - TC4: W = 399.5; P-value = 0.4968
TC1 - TC5: W = 391.5; P-value = 0.5893
TC1 - TC6: W = 303; P-value = 0.2449
TC1 - TC7: W = 278; P-value = 0.8447
TC1 - TC9: W = 253; P-value = 0.1991
TC10 - TC2: W = 0; P-value = 2e-04
TC10 - TC3: W = 0; P-value = 1e-04
TC10 - TC4: W = 0; P-value = 1e-04
TC10 - TC5: W = 0; P-value = 1e-04
TC10 - TC6: W = 0; P-value = 1e-04
TC10 - TC7: W = 0; P-value = 2e-04
TC10 - TC9: W = 2; P-value = 7e-04
TC2 - TC3: W = 343; P-value = 0.7738
TC2 - TC4: W = 392.5; P-value = 0.5771
TC2 - TC5: W = 387; P-value = 0.6444
TC2 - TC6: W = 276.5; P-value = 0.1068
TC2 - TC7: W = 237.5; P-value = 0.3024
TC2 - TC9: W = 253; P-value = 0.1992
TC3 - TC4: W = 549.5; P-value = 0.143
TC3 - TC5: W = 516; P-value = 0.3326
TC3 - TC6: W = 370.5; P-value = 0.175
TC3 - TC7: W = 286.5; P-value = 0.2036
TC3 - TC9: W = 332; P-value = 0.0901
TC4 - TC5: W = 423; P-value = 0.6949
TC4 - TC6: W = 272.5; P-value = 0.0056
TC4 - TC7: W = 232.5; P-value = 0.027
TC4 - TC9: W = 288; P-value = 0.4715
TC5 - TC6: W = 303; P-value = 0.0198
TC5 - TC7: W = 258; P-value = 0.0772
TC5 - TC9: W = 300.5; P-value = 0.319
TC6 - TC7: W = 405; P-value = 0.581
TC6 - TC9: W = 385.5; P-value = 0.0088
TC7 - TC9: W = 289.5; P-value = 0.0245
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 45 = 0.00111.

Appendix G2b.

Tukey's multiple comparisons and Wilcoxon tests to identify specific depth differences

```
Dependent Variable Alkalinity
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.152
                   The p-value is 0.927 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.288
                   The p-value is 0.866 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.235
                   The p-value is 0.889 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.281
                   The p-value is 0.869 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.072
                   The p-value is 0.965 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.395
                   The p-value is 0.821 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.063
                   The p-value is 0.969 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.339
                   The p-value is 0.512 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.871
                   The p-value is 0.647 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Chloride ion
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.322
                   The p-value is 0.851 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.500
                   The p-value is 0.287 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.236
                   The p-value is 0.889 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.409
                   The p-value is 0.815 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 3.395
                   The p-value is 0.183 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.454
                   The p-value is 0.797 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 10.807
                   The p-value is 0.005 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 4.838
                   The p-value is 0.089 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 4.760
                   The p-value is 0.093 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.232
                   The p-value is 0.890 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Chloride ion
Grouping Variable  DEPTH$

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 10.807
                   The p-value is 0.005 assuming chi-square distribution with 2 df.
```

```
        Wilcoxon rank sum test with continuity correction
NB - NSH   W = 6.5, p-value = 0.006522
alternative hypothesis: true location shift is not equal to 0
```

```
        Wilcoxon rank sum test with continuity correction
NB - NS    W = 27.5, p-value = 0.01095
alternative hypothesis: true location shift is not equal to 0
```

```
        Wilcoxon rank sum test with continuity correction
NSH - NS   W = 48.5, p-value = 0.2606
alternative hypothesis: true location shift is not equal to 0
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 3 = 0.01667.

```
Dependent Variable Hardness
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.197
                   The p-value is 0.906 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.571
                   The p-value is 0.276 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.302
                   The p-value is 0.860 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.359
                   The p-value is 0.835 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 3.105
                   The p-value is 0.212 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.099
                   The p-value is 0.952 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.508
                   The p-value is 0.776 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.843
                   The p-value is 0.656 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 2.226
                   The p-value is 0.329 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.716
                   The p-value is 0.699 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable  Silica
Grouping Variable   DEPTH$
                    Results for TRANSECT$ = CAN1
                    Kruskal-Wallis Test Statistic: 0.082
                    The p-value is 0.960 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC10
                    Kruskal-Wallis Test Statistic: 3.162
                    The p-value is 0.206 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC1
                    Kruskal-Wallis Test Statistic: 0.181
                    The p-value is 0.913 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC2
                    Kruskal-Wallis Test Statistic: 0.445
                    The p-value is 0.801 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC3
                    Kruskal-Wallis Test Statistic: 0.356
                    The p-value is 0.837 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC4
                    Kruskal-Wallis Test Statistic: 1.486
                    The p-value is 0.476 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC5
                    Kruskal-Wallis Test Statistic: 0.506
                    The p-value is 0.776 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC6
                    Kruskal-Wallis Test Statistic: 2.633
                    The p-value is 0.268 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC7
                    Kruskal-Wallis Test Statistic: 0.936
                    The p-value is 0.626 assuming chi-square distribution with 2 df.

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 1.582
                    The p-value is 0.453 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Silicon, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.232
                   The p-value is 0.890 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.429
                   The p-value is 0.180 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.008
                   The p-value is 0.996 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.408
                   The p-value is 0.816 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.175
                   The p-value is 0.556 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.779
                   The p-value is 0.249 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.165
                   The p-value is 0.559 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 8 = 0.00625.
```

```
Dependent Variable Silicon, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.114
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.286
                   The p-value is 0.867 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.472
                   The p-value is 0.790 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 2.250
                   The p-value is 0.325 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.485
                   The p-value is 0.785 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.754
                   The p-value is 0.686 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.644
                   The p-value is 0.162 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.613
                   The p-value is 0.271 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Sulfate
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.570
                   The p-value is 0.752 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.250
                   The p-value is 0.535 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.758
                   The p-value is 0.684 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.139
                   The p-value is 0.933 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.130
                   The p-value is 0.937 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.125
                   The p-value is 0.939 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.173
                   The p-value is 0.917 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 1.508
                   The p-value is 0.470 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 2.182
                   The p-value is 0.336 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.452
                   The p-value is 0.484 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable TDS, lab
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.696
                   The p-value is 0.428 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.074
                   The p-value is 0.964 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 2.715
                   The p-value is 0.257 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 4.076
                   The p-value is 0.130 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.358
                   The p-value is 0.507 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.649
                   The p-value is 0.723 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 2.395
                   The p-value is 0.302 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.643
                   The p-value is 0.725 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.090
                   The p-value is 0.956 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.814
                   The p-value is 0.245 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Aluminum, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.079
                   The p-value is 0.961 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 4.571
                   The p-value is 0.102 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.378
                   The p-value is 0.828 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.509
                   The p-value is 0.470 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 7.574
                   The p-value is 0.023 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 4.339
                   The p-value is 0.114 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 13.498
                   The p-value is 0.001 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 8.277
                   The p-value is 0.016 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 6.846
                   The p-value is 0.033 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.309
                   The p-value is 0.520 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Aluminum, total
Grouping Variable  DEPTH$

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 13.498
                   The p-value is 0.001 assuming chi-square distribution with 2 df.

                                 Wilcoxon rank sum test with continuity correction
                        NB - NS    W = 18.5, p-value = 0.1112
                        alternative hypothesis: true location shift is not equal to 0

                                 Wilcoxon rank sum test with continuity correction
                        NB - NS    W = 123, p-value = 0.00355
                        alternative hypothesis: true location shift is not equal to 0

                                 Wilcoxon rank sum test with continuity correction
                        NSH - NS   W = 67, p-value = 0.004282
                        alternative hypothesis: true location shift is not equal to 0

                      P-values reported are not adjusted for multiple comparisons.
                      Adjusted significance level is 0.05 / 3 = 0.01667.
```

```
Dependent Variable Antimony, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.234
                   The p-value is 0.889 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.429
                   The p-value is 0.180 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.756
                   The p-value is 0.685 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.202
                   The p-value is 0.904 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.570
                   The p-value is 0.752 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.627
                   The p-value is 0.163 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 5.143
                   The p-value is 0.076 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 12.253
                   The p-value is 0.002 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.969
                   The p-value is 0.616 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.518
                   The p-value is 0.772 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Antimony, dissolved
Grouping Variable  DEPTH$

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 12.253
                   The p-value is 0.002 assuming chi-square distribution with 2 df.

                                Wilcoxon rank sum test with continuity correction
                        NB - NSH   W = 5, p-value = 0.004282
                        alternative hypothesis: true location shift is not equal to 0

                                Wilcoxon rank sum test with continuity correction
                        NB - NS    W = 27, p-value = 0.006008
                        alternative hypothesis: true location shift is not equal to 0

                                Wilcoxon rank sum test with continuity correction
                        NSH - NS   W = 54, p-value = 0.2033
                        alternative hypothesis: true location shift is not equal to 0

                     P-values reported are not adjusted for multiple comparisons.
                     Adjusted significance level is 0.05 / 3 = 0.01667.
```

```
Dependent Variable Antimony, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.492
                   The p-value is 0.782 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.838
                   The p-value is 0.399 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.116
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.323
                   The p-value is 0.851 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.856
                   The p-value is 0.652 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.634
                   The p-value is 0.442 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 4.761
                   The p-value is 0.093 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 13.205
                   The p-value is 0.001 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 3.253
                   The p-value is 0.197 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.522
                   The p-value is 0.467 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Antimony, total
Grouping Variable  DEPTH$

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 13.205
                   The p-value is 0.001 assuming chi-square distribution with 2 df.
```

```
        Wilcoxon rank sum test with continuity correction
NB - NSH   W = 7, p-value = 0.007602
alternative hypothesis: true location shift is not equal to 0
```

```
        Wilcoxon rank sum test with continuity correction
NB - NS    W = 17.5, p-value = 0.001093
alternative hypothesis: true location shift is not equal to 0
```

```
        Wilcoxon rank sum test with continuity correction
NSH - NS   W = 41, p-value = 0.8952
alternative hypothesis: true location shift is not equal to 0
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 3 = 0.01667.

```
Dependent Variable Arsenic, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.038
                   The p-value is 0.981 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.970
                   The p-value is 0.373 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.275
                   The p-value is 0.529 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.105
                   The p-value is 0.949 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.808
                   The p-value is 0.668 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 3.009
                   The p-value is 0.222 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 8.820
                   The p-value is 0.012 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.543
                   The p-value is 0.462 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.816
                   The p-value is 0.665 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Inorganic arsenic, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.133
                   The p-value is 0.568 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.714
                   The p-value is 0.156 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.869
                   The p-value is 0.393 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.151
                   The p-value is 0.927 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.492
                   The p-value is 0.782 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.615
                   The p-value is 0.735 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 6.271
                   The p-value is 0.043 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 15.497
                   The p-value is 0.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 3.487
                   The p-value is 0.175 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 3.069
                   The p-value is 0.216 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Inorganic arsenic, dissolved
Grouping Variable  DEPTH$

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 15.497
                   The p-value is 0.000 assuming chi-square distribution with 2 df.
```

```
        Wilcoxon rank sum test with continuity correction
NB - NSH   W = 4, p-value = 0.00316
alternative hypothesis: true location shift is not equal to 0
```

```
        Wilcoxon rank sum test with continuity correction
NB - NS    W = 14, p-value = 0.0005511
alternative hypothesis: true location shift is not equal to 0
```

```
        Wilcoxon rank sum test with continuity correction
NSH - NS   W = 48, p-value = 0.456
alternative hypothesis: true location shift is not equal to 0
```

```
P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 3 = 0.01667.
```

```
Dependent Variable Inorganic arsenic, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.495
                   The p-value is 0.781 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.016
                   The p-value is 0.602 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.356
                   The p-value is 0.508 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.320
                   The p-value is 0.852 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 2.554
                   The p-value is 0.279 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 4.916
                   The p-value is 0.086 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 10.030
                   The p-value is 0.007 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 4.006
                   The p-value is 0.135 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 4.970
                   The p-value is 0.083 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Barium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.256
                   The p-value is 0.534 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.603
                   The p-value is 0.165 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.653
                   The p-value is 0.721 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.222
                   The p-value is 0.895 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.114
                   The p-value is 0.945 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 2.310
                   The p-value is 0.315 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 4.109
                   The p-value is 0.128 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 8.874
                   The p-value is 0.012 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 4.122
                   The p-value is 0.127 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.903
                   The p-value is 0.637 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Barium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.091
                   The p-value is 0.955 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.721
                   The p-value is 0.257 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.471
                   The p-value is 0.790 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.182
                   The p-value is 0.913 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.295
                   The p-value is 0.863 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 2.563
                   The p-value is 0.278 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 3.584
                   The p-value is 0.167 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 7.925
                   The p-value is 0.019 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 3.122
                   The p-value is 0.210 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.348
                   The p-value is 0.510 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Cadmium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.338
                   The p-value is 0.512 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.591
                   The p-value is 0.451 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.058
                   The p-value is 0.971 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.141
                   The p-value is 0.565 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.204
                   The p-value is 0.332 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 6.190
                   The p-value is 0.045 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 5.866
                   The p-value is 0.053 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 6.494
                   The p-value is 0.039 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 3.585
                   The p-value is 0.167 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.220
                   The p-value is 0.896 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Cadmium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.047
                   The p-value is 0.977 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.397
                   The p-value is 0.497 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.010
                   The p-value is 0.603 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.492
                   The p-value is 0.782 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.879
                   The p-value is 0.237 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.352
                   The p-value is 0.509 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 5.102
                   The p-value is 0.078 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 7.600
                   The p-value is 0.022 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.478
                   The p-value is 0.787 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.203
                   The p-value is 0.548 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

```
Dependent Variable Calcium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.225
                   The p-value is 0.893 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.803
                   The p-value is 0.246 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.839
                   The p-value is 0.657 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.202
                   The p-value is 0.904 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.686
                   The p-value is 0.710 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.174
                   The p-value is 0.917 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 1.007
                   The p-value is 0.604 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 1.884
                   The p-value is 0.390 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 2.012
                   The p-value is 0.366 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.483
                   The p-value is 0.785 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Cerium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.115
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 4.333
                   The p-value is 0.115 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.979
                   The p-value is 0.613 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 6.753
                   The p-value is 0.034 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 7.636
                   The p-value is 0.022 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 9.529
                   The p-value is 0.009 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.196
                   The p-value is 0.550 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 8 = 0.00625.
```

```
Dependent Variable Cesium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.417
                   The p-value is 0.492 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.618
                   The p-value is 0.734 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.412
                   The p-value is 0.814 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.520
                   The p-value is 0.771 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 6.562
                   The p-value is 0.038 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 3.279
                   The p-value is 0.194 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Cesium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                                                   Df  Sum Sq  Mean Sq F value Pr(>F)
                   MET$Depth[MET$Transect=="CAN1"]  2 0.0081 0.004065   0.166  0.848
                   Residuals                         15 0.3670 0.024465

                   Results for TRANSECT$ = TC10
                                                   Df  Sum Sq  Mean Sq F value Pr(>F)
                   MET$Depth[MET$Transect=="TC10"]  2 0.01034 0.005168    0.5  0.65
                   Residuals                          3 0.03101 0.010336

                   Results for TRANSECT$ = TC1
                                                   Df  Sum Sq  Mean Sq F value Pr(>F)
                   MET$Depth[MET$Transect=="TC1"]  2 0.00744 0.00372   0.368  0.697
                   Residuals                        21 0.21244 0.01012

                   Results for TRANSECT$ = TC2
                     Insufficient replication for comparisons (one sample per depth)

