SDMS Document ID
1012181

Summary of Silver Creek Area

Historic metal mining has heavily impacted the Silver Creek watershed surrounding Rico. There are many mine shafts and mine seeps that can be found on the mountainsides around the Rico area. Silver Creek flows by several of these abandoned mining areas and receives direct discharges from some of these mine seeps. There are also several tailings piles that border Silver Creek along its lower sections. This mining activity appears to have affected Silver Creek over the years. This was apparent by red and orange staining on the rocks along the banks of the lower creek and by the lack of benthic invertebrates in the lower sections of Silver Creek. It was very difficult to collect any benthic invertebrates in samples MCP-11 and MCP-12, which were sites located on lower Silver Creek, below the mine seep and tailings. This was noticeably different from other creeks in the area that were sampled for benthic invertebrates. However, the sample collected on Silver Creek (MCP-21) above the former Rico Argentine mine contained several different species of benthic invertebrates. This section of the creek had no staining on the rocks along the banks and had a higher pH than the section of the creek directly below the mine seep at the former Rico Argentine mine (7.07 above compared to 6.7 below the mine in August 1999). The mine seep (MCP-11B) was sampled and had a pH of 2.13 in August 1999. The iron concentration was 70 mg/L with sulfate of 7,000 mg/L. The data collected in the field and the biological observations made suggest that Silver Creek was adversely impacted by the mining activities in this area.

The mercury concentrations differed above and below the mine area as well. The data collected in August are summarized below. The upstream sample on Silver Creek (MCP-21) had low mercury (0.96 ng/L unfiltered total mercury and <0.015 ng/L unfiltered methyl mercury). The mine seep (MCP-11B) had higher total mercury than the other samples from Silver Creek or the Dolores River. The mine seep had 4.38 ng/L unfiltered total mercury of which 2.99 ng/L was dissolved, but low methyl mercury 0.042 ng/L. The sample below the mine tailings (MCP-12) had 0.94 ng/L unfiltered total mercury, and <0.015 ng/L unfiltered methyl mercury. The sample near the mouth of Silver Creek (MCP-11) had 0.75 ng/L unfiltered total mercury and <0.015 ng/L unfiltered methyl mercury. The mercury concentration in the mainstem Dolores River below the confluence with Silver Creek decreased from that at the mine seep, as seen in the

sample from above the confluence of the mainstem Dolores and the West Dolores Rivers (MCP-5). The water sample at MCP-5 had 1.58 ng/L unfiltered total mercury and 0.91 ng/L dissolved total mercury. Methyl mercury was 0.027 ng/L in the unfiltered sample. The higher flow samples collected in June 1999 from these stations had slightly higher mercury concentrations than the August samples. There are other creeks that enter the river in between Silver Creek and the confluence with the West Dolores, as seen from the attached map with the station locations.

The sediment samples also had higher total mercury concentrations from the mine seep (202.8 ng/g dry weight and 0.19 ng/g methyl mercury). This sample had high sulfate (7400 mg/kg) and low pH (2.4). The sediment from the mouth of Silver Creek had less mercury, but was still high (total mercury of 103.04 ng/g dry weight and methyl mercury of 0.135 ng/g dry weight). The sulfate was much lower (61 mg/kg). The upstream sample on Silver Creek (MCP-21) had low mercury in the sediment (24.9 ng/g total mercury and 0.266 ng/g methyl mercury) with low sulfate (140 mg/kg) –all as dry weight.

The benthic invertebrate sample (stonefly larvae) from the mouth of Silver Creek (MCP-11) had the highest methyl mercury concentration (70.33 ng/g wet weight) of all the invertebrate samples collected in August. The night crawler sample from MCP-12 also had high total mercury (62.2 ng/g wet weight), but lower methyl mercury (7.66 ng/g wet weight).

