Appendix A. 1994 Staten Island Channel Island Restoration Project - Detailed Sampling Results

Appendix A. 1994 Staten Island Project Detailed Sampling Results

Pre-Project Monitoring

Table 1. Field Analyses Results for Water Samples

Constituent	C41517	C41518	C41519	C41520
	Between Islands #4 and #5 (200' West of #5)	Between Islands #5 and #7 (300' East of #5)	Upstream of all Islands (SF Mokelumne EC station)	Downstream of all Islands (100' West of #3)
Field Parameters				
Sample Date	July 13, 1994	July 13, 1994	July 13, 1994	July 13, 1994
Time	1200	1300	1400	910
Temp.	24.7	24.8	24.8	23
EC	128	124	138	120
pH	7.5	7.6	7.5	7.1
DO	9.4	8.2	8.2	8.2
Turbidity	15	8	9	6

Table 2. Mineral Analyses Results for Water Samples

Constituent	C41517	C41518	C41519	C41520	Reporting Limit (mg/L)	Drinking Water Primary MCL (mg/L)
	Downstream of #5 (200' West of #5)	Downstream of #7 (300' East of #5)	Upstream of all Islands (SF Mokelumne EC Station)	Downstream of all Islands (100' West of #3)		
Mineral Analysis						
Hardness	43	43	47	40		
Calcium	9	9	9	8	1	
Magnesium	5	5	6	5	1	
Sodium	7	6	8	6	1	
Potassium	1	1	1	1	0.1	
Alkalinity	47	46	49	46	1	
Sulfate	4	4	4	5	1	250*
Chloride	6	5	8	4	1	
Nitrate	0.6	0.5	0.7	0.5	0.1	10
Fluoride	<0.1	<0.1	<0.1	<0.1	0.1	1.3
Boron	<0.1	<0.1	<0.1	<0.1	0.1	D
Total Dissolved Solids	82.8	79.8	86.8	77.8	0.1	500*
Specific Conductance	125	118	138	116	1	

* Indicates secondary MCL

Table 3. Miscellaneous and Metal Analyses Results for Water Samples

Constituent	C41517	C41518	C41519	C41520	Reporting Limit (mg/L)	Drinking Water Primary MCL (mg/L)	Water Quality Objective (mg/L)
	Between Islands #4 and #5 (200' West of #5)	Between Islands #5 and #7	Upstream of all Islands (SF Mokelumne EC station)	Downstream of all Islands (100' West of #3)			
Miscellaneous Analysis							
Oil & Grease	<1	<1	<1	<1	1		
Suspended Solids	2	2	5	<1	1		
TOC	2.3	1.7	1.9	1.6	0.1		
UVA	0.067	0.048	0.054	0.044	0.001		
Metal Analysis (Dissolved)							
Arsenic	0.002	0.002	0.002	0.001	0.001	0.05	0.19
Barium	<0.050	<0.050	<0.050	<0.050	0.05		
Cadmium	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.00055
Chromium	<0.005	<0.005	<0.005	<0.005	0.005		0.011
Chromium (IV)	<0.005	<0.005	<0.005	<0.005	0.005		
Copper	<0.005	<0.005	<0.005	<0.005	0.005	250	0.0054
Iron	0.058	0.048	0.051	0.032	0.005		
Lead	<0.005	<0.005	<0.005	<0.005	0.005	1.4-2.4	0.00099
Manganese	0.024	0.017	0.01	0.01	0.005		
Mercury	<0.001	<0.001	<0.001	<0.001	0.001	0.002	0.0054
Selenium	<0.001	<0.001	<0.001	<0.001	0.001	0.1	0.005
Silver	<0.005	<0.005	<0.005	<0.005	0.005		
Zinc	<0.005	<0.005	<0.005	<0.005	0.005	5*	0.049
Aluminum	0.039	0.045	0.049	0.038	0.010		
Nickel	<0.005	<0.005	<0.005	<0.005	0.005	0.002	
Metal Analysis (Total)							
Arsenic	0.002	0.002	0.002	0.001	0.001	0.05	0.19
Barium	<1	<1	<1	<1	1		
Cadmium	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.00055
Chromium	0.005	<0.005	<0.005	<0.005	0.005		0.011
Copper	<0.005	<0.005	<0.005	<0.005	0.005	250	0.0054
Iron	0.9	0.6	0.6	0.4	0.1		
Lead	<0.005	<0.005	<0.005	<0.005	0.005	1.4-2.4	0.00099
Manganese	0.031	0.027	0.025	0.019	0.005		
Mercury	<0.001	<0.001	<0.001	<0.001	0.001	0.002	
Selenium	<0.001	<0.001	<0.001	<0.001	0.001	0.1	0.005
Silver	<0.005	<0.005	<0.005	<0.005	0.005		
Zinc	0.008	0.005	<0.005	<0.005	0.005	5*	0.049
Aluminum	1	<1	<1	<1	1		
Nickel	<0.005	<0.005	<0.005	<0.005	0.005	0.1	0.0073