                   Results for TRANSECT$ = TC3
                                                   Df  Sum Sq  Mean Sq F value Pr(>F)
                   MET$Depth[MET$Transect=="TC3"]  2 0.02429 0.012145    2.08  0.144
                   Residuals                        27 0.15762 0.005838

                   Results for TRANSECT$ = TC4
                                                   Df  Sum Sq  Mean Sq F value Pr(>F)
                   MET$Depth[MET$Transect=="TC4"]  2 0.2204 0.11019   3.546 0.0429 *
                   Residuals                        27 0.8391 0.03108

                          Tukey multiple comparisons of means
                            95% family-wise confidence level
                                      diff         lwr        upr     p adj
                        NS-NB  -0.15051500 -0.32895383 0.02792384 0.1105333
                        NSH-NB  0.05738917 -0.16115288 0.27593122 0.7933379
                        NSH-NS  0.20790417 -0.01063788 0.42644622 0.0645718

                   Results for TRANSECT$ = TC6
                                                   Df  Sum Sq  Mean Sq F value Pr(>F)
                   MET$Depth[MET$Transect=="TC6"]  2 0.3558 0.17790     3.9 0.0321 *
                   Residuals                        28 1.2772 0.04561

                          Tukey multiple comparisons of means
                            95% family-wise confidence level
                                      diff         lwr       upr     p adj
                        NS-NB  -0.01543047 -0.22698184 0.1961209 0.9822148
                        NSH-NB  0.26257376 -0.00165382 0.5268013 0.0516999
                        NSH-NS  0.27800422  0.01718618 0.5388223 0.0349076

                   Results for TRANSECT$ = TC9
                                                   Df  Sum Sq  Mean Sq F value Pr(>F)
                   MET$Depth[MET$Transect=="TC9"]  2 0.00505 0.002523   0.338  0.719
                   Residuals                        14 0.10439 0.007457
```

```
Dependent Variable Cobalt, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.136
                   The p-value is 0.567 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.397
                   The p-value is 0.497 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.230
                   The p-value is 0.891 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 2.451
                   The p-value is 0.294 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 5.951
                   The p-value is 0.051 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 6.660
                   The p-value is 0.036 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 4.995
                   The p-value is 0.082 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.887
                   The p-value is 0.053 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.041
                   The p-value is 0.980 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.386
                   The p-value is 0.824 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Copper, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 2.878
                   The p-value is 0.237 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.515
                   The p-value is 0.773 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.406
                   The p-value is 0.816 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 6.598
                   The p-value is 0.037 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 4.128
                   The p-value is 0.127 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 5.565
                   The p-value is 0.062 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 8.642
                   The p-value is 0.013 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.207
                   The p-value is 0.201 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.757
                   The p-value is 0.415 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.338
                   The p-value is 0.311 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Europium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 3.275
                   The p-value is 0.194 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 2.700
                   The p-value is 0.259 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.585
                   The p-value is 0.747 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.828
                   The p-value is 0.661 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 4.078
                   The p-value is 0.130 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.406
                   The p-value is 0.495 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Europium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.429
                   The p-value is 0.490 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.001
                   The p-value is 0.999 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 3.000
                   The p-value is 0.223 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 1.985
                   The p-value is 0.371 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 2.270
                   The p-value is 0.321 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.978
                   The p-value is 0.137 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 3.497
                   The p-value is 0.174 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 8 = 0.00625.
```

```
Dependent Variable Iron, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.292
                   The p-value is 0.864 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 4.191
                   The p-value is 0.123 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.364
                   The p-value is 0.833 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 4.074
                   The p-value is 0.130 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 5.514
                   The p-value is 0.063 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 6.855
                   The p-value is 0.032 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 20.670
                   The p-value is 0.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 8.329
                   The p-value is 0.016 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 9.592
                   The p-value is 0.008 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.170
                   The p-value is 0.338 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Iron, total
Grouping Variable  DEPTH$

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 20.670
                   The p-value is 0.000 assuming chi-square distribution with 2 df.

                                 Wilcoxon rank sum test with continuity correction
                        NB - NSH   W = 15, p-value = 0.05486
                        alternative hypothesis: true location shift is not equal to 0

                                 Wilcoxon rank sum test with continuity correction
                        NB - NS    W = 139, p-value = 0.0001233
                        alternative hypothesis: true location shift is not equal to 0

                                 Wilcoxon rank sum test with continuity correction
                        NSH - NS   W = 72, p-value = 0.0008846
                        alternative hypothesis: true location shift is not equal to 0

                      P-values reported are not adjusted for multiple comparisons.
                      Adjusted significance level is 0.05 / 3 = 0.01667.
```

```
Dependent Variable Lanthanum, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.153
                   The p-value is 0.926 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.903
                   The p-value is 0.234 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.415
                   The p-value is 0.813 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.917
                   The p-value is 0.632 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 4.151
                   The p-value is 0.125 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 5.893
                   The p-value is 0.053 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 6.152
                   The p-value is 0.046 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.953
                   The p-value is 0.621 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Lead, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.114
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.325
                   The p-value is 0.516 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 3.401
                   The p-value is 0.183 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 5.309
                   The p-value is 0.070 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 1.837
                   The p-value is 0.399 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 5.449
                   The p-value is 0.066 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.087
                   The p-value is 0.079 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 9.262
                   The p-value is 0.010 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.459
                   The p-value is 0.482 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Magnesium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.504
                   The p-value is 0.777 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.721
                   The p-value is 0.257 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.736
                   The p-value is 0.692 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.057
                   The p-value is 0.589 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.744
                   The p-value is 0.689 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.205
                   The p-value is 0.902 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.798
                   The p-value is 0.671 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.228
                   The p-value is 0.892 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.269
                   The p-value is 0.874 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.505
                   The p-value is 0.777 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Magnesium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.319
                   The p-value is 0.853 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.000
                   The p-value is 1.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.135
                   The p-value is 0.935 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.576
                   The p-value is 0.750 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 3.518
                   The p-value is 0.172 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.907
                   The p-value is 0.635 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 1.522
                   The p-value is 0.467 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.022
                   The p-value is 0.989 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.968
                   The p-value is 0.374 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.652
                   The p-value is 0.438 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Manganese, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.116
                   The p-value is 0.572 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.857
                   The p-value is 0.651 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.215
                   The p-value is 0.898 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 4.740
                   The p-value is 0.093 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 7.078
                   The p-value is 0.029 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.686
                   The p-value is 0.158 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 18.287
                   The p-value is 0.000 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 6.179
                   The p-value is 0.046 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 5.200
                   The p-value is 0.074 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.607
                   The p-value is 0.448 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Manganese, total
Grouping Variable  DEPTH$

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 18.287
                   The p-value is 0.000 assuming chi-square distribution with 2 df.

                                 Wilcoxon rank sum test with continuity correction
                        NB - NSH   W = 37, p-value = 0.9626
                        alternative hypothesis: true location shift is not equal to 0

                                 Wilcoxon rank sum test with continuity correction
                        NB - NS    W = 137, p-value = 0.0001962
                        alternative hypothesis: true location shift is not equal to 0

                                 Wilcoxon rank sum test with continuity correction
                        NSH - NS   W = 72, p-value = 0.0008846
                        alternative hypothesis: true location shift is not equal to 0

                      P-values reported are not adjusted for multiple comparisons.
                      Adjusted significance level is 0.05 / 3 = 0.01667.
```

```
Dependent Variable Molybdenum, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.856
                   The p-value is 0.652 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.529
                   The p-value is 0.171 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 1.228
                   The p-value is 0.541 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.610
                   The p-value is 0.737 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.029
                   The p-value is 0.986 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.081
                   The p-value is 0.960 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.551
                   The p-value is 0.759 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 0.123
                   The p-value is 0.940 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.895
                   The p-value is 0.639 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 2.264
                   The p-value is 0.322 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Molybdenum, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 3.287
                   The p-value is 0.193 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.857
                   The p-value is 0.651 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.899
                   The p-value is 0.638 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.490
                   The p-value is 0.783 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.174
                   The p-value is 0.917 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 5.000
                   The p-value is 0.082 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 0.115
                   The p-value is 0.944 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 1.178
                   The p-value is 0.555 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.822
                   The p-value is 0.663 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.921
                   The p-value is 0.631 assuming chi-square distribution with 2 df.


          P-values reported are not adjusted for multiple comparisons.
          Adjusted significance level is 0.05 / 10 = 0.005.
```

```
Dependent Variable Nickel, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.380
                   The p-value is 0.827 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 4.571
                   The p-value is 0.102 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.971
                   The p-value is 0.616 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.079
                   The p-value is 0.583 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.282
                   The p-value is 0.320 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.600
                   The p-value is 0.165 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 7.583
                   The p-value is 0.023 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 11.809
                   The p-value is 0.003 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 10.081
                   The p-value is 0.006 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.367
                   The p-value is 0.505 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Nickel, dissolved
Grouping Variable  DEPTH$

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 11.809
                   The p-value is 0.003 assuming chi-square distribution with 2 df.

                            Wilcoxon rank sum test with continuity correction
                       NB - NSH   W = 4, p-value = 0.003144
                       alternative hypothesis: true location shift is not equal to 0

                            Wilcoxon rank sum test with continuity correction
                       NB - NS    W = 37.5, p-value = 0.0292
                       alternative hypothesis: true location shift is not equal to 0

                            Wilcoxon rank sum test with continuity correction
                       NSH - NS   W = 62.5, p-value = 0.0433
                       alternative hypothesis: true location shift is not equal to 0

                     P-values reported are not adjusted for multiple comparisons.
                     Adjusted significance level is 0.05 / 3 = 0.01667.
```

```
Dependent Variable Nickel, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.432
                   The p-value is 0.806 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 1.591
                   The p-value is 0.451 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.495
                   The p-value is 0.781 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.498
                   The p-value is 0.473 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 5.001
                   The p-value is 0.082 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 8.898
                   The p-value is 0.012 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 8.168
                   The p-value is 0.017 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 11.163
                   The p-value is 0.004 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 9.298
                   The p-value is 0.010 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.964
                   The p-value is 0.375 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Nickel, total
Grouping Variable  DEPTH$

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 11.163
                   The p-value is 0.004 assuming chi-square distribution with 2 df.

                            Wilcoxon rank sum test with continuity correction
                        NB - NSH   W = 2, p-value = 0.001694
                        alternative hypothesis: true location shift is not equal to 0

                            Wilcoxon rank sum test with continuity correction
                        NB - NS    W = 54, p-value = 0.2009
                        alternative hypothesis: true location shift is not equal to 0

                            Wilcoxon rank sum test with continuity correction
                        NSH - NS   W = 67, p-value = 0.01587
                        alternative hypothesis: true location shift is not equal to 0

                      P-values reported are not adjusted for multiple comparisons.
                      Adjusted significance level is 0.05 / 3 = 0.01667.
```

```
Dependent Variable Potassium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.799
                   The p-value is 0.671 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.857
                   The p-value is 0.651 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.658
                   The p-value is 0.720 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.273
                   The p-value is 0.529 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.131
                   The p-value is 0.936 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.157
                   The p-value is 0.206 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 2.711
                   The p-value is 0.258 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 4.367
                   The p-value is 0.113 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 2.057
                   The p-value is 0.358 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.099
                   The p-value is 0.577 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Potassium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 1.731
                   The p-value is 0.421 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.429
                   The p-value is 0.180 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.659
                   The p-value is 0.719 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 0.606
                   The p-value is 0.739 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 4.990
                   The p-value is 0.082 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.919
                   The p-value is 0.631 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 5.258
                   The p-value is 0.072 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.757
                   The p-value is 0.056 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 1.338
                   The p-value is 0.512 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 6.214
                   The p-value is 0.045 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

```
Dependent Variable Rubidium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.806
                   The p-value is 0.668 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 0.968
                   The p-value is 0.616 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.077
                   The p-value is 0.962 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.044
                   The p-value is 0.360 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.217
                   The p-value is 0.897 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 3.389
                   The p-value is 0.184 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 1.825
                   The p-value is 0.402 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Rubidium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.603
                   The p-value is 0.740 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.333
                   The p-value is 0.189 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.223
                   The p-value is 0.895 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 2.572
                   The p-value is 0.276 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 3.989
                   The p-value is 0.136 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.698
                   The p-value is 0.058 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 3.103
                   The p-value is 0.212 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Scandium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.105
                   The p-value is 0.949 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 3.603
                   The p-value is 0.165 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.431
                   The p-value is 0.806 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 1.800
                   The p-value is 0.407 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.044
                   The p-value is 0.978 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.866
                   The p-value is 0.649 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 5.362
                   The p-value is 0.069 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.479
                   The p-value is 0.787 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Scandium, total
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.179
                   The p-value is 0.915 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.258
                   The p-value is 0.323 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.215
                   The p-value is 0.898 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 2.700
                   The p-value is 0.259 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.387
                   The p-value is 0.824 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.400
                   The p-value is 0.819 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.629
                   The p-value is 0.269 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.763
                   The p-value is 0.683 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 8 = 0.00625.

```
Dependent Variable Sodium, dissolved
Grouping Variable  DEPTH$
                   Results for TRANSECT$ = CAN1
                   Kruskal-Wallis Test Statistic: 0.495
                   The p-value is 0.781 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC10
                   Kruskal-Wallis Test Statistic: 2.000
                   The p-value is 0.368 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC1
                   Kruskal-Wallis Test Statistic: 0.030
                   The p-value is 0.985 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC2
                   Kruskal-Wallis Test Statistic: 3.370
                   The p-value is 0.185 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC3
                   Kruskal-Wallis Test Statistic: 0.133
                   The p-value is 0.936 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC4
                   Kruskal-Wallis Test Statistic: 0.162
                   The p-value is 0.922 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC5
                   Kruskal-Wallis Test Statistic: 2.759
                   The p-value is 0.252 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC6
                   Kruskal-Wallis Test Statistic: 2.519
                   The p-value is 0.284 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC7
                   Kruskal-Wallis Test Statistic: 0.522
                   The p-value is 0.770 assuming chi-square distribution with 2 df.

                   Results for TRANSECT$ = TC9
                   Kruskal-Wallis Test Statistic: 0.365
                   The p-value is 0.833 assuming chi-square distribution with 2 df.
```

P-values reported are not adjusted for multiple comparisons.
Adjusted significance level is 0.05 / 10 = 0.005.

Appendix G2c.

Tukey's multiple comparisons and Wilcoxon tests to identify specific side differences

```
Dependent Variable  Arsenic, dissolved
Grouping Variable   SIDE$

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 7.993
                    The p-value is 0.005 assuming chi-square distribution with 1 df.
```

```
        Wilcoxon rank sum test with continuity correction
data:  ASdis[MET$Transect == "TC9" & MET$Side == "L"] and
       ASdis[MET$Transect == "TC9" & MET$Side == "R"]
W = 65, p-value = 0.005463
alternative hypothesis: true location shift is not equal to 0
```

```
Dependent Variable  Inorganic arsenic, dissolved
Grouping Variable   SIDE$

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 9.199
                    The p-value is 0.002 assuming chi-square distribution with 1 df.
```

```
        Wilcoxon rank sum test with continuity correction
data:  IASdis[MET$Transect == "TC9" & MET$Side == "L"] and
       IASdis[MET$Transect == "TC9" & MET$Side == "R"]
W = 67.5, p-value = 0.002838
alternative hypothesis: true location shift is not equal to 0
```

Dependent Variable Barium, dissolved
Grouping Variable SIDE$

Results for TRANSECT$ = TC9
Kruskal-Wallis Test Statistic: 10.704
The p-value is 0.001 assuming chi-square distribution with 1 df.