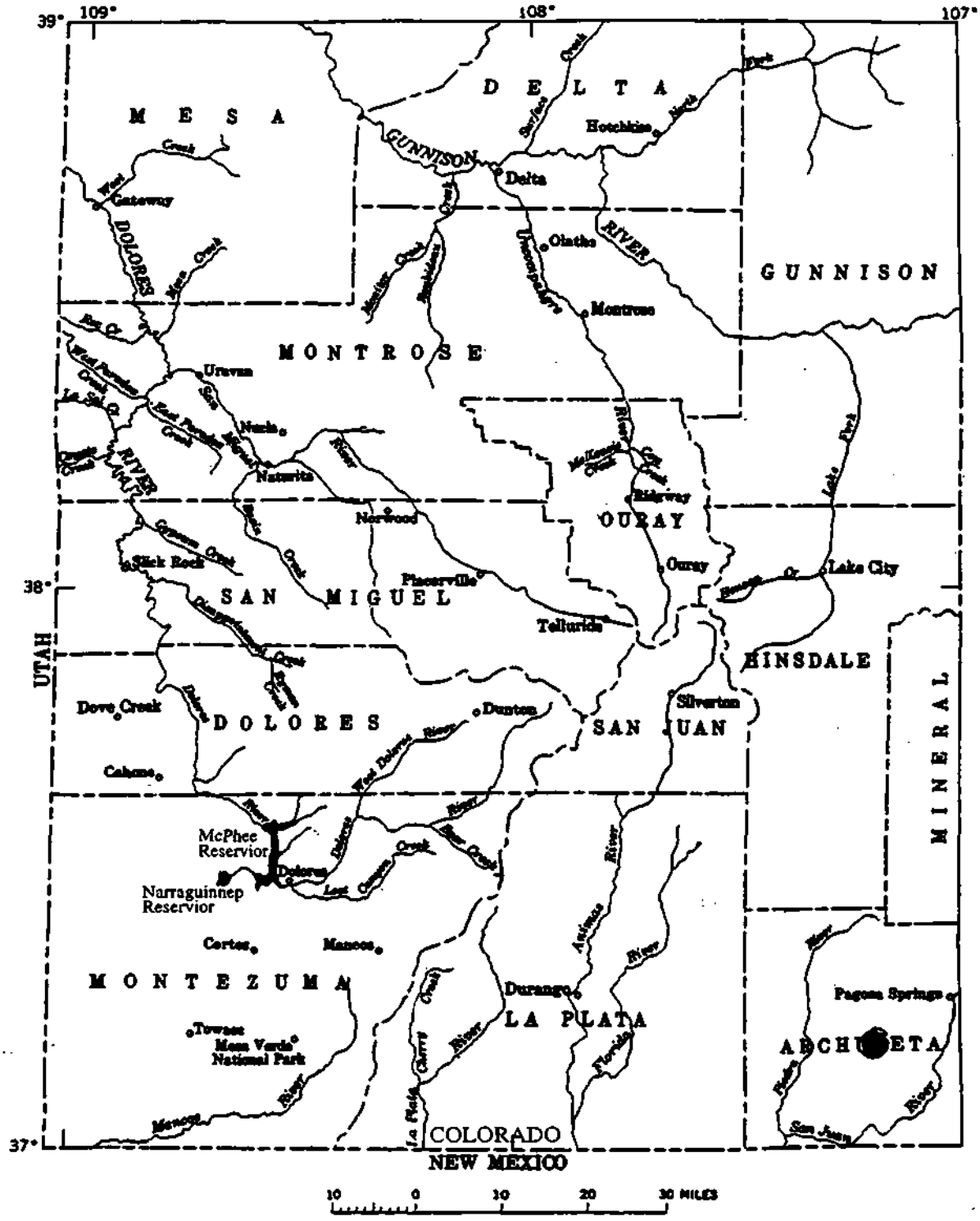


Figure 2. Regional Location map of Dolores River Basin

Coordinates of Sampling Locations for the Summer 1999 Sampling Events

Site Name	Site Location	Latitude	Longitude	USGS Map
MCP-1	Pond near Dolores Treatment Plant	37.471074	108.510739	Dolores West, Co.
MCP-2	Lost Canyon Creek	37.466253	108.505155	Dolores West, Co.
MCP-3	West Dolores River near Mouth	37.588843	108.356529	Stoner, Co.
MCP-4	West Dolores River - Upper	37.780303	108.087199	Dolores Peak, Co.
MCP-5	Dolores River above the Confluence with W. Dolores R.	37.589532	108.342783	Stoner, Co.
MCP-6	Garrison Canyon	37.580922	108.296392	Stoner, Co.
MCP-7	Bear Creek	37.574036	108.187285	Wallace Ranch, Co.
MCP-8	Rio Lado Creek	37.591598	108.132732	Wallace Ranch, Co.
MCP-9	Deadwood Creek	37.678030	108.033505	Rico, Co.
MCP-10	Mine Seep below Poor Boy Mine	37.687328	108.035223	Rico, Co.
MCP-11	Silver Creek near Mouth	37.694904	108.032216	Rico, Co.
MCP-11B	Mine Seep on Silver Creek	37.700413	108.009021	Rico, Co.
MCP-12	Silver Creek - Middle below Mine Tailings	37.693526	108.027062	Rico, Co.
MCP-13	Mine Seep at Former Sulfuric Acid Plant	37.707300	108.029639	Rico, Co.
MCP-14	Horse Creek	37.713154	108.034364	Rico, Co.
MCP-15	Upper Mine Seep on the Dolores River	37.727617	108.028136	Rico, Co.
MCP-17	Dolores River at the Big Bend Boat Launch	37.473140	108.534794	Dolores West, Co.
MCP-19*	West Dolores River below Geyser Creek	37.755510	108.127577	Groundhog Mountain, Co.
MCP-21*	Silver Creek - Upper	37.701102	108.009021	Rico, Co.
MCP-A	McPhee Reservoir	37.579710	108.555842	Trimble Point, Co.
MCP-B	McPhee Reservoir	37.506543	108.553694	Trimble Point, Co.
MCP-C	McPhee Reservoir	37.522039	108.533935	Trimble Point, Co.
MCP-D	McPhee Reservoir	37.500859	108.547680	Trimble Point, Co.
MCP-OUT*	Outlet from McPhee Reservoir - Dolores R.	37.574380	108.576890	Trimble Point, Co.
NAR-1	Unnamed Tributary - Middle of the Reservoir	37.499311	108.618557	Dolores West, Co.
NAR-2	Ditch Entering Reservoir in NW Corner	37.502066	108.628007	Yellow Jacket, Co.
NAR-3	Pond/Backwater in NW Corner of Reservoir	37.501722	108.628866	Yellow Jacket, Co.
NAR-A	Narraguinnep Reservoir	37.490702	108.612113	Dolores West, Co.
NAR-B	Narraguinnep Reservoir	37.498623	108.628866	Arriola, Co.
NAR-C	Narraguinnep Reservoir - Inlet from McPhee	37.498967	108.607388	Dolores West, Co.
NAR-D	Narraguinnep Reservoir	37.459263	108.625000	Dolores West, Co.
NAR-OUT	Outlet from Narraguinnep Reservoir	37.482094	108.625430	Arriola, Co.
NARW*	Narraguinnep Reservoir - Wetlands	37.498278	108.611684	Dolores West, Co.
SAN-1	Ventero Creek - Pond	37.016529	105.430412	Sanchez Reservoir, Co.
SAN-2	Unnamed Tributary to Ventero Creek	37.012397	105.429553	Sanchez Reservoir, Co.
SAN-3	Willow Creek	37.009298	105.429124	Sanchez Reservoir, Co.
SAN-4	Cuates Creek	37.034364	105.399485	Sanchez Reservoir, Co.
SAN-5	Jaroso Creek - Upper Beaver Pond	37.049242	105.368986	La Valley, Co.
SAN-5A*	Jaroso Creek - Lower	37.055441	105.395189	Sanchez Reservoir, Co.
SAN-6	Torcido Creek - Lower	37.093320	105.384860	Sanchez Reservoir, Co.
SAN-6A	Torcido Creek - Upper	37.060778	105.335911	La Valley, Co.
SAN-7	San Francisco Creek - Seep	37.082300	105.315077	La Valley, Co.
SAN-7A	Alamosito Creek	37.085744	105.312285	La Valley, Co.
SAN-7B	San Francisco Creek at Beaver Pond	37.097452	105.335481	La Valley, Co.
SAN-8	Sanchez Canal - Middle	37.111915	105.369845	La Valley, Co.
SAN-9	Vallejos Creek	37.126377	105.360395	Taylor Ranch, Co.
SAN-10	Culebra Creek	37.168044	105.344072	Taylor Ranch, Co.
SAN-11	Ventero Creek near Inlet to Reservoir	37.059229	105.420962	Sanchez Reservoir, Co.
SAN-13*	Torcido Creek - Middle	37.081956	105.362113	La Valley, Co.
SAN-14*	Unnamed Tributary to Alamosito Creek	37.081612	105.270618	La Valley, Co.
SAN-A	Sanchez Reservoir	37.073864	105.416237	Sanchez Reservoir, Co.
SAN-B	Sanchez Reservoir	37.096419	105.399485	Sanchez Reservoir, Co.
SAN-C	Sanchez Reservoir	37.097451	105.419243	Sanchez Reservoir, Co.
SAN-OUT	Outlet from Sanchez Reservoir - Ventero Creek	37.114325	105.408935	Sanchez Reservoir, Co.
SAN-SC	Sanchez Canal near Inlet to Reservoir	37.095730	105.392612	Sanchez Reservoir, Co.
SANW	Sanchez Reservoir - Wetlands	37.059056	105.421392	Sanchez Reservoir, Co.
SAN-MDC/Rito Seco	Rito Seco near West Pit of Battle Mountain Mine	37.252410	105.334622	Ojito Peak, Co.
Mine Tailings	Tailings Pond at Battle Mountain Mine	37.233471	105.365979	Taylor Ranch, Co.

*Indicates new sites added for the August 1999 sampling event.

Summary of Field Data (8/99)

Site	Total Fe mg/L	Ferrous Fe mg/L	Temperature Celcius	Conductivity microS/m	Dissolved Oxygen mg/L	pH S.U.	ORP mV
Sanchez Streams							
SAN-1	0.14	0.04	14.9	242	6.32	8.11	-
SAN-2	0.08	0.01	15.5	233	8	7.99	-
SAN-3	0.04	<0.01	16.4	276	7.9	8.01	-
SAN-4	0.14	<0.01	16.5	115	5.59	7.81	-
SAN-5	0.31	0.04	13.2	52	9.32	8.39	-
SAN-5A	0.61	0.09	12.6	65	9.7	7.83	-
SAN-6	Dry	Dry	Dry	Dry	Dry	Dry	Dry
SAN-6A	0.13	<0.01	11.73	70	9.62	7.61	299.8
SAN-7	6.08	5.96	12.97	225	3.54	6.87	67.6
SAN-7A	0.06	<0.01	11.48	48	8.8	7.42	148.3
SAN-7B	0.29	0.06	14.15	59	8.61	7.44	228.5
SAN-8	0.22	0.02	15.18	70	9.34	7.86	233.4
SAN-9	0.14	<0.01	11.65	68	8.9	7.33	212.2
SAN-10	0.12	<0.01	10.89	114	9.2	7.4	295.1
SAN-11	0.48	<0.01	13.7	182	5.34	8.11	-
SAN-13	0.05	0.03	13.6	240	5.82	8.14	-
SAN-14	0.54	0.09	9.8	24	9.17	7.53	215.8
SAN-OUT	0.21	0.14	14.2	157	4.95	8.12	-
SAN-SC	0.24	<0.01	15.29	77	8.8	7.62	21.8
SANW	0.32	0.09	14.8	285	4.45	8.05	-
Sanchez Reservoir							
SAN-A (3')	0.02	<0.01	18.83	159	6.27	8.07	130.1
SAN-A (18')	0.02	<0.01	18.66	161	5.39	7.87	136.9
SAN-B (3')	0.02	<0.01	18.97	157	7.68	8.38	169.4
SAN-B (8')	<0.01	<0.01	18.63	154	7.97	8.47	167.6
SAN-C (20')	<0.01	<0.01	19.08	162	6.23	7.95	111.3
SAN-C (30')	0.02	<0.01	17.36	157	1.5	7.48	122.2
McPhee Streams							
MCP-1	0.07	<0.01	22.46	184	11.22	8.73	155
MCP-2	0.33	0.01	22.9	141	7.66	8.16	170
MCP-3	0.1	<0.01	14.5	239	9.63	8.49	239
MCP-4	0.03	<0.01	8.13	94	10.07	7.45	284
MCP-5	0.09	<0.01	14.4	182	9.27	8.35	224
MCP-6	Dry	Dry	Dry	Dry	Dry	Dry	Dry
MCP-7	0.04	<0.01	13.34	130	8.66	8.11	180
MCP-8	0.01	0.01	11.35	218	9.41	8.11	186
MCP-9	0.04	0.01	14.83	209	8.38	8.26	179.8
MCP-10	0.14	<0.01	18.1	1400	6.82	6.71	121.4
MCP-11	0.82	<0.01	9.3	204	9.87	7.9	115
MCP-11B	70	36.50	7.74	6520	6.45	2.13	456
MCP-12	0.85	<0.01	9.1	176	9.75	7.73	125.6
MCP-13	10.3	0.95	18.7	1100	6.46	6.75	-5
MCP-14	0.14	0.01	7.7	136	10.22	7.8	157
MCP-15	1.48	0.11	7.94	706	8.46	7.1	101
MCP-17	0.07	0.04	21.02	189	7.67	8.38	159
MCP-19	0.06	0.01	9.33	136	10.08	7.52	260.7
MCP-21	0.08	<0.01	8.92	141	9.88	7.07	104.9
MCP-OUT	0.05	<0.01	10.22	176	11.61	8.15	125.8
McPhee Reservoir							
MCP-A (20')	<0.01	<0.01	20.35	215	7.18	8.1	109.2
MCP-A (35')	0.02	<0.01	16.91	194	5.3	7.67	127.8
MCP-B (25')	<0.01	<0.01	20.01	211	7.22	8.36	133.6
MCP-B (40')	0.08	0.02	15.61	183	5.62	7.86	153.3
MCP-C (25')	0.03	<0.01	19.14	207	6.58	8.17	124.6
MCP-C (35')	0.05	<0.01	17	196	6.16	7.9	139
MCP-D (25')	<0.01	<0.01	-	-	-	-	-
MCP-D (40')	0.08	<0.01	-	-	-	-	-
Narraguinnep Streams							
NAR-1	0.13	NA (Cloudy)	22.07	2244	11.11	8.27	146.2
NAR-2	0.17	NA (Cloudy)	20.16	3400	10.27	8.14	68
NAR-3	0.05	NA (Cloudy)	29.69	4861	18.41	9.72	94.9
NAR-OUT	0.02	<0.01	14.3	276	9.13	7.97	196.5
NARW	1.27	NA (Cloudy)	26.66	1080	10.29	8.11	191
Narraguinnep Reservoir							
NAR-A (3')	0.09	<0.01	20.49	311	8.08	8.51	113.6
NAR-A (11.5')	0.05	<0.01	20.44	342	3.83	8.47	100.8
NAR-B (3')	0.07	<0.01	21.25	325	7.34	8.4	147.5
NAR-B (8')	0.06	<0.01	21.1	322	7.33	8.4	149
NAR-C (1.5')	0.06	<0.01	14.58	192	8.57	8.01	132.3
NAR-D (20')	0.01	<0.01	-	-	-	-	-
NAR-D (40')	0.02	<0.01	-	-	-	-	-