* Indicates Secondary MCL

Table 4. Metal Analyses Results for Sediment Samples

		C41477 C41478 C41479	C41486 C41487 C41488	C41492 C41493 C41494	C41498 C41499 C41500			Ontario's Prov. Sediment Quality			SF RWQCB
Sample No.		Composite	Composite	Composite	Composite	Reporting Limit		Guidelines (dry weight)			Criteria
Channel Island		#3	#4	#5	#7		TTLC (wet weight)	NEL	LEL	SEL	dry weight
Metals Analyses											
As	mg/kg wet wt.	4.3	4.0	6.3	5.6	0.5	500				
As	mg/kg dry wt.	8.1	9.1	13.7	10.8				6	33	33
Cd	mg/kg wet wt.	0.24	0.26	0.18	0.06	0.01	100				
Cd	mg/kg dry wt.	0.45	0.59	0.39	0.12				0.6	10	5.0
Cr	mg/kg wet wt.	31	30	25	37	1	2500				
Cr	mg/kg dry wt.	59	68	54	71				26	110	220
Cu	mg/kg wet wt.	44**	38**	30**	29**	5	2500				
Cu	mg/kg dry wt.	83**	86**	65**	56**				16	110	90
Hg	mg/kg wet wt.	0.10	0.10	0.24	0.19	0.02	20				
Hg	mg/kg dry wt.	0.19	0.23	0.52	0.37				0.2	2.0	0.35
Ni	mg/kg wet wt.	45	42	28	29	5	2000				
Ni	mg/kg dry wt.	85	96	61	69				16	75	140
Pb	mg/kg wet wt.	8.0	8.1	8.6	5.8	0.2	1000				
Pb	mg/kg dry wt.	15.1	18.4	18.7	11.2				31	250	50
Se	mg/kg wet wt.	ND	ND	ND	ND	0.5	100				
Se	mg/kg dry wt.										0.7
Ag	mg/kg wet wt.	ND	ND	ND	ND	0.2	500				
Ag	mg/kg dry wt.										1.0

