

Appendix E. Tables of Data Related to Quality Assurance and Quality Control.

Table E1. Blanks for unfiltered total mercury analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.

[Note: trace metals lab, U.S. Geological Survey trace metals laboratory, Sacramento, California. DI, deionized; MilliQ, water deionizer manufactured by Millipore, Inc.; s.d., standard deviation; ng/L, nanogram per liter; <, less than; –, not determined]

Comment	Date	Time	Replicate	Total mercury, unfiltered (ng/L)	
				value	s.d.
Equipment blank:					
Churn	02/13/2002	15:37	1of1	0.6	0.1
Churn	08/08/2002	10:30	1of1	<0.4	0.1
Churn	08/21/2002	10:39	1of1	0.5	0.0
Churn	08/21/2002	10:39	1of1	0.5	0.0
Churn	09/10/2002	8:07	1of1	0.8	0.1
Churn	09/10/2002	8:07	1of1	0.8	0.1
Churn	10/22/2002	10:18	1of1	<0.4	0.1
Churn	12/20/2002	10:08	1of1	<0.4	0.1
Churn	01/13/2003	13:28	1of1	<0.4	0.1
Churn	03/20/2003	10:58	1of1	<0.4	0.1
Churn	03/20/2003	12:18	1of1	<0.4	0.1
Churn plus Wisconsin blank water	11/12/2002	7:08	1of1	<0.4	0.1
Churn plus trace metals lab DI water	11/12/2002	7:08	1of1	0.4	0.0
Distributor arm blank	03/18/2003	12:08	1of1	<0.4	0.1
Jerrican	02/13/2002	15:36	1of1	0.5	0.0
Jerrican	03/20/2003	10:48	1of1	<0.4	0.1
Jerrican	03/20/2003	12:08	1of1	<0.4	0.0
Tubing	02/13/2002	8:38	1of2	<0.4	0.1
Tubing	02/13/2002	8:38	2of2	<0.4	0.1
Sampler blank:					
Distributor arm blank	03/18/2003	15:08	1of1	<0.4	0.0
Grab	03/18/2003	12:18	1of1	<0.4	0.0
Grab	03/18/2003	15:18	1of1	<0.4	0.2
Holding bottle	08/21/2000	20:30	1of1	<0.5	0.1
Holding bottle	08/21/2000	21:30	1of1	<0.5	0.1

Table E1. Blanks for unfiltered total mercury analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Note: trace metals lab, U.S. Geological Survey trace metals laboratory, Sacramento, California. DI, deionized; MilliQ, water deionizer manufactured by Millipore, Inc.; s.d., standard deviation; ng/L, nanogram per liter; <, less than; –, not determined]

Comment	Date	Time	Replicate	Total mercury, unfiltered (ng/L)	
				value	s.d.
Source blank:					
MilliQ	06/06/2001	15:25	1of1	<0.4	0.2
MilliQ	10/31/2001	11:30	1of1	2.3	0.2
MilliQ	10/31/2001	11:30	1of1	2.3	0.2
MilliQ	02/13/2002	13:09	1of1	<0.4	0.1
Polished water	01/09/2002	11:40	1of1	2.5	0.1
Trace metals lab DI water	01/09/2002	11:30	1of1	<0.4	0.1
Trace metals lab DI water	02/11/2002	14:09	1of1	<0.4	0.0
Trace metals lab DI water	02/13/2002	14:09	1of1	<0.4	0.0
Trace metals lab DI water	03/18/2002	7:29	1of1	<0.4	0.0
Trace metals lab DI water	04/15/2002	—	1of1	0.6	0.1
Trace metals lab DI water	04/15/2002	—	1of1	0.6	0.1
Trace metals lab DI water	08/08/2002	10:30	1of1	<0.4	0.1
Trace metals lab DI water	08/21/2002	10:37	1of1	<0.4	0.1
Trace metals lab DI water	08/21/2002	10:37	1of1	<0.4	0.1
Trace metals lab DI water	08/27/2002	12:07	1of1	0.4	0.0
Trace metals lab DI water	09/10/2002	8:06	1of1	0.9	0.2
Trace metals lab DI water	09/10/2002	8:06	1of1	0.9	0.2
Trace metals lab DI water	09/16/2002	10:46	1of1	0.6	0.1
Trace metals lab DI water	09/16/2002	10:46	1of1	0.6	0.1
Trace metals lab DI water	10/22/2002	10:18	1of1	<0.4	0.1
Trace metals lab DI water	11/12/2002	7:09	1of1	<0.4	0.2
Trace metals lab DI water	12/20/2002	10:08	1of1	<0.4	0.1
Trace metals lab DI water	01/13/2003	13:28	1of1	<0.4	0.1
Trace metals lab DI water	03/20/2003	10:38	1of1	<0.4	0.1

Table E2. Blanks for filtered total mercury analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.

[C45, Gelman capsule filter; Q, quartz fiber filter; s.d., standard deviation; ng/L, nanogram per liter; <, less than]

Comment	Date	Time	Filter type	Replicate	Total mercury, filtered (ng/L)	
					value	s.d.
Field blank:						
	06/06/2001	14:45	C45	1of1	<0.5	0.2
	06/06/2001	14:45	C45	1of1	<0.4	0.2
	08/08/2002	10:30	C45	1of1	<0.4	0.1
	08/08/2002	10:30	C45	1of1	<0.4	0.0
	08/27/2002	12:07	C45	1of1	0.5	0.0
Filter blank:						
	08/21/2002	10:38	C45	1of1	<0.4	0.1
Process blank:						
	10/31/2001	11:15	C45	1of1	<0.4	0.1
	10/31/2001	11:15	C45	1of1	<0.4	0.0
	02/13/2002	15:37	C45	1of1	0.5	0.1
	02/13/2002	15:37	C45	1of1	<0.4	0.0
	08/14/2002	14:38	C45	1of1	<0.4	0.1
	09/10/2002	8:08	C45	1of2	<0.4	0.1
	09/10/2002	8:08	C45	2of2	<0.4	0.1
	10/31/2002	11:15	C45	1of1	<0.4	0.1
	12/20/2002	10:08	C45	1of1	<0.4	0.1
	01/13/2003	13:28	C45	1of1	<0.4	0.1
	03/20/2003	11:08	C45	1of1	<0.4	0.1
Lab blank:						
Laminar flow hood	02/11/2002	14:37	Q	1of1	<0.4	0.1
Laminar flow hood	02/13/2002	14:37	Q	1of1	<0.4	0.1
Process blank:						
	10/31/2001	11:15	Q	1of1	<0.4	0.0
	02/13/2002	15:37	Q	1of1	<0.4	0.0

Table E3. Blanks for unfiltered total mercury analyzed at the U.S. Geological Survey laboratory, Middleton, Wisconsin

[Information represents a summary of all results for the laboratory for unfiltered blank samples submitted by the U.S. Geological Survey (USGS) California Water Science Center during the period (2002–06) when samples from the present study were analyzed for total mercury. Trace Metals lab, Trace Metals laboratory, Sacramento; DI, deionized; ng/L, nanogram per liter; na, not available]

Blank Type	USGS station name	USGS station ID	Date	Time	Total mercury, unfiltered (ng/L)
Equipment blank:					
Churn	Camp Far West Reservoir	na	12/20/02	10:08	0.04
Churn	na	na	03/20/03	10:18	0.12
Churn	Bear River below Wolf Creek, near Lucas Hill, California	390107121102101	10/15/03	10:52	<0.04
Churn	na	na	07/13/04	7:32	0.46
Churn	na	na	07/18/06	9:30	0.11
Jerrican	Bear River below Steephollow Creek, near Chicago Park, California	391023120541301	06/30/03	9:33	0.59
Jerrican	Bear River below Wolf Creek, near Lucas Hill, California	390107121102101	10/15/03	10:52	<0.04
Jerrican	na	na	04/01/04	13:27	0.19
Jerrican	na	na	04/01/04	13:27	0.18
Jerrican	na	na	07/13/04	7:32	0.32
Field blank:					
Field blank	Camp Far West Reservoir 0.3 mile north of dam abutment	390317121185001	02/12/02	12:00	0.94
Field blank	Bear River below Camp Far West Dam	390256121190701	10/22/02	10:19	0.06
Field blank	Bear River below Camp Far West Dam	390256121190701	10/22/02	10:20	0.09
Field blank	Bear River below Camp Far West Dam	390256121190701	10/22/02	10:20	0.06
Field blank	Bear River below Steephollow Creek, near Chicago Park, California	391022120535401	11/12/02	7:08	0.11
Field blank	Bear River below Steephollow Creek, near Chicago Park, California	391022120535401	11/12/02	7:08	0.09
Field blank	Wolf Creek above Grass Valley Treatment Plant	391231121041001	01/13/03	13:28	4.39
Field blank	Wolf Creek above Grass Valley Treatment Plant	391231121041001	01/13/03	13:28	0.36
Field blank	na	na	03/21/03	12:08	0.08
Field blank	Bear River near Wheatland, California	11424002	05/15/03	13:42	0.11
Field blank	Bear River below Steephollow Creek, near Chicago Park, California	391023120541301	06/30/03	9:34	0.23
Source blank:					
Trace Metals lab DI	na	na	12/20/02	10:08	0.05
Trace Metals lab DI	na	na	11/12/02	7:09	0.06
Trace Metals lab DI	na	na	03/19/03	14:00	<0.04
Trace Metals lab DI	na	na	03/20/03	10:08	0.06
Wisconsin lab	na	na	03/19/03	14:01	0.04
Wisconsin lab	na	na	05/15/03	13:41	0.08
Wisconsin lab	na	na	06/30/03	9:32	0.23

Table E4. Blanks for filtered total mercury analyzed at the U.S. Geological Survey laboratory, Middleton, Wisconsin.

[Information represents a summary of all results for the laboratory for filtered blank samples submitted by the U.S. Geological Survey (USGS) California Water Science Center during the period (2002–06) when samples from the present study were analyzed for total mercury. Gelman, capsule filtered manufactured by Pall Gelman Sciences, Inc.; Q, quartz fiber filter; C45, capsule filter; ng/L, nanogram per liter; <, less than; na, not available]

Site name	USGS station ID	Date	Time	Filter type	Total mercury, filtered (ng/L)
Process blank (filtered):					
Bear River below Camp Far West Dam	390256121190701	03/19/2003	14:02	C45	0.04
na	na	03/20/2003	10:28	C45	0.05
Bear River near Wheatland, California	11424008	05/15/2003	13:44	C45	0.24
Bear River below Steephollow Creek, near Chicago Park, California	391023120541301	06/30/2003	9:35	C45	0.1
Bear River below Wolf Creek, near Lucas Hill, California	390107121102101	10/15/2003	10:52	C45	<0.04
Bear River below Camp Far West Dam	390256121190701	10/22/2002	10:18	na	0.12
Bear River below Camp Far West Dam	390256121190701	10/22/2002	10:18	na	0.08
na	na	12/20/2002	10:08	na	0.04
Wolf Creek above Grass Valley Treatment Plant	391231121041001	01/13/2003	13:28	na	0.64
Wolf Creek above Grass Valley Treatment Plant	391231121041001	01/13/2003	13:28	na	1.01
na	na	04/01/2004	13:27	na	0.48
na	na	07/13/2004	7:32	na	0.88
na	na	07/18/2006	10:00	na	0.25
Bear River below Steephollow Creek, near Chicago Park, California	391022120535401	11/12/2002	7:07	Q	0.06
Bear River below Steephollow Creek, near Chicago Park, California	391022120535401	11/12/2002	7:07	Q	0.07
na	na	12/20/2002	10:09	Q	0.18
Bear River below Camp Far West Dam	390256121190701	03/19/2003	14:03	Q	<0.04
Bear River near Wheatland, California	11424005	05/15/2003	13:43	Q	0.14
Bear River below Wolf Creek, near Lucas Hill, California	390107121102101	10/15/2003	10:52	Q	<0.04

Table E5. Blanks for unfiltered methylmercury analyzed at the U.S. Geological Survey laboratory, Middleton, Wisconsin.

[ng/ L, nanogram per liter; <, less than]

Comment	Date	Time	Methylmercury, unfiltered (ng/L)
Equipment blank:			
Churn	08/21/2002	10:39	<0.04
Churn	09/10/2002	8:07	<0.04
Churn	10/22/2002	10:19	<0.04
Churn	03/19/2003	14:01	<0.04
Churn	03/20/2003	10:18	<0.04
Churn	05/15/2003	13:42	<0.04
Churn	06/30/2003	9:34	<0.04
Jerrican	02/13/2002	15:37	<0.04
Jerrican	10/15/2003	10:52	<0.04
	03/21/2003	12:08	<0.04
	06/30/2003	9:33	<0.04
Field blank:			
	06/06/2001	14:45	<0.04
	08/27/2002	12:07	<0.04
	11/12/2002	7:07	<0.04
	11/12/2002	7:08	<0.04
	11/12/2002	7:09	<0.04
	01/13/2003	13:28	<0.04
Process blank:			
Tubing	02/13/2002	15:36	<0.04
	10/31/2001	11:15	<0.04
	02/13/2002	13:09	<0.04
	08/08/2002	10:30	<0.04
	08/14/2002	14:38	<0.04
Source blank:			
	10/31/2001	11:30	<0.04
	02/13/2002	8:38	0.04
	08/08/2002	10:30	0.04
	08/21/2002	10:37	0.04
	09/10/2002	8:06	0.04
	03/19/2003	14:00	0.04
	03/20/2003	10:08	0.04
	05/15/2003	13:41	0.04
	06/30/2003	9:32	0.04
	10/15/2003	10:52	0.04

Table E6. Blanks for filtered and particulate methylmercury analyzed at the U.S. Geological Survey laboratory, Middleton, Wisconsin.

[Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; Q, quartz fiber filter; C45, Gelman capsule filter; QFF, quartz fiber filter particulates. ng/L, nanogram per liter; <, less than]

Comment	Date	Time	Filter type	Methyl-mercury, filtered value (ng/L)	Methyl-mercury, particulate value (ng/L)
Equipment blank:	10/15/2003	10:52		<0.04	
Field blank:					
Gelman	01/13/2003	13:28	C45	<0.04	
Gelman	06/06/2001	14:45	C45	0.04	
QFF	02/11/2002	15:17	Q		<0.00
Quartz	11/12/2002	7:07	Q	<0.04	
Quartz	01/13/2003	13:28	Q	<0.04	
Filter blank:					
Gelman	08/21/2002	10:38	C45	<0.04	
Gelman	08/27/2002	12:07	C45	<0.04	
Quartz plus QFF	08/21/2002	10:36	Q	<0.04	<0.05
Process blank:					
Churn plus Gelman	05/15/2003	13:44	C45	<0.04	
Churn plus Quartz	06/30/2003	9:35	Q	<0.04	
Churn plus Quartz	05/15/2003	13:43	Q	<0.04	
Gelman	06/30/2003	9:34	C45	<0.04	
Gelman	03/20/2003	10:28	C45	<0.04	
Gelman	08/08/2002	10:30	C45	<0.04	
Gelman	10/15/2003	10:52	C45	<0.04	
Gelman	03/19/2003	14:02	C45	<0.04	
Gelman	08/14/2002	14:38	C45	<0.04	
Gelman	02/13/2002	15:37	C45	<0.04	
Quartz	11/12/2002	7:07	Q	<0.04	
Quartz	10/15/2003	10:52	Q	<0.04	
Quartz	03/19/2003	14:03	Q	<0.04	
Quartz	02/11/2002	14:37	Q	<0.04	
Quartz plus QFF	09/10/2002	8:08	Q	<0.04	<0.04
Quartz plus QFF	08/08/2002	10:30	Q	<0.04	<0.05
Quartz plus QFF	10/31/2001	11:15	Q	<0.04	<0.06
Quartz plus QFF	02/13/2002	15:37	Q	<0.04	<0.00

Table E7. Blanks for unfiltered selected elements analyzed at the U.S. Geological Survey laboratory in Boulder, Colorado.

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized. mg/L, milligram per liter; µg/L, microgram per liter; <, less than; na, not available]

Comment	Date	Time	Replicate	Aluminum (Al)		Arsenic (As)		Boron (B)		Barium (Ba)	
				(µg/L)		(µg/L)		(µg/L)		(µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.1	0.0	< 0.01	0.00	< 0.4	0.4	0.069	0.006
Churn	09/10/2002	8:07	1of1	0.22	0.01	< 0.03	0.01	0.4	1.1	0.33	0.01
Jerrican BY-13	03/19/2003	14:56	1of1	0.08	0.04	< 0.01	0.00	< 0.2	0.1	< 0.002	0.001
Churn	03/19/2003	14:57	1of1	0.17	0.09	< 0.01	0.00	< 0.2	0.5	0.58	0.01
Hydrochloric acid:											
	07/09/2004	na	1of1	4.5	0.4	< 40	21	< 10	6	0.10	0.04
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.1	0.0	< 0.01	0.01	< 0.4	0.3	< 0.003	0.003
Trace metals lab DI water	09/10/2002	8:06	1of1	0.50	0.02	< 0.03	0.01	< 0.3	0.1	< 0.05	0.00
Trace metals lab DI water	03/19/2003	14:55	1of1	< 0.04	0.02	< 0.01	0.00	< 0.2	0.1	0.004	0.003

Comment	Date	Time	Replicate	Beryllium (Be)		Bismuth (Bi)		Calcium (Ca)		Cadmium (Cd)	
				(µg/L)		(µg/L)		(mg/L)		(µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.007	0.000	0.003	0.001	< 0.005	0.001	0.002	0.001
Churn	09/10/2002	8:07	1of1	< 0.006	0.004	< 0.002	0.002	< 0.005	0.003	< 0.005	0.001
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.005	0.005	< 0.0008	0.0003	< 0.005	0.006	< 0.002	0.001
Churn	03/19/2003	14:57	1of1	< 0.005	0.002	< 0.0008	0.0001	< 0.005	0.002	< 0.002	0.001
Hydrochloric acid:											
	07/09/2004	na	1of1	< 0.08	0.01	< 0.01	0.01	0.04	0.01	0.05	0.05
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.007	0.002	0.008	0.000	< 0.005	0.001	< 0.001	0.001
Trace metals lab DI water	09/10/2002	8:06	1of1	< 0.006	0.001	< 0.002	0.001	< 0.005	0.001	< 0.005	0.002
Trace metals lab DI water	03/19/2003	14:55	1of1	< 0.005	0.002	< 0.0008	0.0010	< 0.005	0.001	< 0.002	0.001

Comment	Date	Time	Replicate	Cerium (Ce)		Cobalt (Co)		Chromium (Cr)		Cesium (Cs)	
				(µg/L)		(µg/L)		(µg/L)		(µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.0003	0.0001	< 0.003	0.000	< 0.1	0.0	< 0.006	0.004
Churn	09/10/2002	8:07	1of1	< 0.0002	0.0002	0.002	0.001	0.30	0.13	< 0.007	0.003
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.0002	0.0000	< 0.002	0.000	< 0.06	0.03	< 0.003	0.002
Churn	03/19/2003	14:57	1of1	0.0003	0.0001	< 0.002	0.000	0.07	0.01	< 0.003	0.001
Hydrochloric acid:											
	07/09/2004	na	1of1	0.006	0.001	< 0.1	0.0	< 2	0	0.92	0.07
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.0003	0.0000	< 0.003	0.002	< 0.1	0.0	< 0.006	0.002
Trace metals lab DI water	09/10/2002	8:06	1of1	0.0002	0.0001	< 0.002	0.001	< 0.06	0.00	< 0.007	0.002
Trace metals lab DI water	03/19/2003	14:55	1of1	< 0.0002	0.0001	< 0.002	0.000	< 0.06	0.03	< 0.003	0.002

Table E7. Blanks for unfiltered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; mg/L, milligram per liter; µg/L, microgram per liter; <, less than]

Comment	Date	Time	Replicate	Copper (Cu) (µg/L)		Dysprosium (Dy) (µg/L)		Erbium (Er) (µg/L)		Europium (Eu) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.03	0.01	< 0.0005	0.0003	< 0.0004	0.0007	< 0.0002	0.0001
Churn	09/10/2002	8:07	1of1	< 0.01	0.006	< 0.0006	0.0002	< 0.0007	0.0001	< 0.0004	0.0001
Jerrican BY-13	03/19/2003	14:56	1of1	0.004	0.001	< 0.0004	0.0001	< 0.0004	0.0001	< 0.0002	0.0001
Churn	03/19/2003	14:57	1of1	0.047	0.012	< 0.0004	0.0002	< 0.0004	0.0002	< 0.0002	0.0001
Hydrochloric acid:											
	07/09/2004	na	1of1	< 0.7	0.6	< 0.008	0.000	< 0.004	0.004	< 0.003	0.001
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.03	0.02	< 0.0005	0.0002	< 0.0004	0.0003	< 0.0002	0.0001
Trace metals lab DI water	09/10/2002	8:06	1of1	< 0.01	0.010	< 0.0006	0.0001	< 0.0007	0.0001	< 0.0004	0.0001
Trace metals lab DI water	03/19/2003	14:55	1of1	0.007	0.007	< 0.0004	0.0002	< 0.0004	0.0002	< 0.0002	0.0001

Comment	Date	Time	Replicate	Iron (Fe) (µg/L)		Gadolinium (Gd) (µg/L)		Holmium (Ho) (µg/L)		Potassium (K) (mg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.6	0.8	< 0.0005	0.0001	< 0.0002	0.0001	< 0.008	0.005
Churn	09/10/2002	8:07	1of1	1.6	0.7	< 0.0009	0.0001	< 0.0002	0.0001	< 0.02	0.01
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.9	1.2	< 0.0002	0.0002	< 0.0001	0.0000	0.006	0.002
Churn	03/19/2003	14:57	1of1	< 0.9	0.2	< 0.0002	0.0000	< 0.0001	0.0001	< 0.004	0.002
Hydrochloric acid:											
	07/09/2004	na	1of1	< 10	2	< 0.004	0.002	< 0.0009	0.0008	< 0.2	0.0
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.6	0.1	< 0.0005	0.0002	< 0.0002	0.0000	< 0.008	0.006
Trace metals lab DI water	09/10/2002	8:06	1of1	< 0.6	0.1	< 0.0009	0.0002	< 0.0002	0.0001	< 0.02	0.01
Trace metals lab DI water	03/19/2003	14:55	1of1	1.0	1.4	< 0.0002	0.0002	< 0.0001	0.0001	< 0.004	0.003

Comment	Date	Time	Replicate	Lanthanum (La) (µg/L)		Lithium (Li) (µg/L)		Lutetium (Lu) (µg/L)		Magnesium (Mg) (mg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	0.0002	0.0002	< 0.01	0.01	< 0.0001	0.0001	< 0.003	0.001
Churn	09/10/2002	8:07	1of1	0.0003	0.0001	< 0.02	0.01	< 0.0003	0.0001	< 0.003	0.001
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.0001	0.0000	< 0.003	0.005	< 0.0001	0.0001	< 0.006	0.003
Churn	03/19/2003	14:57	1of1	0.0001	0.0002	0.004	0.004	< 0.0001	0.0001	< 0.006	0.002
Hydrochloric acid:											
	07/09/2004	na	1of1	0.009	0.001	0.4	0.5	0.0009	0.0006	0.0051	0.0007
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.0001	0.0001	< 0.01	0.00	< 0.0001	0.0001	< 0.003	0.002
Trace metals lab DI water	09/10/2002	8:06	1of1	0.0003	0.0000	0.02	0.00	< 0.0003	0.0001	< 0.003	0.001
Trace metals lab DI water	03/19/2003	14:55	1of1	0.0001	0.0001	< 0.003	0.002	< 0.0001	0.0000	< 0.006	0.001

Table E7. Blanks for unfiltered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; mg/L, milligram per liter; µg/L, microgram per liter; <, less than]

Comment	Date	Time	Replicate	Manganese (Mn) (µg/L)		Molybdenum (Mo) (µg/L)		Sodium (Na) (mg/L)		Neodymium (Nd) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.07	0.05	< 0.05	0.04	< 0.01	0.01	< 0.0008	0.0003
Churn	09/10/2002	8:07	1of1	< 0.1	0.0	< 0.05	0.01	0.008	0.009	< 0.002	0.000
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.07	0.05	< 0.04	0.03	< 0.006	0.009	< 0.0004	0.0002
Churn	03/19/2003	14:57	1of1	< 0.07	0.05	< 0.04	0.05	< 0.006	0.005	< 0.0004	0.0003
Hydrochloric acid:											
	07/09/2004	na	1of1	< 0.6	0.2	< 0.4	0.1	0.10	0.06	0.005	0.004
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.07	0.08	< 0.05	0.00	< 0.01	0.00	< 0.0008	0.0004
Trace metals lab DI water	09/10/2002	8:06	1of1	< 0.1	0.0	< 0.05	0.02	< 0.002	0.000	< 0.002	0.000
Trace metals lab DI water	03/19/2003	14:55	1of1	< 0.07	0.01	< 0.04	0.01	0.008	0.014	< 0.0004	0.0002

Comment	Date	Time	Replicate	Nickel (Ni) (µg/L)		Lead (Pb) (µg/L)		Praseodymium (Pr) (µg/L)		Rubidium (Rb) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.07	0.00	< 0.003	0.001	< 0.0002	0.0001	< 0.001	0.000
Churn	09/10/2002	8:07	1of1	0.11	0.01	< 0.004	0.000	< 0.0002	0.0001	< 0.002	0.001
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.009	0.001	< 0.003	0.003	< 0.0002	0.0000	0.0067	0.0004
Churn	03/19/2003	14:57	1of1	0.046	0.005	0.004	0.002	< 0.0002	0.0001	0.0010	0.0002
Hydrochloric acid:											
	07/09/2004	na	1of1	< 0.8	0.2	< 0.2	0.1	< 0.001	0.001	0.09	0.09
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.07	0.00	< 0.003	0.000	< 0.0002	0.0001	< 0.001	0.000
Trace metals lab DI water	09/10/2002	8:06	1of1	< 0.009	0.004	< 0.004	0.003	< 0.0002	0.0002	0.002	0.001
Trace metals lab DI water	03/19/2003	14:55	1of1	< 0.009	0.002	< 0.003	0.000	< 0.0002	0.0001	0.0008	0.0004

Comment	Date	Time	Replicate	Rhenium (Re) (µg/L)		Sulfur (S) (mg/L)		Antimony (Sb) (µg/L)		Selenium (Se) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.0003	0.0000	< 0.01	0.01	< 0.004	0.002	< 0.05	0.05
Churn	09/10/2002	8:07	1of1	< 0.0003	0.0001	< 0.02	0.02	< 0.003	0.001	< 0.05	0.05
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.0001	0.0000	< 0.01	0.01	< 0.006	0.004	< 0.07	0.01
Churn	03/19/2003	14:57	1of1	< 0.0001	0.0001	< 0.01	0.01	< 0.006	0.000	< 0.07	0.04
Hydrochloric acid:											
	07/09/2004	na	1of1	< 0.003	0.001	< 0.2	0.1	< 0.02	0.01	< 2	0
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.0003	0.0003	< 0.01	0.01	< 0.004	0.001	< 0.05	0.05
Trace metals lab DI water	09/10/2002	8:06	1of1	< 0.0003	0.0001	< 0.02	0.01	< 0.003	0.002	< 0.05	0.03
Trace metals lab DI water	03/19/2003	14:55	1of1	< 0.0001	0.0000	< 0.01	0.01	< 0.006	0.000	< 0.07	0.03

Table E7. Blanks for unfiltered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; mg/L, milligram per liter; µg/L, microgram per liter; <, less than]

Comment	Date	Time	Replicate	Silica (SiO ₂) (mg/L)		Samarium (Sm) (µg/L)		Strontium (Sr) (µg/L)		Terbium (Tb) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.04	0.00	< 0.0009	0.0006	< 0.01	0.01	< 0.0002	0.0001
Churn	09/10/2002	8:07	1of1	< 0.07	0.01	< 0.001	0.001	< 0.02	0.01	0.0001	0.0002
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.01	0.00	< 0.0003	0.0002	< 0.01	0.01	< 0.0001	0.0001
Churn	03/19/2003	14:57	1of1	< 0.01	0.00	< 0.0003	0.0005	0.02	0.00	< 0.0001	0.0000
Hydrochloric acid:											
	07/09/2004	na	1of1	< 0.03	0.01	< 0.004	0.001	< 0.2	0.1	< 0.001	0.000
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.04	0.00	< 0.0009	0.0004	< 0.01	0.00	< 0.0002	0.0001
Trace metals lab DI water	09/10/2002	8:06	1of1	< 0.07	0.02	< 0.001	0.000	< 0.02	0.01	< 0.0001	0.0000
Trace metals lab DI water	03/19/2003	14:55	1of1	< 0.01	0.01	0.0006	0.0002	< 0.01	0.01	< 0.0001	0.0001