Total Mercury Water Data from the August 1999 Sampling Event

Sample ID	Date	Matrix	Unfiltered Total Mercury (ng/L)	Dissolved Total Mercury (ng/L)
McPhee Streams				
MCP-1	8/7/99	Stream	1.10	0.58
MCP-2	8/7/99	Stream	1.73	1.35
MCP-3	8/9/99	Stream	1.64	0.85
MCP-4	8/9/99	Stream	1.57	1.06
MCP-5	8/9/99	Stream	1.58	0.91
MCP-7	8/8/99	Stream	1.64	0.94
MCP-8	8/8/99	Stream	2.02	1.25
MCP-9	8/8/99	Stream	0.68	0.37
MCP-10	8/8/99	Stream	0.41	0.54
MCP-11	8/8/99	Stream	0.75	0.51
MCP-11B	8/8/99	Stream	4.38	2.99
MCP-12	8/8/99	Stream	0.94	0.48
MCP-13	8/8/99	Stream	0.73	0.14
MCP-14	8/8/99	Stream	1.60	0.62
MCP-15	8/8/99	Stream	0.45	0.36
MCP-17	8/7/99	Stream	1.58	0.76
MCP-18	8/8/99	Stream	1.50	0.52
MCP-19	8/9/99	Stream	1.71	1.08
MCP-21	8/8/99	Stream	0.96	0.81
MCP-OUT	8/12/99	Stream	1.64	1.01
McPhee Reservoir				
MCP-A (20')	8/9/99	Reservoir	0.88	0.56
MCP-A (35')	8/9/99	Reservoir	2.35	0.81
MCP-B (25')	8/10/99	Reservoir	0.87	0.67
MCP-B (40')	8/10/99	Reservoir	1.44	0.98
MCP-C (25')	8/10/99	Reservoir	1.44	0.91
MCP-C (35')	8/10/99	Reservoir	1.56	1.01
MCP-D (25')	8/10/99	Reservoir	1.04	0.73
MCP-D (40')	8/10/99	Reservoir	1.54	0.97
MCP-E (20')	8/10/99	Reservoir	1.22	0.78
Narraguinnep Streams				
NAR-1	8/12/99	Stream	1.04	0.47
NAR-2	8/12/99	Stream	1.51	1.19
NAR-3	8/12/99	Stream	0.73	0.63
NAR-OUT	8/12/99	Stream	2.90	2.25
Narraguinnep Reservoir				
NAR-A (3')	8/11/99	Reservoir	0.97	0.54
NAR-A (11.5')	8/11/99	Reservoir	0.85	0.45
NAR-B (3')	8/11/99	Reservoir	0.90	0.4
NAR-B (8')	8/11/99	Reservoir	0.84	0.54
NAR-C (1.5')	8/11/99	Reservoir	1.85	1.06
NAR-D (20')	8/11/99	Reservoir	0.73	0.67
NAR-D (40')	8/11/99	Reservoir	0.73	0.56
NAR-E (20')	8/11/99	Reservoir	0.60	0.63
Sanchez Streams				
SAN-1	8/4/99	Stream	2.76	2.12
SAN-2	8/4/99	Stream	1.18	1.05
SAN-3	8/4/99	Stream	6.65	2.92
SAN-4	8/4/99	Stream	1.32	1.09
SAN-5	8/4/99	Stream	3.04	1.52
SAN-5 rep.	8/4/99	Stream	3.51	-
SAN-6A	8/3/99	Stream	2.48	1.26
SAN-7	8/2/99	Stream	0.40	0.54
SAN-7A	8/2/99	Stream	1.48	1.04
SAN-7B	8/2/99	Stream	1.61	0.82
SAN-8	8/2/99	Stream	1.12	0.64
SAN-9	8/2/99	Stream	0.86	0.62
SAN-10	8/2/99	Stream	1.57	0.8
SAN-11	8/6/99	Stream	1.58	1.31
SAN-12	8/4/99	Stream	1.72	1.05
SAN-13	8/3/99	Stream	0.62	0.58
SAN-14	8/2/99	Stream	4.58	1.32
SAN-SC	8/2/99	Stream	1.41	0.74
SAN-OUT	8/3/99	Stream	1.00	0.8
Sanchez Reservoir				
SAN-A (3')	8/6/99	Reservoir	0.62	0.59
SAN-A (18')	8/6/99	Reservoir	0.75	0.51
SAN-B (3')	8/6/99	Reservoir	0.91	0.77
SAN-B (8')	8/6/99	Reservoir	8.39	0.54
SAN-C (20')	8/5/99	Reservoir	1.56	0.5
SAN-C (30')	8/5/99	Reservoir	0.64	0.26
SAN-E (3')	8/5/99	Reservoir	0.46	0.35
Depth of reservoir samples given in parantheses.				

Methylmercury Water Data from the August 1999 Sampling Event

Sample ID	Date	Matrix	Unfiltered Methylmercury (ng/L)	Dissolved Methylmercury (ng/L)
McPhee Streams				
MCP-1	8/7/99	Stream	0.071	NA
MCP-2	8/7/99	Stream	0.256	NA
MCP-3	8/9/99	Stream	0.042	NA
MCP-4	8/9/99	Stream	0.019	NA
MCP-5	8/9/99	Stream	0.027	NA
MCP-7	8/8/99	Stream	0.041	NA
MCP-8	8/8/99	Stream	0.061	NA
MCP-9	8/8/99	Stream	<0.015	NA
MCP-10	8/8/99	Stream	<0.015	NA
MCP-11	8/8/99	Stream	<0.015	NA
MCP-11B	8/8/99	Stream	0.042	NA
MCP-12	8/8/99	Stream	<0.015	NA
MCP-13	8/8/99	Stream	<0.015	NA
MCP-14	8/8/99	Stream	<0.015	NA
MCP-15	8/8/99	Stream	<0.015	NA
MCP-17	8/7/99	Stream	0.039	NA
MCP-18	8/8/99	Stream	<0.015	NA
MCP-19	8/9/99	Stream	0.028	NA
MCP-21	8/8/99	Stream	<0.015	NA
MCP-OUT	8/12/99	Stream	<0.036	NA
McPhee Reservoir				
MCP-A (20')	8/9/99	Reservoir	0.031	<0.012
MCP-A (35')	8/9/99	Reservoir	0.013	0.015
MCP-B (25')	8/10/99	Reservoir	0.014	0.012
MCP-B (40')	8/10/99	Reservoir	0.019	<0.012
MCP-C (25')	8/10/99	Reservoir	0.016	0.012
MCP-C (35')	8/10/99	Reservoir	0.034	0.017
MCP-D (25')	8/10/99	Reservoir	0.021	<0.012
MCP-D (40')	8/10/99	Reservoir	0.023	<0.012
MCP-E (20')	8/10/99	Reservoir	0.012	0.017
Narraguinnep Streams				
NAR-1	8/12/99	Stream	0.096	NA
NAR-2	8/12/99	Stream	0.136	NA
NAR-3	8/12/99	Stream	0.087	NA
NAR-OUT	8/12/99	Stream	<0.036	NA
Narraguinnep Reservoir				
NAR-A (3')	8/11/99	Reservoir	0.037	0.017
NAR-A (11.5')	8/11/99	Reservoir	0.032	<0.012
NAR-B (3')	8/11/99	Reservoir	0.025	0.021
NAR-B (8')	8/11/99	Reservoir	0.029	0.017
NAR-C (1.5')	8/11/99	Reservoir	0.022	0.025
NAR-D (20')	8/11/99	Reservoir	0.015	0.017
NAR-D (40')	8/11/99	Reservoir	0.028	0.015
NAR-E (20')	8/11/99	Reservoir	0.020	<0.012
Sanchez Streams				
SAN-1	8/4/99	Stream	0.173	NA
SAN-2	8/4/99	Stream	0.186	NA
SAN-3	8/4/99	Stream	0.334	NA
SAN-4	8/4/99	Stream	0.225	NA
SAN-5	8/4/99	Stream	0.169	NA
SAN-5A	8/4/99	Stream	0.138	NA
SAN-6A	8/3/99	Stream	0.085	NA
SAN-7	8/2/99	Stream	0.086	NA
SAN-7A	8/2/99	Stream	0.084	NA
SAN-7B	8/2/99	Stream	0.105	NA
SAN-8	8/2/99	Stream	0.072	NA
SAN-9	8/2/99	Stream	0.066	NA
SAN-10	8/2/99	Stream	0.048	NA
SAN-11	8/6/99	Stream	0.107	NA
SAN-12	8/4/99	Stream	0.233	NA
SAN-13	8/3/99	Stream	0.052	NA
SAN-14	8/2/99	Stream	0.065	NA
SAN-SC	8/2/99	Stream	0.084	NA
SAN-OUT	8/3/99	Stream	0.439	NA
Sanchez Reservoir				
SAN-A (3')	8/6/99	Reservoir	0.087	<0.036
SAN-A (18')	8/6/99	Reservoir	0.059	<0.036
SAN-B (3')	8/5/95	Reservoir	0.096	<0.036
SAN-B (8')	8/5/95	Reservoir	0.106	0.04
SAN-C (20')	8/5/99	Reservoir	0.092	0.029
SAN-C (30')	8/5/99	Reservoir	0.062	0.029
SAN-E (3')	8/5/99	Reservoir	0.047	0.035

