

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

<b>Sample Type</b>	<b>Site Number</b>	<b>Site Name</b>	<b>Date</b>	<b>Mean Sample Time</b>	<b>Discharge (ft<sup>3</sup>/s)</b>	<b>Oxygen Dissolved, (mg/L)</b>
Environmental	1	Humboldt River near Imlay	06/17/98	1500	1980	6.5
Environmental	1		07/22/98	0945	1420	8.2
Environmental	1		08/12/98	1036	520	7.3
Environmental	1		09/01/98	0945	223	7.2
Blank	1		10/07/98	0845	--	--
Environmental	1		10/07/98	0915	97	10.7
Environmental	1		11/17/98	0915	267	10.7
Environmental	1		01/12/99	1000	460	11.4
Environmental	1		03/02/99	0915	410	9.6
Environmental	1		04/13/99	0905	403	11.0
Environmental	1		05/25/99	0840	408	7.8
Environmental	1		06/29/99	1030	951	6.9
Environmental	1		08/10/99	0955	138	7.6
Environmental	1		09/13/99	1230	45	8.6
Environmental	2		Humboldt River near Rye Patch	06/18/98	1350	2360
Environmental	2	07/22/98		1325	1270	8.2
Environmental	2	08/12/98		1400	538	7.5
Replicate	2	08/12/98		1405	--	--
Environmental	2	09/01/98		1300	525	8.2
Environmental	2	10/07/98		1230	440	9.3
Environmental	2	11/17/98		1220	429	10.9
Environmental	2	01/12/99		1330	248	12.1
Environmental	2	03/02/99		1300	577	12.7
Environmental	2	04/13/99		1245	416	12.8
Environmental	2	05/25/99		1100	550	11.8
Blank	2	06/29/99		1400	--	--
Environmental	2	06/29/99		1445	523	8.1
Environmental	2	08/10/99		1630	240	7.7
Environmental	2	09/13/99		1545	143	8.4

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<b>Sample Type</b>	<b>Site Number</b>	<b>Site Name</b>	<b>Date</b>	<b>Mean Sample Time</b>	<b>Discharge (ft<sup>3</sup>/s)</b>	<b>Oxygen Dissolved, (mg/L)</b>
Environmental	3	Humboldt River at Reservation Road near Lovelock	06/24/98	1130	2130	8.3
Blank	4	Humboldt River near Lovleock	07/21/98	1200	--	--
Environmental	4		07/21/98	1410	904	7.1
Environmental	4		08/11/98	1030	137	7.9
Environmental	4		09/02/98	0930	74	7.4
Environmental	4		10/06/98	1030	410	9.9
Environmental	4		11/18/98	1415	430	10.9
Environmental	4		01/13/99	0930	300	13.2
Blank	4		03/03/99	0900	--	--
Environmental	4		03/03/99	1030	510	13.4
Environmental	4		04/14/99	0920	25	11.2
Blank	4		05/26/99	0830	--	--
Environmental	4		05/26/99	0900	98	8.5
Environmental	4		06/30/99	1000	93	8.8
Blank	4		08/11/99	0850	--	--
Environmental	4		08/11/99	0930	18	7.8
Blank	4		09/15/99	0900	--	--
Environmental	4		09/15/99	1030	35	9.8
Blank	6	Army Drain at Derby Road near Toulon Lake	06/23/98	1500	--	--
Environmental	6		06/23/98	1500	28	10.0
Environmental	6		07/23/98	1200	17	3.3
Environmental	6		08/11/98	1245	12	7.8
Environmental	7	Army Drain at Iron Bridge near Toulon	09/03/98	0930	48	5.6
Environmental	6		10/06/98	1300	32	11.2
Environmental	7		11/18/98	1000	8.0	8.9
Blank	5	Army Drain above Iron Bridge near Lovelock	01/14/99	1000	--	--
Environmental	5		01/14/99	1045	32	10.2
Environmental	5		03/03/99	1500	7.0	21.4
Environmental	5		04/15/99	1100	52	8.4

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Sample Type	Site Number	Site Name	Date	Mean Sample Time	Discharge (ft <sup>3</sup> /s)	Oxygen Dissolved, (mg/L)
Environmental	5		05/26/99	1300	43	10.3
Environmental	5		06/30/99	1500	90	5.4
Blank	5		08/11/99	1245	--	--
Environmental	5		08/11/99	1330	44	5.0
Environmental	5		09/14/99	1000	36	7.0
Environmental	8	Toulon Drain at Derby Field Road near Toulon	06/19/98	0830	8.5	7.0
Environmental	8		07/23/98	0900	17	3.8
Environmental	8		08/13/98	1000	13	7.9
Environmental	8		09/02/98	1300	23	9.5
Environmental	8		10/06/98	1630	18	21.4
Blank	8		11/19/98	0950	--	--
Environmental	8		11/19/98	1015	12	18.9
Environmental	8		01/13/99	1445	7.0	17.0
Environmental	8		03/04/99	0930	5.0	8.9
Blank	8		04/14/99	1245	--	--
Environmental	8		04/14/99	1330	14	13.0
Environmental	8		05/25/99	1530	27	9.4
Environmental	8		07/01/99	0950	24	5.4
Blank	8		08/12/99	0930	--	--
Environmental	8		08/12/99	1000	19	8.3
Environmental	8		09/14/99	1535	17	10.5
Environmental	9	Unnamed Drain East of Army Drain near Derby Field	01/13/99	1245	--	11.5
Environmental	9		03/03/99	1300	--	9.8
Environmental	9		04/15/99	0950	--	10.5
Environmental	9		05/26/99	1245	--	27.3
Environmental	9		06/30/99	1615	--	15.3
Environmental	9		08/11/99	1445	--	8.2
Environmental	9		09/14/99	1230	--	6.3

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<b>Sample Type</b>	<b>Site Number</b>	<b>Site Name</b>	<b>Date</b>	<b>Mean Sample Time</b>	<b>Discharge (ft<sup>3</sup>/s)</b>	<b>Oxygen Dissolved, (mg/L)</b>
Environmental	10	Upper Humboldt Lake at Mouth Army Drain near Toulon	08/31/99	1340	--	17.5
Environmental	10		04/20/00	1200	--	9.9
Environmental	10		07/21/00	1200	--	--
Environmental	11	Upper Humboldt Lake Sample Point near Mouth of River	05/21/98	1145	--	4.8
Environmental	11		08/31/99	1100	--	--
Environmental	11		04/20/00	1100	--	6.9
Environmental	11		07/21/00	1000	--	--
Environmental	13	Lower Humboldt Drain at Humboldt Dike near Lovelock	07/09/98	1530	828	7.7
Environmental	13		07/20/98	1730	937	7.2
Environmental	13		08/10/98	1530	775	7.0
Environmental	13		08/31/98	1500	561	7.9
Environmental	13		10/05/98	1400	425	9.3
Environmental	13		11/16/98	1410	377	11.0
Environmental	13		01/11/99	1430	303	14.4
Environmental	13		03/01/99	1600	272	9.8
Environmental	13		04/12/99	1450	229	13.5
Environmental	13		05/24/99	1530	167	7.7
Environmental	13		06/28/99	1550	141	7.0
Environmental	13		08/09/99	1500	1500	27

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Site #	Date	pH	Specific Conductance ( $\mu$ S/cm)	Water Temperature (°C)	Hardness (mg/L as CaCO <sub>3</sub> )	Calcium, Filtered (mg/L)	Magnesium, Filtered (mg/L)	Sodium, Filtered (mg/L)	Potassium, Filtered (mg/L)
1	06/17/98	8.2	724	19.5	154	38	14	95	11
1	07/22/98	8.6	575	25.5	--	--	--	--	--
1	08/12/98	8.5	692	23.0	167	45	13	80	9
1	09/01/98	8.4	873	21.0	183	47	16	111	12
1	10/07/98	8.0	3	--	--	0.02	0.005	<0.06	<0.10
1	10/07/98	8.5	800	11.5	157	39	14	106	12
1	11/17/98	8.5	650	5.0	141	37	12	79	13
1	01/12/99	8.4	720	0.5	150	41	12	80	11
1	03/02/99	8.5	660	7.0	173	47	13	68	9
1	04/13/99	8.5	600	9.0	156	42	13	65	8
1	05/25/99	8.4	710	18.0	184	48	15	77	10
1	06/29/99	8.4	600	21.5	155	40	13	69	9
1	08/10/99	8.5	810	19.0	183	47	16	103	10
1	09/13/99	8.3	940	18.5	187	43	20	120	11
2	06/18/98	8.6	746	17.0	151	38	14	96	12
2	07/22/98	8.4	819	22.5	161	41	14	108	12
2	08/12/98	8.6	823	23.0	158	39	15	112	14
2	08/12/98	8.5	827	--	--	39	15	112	14
2	09/01/98	8.5	831	23.0	150	36	14	111	13
2	10/07/98	8.5	870	16.5	149	36	15	120	14
2	11/17/98	8.6	940	7.5	149	35	15	137	17
2	01/12/99	8.6	1270	3.5	162	37	17	185	19
2	03/02/99	8.6	1060	4.5	151	35	15	146	15
2	04/13/99	8.7	980	7.5	151	36	15	133	20
2	05/25/99	8.6	900	14.5	157	38	15	115	14
2	06/29/99	8.3	3	--	--	0.04	E 0.003	0.060	<0.10
2	06/29/99	8.8	860	22.0	183	40	20	117	13
2	08/10/99	8.4	850	20.5	166	40	16	114	14
2	09/13/99	8.5	940	18.5	165	39	17	119	15

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Site #	Date	pH	Specific Conductance (μS/cm)	Water Temperature (°C)	Hardness (mg/L as CaCO <sub>3</sub> )	Calcium, Filtered (mg/L)	Magnesium, Filtered (mg/L)	Sodium, Filtered (mg/L)	Potassium, Filtered (mg/L)
3	06/24/98	8.5	786	18.0	153	39	14	104	13
4	07/21/98	7.7	2	--	--	<0.02	<0.000	<.1	<0.10
4	07/21/98	8.5	850	24.5	--	--	--	--	--
4	08/11/98	9.0	1060	20.5	171	42	16	153	15
4	09/02/98	8.5	1330	20.0	163	40	15	202	16
4	10/06/98	8.6	930	13.5	152	37	15	134	14
4	11/18/98	8.6	1050	7.5	152	36	15	152	15
4	01/13/99	8.7	1340	1.5	170	39	17	210	18
4	03/03/99	6.9	5	--	--	<0.02	<0.004	0.070	<0.10
4	03/03/99	8.7	1150	5.5	160	38	16	163	16
4	04/14/99	8.6	2340	9.0	196	46	20	408	20
4	05/26/99	8.0	11	--	--	0.07	<0.004	0.10	<0.10
4	05/26/99	8.2	1230	16.5	174	43	16	171	17
4	06/30/99	8.5	1170	21.0	159	38	15	163	15
4	08/11/99	--	--	--	--	--	--	--	--
4	08/11/99	8.5	2180	19.0	208	50	20	366	24
4	09/15/99	8.0	3	--	--	E 0.01	<0.014	E 0.058	<0.24
4	09/15/99	8.6	1640	20.5	179	42	18	256	20
6	06/23/98	--	--	--	--	--	--	--	--
6	06/23/98	8.1	3580	21.5	512	131	45	573	31
6	07/23/98	8.1	3560	20.5	--	--	--	--	--
6	08/11/98	8.0	5090	21.5	611	154	55	825	42
7	09/03/98	8.1	3320	19.0	489	131	39	496	33
6	10/06/98	8.2	3530	12.5	488	129	40	542	28
7	11/18/98	8.1	6960	7.0	932	237	83	1230	51
5	01/14/99	7.5	9	--	--	E 0.02	0.005	0.077	<0.10
5	01/14/99	8.3	6010	2.5	878	232	72	1040	41
5	03/03/99	8.4	6280	14.0	866	223	75	1070	40
5	04/15/99	8.2	6300	11.0	837	206	78	1070	8