** Data tagged due to questionable precision

Table 5. WET Metal Analyses Results for Sediment Samples

		C41477 C41478 C41479	C41486 C41487 C41488	C41492 C41493 C41494	C41498 C41499 C41500				
Sample No.		Composite	Composite	Composite	Composite	Reporting Limit	CA Code of Regualtions, Title 22	Drinking Water Primary MCL	Water Quality Objective
Channel Island		#3	#4	#5	#7		STLC	(mg/L)	(mg/L)
Citrate Wet Metals									
As	mg/l	0.24	0.18	0.31	0.21	0.02	5.0	0.05	0.19
Cd	mg/l	ND	ND	ND	ND	0.05	1.0	0.005	0.00055
Cr	mg/l	0.32	0.28	0.29	0.31	0.05	5.0	0.05	0.011
Cu	mg/l	0.11**	ND**	ND**	ND**	0.05	25	250	0.0054
Hg	mg/l	ND**	ND**	ND**	ND**	0.002	0.2	0.002	0.002
Ni	mg/l	0.30	0.45	0.61	0.34	0.05	20	0.1	0.073
Pb	mg/l	0.10**	0.15**	0.18**	0.07**	0.03	5.0	1.4-2.4	0.00099
Se	mg/l	ND	ND	ND	ND	0.02	1.0	0.01	0.005
Ag	mg/l	ND	ND	ND	ND	0.05	5.0	0.05	
Zn	mg/l	0.34**	1.8**	0.83**	0.22**	0.05	250	5.0*	0.049
DI Wet Metals									
As	mg/l	0.005	ND	ND	ND	0.003	5.0	0.05	0.19
Cd	mg/l	ND	ND	ND	ND	0.005	1.0	0.005	0.00055
Cr	mg/l	0.015	ND	ND	ND	0.005	5.0	0.05	0.011
Cu	mg/l	0.015**	0.005**	0.006**	0.005**	0.005	25	250	0.0054
Hg	mg/l	ND**	ND**	ND**	ND**	0.0002	0.2	0.002	0.002
Ni	mg/l	0.007	ND	ND	ND	0.005	20	0.1	0.073
Pb	mg/l	0.031**	0.007**	0.039**	0.008**	0.003	5.0	1.4-2.4	0.00099
Se	mg/l	ND	ND	ND	ND	0.002	1.0	0.01	0.005
Ag	mg/l	ND	ND	ND	ND	0.005	5.0	0.05	
Zn	mg/l	0.03**	0.025**	0.26**	0.24**	0.005	250	5.0*	0.049

* Indicates secondary MCL.

** Data tagged due to questionable quality.

Table 6. Pesticide and Acid Generation Potential Results for Sediment Samples

	C41477 C41478 C41479	C41486 C41487 C41488	C41492 C41493 C41494	C41498 C41499 C41500
Sample No.	Composite	Composite	Composite	Composite
Channel Island	#3	#4	#5	#7
Pesticide Analyses				
Organochlorine	ND	ND	ND	ND
PCBs	ND	ND	ND	ND
Acid Generation Potential				
AGP	0.24	4.96	1.14	2.16

Table 7. Field Analyses Results for Water Samples

Constituent	C41586	C41588	C41575	C41577	C41607	C41606
	No.4 upstream of plume	No. 4 in plume	No.5 upstream of plume	No.5 in plume	Upstream of all Islands	Downstream of all Islands
Field Parameter						
Sample Date	15-Aug-95	15-Aug-95	10-Aug-95	10-Aug-95	29-Aug-95	29-Aug-95
Time	845	913	1028	1003	1145	1130
Temp.	23.3	23.3	23.6	23.5	23.4	24.5
EC	151	147	151	147	178	182
pH	7.6	7.5	7.7	7.5	7.4	7.3
DO	7.5	7.4	6.2	5.8	8	8.6
Turbidity	9.2	73.2	11	13	10	235

Table 8. Field Analyses Results for Other Water Samples Taken

These samples are samples taken just for the purpose of field analysis; and were not submitted to the laboratory.

Location	Date	Time	Temperature	EC	pH	D.O.	Turbidity
South Fork Mokelumne River @ Staten EC Station (Upstream of all Islands)	8/25/94	0832	22.3	159	6.9	7.2	11
"	9/6/94	0858	21.5	202	7.3	7.0	12
100' West of Island #3 (Downstream of all Islands)	8/29/94	1130	24.5	182	7.3	8.6	235
"	9/6/94	0913	21.3	200	7.3	7.2	20
100' East of Island #4 (Upstream of Island #4)	8/22/94	0927	22.8	160	7.1	7.5	11
100' West of Island #4 (Downstream of Island #4)	8/22/94	0904	23.0	167	7.0	7.4	64
300' East of #5 (Upstream of Dredger)	8/17/94	1009	24.6	148	7.1	7.3	75
22' West of Island #5 (Downstream of Island #5)	8/25/94	0850	23.1	148	7.2	7.5	12
200' West of Island #5 (Downstream of Island #5)	8/17/94	0956	24.9	150	7.7	7.1	166