Depth of reservoir samples given in parantheses.

Sediment Data from the August 1999 Sampling Event

Sample ID	Date	% Moisture	Sediment pH (S.U.)	Total Hg (ng/g) dry wt.	Methyl Hg (ng/g) dry wt.	TOC (%)	Sulfate (mg/kg - dry)	Sulfide-S (mg/kg - dry)
McPhee Streams								
MCP-1	8/7/99	59.3	7.0	47.54(72.71)	0.251	0.59	50	3.1
MCP-2	8/7/99	79.2	7.0	2.37	0.133	0.26	15	2.6
MCP-3	8/9/99	66.9	7.0	41.61	0.548	1.03	5	<7.1
MCP-4	8/9/99	56.3	6.8	29.75	0.339(0.321)	0.74	16	0
MCP-5	8/9/99	59.4	6.8	41.19	0.194	0.89	4.4	<8.3
MCP-6	8/8/99	86.4	6.9	7.55	0.045	0.83	1.2	<2.2
MCP-7	8/8/99	80.2	6.9	5.81	0.075	0.27	<1.7	3.4
MCP-8	8/8/99	73.0	7.4	4.32	0.140	0.37	1.7	3.2
MCP-9	8/8/99	71.7	6.8	17.30	0.082	0.7	<1.5	4.2
MCP-10	8/8/99	75.9	6.9	26.89	<0.005	0.63	100	<2.8
MCP-11	8/8/99	54.3	6.7	103.04	0.135	1.1	61	<3.4
MCP-11B	8/8/99	42.0	2.4	202.80	0.181	2.4	7400	<4.8
MCP-12	8/8/99	55.3	6.7	48.34	0.142	2.1	130	<4.1
MCP-13	8/8/99	35.2	6.6	85.10	<0.011	0.22	750	<2.9
MCP-14	8/8/99	73.2	6.6	38.48	<0.005	1.6	37	4.9
MCP-15	8/8/99	40.3	6.6	284.21	0.051	0.41	2000	<12
MCP-17	8/7/99	79.9	7.7	21.64	0.106	0.29	8	2.6
MCP-18	8/8/99	71.7	6.5	55.87	<0.006	1.9	33	3.8
MCP-19	8/9/99	75.4	7.2	16.62	0.074	0.36	9	<5.6
MCP-21	8/8/99	68.5	6.7	24.93	0.266	0.61	140	<3.2
MCP-OUT	8/12/99	55.2	6.3	<4	0.322	1.42	9.1	20
McPhee Reservoir								
MCP-A-B	8/9/99	70.8	7.4	13.05	0.015	0.14	11	<5.1
MCP-B-B	8/10/99	46.0	6.4	62.69	0.198	0.82	18	20
MCP-C-B	8/10/99	64.4	6.5	28.89	0.145	0.81	360	<9.7
MCP-C-B (rep.)	8/10/99	64.4	-	34.49	-	-	-	-
MCP-D-B	8/10/99	52.2	6.7	39.07	0.377	0.89	17	28
MCP-E-S	8/10/99	53.5	7.4	40.23	0.234	0.11	11	<5.4
Nemaquinnep Streams								
NAR-1	8/12/99	68.1	7.0	15.12	0.479	0.09	535.4	<6.9
NAR-2	8/12/99	72.9	7.4	14.54	0.366	0.52	1200	<9.1
NAR-3	8/12/99	26.4	7.2	<17	0.380	0.48	1900	<6.9
NAR-OUT	8/12/99	56.1	6.4	24.17	1.649	1.27	8	41
Nemaquinnep Reservoir								
NAR-A-B	8/11/99	67.9	6.7	28.70	0.337	0.73	8.8	<6
NAR-B-B	8/11/99	68.5	7.0	15.52	0.142	0.62	18	20
NAR-C-B	8/11/99	78.7	6.7	16.49	0.120(0.120)	0.81	360	<8.2
NAR-D-B	8/11/99	49.2	6.7	55.25	0.168	0.38	93	>600
NAR-E-S	8/11/99	52.3	6.8	59.70	0.185	0.35	51	44
Nemaquinnep Wetlands								
NARW	8/12/99	34.2	7.0	18.34	2.181(2.471)	0.78	170	<5.8
Sanchez Streams								
SAN-1	8/4/99	61.2	-	12.84	0.141	0.85	-	31
SAN-2	8/4/99	45.3	-	31.21	0.157(0.191)	2.25	-	<7.5
SAN-3	8/4/99	61.6	-	17.02	0.247	2.32	-	9.1
SAN-4	8/4/99	58.4	-	21.34	0.642	1.23	-	<6.9
SAN-5	8/4/99	49.7	-	31.48	2.699(3.119)	1.17	-	10
SAN-5A	8/4/99	77.5	-	<2	0.203	0.67	-	<6.8
SAN-6	8/3/99	64.4	7.2	4.58	0.027	0.36	-	<4.9
SAN-6A	8/3/99	78.5	7.6	<2	0.006	0.28	-	<4.9
SAN-7	8/2/99	38.7	6.7	<47	0.611	1.2	-	3.1
SAN-7A	8/2/99	77.1	6.8	<2	0.188	0.84	-	<5.7
SAN-7B	8/2/99	73.6	7.5	5.26	0.322	0.42	-	<5.8
SAN-8	8/2/99	67.4	7.3	13.30(11.91)	0.344	0.59	-	5
SAN-9	8/2/99	85.0	7.2	<2	0.142	0.43	-	<6
SAN-10	8/2/99	73.0	7.2	<3	0.414	0.72	-	<6.2
SAN-11	8/6/99	71.3	7.2	35.28	0.047	0.9	-	<4.4
SAN-13	8/3/99	75.8	-	7.00	0.055	0.63	-	<10
SAN-14	8/2/99	77.1	-	14.07	0.104	0.89	-	<5.7
SAN-SC	8/2/99	68.8	7.4	<3	1.035	0.16	-	3.1
SAN-OUT	8/3/99	64.0	-	<3	0.288	1.5	-	<6.6
Sanchez Reservoir								
SAN-A-B	8/6/99	68.0	6.8	40.51	0.019	0.68	2.7	11
SAN-B-B	8/5/99	70.9	6.6	21.81	0.079	0.49	1.9	<7.3
SAN-C-B	8/5/99	43.5	6.9	15.72	0.423	0.68	7.8	21
SAN-E-S	8/5/99	53.4	6.5	21.69	0.288	0.64	<1.8	11
Sanchez Wetlands								
SANW	8/6/99	45.2	6.8	14.29	0.069	1.94	<2	<7.9
Replicate results shown in parantheses.								