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Site #	Date	pH	Specific Conductance ( $\mu$ S/cm)	Water Temperature (°C)	Hardness (mg/L as CaCO <sub>3</sub> )	Calcium, Filtered (mg/L)	Magnesium, Filtered (mg/L)	Sodium, Filtered (mg/L)	Potassium, Filtered (mg/L)
5	05/26/99	8.2	6730	21.5	884	220	81	1080	43
5	06/30/99	8.0	5380	25.0	710	175	66	928	40
5	08/11/99	8.3	4			0.14	<0.004	0.061	<0.10
5	08/11/99	8.1	2800	21.5	400	105	34	426	25
5	09/14/99	8.2	3290	17.5	483	125	41	515	26
8	06/19/98	8.5	3180	17.5	448	111	41	522	29
8	07/23/98	8.4	2590	22.0	395	104	33	388	27
8	08/13/98	8.3	2910	21.5	415	108	35	451	27
8	09/02/98	8.3	2540	22.0	408	111	32	390	28
8	10/06/98	8.5	3010	15.0	458	120	39	469	26
8	11/19/98	8.6	2	--	--	E 0.01	<0.004	<0.06	<0.10
8	11/19/98	8.5	3160	3.0	490	128	41	487	28
8	01/13/99	8.5	3700	6.0	567	142	51	639	31
8	03/04/99	8.4	4080	5.0	555	133	54	683	34
8	04/14/99	8.0	2	--	--	<0.02	<0.004	<0.06	<0.10
8	04/14/99	8.3	3040	14.0	444	111	41	495	27
8	05/25/99	8.2	2940	22.5	450	118	38	443	26
8	07/01/99	8.3	3000	21.5	454	117	39	486	27
8	08/12/99	--	--	--	--	--	--	--	--
8	08/12/99	8.3	3010	18.0	458	118	39	484	27
8	09/14/99	8.3	2630	20.5	376	98	32	398	26
9	01/13/99	7.6	12200	5.0	2070	472	216	2940	95
9	03/03/99	7.8	14000	13.0	1690	381	181	2670	82
9	04/15/99	7.8	14600	8.0	1550	351	164	2500	76
9	05/26/99	8.2	11200	23.0	1450	346	143	2020	67
9	06/30/99	7.8	8940	25.5	925	222	90	1580	51
9	08/11/99	7.8	8510	22.0	958	221	99	1840	55
9	09/14/99	7.7	9360	19.0	1300	311	127	1740	70

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Site #	Date	pH	Specific Conductance (μS/cm)	Water Temperature (°C)	Hardness (mg/L as CaCO <sub>3</sub> )	Calcium, Filtered (mg/L)	Magnesium, Filtered (mg/L)	Sodium, Filtered (mg/L)	Potassium, Filtered (mg/L)
10	08/31/99	8.2	4440	25.5	613	155	55	1110	37
10	04/20/00	8.1	5380	16.0	712	181	63	851	31
10	07/21/00	8.2	4670	--	549	136	51	695	36
11	05/21/98	8.1	890	15.5	154	38	15	119	14
11	08/31/99	8.6	7330	--	604	72	103	763	67
11	04/20/00	8.5	3770	18.5	304	41	49	675	45
11	07/21/00	9.1	16500	--	1100	86	214	3310	165
13	07/09/98	8.5	1260	26.5	177	38	20	186	20
13	07/20/98	8.6	1170	28.5	164	34	19	171	19
13	08/10/98	8.5	1180	26.0	162	32	20	169	21
13	08/31/98	8.6	1580	25.0	190	33	26	243	25
13	10/05/98	8.7	2270	14.5	239	37	35	370	32
13	11/16/98	8.6	1970	7.0	232	41	32	320	26
13	01/11/99	8.8	2260	6.5	270	48	36	386	29
13	03/01/99	8.7	2380	11.0	249	46	33	366	25
13	04/12/99	8.7	1980	10.0	237	45	30	345	23
13	05/24/99	8.6	3190	20.5	265	39	41	544	35
13	06/28/99	8.6	2840	22.0	280	40	44	486	37
13	08/09/99	8.7	5210	19.0	378	38	68	977	63



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Site #	Date	Alkalinity, Filtered (mg/L as CaCO <sub>3</sub> )	Bicarbonate, Filtered (mg/L as HCO <sub>3</sub> )	Carbonate, Filtered (mg/L as CO <sub>3</sub> )	Sulfate, Filtered (mg/L)	Chloride, Filtered (mg/L)	Fluoride, Filtered (mg/L)	Silica, Filtered (mg/L)
1	06/17/98	--	--	--	62	46	0.76	31
1	07/22/98	226	275	<2	--	--	--	--
1	08/12/98	234	286	<2	59	37	0.97	28
1	09/01/98	260	317	<2	94	58	1.3	29
1	10/07/98	--	--	--	<0.1	0.39	<0.1	<0.05
1	10/07/98	210	230	10	103	50	1.3	23
1	11/17/98	180	220	5	108	29	0.88	20
1	01/12/99	140	170	<2	110	27	1.0	23
1	03/02/99	200	230	5	60	36	0.97	26
1	04/13/99	200	230	5	53	30	0.91	26
1	05/25/99	240	290	2	65	38	0.91	33
1	06/29/99	210	250	5	37	26	0.79	32
1	08/10/99	230	270	7	79	55	1.1	34
1	09/13/99	230	270	5	102	79	1.1	36
2	06/18/98	--	--	--	79	61	0.89	25
2	07/22/98	252	307	<2	70	60	0.83	32
2	08/12/98	252	307	<2	67	62	0.88	30
2	08/12/98	--	--	--	67	64	0.90	30
2	09/01/98	256	307	2	65	67	0.86	30
2	10/07/98	210	260	5	65	83	0.85	30
2	11/17/98	250	280	10	67	113	0.87	29
2	01/12/99	240	260	10	87	172	1.0	28
2	03/02/99	210	240	10	78	127	0.99	26
2	04/13/99	--	--	--	88	112	1.0	23
2	05/25/99	220	210	30	95	87	1.0	21
2	06/29/99	--	--	--	<0.1	<0.1	<0.1	0.05
2	06/29/99	210	230	10	87	78	1.1	24
2	08/10/99	210	240	5	86	71	0.98	30
2	09/13/99	220	260	5	87	83	1.1	31

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--", not determined; "<", less than)

Site #	Date	Alkalinity, Filtered (mg/L as CaCO <sub>3</sub> )	Bicarbonate, Filtered (mg/L as HCO <sub>3</sub> )	Carbonate, Filtered (mg/L as CO <sub>3</sub> )	Sulfate, Filtered (mg/L)	Chloride, Filtered (mg/L)	Fluoride, Filtered (mg/L)	Silica, Filtered (mg/L)
3	06/24/98	--	--	--	80	66	0.96	26
4	07/21/98	--	--	--	<0.1	<0.1	<0.1	<0.1
4	07/21/98	258	300	7	--	--	--	--
4	08/11/98	272	332	<2	82	122	0.99	32
4	09/02/98	280	307	17	87	193	0.97	32
4	10/06/98	210	250	<2	71	101	0.91	30
4	11/18/98	240	290	5	73	137	0.87	28
4	01/13/99	230	260	10	93	205	1.1	29
4	03/03/99	--	--	--	<0.1	0.67	<0.1	<0.05
4	03/03/99	220	240	10	82	152	1.0	27
4	04/14/99	220	260	5	131	495	1.2	29
4	05/26/99	--	--	--	<0.1	0.12	<0.1	<0.05
4	05/26/99	220	270	<2	109	169	1.1	25
4	06/30/99	220	210	30	100	149	1.1	26
4	08/11/99	--	--	--	--	--	--	--
4	08/11/99	270	310	10	136	392	1.3	38
4	09/15/99	--	--	--	<0.3	E 0.27	<0.1	<0.09
4	09/15/99	260	290	14	118	262	1.4	37
6	06/23/98	--	--	--	--	--	--	--
6	06/23/98	--	--	--	322	708	1.4	38
6	07/23/98	456	556	<2	--	--	--	--
6	08/11/98	488	595	<2	381	1200	1.4	46
7	09/03/98	500	610	<2	280	645	1.3	46
6	10/06/98	400	480	<2	296	725	1.2	42
7	11/18/98	510	620	<2	687	1650	1.5	47
5	01/14/99	--	--	--	<0.1	1.5	<0.1	<0.05
5	01/14/99	500	610	<2	459	1400	1.4	53
5	03/03/99	430	500	<2	484	1570	1.5	47
5	04/15/99	450	550	<2	567	1520	1.4	43

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--", not determined; "<", less than)

Site #	Date	Alkalinity, Filtered (mg/L as CaCO <sub>3</sub> )	Bicarbonate, Filtered (mg/L as HCO <sub>3</sub> )	Carbonate, Filtered (mg/L as CO <sub>3</sub> )	Sulfate, Filtered (mg/L)	Chloride, Filtered (mg/L)	Fluoride, Filtered (mg/L)	Silica, Filtered (mg/L)
5	05/26/99	400	480	<2	638	1580	1.4	37
5	06/30/99	380	460	<2	554	1560	1.5	40
5	08/11/99	--	--	--	<0.1	0.14	<0.1	0.073
5	08/11/99	340	420	<2	238	504	1.3	43
5	09/14/99	380	460	<2	290	681	1.4	43
8	06/19/98	--	--	--	371	567	1.1	31
8	07/23/98	506	625	<2	267	377	1.1	45
8	08/13/98	516	630	<2	304	433	1.3	41
8	09/02/98	496	605	<2	266	371	1.3	46
8	10/06/98	440	490	24	327	520	1.2	43
8	11/19/98	--	--	--	<0.1	0.17	<0.1	<0.05
8	11/19/98	510	590	14	338	544	1.2	43
8	01/13/99	500	530	40	418	676	1.3	48
8	03/04/99	464	550	10	458	823	1.4	40
8	04/14/99	--	--	--	<0.1	<0.1	<0.1	M
8	04/14/99	380	460	5	334	508	1.2	34
8	05/25/99	440	530	<2	322	459	1.3	41
8	07/01/99	470	520	24	337	484	1.3	42
8	08/12/99	--	--	--	--	--	--	--
8	08/12/99	510	620	<2	343	460	1.3	49
8	09/14/99	420	500	5	284	389	1.3	45
9	01/13/99	580	710	<2	1830	3530	1.9	53
9	03/03/99	500	610	<2	1880	3770	1.9	44
9	04/15/99	530	650	<2	1520	3940	1.7	36
9	05/26/99	430	530	<2	1230	2880	1.7	36
9	06/30/99	380	470	<2	811	2430	1.8	31
9	08/11/99	370	450	<2	874	2760	1.8	24
9	09/14/99	450	550	<2	1340	2430	1.9	40

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--", not determined; "<", less than)