Table 9. Mineral Analyses Results for Water Samples

Constituent	C41586	C41588	C41575	C41577	Reporting Limit (mg/L)	Drinking Water Primary MCL
	No. 4, upstream of plume	No. 4, in plume	No. 5, upstream of plume	No. 5, in plume		
Mineral Analysis						
Hardness	54	54	50	50		
Calcium	10	10	10	10	1	
Magnesium	7	7	6	6	1	
Sodium	10	9	9	9	1	
Alkalinity	59	58	56	56	1	
Sulfate	7	6	5	6	1	250*
Chloride	6	6	6	6	1	
Nitrate	0.5	0.5	0.6	0.6	0.1	10
Fluoride	<0.1	<0.1	<0.1	<0.1	0.1	1.3
Boron	<0.1	<0.1	<0.1	<0.1	0.1	
Total Dissolved Solids	96	96	94	94	0.1	500*
Specific Conductance	152	151	150	148	1	

*Indicates Secondary MCL

Table 10. Miscellaneous and Metals Analyses Results for Water Samples

Constituent	C41586	C41588	C41575	C41577	Reporting Limit (mg/L)	Drinking Water Primary MCL	Water Quality Objective
	No. 4, upstream of	No. 4, in plume	No. 5, upstream of plume	No. 5, in plume			
Miscellaneous Analysis							
Oil & Grease	<1**	<1**	<1**	<1**	1		
Suspended Solids	10	125	12	22	1		
Metal Analysis (Dissolved)							
Arsenic	0.002	0.002	0.002	0.002	0.001	0.05	0.19
Barium	<0.05	<0.05	<0.05	<0.05	0.05		
Cadmium	<0.002	<0.002	<0.002	<0.002	0.002	0.005	0.00055
Chromium	<0.005	<0.005	<0.005	<0.005	0.005		0.011
Chromium (IV)	<0.005	<0.005	<0.005	<0.005	0.005		
Copper	<0.005	<0.005	<0.005	<0.005	0.005	250	0.0054
Iron	0.065	0.06	0.061	0.049	0.005		
Lead	<0.002	<0.002	<0.002	<0.002	0.002	1.4-2.4	0.00099
Manganese	0.02	0.068	0.019	0.03	0.005		
Mercury	<0.001	<0.001	<0.001	<0.001	0.001	0.002	0.0054
Selenium	<0.001	<0.001	<0.001	<0.001	0.001	0.1	0.005
Silver	<0.005	<0.005	<0.005	<0.005	0.005		
Zinc	0.011	0.015	<0.005	<0.005	0.005	5*	0.049
Aluminum	0.032	0.034	0.061	0.032	0.010		
Nickel	<0.005	<0.005	<0.005	<0.005	0.005	0.002	

*Indicates Secondary MCL
**These values were qualifed as estimated (See Quality Assessment Section)

Table 11. Mineral and Miscellaneous Analyses Results for Sediment Samples

	C41601 C41602 C41603						
Sample No.	No. 3	C41590	C41591	C41592	C41579	C41580	C41581
Channel Island	Composite	No. 4	No. 4	No. 4	No.5	No.5	No.5
Mineral Analyses							
EC (umohs/cm)	16	<1	<1	5	2	<1	3
Miscellaneous Analyses							
Moisture	37	35	40	37	35	39	36
TOC (mg/kg dry wt.)	6825	11846	14500	12540	7231	12459	14531
TPH-D* (mg/kg dry wt.)	46.03**	29.23**	166.67**	142.86**	27.69**	24.59**	187.50**
TPH-G* (mg/kg dry wt.)	<0.5**	<0.5**	<0.5**	<0.5**	<0.5**	<0.5**	<0.5**
Vol. Solids (g/kg dry wt.)	95.24	not done	not done	not done	not done	not done	not done

** Data tagged due to questionable precision.

Table 12. Metal Analyses Results for Sediment Samples

	C41601 C41602 C41603						
Sample No.	Composite	C41590	C41591	C41592	C41579	C41580	C41581
Channel Island	No. 3	No. 4	No. 4	No. 4	No.5	No.5	No.5
Metal Analyses (mg/kg dry wt.)							
As	10	15	10	11	17	15	9
Cd	<1	<1	<1	1	<1	<1	<1
Cr	68	69	77	75	72	72	72
Cu	56	80	75	78	52	57	70
Hg	0.32	0.46	0.33	0.48	0.46	0.33	0.31
Ni	67	75	88	84	80	72	83
Pb	11	17	18	17	17	18	17
Se	<1.6	<1.5	<1.7	<1.6	<1.5	<1.6	<1.6
Ag	2.38	0.77	1.50	2.22	0.77	1.15	1.41
Tl	not done	not done	not done	not done	not done	not done	not done
Zn	98	137	160	152	75	85	150