Comment	Date	Time	Replicate	Tellurium (Te) (µg/L)		Thorium (Th) (µg/L)		Thallium (Tl) (µg/L)		Thulium (Tm) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.007	0.004	< 0.001	0.001	< 0.003	0.002	< 0.0002	0.0001
Churn	09/10/2002	8:07	1of1	< 0.006	0.006	< 0.002	0.002	< 0.002	0.004	< 0.0001	0.0000
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.006	0.002	< 0.0003	0.0006	< 0.002	0.001	< 0.0001	0.0000
Churn	03/19/2003	14:57	1of1	< 0.006	0.002	< 0.0003	0.0003	< 0.002	0.002	< 0.0001	0.0000
Hydrochloric acid:											
	07/09/2004	na	1of1	< 0.04	0.01	< 0.009	0.003	< 0.02	0.01	< 0.0007	0.0003
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.007	0.001	< 0.001	0.000	< 0.003	0.001	< 0.0002	0.0001
Trace metals lab DI water	09/10/2002	8:06	1of1	< 0.006	0.002	< 0.002	0.001	< 0.002	0.002	< 0.0001	0.0001
Trace metals lab DI water	03/19/2003	14:55	1of1	< 0.006	0.000	< 0.0003	0.0001	< 0.002	0.001	< 0.0001	0.0000

Comment	Date	Time	Replicate	Uranium (U) (µg/L)		Vanadium (V) (µg/L)		Yttrium (Y) (µg/L)		Ytterbium (Yb) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.	Avg	s.d.
Equipment blank:											
Churn	08/21/2002	10:39	1of1	< 0.0004	0.0002	< 0.1	0.1	< 0.0002	0.0002	< 0.0004	0.0001
Churn	09/10/2002	8:07	1of1	< 0.0003	0.0000	< 0.03	0.01	< 0.0003	0.0000	< 0.0007	0.0002
Jerrican BY-13	03/19/2003	14:56	1of1	< 0.0002	0.0002	< 0.02	0.01	< 0.0002	0.0000	< 0.0002	0.0002
Churn	03/19/2003	14:57	1of1	0.0002	0.0001	< 0.02	0.01	< 0.0002	0.0001	0.0002	0.0002
Hydrochloric acid:											
	07/09/2004	na	1of1	< 0.01	0.00	< 2	0	< 0.001	0.001	< 0.003	0.001
Source blank:											
Trace metals lab DI water	08/21/2002	10:37	1of1	< 0.0004	0.0002	< 0.1	0.0	< 0.0002	0.0002	< 0.0004	0.0002
Trace metals lab DI water	09/10/2002	8:06	1of1	< 0.0003	0.0001	< 0.03	0.01	< 0.0003	0.0003	< 0.0007	0.0003
Trace metals lab DI water	03/19/2003	14:55	1of1	0.0003	0.0005	< 0.02	0.02	< 0.0002	0.0000	< 0.0002	0.0002

Table E7. Blanks for unfiltered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; mg/L, milligram per liter; µg/L, microgram per liter; <, less than]

Comment	Date	Time	Replicate	Zinc (Zn) (µg/L)		Zirconium (Zr) (µg/L)	
				Avg	s.d.	Avg	s.d.
Equipment blank:							
Churn	08/21/2002	10:39	1of1	0.29	0.02	< 0.001	0.000
Churn	09/10/2002	8:07	1of1	0.42	0.04	0.002	0.001
Jerrican BY-13	03/19/2003	14:56	1of1	0.52	0.24	< 0.0007	0.0003
Churn	03/19/2003	14:57	1of1	0.62	0.22	0.0010	0.0002
Hydrochloric acid:							
	07/09/2004	na	1of1	< 4	6	< 0.02	0.01
Source blank:							
Trace metals lab DI water	08/21/2002	10:37	1of1	0.06	0.02	< 0.001	0.001
Trace metals lab DI water	09/10/2002	8:06	1of1	0.97	0.03	< 0.001	0.001
Trace metals lab DI water	03/19/2003	14:55	1of1	1.7	0.9	< 0.0007	0.0006

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory in Boulder, Colorado.

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; –, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Aluminum (Al) (µg/L)		Arsenic (As) (µg/L)		Boron (B) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	–	0.8	0.3	< 20	23	< 10	12
Blank-DI plus acid plus digestion:		01/25/2002	–	< 0.5	0.0	< 20	15	< 10	1
Blank-DI plus acid plus digestion plus filter:		01/25/2002	–	< 0.5	0.1	< 20	5	< 10	4
Equipment blank:									
	Holding bottle	01/29/2001	–	33	1	< 20	10	< 400	100
	Tubing	02/13/2002	5:30	0.17	0.03	< 0.01	0.03	6.5	6.5
	Tubing	02/13/2002	5:30	0.42	0.19	< 0.01	0.01	1.3	0.8
	Jerrican	02/13/2002	15:36	0.24	0.02	0.01	0.00	2.9	3.1
	Churn	02/13/2002	15:37	0.37	0.03	< 0.01	0.01	< 1	2
	Churn	08/08/2002	10:30	< 0.06	0.00	< 0.02	0.01	< 0.3	0.0
	Churn	10/22/2002	10:18	0.18	0.04	< 0.03	0.01	< 0.3	0.2
	Churn	11/12/2002	7:08	0.41	0.33	< 0.03	0.02	0.8	1.2
	Churn	01/13/2003	13:28	< 0.03	0.01	< 0.01	0.00	< 0.3	0.4
	Carboy	05/15/2003	13:41	< 0.03	0.01	< 0.007	0.012	< 0.5	0.3
	Churn	05/15/2003	13:42	0.05	0.00	< 0.007	0.003	< 0.5	0.6
	Jerrican	05/15/2003	13:45	0.12	0.01	< 0.007	0.016	< 0.5	0.1
Filter blank:									
	Setup	06/12/2001	–	48	2	< 30	30	8	14
	Setup	06/12/2001	–	48	4	< 30	10	18	4
	Gelman	08/21/2002	10:38	< 0.1	0.0	< 0.01	0.01	< 0.4	0.9
Process blank:									
	Holding bottle	01/31/2001	–	5	1	< 10	10	< 40	10
	Gelman	06/11/2001	–	93	7	< 30	20	< 5	1
	Gelman	06/12/2001	–	44	3	< 30	30	< 5	6
	Gelman	06/12/2001	–	55	3	< 30	30	< 5	5
	Gelman	06/12/2001	–	50	0	< 30	20	8	4
	Gelman	10/31/2001	11:15	0.3	0.3	< 0.04	0.02	< 1	0
	Gelman	02/13/2002	15:37	0.14	0.02	0.01	0.01	< 1	2
	Gelman	08/08/2002	10:30	0.15	0.19	< 0.02	0.00	< 0.3	0.1
	Gelman	09/10/2002	8:08	0.10	0.00	< 0.03	0.00	< 0.3	0.6
	Gelman	10/22/2002	10:18	0.15	0.02	< 0.03	0.01	0.5	0.4
	Gelman	11/12/2002	7:09	0.07	0.03	< 0.03	0.01	< 0.7	0.5
	Gelman	01/13/2003	13:28	0.09	0.01	< 0.01	0.01	< 0.3	0.1
	Churn plus Gelman	03/19/2003	14:58	0.08	0.02	< 0.01	0.01	0.6	0.3
	Churn plus Gelman	05/15/2003	13:44	< 0.03	0.02	< 0.007	0.003	< 0.5	0.2
Source blank:									
	MilliQ	10/31/2001	11:30	0.5	0.0	< 0.04	0.01	< 1	1
	Trace metals lab DI water	08/08/2002	10:30	< 0.06	0.05	< 0.02	0.01	< 0.3	0.4
	Trace metals lab DI water	10/22/2002	10:18	0.17	0.04	< 0.03	0.01	0.5	0.0
	Trace metals lab DI water	11/12/2002	7:07	0.06	0.02	< 0.03	0.02	0.9	0.4
	Trace metals lab DI water	01/13/2003	13:28	< 0.03	0.02	< 0.01	0.00	0.3	0.6

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; —, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Barium (Ba) (µg/L)		Beryllium (Be) (µg/L)		Bismuth (Bi) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 0.02	0.01	< 0.03	0.03	0.16	0.13
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.02	0.01	< 0.03	0.02	0.16	0.02
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.02	0.01	< 0.03	0.04	0.19	0.13
Equipment blank:									
	Holding bottle	01/29/2001	—	0.61	0.06	< 0.1	0.0	0.15	0.03
	Tubing	02/13/2002	5:30	0.014	0.002	< 0.006	0.004	< 0.0009	0.0001
	Tubing	02/13/2002	5:30	0.043	0.004	< 0.006	0.004	< 0.0009	0.0004
	Jerrican	02/13/2002	15:36	0.005	0.000	< 0.006	0.003	0.0027	0.0020
	Churn	02/13/2002	15:37	0.35	0.01	< 0.006	0.005	0.0010	0.0022
	Churn	08/08/2002	10:30	0.065	0.003	< 0.008	0.004	< 0.002	0.000
	Churn	10/22/2002	10:18	< 0.05	0.02	< 0.006	0.000	< 0.002	0.000
	Churn	11/12/2002	7:08	0.18	0.00	< 0.007	0.006	< 0.001	0.000
	Churn	01/13/2003	13:28	< 0.002	0.000	0.005	0.004	< 0.0007	0.0003
	Carboy	05/15/2003	13:41	< 0.002	0.001	< 0.007	0.001	0.0006	0.0011
	Churn	05/15/2003	13:42	0.093	0.007	< 0.007	0.002	< 0.0005	0.0002
	Jerrican	05/15/2003	13:45	0.003	0.001	< 0.007	0.001	< 0.0005	0.0003
Filter blank:									
	Setup	06/12/2001	—	< 0.06	0.01	< 0.04	0.09	< 0.03	0.01
	Setup	06/12/2001	—	< 0.06	0.05	< 0.04	0.03	< 0.03	0.01
	Gelman	08/21/2002	10:38	0.015	0.005	< 0.007	0.003	< 0.002	0.000
Process blank:									
	Holding bottle	01/31/2001	—	0.14	0.03	< 0.2	0.1	0.024	0.007
	Gelman	06/11/2001	—	< 0.06	0.02	< 0.04	0.06	0.08	0.06
	Gelman	06/12/2001	—	< 0.06	0.02	< 0.04	0.02	< 0.03	0.02
	Gelman	06/12/2001	—	< 0.06	0.05	< 0.04	0.02	0.04	0.03
	Gelman	06/12/2001	—	< 0.06	0.04	< 0.04	0.04	< 0.03	0.01
	Gelman	10/31/2001	11:15	< 0.05	0.01	< 0.005	0.002	< 0.0008	0.0006
	Gelman	02/13/2002	15:37	0.14	0.01	< 0.006	0.003	0.0036	0.0025
	Gelman	08/08/2002	10:30	0.011	0.004	< 0.008	0.004	< 0.002	0.001
	Gelman	09/10/2002	8:08	< 0.05	0.00	< 0.006	0.002	< 0.002	0.001
	Gelman	10/22/2002	10:18	< 0.05	0.00	< 0.006	0.003	< 0.002	0.000
	Gelman	11/12/2002	7:09	< 0.003	0.002	< 0.007	0.004	< 0.001	0.000
	Gelman	01/13/2003	13:28	0.31	0.01	< 0.003	0.003	< 0.0007	0.0005
	Churn plus Gelman	03/19/2003	14:58	0.039	0.003	< 0.005	0.003	< 0.0008	0.0008
	Churn plus Gelman	05/15/2003	13:44	0.041	0.004	< 0.007	0.002	< 0.0005	0.0004
Source blank:									
	MilliQ	10/31/2001	11:30	< 0.05	0.01	< 0.005	0.001	< 0.0008	0.0014
	Trace metals lab DI water	08/08/2002	10:30	0.027	0.039	< 0.008	0.002	< 0.002	0.000
	Trace metals lab DI water	10/22/2002	10:18	< 0.05	0.01	0.007	0.000	< 0.002	0.001
	Trace metals lab DI water	11/12/2002	7:07	0.011	0.001	< 0.007	0.003	< 0.001	0.001
	Trace metals lab DI water	01/13/2003	13:28	0.085	0.003	< 0.003	0.003	< 0.0007	0.0005

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; —, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Calcium (Ca) (mg/L)		Cadmium (Cd) (µg/L)		Cerium (Ce) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid Blank:		01/25/2002	—	0.01	0.01	0.03	0.01	0.034	0.003
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.01	0.00	< 0.01	0.01	0.004	0.001
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	0.03	0.05	< 0.01	0.00	0.002	0.001
Equipment blank:									
	Holding bottle	01/29/2001	—	< 0.1	0.1	< 0.08	0.00	0.16	0.02
	Tubing	02/13/2002	5:30	0.07	0.00	< 0.004	0.002	< 0.0001	0.0001
	Tubing	02/13/2002	5:30	0.08	0.00	< 0.004	0.001	0.0006	0.0001
	Jerrican	02/13/2002	15:36	< 0.02	0.00	< 0.004	0.001	< 0.0001	0.0001
	Churn	02/13/2002	15:37	< 0.02	0.01	< 0.004	0.001	0.0002	0.0002
	Churn	08/08/2002	10:30	< 0.004	0.003	< 0.001	0.001	0.0002	0.0003
	Churn	10/22/2002	10:18	< 0.005	0.001	< 0.005	0.001	< 0.0002	0.0001
	Churn	11/12/2002	7:08	< 0.01	0.00	< 0.002	0.001	0.0003	0.0002
	Churn	01/13/2003	13:28	0.005	0.007	< 0.001	0.001	< 0.0001	0.0000
	Carboy	05/15/2003	13:41	< 0.003	0.001	< 0.002	0.000	< 0.0001	0.0001
	Churn	05/15/2003	13:42	< 0.003	0.001	< 0.002	0.002	< 0.0001	0.0001
	Jerrican	05/15/2003	13:45	< 0.003	0.004	< 0.002	0.000	0.0002	0.0002
Filter blank:									
	Setup	06/12/2001	—	0.09	0.12	< 0.04	0.01	0.005	0.000
	Setup	06/12/2001	—	0.09	0.10	< 0.04	0.02	0.007	0.001
	Gelman	08/21/2002	10:38	< 0.005	0.004	< 0.001	0.001	0.0005	0.0003
Process blank:									
	Holding bottle	01/31/2001	—	0.12	0.11	< 0.08	0.04	0.021	0.004
	Gelman	06/11/2001	—	< 0.05	0.03	< 0.04	0.01	0.011	0.003
	Gelman	06/12/2001	—	< 0.05	0.01	< 0.04	0.01	0.010	0.004
	Gelman	06/12/2001	—	< 0.05	0.01	< 0.04	0.01	0.007	0.004
	Gelman	06/12/2001	—	< 0.05	0.04	< 0.04	0.01	0.008	0.003
	Gelman	10/31/2001	11:15	0.008	0.001	0.0065	0.0019	0.0015	0.0012
	Gelman	02/13/2002	15:37	< 0.02	0.01	< 0.004	0.001	< 0.0001	0.0001
	Gelman	08/08/2002	10:30	0.004	0.001	< 0.001	0.000	< 0.0002	0.0002
	Gelman	09/10/2002	8:08	0.010	0.002	< 0.005	0.001	0.0015	0.0002
	Gelman	10/22/2002	10:18	< 0.005	0.002	< 0.005	0.000	0.0014	0.0001
	Gelman	11/12/2002	7:09	< 0.01	0.01	< 0.002	0.001	< 0.0002	0.0001
	Gelman	01/13/2003	13:28	0.003	0.001	< 0.001	0.000	0.0004	0.0003
	Churn plus Gelman	03/19/2003	14:58	0.006	0.005	< 0.002	0.001	< 0.0002	0.0000
	Churn plus Gelman	05/15/2003	13:44	< 0.003	0.000	< 0.002	0.000	0.0001	0.0001
Source blank:									
	MilliQ	10/31/2001	11:30	0.002	0.001	0.0054	0.0043	0.0011	0.0015
	Trace metals lab DI water	08/08/2002	10:30	< 0.004	0.001	< 0.001	0.000	< 0.0002	0.0001
	Trace metals lab DI water	10/22/2002	10:18	0.027	0.030	< 0.005	0.001	< 0.0002	0.0002
	Trace metals lab DI water	11/12/2002	7:07	0.01	0.01	< 0.002	0.002	< 0.0002	0.0001
	Trace metals lab DI water	01/13/2003	13:28	0.008	0.003	< 0.001	0.001	0.0001	0.0001