Site #	Date	Alkalinity, Filtered (mg/L as CaCO <sub>3</sub> )	Bicarbonate, Filtered (mg/L as HCO <sub>3</sub> )	Carbonate, Filtered (mg/L as CO <sub>3</sub> )	Sulfate, Filtered (mg/L)	Chloride, Filtered (mg/L)	Fluoride, Filtered (mg/L)	Silica, Filtered (mg/L)
10	08/31/99	--	--	--	530	889	1.4	45
10	04/20/00	494	603	<1	563	1200	1.6	44
10	07/21/00	405	494	<1	400	920	1.3	42
11	05/21/98	--	--	--	98	79	0.97	21
11	08/31/99	320	360	20	792	1810	1.7	28
11	04/20/00	359	398	19	390	807	1.9	23
11	07/21/00	--	--	--	1830	4620	2.1	30
13	07/09/98	--	--	--	133	161	1.1	31
13	07/20/98	256	295	9	118	139	1.0	33
13	08/10/98	270	281	21	109	128	1.1	37
13	08/31/98	282	329	7	161	216	1.1	40
13	10/05/98	320	312	38	245	395	1.1	41
13	11/16/98	288	322	14	200	339	1.0	32
13	01/11/99	290	310	24	225	398	1.2	32
13	03/01/99	270	270	30	213	420	1.2	26
13	04/12/99	250	290	10	188	371	1.3	26
13	05/24/99	320	340	24	314	618	1.5	28
13	06/28/99	290	350	5	270	534	1.5	39
13	08/09/99	410	270	110	570	1140	1.7	43

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	Solids Residue, 180 °C, Filt. (mg/L)	Solids, Sum, Filtered (mg/L)	Solids, Filtered (tons/day)	Nitrogen, Ammonia, Filtered (mg/L as N)	Nitrogen, Ammonia plus Organic, Filtered (mg/L as N)
1	06/17/98	481	455	2570	<0.02	0.69
1	07/22/98	--	--	--	0.024	0.41
1	08/12/98	419	414	588	0.080	0.20
1	09/01/98	532	525	320	<0.02	0.20
1	10/07/98	<10	--	--	<0.02	<0.10
1	10/07/98	508	473	133	<0.02	--
1	11/17/98	445	414	320	<0.02	0.10
1	01/12/99	421	391	522	0.031	0.13
1	03/02/99	426	379	471	<0.02	0.25
1	04/13/99	379	356	412	<0.02	0.13
1	05/25/99	456	432	502	0.029	0.34
1	06/29/99	393	356	1000	0.023	0.47
1	08/10/99	478	485	178	<0.02	0.18
1	09/13/99	550	549	67	<0.02	0.20
2	06/18/98	471	494	3000	0.028	0.40
2	07/22/98	521	489	1780	0.032	0.56
2	08/12/98	529	492	768	0.085	0.54
2	08/12/98	528	--	--	0.089	0.57
2	09/01/98	515	490	729	0.063	0.67
2	10/07/98	543	497	644	0.039	--
2	11/17/98	586	564	678	0.025	0.49
2	01/12/99	716	685	479	0.026	0.47
2	03/02/99	616	573	959	<0.02	0.40
2	04/13/99	587	--	659	0.020	0.32
2	05/25/99	545	520	808	0.052	0.28
2	06/29/99	<10	--	--	0.020	E 0.09
2	06/29/99	525	529	741	0.029	0.26
2	08/10/99	531	494	344	0.024	0.22
2	09/13/99	542	525	209	<0.02	0.41

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	Solids Residue, 180 °C, Filt. (mg/L)	Solids, Sum, Filtered (mg/L)	Solids, Filtered (tons/day)	Nitrogen, Ammonia, Filtered (mg/L as N)	Nitrogen, Ammonia plus Organic, Filtered (mg/L as N)
3	06/24/98	491	499	2820	0.047	0.45
4	07/21/98	<10	--	--	0.025	<0.10
4	07/21/98	--	--	--	0.020	0.52
4	08/11/98	642	628	237	0.079	0.45
4	09/02/98	782	755	156	<0.02	0.50
4	10/06/98	585	526	648	<0.02	0.49
4	11/18/98	638	607	741	<0.02	0.44
4	01/13/99	784	754	635	0.029	0.47
4	03/03/99	<10	--	--	<0.02	E 0.06
4	03/03/99	668	623	920	<0.02	0.43
4	04/14/99	1350	1280	91	0.020	0.31
4	05/26/99	<10	--	--	0.033	<0.10
4	05/26/99	738	686	195	0.039	0.22
4	06/30/99	690	641	173	0.042	0.26
4	08/11/99	--	--	--	--	--
4	08/11/99	1180	1190	57	0.020	0.19
4	09/15/99	<10	--	--	<0.02	<0.10
4	09/15/99	916	913	86	<0.02	0.30
6	06/23/98	--	--	--	--	--
6	06/23/98	2220	2120	168	0.14	1.1
6	07/23/98	--	--	--	0.15	0.78
6	08/11/98	3050	3000	99	0.11	0.70
7	09/03/98	2040	1980	264	0.19	0.97
6	10/06/98	2140	2050	185	0.068	--
7	11/18/98	4520	4290	98	0.30	1.2
5	01/14/99	<10	--	--	<0.02	<0.10
5	01/14/99	3650	3610	315	0.60	1.2
5	03/03/99	3790	3770	72	0.084	0.63
5	04/15/99	3850	3780	540	0.25	1.0

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	Solids Residue, 180 °C, Filt. (mg/L)	Solids, Sum, Filtered (mg/L)	Solids, Filtered (tons/day)	Nitrogen, Ammonia, Filtered (mg/L as N)	Nitrogen, Ammonia plus Organic, Filtered (mg/L as N)
5	05/26/99	4010	3910	465	0.092	0.69
5	06/30/99	3330	3200	808	0.20	1.0
5	08/11/99	<10	--	--	<0.02	0.11
5	08/11/99	1600	1590	190	0.18	0.73
5	09/14/99	2000	1950	194	0.23	0.81
8	06/19/98	1980	1990	45	<0.02	0.70
8	07/23/98	1570	1550	72	0.056	0.81
8	08/13/98	1740	1710	61	0.087	0.70
8	09/02/98	1570	1550	97	<0.02	0.76
8	10/06/98	1890	1810	92	0.020	--
8	11/19/98	12	--	--	<0.02	<0.10
8	11/19/98	2000	1920	65	0.18	0.75
8	01/13/99	2380	2320	45	0.87	1.6
8	03/04/99	2630	2520	35	0.95	1.9
8	04/14/99	<10	--	--	<0.02	<0.10
8	04/14/99	1880	1790	71	0.36	1.1
8	05/25/99	1760	1710	128	0.17	0.74
8	07/01/99	1860	1820	120	0.027	0.66
8	08/12/99	--	--	--	--	--
8	08/12/99	1780	1830	91	0.078	0.60
8	09/14/99	1560	1530	71	0.070	0.62
9	01/13/99	9490	9510	--	0.22	1.8
9	03/03/99	9730	9320	--	0.14	1.9
9	04/15/99	9010	8920	--	0.20	1.4
9	05/26/99	7060	6990	--	0.04	0.98
9	06/30/99	5700	5450	--	0.13	0.74
9	08/11/99	6070	6100	--	0.20	1.1
9	09/14/99	6510	6340	--	0.13	1.2

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	Solids Residue, 180 °C, Filt. (mg/L)	Solids, Sum, Filtered (mg/L)	Solids, Filtered (tons/day)	Nitrogen, Ammonia, Filtered (mg/L as N)	Nitrogen, Ammonia plus Organic, Filtered (mg/L as N)
10	08/31/99	2730	--	--	0.11	0.90
10	04/20/00	3260	--	--	0.38	1.1
10	07/21/00	2540	--	--	0.13	0.85
11	05/21/98	534	528	--	0.084	0.34
11	08/31/99	4520	3840	--	<0.02	1.3
11	04/20/00	2290	--	--	<0.02	1.2
11	07/21/00	10600	--	--	<0.02	2.1
13	07/09/98	752	744	1680	0.039	0.44
13	07/20/98	708	687	1790	0.029	0.46
13	08/10/98	704	677	1470	0.077	0.51
13	08/31/98	964	915	1460	<0.02	0.61
13	10/05/98	1400	1350	1600	0.020	--
13	11/16/98	1230	1170	1250	<0.02	0.68
13	01/11/99	1380	1330	1130	<0.02	0.69
13	03/01/99	1350	1290	990	<0.02	0.64
13	04/12/99	1260	1180	778	<0.02	0.59
13	05/24/99	1870	1820	842	0.034	0.71
13	06/28/99	1710	1630	650	0.045	0.87
13	08/09/99	3110	3150	226	<0.02	1.4



**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--", not determined; "<", less than)

Site #	Date	Nitrogen, Ammonia plus Organic, Total (mg/L as N)	Nitrogen, Nitrite plus Nitrate, Filtered (mg/L as N)	Nitrogen, Nitrite, Filtered (mg/L as N)	Phosphorus, Filtered (mg/L as P)	Phosphorus, ortho, Filtered (mg/L as P)
1	06/17/98	0.91	<0.05	<0.01	0.05	0.04
1	07/22/98	0.73	0.09	<0.01	0.02	0.03
1	08/12/98	0.77	<0.05	<0.01	0.01	0.03
1	09/01/98	0.29	<0.05	<0.01	0.01	0.01
1	10/07/98	<0.10	0.06	<0.01	<0.05	<0.01
1	10/07/98	--	0.06	<0.01	<0.05	<0.01
1	11/17/98	0.18	0.20	<0.01	<0.05	0.01
1	01/12/99	0.12	0.33	0.02	0.02	0.03
1	03/02/99	0.62	0.15	<0.01	0.05	0.05
1	04/13/99	0.51	0.06	<0.01	0.04	0.04
1	05/25/99	0.85	<0.05	<0.01	0.05	0.04
1	06/29/99	0.99	<0.05	0.01	0.04	0.04
1	08/10/99	0.18	<0.05	<0.01	0.01	<0.01
1	09/13/99	0.24	<0.05	<0.01	0.01	<0.01
2	06/18/98	0.65	0.06	<0.01	0.03	0.05
2	07/22/98	0.65	0.09	0.01	0.04	0.05
2	08/12/98	0.72	<0.05	<0.01	0.03	0.04
2	08/12/98	0.67	<0.05	<0.01	0.03	0.04
2	09/01/98	0.93	<0.05	0.01	0.05	0.02
2	10/07/98	--	0.27	0.02	E 0.04	0.03
2	11/17/98	0.57	0.27	0.01	E 0.04	0.04
2	01/12/99	0.56	0.24	0.01	0.04	0.04
2	03/02/99	0.50	0.16	0.01	0.03	0.02
2	04/13/99	0.47	0.05	<0.01	0.01	0.01
2	05/25/99	0.51	<0.05	<0.01	0.01	0.02
2	06/29/99	<0.10	<0.05	<0.01	<0.004	0.02
2	06/29/99	0.37	<0.05	0.01	0.01	0.02
2	08/10/99	0.27	<0.05	<0.01	0.02	0.01
2	09/13/99	0.42	<0.05	<0.01	0.02	0.02