Benthic Invertebrate Data from the August 1999 Sampling Event

Sample ID	Date	Species Collected	Total Hg (ng/g ww)	Methyl Hg (ng/g ww)
McPhee Streams				
MCP-1	8/7/99	Dragonfly Larvae and Water Beetles	29.20	21.11
MCP-2	8/7/99	Crayfish	38.80	2.67
MCP-3	8/9/99	Mayfly, Stonefly, and Water Beetle Larvae	2410.20	8.68
MCP-4	8/9/99	Mayfly, Stonefly, Caddisfly, Fly, and Water Beetle Larvae	14.60	10.01
MCP-4 (rep.)	8/9/99	Mayfly, Stonefly, Caddisfly, Fly, and Water Beetle Larvae	NA	9.26
MCP-5	8/9/99	Stonefly, Water Beetle, and Fly Larvae	22.00	12.38
MCP-5 (rep.)	8/9/99	Stonefly, Water Beetle, and Fly Larvae	16.70	-
MCP-7	8/8/99	Earthworms, Stonefly, Water Beetle, Caddisfly, and Fly Larvae	23.20	12.48
MCP-7 (rep.)	8/8/99	Earthworms, Stonefly, Water Beetle, Caddisfly, and Fly Larvae	23.60	14.10
MCP-11	8/8/99	Stonefly Larvae	NA	70.33
MCP-12	8/8/99	Night Crawler	62.20	7.65
MCP-19	8/9/99	Stonefly, Water Beetle, Caddisfly, and Fly Larvae	26.30	11.97
MCP-21	8/8/99	Mayfly, Stonefly, and Fly Larvae	14.10	7.66
McPhee Reservoir				
MCP-A-B	8/9/99	Fly Larvae	NA	<10
MCP-B-B	8/10/99	Oligochaetes (red worms) and Fly Larvae	9.70	0.72
MCP-D-B	8/10/99	Oligochaetes (red worms) and Fly Larvae	6.40	<0.8
Narraguinnep Streams				
NAR-1 (a)	8/12/99	Crayfish	9.30	8.68
NAR-1 (b)	8/12/99	Damselfly and Water Beetle Larvae	10.10	7.74
Narraguinnep Reservoir				
NAR-B-B	8/11/99	Oligochaetes (red worms)	4.60	3.45
NAR-C-B	8/11/99	Crayfish	18.10	12.73
NAR-D-B	8/11/99	Oligochaetes (red worms)	7.00	6.01
Sanchez Streams				
SAN-1	8/4/99	Dragonfly Larvae and Water Beetles	28.30	19.88
SAN-2	8/4/99	Leeches, Mayfly, and Fly Larvae	25.60	11.80
SAN-3	8/4/99	Water Beetles	110.60	37.44
SAN-4	8/4/99	Mayfly Larvae and Water Beetles	99.00	62.25
SAN-5	8/4/99	Mayfly and Fly Larvae	NA	18.61
SAN-5A	8/4/99	Mayfly, Caddisfly and Fly Larvae	NA	12.12
SAN-6A	8/3/99	Stonefly, Mayfly and Water Beetle Larvae	46.00	41.52
SAN-7A	8/2/99	Stonefly, Mayfly and Water Beetle Larvae	58.40	34.07
SAN-7B	8/2/99	Stonefly, Mayfly, Fly, and Water Beetle Larvae	21.70	16.76
SAN-8	8/2/99	Mayfly and Water Beetle Larvae	24.90	17.91
SAN-9	8/2/99	Stonefly, Mayfly, Fly, and Water Beetle Larvae	20.60	18.31
SAN-10	8/2/99	Stonefly, Mayfly, Caddisfly, and Water Beetle Larvae	16.90	12.03
SAN-11	8/6/99	Mayfly Larvae and Mysid Shrimp	12.00	6.18
SAN-13	8/3/99	Water Beetles and Mayfly Larvae	118.40	29.24
SAN-14	8/2/99	Stonefly and Mayfly Larvae	NA	10.13
SAN-SC	8/2/99	Stonefly Larvae, Mayfly Larvae	12.50	8.30
Sanchez Reservoir				
SAN-A-B	8/6/99	Oligochaetes (red worms)	12.40	4.64
SAN-B-B	8/6/99	Oligochaetes (red worms) and Mysid Shrimp	NA	5.47
SAN-C-B	8/5/99	Oligochaetes (red worms)	8.20	<1

Wetland Samples for June and August 1999 Sampling

Sample No.	Sampling Date	Matrix	Total Hg, ng/L	Methyl mercury, ng/L
Sanchez Wetland Water				
SAN-W	6/6/99	standing water	1.97(1.52*)	0.13(0.13)
SAN-W	8/6/99	standing water	2.09(2.31)	0.052(0.086)
Sanchez Wetland Porewater				
SAN - W - 1 - JUNE	6/6/99	sediment porewater**	27.7	1.017
SAN - W - 2 - JUNE	6/6/99	sediment porewater	10.1	0.65
SAN - W - 3 - JUNE	6/6/99	sediment porewater	NA	NA
SAN - W - C - 2	8/14/99	sediment porewater	23.9	0.297
SAN - W - C - 5	8/14/99	sediment porewater	7.60	0.292
SAN - W - C - 3	8/14/99	sediment porewater	26.4	0.866
Narraguinnep Wetland Water				
NAR-W	8/12/99	standing water	1.91 (0.71)	0.217
Narraguinnep Wetland Porewater				
NAR-W	8/12/99	sediment porewater	3.2	1.067

*Values in parantheses are dissolved.
**Sediment porewater was filtered in lab using a 0.2 micron filter.

Summary of Flow Data from the 1999 Sampling Events

Location	Flow (cu. m/sec) June 1999	Flow (cu. m/sec) August 1999
McPhee Sites		
MCP-2	0.02	0.29
MCP-3	9.78	5.64
MCP-4	6.28	2.45
MCP-5	19.5	14.15
MCP-6	0.002	Dry
MCP-7	5.48	4.5
MCP-8	0.56	0.47
MCP-9	0.51	0.35
MCP-10	0.006	0.012
MCP-11	2.49	0.89
MCP-11B	0.0003	0.00012
MCP-12	2.32	1.28
MCP-13	0.0012	0.06
MCP-14	1.4	0.43
MCP-15	0.0003	0.00012
MCP-19*	NA	6.65
MCP-21*	NA	0.71
MCP-OUT*	NA	5.28
Narraguinnep Sites		
NAR-1	NA	0.003
NAR-2	0.08	0.00016
NAR-3	backwater	ponded
NAR-C (Inlet)	NA	2.44
NAR-OUT	1.41	1.65
Sanchez Sites		
SAN-1	0.4	0.41
SAN-2	0.046	0.12
SAN-3	NA	0.017
SAN-4	0.034	0.002
SAN-5	0.357	0.27
SAN-5A*	NA	0.16
SAN-6	0.32	Dry
SAN-6A	0.49	0.09
SAN-7	low flow seep	ponded no flow
SAN-7A	0.62	0.18
SAN-7B	1.31	0.59
SAN-8	2.64	0.98
SAN-9	1.18	0.95
SAN-10	4.74	2.34
SAN-11	0.78	0.64
SAN-13*	NA	0.0005
SAN-14*	NA	0.24
SAN-SC	6.3	1.03
SAN-OUT	5.4	2.17