Table 13. WET Metal Analyses Results for Sediment Samples

		C41601 C41602 C41603	C41590	C41591	C41592	C41579	C41580	C41581				
Sample No.		Composite							Reporting Limit	CA Code of Regualtions, Title 22	Drinking Water Primary MCL	Water Quality Objective
Channel Island		#3	#4	#4	#4	#5	#5	#5		STLC	(mg/L)	(mg/L)
Citrate Wet Metals												
As	mg/L	ND	ND	ND	ND	ND	ND	ND	0.05	5.0	0.05	0.19
Cd	mg/L	ND	ND	ND	ND	ND	ND	ND	0.05	1.0	0.005	0.00055
Cr	mg/L	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	5.0	0.05	0.011
Cu	mg/L	ND	ND	ND	ND	ND	ND	ND	0.1	25	250	0.0054
Hg	mg/L	ND	ND	ND	ND	ND	ND	ND	0.006	0.2	0.002	0.002
Ni	mg/L	0.7	1.0	1.0	0.8	1.0	1.0	0.8	0.1	20	0.1	0.073
Pb	mg/L	1.8	0.2	0.2	0.2	0.2	0.2	0.2	0.1	5.0	1.4-2.4	0.00099
Se	mg/L	ND	ND	ND	ND	ND	ND	ND	0.05	1.0	0.01	0.005
Ag	mg/L	ND	ND	ND	ND	ND	ND	ND	0.1	5.0	0.05	
Zn	mg/L	1.1	2.4	2.8	2.0	2.4	2.8	2.0	0.1	250	5.0*	0.049
DI Wet Metals												
As	mg/L	ND	ND	ND	ND	ND	ND	ND	0.05	5.0	0.05	0.19
Cd	mg/L	ND	ND	ND	ND	ND	ND	ND	0.05	1.0	0.005	0.00055
Cr	mg/L	ND	ND	ND	ND	ND	ND	ND	0.1	5.0	0.05	0.011
Cu	mg/L	ND	ND	ND	ND	ND	ND	ND	0.1	25	250	0.0054
Hg	mg/L	ND	ND	ND	ND	ND	ND	ND	0.006	0.2	0.002	0.002
Ni	mg/L	ND	ND	ND	ND	ND	ND	ND	0.1	20	0.1	0.073
Pb	mg/L	ND	ND	ND	ND	ND	ND	ND	0.1	5.0	1.4-2.4	0.00099
Se	mg/L	ND	ND	ND	ND	ND	ND	ND	0.05	1.0	0.01	0.005
Ag	mg/L	ND	ND	ND	ND	ND	ND	ND	0.1	5.0	0.05	
Zn	mg/L	ND	ND	ND	ND	ND	ND	ND	0.1	250	5.0*	0.049

* Indicates secondary MCL.

Table 14. Pesticide and Acid Generation Potential Results for Sediment Samples

	C41601 C41602 C41603							
Sample No.	Composite	C41590	C41591	C41592	C41579	C41580	C41581	
Channel Island	No. 3	No. 4	No. 4	No. 4	No.5	No.5	No.5	
Pesticide Analyses								
Organochlorine	ND**	ND**	0.028 DDD**	ND**	ND**	ND**	0.069 DDD**	0.016 DDE**
PCBs	ND**	ND**	ND**	ND**	ND**	ND**	ND**	
Butyltin Analyses								
TBT	1	<1.5	3.3	<1.6	<1.5	<1.6	3.1	
Acid Generation Potential								
	13.1	1.1	1.6	5.0	9.0	21.0	1.1	