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	Nitrogen, Ammonia plus Organic, Total (mg/L as N)	Nitrogen, Nitrite plus Nitrate, Filtered (mg/L as N)	Nitrogen, Nitrite, Filtered (mg/L as N)	Phosphorus, Filtered (mg/L as P)	Phosphorus, ortho, Filtered (mg/L as P)
3	06/24/98	0.35	0.05	0.01	0.04	0.05
4	07/21/98	<0.10	0.07	<0.01	<0.01	0.01
4	07/21/98	0.84	<0.05	<0.01	0.05	0.05
4	08/11/98	0.73	0.06	<0.01	0.03	0.05
4	09/02/98	0.72	<0.05	<0.01	0.01	0.02
4	10/06/98	0.64	0.23	<0.01	E 0.04	0.03
4	11/18/98	0.55	0.23	<0.01	E 0.03	0.03
4	01/13/99	0.63	0.27	<0.01	0.05	0.04
4	03/03/99	<0.10	<0.05	<0.01	<0.004	<0.01
4	03/03/99	0.61	0.13	<0.01	0.02	0.02
4	04/14/99	0.45	0.11	<0.01	0.03	0.03
4	05/26/99	E 0.08	<0.05	<0.01	<0.004	<0.01
4	05/26/99	0.47	0.09	<0.01	0.03	0.03
4	06/30/99	0.54	<0.05	0.01	0.02	0.03
4	08/11/99	--	--	--	--	--
4	08/11/99	0.26	0.09	<0.01	0.03	0.03
4	09/15/99	<0.10	<0.05	<0.01	<0.004	<0.01
4	09/15/99	0.38	<0.05	<0.01	0.03	0.03
6	06/23/98	--	--	--	--	--
6	06/23/98	0.98	0.86	0.04	0.11	0.12
6	07/23/98	0.93	0.46	0.10	0.17	0.16
6	08/11/98	0.79	0.44	0.05	0.08	0.12
7	09/03/98	1.3	0.98	0.06	0.13	0.14
6	10/06/98	--	0.37	0.02	0.06	0.07
7	11/18/98	1.2	0.87	0.04	0.13	0.16
5	01/14/99	<0.10	<0.05	<0.01	<0.004	<0.01
5	01/14/99	1.2	0.42	0.02	0.17	0.16
5	03/03/99	0.96	<0.05	0.01	0.08	0.08
5	04/15/99	1.5	0.44	0.02	0.13	0.12

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	Nitrogen, Ammonia plus Organic, Total (mg/L as N)	Nitrogen, Nitrite plus Nitrate, Filtered (mg/L as N)	Nitrogen, Nitrite, Filtered (mg/L as N)	Phosphorus, Filtered (mg/L as P)	Phosphorus, ortho, Filtered (mg/L as P)
5	05/26/99	1.5	0.30	0.04	0.09	0.08
5	06/30/99	1.6	0.20	0.04	0.12	0.12
5	08/11/99	E 0.07	<0.05	<0.01	<0.004	<0.01
5	08/11/99	0.61	0.52	0.05	0.10	0.08
5	09/14/99	1.5	0.37	0.07	0.09	0.06
8	06/19/98	1.0	<0.05	<0.01	0.11	0.14
8	07/23/98	1.2	0.28	0.05	0.22	0.22
8	08/13/98	0.97	0.07	0.01	0.10	0.14
8	09/02/98	1.4	0.26	0.02	0.16	0.17
8	10/06/98	--	0.59	0.04	0.22	0.21
8	11/19/98	<0.10	<0.05	<0.01	<0.05	<0.01
8	11/19/98	0.93	0.48	0.03	0.23	0.24
8	01/13/99	1.7	0.71	0.04	0.37	0.37
8	03/04/99	2.4	0.34	0.06	0.41	0.42
8	04/14/99	<0.10	<0.05	<0.01	<0.004	<0.01
8	04/14/99	3.0	0.36	0.05	0.20	0.17
8	05/25/99	1.5	0.46	0.07	0.20	0.20
8	07/01/99	0.93	0.19	0.05	0.15	0.15
8	08/12/99	--	--	--	--	--
8	08/12/99	0.59	0.50	0.04	0.20	0.16
8	09/14/99	1.4	0.48	0.04	0.20	0.18
9	01/13/99	2.5	0.11	0.01	0.20	0.25
9	03/03/99	1.9	<0.05	<0.01	0.25	0.31
9	04/15/99	1.6	0.33	0.02	0.16	0.23
9	05/26/99	1.9	0.28	0.05	0.09	0.08
9	06/30/99	1.4	0.07	0.02	0.15	0.15
9	08/11/99	1.0	<0.05	<0.01	0.11	0.08
9	09/14/99	3.3	<0.05	<0.01	0.18	0.16

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	Nitrogen, Ammonia plus Organic, Total (mg/L as N)	Nitrogen, Nitrite plus Nitrate, Filtered (mg/L as N)	Nitrogen, Nitrite, Filtered (mg/L as N)	Phosphorus, Filtered (mg/L as P)	Phosphorus, ortho, Filtered (mg/L as P)
10	08/31/99	2.4	0.31	0.04	0.11	0.09
10	04/20/00	1.5	0.88	0.05	0.15	0.12
10	07/21/00	1.5	0.33	0.06	0.11	0.09
11	05/21/98	0.60	<0.05	0.01	0.03	0.03
11	08/31/99	3.2	<0.05	<0.01	0.05	0.03
11	04/20/00		<0.05	<0.01	0.05	0.02
11	07/21/00	2.6	<0.05	<0.01	0.06	0.02
13	07/09/98	0.64	<0.05	<0.01	0.02	0.03
13	07/20/98	0.74	0.07	<0.01	<0.01	0.02
13	08/10/98	0.64	<0.05	<0.01	<0.01	0.03
13	08/31/98	0.87	<0.05	<0.01	0.02	0.02
13	10/05/98	--	0.06	<0.01	<0.05	0.01
13	11/16/98	1.0	<0.05	<0.01	<0.05	0.01
13	01/11/99	0.80	<0.05	<0.01	0.01	0.01
13	03/01/99	0.94	<0.05	<0.01	0.02	0.02
13	04/12/99	1.3	<0.05	<0.01	0.02	0.02
13	05/24/99	1.5	<0.05	<0.01	0.02	0.03
13	06/28/99	1.5	<0.05	0.01	0.03	0.04
13	08/09/99	2.5	<0.05	<0.01	0.05	0.02

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--", not determined; "<", less than)

Site #	Date	Phosphorus, Total (mg/L as P)	Aluminum, Filtered (μg/L)	Antimony, Filtered (μg/L)	Arsenic, Filtered (μg/L)	Barium, Filtered (μg/L)	Beryllium, Filtered (μg/L)	Boron, Filtered (μg/L)	Cadmium, Filtered (μg/L)	Chromium, Filtered (μg/L)
1	06/17/98	0.09	2.4	1.0	18	60	<1	427	<1	2.1
1	07/22/98	0.15	6.0	1.2	14	52	<1	322	<1	2.6
1	08/12/98	0.04	4.7	4.8	18	64	<1	392	<1	1.9
1	09/01/98	0.02	4.9	8.5	23	86	<1	561	<1	1.7
1	10/07/98	<0.05	4.0	<1	<1	<1	<1	E 14	<1	<1
1	10/07/98	0.05	4.3	11	18	80	<1	525	<1	2.9
1	11/17/98	<0.05	4.9	4.7	13	82	<1	421	<1	<1
1	01/12/99	0.04	<1	3.8	13	77	<1	413	<1	<1
1	03/02/99	0.25	<1	2.5	15	69	<1	299	<1	<1
1	04/13/99	0.20	<1	2.1	13	67	<1	284	<1	<1
1	05/25/99	0.29	1.1	1.7	21	77	<1	321	<1	<1
1	06/29/99	0.43	3.0	1.1	19	56	<1	301	<1	<1
1	08/10/99	0.15	1.3	2.7	23	74	<1	501	<1	<1
1	09/13/99	0.04	1.2	1.8	20	85	<1	646	<1	<1
2	06/18/98	0.06	4.7	2.8	20	34	<1	405	<1	5.5
2	07/22/98	0.05	--	--	--	--	--	--	--	--
2	08/12/98	0.05	6.0	1.7	25	35	<1	488	<1	2.7
2	08/12/98	0.04	5.0	1.6	22	36	<1	503	<1	2.4
2	09/01/98	0.06	5.1	1.7	24	32	<1	483	<1	1.9
2	10/07/98	0.07	4.1	1.8	28	33	<1	503	<1	3.0
2	11/17/98	E 0.05	4.8	2.3	33	45	<1	527	<1	<1
2	01/12/99	0.07	<1	3.4	35	62	<1	610	<1	<1
2	03/02/99	0.06	<1	3.1	30	45	<1	547	<1	<1
2	04/13/99	0.06	2.4	3.6	24	45	<1	546	<1	<1
2	05/25/99	0.04	4.5	3.5	25	38	<1	485	<1	<1
2	06/29/99	<0.004	1.0	<1	<1	<1	<1	<16	<1	<1
2	06/29/99	0.04	1.5	3.2	23	32	<1	444	<1	<1
2	08/10/99	0.07	<1	3.0	26	30	<1	447	<1	<1
2	09/13/99	0.07	<1	3.1	28	35	<1	476	<1	<1

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; µS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--", not determined; "<", less than)

Site #	Date	Phosphorus, Total (mg/L as P)	Aluminum, Filtered (µg/L)	Antimony, Filtered (µg/L)	Arsenic, Filtered (µg/L)	Barium, Filtered (µg/L)	Beryllium, Filtered (µg/L)	Boron, Filtered (µg/L)	Cadmium, Filtered (µg/L)	Chromium, Filtered (µg/L)
3	06/24/98	0.07	4.6	2.9	32	28	<1	413	1	2.8
4	07/21/98	<0.01	--	--	--	--	--	--	--	--
4	07/21/98	0.18	--	--	--	--	--	--	--	--
4	08/11/98	0.11	4.9	2.0	27	42	<1	732	<1	2.7
4	09/02/98	0.10	5.1	2.0	29	45	<1	906	<1	2.2
4	10/06/98	0.10	5.1	1.9	30	38	<1	588	<1	2.8
4	11/18/98	0.08	2.7	2.3	34	44	<1	602	<1	1.6
4	01/13/99	0.19	<1	3.3	37	58	<1	751	<1	<1
4	03/03/99	<0.004	<1	<1	<1	<1	<1	<16	<1	<1
4	03/03/99	0.15	<1	3.3	31	49	<1	616	<1	<1
4	04/14/99	0.09	1.7	3.2	36	66	<1	1820	<1	<1
4	05/26/99	<0.004	<1	<1	<1	<1	<1	<16	<1	<1
4	05/26/99	0.13	1.2	3.3	31	50	<1	856	<1	<1
4	06/30/99	0.13	1.8	3.1	31	38	<1	710	<1	<1
4	08/11/99	--	--	--	--	--	--	--	--	--
4	08/11/99	0.11	<1	2.5	42	64	<1	1690	<1	<1
4	09/15/99	<0.004	<1	<1	<1	<1	<1	<16	<1	<1
4	09/15/99	0.07	1.0	2.8	36	56	<1	1200	<1	<1
6	06/23/98	--	4.0	<1	<1	<1	<1	<16	<1	<1
6	06/23/98	0.13	4.8	2.1	57	106	<2	2240	2	4.7
6	07/23/98	0.19	--	--	--	--	--	--	--	--
6	08/11/98	0.11	5.3	<3	66	126	<3	3880	3	4.5
7	09/03/98	0.26	9.0	2.0	56	97	<2	2300	<2	4.0
6	10/06/98	0.12	2.7	<2	53	97	<2	2300	2	4.6
7	11/18/98	0.16	3.3	<3	115	128	<3	4730	<3	3.4
5	01/14/99	<0.004	<1	<1	<1	<1	<1	<16	<1	<1
5	01/14/99	0.19	<3	<3	78	144	<3	3880	<3	1.1
5	03/03/99	0.16	<3	<3	74	151	<3	4070	<3	<1
5	04/15/99	0.34	<3	<3	94	114	<3	4250	<3	<1