NA - Not Analyzed

Total Mercury Water Data from the June 1999 Sampling Event

Sample ID	Date	Matrix	Unfiltered Total Mercury (ng/L)	Dissolved Total Mercury (ng/L)
McPhee Streams				
MCP-1	6/7/99	Stream	3.65	2.9
MCP-2	6/7/99	Stream	2.34	1.44
MCP-3	6/7/99	Stream	3.18	1.91
MCP-4	6/7/99	Stream	5.62	3.69
MCP-5	6/7/99	Stream	3.98	2.55
MCP-6	6/7/99	Stream	1.50	1.33
MCP-7	6/8/99	Stream	2.92	3.95
MCP-8	6/8/99	Stream	3.50	2.57
MCP-9	6/8/99	Stream	4.67	NA
MCP-9 rep.	6/8/99	Stream	5.06	NA
MCP-10	6/8/99	Stream	0.98	NA
MCP-10 rep.	6/8/99	Stream	2.27	NA
MCP-11	6/8/99	Stream	4.25	NA
MCP-11 rep.	6/8/99	Stream	5.45	NA
MCP-11B	6/9/99	Stream	5.44	3.7
MCP-12	6/8/99	Stream	3.54	NA
MCP-12 rep.	6/8/99	Stream	3.68	NA
MCP-13	6/8/99	Stream	2.18	NA
MCP-13 rep.	6/8/99	Stream	21.07	NA
MCP-14	6/8/99	Stream	4.61	NA
MCP-14 rep.	6/8/99	Stream	4.92	NA
MCP-15	6/8/99	Stream	1.46	NA
MCP-15 rep.	6/8/99	Stream	1.52	NA
MCP-16	6/8/99	Stream	3.36	2.63
MCP-17	6/9/99	Stream	2.20	1.52
McPhee Reservoir				
MCP-A (3')	6/12/99	Reservoir	1.08	1.63
MCP-A (40')	6/12/99	Reservoir	1.99	1.36
MCP-B (3')	6/13/99	Reservoir	1.86	2.18
MCP-B (43')	6/13/99	Reservoir	2.46	1.64
MCP-C (3')	6/13/99	Reservoir	NA	1.12
MCP-C (43')	6/13/99	Reservoir	2.37	1.49
MCP-D (3')	6/13/99	Reservoir	1.73	1.36
MCP-D (43')	6/13/99	Reservoir	1.87	1.18
MCP-E (3')	6/13/99	Reservoir	1.76	NA
Narraguinnep Streams				
NAR-1	6/15/99	Stream	1.94	1.55
NAR-2	6/15/99	Stream	1.91	1.5
NAR-3	6/15/99	Stream	1.90	1.43
NAR-OUT	6/14/99	Stream	1.03	0.68
Narraguinnep Reservoir				
NAR-A (1.5')	6/14/99	Reservoir	0.74	0.55
NAR-A (13')	6/14/99	Reservoir	2.07	1.56
NAR-B (1.5')	6/15/99	Reservoir	0.75	0.62
NAR-B (15')	6/15/99	Reservoir	0.94	0.63
NAR-C (1.5')	6/15/99	Reservoir	1.53	1.36
NAR-C (6')	6/15/99	Reservoir	0.56	3.21
NAR-D (1.5')	6/15/99	Reservoir	1.12	0.51
NAR-D (26')	6/15/99	Reservoir	1.49	0.70
NAR-E (1.5')	6/15/99	Reservoir	0.80	0.46
Sanchez Streams				
SAN-1	6/5/99	Stream	2.35	1.65
SAN-2	6/5/99	Stream	2.82	2.33
SAN-3	6/5/99	Stream	4.35	3.23
SAN-4	6/4/99	Stream	3.41	3.37
SAN-5	6/4/99	Stream	7.60	2.43
SAN-6	6/5/99	Stream	3.48	2.72
SAN-6A	6/4/99	Stream	6.24	3.98
SAN-7	6/4/99	Stream	0.74	0.49
SAN-7A	6/4/99	Stream	10.65	3.88
SAN-7B	6/4/99	Stream	7.03	2.73
SAN-8	6/3/99	Stream	2.43	1.43
SAN-9	6/4/99	Stream	3.24	2.08
SAN-10	6/3/99	Stream	1.80	1.27
SAN-11	6/6/99	Stream	1.08	1.04
SAN-SC	6/3/99	Stream	3.29	1.75
SAN-OUT	6/3/99	Stream	1.03	0.65
Sanchez Reservoir				
SAN-A (1')	6/6/99	Reservoir	0.70	0.75
SAN-A (1') rep.	6/6/99	Reservoir	0.76	0.68
SAN-A (9')	6/6/99	Reservoir	0.67	0.68
SAN-B (1.5')	6/17/99	Reservoir	0.74	0.69
SAN-B (8.5')	6/17/99	Reservoir	1.26	0.94
SAN-C (1.5')	6/17/99	Reservoir	0.93	0.76
SAN-C (33')	6/17/99	Reservoir	0.78	0.52
SAN-E (1')	6/17/99	Reservoir	0.71	0.68
Depth of reservoir samples given in parantheses.				

Methylmercury Water Data from the June 1999 Sampling Event

Sample ID	Date	Matrix	Unfiltered Methylmercury (ng/L)	Dissolved Methylmercury (ng/L)
McPhee Streams				
MCP-1	6/7/99	Stream	0.155	0.038
MCP-2	6/7/99	Stream	0.245	0.109
MCP-3	6/7/99	Stream	0.042	0.036
MCP-4	6/7/99	Stream	0.070	0.061
MCP-5	6/7/99	Stream	0.048	0.026
MCP-6	6/7/99	Stream	ND	ND
MCP-7	6/8/99	Stream	0.010	0.015
MCP-8	6/8/99	Stream	0.032	0.018
MCP-9	6/8/99	Stream	0.012	NA
MCP-9 rep.	6/8/99	Stream	0.036	NA
MCP-10	6/8/99	Stream	0.004	NA
MCP-10 rep.	6/8/99	Stream	ND	NA
MCP-11	6/8/99	Stream	0.010	NA
MCP-11 rep.	6/8/99	Stream	0.020	NA
MCP-11B	6/9/99	Stream	0.031	0.012
MCP-12	6/8/99	Stream	0.027	NA
MCP-12 rep.	6/8/99	Stream	0.023	NA
MCP-13	6/8/99	Stream	0.004	NA
MCP-13 rep.	6/8/99	Stream	0.007	NA
MCP-14	6/8/99	Stream	0.031	NA
MCP-14 rep.	6/8/99	Stream	0.023	NA
MCP-15	6/8/99	Stream	0.052	NA
MCP-15 rep.	6/8/99	Stream	0.067	NA
MCP-16	6/8/99	Stream	0.004	0.012
MCP-17	6/9/99	Stream	0.031	0.026
McPhee Reservoir				
MCP-A (3')	6/12/99	Reservoir	0.026	0.032
MCP-A (40')	6/12/99	Reservoir	0.045	0.022
MCP-B (3')	6/13/99	Reservoir	0.045	0.018
MCP-B (43')	6/13/99	Reservoir	0.030	0.035
MCP-C (3')	6/13/99	Reservoir	NA	0.021
MCP-C (43')	6/13/99	Reservoir	0.036	0.014
MCP-D (3')	6/13/99	Reservoir	0.023	0.017
MCP-D (43')	6/13/99	Reservoir	0.026	0.011
MCP-E (3')	6/13/99	Reservoir	0.026	NA
Narraguinnep Streams				
NAR-1	6/15/99	Stream	0.211	0.17
NAR-2	6/15/99	Stream	0.202	0.121
NAR-3	6/15/99	Stream	0.229	0.206
NAR-OUT	6/14/99	Stream	0.064	0.009
Narraguinnep Reservoir				
NAR-A (1.5')	6/14/99	Reservoir	0.029	0.016
NAR-A (13')	6/14/99	Reservoir	0.040	0.028
NAR-B (1.5')	6/15/99	Reservoir	0.031	ND
NAR-B (15')	6/15/99	Reservoir	ND	0.016
NAR-C (1.5')	6/15/99	Reservoir	0.009	0.032
NAR-C (6')	6/15/99	Reservoir	0.032	0.027
NAR-D (1.5')	6/15/99	Reservoir	ND	0.026
NAR-D (26')	6/15/99	Reservoir	0.050	0.026
NAR-E (1.5')	6/15/99	Reservoir	0.018	0.026
Sanchez Streams				
SAN-1	6/5/99	Stream	0.185	0.112
SAN-2	6/5/99	Stream	0.301	0.206
SAN-3	6/5/99	Stream	0.206	0.158
SAN-4	6/4/99	Stream	0.109	0.089
SAN-5	6/4/99	Stream	0.174	0.032
SAN-6	6/5/99	Stream	0.232	0.221
SAN-6A	6/4/99	Stream	0.068	0.041
SAN-7	6/4/99	Stream	0.034	0.011
SAN-7A	6/4/99	Stream	0.208	0.033
SAN-7B	6/4/99	Stream	0.161	0.01
SAN-8	6/3/99	Stream	0.052	0.013
SAN-9	6/4/99	Stream	0.075	0.03
SAN-10	6/3/99	Stream	0.014	0.003
SAN-11	6/6/99	Stream	0.140	0.148
SAN-SC	6/3/99	Stream	0.108	0.001
SAN-OUT	6/3/99	Stream	0.093	0.024
Sanchez Reservoir				
SAN-A (1')	6/6/99	Reservoir	0.001	0.008
SAN-A (1') rep.	6/6/99	Reservoir	0.009	0.006
SAN-A (9')	6/6/99	Reservoir	0.101	0.017
SAN-B (1.5')	6/17/99	Reservoir	0.042	0.016
SAN-B (8.5')	6/17/99	Reservoir	0.095	0.062
SAN-C (1.5')	6/17/99	Reservoir	0.026	0.030
SAN-C (33')	6/17/99	Reservoir	0.040	0.013
SAN-E (1')	6/17/99	Reservoir	0.037	0.014

Depth of reservoir samples given in parantheses.