```
        Wilcoxon rank sum test with continuity correction
data:  BAdis[MET$Transect == "TC9" & MET$Side == "L"] and
       BAdis[MET$Transect == "TC9" & MET$Side == "R"]
W = 70, p-value = 0.001266
alternative hypothesis: true location shift is not equal to 0
```

```
Dependent Variable  Barium, total
Grouping Variable   SIDE$

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 12.000
                    The p-value is 0.001 assuming chi-square distribution with 1 df.
```

```
        Wilcoxon rank sum test with continuity correction
data:  BAtot[MET$Transect == "TC9" & MET$Side == "L"] and
       BAtot[MET$Transect == "TC9" & MET$Side == "R"]
W = 72, p-value = 0.0006355
alternative hypothesis: true location shift is not equal to 0
```

```
Dependent Variable  Magnesium, total
Grouping Variable   SIDE$

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 8.898
                    The p-value is 0.003 assuming chi-square distribution with 1 df.
```

```
        Wilcoxon rank sum test with continuity correction
data:  MGtot[MET$Transect == "TC9" & MET$Side == "L"] and
       MGtot[MET$Transect == "TC9" & MET$Side == "R"]
W = 67, p-value = 0.003337
alternative hypothesis: true location shift is not equal to 0
```

```
Dependent Variable  Manganese, total
Grouping Variable   SIDE$

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 8.920
                    The p-value is 0.003 assuming chi-square distribution with 1 df.
```

```
        Wilcoxon rank sum test with continuity correction
data:  MNtot[MET$Transect == "TC9" & MET$Side == "L"] and
       MNtot[MET$Transect == "TC9" & MET$Side == "R"]
W = 67, p-value = 0.003298
alternative hypothesis: true location shift is not equal to 0
```

```
Dependent Variable  Strontium, total
Grouping Variable   SIDE$

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 7.806
                    The p-value is 0.005 assuming chi-square distribution with 1 df.
```

```
        Wilcoxon rank sum test with continuity correction
data:  STtot[MET$Transect == "TC9" & MET$Side == "L"] and
       STtot[MET$Transect == "TC9" & MET$Side == "R"]
W = 7, p-value = 0.006037
alternative hypothesis: true location shift is not equal to 0
```

```
Dependent Variable  Vanadium, dissolved
Grouping Variable   SIDE$

                    Results for TRANSECT$ = TC9
                    Kruskal-Wallis Test Statistic: 8.374
                    The p-value is 0.004 assuming chi-square distribution with 1 df.
```

