

Appendix 6. Detection frequencies and median concentrations for selected volatile organic compounds in samples from aquifer studies.

[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	1,687	ND	ND	3,119	0.032	ND	ND	ND	< 0.20	0.50
Dibromochloropropane	1,687	0.18	0.18	2,518	.71	0.56	ND	ND	< .50	1.4
1,4-Dichlorobenzene	1,687	2.5	.77	3,446	.15	.12	0.058	0.058	< .20	.011
1,2-Dichloropropane	1,686	1.3	1.0	3,497	.71	.31	.086	ND	< .20	.23
<i>cis</i> -1,3-Dichloropropene	1,687	ND	ND	3,118	ND	ND	ND	ND	< .10	--
<i>trans</i> -1,3-Dichloropropene	1,686	ND	ND	3,117	ND	ND	ND	ND	< .13	--
Ethylene dibromide	1,686	ND	ND	2,851	.070	ND	ND	ND	< .10	.72
1,2,3-Trichloropropane	1,687	.59	.59	2,765	.61	.14	ND	ND	< .20	.50
Gasoline hydrocarbons										
Benzene	1,687	4.1	1.7	3,497	0.63	0.23	0.057	0.057	< 0.20	0.020
<i>n</i> -Butylbenzene	1,687	.18	.18	2,461	.041	ND	ND	ND	< .19	.040
Ethylbenzene	1,687	.83	.47	3,497	.26	.17	.057	.029	< .20	.035
Isopropylbenzene	1,687	1.0	.36	2,461	.081	.041	ND	ND	< .032	.014
Naphthalene	1,687	.30	.30	2,509	.16	.12	ND	ND	< .25	1.9
Styrene	1,665	2.3	.60	3,463	ND	ND	ND	ND	< .20	.015
Toluene	1,676	16.4	9.9	3,457	1.9	.46	.17	.087	< .20	.032
1,2,4-Trimethylbenzene	1,662	16.0	9.4	2,376	.63	.042	ND	ND	< .056	.020
<i>o</i> -Xylene	1,682	1.0	.54	1,739	.058	.058	.058	ND	< .050	.010
<i>m</i> - and <i>p</i> -Xylenes ⁴	1,683	2.5	1.2	1,717	.12	.058	.058	.058	< .060	.020
Total xylenes ⁵	1,683	2.7	1.3	3,436	.38	.087	.058	.058	< .064	.022
Gasoline oxygenates										
<i>tert</i> -Amyl methyl ether	1,683	0.65	0.65	1,710	0.18	ND	ND	ND	< 0.11	0.11
Diisopropyl ether	1,547	.58	.58	1,574	.13	0.064	0.064	0.064	< .10	.10
Ethyl <i>tert</i> -butyl ether	1,683	.18	.059	1,710	ND	ND	ND	ND	< .054	.010
Methyl <i>tert</i> -butyl ether	1,687	7.1	7.0	2,422	2.8	.99	.12	.041	< .17	.20
Organic synthesis compounds										
Acrolein	618	ND	ND	670	ND	ND	ND	ND	< 2.0	--
Acrylonitrile	1,683	ND	ND	1,762	ND	ND	ND	ND	< 1.2	--
1,1-Dichloroethene	1,686	2.2	1.5	3,497	0.66	0.34	0.14	0.086	< .20	0.068
Hexachlorobutadiene	1,687	.059	.059	2,509	ND	ND	ND	ND	< .20	.030
1,2,3-Trichlorobenzene	1,687	.059	.059	2,461	ND	ND	ND	ND	< .27	.020
Vinyl bromide	1,683	ND	ND	1,710	ND	ND	ND	ND	< .10	--
Vinyl chloride	1,687	.12	.12	3,498	.26	.14	.029	ND	< .20	1.1

Appendix 6. Detection frequencies and median concentrations for selected volatile organic compounds in samples from aquifer studies.—Continued

[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
Refrigerants										
Dichlorodifluoromethane	1,687	4.1	4.1	3,496	1.9	0.34	0.029	ND	< 0.20	0.28
Trichlorofluoromethane	1,686	2.4	2.1	3,495	1.1	.37	.057	.029	< .20	.20
Trichlorotrifluoroethane	1,686	1.0	.77	2,666	.26	.038	ND	ND	< .060	.092
Solvents										
Carbon tetrachloride	1,686	1.3	1.1	3,497	0.31	0.086	ND	ND	< 0.20	0.077
Chlorobenzene	1,687	1.3	.41	3,498	.17	.11	0.029	ND	< .20	.007
Chloroethane	1,686	.30	.30	3,113	.29	.064	ND	ND	< .12	.20
Chloromethane	1,676	7.9	6.0	2,988	1.1	.13	.033	0.033	< .20	.035
1,2-Dichlorobenzene	1,687	.53	.41	3,464	.12	.087	.029	.029	< .20	.041
1,3-Dichlorobenzene	1,687	.41	.12	2,347	ND	ND	ND	ND	< .054	.008
1,1-Dichloroethane	1,686	2.8	2.4	3,496	.86	.17	.029	ND	< .20	.085
1,2-Dichloroethane	1,687	.18	.18	3,438	.47	.15	ND	ND	< .20	.30
<i>cis</i> -1,2-Dichloroethene	1,686	2.3	1.7	2,847	.42	.070	ND	ND	< .050	.047
<i>trans</i> -1,2-Dichloroethene	1,686	.30	.24	3,200	.91	.38	.12	.062	< .050	.60
Hexachloroethane	1,683	ND	ND	1,759	ND	ND	ND	ND	< .19	--
Methylene chloride	1,685	5.0	3.6	3,487	.89	.37	.057	.057	< .20	.040
Perchloroethene	1,656	13.2	8.3	3,449	3.7	1.5	.70	.32	< .20	.090
<i>n</i> -Propylbenzene	1,687	.30	.24	2,461	.041	.041	ND	ND	< .042	.048
1,2,4-Trichlorobenzene	1,687	.059	.059	2,509	ND	ND	ND	ND	< .20	.020
1,1,1-Trichloroethane	1,687	8.2	4.4	3,498	1.7	.57	.17	.14	< .20	.043
1,1,2-Trichloroethane	1,687	.18	.12	3,119	ND	ND	ND	ND	< .10	.028
Trichloroethene	1,686	5.2	3.8	3,497	2.6	1.1	.46	.26	< .20	.20
Trihalomethanes										
Bromodichloromethane	1,686	4.9	3.7	3,497	1.1	0.46	0.20	0.11	< 0.20	0.080
Bromoform	1,685	2.2	1.4	3,496	1.0	.31	.029	ND	< .20	.30
Chloroform	1,686	29.8	21.2	3,495	7.4	2.3	.69	.31	< .20	.079
Dibromochloromethane	1,686	2.0	1.7	3,497	.94	.34	.14	.11	< .20	.20
Total trihalomethanes ⁵	1,686	30.5	21.6	3,497	8.1	2.5	.71	.34	< .20	.090

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.