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<", less than)

Site #	Date	Phosphorus, Total (mg/L as P)	Aluminum, Filtered (μg/L)	Antimony, Filtered (μg/L)	Arsenic, Filtered (μg/L)	Barium, Filtered (μg/L)	Beryllium, Filtered (μg/L)	Boron, Filtered (μg/L)	Cadmium, Filtered (μg/L)	Chromium, Filtered (μg/L)
5	05/26/99	0.25	<3	<3	117	109	<3	4220	<3	<1
5	06/30/99	0.34	5.8	3.1	113	97	<3	3820	<3	<1
5	08/11/99	<0.004	<1	<1	<1	<1	<1	<16	<1	<1
5	08/11/99	0.88	<2	2.7	48	83	<2	1880	<2	<1
5	09/14/99	0.35	5.5	2.2	56	102	<1	2130	<1	0.9
8	06/19/98	0.18	2.6	<2	85	87	<2	2320	<2	3.5
8	07/23/98	0.33	--	--	--	--	--	--	--	--
8	08/13/98	0.15	2.1	<2	69	102	<2	2110	<2	4.1
8	09/02/98	0.43	6.2	2.0	70	95	<2	1840	<2	3.8
8	10/06/98	0.29	3.8	<2	64	103	<2	2110	<2	4.6
8	11/19/98	<0.05	3.0	<1	<1	<1	<1	<16	<1	<1
8	11/19/98	0.29	3.1	<2	64	110	<2	1350	<2	2.8
8	01/13/99	0.43	5.0	<2	75	131	<2	2770	<2	<2
8	03/04/99	0.66	<2	<2	82	165	<2	2120	<2	<1
8	04/14/99	<0.004	<1	<1	<1	<1	<1	<16	<1	<1
8	04/14/99	1.10	7.4	2.4	72	101	<2	2230	<2	<1
8	05/25/99	0.46	2.5	<2	79	93	<2	2250	<2	<1
8	07/01/99	0.22	5.0	<2	92	97	<2	2070	<2	<1
8	08/12/99	--	--	--	--	--	--	--	--	--
8	08/12/99	0.33	2.3	2.0	78	113	<2	2120	<2	<1
8	09/14/99	0.42	1.2	2.1	77	102	<1	1870	<1	<1
9	01/13/99	0.51	11	<6	220	109	<6	12400	6	<6
9	03/03/99	0.32	<6	<6	200	117	<6	9560	6	1.4
9	04/15/99	0.21	11	<6	225	118	<6	8750	6	<1
9	05/26/99	0.21	<5	<5	228	119	<5	7190	5	<1
9	06/30/99	0.21	6.2	<4	181	112	<4	5070	4	<10
9	08/11/99	0.18	<5	<5	141	113	<5	6130	5	<1
9	09/14/99	0.74	2.3	3.6	137	103	<1	6810	1	<1

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--", not determined; "<", less than)

Site #	Date	Phosphorus, Total (mg/L as P)	Aluminum, Filtered ( $\mu$ g/L)	Antimony, Filtered ( $\mu$ g/L)	Arsenic, Filtered ( $\mu$ g/L)	Barium, Filtered ( $\mu$ g/L)	Beryllium, Filtered ( $\mu$ g/L)	Boron, Filtered ( $\mu$ g/L)	Cadmium, Filtered ( $\mu$ g/L)	Chromium, Filtered ( $\mu$ g/L)
10	08/31/99	0.54	<2	3.1	93	115	<2	3250	<2	<1
10	04/20/00	0.28	3.5	3.3	77	120	--	3260	--	<0.8
10	07/21/00	0.31	1.4	<2	75	38	<2	2990	<2	<0.8
11	05/21/98	0.10	22	3.9	23	36	<1	577	<1	2.0
11	08/31/99	0.36	<3	5.5	177	110	<3	5550	<3	<1
11	04/20/00		2.2	2.6	97	99		4590		<0.8
11	07/21/00	0.08	54	<5.00	228	177	<5	12700	<5	E 0.8
13	07/09/98	0.06	2.9	3.6	39	33	<1	993	<1	1.4
13	07/20/98	0.04	--	--	--	--	--	--	--	--
13	08/10/98	0.03	5.7	3.6	38	27	<1	898	<1	2.4
13	08/31/98	0.05	4.6	4.0	56	41	<1	1270	<1	2.4
13	10/05/98	0.07	3.8	4.2	79	66	<1	1870	<1	4.2
13	11/16/98	0.05	2.2	3.1	68	60	<1	1520	<1	2.2
13	01/11/99	0.06	<1	3.5	66	72	<1	1710	<1	<1
13	03/01/99	0.16	<1	3.3	53	76	<1	1490	<1	<1
13	04/12/99	0.21	2.4	4.3	53	67	<1	1500	<1	<1
13	05/24/99	0.23	2.5	5.5	93	86	<2	2510	<2	<1
13	06/28/99	0.24	2.8	5.1	99	74	<2	2130	<2	<1
13	08/09/99	0.31	<3	6.6	175	144	<3	4230	<3	<1



**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--", not determined; "<", less than)

Site #	Date	Cobalt, Filtered ( $\mu$ g/L)	Copper, Filtered ( $\mu$ g/L)	Iron, Filtered ( $\mu$ g/L)	Lead, Filtered ( $\mu$ g/L)	Manganese, Filtered ( $\mu$ g/L)	Mercury, Filtered ( $\mu$ g/L)	Mercury, Total Recoverable ( $\mu$ g/L)	Mercury, Unfiltered (ng/L)
1	06/17/98	<1	3.0	<10	<1	6.8	<0.1	--	--
1	07/22/98	<1	3.1	--	<1	2.3	<0.1	<0.1	--
1	08/12/98	<1	1.9	<10	<1	<1	<0.1	--	--
1	09/01/98	<1	1.5	<10	<1	4.9	<0.1	--	--
1	10/07/98	<1	<1	<10	<1	<1	--	<0.1	--
1	10/07/98	<1	1.1	<10	<1	4.4	--	<0.1	--
1	11/17/98	<1	<1	<10	<1	3.1	--	<0.1	--
1	01/12/99	<1	1.0	<10	<1	1.7	--	<0.1	--
1	03/02/99	<1	1.4	<10	<1	<1	--	<0.1	--
1	04/13/99	<1	1.4	<10	<1	3.4	--	<0.1	--
1	05/25/99	<1	2.2	<10	<1	1.2	--	<0.1	--
1	06/29/99	<1	2.7	<10	<1	1.0	--	<0.1	--
1	08/10/99	<1	1.6	E 9.9	<1	3.5	--	--	8.3
1	09/13/99	<1	1.6	<10	<1	2.8	--	<0.1	--
2	06/18/98	<1	2.5	<10	<1	<1	<0.1	--	--
2	07/22/98	--	--	<10	--	--	--	--	--
2	08/12/98	<1	3.2	<10	<1	<1	<0.1	--	--
2	08/12/98	<1	3.0	<10	<1	<1	<0.1	--	--
2	09/01/98	<1	2.2	<10	<1	1.8	<0.1	--	--
2	10/07/98	<1	1.8	<10	<1	<1	--	<0.1	--
2	11/17/98	<1	2.1	<10	<1	<1	--	<0.1	--
2	01/12/99	<1	2.3	<10	<1	<1	--	<0.1	--
2	03/02/99	<1	2.2	<10	<1	<1	--	<0.1	--
2	04/13/99	<1	2.1	<10	<1	<1	--	<0.1	--
2	05/25/99	<1	1.6	E 6.4	<1	<1	--	<0.1	--
2	06/29/99	<1	<1	<10	<1	<1	--	<0.1	--
2	06/29/99	<1	1.7	<10	<1	<1	--	<0.1	--
2	08/10/99	<1	1.9	<10	<1	<1	--	--	5.0
2	09/13/99	<1	2.2	<10	<1	<1	--	<0.1	--

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<", less than)

Site #	Date	Cobalt, Filtered (μg/L)	Copper, Filtered (μg/L)	Iron, Filtered (μg/L)	Lead, Filtered (μg/L)	Manganese, Filtered (μg/L)	Mercury, Filtered (μg/L)	Mercury, Total Recoverable (μg/L)	Mercury, Water, Unfiltered (ng/L)
3	06/24/98	<1	2.6	<10	<1	2.6	<0.1	--	--
4	07/21/98	--	--	10	--	--	--	--	--
4	07/21/98	--	--	--	--	--	--	<0.1	--
4	08/11/98	<1	2.7	<10	<1	3.1	<0.1	--	--
4	09/02/98	<1	2.0	<10	<1	10	<0.1	--	--
4	10/06/98	<1	1.9	<10	<1	1.2	--	<0.1	--
4	11/18/98	<1	1.9	<10	<1	1.5	--	<0.1	--
4	01/13/99	<1	2.4	<10	<1	1.8	--	<0.1	--
4	03/03/99	<1	<1	<10	<1	<1	--	<0.1	--
4	03/03/99	<1	2.3	<10	<1	<1	--	<0.1	--
4	04/14/99	<1	2.1	<30	<1	6.1	--	<0.1	--
4	05/26/99	<1	<1	M	<1	<1	--	<0.1	--
4	05/26/99	<1	1.6	<10	<1	2.8	--	<0.1	--
4	06/30/99	<1	1.5	<10	<1	2.5	--	<0.1	--
4	08/11/99	--	--	--	--	--	--	--	0.67
4	08/11/99	<1	1.6	<30	<1	2.0	--	--	10
4	09/15/99	<1	<1	<10	<1	<1	--	<0.1	--
4	09/15/99	<1	1.9	<10	<1	<1	--	<0.1	--
6	06/23/98	<1	<1	--	<1	<1	<0.1	--	--
6	06/23/98	<2	4.0	<30	<2	145	<0.1	--	--
6	07/23/98	--	--	--	--	--	--	<0.1	--
6	08/11/98	<3	3.5	<30	<3	147	<0.1	--	--
7	09/03/98	<2	2.1	<30	<2	70	<0.1	--	--
6	10/06/98	<2	<2	<30	<2	103	--	<0.1	--
7	11/18/98	<3	<3	<50	<3	247	--	<0.1	--
5	01/14/99	<1	<1	<10	<1	<1	--	<0.1	--
5	01/14/99	<3	<3	<50	<3	952	--	<0.1	--
5	03/03/99	<3	4.1	<50	<3	825	--	<0.1	--
5	04/15/99	<3	3.9	<50	<3	294	--	<0.1	--

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<", less than)