```
        Wilcoxon rank sum test with continuity correction
data:  Vdis[MET$Transect == "TC9" & MET$Side == "L"] and
       Vdis[MET$Transect == "TC9" & MET$Side == "R"]
W = 66, p-value = 0.004432
alternative hypothesis: true location shift is not equal to 0
```

Table H-1. Field Measurements made during the First Round of Surface Water Sampling (Fall 2009)

Survey	Sample Number	Survey Station	Date	Sample ID	Field Replicate	Depth to Water Level (m total)	Oxidation Reduction Potential (mV total)	Temperature (degC total)	Conductivity (µS/cm total)	Dissolved Oxygen (mg/L total)	Turbidity (NTU total)	pH (pH total)
TECKSWR1	SWNB-1-CAN1-LA	CAN1-NB-L	10/9/2009	SWNB-1-CAN1-LA	1	3	-130	13.5	118	8.6	0	8.2
TECKSWR1	SWNB-1-CAN1-LB	CAN1-NB-L	10/9/2009	SWNB-1-CAN1-LB	2	13	-143	13.5	118	8.5	0	8.3
TECKSWR1	SWNB-1-CAN1-LC	CAN1-NB-L	10/9/2009	SWNB-1-CAN1-LC	3	13	-149	13.56	118	8.63	0	8.4
TECKSWR1	SWNB-1-CAN1-RA	CAN1-NB-R	10/9/2009	SWNB-1-CAN1-RA	1	3	-162	13.7	119	8.7	0	8.2
TECKSWR1	SWNB-1-CAN1-RB	CAN1-NB-R	10/9/2009	SWNB-1-CAN1-RB	2	12	-163	13.67	119	8.6	0	8.23
TECKSWR1	SWNB-1-CAN1-RC	CAN1-NB-R	10/9/2009	SWNB-1-CAN1-RC	3	12	-160	13.65	119	8.71	0	8.2
TECKSWR1	SWNB-1-TC10-L	TC10-NB-L	10/10/2009	SWNB-1-TC10-L	0	11	-63	13.31	119	8.76		8.16
TECKSWR1	SWNB-1-TC10-R	TC10-NB-R	10/10/2009	SWNB-1-TC10-R	0	6	-135	13.15	120	8.69	0	8.07
TECKSWR1	SWNB-1-TC1-L	TC1-NB-L	10/13/2009	SWNB-1-TC1-L	0	7	-778	12.4	100	8.7		8.1
TECKSWR1	SWNB-1-TC1-M	TC1-NB-M	10/12/2009	SWNB-1-TC1-M	0							
TECKSWR1	SWNB-1-TC1-R	TC1-NB-R	10/12/2009	SWNB-1-TC1-R	0	3	-136	13.14	108	8.7	0	8.09
TECKSWR1	SWNB-1-TC2-L	TC2-NB-L	10/14/2009	SWNB-1-TC2-L	0	68.7	-779	11.83	107	9.1		8.28
TECKSWR1	SWNB-1-TC2-M	TC2-NB-M	10/14/2009	SWNB-1-TC2-M	0	55	-780	11.85	107	8.98		8.24
TECKSWR1	SWNB-1-TC2-R	TC2-NB-R	10/13/2009	SWNB-1-TC2-R	0	48.5	-545	12.29	101	8.9		8.20
TECKSWR1	SWNB-1-TC3-L1A	TC3-NB-L1	10/16/2009	SWNB-1-TC3-L1A	1	68.1	-783	11.92	105	8.98		8.26
TECKSWR1	SWNB-1-TC3-L1B	TC3-NB-L1	10/16/2009	SWNB-1-TC3-L1B	2	70.9	-784	11.9	106	9		8.27
TECKSWR1	SWNB-1-TC3-L1C	TC3-NB-L1	10/16/2009	SWNB-1-TC3-L1C	3	72.6	-784	11.8	106	8.9		8.29
TECKSWR1	SWNB-1-TC3-L2A	TC3-NB-L2	10/16/2009	SWNB-1-TC3-L2A	1	59.7	-784	12.2	105	9.16		8.24
TECKSWR1	SWNB-1-TC3-L2B	TC3-NB-L2	10/16/2009	SWNB-1-TC3-L2B	2	60.3	-782	12.17	105	9.17		8.23
TECKSWR1	SWNB-1-TC3-L2C	TC3-NB-L2	10/16/2009	SWNB-1-TC3-L2C	3	60.5	-781	12.17	104	8.66		8.25
TECKSWR1	SWNB-1-TC3-MA	TC3-NB-M	10/15/2009	SWNB-1-TC3-MA	1	35	-736	12.1	105	8.7		8.28
TECKSWR1	SWNB-1-TC3-MB	TC3-NB-M	10/15/2009	SWNB-1-TC3-MB	2	83.8	-785	12.2	105.3	8.7		8.28
TECKSWR1	SWNB-1-TC3-MC	TC3-NB-M	10/15/2009	SWNB-1-TC3-MC	3	81	-784	12.14	105.5	8.8		8.28
TECKSWR1	SWNB-1-TC3-RA	TC3-NB-R	10/15/2009	SWNB-1-TC3-RA	1	101		12.12	104.5	8.99		8.34
TECKSWR1	SWNB-1-TC3-RB	TC3-NB-R	10/15/2009	SWNB-1-TC3-RB	2	94	-73	12.11	104.5	8.84		8.31
TECKSWR1	SWNB-1-TC3-RC	TC3-NB-R	10/15/2009	SWNB-1-TC3-RC	3	93	-784	12.15	104.2	8.97		8.3
TECKSWR1	SWNB-1-TC4-L1	TC4-NB-L1	10/17/2009	SWNB-1-TC4-L1	0	70	-792	13.6	101	8.07		8.3
TECKSWR1	SWNB-1-TC4-L2	TC4-NB-L2	10/17/2009	SWNB-1-TC4-L2	0	73	-793	13.7	101	8.3		7.8
TECKSWR1	SWNB-1-TC4-M	TC4-NB-M	10/17/2009	SWNB-1-TC4-M	0	175.0	-790	13.16	102	8.03		8.2
TECKSWR1	SWNB-1-TC4-R	TC4-NB-R	10/17/2009	SWNB-1-TC4-R	0	140	-788	13.19	101	8.27		8.13
TECKSWR1	SWNB-1-TC5-L1	TC5-NB-L1	10/18/2009	SWNB-1-TC5-L1	0	93.1	-788	15.7	99	8.1		8.27
TECKSWR1	SWNB-1-TC5-L2	TC5-NB-L2	10/18/2009	SWNB-1-TC5-L2	0	84.2	-791	15.74	99	8.5		8.3
TECKSWR1	SWNB-1-TC5-M	TC5-NB-M	10/18/2009	SWNB-1-TC5-M	0	192	-788	15	98	7.6		8.2
TECKSWR1	SWNB-1-TC5-R	TC5-NB-R	10/18/2009	SWNB-1-TC5-R	0	116	-789	15.6	99	7.7		8.3
TECKSWR1	SWNB-1-TC6-LA	TC6-NB-L	10/20/2009	SWNB-1-TC6-LA	1	81.0	-792	16.06	167	8.5		8.22
TECKSWR1	SWNB-1-TC6-LB	TC6-NB-L	10/20/2009	SWNB-1-TC6-LB	2	69	-791	16.07	167	9.03		8.24
TECKSWR1	SWNB-1-TC6-LC	TC6-NB-L	10/20/2009	SWNB-1-TC6-LC	3	73	-794	16.0	166	9.80		8.2
TECKSWR1	SWNB-1-TC6-MA	TC6-NB-M	10/19/2009	SWNB-1-TC6-MA	1	179	-784	15.3	102	7.87		8.36
TECKSWR1	SWNB-1-TC6-MB	TC6-NB-M	10/19/2009	SWNB-1-TC6-MB	2	135.5	-784	15.66	101	8.76		8.42
TECKSWR1	SWNB-1-TC6-MC	TC6-NB-M	10/19/2009	SWNB-1-TC6-MC	3	170.5	-784	15.43	101	7.94		8.43
TECKSWR1	SWNB-1-TC6-R1	TC6-NB-R1	10/19/2009	SWNB-1-TC6-R1	0	269.2	-795	15.32	100	7.63		8.41
TECKSWR1	SWNB-1-TC6-R2	TC6-NB-R2	10/19/2009	SWNB-1-TC6-R2	0	73.1	-792	16	98	7.39		8.29
TECKSWR1	SWNB-1-TC7-L	TC7-NB-L	10/20/2009	SWNB-1-TC7-L	0	155	-819	17.3	164	9.06		8.78
TECKSWR1	SWNB-1-TC7-M	TC7-NB-M	10/20/2009	SWNB-1-TC7-M	0	236	-812	17.0	165	7.8		8.5
TECKSWR1	SWNB-1-TC7-R	TC7-NB-R	10/20/2009	SWNB-1-TC7-R	0	183	-798	17.2	163	8.2		8.2
TECKSWR1	SWNB-1-TC9-L	TC9-NB-L	10/11/2009	SWNB-1-TC9-L	0	27.5	-122	12.94	126	8.61		8.16
TECKSWR1	SWNB-1-TC9-R	TC9-NB-R	10/11/2009	SWNB-1-TC9-R	0	4.0	-127	12.85	124	8.6	538	8.1
TECKSWR1	SWNS-1-CAN1-LA	CAN1-NS-L	10/9/2009	SWNS-1-CAN1-LA	1	1	-104	13.46	118	8.6	388	7.9
TECKSWR1	SWNS-1-CAN1-LB	CAN1-NS-L	10/9/2009	SWNS-1-CAN1-LB	2	1	-129	13.46	118	8.6	388	7.93
TECKSWR1	SWNS-1-CAN1-LC	CAN1-NS-L	10/9/2009	SWNS-1-CAN1-LC	3	1	-128	13.47	118	8.6	388	7.94
TECKSWR1	SWNS-1-CAN1-RA	CAN1-NS-R	10/9/2009	SWNS-1-CAN1-RA	1	1	-148	13.65	118	8.72	152	8.1
TECKSWR1	SWNS-1-CAN1-RB	CAN1-NS-R	10/9/2009	SWNS-1-CAN1-RB	2	1	-159	13.6	118	8.72	152	8.1
TECKSWR1	SWNS-1-CAN1-RC	CAN1-NS-R	10/9/2009	SWNS-1-CAN1-RC	3	1	-161	13.7	118	8.7	149	8.1
TECKSWR1	SWNS-1-TC10-L	TC10-NS-L	10/10/2009	SWNS-1-TC10-L	0	1	-109	13.26	118	8.77	25	8
TECKSWR1	SWNS-1-TC10-R	TC10-NS-R	10/10/2009	SWNS-1-TC10-R	0	1	-119	13.11	119	8.7		7.9
TECKSWR1	SWNS-1-TC1-L	TC1-NS-L	10/13/2009	SWNS-1-TC1-L	0	2	-786	12.4	97	7		8
TECKSWR1	SWNS-1-TC1-M	TC1-NS-M	10/12/2009	SWNS-1-TC1-M	0	1	-178	12.44	138	8.95		8.18

Table H-1. Field Measurements made during the First Round of Surface Water Sampling (Fall 2009)

Survey	Sample Number	Survey Station	Date	Sample ID	Field Replicate	Depth to Water Level (m total)	Oxidation Reduction Potential (mV total)	Temperature (degC total)	Conductivity (µS/cm total)	Dissolved Oxygen (mg/L total)	Turbidity (NTU total)	pH (pH total)
TECKSWR1	SWNS-1-TC1-R	TC1-NS-R	10/12/2009	SWNS-1-TC1-R	0	1	-790	12.52	109	8.34		8.3
TECKSWR1	SWNS-1-TC2-L	TC2-NS-L	10/14/2009	SWNS-1-TC2-L	0	1	-774	11.82	106	9.02		8.27
TECKSWR1	SWNS-1-TC2-M	TC2-NS-M	10/14/2009	SWNS-1-TC2-M	0	1	-781	11.9	107	9		8.3
TECKSWR1	SWNS-1-TC2-R	TC2-NS-R	10/13/2009	SWNS-1-TC2-R	0	4	-781	12.2	105	7.4		8.2
TECKSWR1	SWNS-1-TC3-L1A	TC3-NS-L1	10/16/2009	SWNS-1-TC3-L1A	1	1	-144	12.13	117	8.8		8.26
TECKSWR1	SWNS-1-TC3-L1B	TC3-NS-L1	10/16/2009	SWNS-1-TC3-L1B	2	1	-169	12.1	118	8.8		8.24
TECKSWR1	SWNS-1-TC3-L1C	TC3-NS-L1	10/16/2009	SWNS-1-TC3-L1C	3	1	-170	11.74	118	8.98		7.75
TECKSWR1	SWNS-1-TC3-L2A	TC3-NS-L2	10/16/2009	SWNS-1-TC3-L2A	1	1.09	-187	12.27	117	8.77		8.2
TECKSWR1	SWNS-1-TC3-L2B	TC3-NS-L2	10/16/2009	SWNS-1-TC3-L2B	2	1.09	-181	12.25	117	8.77		8.2
TECKSWR1	SWNS-1-TC3-L2C	TC3-NS-L2	10/16/2009	SWNS-1-TC3-L2C	3	1.09	-177	12.26	117	8.78		8.20
TECKSWR1	SWNS-1-TC3-MA	TC3-NS-M	10/15/2009	SWNS-1-TC3-MA	1	2	-784	12.3	104	8.9		8.35
TECKSWR1	SWNS-1-TC3-MB	TC3-NS-M	10/16/2009	SWNS-1-TC3-MB	2	1	-783	12.04	104	8.9		8.13
TECKSWR1	SWNS-1-TC3-MC	TC3-NS-M	10/16/2009	SWNS-1-TC3-MC	3	1	-779	12.08	104	8.57		8.3
TECKSWR1	SWNS-1-TC3-RA	TC3-NS-R	10/14/2009	SWNS-1-TC3-RA	1	2	-783	12.3	104	9		8.3
TECKSWR1	SWNS-1-TC3-RB	TC3-NS-R	10/14/2009	SWNS-1-TC3-RB	2	1	-782	12.3	104	8.73		8.3
TECKSWR1	SWNS-1-TC3-RC	TC3-NS-R	10/14/2009	SWNS-1-TC3-RC	3	1	-781	12.31	105	8.7		8.3
TECKSWR1	SWNS-1-TC4-L1	TC4-NS-L1	10/17/2009	SWNS-1-TC4-L1	0	0.95	-171	13.9	86	8.5		8.2
TECKSWR1	SWNS-1-TC4-L2	TC4-NS-L2	10/17/2009	SWNS-1-TC4-L2	0	36	-608	13.8	97	8.3		8.3
TECKSWR1	SWNS-1-TC4-M	TC4-NS-M	10/17/2009	SWNS-1-TC4-M	0	1	-792	14	101	8		8.4
TECKSWR1	SWNS-1-TC4-R	TC4-NS-R	10/17/2009	SWNS-1-TC4-R	0	3	-779	13.78	100	8		8
TECKSWR1	SWNS-1-TC5-L1	TC5-NS-L1	10/18/2009	SWNS-1-TC5-L1	0	1.2	-182	16.13	87	7.72	0	8.10
TECKSWR1	SWNS-1-TC5-L2	TC5-NS-L2	10/18/2009	SWNS-1-TC5-L2	0	1.02	111	16.11	87	8.0	0	8.13
TECKSWR1	SWNS-1-TC5-M	TC5-NS-M	10/18/2009	SWNS-1-TC5-M	0	4	-790	16	99	7.4		8.4
TECKSWR1	SWNS-1-TC5-R	TC5-NS-R	10/18/2009	SWNS-1-TC5-R	0	4	-789	15.87	100	7.4		8.2
TECKSWR1	SWNS-1-TC6-L	TC6-NS-L	10/20/2009	SWNS-1-TC6-L	0	4	-796	16.1	166	7.5		8.3
TECKSWR1	SWNS-1-TC6-MA	TC6-NS-M	10/19/2009	SWNS-1-TC6-MA	1	1	-66	16.2	88	7.63	0	8
TECKSWR1	SWNS-1-TC6-MB	TC6-NS-M	10/19/2009	SWNS-1-TC6-MB	2	1.04	-76	16.22	87	7.62	0	8.01
TECKSWR1	SWNS-1-TC6-MC	TC6-NS-M	10/19/2009	SWNS-1-TC6-MC	3	1.04	-76	16.22	87	7.62	0	8.01
TECKSWR1	SWNS-1-TC6-R1	TC6-NS-R1	10/19/2009	SWNS-1-TC6-R1	0	3.9	-788	16.24	101	8.20		8.33
TECKSWR1	SWNS-1-TC6-RA2	TC6-NS-R2	10/19/2009	SWNS-1-TC6-RA2	0	3.7	-795	16.14	99	7.44		8.38
TECKSWR1	SWNS-1-TC6-RB2	TC6-NS-R2	10/19/2009	SWNS-1-TC6-RB2	0	3.7	-794	16.38	99	7.38		8.38
TECKSWR1	SWNS-1-TC6-RC2	TC6-NS-R2	10/19/2009	SWNS-1-TC6-RC2	0	3.7	-794	16.38	99	7.38		8.38
TECKSWR1	SWNS-1-TC7-L	TC7-NS-L	10/20/2009	SWNS-1-TC7-L	0	1	-178	17.35	85	7.2	0	7.88
TECKSWR1	SWNS-1-TC7-M	TC7-NS-M	10/20/2009	SWNS-1-TC7-M	0	0.93	-180	17.37	85	7.25	0	7.9
TECKSWR1	SWNS-1-TC7-R	TC7-NS-R	10/20/2009	SWNS-1-TC7-R	0	0.90	230	17.38	85	7.3	0	7.92
TECKSWR1	SWNS-1-TC9-L	TC9-NS-L	10/11/2009	SWNS-1-TC9-L	0	0.3	-103	12.8	132	8.7	986	8.1
TECKSWR1	SWNS-1-TC9-R	TC9-NS-R	10/11/2009	SWNS-1-TC9-R	0	1	-119	12.8	122	8.64		7.94