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Cobalt (Co) (µg/L)		Chromium (Cr) (µg/L)		Cesium (Cs) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 0.01	0.00	< 1	1	< 0.04	0.01
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.01	0.01	< 1	1	< 0.04	0.03
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.01	0.00	2	1	2.2	0.2
Equipment blank:									
	Holding bottle	01/29/2001	—	< 0.02	0.01	< 2	1	0.17	0.06
	Tubing	02/13/2002	5:30	< 0.001	0.001	0.11	0.07	< 0.003	0.001
	Tubing	02/13/2002	5:30	< 0.001	0.000	0.16	0.04	< 0.003	0.001
	Jerrican	02/13/2002	15:36	< 0.001	0.000	< 0.08	0.03	< 0.003	0.001
	Churn	02/13/2002	15:37	0.004	0.000	0.21	0.01	< 0.003	0.001
	Churn	08/08/2002	10:30	0.003	0.001	< 0.2	0.0	< 0.007	0.003
	Churn	10/22/2002	10:18	< 0.002	0.001	0.08	0.03	< 0.007	0.004
	Churn	11/12/2002	7:08	0.002	0.002	< 0.4	0.3	< 0.006	0.002
	Churn	01/13/2003	13:28	< 0.001	0.001	< 0.1	0.0	< 0.004	0.003
	Carboy	05/15/2003	13:41	< 0.002	0.002	< 0.1	0.0	< 0.008	0.003
	Churn	05/15/2003	13:42	0.002	0.002	0.25	0.02	< 0.008	0.002
	Jerrican	05/15/2003	13:45	< 0.002	0.002	< 0.1	0.0	< 0.008	0.002
Filter blank:									
	Setup	06/12/2001	—	< 0.03	0.02	< 0.7	0.2	< 0.2	0.0
	Setup	06/12/2001	—	< 0.03	0.02	< 0.7	0.1	0.3	0.2
	Gelman	08/21/2002	10:38	< 0.003	0.000	< 0.1	0.0	< 0.006	0.002
Process blank:									
	Holding bottle	01/31/2001	—	< 0.03	0.02	< 1	1	< 0.08	0.01
	Gelman	06/11/2001	—	< 0.03	0.01	1.5	0.7	< 0.2	0.0
	Gelman	06/12/2001	—	< 0.03	0.02	0.7	0.3	2.5	2.7
	Gelman	06/12/2001	—	< 0.03	0.02	1.6	0.6	0.3	0.1
	Gelman	06/12/2001	—	< 0.03	0.01	1.1	0.4	< 0.2	0.2
	Gelman	10/31/2001	11:15	0.007	0.007	< 0.2	0.0	< 0.009	0.006
	Gelman	02/13/2002	15:37	0.002	0.001	0.12	0.05	< 0.003	0.001
	Gelman	08/08/2002	10:30	< 0.001	0.001	< 0.2	0.1	< 0.007	0.006
	Gelman	09/10/2002	8:08	< 0.002	0.000	< 0.06	0.06	< 0.007	0.002
	Gelman	10/22/2002	10:18	< 0.002	0.000	< 0.06	0.01	< 0.007	0.002
	Gelman	11/12/2002	7:09	< 0.001	0.001	< 0.4	0.3	< 0.006	0.002
	Gelman	01/13/2003	13:28	< 0.001	0.001	< 0.1	0.1	< 0.004	0.002
	Churn plus Gelman	03/19/2003	14:58	< 0.002	0.000	< 0.06	0.03	< 0.003	0.002
	Churn plus Gelman	05/15/2003	13:44	0.003	0.001	< 0.1	0.0	< 0.008	0.002
Source blank:									
	MilliQ	10/31/2001	11:30	0.003	0.017	< 0.2	0.1	< 0.009	0.001
	Trace metals lab DI water	08/08/2002	10:30	< 0.001	0.001	< 0.2	0.1	< 0.007	0.009
	Trace metals lab DI water	10/22/2002	10:18	0.003	0.001	< 0.06	0.01	< 0.007	0.004
	Trace metals lab DI water	11/12/2002	7:07	< 0.001	0.001	< 0.4	0.3	< 0.006	0.004
	Trace metals lab DI water	01/13/2003	13:28	< 0.001	0.001	< 0.1	0.1	< 0.004	0.002

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Copper (Cu) (µg/L)		Dysprosium (Dy) (µg/L)		Erbium (Er) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 0.2	0.0	0.005	0.006	< 0.007	0.003
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.2	0.1	< 0.003	0.000	< 0.007	0.001
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.2	0.0	< 0.003	0.001	< 0.007	0.003
Equipment blank:									
	Holding bottle	01/29/2001	—	3.2	0.1	0.007	0.002	< 0.004	0.003
	Tubing	02/13/2002	5:30	0.010	0.014	< 0.0003	0.0001	< 0.0004	0.0004
	Tubing	02/13/2002	5:30	0.011	0.014	< 0.0003	0.0002	< 0.0004	0.0005
	Jerrican	02/13/2002	15:36	< 0.01	0.002	0.0003	0.0002	< 0.0004	0.0003
	Churn	02/13/2002	15:37	0.021	0.003	< 0.0003	0.0002	< 0.0004	0.0001
	Churn	08/08/2002	10:30	0.37	0.21	< 0.0005	0.0001	< 0.0005	0.0002
	Churn	10/22/2002	10:18	0.023	0.030	< 0.0006	0.0004	< 0.0007	0.0003
	Churn	11/12/2002	7:08	< 0.009	0.003	< 0.0004	0.0002	< 0.001	0.001
	Churn	01/13/2003	13:28	< 0.006	0.003	< 0.0002	0.0002	< 0.0004	0.0001
	Carboy	05/15/2003	13:41	< 0.01	0.01	< 0.0005	0.0001	< 0.0004	0.0002
	Churn	05/15/2003	13:42	< 0.01	0.01	< 0.0005	0.0001	< 0.0004	0.0000
	Jerrican	05/15/2003	13:45	< 0.01	0.01	< 0.0005	0.0002	< 0.0004	0.0001
Filter blank:									
	Setup	06/12/2001	—	0.8	0.0	< 0.005	0.002	0.003	0.002
	Setup	06/12/2001	—	0.8	0.1	< 0.005	0.002	0.002	0.001
	Gelman	08/21/2002	10:38	< 0.03	0.00	< 0.0005	0.0001	< 0.0004	0.0004
Process blank:									
	Holding bottle	01/31/2001	—	0.8	0.4	< 0.003	0.004	0.003	0.002
	Gelman	06/11/2001	—	1.1	0.2	< 0.005	0.001	< 0.002	0.001
	Gelman	06/12/2001	—	0.8	0.2	< 0.005	0.001	< 0.002	0.002
	Gelman	06/12/2001	—	0.9	0.1	< 0.005	0.002	< 0.002	0.001
	Gelman	06/12/2001	—	0.9	0.1	< 0.005	0.002	< 0.002	0.002
	Gelman	10/31/2001	11:15	0.08	0.08	0.0004	0.0003	< 0.0003	0.0002
	Gelman	02/13/2002	15:37	0.039	0.008	< 0.0003	0.0002	< 0.0004	0.0003
	Gelman	08/08/2002	10:30	0.05	0.06	< 0.0005	0.0005	< 0.0005	0.0001
	Gelman	09/10/2002	8:08	0.10	0.01	< 0.0006	0.0001	< 0.0007	0.0002
	Gelman	10/22/2002	10:18	0.018	0.020	< 0.0006	0.0004	< 0.0007	0.0004
	Gelman	11/12/2002	7:09	0.022	0.004	< 0.0004	0.0001	< 0.001	0.000
	Gelman	01/13/2003	13:28	< 0.006	0.004	< 0.0002	0.0002	< 0.0004	0.0003
	Churn plus Gelman	03/19/2003	14:58	0.017	0.002	< 0.0004	0.0002	< 0.0004	0.0003
	Churn plus Gelman	05/15/2003	13:44	< 0.01	0.01	< 0.0005	0.0003	< 0.0004	0.0001
Source blank:									
	MilliQ	10/31/2001	11:30	< 0.02	0.01	0.0002	0.0003	< 0.0003	0.0003
	Trace metals lab DI water	08/08/2002	10:30	< 0.02	0.02	< 0.0005	0.0004	< 0.0005	0.0002
	Trace metals lab DI water	10/22/2002	10:18	0.026	0.016	< 0.0006	0.0002	< 0.0007	0.0007
	Trace metals lab DI water	11/12/2002	7:07	0.010	0.001	< 0.0004	0.0002	< 0.001	0.001
	Trace metals lab DI water	01/13/2003	13:28	0.014	0.002	0.0003	0.0002	< 0.0004	0.0002

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Europium (Eu) (µg/L)		Iron (Pb) (µg/L)		Gadolinium (Gd) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	0.002	0.003	71	25	0.006	0.004
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.002	0.002	73	10	< 0.004	0.003
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.002	0.002	6	4	< 0.004	0.001
Equipment blank:									
	Holding bottle	01/29/2001	—	0.003	0.001	35	1	0.006	0.004
	Tubing	02/13/2002	5:30	< 0.0003	0.0001	1.9	1.9	< 0.0005	0.0006
	Tubing	02/13/2002	5:30	< 0.0003	0.0000	< 1	1	< 0.0005	0.0004
	Jerrican	02/13/2002	15:36	< 0.0003	0.0001	< 1	0	< 0.0005	0.0003
	Churn	02/13/2002	15:37	< 0.0003	0.0001	< 1	1	< 0.0005	0.0004
	Churn	08/08/2002	10:30	< 0.0002	0.0001	< 1	2	< 0.0004	0.0002
	Churn	10/22/2002	10:18	< 0.0004	0.0001	< 0.6	0.2	< 0.0009	0.0003
	Churn	11/12/2002	7:08	< 0.0002	0.0003	0.7	0.4	< 0.0002	0.0002
	Churn	01/13/2003	13:28	< 0.0001	0.0001	< 0.5	0.6	< 0.0002	0.0000
	Carboy	05/15/2003	13:41	< 0.0003	0.0000	< 0.4	0.3	< 0.0006	0.0004
	Churn	05/15/2003	13:42	< 0.0003	0.0001	1.7	0.3	< 0.0006	0.0003
	Jerrican	05/15/2003	13:45	< 0.0003	0.0002	< 0.4	0.7	< 0.0006	0.0002
Filter blank:									
	Setup	06/12/2001	—	< 0.002	0.001	15	15	< 0.006	0.001
	Setup	06/12/2001	—	< 0.002	0.001	14	14	< 0.006	0.003
	Gelman	08/21/2002	10:38	< 0.0002	0.0001	< 0.6	0.4	< 0.0005	0.0001
Process blank:									
	Holding bottle	01/31/2001	—	0.002	0.001	13	11	< 0.004	0.002
	Gelman	06/11/2001	—	< 0.002	0.001	7	3	< 0.006	0.002
	Gelman	06/12/2001	—	< 0.002	0.001	3	1	< 0.006	0.001
	Gelman	06/12/2001	—	< 0.002	0.001	6	2	< 0.006	0.002
	Gelman	06/12/2001	—	< 0.002	0.001	6	4	< 0.006	0.001
	Gelman	10/31/2001	11:15	< 0.0001	0.0002	0.5	0.2	< 0.0003	0.0003
	Gelman	02/13/2002	15:37	< 0.0003	0.0001	< 1	1	< 0.0005	0.0001
	Gelman	08/08/2002	10:30	< 0.0002	0.0002	1.7	2.9	< 0.0004	0.0002
	Gelman	09/10/2002	8:08	< 0.0004	0.0002	< 0.6	0.3	< 0.0009	0.0002
	Gelman	10/22/2002	10:18	< 0.0004	0.0000	< 0.6	1.1	< 0.0009	0.0006
	Gelman	11/12/2002	7:09	< 0.0002	0.0001	< 0.5	0.1	< 0.0002	0.0001
	Gelman	01/13/2003	13:28	< 0.0001	0.0002	0.9	0.5	< 0.0002	0.0004
	Churn plus Gelman	03/19/2003	14:58	< 0.0002	0.0001	1.0	0.3	< 0.0002	0.0001
	Churn plus Gelman	05/15/2003	13:44	< 0.0003	0.0000	1.3	0.4	< 0.0006	0.0003
Source blank:									
	MilliQ	10/31/2001	11:30	< 0.0001	0.0001	1.8	1.3	< 0.0003	0.0003
	Trace metals lab DI water	08/08/2002	10:30	< 0.0002	0.0000	1.3	2.0	< 0.0004	0.0003
	Trace metals lab DI water	10/22/2002	10:18	< 0.0004	0.0002	< 0.6	0.5	< 0.0009	0.0003
	Trace metals lab DI water	11/12/2002	7:07	< 0.0002	0.0001	< 0.5	0.3	< 0.0002	0.0003
	Trace metals lab DI water	01/13/2003	13:28	< 0.0001	0.0001	1.2	0.4	< 0.0002	0.0001

