

172 Characterization of Preferential Ground-Water Seepage to West Branch Canal Creek, APG, Maryland

Appendix 3C. Concentrations of tetrachloroethene plus pentachloroethane for passive-diffusion bag samples and surface-water samples in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 2003.

[µg/L, micrograms per liter; NR, no replicate sample analyzed; <, less than; >, greater than; MA, multiple analyses from the same sample (see footnote D at bottom of table); See laboratory qualifiers description at bottom of table; --, compound was not analyzed in the sample; NA, not applicable; WB PDS, West Branch Canal Creek passive-diffusion bag sample; WB PEEPER, West Branch Canal Creek peeper sample; WB SW, West Branch Canal Creek surface-water sample.]

Seep	Sample name	Replicate	Collection date	Collection time	^F Tetrachloroethene plus pentachloroethane (µg/L)
March 2003 -- Quality-Control and Quality-Assurance Samples [CB, construction blank; DB or DP, deployment blank; EB, equipment blank; -1, primary sample; -2, secondary sample]					
-	CB031303-1	NR	3/13/2003	--	<0.5 x,E
-	DP031303-1	NR	3/13/2003	--	<0.5 x,E
-	CB031403-1	NR	3/14/2003	--	<0.5 E
-	DP031403-1	NR	3/14/2003	--	<0.5 E
-	CB032403-1	NR	3/24/2003	--	<0.5 E
-	DP032503-1	NR	3/25/2003	--	<0.5 E
-	CB032603-1	NR	3/26/2003	--	<0.5 E
-	DP032603-1	1	3/26/2003	--	<0.5 E
-	DP032603-2	2	3/26/2003	--	<0.5 E
-	DP032703-1	NR	3/27/2003	--	<0.5 E
-	CB032803-1	NR	3/28/2003	--	<0.5 E
-	DP033003-1	NR	3/30/2003	--	<0.5 E
-	DP033103-1	NR	3/31/2003	--	<0.5 E
-	EB031303-1	NR	3/13/2003	--	<0.5 x,E
-	EBSW040403-1	NR	4/3/2003	0800	<0.5 E
March 2003 -- Passive-Diffusion Samples [DS47, passive-diffusion sampler location 47; -A1, bag A primary sample; -B2, bag B secondary sample; a, second sample from bottle; b, third sample from bottle]					
2-3E	DS47-A1	NR	4/4/2003	0950	<2.5 E
2-3E	DS47-B1	NR	4/4/2003	0950	<0.5 E
2-3E	DS48-A1	NR	4/4/2003	0955	<1.7 E
2-3E	DS48-B1	1	4/4/2003	0955	<0.5 E
2-3E	DS48-B2	2	4/4/2003	0955	<0.5 E
2-3E	DS49-A1	NR	4/4/2003	1000	<1.7 E
2-3E	DS49-B1	NR	4/4/2003	1000	<0.5 E
2-3E	DS50-A1	NR	4/4/2003	1005	<1.7 E
2-3E	DS50-B1	NR	4/4/2003	1005	<0.5 E
2-3E	DS51-A1	NR	4/4/2003	1010	<1.7 E
2-3E	DS51-B1	NR	4/4/2003	1010	<0.5 E
2-3E	DS52-A1	NR	4/4/2003	1015	<1.7 E
2-3E	DS52-B1	NR	4/4/2003	1015	<0.5 E
2-3E	DS53-A1	1	4/4/2003	1020	<2.5 E
2-3E	DS53-A2	2	4/4/2003	1020	<0.5 x,E

Appendix 3C. Concentrations of tetrachloroethene plus pentachloroethane for passive-diffusion bag samples and surface-water samples in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 2003.—Continued

[$\mu\text{g/L}$, micrograms per liter; NR, no replicate sample analyzed; <, less than; >, greater than; MA, multiple analyses from the same sample (see footnote D at bottom of table); See laboratory qualifiers description at bottom of table; --, compound was not analyzed in the sample; NA, not applicable; WB PDS, West Branch Canal Creek passive-diffusion bag sample; WB PEEPER, West Branch Canal Creek peeper sample; WB SW, West Branch Canal Creek surface-water sample.]

