

Appendix 8. Detection frequencies and median concentrations for selected volatile organic compounds in samples from domestic wells.

[µg/L, micrograms per liter; ND, compound not detected; <, less than; --, not applicable]

Compound name	Number of samples	Detection frequency at selected assessment levels ¹ (percent)		Number of samples	Detection frequency at selected assessment levels ² (percent)				Median concentration ³ (µg/L)	
		No assessment level	0.02 µg/L		0.2 µg/L	1 µg/L	5 µg/L	10 µg/L	All samples	Samples with detections
Fumigants										
Bromomethane	1,208	ND	ND	2,156	ND	ND	ND	ND	<0.20	--
Dibromochloropropane	1,208	0.25	0.25	1,962	0.71	0.51	ND	ND	<.50	1.4
1,4-Dichlorobenzene	1,208	1.9	.41	2,399	.083	.083	ND	ND	<.20	.011
1,2-Dichloropropane	1,207	.75	.58	2,400	.58	.29	0.12	0.042	<.20	.30
<i>cis</i> -1,3-Dichloropropene	1,208	ND	ND	2,156	ND	ND	ND	ND	<.10	--
<i>trans</i> -1,3-Dichloropropene	1,207	ND	ND	2,155	ND	ND	ND	ND	<.13	--
Ethylene dibromide	1,207	ND	ND	2,085	.14	.048	ND	ND	<.04	.55
1,2,3-Trichloropropane	1,208	.17	.17	2,092	.43	ND	ND	ND	<.20	.38
Gasoline hydrocarbons										
Benzene	1,208	3.1	1.2	2,401	0.21	0.042	ND	ND	<0.20	0.015
<i>n</i> -Butylbenzene	1,208	.17	.17	1,932	ND	ND	ND	ND	<.19	.038
Ethylbenzene	1,208	.58	.33	2,401	.12	.083	0.042	ND	<.12	.041
Isopropylbenzene	1,208	.75	.33	1,932	.10	ND	ND	ND	<.050	.019
Naphthalene	1,208	.25	.25	1,939	.15	.10	ND	ND	<.20	1.1
Styrene	1,202	2.2	.25	2,395	ND	ND	ND	ND	<.17	.014
Toluene	1,203	17.9	10.7	2,386	1.0	.21	.042	0.042	<.20	.026
1,2,4-Trimethylbenzene	1,190	15.2	8.5	1,876	.32	.053	.053	.053	<.056	.020
<i>o</i> -Xylene	1,205	.66	.41	1,214	ND	ND	ND	ND	<.050	.038
<i>m</i> - and <i>p</i> -Xylenes ⁴	1,206	2.3	1.0	1,208	ND	ND	ND	ND	<.060	.018
Total xylenes ⁵	1,206	2.5	1.1	2,388	.21	.042	.042	.042	<.060	.020
Gasoline oxygenates										
<i>tert</i> -Amyl methyl ether	1,206	0.50	0.50	1,215	0.082	ND	ND	ND	<0.11	0.10
Diisopropyl ether	1,096	.36	.36	1,105	.090	0.090	0.090	0.090	<.10	.14
Ethyl <i>tert</i> -butyl ether	1,206	ND	ND	1,215	ND	ND	ND	ND	<.054	--
Methyl <i>tert</i> -butyl ether	1,208	5.5	5.5	1,931	2.9	.98	.21	.052	<.17	.30
Organic synthesis compounds										
Acrolein	445	ND	ND	450	ND	ND	ND	ND	<2.0	--
Acrylonitrile	1,206	ND	ND	1,220	ND	ND	ND	ND	<1.2	--
1,1-Dichloroethene	1,207	1.6	1.1	2,400	0.21	0.12	0.083	0.042	<.18	0.026
Hexachlorobutadiene	1,208	ND	ND	1,939	ND	ND	ND	ND	<.20	--
1,2,3-Trichlorobenzene	1,208	ND	ND	1,932	ND	ND	ND	ND	<.20	--
Vinyl bromide	1,206	ND	ND	1,215	ND	ND	ND	ND	<.10	--
Vinyl chloride	1,208	.083	.083	2,401	.083	.042	ND	ND	<.20	.74