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Holmium (Ho) (µg/L)		Potassium (K) (mg/L)		Lanthanum (La) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 0.001	0.000	< 0.1	0.1	0.026	0.003
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.001	0.001	< 0.1	0.1	0.0026	0.0010
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.001	0.001	< 0.1	0.1	0.0012	0.0010
Equipment blank:									
	Holding bottle	01/29/2001	—	< 0.001	0.000	< 0.06	0.03	0.095	0.004
	Tubing	02/13/2002	5:30	< 0.0001	0.0000	< 0.01	0.01	< 0.0001	0.0001
	Tubing	02/13/2002	5:30	< 0.0001	0.0000	0.02	0.04	0.0002	0.0001
	Jerrican	02/13/2002	15:36	< 0.0001	0.0000	< 0.01	0.00	0.0001	0.0001
	Churn	02/13/2002	15:37	< 0.0001	0.0001	0.02	0.02	< 0.0001	0.0001
	Churn	08/08/2002	10:30	< 0.0001	0.0000	< 0.03	0.02	0.0004	0.0000
	Churn	10/22/2002	10:18	< 0.0002	0.0001	< 0.02	0.00	< 0.0002	0.0002
	Churn	11/12/2002	7:08	< 0.0001	0.0000	< 0.07	0.05	0.0002	0.0001
	Churn	01/13/2003	13:28	< 0.0001	0.0001	< 0.01	0.01	< 0.0002	0.0001
	Carboy	05/15/2003	13:41	< 0.0001	0.0000	< 0.008	0.002	< 0.0003	0.0000
	Churn	05/15/2003	13:42	< 0.0001	0.0001	< 0.008	0.001	< 0.0003	0.0002
	Jerrican	05/15/2003	13:45	< 0.0001	0.0000	0.013	0.007	0.0003	0.0001
Filter blank:									
	Setup	06/12/2001	—	< 0.0008	0.0005	0.02	0.03	< 0.004	0.001
	Setup	06/12/2001	—	< 0.0008	0.0006	0.04	0.04	< 0.004	0.001
	Gelman	08/21/2002	10:38	< 0.0002	0.0000	< 0.008	0.009	0.0004	0.0001
Process blank:									
	Holding bottle	01/31/2001	—	< 0.0009	0.0003	< 0.08	0.01	0.010	0.002
	Gelman	06/11/2001	—	< 0.0008	0.0007	< 0.02	0.01	< 0.004	0.001
	Gelman	06/12/2001	—	< 0.0008	0.0010	< 0.02	0.01	< 0.004	0.001
	Gelman	06/12/2001	—	< 0.0008	0.0004	< 0.02	0.01	< 0.004	0.001
	Gelman	06/12/2001	—	< 0.0008	0.0004	< 0.02	0.01	< 0.004	0.001
	Gelman	10/31/2001	11:15	0.0001	0.0000	< 0.02	0.02	0.0006	0.0003
	Gelman	02/13/2002	15:37	< 0.0001	0.0001	0.02	0.03	< 0.0001	0.0000
	Gelman	08/08/2002	10:30	< 0.0001	0.0000	< 0.03	0.03	< 0.0002	0.0001
	Gelman	09/10/2002	8:08	< 0.0002	0.0000	< 0.02	0.01	0.0016	0.0003
	Gelman	10/22/2002	10:18	< 0.0002	0.0001	< 0.02	0.01	0.0011	0.0002
	Gelman	11/12/2002	7:09	0.0001	0.0000	< 0.07	0.04	< 0.0001	0.0001
	Gelman	01/13/2003	13:28	< 0.0001	0.0000	< 0.01	0.01	0.0003	0.0003
	Churn plus Gelman	03/19/2003	14:58	< 0.0001	0.0000	< 0.004	0.002	0.0002	0.0002
	Churn plus Gelman	05/15/2003	13:44	< 0.0001	0.0001	< 0.008	0.003	< 0.0003	0.0001
Source blank:									
	MilliQ	10/31/2001	11:30	0.0001	0.0001	< 0.02	0.02	0.0007	0.0007
	Trace metals lab DI water	08/08/2002	10:30	< 0.0001	0.0001	< 0.03	0.02	< 0.0002	0.0001
	Trace metals lab DI water	10/22/2002	10:18	< 0.0002	0.0000	< 0.02	0.01	0.0003	0.0003
	Trace metals lab DI water	11/12/2002	7:07	< 0.0001	0.0000	< 0.07	0.05	0.0001	0.0001
	Trace metals lab DI water	01/13/2003	13:28	< 0.0001	0.0000	< 0.01	0.01	< 0.0002	0.0001

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Lithium (Li) (µg/L)		Lutetium (Lu) (µg/L)		Magnesium (Mg) (mg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 0.1	0.0	< 0.001	0.002	< 0.008	0.003
Blank-DI plus acid plus digestion:		01/25/2002	—	0.6	0.1	< 0.001	0.000	< 0.008	0.009
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	0.6	0.2	< 0.001	0.000	< 0.008	0.006
Equipment blank:									
	Holding bottle	01/29/2001	—	0.3	0.1	< 0.001	0.000	< 0.1	0.0
	Tubing	02/13/2002	5:30	< 0.03	0.01	< 0.0001	0.0001	< 0.009	0.008
	Tubing	02/13/2002	5:30	< 0.03	0.02	< 0.0001	0.0001	< 0.009	0.001
	Jerrican	02/13/2002	15:36	< 0.03	0.01	< 0.0001	0.0001	< 0.009	0.001
	Churn	02/13/2002	15:37	< 0.03	0.02	< 0.0001	0.0000	0.012	0.016
	Churn	08/08/2002	10:30	< 0.03	0.02	< 0.0001	0.0000	< 0.002	0.001
	Churn	10/22/2002	10:18	< 0.02	0.01	< 0.0003	0.0001	< 0.003	0.002
	Churn	11/12/2002	7:08	< 0.01	0.00	< 0.0001	0.0002	< 0.007	0.003
	Churn	01/13/2003	13:28	< 0.007	0.008	0.0000	0.0000	< 0.002	0.002
	Carboy	05/15/2003	13:41	< 0.01	0.00	< 0.0001	0.0000	< 0.003	0.002
	Churn	05/15/2003	13:42	< 0.01	0.00	< 0.0001	0.0000	< 0.003	0.000
	Jerrican	05/15/2003	13:45	< 0.01	0.01	< 0.0001	0.0001	< 0.003	0.001
Filter blank:									
	Setup	06/12/2001	—	< 0.1	0.1	< 0.0007	0.0007	< 0.07	0.00
	Setup	06/12/2001	—	< 0.1	0.2	< 0.0007	0.0003	< 0.07	0.02
	Gelman	08/21/2002	10:38	< 0.01	0.01	< 0.0001	0.0001	< 0.003	0.001
Process blank:									
	Holding bottle	01/31/2001	—	0.5	0.1	< 0.0006	0.0005	0.04	0.04
	Gelman	06/11/2001	—	< 0.1	0.1	< 0.0007	0.0002	< 0.07	0.07
	Gelman	06/12/2001	—	0.2	0.1	< 0.0007	0.0004	< 0.07	0.00
	Gelman	06/12/2001	—	0.2	0.1	< 0.0007	0.0006	< 0.07	0.06
	Gelman	06/12/2001	—	0.4	0.0	< 0.0007	0.0007	< 0.07	0.04
	Gelman	10/31/2001	11:15	0.018	0.019	< 0.0001	0.0001	0.0010	0.0000
	Gelman	02/13/2002	15:37	< 0.03	0.02	< 0.0001	0.0000	< 0.009	0.004
	Gelman	08/08/2002	10:30	< 0.03	0.01	< 0.0001	0.0001	0.003	0.003
	Gelman	09/10/2002	8:08	< 0.02	0.00	< 0.0003	0.0000	< 0.003	0.001
	Gelman	10/22/2002	10:18	< 0.02	0.01	< 0.0003	0.0001	0.006	0.010
	Gelman	11/12/2002	7:09	< 0.01	0.00	< 0.0001	0.0000	< 0.007	0.002
	Gelman	01/13/2003	13:28	< 0.007	0.002	0.0000	0.0001	< 0.002	0.002
	Churn plus Gelman	03/19/2003	14:58	0.007	0.009	< 0.0001	0.0000	< 0.006	0.001
	Churn plus Gelman	05/15/2003	13:44	< 0.01	0.00	< 0.0001	0.0000	< 0.003	0.001
Source blank:									
	MilliQ	10/31/2001	11:30	< 0.004	0.005	< 0.0001	0.0000	< 0.0003	0.0000
	Trace metals lab DI water	08/08/2002	10:30	< 0.03	0.01	< 0.0001	0.0001	< 0.002	0.000
	Trace metals lab DI water	10/22/2002	10:18	< 0.02	0.01	< 0.0003	0.0001	< 0.003	0.001
	Trace metals lab DI water	11/12/2002	7:07	< 0.01	0.00	< 0.0001	0.0000	< 0.007	0.002
	Trace metals lab DI water	01/13/2003	13:28	< 0.007	0.007	0.0000	0.0000	< 0.002	0.001

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Manganese (Mn) (µg/L)		Molybdenum (Mo) (µg/L)		Sodium (Na) (mg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	0.4	0.1	< 0.5	0.1	< 0.08	0.02
Blank-DI plus acid plus digestion:		01/25/2002	—	0.3	0.1	< 0.5	0.0	< 0.08	0.06
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.3	0.1	< 0.5	0.2	< 0.08	0.10
Equipment blank:									
	Holding bottle	01/29/2001	—	< 0.2	0.2	0.6	0.7	0.07	0.01
	Tubing	02/13/2002	5:30	< 0.2	0.2	< 0.05	0.01	0.18	0.02
	Tubing	02/13/2002	5:30	< 0.2	0.0	0.08	0.02	0.17	0.01
	Jerrican	02/13/2002	15:36	< 0.2	0.1	0.06	0.06	< 0.02	0.02
	Churn	02/13/2002	15:37	< 0.2	0.2	< 0.05	0.01	0.02	0.03
	Churn	08/08/2002	10:30	< 0.06	0.02	< 0.04	0.03	0.003	0.008
	Churn	10/22/2002	10:18	< 0.1	0.0	< 0.05	0.03	< 0.002	0.003
	Churn	11/12/2002	7:08	< 0.4	0.1	< 0.03	0.01	< 0.008	0.004
	Churn	01/13/2003	13:28	< 0.07	0.01	< 0.04	0.03	0.009	0.018
	Carboy	05/15/2003	13:41	< 0.08	0.02	< 0.04	0.02	< 0.01	0.01
	Churn	05/15/2003	13:42	< 0.08	0.03	< 0.04	0.03	< 0.01	0.00
	Jerrican	05/15/2003	13:45	< 0.08	0.02	< 0.04	0.06	< 0.01	0.02
Filter blank:									
	Setup	06/12/2001	—	0.7	0.1	< 0.2	0.2	0.33	0.39
	Setup	06/12/2001	—	0.6	0.2	< 0.2	0.2	0.35	0.40
	Gelman	08/21/2002	10:38	< 0.07	0.01	< 0.05	0.02	< 0.01	0.00
Process blank:									
	Holding bottle	01/31/2001	—	< 0.4	0.1	0.1	0.0	0.079	0.027
	Gelman	06/11/2001	—	0.7	0.4	0.2	0.2	< 0.02	0.05
	Gelman	06/12/2001	—	< 0.5	0.3	0.4	0.6	< 0.02	0.04
	Gelman	06/12/2001	—	< 0.5	0.1	0.5	0.7	0.10	0.04
	Gelman	06/12/2001	—	< 0.5	0.1	< 0.2	0.3	0.21	0.07
	Gelman	10/31/2001	11:15	< 0.1	0.0	< 0.04	0.02	< 0.2	0.1
	Gelman	02/13/2002	15:37	< 0.2	0.0	0.11	0.12	< 0.02	0.01
	Gelman	08/08/2002	10:30	0.12	0.13	0.06	0.04	0.004	0.005
	Gelman	09/10/2002	8:08	< 0.1	0.0	< 0.05	0.01	< 0.002	0.002
	Gelman	10/22/2002	10:18	< 0.1	0.1	< 0.05	0.05	< 0.002	0.002
	Gelman	11/12/2002	7:09	< 0.4	0.1	< 0.03	0.03	< 0.008	0.012
	Gelman	01/13/2003	13:28	0.09	0.04	< 0.04	0.02	0.005	0.004
	Churn plus Gelman	03/19/2003	14:58	< 0.07	0.02	< 0.04	0.08	< 0.006	0.000
	Churn plus Gelman	05/15/2003	13:44	< 0.08	0.05	< 0.04	0.01	< 0.01	0.00
Source blank:									
	MilliQ	10/31/2001	11:30	< 0.1	0.1	< 0.04	0.03	< 0.2	0.1
	Trace metals lab DI water	08/08/2002	10:30	< 0.06	0.02	0.06	0.05	< 0.002	0.003
	Trace metals lab DI water	10/22/2002	10:18	< 0.1	0.0	< 0.05	0.05	0.026	0.034
	Trace metals lab DI water	11/12/2002	7:07	< 0.4	0.1	< 0.03	0.01	0.009	0.011
	Trace metals lab DI water	01/13/2003	13:28	< 0.07	0.01	< 0.04	0.00	0.006	0.009