Seep	Sample name	Replicate	Collection date	Collection time	Tetrachloroethene plus pentachloroethane ($\mu\text{g/L}$)	
2-3E	DS53-B1	1	4/4/2003	1020	<0.5	E
2-3E	DS53-B2	2	4/4/2003	1020	<0.5	x,E
2-3E	DS54-A1	1	4/4/2003	0905	<0.5	E
2-3E	DS54-A2	2	4/4/2003	0905	<0.5	x,E
2-3E	DS54-B1	1	4/4/2003	0905	<2.5	E
2-3E	DS54-B2	2	4/4/2003	0905	<0.5	x,E
2-3E	DS55-A1	1	4/4/2003	0910	<2.5	E
2-3E	DS55-A2	2	4/4/2003	0910	<0.5	E
2-3E	DS55-B1	NR	4/4/2003	0910	<0.5	E
2-3E	DS56-A1	NR	4/4/2003	0915	<1.7	E
2-3E	DS56-B1	NR	4/4/2003	0915	<0.5	E
2-3E	DS57-A1	NR	4/4/2003	0920	<1.7	E
2-3E	DS57-B1	NR	4/4/2003	0920	<0.5	E
2-3E	DS58-A1	NR	4/4/2003	0925	<1.7	E
2-3E	DS58-B1	NR	4/4/2003	0925	<0.5	E
2-7W	DS59-A1	NR	4/4/2003	1110	<1.7	E
2-7W	DS59-B1	NR	4/4/2003	1110	<0.5	E
2-7W	DS60-A1	NR	4/4/2003	1115	<1.7	E
2-7W	DS60-B1	NR	4/4/2003	1115	<0.5	E
2-7W	DS61-A1	NR	4/4/2003	1120	<1.7	E
2-7W	DS61-B1	NR	4/4/2003	1120	<0.5	E
2-7W	DS62-A1	NR	4/4/2003	1125	<1.7	E
2-7W	DS62-B1	NR	4/4/2003	1125	<0.5	E
2-7W	DS63-A1	NR	4/4/2003	1130	<1.7	E
2-7W	DS63-B1	NR	4/4/2003	1130	<0.5	E
2-7W	DS64-A1	1	4/4/2003	1135	<1.7	E
2-7W	DS64-A2	2	4/4/2003	1135	<0.5	E
2-7W	DS64-B1	NR	4/4/2003	1135	<0.5	E
2-7W	DS65-A1	1	4/4/2003	1140	<10.0	E
2-7W	DS65-A2	2	4/4/2003	1140	<0.5	x,E
2-7W	DS65-B1	1	4/4/2003	1140	<0.5	E
2-7W	DS65-B2	2	4/4/2003	1140	<0.5	x,E
2-7W	DS66-A1	NR	4/4/2003	0830	<1.7	E
2-7W	DS66-B1	NR	4/4/2003	0830	<0.5	E
2-7W	DS67-A1	NR	4/4/2003	0840	<1.7	E

Appendix 3C. Concentrations of tetrachloroethene plus pentachloroethane for passive-diffusion bag samples and surface-water samples in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 2003.—Continued

[µg/L, micrograms per liter; NR, no replicate sample analyzed; <, less than; >, greater than; MA, multiple analyses from the same sample (see footnote D at bottom of table); See laboratory qualifiers description at bottom of table; --, compound was not analyzed in the sample; NA, not applicable; WB PDS, West Branch Canal Creek passive-diffusion bag sample; WB PEEPER, West Branch Canal Creek peeper sample; WB SW, West Branch Canal Creek surface-water sample.]

Seep	Sample name	Replicate	Collection date	Collection time	F Tetrachloroethene plus pentachloroethane (µg/L)	
2-7W	DS67-B1	1	4/4/2003	0840	<0.5	E
2-7W	DS67-B2	2	4/4/2003	0840	<0.5	E
2-7W	DS68-A1	NR	4/4/2003	0850	<1.7	E
2-7W	DS68-B1	NR	4/4/2003	0850	<0.5	E
3-1E	DS153-A1	NR	4/3/2003	--	<0.5	E
3-1E	DS153-B1	NR	4/3/2003	0925	<0.5	E
3-1E	DS154-A1	NR	4/3/2003	--	<0.5	E
3-1E	DS154-B1	1	4/3/2003	0931	<2.5	E
3-1E	DS154-B2	2	4/3/2003	0935	<0.5	E
3-1E	DS155-A1	NR	4/3/2003	0944	<2.5	E
3-1E	DS155-B1	NR	4/3/2003	--	<0.5	E
3-1E	DS156-A1	NR	4/3/2003	--	<2.5	E
3-1E	DS156-B1	NR	4/3/2003	0950	<2.5	E
3-1E	DS157-A1	NR	4/3/2003	0958	<0.5	E
3-1E	DS157-B1	NR	4/3/2003	--	<0.5	E
3-1E	DS158-A1	1	4/3/2003	--	<0.5	E
3-1E	DS158-A2	2	4/3/2003	1007	<0.5	E
3-1E	DS158-B1	NR	4/3/2003	1002	<0.5	E
3-1E	DS159-A1	NR	4/3/2003	--	<0.5	E
3-1E	DS159-B1	NR	4/3/2003	1008	<0.5	E
3-1E	DS160-A1	NR	4/3/2003	--	<0.5	E
3-1E	DS160-B1	NR	4/3/2003	--	<0.5	E
3-1E	DS161-A1	1	4/3/2003	1022	<0.5	E
3-1E	DS161-A2	2	4/3/2003	1022	<2.5	x,E
3-1E	DS161-B1	1	4/3/2003	--	<2.5	E
3-1E	DS161-B2	2	4/3/2003	1022	<2.5	x,E
3-1E	DS162-A1	NR	4/3/2003	1027	<0.5	E
3-1E	DS162-B1	1	4/3/2003	--	<0.5	E
3-1E	DS162-B2	2	4/3/2003	1029	<0.5	E
3-4W	DS163-A1	1	4/3/2003	--	219	E
3-4W	DS163-A2	2	4/3/2003	1359	264	x,E
3-4W	DS163-B1	1	4/3/2003	--	220	E
3-4W	DS163-B2	2	4/3/2003	1359	260	x,E
3-4W	DS164-A1	NR	4/3/2003	1335	1,020	E