TECKSWR1	SWNSH-1A-CAN2-L	CAN2-NSH-L	9/1/2009	SWNSH-1A-CAN2-L	0		174	20.23	79	9.7	651	5.68
TECKSWR1	SWNSH-1B-CAN2-L	CAN2-NSH-L	9/8/2009	SWNSH-1B-CAN2-L	0		171	16.94	50	10.95	205	5.51
TECKSWR1	SWNSH-1-CAN1-LA	CAN1-NSH-L	10/8/2009	SWNSH-1-CAN1-LA	1	0.25	-71	13.67	118	8.67	0	8.05
TECKSWR1	SWNSH-1-CAN1-LB	CAN1-NSH-L	10/8/2009	SWNSH-1-CAN1-LB	2	0.25	-132	13.81	118	8.7	0	8.1
TECKSWR1	SWNSH-1-CAN1-LC	CAN1-NSH-L	10/8/2009	SWNSH-1-CAN1-LC	3	0.25	-138	13.8	119	8.73	0	8.1
TECKSWR1	SWNSH-1-CAN1-RA	CAN1-NSH-R	10/8/2009	SWNSH-1-CAN1-RA	1	0.25	-89	13.87	119	8.73	0	8.1
TECKSWR1	SWNSH-1-CAN1-RB	CAN1-NSH-R	10/8/2009	SWNSH-1-CAN1-RB	2	0.25	-166	13.85	119	8.7	0	8.1
TECKSWR1	SWNSH-1-CAN1-RC	CAN1-NSH-R	10/8/2009	SWNSH-1-CAN1-RC	3	0.25	-169	13.84	118	8.7	0	8.1
TECKSWR1	SWNSH-1C-CAN2-L	CAN2-NSH-L	9/15/2009	SWNSH-1C-CAN2-L	0		162	18.44	47	7.98		6.12
TECKSWR1	SWNSH-1D-CAN2-L	CAN2-NSH-L	9/22/2009	SWNSH-1D-CAN2-L	0		153	17.76	46	7.47	9.2	7.35
TECKSWR1	SWNSH-1E-CAN2-L	CAN2-NSH-L	9/29/2009	SWNSH-1E-CAN2-L	0		179	16.99	47	6.86	0	6.86
TECKSWR1	SWNSH-1-TC10-L	TC10-NSH-L	10/10/2009	SWNSH-1-TC10-L	0	0.5	-82	13.3	118	8.8	0	8.13
TECKSWR1	SWNSH-1-TC10-R	TC10-NSH-R	10/10/2009	SWNSH-1-TC10-R	0	0.25	-39	13.04	118	8.7	3	7.7
TECKSWR1	SWNSH-1-TC1-L	TC1-NSH-L	10/13/2009	SWNSH-1-TC1-L	0	0.25	-202	12.2	126	8.8		8.05
TECKSWR1	SWNSH-1-TC1-LDISA	TC1-NSH-L	10/13/2009	SWNSH-1-TC1-LDISA	1							
TECKSWR1	SWNSH-1-TC1-LDISB	TC1-NSH-L	10/13/2009	SWNSH-1-TC1-LDISB	2	0.25	-200	12.2	126	8.84		8.10
TECKSWR1	SWNSH-1-TC1-LDISC	TC1-NSH-L	10/13/2009	SWNSH-1-TC1-LDISC	3	0.25	-182	12.3	130	8.9		8.15
TECKSWR1	SWNSH-1-TC1-R	TC1-NSH-R	10/12/2009	SWNSH-1-TC1-R	0	0.23	-182	12.46	138	8.95		8.2
TECKSWR1	SWNSH-1-TC1-RDISA	TC1-NSH-R	10/12/2009	SWNSH-1-TC1-RDISA	1	0.22	-194	12.46	138	8.96		8.2
TECKSWR1	SWNSH-1-TC1-RDISB	TC1-NSH-R	10/12/2009	SWNSH-1-TC1-RDISB	2	0.22	-194	12.46	138	8.96		8.2

Table H-1. Field Measurements made during the First Round of Surface Water Sampling (Fall 2009)

Survey	Sample Number	Survey Station	Date	Sample ID	Field Replicate	Depth to Water Level (m total)	Oxidation Reduction Potential (mV total)	Temperature (degC total)	Conductivity (µS/cm total)	Dissolved Oxygen (mg/L total)	Turbidity (NTU total)	pH (pH total)
TECKSWR1	SWNSH-1-TC1-RDISC	TC1-NSH-R	10/12/2009	SWNSH-1-TC1-RDISC	3	0.22	-194	12.46	138	8.96		8.2
TECKSWR1	SWNSH-1-TC2-L	TC2-NSH-L	10/13/2009	SWNSH-1-TC2-L	0	0.25	-194	12.12	134	8.84		8.17
TECKSWR1	SWNSH-1-TC2-R	TC2-NSH-R	10/13/2009	SWNSH-1-TC2-R	0	0.25	-148	12.06	137	9.00		8.2
TECKSWR1	SWNSH-1-TC2-RDISA	TC2-NSH-R	10/13/2009	SWNSH-1-TC2-RDISA	1	0.25	-180	12.03	136	8.95		8.18
TECKSWR1	SWNSH-1-TC2-RDISB	TC2-NSH-R	10/13/2009	SWNSH-1-TC2-RDISB	2	0.25	-180	12.03	136	8.95		8.18
TECKSWR1	SWNSH-1-TC2-RDISC	TC2-NSH-R	10/13/2009	SWNSH-1-TC2-RDISC	3	0.25	-180	12.03	136	8.95		8.18
TECKSWR1	SWNSH-1-TC3-LA	TC3-NSH-L	10/15/2009	SWNSH-1-TC3-LA	1	0.25	-136	13.06	132	8.98		8.1
TECKSWR1	SWNSH-1-TC3-LB	TC3-NSH-L	10/15/2009	SWNSH-1-TC3-LB	2	0.25	-149	12.89	132	8.93		8.2
TECKSWR1	SWNSH-1-TC3-LC	TC3-NSH-L	10/15/2009	SWNSH-1-TC3-LC	3	0.25	-157	12.79	132	8.9		8.2
TECKSWR1	SWNSH-1-TC3-LDISA	TC3-NSH-L	10/15/2009	SWNSH-1-TC3-LDISA	1	0.25	-165	12.9	132	9		8.27
TECKSWR1	SWNSH-1-TC3-LDISB	TC3-NSH-L	10/15/2009	SWNSH-1-TC3-LDISB	2	0.25	-173	12.8	132	8.98		8.26
TECKSWR1	SWNSH-1-TC3-LDISC	TC3-NSH-L	10/15/2009	SWNSH-1-TC3-LDISC	3	0.25	-178	12.78	132	8.98		8.28
TECKSWR1	SWNSH-1-TC3-RA	TC3-NSH-R	10/15/2009	SWNSH-1-TC3-RA	1	0.25	-184	12.34	134	8.83		8.2
TECKSWR1	SWNSH-1-TC3-RB	TC3-NSH-R	10/15/2009	SWNSH-1-TC3-RB	2	0.25	-184	12.37	134	8.83		8.18
TECKSWR1	SWNSH-1-TC3-RC	TC3-NSH-R	10/15/2009	SWNSH-1-TC3-RC	3	0.25	-154	12.34	134	8.82		8.19
TECKSWR1	SWNSH-1-TC3-RDISA	TC3-NSH-R	10/16/2009	SWNSH-1-TC3-RDISA	1	0.25	-168	11.96	118	8.80		8.15
TECKSWR1	SWNSH-1-TC3-RDISB	TC3-NSH-R	10/16/2009	SWNSH-1-TC3-RDISB	2	0.25	-165	11.96	118	8.78		8.16
TECKSWR1	SWNSH-1-TC3-RDISC	TC3-NSH-R	10/16/2009	SWNSH-1-TC3-RDISC	3	0.25	-162	11.96	118	8.78		8.17
TECKSWR1	SWNSH-1-TC4-L	TC4-NSH-L	10/17/2009	SWNSH-1-TC4-L	0	0.1	-168	13.8	86	8.2		8.02
TECKSWR1	SWNSH-1-TC4-LDISA	TC4-NSH-L	10/17/2009	SWNSH-1-TC4-LDISA	1	0.023	-176	13.8	85	8.25		8.06
TECKSWR1	SWNSH-1-TC4-LDISB	TC4-NSH-L	10/17/2009	SWNSH-1-TC4-LDISB	2	0.010	-175	13.83	85	8.27		8.07
TECKSWR1	SWNSH-1-TC4-LDISC	TC4-NSH-L	10/17/2009	SWNSH-1-TC4-LDISC	3	0.007	-175	13.85	86	8.26		8.07
TECKSWR1	SWNSH-1-TC4-R	TC4-NSH-R	10/17/2009	SWNSH-1-TC4-R	0	0.15	-176	13.73	86	8.52		8.16
TECKSWR1	SWNSH-1-TC5-L	TC5-NSH-L	10/18/2009	SWNSH-1-TC5-L	0	0.25	-144	15.7	87	7.63		7.88
TECKSWR1	SWNSH-1-TC5-LDISA	TC5-NSH-L	10/18/2009	SWNSH-1-TC5-LDISA	1	0.25	-157	15.68	87	7.65	16	7.95
TECKSWR1	SWNSH-1-TC5-LDISB	TC5-NSH-L	10/18/2009	SWNSH-1-TC5-LDISB	2	0.25	-166	15.71	88	7.64	38	7.97
TECKSWR1	SWNSH-1-TC5-LDISC	TC5-NSH-L	10/18/2009	SWNSH-1-TC5-LDISC	3	0.25	-173	15.75	88	7.63	32	7.97
TECKSWR1	SWNSH-1-TC5-R	TC5-NSH-R	10/18/2009	SWNSH-1-TC5-R	0	0.25	-156	16.23	86	7.94	1	8.1
TECKSWR1	SWNSH-1-TC5-RDISA	TC5-NSH-R	10/18/2009	SWNSH-1-TC5-RDISA	1	0.25	-157	16.30	86	8	15	8.11
TECKSWR1	SWNSH-1-TC5-RDISB	TC5-NSH-R	10/18/2009	SWNSH-1-TC5-RDISB	2	0.25	-160	16.3	86	8.02	1	8.15
TECKSWR1	SWNSH-1-TC5-RDISC	TC5-NSH-R	10/18/2009	SWNSH-1-TC5-RDISC	3	0.25	-158	16.34	86	8.06	2	8.17
TECKSWR1	SWNSH-1-TC6-LA	TC6-NSH-L	10/19/2009	SWNSH-1-TC6-LA	1	0.25	-74	15.95	87	7.7	2	7.65
TECKSWR1	SWNSH-1-TC6-LB	TC6-NSH-L	10/19/2009	SWNSH-1-TC6-LB	2	0.3	-84	16.1	88	7.6	0.3	7.98
TECKSWR1	SWNSH-1-TC6-LC	TC6-NSH-L	10/19/2009	SWNSH-1-TC6-LC	3	0.3	-84	16.1	88	7.6	0.3	7.98
TECKSWR1	SWNSH-1-TC6-LDISA	TC6-NSH-L	10/19/2009	SWNSH-1-TC6-LDISA	1	0.3	-15	16.21	88	7.65	11	8
TECKSWR1	SWNSH-1-TC6-LDISB	TC6-NSH-L	10/19/2009	SWNSH-1-TC6-LDISB	2	0.21	-8	16.22	88	7.67	3	8
TECKSWR1	SWNSH-1-TC6-LDISC	TC6-NSH-L	10/19/2009	SWNSH-1-TC6-LDISC	3	0.24	-68	16.23	88	7.71	5	8.02
TECKSWR1	SWNSH-1-TC6-R	TC6-NSH-R	10/19/2009	SWNSH-1-TC6-R	0	0.1	-92	16.8	87	8.3	8	8.2
TECKSWR1	SWNSH-1-TC6-RDISA	TC6-NSH-R	10/19/2009	SWNSH-1-TC6-RDISA	1	0.13	-71	16.8	87	8.38	26	8.25
TECKSWR1	SWNSH-1-TC6-RDISB	TC6-NSH-R	10/19/2009	SWNSH-1-TC6-RDISB	2	0.13	-70	16.83	87	8.44	1	8.27
TECKSWR1	SWNSH-1-TC6-RDISC	TC6-NSH-R	10/19/2009	SWNSH-1-TC6-RDISC	3	0.13	-75	16.75	87	8.43	1	8.27
TECKSWR1	SWNSH-1-TC7-L	TC7-NSH-L	10/20/2009	SWNSH-1-TC7-L	0	0.2	-6	17.2	85	7.3	1	7.9
TECKSWR1	SWNSH-1-TC7-LDISA	TC7-NSH-L	10/20/2009	SWNSH-1-TC7-LDISA	1	0.2	-51	17.25	85	7.3	2	7.9
TECKSWR1	SWNSH-1-TC7-LDISB	TC7-NSH-L	10/20/2009	SWNSH-1-TC7-LDISB	2	0.23	7	17.25	85	7.34	1	7.9
TECKSWR1	SWNSH-1-TC7-LDISC	TC7-NSH-L	10/20/2009	SWNSH-1-TC7-LDISC	3	0.23	3	17.25	85	7.37	0.3	7.9
TECKSWR1	SWNSH-1-TC7-R	TC7-NSH-R	10/20/2009	SWNSH-1-TC7-R	0	0.32	34	17.44	85	7.95	2	8.1
TECKSWR1	SWNSH-1-TC7-RDISA	TC7-NSH-R	10/20/2009	SWNSH-1-TC7-RDISA	1	0.35	76	17.49	85	7.94	2	8.1
TECKSWR1	SWNSH-1-TC7-RDISB	TC7-NSH-R	10/20/2009	SWNSH-1-TC7-RDISB	2	0.37	-8	17.48	85	7.94	2	8.11
TECKSWR1	SWNSH-1-TC7-RDISC	TC7-NSH-R	10/20/2009	SWNSH-1-TC7-RDISC	3	0.37	6	17.51	85	7.91	1	8.1
TECKSWR1	SWNSH-1-TC8-LDISA	TC8-NSH-L	10/12/2009	SWNSH-1-TC8-LDISA	1	0.34	-146	12.43	138	8.9		8.1
TECKSWR1	SWNSH-1-TC8-LDISB	TC8-NSH-L	10/12/2009	SWNSH-1-TC8-LDISB	2	0.25	-157	12.45	138	8.9		8.2
TECKSWR1	SWNSH-1-TC8-LDISC	TC8-NSH-L	10/12/2009	SWNSH-1-TC8-LDISC	3	0.25	-162	12.47	138	8.95		8.2
TECKSWR1	SWNSH-1-TC9-L	TC9-NSH-L	10/11/2009	SWNSH-1-TC9-L	0	0.25	-152	12.67	149	9.1	595	8.3
TECKSWR1	SWNSH-1-TC9-R	TC9-NSH-R	10/11/2009	SWNSH-1-TC9-R	0	0.25	-82	12.7	121	8.6	641	7.9

Table H-2. Field Measurements made during the Second Round of Surface Water Sampling (Spring 2010)

Survey	Sample Number	Survey Station	Date	Sample ID	Field Replicate	Depth to Water Level (ft total)	Oxidation Reduction Potential (mV total)	Total Dissolved Solids (g/L total)	Temperature (degC total)	Conductivity (mS/cm total)	Dissolved Oxygen (mg/L total)	Dissolved Oxygen % Saturation (% total)	Turbidity (NTU total)	pH (pH total)
TECKSWR2	SWNB-2-CAN1-LA	CAN1-NB-L	4/7/2010	SWNB-2-CAN1-LA	1	7	721		5.05	0.091	11		1,000	8.3
TECKSWR2	SWNB-2-CAN1-LB	CAN1-NB-L	4/7/2010	SWNB-2-CAN1-LB	2	7	446		5.06	0.091	11.1		1,000	8.3
TECKSWR2	SWNB-2-CAN1-LC	CAN1-NB-L	4/7/2010	SWNB-2-CAN1-LC	3									
TECKSWR2	SWNB-2-CAN1-RA	CAN1-NB-R	4/8/2010	SWNB-2-CAN1-RA	1									
TECKSWR2	SWNB-2-CAN1-RB	CAN1-NB-R	4/8/2010	SWNB-2-CAN1-RB	2									
TECKSWR2	SWNB-2-CAN1-RC	CAN1-NB-R	4/8/2010	SWNB-2-CAN1-RC	3	5			5	0.134	11		64	8.3
TECKSWR2	SWNB-2-TC1-L	TC1-NB-L	4/11/2010	SWNB-2-TC1-L	0	19	-528		5.05	0.149	13		0	8.3
TECKSWR2	SWNB-2-TC1-M	TC1-NB-M	4/11/2010	SWNB-2-TC1-M	0	20	-664		5.8	0.154	9.6		20	8.5
TECKSWR2	SWNB-2-TC1-R	TC1-NB-R	4/11/2010	SWNB-2-TC1-R	0	23.3	-889		5.3	0.140	9.7		0.06	8.0
TECKSWR2	SWNB-2-TC2-L	TC2-NB-L	4/12/2010	SWNB-2-TC2-L	0		-64		5.4	0.141	9.51		366	8.12
TECKSWR2	SWNB-2-TC2-M	TC2-NB-M	4/12/2010	SWNB-2-TC2-M	0	29.3	-341		5.46	0.141	9.4		365	8.3
TECKSWR2	SWNB-2-TC2-R	TC2-NB-R	4/12/2010	SWNB-2-TC2-R	0		-774		5.5	0.095	11.28		55	8.4
TECKSWR2	SWNB-2-TC3-L1A	TC3-NB-L1	4/13/2010	SWNB-2-TC3-L1A	1	32.3	-147		5.7	0.143	14		0.06	8.0
TECKSWR2	SWNB-2-TC3-L1B	TC3-NB-L1	4/13/2010	SWNB-2-TC3-L1B	2	52.5	-185		5.59	0.143	9.16		9	8.04
TECKSWR2	SWNB-2-TC3-L1C	TC3-NB-L1	4/13/2010	SWNB-2-TC3-L1C	3	53.2	-186		5.62	0.144	9.11		1	8.09
TECKSWR2	SWNB-2-TC3-L2A	TC3-NB-L2	4/13/2010	SWNB-2-TC3-L2A	1	27.7	-174		6	0.144	8.3		1	8.25