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Neodymium (Nd) (µg/L)		Nickel (N) (µg/L)		Lead (Pb) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	0.031	0.004	0.15	0.08	< 0.03	0.01
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.007	0.005	< 0.06	0.08	0.03	0.01
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.007	0.002	< 0.06	0.04	0.12	0.02
Equipment blank:									
	Holding bottle	01/29/2001	—	0.067	0.007	1.4	0.1	2.1	0.1
	Tubing	02/13/2002	5:30	< 0.0005	0.0006	< 0.008	0.001	0.012	0.016
	Tubing	02/13/2002	5:30	< 0.0005	0.0004	0.009	0.004	0.003	0.001
	Jerrican	02/13/2002	15:36	< 0.0005	0.0007	< 0.008	0.001	0.005	0.003
	Churn	02/13/2002	15:37	< 0.0005	0.0003	0.17	0.01	< 0.003	0.001
	Churn	08/08/2002	10:30	< 0.0004	0.0005	0.057	0.001	0.012	0.012
	Churn	10/22/2002	10:18	< 0.002	0.001	0.050	0.050	< 0.004	0.006
	Churn	11/12/2002	7:08	0.0002	0.0003	0.092	0.006	< 0.001	0.001
	Churn	01/13/2003	13:28	< 0.0004	0.0001	< 0.0009	0.0044	< 0.004	0.001
	Carboy	05/15/2003	13:41	< 0.0006	0.0003	< 0.03	0.00	< 0.003	0.001
	Churn	05/15/2003	13:42	< 0.0006	0.0002	0.25	0.01	< 0.003	0.001
	Jerrican	05/15/2003	13:45	< 0.0006	0.0002	< 0.03	0.00	< 0.003	0.001
Filter blank:									
	Setup	06/12/2001	—	< 0.005	0.003	1.2	0.0	< 0.2	0.1
	Setup	06/12/2001	—	< 0.005	0.005	1.3	0.1	< 0.2	0.0
	Gelman	08/21/2002	10:38	< 0.0008	0.0002	< 0.07	0.01	< 0.003	0.001
Process blank:									
	Holding bottle	01/31/2001	—	0.007	0.006	0.5	0.1	< 0.1	0.0
	Gelman	06/11/2001	—	< 0.005	0.003	1.9	0.1	< 0.2	0.1
	Gelman	06/12/2001	—	< 0.005	0.002	2.0	0.2	< 0.2	0.1
	Gelman	06/12/2001	—	< 0.005	0.002	1.6	0.3	< 0.2	0.1
	Gelman	06/12/2001	—	< 0.005	0.004	1.5	0.0	< 0.2	0.2
	Gelman	10/31/2001	11:15	0.0011	0.0007	0.04	0.00	0.009	0.003
	Gelman	02/13/2002	15:37	< 0.0005	0.0002	0.065	0.005	0.006	0.005
	Gelman	08/08/2002	10:30	< 0.0004	0.0006	0.022	0.013	0.008	0.002
	Gelman	09/10/2002	8:08	< 0.002	0.000	< 0.009	0.007	0.008	0.001
	Gelman	10/22/2002	10:18	< 0.002	0.001	0.011	0.011	0.006	0.004
	Gelman	11/12/2002	7:09	0.0004	0.0005	< 0.004	0.001	0.002	0.000
	Gelman	01/13/2003	13:28	< 0.0004	0.0002	0.067	0.001	< 0.004	0.003
	Churn plus Gelman	03/19/2003	14:58	< 0.0004	0.0003	0.028	0.002	< 0.003	0.000
	Churn plus Gelman	05/15/2003	13:44	< 0.0006	0.0005	0.17	0.01	< 0.003	0.003
Source blank:									
	MilliQ	10/31/2001	11:30	0.0008	0.0010	< 0.02	0.02	< 0.005	0.005
	Trace metals lab DI water	08/08/2002	10:30	< 0.0004	0.0003	< 0.006	0.007	< 0.002	0.002
	Trace metals lab DI water	10/22/2002	10:18	< 0.002	0.000	0.012	0.003	< 0.004	0.001
	Trace metals lab DI water	11/12/2002	7:07	< 0.0002	0.0002	0.014	0.007	< 0.001	0.000
	Trace metals lab DI water	01/13/2003	13:28	< 0.0004	0.0002	0.032	0.004	< 0.004	0.004

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Praseodymium (Pr) (µg/L)		Rubidium (Rb) (µg/L)		Rhenium (Re) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	0.007	0.001	< 0.01	0.01	< 0.002	0.001
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.001	0.000	< 0.01	0.01	< 0.002	0.001
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.001	0.001	< 0.01	0.01	< 0.002	0.001
Equipment blank:									
	Holding bottle	01/29/2001	—	0.018	0.000	0.08	0.01	< 0.003	0.001
	Tubing	02/13/2002	5:30	< 0.0001	0.0000	0.0028	0.0006	< 0.0002	0.0002
	Tubing	02/13/2002	5:30	< 0.0001	0.0000	0.0041	0.0008	< 0.0002	0.0001
	Jerrican	02/13/2002	15:36	< 0.0001	0.0000	0.0066	0.0003	< 0.0002	0.0000
	Churn	02/13/2002	15:37	< 0.0001	0.0001	0.0007	0.0003	< 0.0002	0.0001
	Churn	08/08/2002	10:30	< 0.0002	0.0000	< 0.0008	0.0001	< 0.0003	0.0001
	Churn	10/22/2002	10:18	< 0.0002	0.0002	0.002	0.001	< 0.0003	0.0002
	Churn	11/12/2002	7:08	< 0.0001	0.0000	< 0.002	0.001	< 0.0002	0.0000
	Churn	01/13/2003	13:28	< 0.0001	0.0000	< 0.0005	0.0005	< 0.0001	0.0001
	Carboy	05/15/2003	13:41	< 0.0001	0.0000	< 0.001	0.000	< 0.0001	0.0002
	Churn	05/15/2003	13:42	< 0.0001	0.0001	< 0.001	0.001	< 0.0001	0.0001
	Jerrican	05/15/2003	13:45	< 0.0001	0.0000	0.013	0.001	0.0002	0.0002
Filter blank:									
	Setup	06/12/2001	—	< 0.002	0.001	< 0.02	0.01	< 0.002	0.001
	Setup	06/12/2001	—	< 0.002	0.000	< 0.02	0.01	< 0.002	0.001
	Gelman	08/21/2002	10:38	< 0.0002	0.0001	< 0.001	0.001	< 0.0003	0.0001
Process blank:									
	Holding bottle	01/31/2001	—	0.003	0.001	0.028	0.002	0.002	0.001
	Gelman	06/11/2001	—	< 0.002	0.001	< 0.02	0.03	< 0.002	0.001
	Gelman	06/12/2001	—	< 0.002	0.000	< 0.02	0.01	< 0.002	0.000
	Gelman	06/12/2001	—	< 0.002	0.001	0.02	0.01	< 0.002	0.000
	Gelman	06/12/2001	—	< 0.002	0.000	0.03	0.01	< 0.002	0.001
	Gelman	10/31/2001	11:15	0.0001	0.0001	0.004	0.001	< 0.0002	0.0002
	Gelman	02/13/2002	15:37	< 0.0001	0.0001	0.0016	0.0011	< 0.0002	0.0000
	Gelman	08/08/2002	10:30	< 0.0002	0.0000	< 0.0008	0.0001	< 0.0003	0.0001
	Gelman	09/10/2002	8:08	< 0.0002	0.0001	< 0.002	0.001	< 0.0003	0.0000
	Gelman	10/22/2002	10:18	< 0.0002	0.0000	0.002	0.002	< 0.0003	0.0002
	Gelman	11/12/2002	7:09	< 0.0001	0.0000	< 0.002	0.000	< 0.0002	0.0001
	Gelman	01/13/2003	13:28	< 0.0001	0.0000	< 0.0005	0.0004	< 0.0001	0.0001
	Churn plus Gelman	03/19/2003	14:58	< 0.0002	0.0000	< 0.0006	0.0003	< 0.0001	0.0002
	Churn plus Gelman	05/15/2003	13:44	< 0.0001	0.0001	< 0.001	0.000	< 0.0001	0.0001
Source blank:									
	MilliQ	10/31/2001	11:30	0.0002	0.0002	< 0.003	0.001	< 0.0002	0.0001
	Trace metals lab DI water	08/08/2002	10:30	< 0.0002	0.0001	< 0.0008	0.0004	< 0.0003	0.0000
	Trace metals lab DI water	10/22/2002	10:18	< 0.0002	0.0001	0.004	0.001	< 0.0003	0.0002
	Trace metals lab DI water	11/12/2002	7:07	< 0.0001	0.0000	0.002	0.000	< 0.0002	0.0001
	Trace metals lab DI water	01/13/2003	13:28	< 0.0001	0.0000	< 0.0005	0.0003	< 0.0001	0.0001

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Sulfur (S) (mg/L)		Antimony (Sb) (µg/L)		Selenium (Se) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 0.1	0.0	0.07	0.03	< 2	1
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.1	0.1	< 0.02	0.06	< 2	1
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.1	0.1	< 0.02	0.02	< 2	1
Equipment blank:									
	Holding bottle	01/29/2001	—	< 0.2	0.0	0.08	0.03	< 0.7	1.3
	Tubing	02/13/2002	5:30	< 0.04	0.02	< 0.003	0.001	< 0.1	0.1
	Tubing	02/13/2002	5:30	< 0.04	0.02	0.005	0.000	< 0.1	0.0
	Jerrican	02/13/2002	15:36	< 0.04	0.02	0.006	0.004	< 0.1	0.1
	Churn	02/13/2002	15:37	< 0.04	0.01	0.005	0.006	< 0.1	0.0
	Churn	08/08/2002	10:30	< 0.02	0.00	0.003	0.004	< 0.1	0.0
	Churn	10/22/2002	10:18	< 0.02	0.01	0.008	0.008	0.06	0.05
	Churn	11/12/2002	7:08	< 0.01	0.00	< 0.001	0.000	< 0.2	0.2
	Churn	01/13/2003	13:28	< 0.02	0.01	< 0.002	0.002	< 0.05	0.07
	Carboy	05/15/2003	13:41	< 0.02	0.01	< 0.01	0.01	< 0.07	0.04
	Churn	05/15/2003	13:42	< 0.02	0.01	< 0.01	0.01	< 0.07	0.03
	Jerrican	05/15/2003	13:45	< 0.02	0.01	< 0.01	0.00	< 0.07	0.02
Filter blank:									
	Setup	06/12/2001	—	< 0.2	0.1	< 0.03	0.02	< 2	1
	Setup	06/12/2001	—	< 0.2	0.0	< 0.03	0.02	< 2	0
	Gelman	08/21/2002	10:38	< 0.01	0.01	< 0.004	0.002	< 0.05	0.02
Process blank:									
	Holding bottle	01/31/2001	—	0.10	0.15	0.078	0.035	< 1	1
	Gelman	06/11/2001	—	< 0.2	0.1	< 0.03	0.01	< 2	0
	Gelman	06/12/2001	—	< 0.2	0.1	< 0.03	0.03	< 2	0
	Gelman	06/12/2001	—	< 0.2	0.0	0.13	0.01	< 2	1
	Gelman	06/12/2001	—	< 0.2	0.1	< 0.03	0.01	< 2	0
	Gelman	10/31/2001	11:15	< 0.02	0.00	0.078	0.008	< 0.2	0.1
	Gelman	02/13/2002	15:37	< 0.04	0.02	0.008	0.004	< 0.1	0.0
	Gelman	08/08/2002	10:30	0.02	0.03	0.004	0.002	< 0.1	0.0
	Gelman	09/10/2002	8:08	< 0.02	0.01	< 0.003	0.000	< 0.05	0.01
	Gelman	10/22/2002	10:18	< 0.02	0.01	0.005	0.005	< 0.05	0.02
	Gelman	11/12/2002	7:09	< 0.01	0.00	0.003	0.002	< 0.2	0.1
	Gelman	01/13/2003	13:28	< 0.02	0.01	< 0.002	0.002	0.07	0.10
	Churn plus Gelman	03/19/2003	14:58	< 0.01	0.01	< 0.006	0.000	< 0.07	0.02
	Churn plus Gelman	05/15/2003	13:44	< 0.02	0.00	< 0.01	0.00	< 0.07	0.04
Source blank:									
	MilliQ	10/31/2001	11:30	< 0.02	0.01	0.073	0.003	< 0.2	0.1
	Trace metals lab DI water	08/08/2002	10:30	< 0.02	0.01	0.003	0.001	< 0.1	0.1
	Trace metals lab DI water	10/22/2002	10:18	< 0.02	0.02	< 0.003	0.001	< 0.05	0.01
	Trace metals lab DI water	11/12/2002	7:07	< 0.01	0.01	< 0.001	0.001	< 0.2	0.2
	Trace metals lab DI water	01/13/2003	13:28	< 0.02	0.01	< 0.002	0.001	< 0.05	0.05

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Silica (SiO ₂) (mg/L)		Samarium (Sm) (µg/L)		Strontium (Sr) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 0.04	0.00	0.005	0.002	< 0.3	0.1
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.04	0.00	< 0.005	0.006	< 0.3	0.1
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.04	0.01	< 0.005	0.005	< 0.3	0.2
Equipment blank:									
	Holding bottle	01/29/2001	—	< 0.3	0.2	0.010	0.005	< 0.2	0.2
	Tubing	02/13/2002	5:30	< 0.3	0.1	< 0.0005	0.0006	1.0	0.0
	Tubing	02/13/2002	5:30	< 0.3	0.2	< 0.0005	0.0007	1.2	0.0
	Jerrican	02/13/2002	15:36	< 0.3	0.1	< 0.0005	0.0004	< 0.02	0.01
	Churn	02/13/2002	15:37	< 0.3	0.1	< 0.0005	0.0002	< 0.02	0.00
	Churn	08/08/2002	10:30	< 0.02	0.01	< 0.001	0.0005	< 0.02	0.00
	Churn	10/22/2002	10:18	< 0.07	0.01	< 0.001	0.000	< 0.02	0.01
	Churn	11/12/2002	7:08	< 0.02	0.01	< 0.0008	0.0011	< 0.04	0.04
	Churn	01/13/2003	13:28	< 0.07	0.02	< 0.0006	0.0004	< 0.01	0.02
	Carboy	05/15/2003	13:41	< 0.03	0.01	< 0.001	0.000	< 0.02	0.01
	Churn	05/15/2003	13:42	< 0.03	0.01	< 0.001	0.001	< 0.02	0.01
	Jerrican	05/15/2003	13:45	< 0.03	0.00	< 0.001	0.000	< 0.02	0.00
Filter blank:									
	Setup	06/12/2001	—	0.07	0.11	< 0.005	0.001	< 0.3	0.1
	Setup	06/12/2001	—	< 0.05	0.06	< 0.005	0.001	< 0.3	0.1
	Gelman	08/21/2002	10:38	< 0.04	0.00	< 0.0009	0.0008	< 0.01	0.01
Process blank:									
	Holding bottle	01/31/2001	—	< 0.2	0.1	< 0.007	0.003	< 0.3	0.1
	Gelman	06/11/2001	—	< 0.05	0.04	< 0.005	0.002	< 0.3	0.2
	Gelman	06/12/2001	—	0.07	0.10	< 0.005	0.003	< 0.3	0.1
	Gelman	06/12/2001	—	< 0.05	0.03	< 0.005	0.001	< 0.3	0.2
	Gelman	06/12/2001	—	< 0.05	0.02	< 0.005	0.001	< 0.3	0.0
	Gelman	10/31/2001	11:15	0.007	0.000	< 0.0007	0.0001	< 0.1	0.0
	Gelman	02/13/2002	15:37	< 0.3	0.3	< 0.0005	0.0001	0.02	0.02
	Gelman	08/08/2002	10:30	< 0.02	0.01	< 0.001	0.0005	< 0.02	0.01
	Gelman	09/10/2002	8:08	< 0.07	0.01	< 0.001	0.001	< 0.02	0.01
	Gelman	10/22/2002	10:18	< 0.07	0.02	< 0.001	0.001	< 0.02	0.01
	Gelman	11/12/2002	7:09	< 0.02	0.01	< 0.0008	0.0004	< 0.04	0.03
	Gelman	01/13/2003	13:28	< 0.07	0.03	< 0.0006	0.0000	0.02	0.02
	Churn plus Gelman	03/19/2003	14:58	< 0.01	0.00	0.0004	0.0001	< 0.01	0.01
	Churn plus Gelman	05/15/2003	13:44	< 0.03	0.01	< 0.001	0.000	< 0.02	0.01
Source blank:									
	MilliQ	10/31/2001	11:30	0.006	0.000	< 0.0007	0.0003	< 0.1	0.1
	Trace metals lab DI water	08/08/2002	10:30	< 0.02	0.01	< 0.001	0.0004	< 0.02	0.01
	Trace metals lab DI water	10/22/2002	10:18	< 0.07	0.02	< 0.001	0.001	< 0.02	0.01
	Trace metals lab DI water	11/12/2002	7:07	< 0.02	0.01	< 0.0008	0.0000	< 0.04	0.05
	Trace metals lab DI water	01/13/2003	13:28	< 0.07	0.02	< 0.0006	0.0005	0.03	0.02