** These results are qualified as estimated.

Table 15. Field Analyses Results for Water Samples

Constituent	C42151	C42150	C41861	C41862
	Between Islands #3 and #4	Between Islands #4 and #5	Upstream of all Islands (SF Mokelumne EC statn)	Downstream of all Islands (100' West of #3)
Field Parameters				
Sample Date	7-Nov-94	7-Nov-94	7-Nov-94	7-Nov-94
Time	945	936	915	954
Temp.	12.6	12.5	12.8	12.6
EC	196	196	184	197
pH	7.7	7.9	7.3	7.6
DO	9.4	9.3	8.8	9.3
Turbidity	13	22	93	7

Table 16. Mineral Analyses Results for Water Samples

Constituent	C42151	C42150	C41861	C41862	Reporting Limit (mg/L)	Drinking Water Primary MCL (mg/L)
	Between Islands #3 and #4	Between Islands #4 and #5	Upstream of all Islands (SF Mokelumne EC statn)	Downstream of all Islands (100' West of #3)		
Mineral Analysis						
Hardness	68	56	66	66		
Calcium	14	9	13	13	1	
Magnesium	8	8	8	8	1	
Sodium	14	18	13	14	1	
Alkalinity	69	69	65	70	1	
Sulfate	12	12	9	12	1	250*
Chloride	9	9	11	9	1	
Nitrate	2.4**	1.6**	1.1**	1.3**	0.1	10
Fluoride	<0.1	<0.1	<0.1	<0.1	0.10.1	1.3
Boron	<0.1	<0.1	<0.1	<0.1	0.1	
Total Dissolved Solids	118	116	113	116	0.1	500*
Specific Conductance	196	197	189	197	1	
pH	7.7	7.8	7.7	7.8		

*Indicates Secondary MCL
**These results are qualified as estimated. (See Quality Assessment Section)

Table 17. Miscellaneous and Metal Analyses Results for Water Samples

Constituent	C42151	C42150	C41861	C41862	Reporting Limit (mg/L)	Drinking Water Primary MCL (mg/L)	Water Quality Objective (mg/L)
	Between Islands #3 and #4	Between Islands #4 and #5	Upstream of all Islands (SF Mokelumne EC statn)	Downstream of all Islands (100' West of #3)			
Miscellaneous Anlysis							
Suspended Solids	20	12	168	10	1		
Metal Analysis (Dissolved)							
Arsenic	0.002	0.002	0.002	0.002	0.001	0.05	0.19
Cadmium	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.00055
Chromium	<0.005	<0.005	<0.005	<0.005	0.005		0.011
Copper	<0.005	<0.005	<0.005	<0.005	0.005	250	0.0054
Lead	<0.005	<0.005	<0.005	<0.005	0.005	1.4-2.4	0.00099
Mercury	<0.001	<0.001	<0.001	<0.001	0.001	0.002	0.0054
Selenium	<0.001	<0.001	<0.001	<0.001	0.001	0.1	0.005
Silver	<0.005	<0.005	<0.005	<0.005	0.005		
Thallium	not done	not done	not done	not done			
Zinc	0.006	0.013	0.012	0.008	0.005	5*	0.049
Nickel	<0.005	<0.005	<0.005	<0.005	0.005	0.002	

*Indicates Secondary MCL

Table 18. Mineral Analyses Results for Sediment Samples

	C42271 C42272 C42273	C42274 C42275 C42276	C42277 C42278 C42279
Sample No.	Composite	Composite	Composite
Channel Island	#3	#4	#5
Moisture Content (%)	34	33	34
Mineral Analyses			
EC (umohs/cm)	130	220	200
Cl (mg/kg dry wt.)	<2	<2	<2
Br (mg/kg dry wt.)	<0.2	<0.1	<0.2
pH	7.3	7.2	6.5
TDS	N/A	N/A	N/A
Miscellaneous Analyses			
TOC (mg/kg dry wt.)	2727	22388	12121
Volatile Solids (g/kg dry wt.)	136	269	182