Appendix 8. Detection frequencies and median concentrations for selected volatile organic compounds in samples from domestic wells.—Continued

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Compound name	Number of samples	Detection frequency at selected assessment levels ¹ (percent)		Number of samples	Detection frequency at selected assessment levels ² (percent)				Median concentration ³ (µg/L)	
		No assessment level	0.02 µg/L		0.2 µg/L	1 µg/L	5 µg/L	10 µg/L	All samples	Samples with detections
Refrigerants										
Dichlorodifluoromethane	1,208	3.6	3.6	2,401	1.4	0.17	ND	ND	<0.20	0.27
Trichlorofluoromethane	1,208	1.9	1.6	2,401	.62	.17	ND	ND	<.20	.16
Trichlorotrifluoroethane	1,207	.50	.33	2,083	.19	.048	ND	ND	<.060	.17
Solvents										
Carbon tetrachloride	1,207	1.1	0.75	2,400	0.21	0.042	ND	ND	<0.20	0.043
Chlorobenzene	1,208	1.3	.17	2,401	.042	.042	ND	ND	<.11	.0040
Chloroethane	1,207	.33	.33	2,155	.093	ND	ND	ND	<.12	.060
Chloromethane	1,207	9.7	7.3	2,059	.97	.097	ND	ND	<.20	.030
1,2-Dichlorobenzene	1,208	.33	.25	2,391	.042	.042	ND	ND	<.19	.092
1,3-Dichlorobenzene	1,208	.50	.17	1,894	ND	ND	ND	ND	<.054	.0096
1,1-Dichloroethane	1,207	2.2	2.0	2,400	.29	.042	ND	ND	<.20	.073
1,2-Dichloroethane	1,208	.17	.17	2,383	.21	.13	ND	ND	<.20	1.3
<i>cis</i> -1,2-Dichloroethene	1,207	.91	.83	2,177	.18	.092	ND	ND	<.050	.087
<i>trans</i> -1,2-Dichloroethene	1,207	ND	ND	2,241	.045	ND	ND	ND	<.050	.20
Hexachloroethane	1,206	ND	ND	1,223	ND	ND	ND	ND	<.19	--
Methylene chloride	1,207	6.1	4.6	2,398	.67	.21	ND	ND	<.20	.029
Perchloroethene	1,179	11.0	6.5	2,371	2.0	.63	0.21	0.17	<.20	.058
<i>n</i> -Propylbenzene	1,208	.25	.25	1,932	.052	ND	ND	ND	<.050	.061
1,2,4-Trichlorobenzene	1,208	ND	ND	1,939	ND	ND	ND	ND	<.20	--
1,1,1-Trichloroethane	1,208	8.5	4.4	2,401	1.4	.21	.042	.042	<.020	.029
1,1,2-Trichloroethane	1,208	.083	.083	2,156	ND	ND	ND	ND	<.10	.028
Trichloroethene	1,207	3.4	2.6	2,400	.92	.46	.25	.21	<.20	.14
Trihalomethanes										
Bromodichloromethane	1,207	2.8	2.3	2,400	0.58	0.25	0.083	ND	<0.19	0.071
Bromoform	1,206	1.8	.66	2,399	.33	.13	.042	ND	<.20	.010
Chloroform	1,207	25.6	18.0	2,400	5.2	1.7	.37	0.17	<.052	.059
Dibromochloromethane	1,207	1.1	1.1	2,400	.50	.17	.042	.042	<.20	.30
Total trihalomethanes ⁵	1,207	26.5	18.0	2,400	5.3	1.8	.42	.21	<.20	.062

¹These detection frequencies are for the subset of samples that were analyzed with the U.S. Geological Survey's low-level method 0–4127–96. At this assessment level, detection frequencies are estimates.⁽¹⁹⁾

²These detection frequencies are for all samples included in this assessment, regardless of the analytical method.

³The analytical methods used for this assessment have varied sensitivity among compounds, and comparison of the median concentrations between compounds is not appropriate. No assessment level was applied to determine the median.

⁴Considered as 2 of the 55 compounds included in this assessment.

⁵Not considered as 1 of the 55 compounds included in this assessment.