Appendix 3C. Concentrations of tetrachloroethene plus pentachloroethane for passive-diffusion bag samples and surface-water samples in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 2003.—Continued

[µg/L, micrograms per liter; NR, no replicate sample analyzed; <, less than; >, greater than; MA, multiple analyses from the same sample (see footnote D at bottom of table); See laboratory qualifiers description at bottom of table; --, compound was not analyzed in the sample; NA, not applicable; WB PDS, West Branch Canal Creek passive-diffusion bag sample; WB PEEPER, West Branch Canal Creek peeper sample; WB SW, West Branch Canal Creek surface-water sample.]

Seep	Sample name	Replicate	Collection date	Collection time	F Tetrachloroethene plus pentachloroethane (µg/L)	
3-4W	DS164-B1	1	4/3/2003	1335	1,250	E
3-4W	DS164-B2	2	4/3/2003	--	1,320	E
3-4W	DS165-A1	1	4/3/2003	1329	<100	E
3-4W	DS165-A2	2	4/3/2003	--	<0.5	E
3-4W	DS165-B1	NR	4/3/2003	1330	<10.0	E
3-4W	DS166-A1	NR	4/3/2003	--	<0.5	E
3-4W	DS166-B1	NR	4/3/2003	1405	<0.5	E
3-4W	DS167-A1	NR	4/3/2003	1341	<0.5	E
3-4W	DS167-B1	NR	4/3/2003	--	<0.5	E
3-4W	DS168-A1	NR	4/3/2003	--	<0.5	E
3-4W	DS169-A1	NR	4/3/2003	1348	<0.5	E
3-4W	DS169-B1	NR	4/3/2003	1350	<0.5	E
3-4W	DS170-A1	NR	4/3/2003	1409	<0.5	E
3-4W	DS171-A1	1	4/3/2003	1417	<0.5	E
3-4W	DS171-A2	2	4/3/2003	1417	<0.5	E
3-4W	DS171-B1	1	4/3/2003	1419	<0.5	E
3-4W	DS171-B2	2	4/3/2003	1428	<0.5	E
3-4W	DS172-A1	NR	4/3/2003	1426	<0.5	E
3-4W	DS173-A1	NR	4/3/2003	1247	<1.0	E
3-4W	DS173-B1	NR	4/3/2003	1249	<0.5	E
3-4W	DS174-A1	NR	4/3/2003	1305	<10.0	E
3-4W	DS174-B1	NR	4/3/2003	1307	<0.5	E
3-4W	DS175-A1	NR	4/3/2003	1315	<10.0	E
3-4W	DS175-B1	1	4/3/2003	1317	<0.5	E
3-4W	DS175-B2	2	4/3/2003	1317	<0.5	E
3-4W	DS176-A1	NR	4/3/2003	1321	<1.0	E
3-4W	DS176-B1	1	4/3/2003	1323	0.7	E
3-4W	DS176-B2	2	4/3/2003	--	<0.5	E
3-5E	DS177-A1	NR	4/3/2003	1056	3.6	E
3-5E	DS177-B1	NR	4/3/2003	1058	3.8	E
3-5E	DS178-A1	NR	4/3/2003	--	<0.5	E
3-5E	DS178-B1	NR	4/3/2003	--	<0.5	E
3-5E	DS179-A1	1	4/3/2003	--	>250	E

Appendix 3C. Concentrations of tetrachloroethene plus pentachloroethane for passive-diffusion bag samples and surface-water samples in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 2003.—Continued

[$\mu\text{g/L}$, micrograms per liter; NR, no replicate sample analyzed; <, less than; >, greater than; MA, multiple analyses from the same sample (see footnote D at bottom of table); See laboratory qualifiers description at bottom of table; --, compound was not analyzed in the sample; NA, not applicable; WB PDS, West Branch Canal Creek passive-diffusion bag sample; WB PEEPER, West Branch Canal Creek peeper sample; WB SW, West Branch Canal Creek surface-water sample.]