TECKSWR2	SWNB-2-TC3-L2B	TC3-NB-L2	4/13/2010	SWNB-2-TC3-L2B	2									
TECKSWR2	SWNB-2-TC3-L2C	TC3-NB-L2	4/13/2010	SWNB-2-TC3-L2C	2									
TECKSWR2	SWNB-2-TC3-MA	TC3-NB-M	4/14/2010	SWNB-2-TC3-MA	1	43	-231		5.68	0.692	9		0	8
TECKSWR2	SWNB-2-TC3-MB	TC3-NB-M	4/14/2010	SWNB-2-TC3-MB	2	42.9	2		5.76	0.694	8.84		0	7.88
TECKSWR2	SWNB-2-TC3-MC	TC3-NB-M	4/14/2010	SWNB-2-TC3-MC	3	41	-192		5.8	0.694	8.9		0	8.06
TECKSWR2	SWNB-2-TC3-RA	TC3-NB-R	4/14/2010	SWNB-2-TC3-RA	1	37.8	-132		6.03	0.685	8.4		0	8.02
TECKSWR2	SWNB-2-TC3-RB	TC3-NB-R	4/14/2010	SWNB-2-TC3-RB	2	36	-237		6.05	0.688	8.37		0	8.03
TECKSWR2	SWNB-2-TC3-RC	TC3-NB-R	4/14/2010	SWNB-2-TC3-RC	3	37	-51		6.4	0.685	8		0	8.01
TECKSWR2	SWNB-2-TC4-L1	TC4-NB-L1	4/15/2010	SWNB-2-TC4-L1	0	45	-698	0.1	6.4	0.129	6			7.6
TECKSWR2	SWNB-2-TC4-L2	TC4-NB-L2	4/15/2010	SWNB-2-TC4-L2	0	57	-687		6.14	0.129	7.0		0.1	7.57
TECKSWR2	SWNB-2-TC4-M	TC4-NB-M	4/15/2010	SWNB-2-TC4-M	0	103	-731	0.09	6.12	0.1	8.65			8.05
TECKSWR2	SWNB-2-TC4-R	TC4-NB-R	4/15/2010	SWNB-2-TC4-R	0	40	274		6.16	0.112	13.15		0	7.9
TECKSWR2	SWNB-2-TC5-L1	TC5-NB-L1	4/16/2010	SWNB-2-TC5-L1	0	121	-351		5.91	0.149	11.14		0.0	7.81
TECKSWR2	SWNB-2-TC5-L2	TC5-NB-L2	4/16/2010	SWNB-2-TC5-L2	0	17	-393		6.4	0.150	7		0	7.9
TECKSWR2	SWNB-2-TC5-M	TC5-NB-M	4/16/2010	SWNB-2-TC5-M	0	255	-520		5.74	0.148	9.22		1.0	7.81
TECKSWR2	SWNB-2-TC5-R	TC5-NB-R	4/16/2010	SWNB-2-TC5-R	0	152.5	-555	0.1	5.82	0.149	12.57			7.9
TECKSWR2	SWNB-2-TC6-LA	TC6-NB-L	4/17/2010	SWNB-2-TC6-LA	1	59	-277		6.8	0.143	6.0		0.1	8.0
TECKSWR2	SWNB-2-TC6-LB	TC6-NB-L	4/17/2010	SWNB-2-TC6-LB	2									
TECKSWR2	SWNB-2-TC6-LC	TC6-NB-L	4/17/2010	SWNB-2-TC6-LC	3									
TECKSWR2	SWNB-2-TC6-MA	TC6-NB-M	4/17/2010	SWNB-2-TC6-MA	1	83	-199	0.1	6.51	0.142	6.0		0.04	8.0
TECKSWR2	SWNB-2-TC6-MB	TC6-NB-M	4/17/2010	SWNB-2-TC6-MB	2									
TECKSWR2	SWNB-2-TC6-MC	TC6-NB-M	4/17/2010	SWNB-2-TC6-MC	3									
TECKSWR2	SWNB-2-TC6-R1	TC6-NB-R1	4/17/2010	SWNB-2-TC6-R1	0	137	-207		6.2	0.142	6.4		0.1	7.8
TECKSWR2	SWNB-2-TC6-R2	TC6-NB-R2	4/17/2010	SWNB-2-TC6-R2	0	29	-271		7.40	0.141	4		0	8.0
TECKSWR2	SWNB-2-TC7-L	TC7-NB-L	4/18/2010	SWNB-2-TC7-L	0	118	-175		5.8	0.145	6.41		0	7.8
TECKSWR2	SWNB-2-TC7-M	TC7-NB-M	4/18/2010	SWNB-2-TC7-M	0	335	-180		4.92	0.144	5.65		0	7.65
TECKSWR2	SWNB-2-TC7-R	TC7-NB-R	4/18/2010	SWNB-2-TC7-R	0	248	-157		5.20	0.145	5.24		0	7.69
TECKSWR2	SWNB-2-TC9-L	TC9-NB-L	4/9/2010	SWNB-2-TC9-L	0	15	-604		5.3	0.139	10.8		0.03	8.4
TECKSWR2	SWNB-2-TC9-R	TC9-NB-R	4/9/2010	SWNB-2-TC9-R	0	5.2	-668		5.25	0.137	10.97		0	8.23
TECKSWR2	SWNS-2-CAN1-LA	CAN1-NS-L	4/7/2010	SWNS-2-CAN1-LA	1	3	621		4.98	0.091	11		1,000	8.1
TECKSWR2	SWNS-2-CAN1-LB	CAN1-NS-L	4/7/2010	SWNS-2-CAN1-LB	2	3	963		5	0.091	11		1,000	8.1
TECKSWR2	SWNS-2-CAN1-LC	CAN1-NS-L	4/7/2010	SWNS-2-CAN1-LC	3	3	1,000		5.03	0.091	11.1		1,000	8.1
TECKSWR2	SWNS-2-CAN1-RA	CAN1-NS-R	4/8/2010	SWNS-2-CAN1-RA	1	3			4.94	0.133	10.96		0	9.0
TECKSWR2	SWNS-2-CAN1-RB	CAN1-NS-R	4/8/2010	SWNS-2-CAN1-RB	2									
TECKSWR2	SWNS-2-CAN1-RC	CAN1-NS-R	4/8/2010	SWNS-2-CAN1-RC	3									
TECKSWR2	SWNS-2-TC1-L	TC1-NS-L	4/11/2010	SWNS-2-TC1-L	0	3	-495		5.04	0.149	13		0	8.4
TECKSWR2	SWNS-2-TC1-M	TC1-NS-M	4/11/2010	SWNS-2-TC1-M	0	3.4	-539		5.7	0.153	12.6		38	8.47
TECKSWR2	SWNS-2-TC1-R	TC1-NS-R	4/11/2010	SWNS-2-TC1-R	0	3.7	-984		5.1	0.138	10.1		0	8.1
TECKSWR2	SWNS-2-TC2-L	TC2-NS-L	4/12/2010	SWNS-2-TC2-L	0		-288		5.4	0.140	9.47		360	8.1
TECKSWR2	SWNS-2-TC2-M	TC2-NS-M	4/12/2010	SWNS-2-TC2-M	0	4	-421		5.4	0.140	11		362	8.2
TECKSWR2	SWNS-2-TC2-R	TC2-NS-R	4/12/2010	SWNS-2-TC2-R	0		-774		5.5	0.095	11.84		54	8.4
TECKSWR2	SWNS-2-TC3-L1A	TC3-NS-L1	4/13/2010	SWNS-2-TC3-L1A	1	3.3	-183		5.79	0.143	8.81			7.91
TECKSWR2	SWNS-2-TC3-L1B	TC3-NS-L1	4/13/2010	SWNS-2-TC3-L1B	2	3.3	-184		5.79	0.141	8.82		0	7.93
TECKSWR2	SWNS-2-TC3-L1C	TC3-NS-L1	4/13/2010	SWNS-2-TC3-L1C	3	3.5	-180		5.92	0.143	8.6		0	7.95
TECKSWR2	SWNS-2-TC3-L2A	TC3-NS-L2	4/13/2010	SWNS-2-TC3-L2A	1	3.6	-195		6.53	0.144	7.6		1	8.3
TECKSWR2	SWNS-2-TC3-L2B	TC3-NS-L2	4/13/2010	SWNS-2-TC3-L2B	2	3.4	-187		6.54	0.143	7.6		1	8.3
TECKSWR2	SWNS-2-TC3-L2C	TC3-NS-L2	4/13/2010	SWNS-2-TC3-L2C	3	3.5	-186		6.52	0.143	7.6		1	8.3
TECKSWR2	SWNS-2-TC3-MA	TC3-NS-M	4/14/2010	SWNS-2-TC3-MA	1	2	-748		5.9	0.146	16		48	8.0
TECKSWR2	SWNS-2-TC3-MB	TC3-NS-M	4/14/2010	SWNS-2-TC3-MB	2	2	-746		6	0.149	12		46	8.0
TECKSWR2	SWNS-2-TC3-MC	TC3-NS-M	4/14/2010	SWNS-2-TC3-MC	3	2	-718		6.1	0.149	13.8		45	8.0
TECKSWR2	SWNS-2-TC3-RA	TC3-NS-R	4/14/2010	SWNS-2-TC3-RA	1	3.4	-252		7	0.683	7.4		0	8.13

Table H-2. Field Measurements made during the Second Round of Surface Water Sampling (Spring 2010)

Survey	Sample Number	Survey Station	Date	Sample ID	Field Replicate	Depth to Water Level (ft total)	Oxidation Reduction Potential (mV total)	Total Dissolved Solids (g/L total)	Temperature (degC total)	Conductivity (mS/cm total)	Dissolved Oxygen (mg/L total)	Dissolved Oxygen % Saturation (% total)	Turbidity (NTU total)	pH (pH total)
TECKSWR2	SWNS-2-TC3-RB	TC3-NS-R	4/14/2010	SWNS-2-TC3-RB	2	3.5	-191		6.38	0.684	7		0	8.15
TECKSWR2	SWNS-2-TC3-RC	TC3-NS-R	4/14/2010	SWNS-2-TC3-RC	3	3.4	-175		6.36	0.685	7.85		0	8.15
TECKSWR2	SWNS-2-TC4-L1	TC4-NS-L1	4/15/2010	SWNS-2-TC4-L1	0	3	-675		7.52	0.149	9.76			8.10
TECKSWR2	SWNS-2-TC4-L2	TC4-NS-L2	4/15/2010	SWNS-2-TC4-L2	0	2.0	-660		7.4	0.149	11.0		1	8.1
TECKSWR2	SWNS-2-TC4-M	TC4-NS-M	4/15/2010	SWNS-2-TC4-M	0									
TECKSWR2	SWNS-2-TC4-R	TC4-NS-R	4/15/2010	SWNS-2-TC4-R	0	3.4	-159		6.3	0.112	13.6		0.2	7.9
TECKSWR2	SWNS-2-TC5-L1	TC5-NS-L1	4/16/2010	SWNS-2-TC5-L1	0									
TECKSWR2	SWNS-2-TC5-L2	TC5-NS-L2	4/16/2010	SWNS-2-TC5-L2	0	3.3	477	0.1	7.1	0.137	14.4		3	8.5
TECKSWR2	SWNS-2-TC5-M	TC5-NS-M	4/16/2010	SWNS-2-TC5-M	0	3	186	0.1	7	0.136	14	115	2	8.5
TECKSWR2	SWNS-2-TC5-R	TC5-NS-R	4/16/2010	SWNS-2-TC5-R	0	3.6	-617	0.1	6.9	0.148	11.7			8.2
TECKSWR2	SWNS-2-TC6-L	TC6-NS-L	4/17/2010	SWNS-2-TC6-L	0	3	-335		8.0	0.146	7		306	8.3
TECKSWR2	SWNS-2-TC6-MA	TC6-NS-M	4/18/2010	SWNS-2-TC6-MA	1	3	544		9	0.137	14		0.4	8.0
TECKSWR2	SWNS-2-TC6-MB	TC6-NS-M	4/18/2010	SWNS-2-TC6-MB	2	3	805		9	0.136	14		0.3	8.0
TECKSWR2	SWNS-2-TC6-MC	TC6-NS-M	4/18/2010	SWNS-2-TC6-MC	3									
TECKSWR2	SWNS-2-TC6-R1	TC6-NS-R1	4/17/2010	SWNS-2-TC6-R1	0	4	-255		8.4	0.145	5.3		0	8.26
TECKSWR2	SWNS-2-TC6-R2A	TC6-NS-R2	4/17/2010	SWNS-2-TC6-R2A	1									
TECKSWR2	SWNS-2-TC6-R2B	TC6-NS-R2	4/17/2010	SWNS-2-TC6-R2B	2	4	-282	0.1	8.5	0.143	5.5		0.4	8.3
TECKSWR2	SWNS-2-TC6-R2C	TC6-NS-R2	4/17/2010	SWNS-2-TC6-R2C	3									
TECKSWR2	SWNS-2-TC7-L	TC7-NS-L	4/19/2010	SWNS-2-TC7-L	0	3.6	-229		8.9	0.146	5.98		0.09	8.33
TECKSWR2	SWNS-2-TC7-M	TC7-NS-M	4/18/2010	SWNS-2-TC7-M	0	3	-231		8	0.147	2.0		0	8.4
TECKSWR2	SWNS-2-TC7-R	TC7-NS-R	4/18/2010	SWNS-2-TC7-R	0	3.2	-206		7.79	0.149	1.28		0	8.39
TECKSWR2	SWNS-2-TC9-L	TC9-NS-L	4/9/2010	SWNS-2-TC9-L	0	3	-671		5.4	0.140	10.8		0.03	8.2
TECKSWR2	SWNS-2-TC9-R	TC9-NS-R	4/9/2010	SWNS-2-TC9-R	0	3	-717		5.23	0.137	10.9		0.05	8.3
TECKSWR2	SWNSH-2A-CAN2-L	CAN2-NSH-L	2/23/2010	SWNSH-2A-CAN2-L	0		168		5	0.36	11.30		27	7.40
TECKSWR2	SWNSH-2B-CAN2-L	CAN2-NSH-L	3/2/2010	SWNSH-2B-CAN2-L	0		93		5.3	0.423	12.26		16.0	7.2
TECKSWR2	SWNSH-2-CAN1-LA	CAN1-NSH-L	4/6/2010	SWNSH-2-CAN1-LA	1	0.2	1,000		5.3	0.090	11.2		3	7.9
TECKSWR2	SWNSH-2-CAN1-LB	CAN1-NSH-L	4/6/2010	SWNSH-2-CAN1-LB	2	0.09	1,000		5.3	0.090	11.1		1	8.0
TECKSWR2	SWNSH-2-CAN1-LC	CAN1-NSH-L	4/6/2010	SWNSH-2-CAN1-LC	3	0.07	1,000		5.32	0.091	11.1		0.1	8.0
TECKSWR2	SWNSH-2-CAN1-RA	CAN1-NSH-R	4/7/2010	SWNSH-2-CAN1-RA	1	0.5	928		4.9	0.090	10.9		435	8.0
TECKSWR2	SWNSH-2-CAN1-RB	CAN1-NSH-R	4/7/2010	SWNSH-2-CAN1-RB	2	0.4	963		4.92	0.091	10.9		430	8.0
TECKSWR2	SWNSH-2-CAN1-RC	CAN1-NSH-R	4/7/2010	SWNSH-2-CAN1-RC	3	0.5	920		4.92	0.090	10.9		428	8.0
TECKSWR2	SWNSH-2C-CAN2-L	CAN2-NSH-L	3/9/2010	SWNSH-2C-CAN2-L	0		41		6	0.42	11.89		15	7.22
TECKSWR2	SWNSH-2D-CAN2-L	CAN2-NSH-L	3/16/2010	SWNSH-2D-CAN2-L	0		74		5.7	0.409	10.89		13.0	7.13
TECKSWR2	SWNSH-2E-CAN2-L	CAN2-NSH-L	3/23/2010	SWNSH-2E-CAN2-L	0		94		6	0.43	10.7		0	7.1
TECKSWR2	SWNSH-2F-CAN2-L	CAN2-NSH-L	3/30/2010	SWNSH-2F-CAN2-L	0		96		6.1	0.431	11.21		75	6.93
TECKSWR2	SWNSH-2G-CAN2-L	CAN2-NSH-L	4/6/2010	SWNSH-2G-CAN2-L	0		130		6.46	0.439	10.55		9	8.06
TECKSWR2	SWNSH-2-TC1-L	TC1-NSH-L	4/10/2010	SWNSH-2-TC1-L	0	1	-184		6	0.139	11.2		336	8.0
TECKSWR2	SWNSH-2-TC1-LDISA	TC1-NSH-L	4/10/2010	SWNSH-2-TC1-LDISA	1	1	-581		6	0.141	11.3		329	8.3
TECKSWR2	SWNSH-2-TC1-LDISB	TC1-NSH-L	4/10/2010	SWNSH-2-TC1-LDISB	2	1	-236		6	0.141	11.3		326	8.3
TECKSWR2	SWNSH-2-TC1-LDISC	TC1-NSH-L	4/10/2010	SWNSH-2-TC1-LDISC	3	1	-519		6	0.141	11.3		287	8.4
TECKSWR2	SWNSH-2-TC1-R	TC1-NSH-R	4/11/2010	SWNSH-2-TC1-R	0	1	-563		5.13	0.137			0.1	8.2
TECKSWR2	SWNSH-2-TC1-RDISA	TC1-NSH-R	4/11/2010	SWNSH-2-TC1-RDISA	1	1.1	-1,000		5.12	0.137			2	8.24
TECKSWR2	SWNSH-2-TC1-RDISB	TC1-NSH-R	4/11/2010	SWNSH-2-TC1-RDISB	2	1	-904		5.12	0.137			4	8.2
TECKSWR2	SWNSH-2-TC1-RDISC	TC1-NSH-R	4/11/2010	SWNSH-2-TC1-RDISC	3	1.1	-143		5.1	0.138	10		2	8.1
TECKSWR2	SWNSH-2-TC2-L	TC2-NSH-L	4/12/2010	SWNSH-2-TC2-L	0	2	-769		5.8	0.095	10.65		59	8.5
TECKSWR2	SWNSH-2-TC2-LDISA	TC2-NSH-L	4/12/2010	SWNSH-2-TC2-LDISA	1		-782		5.8	0.095	10.13		59	8.49
TECKSWR2	SWNSH-2-TC2-LDISB	TC2-NSH-L	4/12/2010	SWNSH-2-TC2-LDISB	2		-783		5.7	0.095	10.0		59	8.5