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Terbium (Tb) (µg/L)		Tellurium (Te) (µg/L)		Thorium (Th) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	0.002	0.000	< 0.06	0.02	< 0.004	0.000
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.001	0.001	< 0.06	0.02	< 0.004	0.000
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.001	0.000	< 0.06	0.02	< 0.004	0.000
Equipment blank:									
	Holding bottle	01/29/2001	—	0.0029	0.0001	< 0.1	0.0	0.004	0.000
	Tubing	02/13/2002	5:30	< 0.0001	0.0001	< 0.008	0.001	< 0.0009	0.0001
	Tubing	02/13/2002	5:30	< 0.0001	0.0000	< 0.008	0.001	0.0023	0.0014
	Jerrican	02/13/2002	15:36	< 0.0001	0.0001	< 0.008	0.001	0.0018	0.0012
	Churn	02/13/2002	15:37	< 0.0001	0.0001	< 0.008	0.001	< 0.0009	0.0004
	Churn	08/08/2002	10:30	< 0.0001	0.0001	< 0.006	0.004	< 0.001	0.000
	Churn	10/22/2002	10:18	0.0001	0.0001	< 0.006	0.001	0.002	0.001
	Churn	11/12/2002	7:08	< 0.0002	0.0001	< 0.01	0.01	< 0.001	0.000
	Churn	01/13/2003	13:28	0.0001	0.0000	0.003	0.002	< 0.0004	0.0003
	Carboy	05/15/2003	13:41	< 0.0001	0.0000	< 0.007	0.002	< 0.0003	0.0002
	Churn	05/15/2003	13:42	< 0.0001	0.0000	< 0.007	0.003	< 0.0003	0.0003
	Jerrican	05/15/2003	13:45	< 0.0001	0.0000	< 0.007	0.007	< 0.0003	0.0000
Filter blank:									
	Setup	06/12/2001	—	< 0.001	0.000	< 0.03	0.06	< 0.002	0.000
	Setup	06/12/2001	—	< 0.001	0.001	< 0.03	0.01	< 0.002	0.001
	Gelman	08/21/2002	10:38	< 0.0002	0.0001	< 0.007	0.004	< 0.001	0.001
Process blank:									
	Holding bottle	01/31/2001	—	< 0.001	0.000	< 0.08	0.06	0.0063	0.0016
	Gelman	06/11/2001	—	< 0.001	0.001	< 0.03	0.02	< 0.002	0.001
	Gelman	06/12/2001	—	< 0.001	0.001	< 0.03	0.03	< 0.002	0.001
	Gelman	06/12/2001	—	< 0.001	0.000	< 0.03	0.01	< 0.002	0.001
	Gelman	06/12/2001	—	< 0.001	0.000	< 0.03	0.05	< 0.002	0.001
	Gelman	10/31/2001	11:15	< 0.0001	0.0001	< 0.005	0.004	< 0.001	0.003
	Gelman	02/13/2002	15:37	< 0.0001	0.0000	< 0.008	0.002	0.0040	0.0036
	Gelman	08/08/2002	10:30	< 0.0001	0.0000	< 0.006	0.004	< 0.001	0.000
	Gelman	09/10/2002	8:08	< 0.0001	0.0000	< 0.006	0.004	< 0.002	0.001
	Gelman	10/22/2002	10:18	< 0.0001	0.0001	< 0.006	0.003	< 0.002	0.001
	Gelman	11/12/2002	7:09	< 0.0002	0.0000	< 0.01	0.01	< 0.001	0.001
	Gelman	01/13/2003	13:28	< 0.0001	0.0000	< 0.003	0.003	< 0.0004	0.0000
	Churn plus Gelman	03/19/2003	14:58	< 0.0001	0.0000	< 0.006	0.001	< 0.0003	0.0011
	Churn plus Gelman	05/15/2003	13:44	< 0.0001	0.0000	< 0.007	0.002	< 0.0003	0.0001
Source blank:									
	MilliQ	10/31/2001	11:30	< 0.0001	0.0000	< 0.005	0.002	< 0.001	0.001
	Trace metals lab DI water	08/08/2002	10:30	< 0.0001	0.0001	< 0.006	0.004	< 0.001	0.002
	Trace metals lab DI water	10/22/2002	10:18	< 0.0001	0.0001	< 0.006	0.001	< 0.002	0.000
	Trace metals lab DI water	11/12/2002	7:07	< 0.0002	0.0001	< 0.01	0.01	< 0.001	0.000
	Trace metals lab DI water	01/13/2003	13:28	0.0001	0.0001	< 0.003	0.001	< 0.0004	0.0006

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Thallium (Tl) (µg/L)		Thulium (Tm) (µg/L)		Uranium (U) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 0.04	0.02	< 0.001	0.001	< 0.006	0.001
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.04	0.02	< 0.001	0.001	< 0.006	0.000
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.04	0.01	< 0.001	0.001	< 0.006	0.001
Equipment blank:									
	Holding bottle	01/29/2001	—	< 0.02	0.02	< 0.0005	0.0001	0.010	0.001
	Tubing	02/13/2002	5:30	0.0011	0.0027	< 0.0002	0.0001	< 0.0006	0.0004
	Tubing	02/13/2002	5:30	0.0030	0.0012	< 0.0002	0.0000	0.0006	0.0006
	Jerrican	02/13/2002	15:36	0.0010	0.0011	< 0.0002	0.0000	< 0.0006	0.0001
	Churn	02/13/2002	15:37	< 0.0009	0.0002	< 0.0002	0.0001	< 0.0006	0.0001
	Churn	08/08/2002	10:30	< 0.003	0.002	< 0.0001	0.0000	< 0.0004	0.0002
	Churn	10/22/2002	10:18	< 0.002	0.002	< 0.0001	0.0001	< 0.0003	0.0001
	Churn	11/12/2002	7:08	< 0.002	0.000	< 0.0002	0.0001	< 0.0003	0.0000
	Churn	01/13/2003	13:28	0.002	0.003	< 0.0001	0.0001	< 0.0003	0.0003
	Carboy	05/15/2003	13:41	< 0.002	0.004	< 0.0001	0.0000	< 0.0003	0.0001
	Churn	05/15/2003	13:42	< 0.002	0.005	< 0.0001	0.0001	< 0.0003	0.0001
	Jerrican	05/15/2003	13:45	< 0.002	0.002	< 0.0001	0.0000	< 0.0003	0.0000
Filter blank:									
	Setup	06/12/2001	—	< 0.01	0.02	< 0.001	0.001	< 0.005	0.005
	Setup	06/12/2001	—	< 0.01	0.01	< 0.001	0.001	< 0.005	0.001
	Gelman	08/21/2002	10:38	< 0.003	0.001	< 0.0002	0.0001	< 0.0004	0.0008
Process blank:									
	Holding bottle	01/31/2001	—	< 0.02	0.00	< 0.0008	0.0003	0.0049	0.0048
	Gelman	06/11/2001	—	< 0.01	0.00	< 0.001	0.000	< 0.005	0.006
	Gelman	06/12/2001	—	< 0.01	0.01	< 0.001	0.001	< 0.005	0.003
	Gelman	06/12/2001	—	< 0.01	0.02	< 0.001	0.001	< 0.005	0.002
	Gelman	06/12/2001	—	< 0.01	0.01	< 0.001	0.000	< 0.005	0.003
	Gelman	10/31/2001	11:15	< 0.002	0.000	0.0001	0.0000	0.0044	0.0050
	Gelman	02/13/2002	15:37	0.0040	0.0043	< 0.0002	0.0000	0.0008	0.0009
	Gelman	08/08/2002	10:30	< 0.003	0.002	< 0.0001	0.0000	< 0.0004	0.0004
	Gelman	09/10/2002	8:08	< 0.002	0.001	< 0.0001	0.0001	< 0.0003	0.0001
	Gelman	10/22/2002	10:18	0.002	0.004	< 0.0001	0.0001	< 0.0003	0.0003
	Gelman	11/12/2002	7:09	< 0.002	0.001	< 0.0002	0.0001	< 0.0003	0.0001
	Gelman	01/13/2003	13:28	< 0.001	0.001	< 0.0001	0.0001	< 0.0003	0.0002
	Churn plus Gelman	03/19/2003	14:58	< 0.002	0.001	< 0.0001	0.0001	< 0.0002	0.0001
	Churn plus Gelman	05/15/2003	13:44	< 0.002	0.001	< 0.0001	0.0000	< 0.0003	0.0000
Source blank:									
	MilliQ	10/31/2001	11:30	< 0.002	0.001	< 0.0001	0.0000	< 0.0007	0.0002
	Trace metals lab DI water	08/08/2002	10:30	< 0.003	0.002	< 0.0001	0.0001	< 0.0004	0.0004
	Trace metals lab DI water	10/22/2002	10:18	0.002	0.004	< 0.0001	0.0001	< 0.0003	0.0003
	Trace metals lab DI water	11/12/2002	7:07	< 0.002	0.000	< 0.0002	0.0000	< 0.0003	0.0002
	Trace metals lab DI water	01/13/2003	13:28	< 0.001	0.001	< 0.0001	0.0000	0.0006	0.0007

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Vanadium (V) (µg/L)		Yttrium (Y) (µg/L)		Ytterbium (Yb) (µg/L)	
				Avg	s.d.	Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 2	1	0.032	0.006	< 0.003	0.002
Blank-DI plus acid plus digestion:		01/25/2002	—	< 2	1	0.003	0.001	< 0.003	0.000
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 2	1	< 0.002	0.001	< 0.003	0.003
Equipment blank:									
	Holding bottle	01/29/2001	—	< 1	0	0.028	0.004	< 0.003	0.003
	Tubing	02/13/2002	5:30	< 0.06	0.03	< 0.0002	0.0001	< 0.0004	0.0002
	Tubing	02/13/2002	5:30	< 0.06	0.06	0.0002	0.0000	< 0.0004	0.0001
	Jerrican	02/13/2002	15:36	< 0.06	0.05	< 0.0002	0.0000	< 0.0004	0.0002
	Churn	02/13/2002	15:37	< 0.06	0.06	< 0.0002	0.0001	< 0.0004	0.0002
	Churn	08/08/2002	10:30	< 0.1	0.0	0.0003	0.0003	< 0.0003	0.0002
	Churn	10/22/2002	10:18	< 0.03	0.02	< 0.0003	0.0001	< 0.0007	0.0002
	Churn	11/12/2002	7:08	< 0.04	0.02	< 0.0003	0.0003	< 0.0006	0.0001
	Churn	01/13/2003	13:28	< 0.03	0.02	< 0.0002	0.0001	0.0001	0.0000
	Carboy	05/15/2003	13:41	< 0.02	0.00	< 0.0002	0.0001	< 0.0003	0.0001
	Churn	05/15/2003	13:42	< 0.02	0.01	< 0.0002	0.0002	< 0.0003	0.0001
	Jerrican	05/15/2003	13:45	< 0.02	0.00	< 0.0002	0.0002	< 0.0003	0.0001
Filter blank:									
	Setup	06/12/2001	—	< 2	1	< 0.001	0.001	< 0.003	0.003
	Setup	06/12/2001	—	< 2	1	< 0.001	0.001	< 0.003	0.000
	Gelman	08/21/2002	10:38	< 0.1	0.1	< 0.0002	0.0001	< 0.0004	0.0001
Process blank:									
	Holding bottle	01/31/2001	—	< 1	1	0.003	0.001	0.002	0.002
	Gelman	06/11/2001	—	< 2	1	0.002	0.000	< 0.003	0.002
	Gelman	06/12/2001	—	< 2	0	< 0.001	0.001	< 0.003	0.001
	Gelman	06/12/2001	—	< 2	0	< 0.001	0.001	< 0.003	0.001
	Gelman	06/12/2001	—	< 2	1	< 0.001	0.000	< 0.003	0.001
	Gelman	10/31/2001	11:15	< 0.07	0.01	0.0016	0.0021	< 0.0002	0.0000
	Gelman	02/13/2002	15:37	< 0.06	0.06	< 0.0002	0.0001	< 0.0004	0.0003
	Gelman	08/08/2002	10:30	< 0.1	0.0	0.0006	0.0006	< 0.0003	0.0001
	Gelman	09/10/2002	8:08	< 0.03	0.01	< 0.0003	0.0001	< 0.0007	0.0001
	Gelman	10/22/2002	10:18	< 0.03	0.01	< 0.0003	0.0003	< 0.0007	0.0001
	Gelman	11/12/2002	7:09	< 0.04	0.02	< 0.0003	0.0000	< 0.0006	0.0000
	Gelman	01/13/2003	13:28	< 0.03	0.02	< 0.0002	0.0002	0.0001	0.0001
	Churn plus Gelman	03/19/2003	14:58	< 0.02	0.02	< 0.0002	0.0000	< 0.0002	0.0001
	Churn plus Gelman	05/15/2003	13:44	< 0.02	0.00	< 0.0002	0.0001	< 0.0003	0.0000
Source blank:									
	MilliQ	10/31/2001	11:30	< 0.07	0.02	< 0.0002	0.0000	< 0.0002	0.0001
	Trace metals lab DI water	08/08/2002	10:30	< 0.1	0.0	< 0.0002	0.0001	< 0.0003	0.0002
	Trace metals lab DI water	10/22/2002	10:18	< 0.03	0.01	< 0.0003	0.0002	< 0.0007	0.0002
	Trace metals lab DI water	11/12/2002	7:07	< 0.04	0.02	< 0.0003	0.0000	< 0.0006	0.0004
	Trace metals lab DI water	01/13/2003	13:28	< 0.03	0.01	< 0.0002	0.0001	< 0.0001	0.0001