Site #	Date	Cobalt, Filtered ( $\mu$ g/L)	Copper, Filtered ( $\mu$ g/L)	Iron, Filtered ( $\mu$ g/L)	Lead, Filtered ( $\mu$ g/L)	Manganese, Filtered ( $\mu$ g/L)	Mercury, Filtered ( $\mu$ g/L)	Mercury, Total Recoverable ( $\mu$ g/L)	Mercury, Water, Unfiltered (ng/L)
5	05/26/99	<3	3.4	E 21	<3	298	--	<0.1	--
5	06/30/99	<3	4.4	<50	<3	183	--	<0.1	--
5	08/11/99	<1	<1	<10	<1	<1	--	<0.1	--
5	08/11/99	<2	<2	<30	<2	32	--	--	57
5	09/14/99	<1	3.1	<30	<1	70	--	<0.3	--
8	06/19/98	<2	2.2	<30	<2	27	<0.1	--	--
8	07/23/98	--	--	<30	--	--	--	<0.1	--
8	08/13/98	<2	2.5	<30	<2	32	<0.1	--	--
8	09/02/98	<2	<2	<30	<2	32	<0.1	--	--
8	10/06/98	<2	2.3	<30	<2	8.1	--	<0.1	--
8	11/19/98	<1	<1	<10	<1	<1	--	<0.1	--
8	11/19/98	<2	<2	<30	<2	156	--	<0.1	--
8	01/13/99	<2	2.7	<30	<2	369	--	<0.1	--
8	03/04/99	<2	3.0	<30	<2	631	--	<0.1	--
8	04/14/99	<1	<1	<10	<1	<1	--	<0.1	--
8	04/14/99	<2	2.5	<30	<2	314	--	<0.1	--
8	05/25/99	<2	2.2	<30	<2	168	--	<0.1	--
8	07/01/99	<2	2.9	<30	<2	26	--	<0.1	--
8	08/12/99	--	--	--	--	--	--	--	0.16
8	08/12/99	<2	<2	E 22	<2	23	--	--	14
8	09/14/99	<1	1.9	<30	<1	24	--	<0.1	--
9	01/13/99	<6	6.1	<200	<6	416	--	<0.1	--
9	03/03/99	<6	8.2	<100	<6	1060	--	<0.1	--
9	04/15/99	<6	7.2	<100	<6	290	--	<0.1	--
9	05/26/99	<5	<5	<100	<5	246	--	<0.1	--
9	06/30/99	<4	4.1	<100	<4	99	--	<0.1	--
9	08/11/99	<5	<5	<50	<5	106	--	<0.1	--
9	09/14/99	1.1	1.6	E 41	<1	374	--	<0.1	--

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<", less than)

Site #	Date	Cobalt, Filtered ( $\mu$ g/L)	Copper, Filtered ( $\mu$ g/L)	Iron, Filtered ( $\mu$ g/L)	Lead, Filtered ( $\mu$ g/L)	Manganese, Filtered ( $\mu$ g/L)	Mercury, Filtered ( $\mu$ g/L)	Mercury, Total Recoverable ( $\mu$ g/L)	Mercury, Unfiltered (ng/L)
10	08/31/99	<2	3.3	E 7.1	<2	32	--	<0.1	--
10	04/20/00	--	5.3	<30	--	228	--	--	--
10	07/21/00	<2	<2	<50	<2	40	--	--	--
11	05/21/98	<1	1.5	<10	<1	18	<0.1	--	--
11	08/31/99	<3	4.1	<10	<3	<3	--	<0.1	--
11	04/20/00		2.8	<30	--	24	--	--	--
11	07/21/00	<5	5.3	<150	<5	<1	--	--	--
13	07/09/98	<1	2.5	<10	<1	<1	<0.1	--	--
13	07/20/98	--	--	<10	--	--	--	--	--
13	08/10/98	<1	2.0	<10	<1	<1	<0.1	--	--
13	08/31/98	<1	4.7	<10	<1	<1	<0.1	--	--
13	10/05/98	<1	8.0	<30	<1	<1	--	<0.1	--
13	11/16/98	<1	2.0	<30	<1	<1	--	<0.1	--
13	01/11/99	<1	3.7	<30	<1	<1	--	<0.1	--
13	03/01/99	<1	5.8	<30	<1	<1	--	<0.1	--
13	04/12/99	<1	3.3	<30	<1	<1	--	<0.1	--
13	05/24/99	<2	8.2	<10	<2	<2	--	<0.1	--
13	06/28/99	<2	2.4	63	<2	<2	--	<0.1	--
13	08/09/99	<3	3.1	<30	<3	<3	--	--	12

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	Mercury, Methyl, Unfiltered (ng/L)	Molybdenum, Filtered ( $\mu$ g/L)	Nickel, Filtered ( $\mu$ g/L)	Selenium, Filtered ( $\mu$ g/L)	Silver, Filtered ( $\mu$ g/L)	Uranium, Filtered ( $\mu$ g/L)	Zinc, Filtered ( $\mu$ g/L)
1	06/17/98	--	9.4	1.8	<1	<1	4.5	1.4
1	07/22/98	--	7.0	1.9	<1	<1	2.8	1.0
1	08/12/98	--	48	1.4	<1	<1	4.3	<1
1	09/01/98	--	76	1.2	<1	<1	4.8	<1
1	10/07/98	--	<1	<1	<1	<1	<1.0	<1
1	10/07/98	--	115	1.0	1.1	<1	3.6	<1
1	11/17/98	--	34	<1	<1	<1	2.7	1.1
1	01/12/99	--	21	<1	<1	<1	3.1	1.2
1	03/02/99	--	17	1.5	<1	<1	5.2	<1
1	04/13/99	--	13	1.4	<1	<1	4.0	<1
1	05/25/99	--	15	1.8	<1	<1	5.8	<1
1	06/29/99	--	13	2.0	<1	<1	3.6	<1
1	08/10/99	0.24	30	2.1	<1	<1	5.2	<1
1	09/13/99	--	27	1.4	<1	<1	6.4	1.2
2	06/18/98	--	20	3.2	<1	<1	5.1	<1
2	07/22/98	--	--	--	--	--	--	--
2	08/12/98	--	13	2.2	<1	<1	4.8	<1
2	08/12/98	--	13	2.2	<1	<1	4.8	<1
2	09/01/98	--	13	1.9	<1	<1	4.4	1.0
2	10/07/98	--	14	1.7	1.5	<1	4.5	<1
2	11/17/98	--	17	1.9	<1	<1	4.8	<1
2	01/12/99	--	31	2.0	<1	<1	5.8	2.0
2	03/02/99	--	29	2.1	<1	<1	5.0	<1
2	04/13/99	--	37	2.2	<1	<1	5.4	<1
2	05/25/99	--	31	1.2	<1	<1	4.6	<1
2	06/29/99	--	<1	<1	<1	<1	<1.0	<1
2	06/29/99	--	29	1.1	<1	<1	5.2	<1
2	08/10/99	0.03	23	2.1	<1	<1	5.7	<1
2	09/13/99	--	23	1.5	<1	<1	6.4	<1

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second;  $\mu$ S/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter;  $\mu$ g/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	Mercury Methyl, Water, Unfiltered (ng/L)	Molybdenum, Filtered ( $\mu$ g/L)	Nickel, Filtered ( $\mu$ g/L)	Selenium, Filtered ( $\mu$ g/L)	Silver, Filtered ( $\mu$ g/L)	Uranium, Filtered ( $\mu$ g/L)	Zinc, Filtered ( $\mu$ g/L)
3	06/24/98	--	20	1.5	<1	<1	5.6	<1
4	07/21/98	--	--	--	--	--	--	--
4	07/21/98	--	--	--	--	--	--	--
4	08/11/98	--	14	2.2	<1	<1	5.2	<1
4	09/02/98	--	14	1.9	<1	<1	4.9	<1
4	10/06/98	--	15	1.8	1.5	<1	4.6	<1
4	11/18/98	--	17	1.7	1.1	<1	4.9	<1
4	01/13/99	--	31	1.9	<1	<1	5.7	<1
4	03/03/99	--	<1	<1	<1	<1	<1.0	<1
4	03/03/99	--	31	2.3	<1	<1	5.3	<1
4	04/14/99	--	34	2.1	<1	<1	6.5	<1
4	05/26/99	--	<1	<1	<1	<1	<1.0	<1
4	05/26/99	--	29	1.2	<1	<1	5.0	<1
4	06/30/99	--	28	<1	<1	<1	5.3	<1
4	08/11/99	0.00	--	--	--	--	--	--
4	08/11/99	--	22	2.1	<1	<1	5.7	<1
4	09/15/99	--	<1	<1	<1	<1	<1.0	<1
4	09/15/99	--	23	1.5	<1	<1	6.3	<1
6	06/23/98	--	<1	<1	<1	<1	<1.0	1.0
6	06/23/98	--	25	2.2	<1	<2	25	9.1
6	07/23/98	--	--	--	--	--	--	--
6	08/11/98	--	29	3.5	1.4	<3	24	3.1
7	09/03/98	--	22	2.1	1.5	<2	20	<2
6	10/06/98	--	19	2.1	<1	<2	19	<2
7	11/18/98	--	94	4.0	1.9	<3	53	4.2
5	01/14/99	--	<1	<1	<1	<1	<1.0	1.0
5	01/14/99	--	11	3.0	2.1	<3	31	3.6
5	03/03/99	--	24	10.0	<1	<3	28	4.0
5	04/15/99	--	77	5.2	1.1	<3	44	<3

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
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Site #	Date	Mercury Methyl, Water, Unfiltered (ng/L)	Molybdenum, Filtered ( $\mu$ g/L)	Nickel, Filtered ( $\mu$ g/L)	Selenium, Filtered ( $\mu$ g/L)	Silver, Filtered ( $\mu$ g/L)	Uranium, Filtered ( $\mu$ g/L)	Zinc, Filtered ( $\mu$ g/L)
5	05/26/99	--	88	4.1	<1	<3	51	<3
5	06/30/99	--	95	4.7	1.1	<3	42	4.1
5	08/11/99	--	<1	<1	<1	<1	<1.0	<1
5	08/11/99	1.30	26	3.8	<1	<2	16	<2
5	09/14/99	--	25	4.1	<2.4	<1	21	4.2
8	06/19/98	--	34	2.3	1.9	<2	25	4.8
8	07/23/98	--	--	--	--	--	--	--
8	08/13/98	--	27	2.7	1.2	<2	23	<2
8	09/02/98	--	24	2.7	1.7	<2	20	<2
8	10/06/98	--	22	2.5	2.9	<2	19	6.0
8	11/19/98	--	<1	<1	<1	<1	<1.0	<1
8	11/19/98	--	25	2.1	2.3	<2	21	<2
8	01/13/99	--	33	3.1	2.5	<2	28	7.1
8	03/04/99	--	40	8.1	1.4	<2	26	4.4
8	04/14/99	--	<1	<1	<1	<1	<1.0	<1
8	04/14/99	--	37	4.2	1.8	<2	28	2.4
8	05/25/99	--	27	3.2	<1	<2	23	2.8
8	07/01/99	--	42	2.7	1.6	<2	24	3.2
8	08/12/99	0.12	--	--	--	--	--	--
8	08/12/99	0.39	40	4.3	2.1	<2	24	<2
8	09/14/99	--	33	3.5	<1	<1	22	1.6
9	01/13/99	--	373	11	2.9	<6	174	<6
9	03/03/99	--	237	27	1.9	<6	104	<6
9	04/15/99	--	282	11	<1	<6	124	<6
9	05/26/99	--	212	7.1	1.0	<5	110	<5
9	06/30/99	--	140	7.5	1.4	<4	64	5.8
9	08/11/99	--	132	7.3	<1	<5	51	32
9	09/14/99	--	194	7.9	<1	<1	79	4.9