TECKSWR2	SWNSH-2-TC2-LDISC	TC2-NSH-L	4/12/2010	SWNSH-2-TC2-LDISC	3		-783		5.7	0.095	9.98		59	8.49
TECKSWR2	SWNSH-2-TC2-R	TC2-NSH-R	4/11/2010	SWNSH-2-TC2-R	0	1	840		6.8	0.140	8		9	8.2
TECKSWR2	SWNSH-2-TC2-RDISA	TC2-NSH-R	4/11/2010	SWNSH-2-TC2-RDISA	1	1	-519		6.7	0.140	8		38	8.3
TECKSWR2	SWNSH-2-TC2-RDISB	TC2-NSH-R	4/11/2010	SWNSH-2-TC2-RDISB	2	1	-35		6.5	0.140	7		62	8.2
TECKSWR2	SWNSH-2-TC2-RDISC	TC2-NSH-R	4/11/2010	SWNSH-2-TC2-RDISC	3	1	-257		6.5	0.139	7.6		22	8.3
TECKSWR2	SWNSH-2-TC3-LA	TC3-NSH-L	4/13/2010	SWNSH-2-TC3-LA	1	0.4	-783		7.26	0.148	9.3		1	7.99
TECKSWR2	SWNSH-2-TC3-LB	TC3-NSH-L	4/13/2010	SWNSH-2-TC3-LB	2	0.5	-783		7.04	0.150	9.49		1	8.01
TECKSWR2	SWNSH-2-TC3-LC	TC3-NSH-L	4/13/2010	SWNSH-2-TC3-LC	3	0.5	-783		7.28	0.148	9.3		2	8.04
TECKSWR2	SWNSH-2-TC3-LDISA	TC3-NSH-L	4/13/2010	SWNSH-2-TC3-LDISA	1	0.5	-783		7.17	0.148	9.4		30	8.04
TECKSWR2	SWNSH-2-TC3-LDISB	TC3-NSH-L	4/13/2010	SWNSH-2-TC3-LDISB	2									
TECKSWR2	SWNSH-2-TC3-LDISC	TC3-NSH-L	4/13/2010	SWNSH-2-TC3-LDISC	3									
TECKSWR2	SWNSH-2-TC3-RA	TC3-NSH-R	4/12/2010	SWNSH-2-TC3-RA	1	0.6	-776		6.38	0.094	10.13		38	8.47
TECKSWR2	SWNSH-2-TC3-RB	TC3-NSH-R	4/12/2010	SWNSH-2-TC3-RB	2	0.6	-776		6.3	0.094	10.06		37	8.48
TECKSWR2	SWNSH-2-TC3-RC	TC3-NSH-R	4/12/2010	SWNSH-2-TC3-RC	3	0.6	-776		6.4	0.095	10.61		37	8.48
TECKSWR2	SWNSH-2-TC3-RDISA	TC3-NSH-R	4/13/2010	SWNSH-2-TC3-RDISA	1	0.6	-782		6.2	0.148	9.7		1	7.8
TECKSWR2	SWNSH-2-TC3-RDISB	TC3-NSH-R	4/13/2010	SWNSH-2-TC3-RDISB	2	0.5	-782		6.2	0.148	9.74		1	7.8
TECKSWR2	SWNSH-2-TC3-RDISC	TC3-NSH-R	4/13/2010	SWNSH-2-TC3-RDISC	3	0.5	-782		6.2	0.148	9.65		1	7.8
TECKSWR2	SWNSH-2-TC4-L	TC4-NSH-L	4/15/2010	SWNSH-2-TC4-L	0	0.7	-682		7.21	0.150	11.36		1	8.13
TECKSWR2	SWNSH-2-TC4-LDISA	TC4-NSH-L	4/15/2010	SWNSH-2-TC4-LDISA	1	0	-673		7.47	0.151	9.57		1	8.15
TECKSWR2	SWNSH-2-TC4-LDISB	TC4-NSH-L	4/15/2010	SWNSH-2-TC4-LDISB	2									

Table H-2. Field Measurements made during the Second Round of Surface Water Sampling (Spring 2010)

Survey	Sample Number	Survey Station	Date	Sample ID	Field Replicate	Depth to Water Level (ft total)	Oxidation Reduction Potential (mV total)	Total Dissolved Solids (g/L total)	Temperature (degC total)	Conductivity (mS/cm total)	Dissolved Oxygen (mg/L total)	Dissolved Oxygen % Saturation (% total)	Turbidity (NTU total)	pH (pH total)
TECKSWR2	SWNSH-2-TC4-LDISC	TC4-NSH-L	4/15/2010	SWNSH-2-TC4-LDISC	3									
TECKSWR2	SWNSH-2-TC4-R	TC4-NSH-R	4/14/2010	SWNSH-2-TC4-R	0	0.6	-656		6.96	0.147	14.06			8.11
TECKSWR2	SWNSH-2-TC4-RDISA	TC4-NSH-R	4/14/2010	SWNSH-2-TC4-RDISA	1									
TECKSWR2	SWNSH-2-TC4-RDISB	TC4-NSH-R	4/14/2010	SWNSH-2-TC4-RDISB	2	0.6	-665		7.02	0.149	16.08		0	8.08
TECKSWR2	SWNSH-2-TC4-RDISC	TC4-NSH-R	4/14/2010	SWNSH-2-TC4-RDISC	3									
TECKSWR2	SWNSH-2-TC5-L	TC5-NSH-L	4/16/2010	SWNSH-2-TC5-L	0	0.5	39		7.94	0.140	14.37		27	8.44
TECKSWR2	SWNSH-2-TC5-LDISA	TC5-NSH-L	4/16/2010	SWNSH-2-TC5-LDISA	1									
TECKSWR2	SWNSH-2-TC5-LDISB	TC5-NSH-L	4/16/2010	SWNSH-2-TC5-LDISB	2									
TECKSWR2	SWNSH-2-TC5-LDISC	TC5-NSH-L	4/16/2010	SWNSH-2-TC5-LDISC	3	0.3	-177		8.02	0.139	13.74		152	8.48
TECKSWR2	SWNSH-2-TC5-R	TC5-NSH-R	4/16/2010	SWNSH-2-TC5-R	0	0.4	527	0.1	7.8	0.135	14	114	11	8.4
TECKSWR2	SWNSH-2-TC5-RDISA	TC5-NSH-R	4/16/2010	SWNSH-2-TC5-RDISA	1	0.4	39	0.1	7.53	0.135	14.0	117	3	8.58
TECKSWR2	SWNSH-2-TC5-RDISB	TC5-NSH-R	4/16/2010	SWNSH-2-TC5-RDISB	2	0.6	-44	0.1	7.5	0.136	14	117	12	8.6
TECKSWR2	SWNSH-2-TC5-RDISC	TC5-NSH-R	4/16/2010	SWNSH-2-TC5-RDISC	3	0.5	11	0.1	7.47	0.136	13.9	116	23	8.6
TECKSWR2	SWNSH-2-TC6-LA	TC6-NSH-L	4/17/2010	SWNSH-2-TC6-LA	1	2	-19		8	0.140	12.9		2	8.0
TECKSWR2	SWNSH-2-TC6-LB	TC6-NSH-L	4/17/2010	SWNSH-2-TC6-LB	2	2	33		9.0	0.139	13		2	8.1
TECKSWR2	SWNSH-2-TC6-LC	TC6-NSH-L	4/17/2010	SWNSH-2-TC6-LC	3									
TECKSWR2	SWNSH-2-TC6-LDISA	TC6-NSH-L	4/17/2010	SWNSH-2-TC6-LDISA	1	1.5	124		9.4	0.141	13		27	8.2
TECKSWR2	SWNSH-2-TC6-LDISB	TC6-NSH-L	4/17/2010	SWNSH-2-TC6-LDISB	2	1.5	67		9.5	0.142	13		31	8.2
TECKSWR2	SWNSH-2-TC6-LDISC	TC6-NSH-L	4/17/2010	SWNSH-2-TC6-LDISC	3	1.5	101		9.4	0.141	12.8		32	8.2
TECKSWR2	SWNSH-2-TC6-R	TC6-NSH-R	4/17/2010	SWNSH-2-TC6-R	0	1	51		10.0	0.132	14.0		15	8.3
TECKSWR2	SWNSH-2-TC6-RDISA	TC6-NSH-R	4/17/2010	SWNSH-2-TC6-RDISA	1	0.7	248		10	0.131	13.8		164	8.0
TECKSWR2	SWNSH-2-TC6-RDISB	TC6-NSH-R	4/17/2010	SWNSH-2-TC6-RDISB	2	0.7	134		10.5	0.133	13.0		59	8.0
TECKSWR2	SWNSH-2-TC6-RDISC	TC6-NSH-R	4/17/2010	SWNSH-2-TC6-RDISC	3	0.7	136		10.7	0.133	13.7		92	8.0
TECKSWR2	SWNSH-2-TC7-L	TC7-NSH-L	4/18/2010	SWNSH-2-TC7-L	0	0.5			9	0.127	14		3	8.0
TECKSWR2	SWNSH-2-TC7-LDISA	TC7-NSH-L	4/19/2010	SWNSH-2-TC7-LDISA	1	0.4			9.2	0.128	13.9		4	8.29
TECKSWR2	SWNSH-2-TC7-LDISB	TC7-NSH-L	4/19/2010	SWNSH-2-TC7-LDISB	2	0.6			9	0.129	13.88		12	8.27
TECKSWR2	SWNSH-2-TC7-LDISC	TC7-NSH-L	4/19/2010	SWNSH-2-TC7-LDISC	3	0.5			9.9	0.134	13.8		11	8.3
TECKSWR2	SWNSH-2-TC7-R	TC7-NSH-R	4/19/2010	SWNSH-2-TC7-R	0	1.5			11.48	0.135	13.47		2	8.22
TECKSWR2	SWNSH-2-TC7-RDISA	TC7-NSH-R	4/18/2010	SWNSH-2-TC7-RDISA	1	1.5			12.29	0.137	13.63		7	8.55
TECKSWR2	SWNSH-2-TC7-RDISB	TC7-NSH-R	4/18/2010	SWNSH-2-TC7-RDISB	2	1.5			12.15	0.136	13.82			8.21
TECKSWR2	SWNSH-2-TC7-RDISC	TC7-NSH-R	4/18/2010	SWNSH-2-TC7-RDISC	3	1.5			12.09	0.135	13.90			8.07
TECKSWR2	SWNSH-2-TC8-LDISA	TC8-NSH-L	4/10/2010	SWNSH-2-TC8-LDISA	1	1	-495		5.3	0.141	10.7		0.2	8.0
TECKSWR2	SWNSH-2-TC8-LDISB	TC8-NSH-L	4/10/2010	SWNSH-2-TC8-LDISB	2	1	-159		5.35	0.141	10.76		0.5	8.0
TECKSWR2	SWNSH-2-TC8-LDISC	TC8-NSH-L	4/10/2010	SWNSH-2-TC8-LDISC	3	1	-169		5.4	0.141	10.8		0.3	8.0
TECKSWR2	SWNSH-2-TC9-L	TC9-NSH-L	4/8/2010	SWNSH-2-TC9-L	0	0.3	239		6.4	0.147	10.6		4	8.2
TECKSWR2	SWNSH-2-TC9-R	TC9-NSH-R	4/8/2010	SWNSH-2-TC9-R	0	1.5	449		5.3	0.136	10.8		2	8.1

Table H-3. Field Measurements made during the Third Round of Surface Water Sampling (Summer 2010

Survey	Sample Number	Survey Station	Date	Sample ID	Field Replicate	Depth to Water Level (m total)	Oxidation Reduction Potential (mV total)	Total Dissolved Solids (g/L total)	Temperature (degC total)	Conductivity (µS/cm total)	Dissolved Oxygen (mg/L total)	Turbidity (NTU total)	pH (pH total)
TECKSWR3	SWNB-3-CAN1-L	CAN1-NB-L-R3	6/7/2010	SWNB-3-CAN1-L	0	5			10.8	119		1	8.4
TECKSWR3	SWNB-3-CAN1-R	CAN1-NB-R-R3	6/6/2010	SWNB-3-CAN1-R	0								
TECKSWR3	SWNB-3-TC1-L	TC1-NB-L-R3	6/10/2010	SWNB-3-TC1-L	0	10			11.86	123		2	8.3
TECKSWR3	SWNB-3-TC1-M	TC1-NB-M-R3	6/10/2010	SWNB-3-TC1-M	0	10			11.9	123	9	3	8.4
TECKSWR3	SWNB-3-TC1-R	TC1-NB-R-R3	6/11/2010	SWNB-3-TC1-R	0	10			11.77	118		1	8.2
TECKSWR3	SWNB-3-TC2-L	TC2-NB-L-R3	6/11/2010	SWNB-3-TC2-L	0	12.9			12.10	116			8.14
TECKSWR3	SWNB-3-TC2-M	TC2-NB-M-R3	6/11/2010	SWNB-3-TC2-M	0	14			11.95	119		1	8.2
TECKSWR3	SWNB-3-TC2-R	TC2-NB-R-R3	6/11/2010	SWNB-3-TC2-R	0	12.5			12.13	117		1	8.18
TECKSWR3	SWNB-3-TC3-L1	TC3-NB-L1-R3	6/12/2010	SWNB-3-TC3-L1	0	10			12.6	110		6	8.2
TECKSWR3	SWNB-3-TC3-L2	TC3-NB-L2-R3	6/12/2010	SWNB-3-TC3-L2	0	13			12.15	113		1	8.14
TECKSWR3	SWNB-3-TC3-M	TC3-NB-M-R3	6/12/2010	SWNB-3-TC3-M	0	16.4			12.0	110		2	8.1
TECKSWR3	SWNB-3-TC3-R	TC3-NB-R-R3	6/12/2010	SWNB-3-TC3-R	0	18.9			12.3	106		1	8.1
TECKSWR3	SWNB-3-TC4-L1	TC4-NB-L1-R3	6/13/2010	SWNB-3-TC4-L1	0	17			12.5	115		0	8.13
TECKSWR3	SWNB-3-TC4-L2	TC4-NB-L2-R3	6/13/2010	SWNB-3-TC4-L2	0	16			12.5	110		0	8.17
TECKSWR3	SWNB-3-TC4-M	TC4-NB-M-R3	6/13/2010	SWNB-3-TC4-M	0	25			12	111		0	8.3
TECKSWR3	SWNB-3-TC4-R	TC4-NB-R-R3	6/13/2010	SWNB-3-TC4-R	0	22			12.3	116		0	8
TECKSWR3	SWNB-3-TC5-L1	TC5-NB-L1-R3	6/14/2010	SWNB-3-TC5-L1	0	25			12.4	119		0	8.0
TECKSWR3	SWNB-3-TC5-L2	TC5-NB-L2-R3	6/14/2010	SWNB-3-TC5-L2	0	22			12.7	120		0	8
TECKSWR3	SWNB-3-TC5-M	TC5-NB-M-R3	6/14/2010	SWNB-3-TC5-M	0	50			11.9	118		0	8
TECKSWR3	SWNB-3-TC5-R	TC5-NB-R-R3	6/14/2010	SWNB-3-TC5-R	0	28.9			12.2	119		0	8.0
TECKSWR3	SWNB-3-TC6-LA	TC6-NB-L-R3	6/15/2010	SWNB-3-TC6-LA	1	22			12.47	111		0	7.9
TECKSWR3	SWNB-3-TC6-LB	TC6-NB-L-R3	6/15/2010	SWNB-3-TC6-LB	2	35.5			11.34	114		0	7.91
TECKSWR3	SWNB-3-TC6-LC	TC6-NB-L-R3	6/15/2010	SWNB-3-TC6-LC	3	35.5			11.34	114		0	7.91
TECKSWR3	SWNB-3-TC6-MA	TC6-NB-M-R3	6/15/2010	SWNB-3-TC6-MA	1	33.1			12	111		0.3	8.0
TECKSWR3	SWNB-3-TC6-MB	TC6-NB-M-R3	6/15/2010	SWNB-3-TC6-MB	2	55.0			11.34	113		0.4	7.9
TECKSWR3	SWNB-3-TC6-MC	TC6-NB-M-R3	6/15/2010	SWNB-3-TC6-MC	3	55.0			11.34	113		0.4	7.9
TECKSWR3	SWNB-3-TC6-R1	TC6-NB-R1-R3	6/16/2010	SWNB-3-TC6-R1	0	51			11.7	113		0	7.96
TECKSWR3	SWNB-3-TC6-R2	TC6-NB-R2-R3	6/16/2010	SWNB-3-TC6-R2	0	14			13.0	108		0	8.1
TECKSWR3	SWNB-3-TC7-L	TC7-NB-L-R3	6/16/2010	SWNB-3-TC7-L	0	40			11.5	117		0	7.97
TECKSWR3	SWNB-3-TC7-M	TC7-NB-M-R3	6/17/2010	SWNB-3-TC7-M	0	71			10.4	122	12	0	7.9
TECKSWR3	SWNB-3-TC7-R	TC7-NB-R-R3	6/17/2010	SWNB-3-TC7-R	0	48			11.8	117	11.1	0	8.0
TECKSWR3	SWNB-3-TC9-R	TC9-NB-R-R3	6/8/2010	SWNB-3-TC9-R	0	8			11.3	119		1	8.45
TECKSWR3	SWNS-3-CAN1-L	CAN1-NS-L-R3	6/7/2010	SWNS-3-CAN1-L	0	1			10.7	119		1	8.4
TECKSWR3	SWNS-3-CAN1-R	CAN1-NS-R-R3	6/6/2010	SWNS-3-CAN1-R	0	1	151		10.26	91		0.01	8
TECKSWR3	SWNS-3-TC1-L	TC1-NS-L-R3	6/10/2010	SWNS-3-TC1-L	0	1			15.9	117		0.1	8.15
TECKSWR3	SWNS-3-TC1-M	TC1-NS-M-R3	6/10/2010	SWNS-3-TC1-M	0	1	231		11.9	133	10.7	3	8
TECKSWR3	SWNS-3-TC1-R	TC1-NS-R-R3	6/11/2010	SWNS-3-TC1-R	0	1	238		11.73	130		3	7.8
TECKSWR3	SWNS-3-TC2-L	TC2-NS-L-R3	6/11/2010	SWNS-3-TC2-L	0		285	0.1	12.05	130	13	2	7.64