Sediment Data from the June 1999 Sampling Event

Sample ID	Date	% Moisture	Sediment pH (S.U.)	Total Hg (ng/g) dry wt.	Methyl Hg (ng/g) dry wt.	Carbonate Carbon (%)	TOC (%)	Sulfide-S (mg/kg - dry)
McPhee Streams								
MCP-1	6/7/99	24.2	8.1	9.58	-	0.02	1.2	<1
MCP-2	6/7/99	32.9	7.6	4.29	-	ND	0.21	22
MCP-3	6/7/99	25.9	8.3	3.74	-	0.21	1.28	25
MCP-4	6/7/99	43.6	8.1	13.78	-	0.02	1.31	21
MCP-5	6/7/99	24.5	8.2	13.70	-	0.24	0.46	3
MCP-7	6/8/99	28.5	8.3	3.85	-	0.01	0.14	<1
MCP-8	6/8/99	37.2	8.2	2.74	-	0.06	0.17	<1
MCP-9	6/8/99	40.8	8.3	0.91	-	0.37	0.97	<1
MCP-10	6/8/99	51.1	7.1	12.18	0.0120	0.28	0.71	157(149)
MCP-11	6/8/99	57.9	8.3	47.90	-	0.16	1.58	<1
MCP-11B	6/9/99	58.7	1.9	206.49	-	0.04	3.07	<1
MCP-12	6/8/99	51.1	8.3	8.01	-	0.25	1.62	<1
MCP-13	6/8/99	81.3	7.4	117.81	-	0.51	0.53	<1
MCP-14	6/8/99	32.3	-	44.64	-	0.03	2.03	<1
MCP-15	6/8/99	92.5	7.6	72.36	-	0.42(0.39)	1.73	3
MCP-16	6/8/99	16.8	-	3.44	-	0.01	0.15	<1
MCP-17	6/9/99	46.9	7.4	14.37	-	0.08	0.49	3
McPhee Reservoir								
MCP-A-B	6/12/99	71.6	-	63.50	0.232	0.01(ND)	3.05	191(55)
MCP-B-B	6/13/99	68.3	-	55.07	0.0850	0.01	2.25	139
MCP-C-B	6/13/99	51.2	-	131.48	0.557	0.02	2.62	34
MCP-D-B	6/13/99	38.0	7.1	22.56	0.132	0.07	0.98	13
Narraguinnep Streams								
NAR-1	6/15/99	68.4	7.5	16.26	-	2.16	3.18	1351(1494)
NAR-2	6/15/99	26.1	7.9	1.16	-	1.14	1.01	5
NAR-3	6/15/99	46.9	7.5	18.42	-	1.54	1.49	190
NAR-OUT	6/14/99	30.4	-	18.59	-	0.1	2.35	21
Narraguinnep Reservoir								
NAR-A-B	6/14/99	32.9	-	26.64	1.187	1.47	0.9	179
NAR-B-B	6/15/99	44.8	7.9	23.50	0.156	1.73	0.65	423
NAR-C-B	6/15/99	22.2	-	18.34	0.059	0.69	0.29	5
NAR-D-B	6/15/99	54.6	8.0	36.20	0.0460	0.55(0.53)	1.03	84(79)
NAR-E-B	6/14/99	28.4	-	24.89	0.960	1.52	0.62	187
Sanchez Streams								
SAN-1	6/5/99	49.8	-	12.23	-	0.01	2.31	20
SAN-2	6/5/99	50.3	-	17.12	-	0.01	3.25	<1
SAN-4	6/4/99	35.9	-	9.38	-	ND	2.31	<1
SAN-5	6/4/99	29.5	-	6.82	-	ND	1.35	<1
SAN-6	6/5/99	29.9	-	6.87	-	ND	1.35	<1
SAN-6A	6/4/99	27.1	-	3.17	-	ND	0.68	<1
SAN-7	6/4/99	41.4	-	5.91	-	0.11(0.09)	5.79	22
SAN-7A	6/4/99	24.8	-	2.01	-	0.01	1.12	4
SAN-7B	6/4/99	47.1	-	15.40	-	ND	3.68	9
SAN-8	6/3/99	36.9	-	8.96	-	0.03	1.09	1
SAN-9	6/4/99	27.1	-	0.85	-	ND	0.14	2
SAN-10	6/17/99	38.2	-	4.54	-	0.01	0.33	<1
SAN-11	6/6/99	53.6	-	27.16	0.093	ND	3.85	8
SAN-SC	6/3/99	34.6	-	1.13	-	ND	0.23	<1
SAN-DAM (soil)	6/17/99	11.9	-	2.58	-	-	-	-
Sanchez Reservoir								
SAN-B-B	6/17/99	38.3	-	6.85	0.305	0.04(0.05)	0.93	54
SAN-C-B	6/17/99	69.6	-	19.70	0.207	ND	1.63	108(117)

Replicates listed in parantheses.

Benthic Invertebrate Data from the June 1999 Sampling Event

Sample ID	Date	Species Collected	Total Hg (ng/g ww)
McPhee Streams			
MCP-1	6/7/99	Mayfly Larvae and Earthworms	9.36
MCP-2	6/7/99	Crayfish	35.06
MCP-4	6/7/99	Mayfly, Stonefly, and Caddisfly Larvae	4.11
MCP-7	6/8/99	Oligochaetes, Mayfly, Stonefly, and Caddisfly Larvae	5.06
McPhee Reservoir			
MCP-C-B	6/13/99	Midge Larvae	20.76
MCP-D-B	6/13/99	Oligochaetes and Midge Larvae	22.06
Narraguinnep Streams			
NAR-1	6/15/99	Amphipods, Oligochaetes, Caddisfly, Dragonfly, and Midge Larvae	0.81
Narraguinnep Reservoir			
NAR-A-B	6/14/99	Damselfly Larvae, Oligochaetes, and Midge Larvae	7.07
Sanchez Streams			
SAN-1	6/5/99	Mayfly, Damselfly, and Dragonfly Larvae	3.96
SAN-2	6/5/99	Water Beetles	28.87
SAN-3	6/5/99	Water Beetles	48.46
SAN-5	6/4/99	Composite Benthic Invertebrates	40.62
SAN-6	6/5/99	Midge Larvae	ND
SAN-6A	6/4/99	Composite Benthic Invertebrates	12.33
SAN-7A (a)	6/4/99	Composite Benthic Invertebrates	4.49
SAN-7A (b)	6/5/99	Composite Benthic Invertebrates	1.66
SAN-7B	6/4/99	Composite Benthic Invertebrates	15.80
SAN-9 (a)	6/4/99	Mayfly and Caddisfly Larvae	13.27
SAN-9 (b)	6/4/99	Stonefly Larvae	8.30
SAN-10	6/17/99	Mayfly and Dragonfly Larvae	4.20
SAN-11	6/6/99	Amphipods, Flatworms, and Oligochaetes	1.43
Sanchez Reservoir			
SAN-B-B	6/17/99	Oligochaetes (red worms) and Midge Larvae	3.29

Iron analyses for Colorado Lakes Survey (June 1999)

Site ID	Name	Date	Lab[a] Fe+2	Lab[a] Total Fe	Lab[a] pH[c]	Field[b] Fe+2	Field[b] Total Fe	Field[b] pH[c]	Comments
mcp-1	Sewage Treatment Ponds	07-Jun-99	0.01	0.11	7.86				
mcp-1	Sewage Treatment Ponds	10-Jun-99				0.00	0.20	7.58	
mcp-2	Lost Canyon	07-Jun-99	0.03	0.22	8.02				
mcp-2	Lost Canyon	10-Jun-99				0.00	0.24	7.78	
mcp-3	West Dolores R. mouth	07-Jun-99	0.02	0.09	8.42				
mcp-3	West Dolores R. mouth	10-Jun-99				0.00	0.12	8.21	
mcp-4	West Dolores R. above CC	07-Jun-99	0.00	0.07	8.17				22 miles upstream
mcp-5	Dolores R. above West Dolores R.	07-Jun-99	0.00	0.10	8.39				
mcp-5	Dolores R. above West Dolores R.	10-Jun-99				0.02	0.23	8.10	
mcp-6	Garrison Canyon	07-Jun-99	0.00	0.01	7.90				
mcp-6	Garrison Canyon	10-Jun-99				0.00	0.00	7.56	
mcp-7	Bear Creek	08-Jun-99	0.02	0.06	8.31				
mcp-7	Bear Creek	08-Jun-99	0.00	0.04	8.31				duplicate analysis
mcp-7	Bear Creek	10-Jun-99				0.00	0.06	8.42	
mcp-8	Rio Lado	08-Jun-99	0.00	0.06	8.48				
mcp-8	Rio Lado	10-Jun-99				0.01	0.04	8.40	
mcp-9	Deadwood Creek	08-Jun-99	0.00	0.02	8.49				
mcp-9	Deadwood Creek	10-Jun-99				0.00	0.09	7.98	
mcp-10	Mine drain (below Poor Boy Mine)	08-Jun-99	0.00	0.16	7.04				
mcp-10	Mine drain (below Poor Boy Mine)	10-Jun-99				0.02	0.19	6.78	
mcp-11	Silver Creek mouth	08-Jun-99	0.02	0.82	8.35				Silver Creek mouth
mcp-11B	Silver Creek uppermost mine seep					>3.30	>3.30	1.76	
mcp-12	Silver Creek below tailings	08-Jun-99	0.00	0.86	8.29				Silver Creek below tailings
mcp-12	Silver Creek below tailings	10-Jun-99				0.00	0.83	8.00	
mcp-13	Sulfuric Acid Plant	08-Jun-99	0.18	3.30	7.29				
mcp-13	Sulfuric Acid Plant	10-Jun-99				1.05	>3.30	6.93	
mcp-14	Horse Creek	08-Jun-99	0.02	0.14	8.16				
mcp-14	Horse Creek	10-Jun-99				0.00	0.31	8.06	
mcp-15	Mine drain on Dolores R.	08-Jun-99	0.00	0.89	7.87				
mcp-15	Mine drain on Dolores R.	10-Jun-99				0.01	1.96	7.70	
mcp-17	Big Bend USFS boat launch ramp	09-Jun-99				0.23	0.33	7.21	
mcp-17	Big Bend USFS boat launch ramp	09-Jun-99	0.01	0.07	7.21				replicate of field sample