Table 19. Metal Analyses Results for Sediment Samples

		C42271 C42272 C42273	C42274 C42275 C42276	C42277 C42278 C42279		Ontario's Prov. Sediment Quality			SF RWQCB
Sample No.		Composite	Composite	Composite	Reporting Limit	Guidelines (dry weight)			Criteria
Channel Island		#3	#4	#5		NEL	LEL	SEL	dry weight
Metals Analyses									
As	mg/kg dry wt.	ND	ND	ND	1.5		6	33	33
Cd	mg/kg dry wt.	ND	0.9	0.8	0.8		0.6	10	5.0
Cr	mg/kg dry wt.	70	75	77	1		26	110	220
Cu	mg/kg dry wt.	48	79	76	1		16	110	90
Hg	mg/kg dry wt.	ND	ND	ND	0.2		0.2	2.0	0.35
Ni	mg/kg dry wt.	62	78	82	1		16	75	140
Pb	mg/kg dry wt.	14	19	18	1		31	250	50
Se	mg/kg dry wt.	ND	ND	1.5	1.5				0.7
Ag	mg/kg dry wt.	ND	ND	ND	0.8				1.0
Zn	mg/kg dry wt.	80	143	136	1		120	820	160

Table 20. WET Metal Analyses Results for Sediment Samples

		C42271 C42272 C42273	C42274 C42275 C42276	C42277 C42278 C42279				
Sample No.		Composite	Composite	Composite	Reporting Limit	CA Code of Regualtions, Title 22	Drinking Water Primacy MCL	Water Quality Objective
Channel Island		#3	#4	#5		STLC	(mg/L)	(mg/L)
Citrate Wet Metals								
As	mg/L	0.14	0.15	0.28	0.05	5.0	0.05	0.19
Cd	mg/L	ND	ND	0.018	0.01	1.0	0.005	0.00055
Cr	mg/L	0.50	0.51	0.39	0.05	5.0	0.05	0.011
Cu	mg/L	ND	ND	0.41	0.05	25	250	0.0054
Hg	mg/L	ND	ND	ND	0.0002	0.2	0.002	0.002
Ni	mg/L	0.68	0.88	0.98	0.05	20	0.1	0.073
Pb	mg/L	0.17	0.17	0.33	0.03	5.0	1.4-2.4	0.00099
Se	mg/L	ND	ND	ND	0.05	1.0	0.01	0.005
Ag	mg/L	ND	ND	ND	0.002	5.0	0.05	
Th	mg/L	ND	ND	ND	0.02	5.0	0.002	
Zn	mg/L	1.1	2.0	3.0	0.05	250	5.0*	0.049
DI Wet Metals								
As	mg/L	0.055	ND	ND	0.005	5.0	0.05	0.19
Cd	mg/L	ND	ND	ND	0.0002	1.0	0.005	0.00055
Cr	mg/L	0.015	ND	ND	0.005	5.0	0.05	0.011
Cu	mg/L	0.019	0.018	0.014	0.005	25	250	0.0054
Hg	mg/L	ND	ND	ND	0.0002	0.2	0.002	0.002
Ni	mg/L	0.03	ND	ND	0.02	20	0.1	0.073
Pb	mg/L	0.056	0.028	0.044	0.003	5.0	1.4-2.4	0.00099
Se	mg/L	ND	ND	ND	0.005	1.0	0.01	0.005
Ag	mg/L	ND	ND	ND	0.0002	5.0	0.05	
Th	mg/L	ND	ND	ND	0.002			
Zn	mg/L	ND	ND	ND	0.05	250	5.0*	0.049

* Indicates secondary MCL.

Table 21. Pesticide and Acid Generation Potential Results for Sediment Samples

	C42271 C42272 C42273	C42274 C42275 C42276	C42277 C42278 C42279
Sample No.	Composite	Composite	Composite
Channel Island	#3	#4	#5
Pesticides Analyses			
Organochlorine	DDE 0.005**	ND	DDE 0.01**
PCBs	ND	ND	ND
Acid Generation Potential			
	5.63	5.50	4.68

** Data qualified as estimated (see Quality Assessment Section)

Table 22. Field Analyses Results for Water Samples

Constituent	C50563	C50562	C50561	C50564
	Between Islands #3 and #4	Between Islands #4 and #5	Upstream of all Islands (SF Mokelumne EC statn)	Downstream of all Islands (100' West of #3)
Field Parameter				
Sample Date	6-Mar-95	6-Mar-95	6-Mar-95	6-Mar-95
Time	1053	1019	956	1120
Temp.	11.4	11.5	11.4	11.4
EC	140	152	177	134
pH	7.3	7.2	7.1	7.4
DO	9.6	9.1	9.1	9.7
Turbidity	18	20	13	16