Seep	Sample name	Replicate	Collection date	Collection time	Tetrachloroethene plus pentachloroethane ($\mu\text{g/L}$)	
3-5E	DS179-A2	2	4/3/2003	1107	<1,200	E
3-5E	DS179-A3	3	4/3/2003	1107	<1,200	E
3-5E	DS179-A3	3, MA	4/3/2003	1107	<1,000	E
3-5E	DS179-A1	1	6/16/2003	--	NA	
3-5E	DS179-A2	2	6/16/2003	--	NA	
3-5E	DS179-B1	1	4/3/2003	1109	802	E
3-5E	DS179-B1	1, MA	4/3/2003	1109	<1,200	E
3-5E	DS179-B1	1, MA	4/3/2003	1109	<1,000	E
3-5E	DS179-B2	2	4/3/2003	1109	<1,000	E
3-5E	DS179-B2	2, MA	4/3/2003	1109	<1,200	E
3-5E	DS179-B2	2, MA	4/3/2003	1109	<1,000	E
3-5E	DS179-B3	3	4/3/2003	1109	<1,200	E
3-5E	DS179-B3	3, MA	4/3/2003	1109	<1,000	E
3-5E	DS179-B1	NR	6/16/2003	--	NA	
3-5E	DS180-A1	NR	4/3/2003	--	1.7	E
3-5E	DS180-B1	1	4/3/2003	1112	<25.0	E
3-5E	DS180-B2	2	4/3/2003	--	<50.0	E
3-5E	DS181-A1	NR	4/3/2003	1249	<10.0	E
3-5E	DS181-A1	NR, MA	4/3/2003	1249	<2.5	E
3-5E	DS181-B1	NR	4/3/2003	1123	1.8	E
3-5E	DS182-A1	NR	4/3/2003	1120	2.4	E
3-5E	DS182-B1	NR	4/3/2003	1120	<10.0	E
3-7E	DS183-A1	NR	4/4/2003	1310	<2.5	E
3-7E	DS183-B1	1	4/4/2003	1310	<0.5	E
3-7E	DS183-B2	2	4/4/2003	1310	<0.5	E
3-7E	DS184-A1	NR	4/4/2003	1315	<1.0	E
3-7E	DS184-B1	NR	4/4/2003	1315	<0.5	E
3-7E	DS185-A1	NR	4/4/2003	1320	<1.0	E
3-7E	DS185-B1	NR	4/4/2003	1320	<0.5	E
3-7E	DS186-A1	NR	4/4/2003	1325	<1.0	E
3-7E	DS186-B1	NR	4/4/2003	1325	<0.5	E
3-7E	DS187-A1	1	4/4/2003	1330	<1.0	E
3-7E	DS187-A2	2	4/4/2003	1330	<0.5	E
3-7E	DS187-B1	NR	4/4/2003	1330	<0.5	E
3-7E	DS188-A1	NR	4/4/2003	1335	<1.7	E

Appendix 3C. Concentrations of tetrachloroethene plus pentachloroethane for passive-diffusion bag samples and surface-water samples in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 2003.—Continued

[µg/L, micrograms per liter; NR, no replicate sample analyzed; <, less than; >, greater than; MA, multiple analyses from the same sample (see footnote D at bottom of table); See laboratory qualifiers description at bottom of table; --, compound was not analyzed in the sample; NA, not applicable; WB PDS, West Branch Canal Creek passive-diffusion bag sample; WB PEEPER, West Branch Canal Creek peeper sample; WB SW, West Branch Canal Creek surface-water sample.]