Table E8. Blanks for filtered selected elements analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.—*Continued*

[Avg, average; s.d., standard deviation; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; MilliQ, water deionizer manufactured by Millipore, Inc.; mg/L, milligram per liter; µg/L, microgram per liter; <, less than; M, not determined. Replicate is 1 of 1]

Blank Type	Comment	Date	Time	Zinc (Zn) (µg/L)		Zirconium (Zr) (µg/L)	
				Avg	s.d.	Avg	s.d.
Blank-DI plus acid blank:		01/25/2002	—	< 0.6	0.4	< 0.01	0.00
Blank-DI plus acid plus digestion:		01/25/2002	—	< 0.6	0.2	< 0.01	0.00
Blank-DI plus acid plus digestion plus filter:		01/25/2002	—	< 0.6	0.1	< 0.01	0.00
Equipment blank:							
	Holding bottle	01/29/2001	—	40	1	0.03	0.01
	Tubing	02/13/2002	5:30	0.18	0.03	0.0043	0.0049
	Tubing	02/13/2002	5:30	0.13	0.02	0.0057	0.0004
	Jerrican	02/13/2002	15:36	0.68	0.04	0.0057	0.0017
	Churn	02/13/2002	15:37	0.45	0.02	0.0046	0.0009
	Churn	08/08/2002	10:30	0.17	0.08	< 0.001	0.0014
	Churn	10/22/2002	10:18	0.55	0.02	< 0.001	0.000
	Churn	11/12/2002	7:08	0.83	0.38	0.019	0.024
	Churn	01/13/2003	13:28	0.05	0.00	< 0.0005	0.0001
	Carboy	05/15/2003	13:41	0.17	0.08	0.0009	0.0009
	Churn	05/15/2003	13:42	< 0.09	0.01	0.0016	0.0018
	Jerrican	05/15/2003	13:45	< 0.09	0.03	0.0014	0.0028
Filter blank:							
	Setup	06/12/2001	—	< 2	1	< 0.01	0.00
	Setup	06/12/2001	—	3	1	< 0.01	0.01
	Gelman	08/21/2002	10:38	0.26	0.03	< 0.001	0.001
Process blank:							
	Holding bottle	01/31/2001	—	2.6	0.5	0.013	0.003
	Gelman	06/11/2001	—	3	0	< 0.01	0.00
	Gelman	06/12/2001	—	< 2	1	< 0.01	0.00
	Gelman	06/12/2001	—	3	3	< 0.01	0.01
	Gelman	06/12/2001	—	3	0	< 0.01	0.00
	Gelman	10/31/2001	11:15	0.76	0.21	< 0.0009	0.0009
	Gelman	02/13/2002	15:37	0.64	0.03	0.0026	0.0003
	Gelman	08/08/2002	10:30	0.26	0.06	< 0.001	0.0009
	Gelman	09/10/2002	8:08	0.23	0.01	< 0.001	0.001
	Gelman	10/22/2002	10:18	0.49	0.01	< 0.001	0.001
	Gelman	11/12/2002	7:09	0.49	0.04	0.0029	0.0019
	Gelman	01/13/2003	13:28	0.31	0.11	< 0.0005	0.0004
	Churn plus Gelman	03/19/2003	14:58	0.34	0.02	0.0007	0.0006
	Churn plus Gelman	05/15/2003	13:44	0.19	0.05	< 0.0008	0.0009
Source blank:							
	MilliQ	10/31/2001	11:30	0.36	0.02	0.0014	0.0008
	Trace metals lab DI water	08/08/2002	10:30	0.26	0.04	< 0.001	0.0005
	Trace metals lab DI water	10/22/2002	10:18	1.3	0.4	0.001	0.001
	Trace metals lab DI water	11/12/2002	7:07	0.43	0.00	0.0012	0.0000
	Trace metals lab DI water	01/13/2003	13:28	0.13	0.02	< 0.0005	0.0002

Table E9. Blanks for anions analyzed at the U.S. Geological Survey laboratory, Boulder, Colorado.

[Gelman, capsule filter manufactured by Pall Gelman Sciences, Inc.; trace metals lab, trace metals laboratory, Sacramento, California; DI, deionized; mg/L, milligram per liter]

Blank type	Comment	Date	Time	Chloride (Cl) (mg/L)	Sulfate (SO ₄) (mg/L)
Equipment blank:					
	Churn	08/08/2002	10:30	<0.02	<0.02
	Churn	08/21/2002	10:39	0.12	<0.10
	Churn	08/21/2002	8:07	0.51	0.53
	Churn	03/19/2003	14:56	<0.02	0.04
	Jerrican	03/19/2003	14:57	<0.02	0.04
	Churn	05/15/2003	13:45	<0.02	<0.02
	Jerrican	05/15/2003	13:45	<0.02	<0.02
Filter blank:					
	Gelman	08/21/2002	10:38	0.14	<0.10
	Churn + Gelman	03/19/2003	14:58	<0.02	0.04
	Churn + Gelman	05/15/2003	13:44	<0.02	<0.02
Process blank:					
	Gelman	10/31/2001	11:15	0.08	0.32
	Gelman	08/08/2002	10:30	<0.02	<0.02
	Gelman	08/21/2002	8:08	0.53	0.54
Source blank:					
	Trace metals lab DI water	08/08/2002	10:30	<0.02	<0.02
	Trace metals lab DI water	08/21/2002	10:37	<0.05	<0.10
	Trace metals lab DI water	08/21/2002	8:06	0.08	0.53
	Carboy	03/19/2003	14:55	<0.02	0.03
	Carboy	05/15/2003	13:44	<0.02	<0.02

Table E10. Blanks for nutrients and organic carbon analyzed at the U.S. Geological Survey National Water Quality Laboratory.

[The number in parentheses is the data parameter code, a five-digit code used in the U.S. Geological survey computerized data system. NWQL, U.S. Geological Survey National Water Quality Laboratory. mg/L, milligram per liter; µg/L, microgram per liter; E, estimated value; <, less than, -, not determined]

NWQL lot number																							
Comment	Date	Time	Nitrogen, ammonia				Nitrogen, nitrite plus nitrate, filtered		Nitrogen, nitrite, filtered		Phos phorus, ortho phosphate, filtered		Total phosphorus, unfiltered		Total carbon, inorganic, particulate		Carbon, organic, particulate		Carbon, organic, filtered		Inorganic Grade Water	Organic Grade Water	
			Nitrogen, ammonia plus organic, filtered (mg/L as N) (00623)	Nitrogen, ammonia plus organic, unfiltered (mg/L as N) (00625)	Nitrogen, ammonia, filtered (mg/L as N) (00608)	Nitrogen, nitrite, filtered (mg/L as N) (00613)	Nitrogen, nitrite, filtered (mg/L as N) (00613)	Total nitrogen, partic ulate (mg/L) (49570)	Phos phorus, ortho phosphate, filtered (mg/L as P) (00666)	Total phosphorus, unfiltered (mg/L as P) (00665)	Total carbon, inorganic, particulate (mg/L as C) (00694)	Total carbon, organic, particulate (mg/L as C) (00689)	Carbon, organic, filtered (mg/L as C) (00681)										
Process blank:																							
Gelman capsule filter	10/22/2002	10:18	<0.1	<0.1	<0.04	<0.06	<0.008	-	<0.02	<0.004	<0.004	-	-	-	-	-	-	-	-	-	-	-	
Gelman capsule filter	03/18/2003	09:38	<0.1	<0.1	<0.04	<0.06	<0.008	-	<0.02	<0.004	<0.004	-	-	-	-	-	-	<0.3	2262	42044	2262	42044	
Gelman capsule filter	11/12/2002	07:08	<0.1	<0.1	<0.04	<0.06	<0.008	-	<0.02	<0.004	<0.004	-	-	-	-	-	-	<0.3	2262	42044	2262	42044	
Gelman capsule filter	06/30/2003	09:31	<0.1	<0.1	<0.04	<0.06	<0.008	<0.02	<0.02	<0.004	<0.004	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	3037	80203	3037	80203	

Table E11. Detection limits for trace metals and selected major elements determined by inductively coupled plasma methods, U.S. Geological Survey laboratory in Boulder, Colorado.

[Information represents a summary of all results for the laboratory during the period (2001–04) when samples from the present study were analyzed. DL, detection limit; n, number of determinations of standard reference materials; na, not applicable; mg/L, milligram per liter; µg/L, microgram per liter]

Element	Units	Filtered water		Unfiltered water		Sediment digests	
		DL	n	DL	n	DL	n
Aluminum (Al)	µg/L	0.070	599	0.53	631	2.1	212
Arsenic (As)	µg/L	0.019	597	52	723	0.14	222
Boron (B)	µg/L	0.70	548	6.5	531	6.9	244
Barium (Ba)	µg/L	0.0051	616	0.040	667	0.044	221
Beryllium (Be)	µg/L	0.0074	598	0.050	687	0.036	221
Bismuth (Bi)	µg/L	0.0012	589	0.010	688	0.0094	227
Calcium (Ca)	mg/L	0.0043	762	0.023	685	0.019	277
Cadmium (Cd)	µg/L	0.0031	615	0.024	668	0.019	222
Cerium (Ce)	µg/L	0.00023	589	0.0019	687	0.0046	223
Cobalt (Co)	µg/L	0.0021	580	0.017	678	0.021	219
Chromium (Cr)	µg/L	0.13	573	1.2	672	0.86	215
Cesium (Cs)	µg/L	0.0073	571	0.046	685	0.051	225
Copper (Cu)	µg/L	0.021	589	0.15	652	0.18	223
Dysprosium (Dy)	µg/L	0.00042	597	0.0042	707	0.0043	231
Erbium (Er)	µg/L	0.00050	604	0.0044	696	0.0045	227
Europium (Eu)	µg/L	0.00022	595	0.0022	714	0.0018	231
Iron (Fe)	µg/L	0.52	740	5.6	691	22	260
Gadolinium (Gd)	µg/L	0.00047	600	0.0038	699	0.0042	231
Holmium (Ho)	µg/L	0.00011	605	0.0011	704	0.0011	232
Potassium (K)	mg/L	0.016	582	0.12	668	0.12	225
Lanthanum (La)	µg/L	0.00019	585	0.0017	699	0.0027	225
Lithium (Li)	µg/L	0.014	569	0.10	653	0.13	222
Lutetium (Lu)	µg/L	0.00011	600	0.0012	704	0.0011	229
Magnesium (Mg)	mg/L	0.0020	737	0.0043	668	0.0055	266
Manganese (Mn)	µg/L	0.054	759	0.37	681	0.41	277
Molybdenum (Mo)	µg/L	0.041	630	0.42	697	0.37	227
Sodium (Na)	mg/L	0.0073	297	0.046	408	0.064	90
Neodymium (Nd)	µg/L	0.00055	592	0.0059	695	0.0071	224
Nickel (Ni)	µg/L	0.014	559	0.10	661	0.081	217
Lead (Pb)	µg/L	0.0046	574	0.041	627	0.064	202
Praseodymium (Pr)	µg/L	0.00015	588	0.0013	695	0.0017	229
Rubidium (Rb)	µg/L	0.0013	582	0.010	679	0.055	227
Rhenium (Re)	µg/L	0.00023	598	0.0023	702	0.0023	229
Sulfur (S)	mg/L	0.018	753	0.17	693	0.18	276
Antimony (Sb)	µg/L	0.0035	579	0.036	682	0.028	227
Selenium (Se)	µg/L	0.098	576	0.92	673	0.79	222
Silica (SiO ₂)	mg/L	0.029	737	0.11	657	na	262
Samarium (Sm)	µg/L	0.00076	600	0.0069	697	0.0076	228
Strontium (Sr)	µg/L	0.022	585	0.23	682	0.17	224
Terbium (Tb)	µg/L	0.00011	600	0.0011	708	0.0010	228
Tellurium (Te)	µg/L	0.0065	592	0.068	691	0.052	220
Thorium (Th)	µg/L	0.00064	585	0.0068	678	0.0022	224
Titanium (Ti)	µg/L	na	781	2.3	717	4.0	275
Thallium (Tl)	µg/L	0.0033	583	0.034	689	0.048	223
Thulium (Tm)	µg/L	0.00010	598	0.00092	697	0.00094	229
Uranium (U)	µg/L	0.00051	578	0.0048	669	0.0052	218
Vanadium (V)	µg/L	0.060	545	2.0	642	0.56	223
Tungsten (W)	µg/L	0.0024	586	0.020	675	0.022	228
Yttrium (Y)	µg/L	0.00023	584	0.0019	690	0.0032	227
Ytterbium (Yb)	µg/L	0.00030	592	0.0031	710	0.0028	229
Zinc (Zn)	µg/L	0.071	596	0.57	642	0.98	215
Zirconium (Zr)	µg/L	0.0011	588	0.013	675	0.0075	223

Table E12. Selected trace elements with regression correlation coefficients (R^2) for correlation plots of observed versus reported values of analysis of standard reference materials.

Element	R^2
Aluminum (Al)	0.9985
Arsenic (As)	0.9998
Boron (B)	0.9984
Barium (Ba)	0.9999
Beryllium (Be)	1.0000
Cadmium (Cd)	1.0000
Cobalt (Co)	1.0000
Chromium (Cr)	0.9997
Copper (Cu)	1.0000
Lithium (Li)	0.9996
Manganese (Mn)	1.0000
Molybdenum (Mo)	1.0000
Nickel (Ni)	0.9991
Lead (Pb)	1.0000
Antimony (Sb)	0.9999
Selenium (Se)	0.9969
Strontium (Sr)	1.0000
Thallium (Tl)	0.9993
Uranium (U)	0.9973
Vanadium (V)	0.9998
Zinc (Zn)	0.9997

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