Table 23. Mineral Analyses Results for Water Samples

Constituent	C50563	C50562	C50561	C50564	Reporting Limit (mg/L)	Drinking Water Primary MCL (mg/L)
	Between Islands #3 and #4	Between Islands #4 and #5	Upstream of all Islands (SF Mokelumne EC statn)	Downstream of all Islands (100' West of #3)		
Mineral Analysis						
Hardness	54	59	62	52		
Calcium	12	12	13	11	1	
Magnesium	6	7	7	6	1	
Sodium	7	8	10	6	1	
Alkalinity	49	50	49	46	1	
Sulfate	8	9	11	7	1	250*
Chloride	6	8	11	5	1	
Nitrate	1.4	1.7	18	1.4	0.1	10
Fluoride	<0.1	<0.1	<0.1	<0.1	0.1	1.3
Boron	<0.1	<0.1	<0.1	<0.1	0.1	
Total Dissolved Solids	92	98	102	82	0.1	500*
Specific Conductance	139	150	162	126	1	
pH	7.4	7.3	7.3	7.4		

*Indicates Secondary MCL

Table 24. Miscellaneous and Metal Analyses Results for Water Samples (Note:Metals data have not yet been received.)

Constituent	C50563	C50562	C50561	C50564	Reporting Limit (mg/L)	Drinking Water Primary MCL (mg/L)	Water Quality Objective (mg/L)
	Between Islands #3 and #4	Between Islands #4 and #5	Upstream of all Islands (SF Mokelumne EC statn)	Downstream of all Islands (100' West of #3)			
Miscellaneous Analysis							
Suspended Solids	16	15	10	14	1		
TOC	3.1	4.3	3.8	2.6	0.1		
Metal Analysis (Dissolved)							
Arsenic					0.001	0.05	0.19
Barium					0.05		
Cadmium					0.005	0.005	0.00055
Chromium					0.005		0.011
Chromium (IV)					0.005		
Copper					0.005	250	0.0054
Iron					0.005		
Lead					0.005	1.4-2.4	0.00099
Manganese					0.005		
Mercury					0.001	0.002	0.0054
Selenium					0.001	0.1	0.005
Silver					0.005		
Zinc					0.005	5*	0.049
Aluminum					0.010		
Nickel					0.005	0.002	

*Indicates Secondary MCL

Table 25. Mineral Analyses Results for Sediment Samples

	C50568 C50569 C50570	C50571 C50572 C50573	
Sample No.	Composite	Composite	C50576
Channel Island	#3	#4	#5
Mineral Analyses			
Moisture Content (%)	35	34	35
EC (umhos/cm)	75	75	93
pH	7.0	7.1	7.5

Table 26. Miscellaneous Analyses Results for Sediment Samples

	C50568 C50569 C50570	C50571 C50572 C50573		
Sample No.	Composite	Composite	C50576	Reporting Limit Limit
Channel Island	#3	#4	#5	
Miscellaneous Analyses				
Moisture Content (%)	35	34	35	0.1
TOC (mg/kg wet wt.)	5600	6800	12000	10
TOC (mg/kg dry wt)	8615	10303	18462	15
Volatile Solids (mg/kg wet wt.)	40	50	60	10
Volatile Solids (mg/kg dry wt.)	62	76	92	15

Table 27. Pesticide and Acid Generation Potential Results for Sediment Samples

		C50568 C50569 C50570	C50571 C50572 C50573	
Station No.		Composite	Composite	C50576
Channel Island		#3	#4	#5
Pesticide Analyses				
Organochlorine	mg/l	ND	ND	ND
2,4'-DDD		ND	ND	0.004
4,4'-DDD		ND	ND	0.009
4,4'-DDE		ND	ND	0.003
PCBs	mg/l	ND	ND	ND
Acid Generation Potential				
		0.01	0.31	3.11