Seep	Sample name	Replicate	Collection date	Collection time	Tetrachloroethene plus pentachloroethane (µg/L)	
3-7E	DS188-B1	NR	4/4/2003	1335	<0.5	E
3-7E	DS189-A1	1	4/4/2003	1340	<2.5	E
3-7E	DS189-A2	2	4/4/2003	1340	0.9	x, E
3-7E	DS189-B1	1	4/4/2003	1340	<1.0	E
3-7E	DS189-B2	2	4/4/2003	1340	0.9	x, E
3-7E	DS190-A1	NR	4/4/2003	1345	12.7	E
3-7E	DS190-B1	NR	4/4/2003	1345	12.1	E

March 2003 -- Surface-water samples [SWDS54, surface water location 54; -1, primary sample; -2, secondary sample]

2-3E	SWDS54-1	1	4/4/2003	0940	1.1	E
2-3E	SWDS54-2	2	4/4/2003	0940	<0.5	E
2-7W	SWDS65-1	NR	4/4/2003	0900	<0.5	E
3-1E	SWDS155-1	NR	4/3/2003	0905	<0.5	E
3-4W	SWDS164-1	1	4/3/2003	--	187	E
3-4W	SWDS164-2	2	4/3/2003	1241	194	x, E
3-4W	SWDS174-1	1	4/3/2003	--	<50.0	E
3-4W	SWDS174-2	2	4/3/2003	--	<10.0	E
3-5E	SWDS179-1	NR	6/16/2003	--	NA	
3-5E	SWDS182-1	1	4/3/2003	1044	<10.0	E
3-5E	SWDS182-2	2	4/3/2003	1044	<10.0	x, E
3-7E	SWDS189-1	1	4/4/2003	1300	<10.0	E
3-7E	SWDS189-2	2	4/4/2003	1300	<0.5	E

March 2003 -- Quality-Control and Quality-Assurance Samples [TB, trip blank; -1, primary sample; -2, secondary sample]

-	TB031303-1	NR	3/13/2003	--	<0.5	x, E
-	TB031403-1	NR	3/14/2003	--	<0.5	E
-	TB032403-1	NR	3/24/2003	--	<0.5	E
-	TB032603-1	1	3/26/2003	--	<0.5	E
-	TB032603-2	2	3/26/2003	--	<0.5	E
-	TB032703-1	NR	3/27/2003	--	<0.5	E
-	TB032803-1	NR	3/28/2003	--	<0.5	E
-	TB033103-1	NR	3/31/2003	--	<0.5	E
-	TB040303-1	NR	4/3/2003	--	<0.5	E

Appendix 3C. Concentrations of tetrachloroethene plus pentachloroethane for passive-diffusion bag samples and surface-water samples in the West Branch Canal Creek study area, Aberdeen Proving Ground, Maryland, March 2003.—Continued

[µg/L, micrograms per liter; NR, no replicate sample analyzed; <, less than; >, greater than; MA, multiple analyses from the same sample (see footnote D at bottom of table); See laboratory qualifiers description at bottom of table; --, compound was not analyzed in the sample; NA, not applicable; WB PDS, West Branch Canal Creek passive-diffusion bag sample; WB PEEPER, West Branch Canal Creek peeper sample; WB SW, West Branch Canal Creek surface-water sample.]

Seep	Sample name	Replicate	Collection date	Collection time	^F Tetrachloroethene plus pentachloroethane (µg/L)
-	TB040403-1	NR	4/4/2003	0700	<0.5 E

^D MA indicates that multiple samples have been analyzed from the same sample bottle. Concentrations of samples marked as multiple analysis samples may have lower concentrations due to volatilization of constituents out of the water sample and into head space introduced into the sample bottle after the first aliquot is removed from the sample bottle.

^F For spring 2003 samples (PDS, SWDS, and QA/QC), pentachloroethane (PCA) may have partially degraded to tetrachloroethene (PCE) during some of the analyses. Therefore, for the affected samples, the sum of PCA and PCE was computed by converting concentrations in µg/L to total molar mass based on a 1:1 stoichiometric ratio of PCA to PCE and molecular weights of 202.29 and 165.83 micrograms per micromole (µg/µmol), respectively. The total molar mass, in units of µmol/L, was then converted back to concentration in µg/L based on the molecular weight of PCE.

Laboratory Qualifiers:

B Compound was detected in the associated field (equipment) blank. Concentrations in the sample may be biased high based on the analyte concentration in the blank.

x indicates that the recommended 14-day holding time was exceeded for this sample, which could result in losses for some or all compounds.

V indicates possible positive bias due to suspected laboratory contamination.

H indicates possible positive bias based on an unacceptably high response for this compound in one or more calibration checks for this batch of samples.

L indicates possible negative bias based on an unacceptably low response for this compound in one or more calibration checks for this batch of samples.

E indicates estimated concentration.

NV indicates that library check was performed but did not verify compound identity based on criteria of greater than or equal to 40-percent quality match.