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Site #	Date	Mercury, Methyl, Unfiltered (ng/L)	Molybdenum, Filtered ( $\mu$ g/L)	Nickel, Filtered ( $\mu$ g/L)	Selenium, Filtered ( $\mu$ g/L)	Silver, Filtered ( $\mu$ g/L)	Uranium, Filtered ( $\mu$ g/L)	Zinc, Filtered ( $\mu$ g/L)
10	08/31/99	--	97	6.7	2.5	<2	38	2.7
10	04/20/00	--	78	<1	3.0	--	48	16
10	07/21/00	--	20	<2	<2.4	<2	12	1.8
11	05/21/98	--	26	1.4	<1	<1	5.5	1.0
11	08/31/99	--	151	4.9	3.4	<3	50	3.1
11	04/20/00	--	72	2.2	1.2		16	<6.47
11	07/21/00	--	138	<5	<2.4	<5	37	25
13	07/09/98	--	32	1.3	<1	<1	9.7	2.2
13	07/20/98	--	--	--	--	--	--	--
13	08/10/98	--	26	1.6	<1	<1	10	1.6
13	08/31/98	--	33	1.6	<1	<1	14	<1
13	10/05/98	--	44	1.7	1.3	<1	20	1.1
13	11/16/98	--	35	1.7	1.5	<1	15	1.3
13	01/11/99	--	41	2.0	1.6	<1	18	1.8
13	03/01/99	--	39	4.3	<1	<1	14	1.2
13	04/12/99	--	49	2.4	<1	<1	19	1.5
13	05/24/99	--	67	2.3	<1	<2	29	<2
13	06/28/99	--	66	2.2	1.2	<2	22	2.7
13	08/09/99	0.31	106	3.1	1.0	<3	34	<3



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Site #	Date	<sup>2</sup> H/ <sup>1</sup> H	<sup>18</sup> O/ <sup>16</sup> O
		Stable Isotope Ratio, permil	Stable Isotope Ratio, permil
1	06/17/98	-106.2	-13.0
1	07/22/98	-109.8	-13.7
1	08/12/98	-112.0	-13.9
1	09/01/98	-113.2	-13.3
1	10/07/98	--	--
1	10/07/98	-114.4	-13.6
1	11/17/98	-120.6	-15.1
1	01/12/99	-122.0	-15.3
1	03/02/99	-118.5	-15.0
1	04/13/99	-117.1	-14.7
1	05/25/99	-109.5	-13.2
1	06/29/99	-109.5	-13.4
1	08/10/99	-110.4	-13.0
1	09/13/99	-106.5	-12.3
2	06/18/98	-110.8	-13.4
2	07/22/98	-105.7	-12.5
2	08/12/98	-103.2	-11.9
2	08/12/98	--	--
2	09/01/98	-100.5	-11.7
2	10/07/98	-98.1	-11.1
2	11/17/98	-95.3	-10.6
2	01/12/99	-94.7	-10.4
2	03/02/99	-94.1	-10.7
2	04/13/99	-98.8	-11.3
2	05/25/99	-105.1	-12.3
2	06/29/99	--	--
2	06/29/99	-103.6	-12.2
2	08/10/99	-100.8	-11.5
2	09/13/99	-98.0	-10.8

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
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Site #	Date	<sup>2</sup> H/ <sup>1</sup> H	<sup>18</sup> O/ <sup>16</sup> O
		Stable Isotope Ratio, permil	Stable Isotope Ratio, permil
3	06/24/98	-109.5	-13.3
4	07/21/98	--	--
4	07/21/98	-104.2	-12.3
4	08/11/98	-99.9	-11.7
4	09/02/98	-99.5	-11.5
4	10/06/98	-98.8	-11.2
4	11/18/98	-97.0	-10.7
4	01/13/99	-93.0	-10.4
4	03/03/99	--	--
4	03/03/99	-94.4	-10.7
4	04/14/99	-99.0	-11.0
4	05/26/99	--	--
4	05/26/99	-102.7	-12.0
4	06/30/99	-103.4	-11.9
4	08/11/99	--	--
4	08/11/99	-101.0	-11.0
4	09/15/99	--	--
4	09/15/99	-96.4	-10.4
6	06/23/98	--	--
6	06/23/98	-102.8	-11.4
6	07/23/98	-99.8	-11.3
6	08/11/98	-100.3	-11.0
7	09/03/98	-99.7	-11.3
6	10/06/98	-100.7	-11.1
7	11/18/98	-94.5	-10.3
5	01/14/99	--	--
5	01/14/99	-100.0	-10.9
5	03/03/99	-97.0	-10.5
5	04/15/99	-96.5	-10.6

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	<sup>2</sup> H/ <sup>1</sup> H	<sup>18</sup> O/ <sup>16</sup> O
		Stable Isotope Ratio, permil	Stable Isotope Ratio, permil
5	05/26/99	-98.5	-10.8
5	06/30/99	-98.4	-11.0
5	08/11/99	--	--
5	08/11/99	-100.4	-11.1
5	09/14/99	-97.9	-10.7
8	06/19/98	-98.2	-10.9
8	07/23/98	-99.3	-11.1
8	08/13/98	-98.8	-10.8
8	09/02/98	-100.2	-11.0
8	10/06/98	-100.9	-11.1
8	11/19/98	--	--
8	11/19/98	-102.8	-11.4
8	01/13/99	-100.0	-10.9
8	03/04/99	-100.5	-11.1
8	04/14/99	--	--
8	04/14/99	-98.9	-10.8
8	05/25/99	-99.7	-11.0
8	07/01/99	-99.2	-10.9
8	08/12/99	--	--
8	08/12/99	-99.6	-11.0
8	09/14/99	-99.3	-10.9
9	01/13/99	-85.8	-8.1
9	03/03/99	-84.5	-7.9
9	04/15/99	-90.9	-9.1
9	05/26/99	-94.7	-9.9
9	06/30/99	-96.7	-10.5
9	08/11/99	-95.8	-10.1
9	09/14/99	-96.5	-10.0

**Appendix A. Surface-water quality for samples collected from the lower Humboldt River system from May 1998 through July 2000.**  
 (Abbreviations and symbols: ft<sup>3</sup>/s, cubic feet per second; μS/cm, microsiemens per centimeter at 25 °C; °C, degrees celsius; mg/L, milligrams per liter; μg/L, micrograms per liter; ng/L, nanograms per liter; E, estimated value; "--" , not determined; "<" , less than)

Site #	Date	<sup>2</sup> H/ <sup>1</sup> H	<sup>18</sup> O/ <sup>16</sup> O
		Stable Isotope Ratio, permil	Stable Isotope Ratio, permil
10	08/31/99	-96.0	-10.4
10	04/20/00	--	--
10	07/21/00	--	--
11	05/21/98	-110.9	-13.1
11	08/31/99	-55.3	-1.5
11	04/20/00	--	--
11	07/21/00	--	--
13	07/09/98	-99.0	-10.9
13	07/20/98	-99.1	-10.9
13	08/10/98	-96.2	-10.5
13	08/31/98	-86.6	-8.8
13	10/05/98	-77.5	-6.9
13	11/16/98	-85.2	-8.7
13	01/11/99	-86.5	-9.0
13	03/01/99	-84.8	-8.6
13	04/12/99	-81.3	-8.2
13	05/24/99	-68.9	-5.3
13	06/28/99	-68.5	-5.0
13	08/09/99	-42.4	-0.8

**Appendix B. Bottom-sediment quality for samples collected from the lower Humboldt River system from August 1999 through July 2000**

[Except for low-level (ng/g) determinations of mercury and methyl mercury, all listed bottom-sediment data are for the less-than-62-micrometer particle-size fraction of sieved samples. Low-level mercury and methyl mercury determinations were made on whole (unsieved) samples. Abbreviation and symbol: µg/g = micrograms per gram; ng/g, nanogram per gram; < = less than; --, sample not collected, or determination not made]

Site Number	Site Name	Date	Mean Sample Time	Calcium (percent)	Magnesium (percent)	Sodium (percent)
1	Humboldt River near Imlay	08/12/98	1036	4.0	1.3	1.2
1		08/10/99	955	4.9	1.2	1.1
2	Humboldt River near Rye Patch	08/12/98	1400	5.2	1.2	1.5
2		08/10/99	1630	7.0	1.3	1.1
4	Humboldt River near Lovelock	08/11/98	1030	5.1	1.3	1.3
4		08/11/99	930	6.2	1.5	1.3
7	Army Drain at Iron Bridge near Toulon	08/11/98	1245	6.7	1.5	0.87
5	Army Drain above Iron Bridge near Lovelock	08/11/99	1330	6.1	1.3	0.96
8	Toulon Drain at Derby Field Road near Toulon	08/13/98	1000	7.5	1.5	1.1
8		08/12/99	1000	6.3	1.6	1.0
9	Unnamed Drain east of Army Drain near Derby Field	08/11/99	1445	7.4	1.2	1.0
10	Upper Humboldt Lake at mouth Army Drain near Toulon	08/31/99	1340	13	1.5	0.87
10		04/20/00	1200	12	1.2	0.85
11	Upper Humboldt Lake sample point near mouth of river	08/31/99	1100	24	1.5	0.90
11		04/20/00	1100	15	1.8	0.71
11		07/21/00	1000	25	1.4	1.2
12	Upper Humboldt Lake near center	07/21/00	1200	25	1.2	0.69
13	Lower Humboldt Drain at Humboldt Dike near Lovelock	08/10/98	1530	20	2.8	0.81
13		08/09/99	1500	17	2.9	0.65

**Appendix B. Bottom-sediment quality for samples collected from the lower Humboldt River system from August 1999 through July 2000**

[Except for low-level (ng/g) determinations of mercury and methyl mercury, all listed bottom-sediment data are for the less-than-62-micrometer particle-size fraction of sieved samples. Low-level mercury and methyl mercury determinations were made on whole (unsieved) samples. Abbreviation and symbol: µg/g = micrograms per gram; ng/g, nanogram per gram; < = less than; --, sample not collected, or determination not made]

Site #	Date	Potassium (percent)	Sulfur (percent)	Phosphorus (percent)	Carbon, Inorganic (percent)	Carbon, Total (percent)	Carbon, Organic (percent)
1	08/12/98	2.0	0.060	0.10	0.88	1.9	1.0
1	08/10/99	2.2	0.070	0.11	1.1	2.2	1.0
2	08/12/98	1.9	<0.05	0.14	1.0	1.6	0.57
2	08/10/99	2.1	<0.05	0.12	1.7	2.6	0.94
4	08/11/98	2.2	0.090	0.11	1.2	1.6	0.42
4	08/11/99	2.2	0.11	0.12	1.5	2.1	0.61
7	08/11/98	2.1	0.13	0.13	1.7	3.6	1.8
5	08/11/99	2.1	0.15	0.12	1.5	3.0	1.5
8	08/13/98	2.2	0.14	0.14	1.9	3.5	1.6
8	08/12/99	2.3	0.18	0.14	1.5	3.0	1.4
9	08/11/99	1.8	0.26	0.10	1.9	3.9	2.0
10	08/31/99	1.8	0.39	0.096	3.1	4.5	1.4
10	04/20/00	1.6	0.32	0.095	3.2	5.1	1.9
11	08/31/99	0.90	0.27	0.068	6.7	8.2	1.5
11	04/20/00	1.5	0.33	0.086	4.2	6.3	2.1
11	07/21/00	0.79	0.40	0.068	7.0	8.5	1.4
12	07/21/00	0.72	0.34	0.082	6.8	8.9	2.1
13	08/10/98	1.6	0.13	0.12	5.3	7.1	1.8
13	08/09/99	1.3	0.15	0.091	5.5	7.2	1.7