TECKSWR3	SWNS-3-TC2-M	TC2-NS-M-R3	6/11/2010	SWNS-3-TC2-M	0	0.6			11.9	118		3	8.35
TECKSWR3	SWNS-3-TC2-R	TC2-NS-R-R3	6/11/2010	SWNS-3-TC2-R	0		279		12.1	130	13	3	7.7
TECKSWR3	SWNS-3-TC3-L1	TC3-NS-L1-R3	6/12/2010	SWNS-3-TC3-L1	0	1	232	0.1	13.5	129	11.0	1	7.85
TECKSWR3	SWNS-3-TC3-L2	TC3-NS-L2-R3	6/12/2010	SWNS-3-TC3-L2	0	1.2			13.1	113		0	8.44
TECKSWR3	SWNS-3-TC3-M	TC3-NS-M-R3	6/12/2010	SWNS-3-TC3-M	0	0.5			13	114		3	8.36
TECKSWR3	SWNS-3-TC3-R	TC3-NS-R-R3	6/12/2010	SWNS-3-TC3-R	0	1	225	0.1	13.6	127	11	1	7.76
TECKSWR3	SWNS-3-TC4-L1	TC4-NS-L1-R3	6/13/2010	SWNS-3-TC4-L1	0	1			16.2	112		0.07	8.5
TECKSWR3	SWNS-3-TC4-L2	TC4-NS-L2-R3	6/13/2010	SWNS-3-TC4-L2	0	1.2			16	112		0.2	8.54
TECKSWR3	SWNS-3-TC4-M	TC4-NS-M-R3	6/13/2010	SWNS-3-TC4-M	0	1.2	247		15	117	12	1	7.7
TECKSWR3	SWNS-3-TC4-R	TC4-NS-R-R3	6/13/2010	SWNS-3-TC4-R	0	1.1	243		14	117	12.5	1	7.75
TECKSWR3	SWNS-3-TC5-L1	TC5-NS-L1-R3	6/14/2010	SWNS-3-TC5-L1	0	1			16	113		0.1	8.2
TECKSWR3	SWNS-3-TC5-L2	TC5-NS-L2-R3	6/14/2010	SWNS-3-TC5-L2	0	1			15.9	117	0	0	8.15
TECKSWR3	SWNS-3-TC5-M	TC5-NS-M-R3	6/14/2010	SWNS-3-TC5-M	0	1.2	229		16	119	10.4	10	7.6
TECKSWR3	SWNS-3-TC5-R	TC5-NS-R-R3	6/14/2010	SWNS-3-TC5-R	0	1.2	223		15.8	119	10.4	11	7.65
TECKSWR3	SWNS-3-TC6-L	TC6-NS-L-R3	6/15/2010	SWNS-3-TC6-L	0	1.2			16.6	104		227	8.14
TECKSWR3	SWNS-3-TC6-MA	TC6-NS-M-R3	6/16/2010	SWNS-3-TC6-MA	1	1.1	238		15	99	10.8	3	7.8
TECKSWR3	SWNS-3-TC6-MB	TC6-NS-M-R3	6/16/2010	SWNS-3-TC6-MB	2								
TECKSWR3	SWNS-3-TC6-MC	TC6-NS-M-R3	6/16/2010	SWNS-3-TC6-MC	3								
TECKSWR3	SWNS-3-TC6-R1	TC6-NS-R1-R3	6/15/2010	SWNS-3-TC6-R1	0	1	160		15.5	110	10.4		7.9
TECKSWR3	SWNS-3-TC6-R2A	TC6-NS-R2-R3	6/15/2010	SWNS-3-TC6-R2A	1	1.2	167		15.3	110	10.6	124	7.9
TECKSWR3	SWNS-3-TC6-R2B	TC6-NS-R2-R3	6/15/2010	SWNS-3-TC6-R2B	2								
TECKSWR3	SWNS-3-TC6-R2C	TC6-NS-R2-R3	6/15/2010	SWNS-3-TC6-R2C	3								
TECKSWR3	SWNS-3-TC7-L	TC7-NS-L-R3	6/16/2010	SWNS-3-TC7-L	0	1			15.7	114		0	8.3

Note: the sample date 4/24/10 highlighted yellow below should be 4/27/10.

Table H-3. Field Measurements made during the Third Round of Surface Water Sampling (Summer 2010

Survey	Sample Number	Survey Station	Date	Sample ID	Field Replicate	Depth to Water Level (m total)	Oxidation Reduction Potential (mV total)	Total Dissolved Solids (g/L total)	Temperature (degC total)	Conductivity (µS/cm total)	Dissolved Oxygen (mg/L total)	Turbidity (NTU total)	pH (pH total)
TECKSWR3	SWNS-3-TC7-M	TC7-NS-M-R3	6/17/2010	SWNS-3-TC7-M	0	1.1			15.5	112	3.2	0	8.33
TECKSWR3	SWNS-3-TC7-R	TC7-NS-R-R3	6/17/2010	SWNS-3-TC7-R	0	1			15.8	112	2.4	0	8.32
TECKSWR3	SWNS-3-TC9-L	TC9-NS-L-R3	6/10/2010	SWNS-3-TC9-L	0	1.3	232		12	135	13.1	5	7.7
TECKSWR3	SWNS-3-TC9-R	TC9-NS-R-R3	6/8/2010	SWNS-3-TC9-R	0	1			11.3	119		1	8.4
TECKSWR3	SWNSH-3A-CAN2-L	CAN2-NSH-L-R3	4/24/2010	SWNSH-3A-CAN2-L	0		141		8.3	750	9.75	2.2	8.02
TECKSWR3	SWNSH-3B-CAN2-L	CAN2-NSH-L-R3	5/4/2010	SWNSH-3B-CAN2-L	0		151		9.5	710	9.60	4	8.1
TECKSWR3	SWNSH-3-CAN1-L	CAN1-NSH-L-R3	6/6/2010	SWNSH-3-CAN1-L	0								
TECKSWR3	SWNSH-3-CAN1-R	CAN1-NSH-R-R3	6/6/2010	SWNSH-3-CAN1-R	0	0.6	162		10.26	91		2	8
TECKSWR3	SWNSH-3C-CAN2-L	CAN2-NSH-L-R3	5/11/2010	SWNSH-3C-CAN2-L	0		165		10.4	773	8.8	7.4	7.46
TECKSWR3	SWNSH-3D-CAN2-L	CAN2-NSH-L-R3	5/18/2010	SWNSH-3D-CAN2-L	0		137		11.3	710	9.0	9.8	7.82
TECKSWR3	SWNSH-3E-CAN2-L	CAN2-NSH-L-R3	5/25/2010	SWNSH-3E-CAN2-L	0		164		10.7	786	11.71	4	8
TECKSWR3	SWNSH-3F-CAN2-L	CAN2-NSH-L-R3	6/1/2010	SWNSH-3F-CAN2-L	0		156		11.3	726	11.71	7.7	8.02
TECKSWR3	SWNSH-3G-CAN2-L	CAN2-NSH-L-R3	6/8/2010	SWNSH-3G-CAN2-L	0		171		12	775	11.74	8	7.46
TECKSWR3	SWNSH-3-TC1-L	TC1-NSH-L-R3	6/10/2010	SWNSH-3-TC1-L	0		230		12.3	133	11.2	4	7.9
TECKSWR3	SWNSH-3-TC1-LDISA	TC1-NSH-L(d)-R3	6/10/2010	SWNSH-3-TC1-LDISA	1		235		12.2	133	11.4	3	7.9
TECKSWR3	SWNSH-3-TC1-LDISB	TC1-NSH-L(d)-R3	6/10/2010	SWNSH-3-TC1-LDISB	2								
TECKSWR3	SWNSH-3-TC1-LDISC	TC1-NSH-L(d)-R3	6/10/2010	SWNSH-3-TC1-LDISC	3								
TECKSWR3	SWNSH-3-TC1-R	TC1-NSH-R-R3	6/9/2010	SWNSH-3-TC1-R	0	0.4	255		11.94	93	12		7.5
TECKSWR3	SWNSH-3-TC1-RDISA	TC1-NSH-R(d)-R3	6/10/2010	SWNSH-3-TC1-RDISA	1		232		11.76	133	11.7		7.8
TECKSWR3	SWNSH-3-TC1-RDISB	TC1-NSH-R(d)-R3	6/10/2010	SWNSH-3-TC1-RDISB	2								
TECKSWR3	SWNSH-3-TC1-RDISC	TC1-NSH-R(d)-R3	6/10/2010	SWNSH-3-TC1-RDISC	3								
TECKSWR3	SWNSH-3-TC2-L	TC2-NSH-L-R3	6/11/2010	SWNSH-3-TC2-L	0		282	0.1	12	128	12	6	7.6
TECKSWR3	SWNSH-3-TC2-LDISA	TC2-NSH-L(d)-R3	6/11/2010	SWNSH-3-TC2-LDISA	1		291	0.1	12	127	12	4	7.65
TECKSWR3	SWNSH-3-TC2-LDISB	TC2-NSH-L(d)-R3	6/11/2010	SWNSH-3-TC2-LDISB	2								
TECKSWR3	SWNSH-3-TC2-LDISC	TC2-NSH-L(d)-R3	6/11/2010	SWNSH-3-TC2-LDISC	3								
TECKSWR3	SWNSH-3-TC2-R	TC2-NSH-R-R3	6/11/2010	SWNSH-3-TC2-R	0		247		12.5	125	11.3	3	7.5
TECKSWR3	SWNSH-3-TC2-RDISA	TC2-NSH-R(d)-R3	6/11/2010	SWNSH-3-TC2-RDISA	1		261		12.6	126	11	9	7.6
TECKSWR3	SWNSH-3-TC2-RDISB	TC2-NSH-R(d)-R3	6/11/2010	SWNSH-3-TC2-RDISB	2								
TECKSWR3	SWNSH-3-TC2-RDISC	TC2-NSH-R(d)-R3	6/11/2010	SWNSH-3-TC2-RDISC	3								
TECKSWR3	SWNSH-3-TC3-L	TC3-NSH-L-R3	6/12/2010	SWNSH-3-TC3-L	0		248		13	130	10.4	70	7.8
TECKSWR3	SWNSH-3-TC3-LDISA	TC3-NSH-L(d)-R3	6/12/2010	SWNSH-3-TC3-LDISA	1		250		14	130	10.3	3	7.9
TECKSWR3	SWNSH-3-TC3-LDISB	TC3-NSH-L(d)-R3	6/12/2010	SWNSH-3-TC3-LDISB	2								
TECKSWR3	SWNSH-3-TC3-LDISC	TC3-NSH-L(d)-R3	6/12/2010	SWNSH-3-TC3-LDISC	3								
TECKSWR3	SWNSH-3-TC3-R	TC3-NSH-R-R3	6/12/2010	SWNSH-3-TC3-R	0		244		13	125	10.4	1	7.7
TECKSWR3	SWNSH-3-TC3-RDISA	TC3-NSH-R(d)-R3	6/12/2010	SWNSH-3-TC3-RDISA	1		252	0.1	13.0	124	10.4	2	7.75
TECKSWR3	SWNSH-3-TC3-RDISB	TC3-NSH-R(d)-R3	6/12/2010	SWNSH-3-TC3-RDISB	2								
TECKSWR3	SWNSH-3-TC3-RDISC	TC3-NSH-R(d)-R3	6/12/2010	SWNSH-3-TC3-RDISC	3								
TECKSWR3	SWNSH-3-TC4-L	TC4-NSH-L-R3	6/13/2010	SWNSH-3-TC4-L	0		240	0.1	19.4	114	11	5	7.8
TECKSWR3	SWNSH-3-TC4-LDISA	TC4-NSH-L(d)-R3	6/13/2010	SWNSH-3-TC4-LDISA	1		242	0.1	18	114	11	0.2	7.8
TECKSWR3	SWNSH-3-TC4-LDISB	TC4-NSH-L(d)-R3	6/13/2010	SWNSH-3-TC4-LDISB	2								
TECKSWR3	SWNSH-3-TC4-LDISC	TC4-NSH-L(d)-R3	6/13/2010	SWNSH-3-TC4-LDISC	3								
TECKSWR3	SWNSH-3-TC4-R	TC4-NSH-R-R3	6/13/2010	SWNSH-3-TC4-R	0		248	0.1	14.3	116	10.8	23	7.7
TECKSWR3	SWNSH-3-TC5-L	TC5-NSH-L-R3	6/14/2010	SWNSH-3-TC5-L	0	0.5	232		16.6	115	9.6	18	7.56
TECKSWR3	SWNSH-3-TC5-LDISA	TC5-NSH-L(d)-R3	6/14/2010	SWNSH-3-TC5-LDISA	1	0.33	230		16.8	103	10	14	7.5
TECKSWR3	SWNSH-3-TC5-LDISB	TC5-NSH-L(d)-R3	6/14/2010	SWNSH-3-TC5-LDISB	2								
TECKSWR3	SWNSH-3-TC5-LDISC	TC5-NSH-L(d)-R3	6/14/2010	SWNSH-3-TC5-LDISC	3								
TECKSWR3	SWNSH-3-TC5-R	TC5-NSH-R-R3	6/14/2010	SWNSH-3-TC5-R	0	0.5	231		16	120	10.5	18	7.75
TECKSWR3	SWNSH-3-TC5-RDISA	TC5-NSH-R(d)-R3	6/14/2010	SWNSH-3-TC5-RDISA	1	0.5	231		15.8	120	10.5	14	7.74
TECKSWR3	SWNSH-3-TC5-RDISB	TC5-NSH-R(d)-R3	6/14/2010	SWNSH-3-TC5-RDISB	2								
TECKSWR3	SWNSH-3-TC5-RDISC	TC5-NSH-R(d)-R3	6/14/2010	SWNSH-3-TC5-RDISC	3								
TECKSWR3	SWNSH-3-TC6-LA	TC6-NSH-L-R3	6/15/2010	SWNSH-3-TC6-LA	1	0.4	177		17	107	9.4	36	7.8
TECKSWR3	SWNSH-3-TC6-LB	TC6-NSH-L-R3	6/15/2010	SWNSH-3-TC6-LB	2								
TECKSWR3	SWNSH-3-TC6-LC	TC6-NSH-L-R3	6/15/2010	SWNSH-3-TC6-LC	3								
TECKSWR3	SWNSH-3-TC6-LDISA	TC6-NSH-L(d)-R3	6/15/2010	SWNSH-3-TC6-LDISA	1	0.7	169		17.5	106	9.4	26	7.8
TECKSWR3	SWNSH-3-TC6-LDISB	TC6-NSH-L(d)-R3	6/15/2010	SWNSH-3-TC6-LDISB	2								
TECKSWR3	SWNSH-3-TC6-LDISC	TC6-NSH-L(d)-R3	6/15/2010	SWNSH-3-TC6-LDISC	3								
TECKSWR3	SWNSH-3-TC6-R	TC6-NSH-R-R3	6/15/2010	SWNSH-3-TC6-R	0	0.3	167		17.7	108	10.3	23	8
TECKSWR3	SWNSH-3-TC6-RDISA	TC6-NSH-R(d)-R3	6/15/2010	SWNSH-3-TC6-RDISA	1	0.8	166		16.5	110	10.6	5	8
TECKSWR3	SWNSH-3-TC6-RDISB	TC6-NSH-R(d)-R3	6/15/2010	SWNSH-3-TC6-RDISB	2								
TECKSWR3	SWNSH-3-TC6-RDISC	TC6-NSH-R(d)-R3	6/15/2010	SWNSH-3-TC6-RDISC	3								
TECKSWR3	SWNSH-3-TC7-L	TC7-NSH-L-R3	6/17/2010	SWNSH-3-TC7-L	0	0.5	238		16	115	7	1	7.9

Table H-3. Field Measurements made during the Third Round of Surface Water Sampling (Summer 2010

Survey	Sample Number	Survey Station	Date	Sample ID	Field Replicate	Depth to Water Level (m total)	Oxidation Reduction Potential (mV total)	Total Dissolved Solids (g/L total)	Temperature (degC total)	Conductivity (µS/cm total)	Dissolved Oxygen (mg/L total)	Turbidity (NTU total)	pH (pH total)
TECKSWR3	SWNSH-3-TC7-LDISA	TC7-NSH-L(d)-R3	6/17/2010	SWNSH-3-TC7-LDISA	1	0.5	237		15.7	114	8	0.4	7.95
TECKSWR3	SWNSH-3-TC7-LDISB	TC7-NSH-L(d)-R3	6/17/2010	SWNSH-3-TC7-LDISB	2								
TECKSWR3	SWNSH-3-TC7-LDISC	TC7-NSH-L(d)-R3	6/17/2010	SWNSH-3-TC7-LDISC	3								
TECKSWR3	SWNSH-3-TC7-R	TC7-NSH-R-R3	6/17/2010	SWNSH-3-TC7-R	0	0.4	233		15.6	119	7.7	0	7.86
TECKSWR3	SWNSH-3-TC7-RDISA	TC7-NSH-R(d)-R3	6/17/2010	SWNSH-3-TC7-RDISA	1	0.4	239		16	119	7.6	0.5	7.9
TECKSWR3	SWNSH-3-TC7-RDISB	TC7-NSH-R(d)-R3	6/17/2010	SWNSH-3-TC7-RDISB	2								
TECKSWR3	SWNSH-3-TC7-RDISC	TC7-NSH-R(d)-R3	6/17/2010	SWNSH-3-TC7-RDISC	3								
TECKSWR3	SWNSH-3-TC8-LDISA	TC8-NSH-L(d)-R3	6/9/2010	SWNSH-3-TC8-LDISA	1	0.6	252		11.9	94	12.5	32	7.5
TECKSWR3	SWNSH-3-TC8-LDISB	TC8-NSH-L(d)-R3	6/9/2010	SWNSH-3-TC8-LDISB	2								
TECKSWR3	SWNSH-3-TC8-LDISC	TC8-NSH-L(d)-R3	6/9/2010	SWNSH-3-TC8-LDISC	3								
TECKSWR3	SWNSH-3-TC9-L	TC9-NSH-L-R3	6/7/2010	SWNSH-3-TC9-L	0	0.5			12	121		4	8.4
TECKSWR3	SWNSH-3-TC9-R	TC9-NSH-R-R3	6/8/2010	SWNSH-3-TC9-R	0	0.4			11.1	117	9	2	8.45