

Table 1
Range of total iodine values in geological matrices.

Sample type	Range of Iodine (nM) Values	Median of Iodine (nM) Values	References
Texas soils	840 – 5600	1911	[7, 8]
Mississippi River Delta sediments	10000 – 270000	85000	[27]
Texas rains	0.6 – 12	2	[7, 8, 28]
Mississippi River	2.2 – 16.9	5.7	[9, 26-28]
United States Rivers	0.5 – 212	10.7	[8, 9, 26-29]
United States South Coast Rivers	5.5 – 212	16.6	[26]
Surface seawater, Gulf of Mexico	–	500	[8, 29]
Seawater, North Atlantic	354 – 512	440	[20]
Seawater, Arabian Sea	545 – 945 ^a	545	[30]
Seawater, specific iodine (total iodine ^b normalized to salinity) (nM/‰)	12.7 – 14.9	~13	[19, 24, 30, 31, this work]

^aValues (> 545 nM) in excess of specific iodine in this study are attributed to lateral transport of iodide diffusing out from margin sediments [30]. ^bTotal iodine refers to total inorganic iodine in most previous studies; see discussion in text.

Table 2
Mobile phase gradient elution profile.

Time (min)	Flow rate (mL/min)	Mobile phase solution				Comment
		% A	% B	% C	% D	
0.1	1	76.5	8	10	5.5	Analysis
10	1	68	15	10	7	
11	1	58	15	20	7	Regeneration
13	1	76.5	8	10	5.5	
25	1	76.5	8	10	5.5	Equilibration

Mobile phase solution A is distilled water, B is 0.2 M NaCl, C is 10 mM NaOH, and D is 75 mM NaClO₄ in 12.5 mM phosphate buffer of pH 6.1.

Table 3

Iodine speciation in the vertical profile of a warm core ring, Gulf of Mexico, 26° 0.04' N, 95° 20' W. Collection was July 9, 2000, aboard the R/V Gyre.

Depth (m)	Salinity	DOC ^a ($\mu\text{M-C}$)	Chl a ^b ($\mu\text{g L}^{-1}$)	[TII] ^c (nM)	[TIII] ^d (nM)	[I] ^g (nM)	[IO ₃] ^h (nM)	[DOI] ^e (nM)	% [DOI]
1	36.7	90	0.033	526.2 ^f	491.0	227.8	263.2	35.2	7.2
10	36.7	64	0.046	670.8	496.5	230.0	266.7	174.1	35.1
30	36.7	73	0.024	597.5	481.3	228.4	252.9	116.2	24.1
50	36.5	72	0.056	557.9	480.3	207.6	272.6	77.6	16.2
80	36.5	72	0.119	640.3	489.1	204.8	284.3	151.2	30.9
121	36.5	67	0.192	553.6	495.5	182.4	313.1	58.1	11.7
150	36.4	59	0.089	521.6	496.7	169.1	327.6	24.9	5.0
200	36.4	67	0.014	550.6	508.3	24.3	484.0	42.3	8.3
500	36.8	53	n.d.	588.1	519.3	18.2	501.1	68.8	13.2
1001	34.9	53	n.d.	587.2	523.5	6.7	516.8	63.7	12.2
1501	35.0	47	n.d.	595.1	547.1	28.6	518.5	48	8.8
1787	35.0	43	n.d.	562.6 ^f	519.7	3.4	516.3	42.9	8.3

^a Data provided by [41]; ^b Data provided by J.L. Pinckney and S.E. Lumsden, n.d. represents concentrations not detectible; ^c [TII]: concentration of total iodine; ^d [TIII]: concentration of total inorganic iodine; ^e [DOI]: concentration of dissolved organic iodine; ^f [TII]: independently analyzed by ICP-MS and HPLC.

Table 4
Iodine speciation in estuarine surface waters from Galveston Bay.

Location	Distance from mouth of Bay (km)	Date	Salinity	Chl a ^a (µg/L)	[TII] ^b (nM)	[TII] ^c (nM)	[I ⁻] (nM)	[IO ₃ ⁻] (nM)	[DOI] ^d (nM)	% [DOI]
29.7°N, 94.7°W	45 (near Trinity River mouth)	Sep. 1999	16.5	< 5	300.5	280.6	213.5	67.1	19.9	6.6
29.6°N, 94.8°W	40	Nov. 1999	9	< 5	241.0	127.0	103.6	23.4	114.0	47.3
29.5°N, 94.9°W	22 (mid-Bay)	Sep. 1999	21	10 – 17	438.0 ^e	219.0	112.0	107.0	219.0	50.0
29.5°N, 94.9°W	22 (mid-Bay)	Oct. 1999	12	7	295.4	106.7	54.1	52.6	188.7	63.9
29.5°N, 94.9°W	22 (mid-Bay)	Nov. 1999	18	< 5	331.5	271.4	135.1	136.3	60.1	18.1

^a Reference [42] and E. Ormolfsdottir, J. Pinkney, S. Lumsden, unpublished data; ^b [TII]: concentration of total iodine; ^c [TII]: concentration of total inorganic iodine; ^d [DOI]: concentration of dissolved organic iodine; ^e [TII]: concentration independently analyzed by ICP-MS and HPLC.

Table 5

Iodine speciation in surface and ground waters from central and southeastern Texas. Gorman Springs and CO₂ Alley (Gorman Cave) are in the Colorado Bend State Park. The Trinity River is the major inflow into Galveston Bay.

Station	Location	Date	DOC (μM)	[TI] ^b (nM)	[TII] ^c (nM)	[I] ^d (nM)	[IO ₃] ^e (nM)	[DOI] ^d (nM)	% [DOI]
Galveston rain	29.3°N, 94.8°W	Aug. 2001	48.9	24.3	4.9	19.4	24.6	48.0	
Gorman springs	30.9°N, 99.8°W	Jan. 2000	118.6	67.3	62.8	4.5	51.3	40.0	
CO ₂ Alley	30.9°N, 99.8°W	Jan. 2000	74.0	64.4	40.4	24.0	9.6	13.0	
Trinity River	29.8°N, 94.7°W	Sep. 2000	457 ^a	294.7 ^e	187.3	176.1	11.2	107.4	36.4

^a DOC value from K. W. Warnken, unpublished data. ^b [TI]: concentration of total iodine; ^c [TII]: concentration of total inorganic iodine; ^d [DOI]: concentration of dissolved organic iodine; ^e [TI]: independently analyzed by ICP-MS and HPLC.