**Appendix B. Bottom-sediment quality for samples collected from the lower Humboldt River system from August 1999 through July 2000**

[Except for low-level (ng/g) determinations of mercury and methyl mercury, all listed bottom-sediment data are for the less-than-62-micrometer particle-size fraction of sieved samples. Low-level mercury and methyl mercury determinations were made on whole (unsieved) samples. Abbreviation and symbol: µg/g = micrograms per gram; ng/g, nanogram per gram; < = less than; --, sample not collected, or determination not made]

Site #	Date	Aluminum (percent)	Antimony (µg/g)	Arsenic (µg/g)	Barium (µg/g)	Beryllium (µg/g)	Bismuth (µg/g)	Boron (µg/g)	Cadmium (µg/g)	Cerium (µg/g)
1	08/12/98	7.0	2.8	6.7	910	2.0	<10	--	0.60	61
1	08/10/99	6.8	2.2	8.2	970	2.6	<1	20	0.68	77
2	08/12/98	7.3	4.8	15	800	2.0	<10	--	0.40	75
2	08/10/99	6.6	3.4	14	900	2.0	<1	30	0.67	82
4	08/11/98	7.2	4.1	11	870	2.0	<10	--	0.50	63
4	08/11/99	7.0	3.6	13	890	2.6	<1	50	0.70	84
7	08/11/98	6.7	4.1	16	640	2.0	<10	--	0.80	53
5	08/11/99	6.8	3.6	21	710	2.2	<1	60	0.94	58
8	08/13/98	6.7	3.4	12	770	2.0	<10	--	0.60	53
8	08/12/99	6.8	2.7	16	830	2.6	<1	70	0.77	67
9	08/11/99	5.6	4.8	20	600	1.6	<1	--	0.51	52
10	08/31/99	5.6	3.5	21	510	1.8	<1	40	0.73	43
10	04/20/00	5.1	2.7	23	530	1.7	<1	--	0.81	41
11	08/31/99	2.7	2.0	22	400	0.82	<1	50	<0.1	21
11	04/20/00	4.3	3.9	23	510	1.2	<1	--	0.65	34
11	07/21/00	2.2	1.3	23	340	0.61	<1	--	<0.1	19
12	07/21/00	2.2	1.5	25	360	0.44	<1	--	<0.1	19
13	08/10/98	4.7	3.5	17	610	1.0	<10	--	0.40	34
13	08/09/99	3.4	3.3	21	460	0.92	<1	120	0.47	33

**Appendix B. Bottom-sediment quality for samples collected from the lower Humboldt River system from August 1999 through July 2000**

[Except for low-level (ng/g) determinations of mercury and methyl mercury, all listed bottom-sediment data are for the less-than-62-micrometer particle-size fraction of sieved samples. Low-level mercury and methyl mercury determinations were made on whole (unsieved) samples. Abbreviation and symbol: µg/g = micrograms per gram; ng/g, nanogram per gram; < = less than; --, sample not collected, or determination not made]

Site #	Date	Chromium (µg/g)	Cobalt (µg/g)	Copper (µg/g)	Europium (µg/g)	Gallium (µg/g)	Gold (µg/g)	Holmium (µg/g)	Iron (percent)	Lanthanum (µg/g)	Lead (µg/g)
1	08/12/98	42	11	25	<2	15	<8	<4	2.8	36	18
1	08/10/99	51	10	33	1.1	17	<1	<1	2.9	38	21
2	08/12/98	52	13	18	<2	15	<8	<4	2.8	45	16
2	08/10/99	52	11	30	1.1	16	<1	<1	2.9	41	20
4	08/11/98	47	11	22	<2	15	<8	<4	2.7	37	18
4	08/11/99	62	11	38	1.2	17	<1	<1	3.1	42	27
7	08/11/98	44	12	39	<2	12	<8	<4	3.2	30	16
5	08/11/99	51	12	42	1.0	17	<1	<1	3.6	32	20
8	08/13/98	43	11	29	<2	15	<8	<4	3.0	31	13
8	08/12/99	52	11	39	1.0	16	<1	<1	3.1	33	20
9	08/11/99	42	10	45	<1	14	<1	<1	2.9	26	14
10	08/31/99	46	9.9	36	<1	13	<1	<1	2.9	23	12
10	04/20/00	38	7.8	33	<1	12	<1	<1	2.5	22	14
11	08/31/99	27	4.9	18	<1	6.4	<1	<1	1.4	12	7.9
11	04/20/00	38	8.3	34	<1	10	<1	<1	2.4	18	22
11	07/21/00	22	4.0	16	<1	5.0	<1	<1	1.2	10	7.7
12	07/21/00	24	4.2	17	<1	4.8	<1	<1	1.2	10	6.4
13	08/10/98	29	9.0	22	<2	13	<8	<4	2.2	21	12
13	08/09/99	28	6.6	22	<1	8.5	<1	<1	2.0	16	14



**Appendix B. Bottom-sediment quality for samples collected from the lower Humboldt River system from August 1999 through July 2000**

[Except for low-level (ng/g) determinations of mercury and methyl mercury, all listed bottom-sediment data are for the less-than-62-micrometer particle-size fraction of sieved samples. Low-level mercury and methyl mercury determinations were made on whole (unsieved) samples. Abbreviation and symbol: µg/g = micrograms per gram; ng/g, nanogram per gram; < = less than; --, sample not collected, or determination not made]

Site #	Date	Lithium (µg/g)	Manganese (µg/g)	Mercury, (µg/g)	Mercury (ng/g)	Methyl Mercury (ng/g)	Molybdenum (µg/g)	Neodymium (µg/g)	Nickel (µg/g)	Niobium (µg/g)
1	08/12/98	56	820	0.05	--	--	<2	31	24	17
1	08/10/99	60	780	0.06	687	2.34	0.73	31	25	9.0
2	08/12/98	38	540	0.03	--	--	<2	39	21	16
2	08/10/99	70	810	0.06	5.76	0.13	0.76	33	26	7.9
4	08/11/98	66	620	0.08	--	--	<2	32	24	15
4	08/11/99	79	710	0.10	6.47	0.04	0.76	35	27	8.6
7	08/11/98	85	2200	0.05	--	--	<2	26	29	10
5	08/11/99	81	1800	0.06	39	1.52	2.0	26	28	7.9
8	08/13/98	84	940	0.05	--	--	<2	27	25	12
8	08/12/99	82	1400	0.11	571	2.38	1.1	27	27	8.0
9	08/11/99	75	620	0.03	--	--	2.0	21	29	6.5
10	08/31/99	77	1600	0.05	--	--	6.5	19	26	14
10	04/20/00	64	1500	0.06	--	--	2.8	18	22	10
11	08/31/99	58	470	0.06	--	--	2.0	9.3	18	6.8
11	04/20/00	85	620	0.11	--	--	6.7	15	24	10
11	07/21/00	52	450	0.05	--	--	3.5	7.9	18	4.5
12	07/21/00	43	430	0.05	--	--	5.4	7.9	20	4.4
13	08/10/98	130	500	0.07	--	--	<2	19	22	<4
13	08/09/99	130	480	0.14	183	0.15	1.2	13	23	4.0

**Appendix B. Bottom-sediment quality for samples collected from the lower Humboldt River system from August 1999 through July 2000**

[Except for low-level (ng/g) determinations of mercury and methyl mercury, all listed bottom-sediment data are for the less-than-62-micrometer particle-size fraction of sieved samples. Low-level mercury and methyl mercury determinations were made on whole (unsieved) samples. Abbreviation and symbol: µg/g = micrograms per gram; ng/g, nanogram per gram; < = less than; --, sample not collected, or determination not made]

Site #	Date	Scandium (µg/g)	Selenium (µg/g)	Silver (µg/g)	Strontium (µg/g)	Tantalum (µg/g)	Thallium (µg/g)	Thorium (µg/g)	Tin (µg/g)	Titanium (percent)
1	08/12/98	10	0.32	0.20	340	<40	--	11	<5	0.35
1	08/10/99	9.8	0.42	0.45	330	<1	<1	12	2.1	0.35
2	08/12/98	11	0.32	0.20	420	<40	--	12	<5	0.45
2	08/10/99	10	0.57	0.40	370	<1	<1	13	1.7	0.38
4	08/11/98	10	0.29	0.20	420	<40	--	14	<5	0.38
4	08/11/99	10	0.37	0.41	410	1.0	<1	16	2.1	0.38
7	08/11/98	11	0.80	0.20	400	<40	--	9.0	<5	0.30
5	08/11/99	11	0.85	0.41	360	1.0	<1	11	2.1	0.32
8	08/13/98	11	0.82	0.20	470	<40	--	16	<5	0.30
8	08/12/99	11	1.1	0.44	370	<1	<1	11	2.3	0.33
9	08/11/99	10	0.75	0.34	360	<1	<1	9.8	1.6	0.28
10	08/31/99	10	1.5	0.21	510	1.2	<1	8.9	2.1	0.28
10	04/20/00	8.9	1.2	0.17	570	<1	<1	9.1	1.8	0.25
11	08/31/99	4.9	1.0	0.10	1100	<1	<1	4.2	<1	0.14
11	04/20/00	8.6	1.2	0.20	770	<1	<1	7.7	1.7	0.22
11	07/21/00	4.0	1.4	0.12	1100	<1	<1	3.4	<1	0.15
12	07/21/00	4.1	1.2	0.20	1100	<1	<1	3.1	<1	0.17
13	08/10/98	8.0	0.58	0.10	1300	<40	--	6.7	<5	0.21
13	08/09/99	5.7	0.66	0.20	1000	<1	<1	5.9	<1	0.17

**Appendix B. Bottom-sediment quality for samples collected from the lower Humboldt River system from August 1999 through July 2000**

[Except for low-level (ng/g) determinations of mercury and methyl mercury, all listed bottom-sediment data are for the less-than-62-micrometer particle-size fraction of sieved samples. Low-level mercury and methyl mercury determinations were made on whole (unsieved) samples. Abbreviation and symbol: µg/g = micrograms per gram; ng/g, nanogram per gram; < = less than; --, sample not collected, or determination not made]

Site #	Date	Uranium (µg/g)	Vanadium (µg/g)	Ytterbium (µg/g)	Yttrium (µg/g)	Zinc (µg/g)
1	08/12/98	3.6	89	2	22	110
1	08/10/99	2.9	88	2.3	24	110
2	08/12/98	4.7	110	2	23	85
2	08/10/99	3.4	100	2.2	21	99
4	08/11/98	3.9	97	2	21	93
4	08/11/99	3.5	110	2.2	24	120
7	08/11/98	3.5	120	2	20	120
5	08/11/99	4.6	120	2.2	21	120
8	08/13/98	3.5	99	2	19	120
8	08/12/99	4.0	100	2.0	21	120
9	08/11/99	4.6	140	1.7	17	100
10	08/31/99	12	110	1.7	17	100
10	04/20/00	6.5	99	1.5	16	96
11	08/31/99	8.0	57	<1	8.2	46
11	04/20/00	8.1	91	1.3	13	95
11	07/21/00	10	52	<1	6.7	37
12	07/21/00	12	49	<1	6.2	36
13	08/10/98	4.9	87	<1	12	93
13	08/09/99	6.5	78	1.2	12	71