Site ID	Name	Date	Lab[a] Fe+2	Lab[a] Total Fe	Lab[a] pH[c]	Field[b] Fe+2	Field[b] Total Fe	Field[b] pH[c]	Comments
mcp-17	Big Bend USFS boat launch ramp	09-Jun-99	0.00	0.06	7.21				replicate of field sample
mcp-A-B	McPhee-A	12-Jun-99				0.00	0.04	8.20	
mcp-A-T	McPhee-A	12-Jun-99				0.00	0.04	8.30	
mcp-B-B	McPhee-B - Marina	13-Jun-99				0.00	0.05	8.00	
mcp-B-T	McPhee-B - Marina	13-Jun-99				0.00	0.03	8.10	
mcp-C-B	McPhee-C - House Creek	13-Jun-99				0.02	0.05	7.90	
mcp-C-T	McPhee-C - House Creek	13-Jun-99				0.00	0.04	8.10	
mcp-D-B	McPhee-D - Dolores R. mouth	13-Jun-99				0.00	0.06	8.30	
mcp-D-T	McPhee-D - Dolores R. mouth	13-Jun-99				0.00	0.05	8.20	
san-1	Ventero Creek	05-Jun-99	0.04	0.16	8.46				
san-2	unnamed tributary	05-Jun-99	0.03	0.09	8.57				
san-3	Willow Creek	05-Jun-99	0.00	0.00	8.65				
san-4	Coates Creek	05-Jun-99	0.00	0.10	7.94				
san-5	Joroso Creek	18-Jun-99				0.00	0.27	8.40	collected upstream of road, access to upstream site blocked by gate
san-6	Torrecito Creek - above canal	05-Jun-99	0.00	0.09	8.46				no in-field analysis, creek was dry when returned to sample for iron
san-6A	upper Torrecito Creek	18-Jun-99				0.00	0.10	8.50	collected at end of road, before hike portion
san-7	San Francisco Creek - seep	17-Jun-99				3.12	>3.30	7.40	
san-7A	Alamacito Creek	05-Jun-99	0.00	0.38	7.93				
san-7A	Alamacito Creek	17-Jun-99				0.00	0.09	8.50	
san-7B	San Francisco Creek - beaver pond	17-Jun-99				0.00	0.13	8.20	
san-8	Sanchez Canal	18-Jun-99				0.00	0.02	8.40	
san-9	Vallejos Creek	05-Jun-99	0.02	0.17	7.92				
san-10	Culebra Creek	05-Jun-99	0.03	0.05	8.07				
san-10	Culebra Creek	17-Jun-99				0.00	0.03	8.20	
san-11	Inlet to Sanchez Res.	06-Jun-99				0.00	0.16	7.95	
san-A-B	Sanchez-A - upper reservoir	06-Jun-99	0.02	0.04	8.60				
san-A-T	Sanchez-A - upper reservoir	06-Jun-99	0.03	0.04	8.40				
san-B-B	Sanchez-B - off Sanchez Canal	17-Jun-99				0.00	0.06	8.50	
san-C-B	Sanchez-C - west side	17-Jun-99				0.00	0.03	8.40	
san-out	Sanchez Reservoir outlet							8.46	
san-sc	Sanchez Canal above lake	05-Jun-99	0.02	0.12	8.08				
san-sc	Sanchez Canal above lake	18-Jun-99				0.00	0.07	8.20	

Site ID	Name	Date	Lab[a]			Field[b]			Comments
			Fe+2	Total Fe	pH[c]	Fe+2	Total Fe	pH[c]	
nar-1	Tributary (large on map)	15-Jun-99				0.03	0.07	7.69	
nar-2	Tributary (culvert under canal)	15-Jun-99				0.00	0.03	7.85	
nar-3	Tributary (blocked by canal)	15-Jun-99				0.00	0.04	8.32	
nar-A-T	Narraguinup Res. - mouth of inlet	14-Jun-99				0.00	0.03	8.50	
nar-A-B	Narraguinup Res. - mouth of inlet	14-Jun-99				0.01	0.07	8.50	
nar-B-T	Narraguinup Res. - west arm	15-Jun-99				0.01	0.01	8.30	
nar-B-B	Narraguinup Res. - west arm	15-Jun-99				0.00	0.02	8.30	
nar-C-T	Narraguinup Res. - inlet	15-Jun-99				0.01	0.01	8.20	
nar-C-B	Narraguinup Res. - inlet	15-Jun-99				0.00	0.06	8.10	
nar-D-T	Narraguinup Res. - off boat launch	15-Jun-99				0.00	0.01	8.40	
nar-D-B	Narraguinup Res. - off boat launch	15-Jun-99				0.00	0.03	8.50	
nar-out	Narraguinup Res. Outlet							8.24	

[a] Lab analyses were conducted within 8 hours of collection

[b] Field analyses were conducted within 1 hour of collection

[c] pH data are from CTD recordings for samples that were collected concurrently with other sampling data. pH data for iron analyses conducted subsequent to sampling event are from concurrent field measurements.

June 1999

Sanchez Reservoir drainage. Stream data.

Site	ave Temp C	ave DO mg/L	ave pH	ave ORP mV	ave Cond mS/cm	ave TDS g/L	count
san-1	14.94	8.70	8.46	181.94	0.122		31
san-2	15.71	8.58	8.57	183.43	0.290		28
san-3	16.01	9.80	8.65	180.60	0.287		35
san-4	9.44	5.51	7.94	166.00	0.055		29
san-5	12.07	7.79	7.99	137.43	0.036		30
san-6	12.39	8.50	8.46	174.81	0.089		47
san-6A	10.88	8.52	7.88	159.76	0.035		25
san-7A	6.42	8.86	7.93	151.29	0.029		24
san-7B	7.85	8.60	7.85	132.62	0.040		26
san-8	12.51	11.59	8.07	145.35	0.078		26
san-9	3.80	6.61	7.92	102.32	0.037		19
san-10	11.35	9.98	8.07	151.00	0.087		12
san-11	9.57	9.43	7.95	171.25	0.181		32
san-out	13.93	11.50	8.48	149.09	0.145		23
san-sc	13.02	11.87	8.08	163.68	0.074		19

June 1999

McPhee Reservoir drainage. Stream data.

Site	ave Temp C	ave DO mg/L	ave pH	ave ORP mV	ave Cond mS/cm	ave TDS g/L	count	
mcp-1	14.92	5.65	7.86	142.4	0.138	0.111	35	
mcp-2	17.71	9.15	8.02	156.5	0.212	0.160	22	
mcp-3	12.11	10.00	8.42	159.0	0.162	0.140	36	
mcp-4	9.04	9.26	8.17	151.8	0.082	0.077	31	
mcp-5	12.18	9.62	8.39	147.6	0.115	0.099	38	
mcp-6	7.82	9.08	7.90	168.5	0.115	0.111	42	
mcp-7	3.42	11.10	8.31	174.0	0.068	0.076	19	
mcp-8	5.73	11.05	8.48	170.0	0.131	0.135	22	
mcp-9	6.60	11.15	8.49	140.0	0.112	0.113	24	
mcp-10	15.67	7.18	7.04	202.9	1.157	0.915	33	
mcp-11	6.56	11.53	8.35	155.3	0.089	0.089	19	
mcp-11B	6.02	4.08	1.76	432.0	6.983	7.120	24	used only data from seep
mcp-12	7.19	11.24	8.29	175.7	0.092	0.090	32	
mcp-13	18.94	7.24	7.29	160.5	1.054	0.775	17	
mcp-14	8.22	10.60	8.16	194.6	0.049	0.047	18	
mcp-15	19.15	8.79	7.87	204.5	0.682	0.499	25	
mcp-17	12.06	10.96	7.21	171.8	0.147	0.127	17	

June 1997

Narraguinup Reservoir drainage. Stream data.

Site	ave Temp C	ave DO mg/L	ave pH	ave ORP mV	ave Cond mS/cm	ave TDS g/L	count
nar-1	13.55	2.84	7.69	210.00	1.248	1.038	14
nar-2	17.07	4.67	7.85	131.60	0.507	0.389	15
nar-3	20.82	5.89	8.32	174.56	0.905	0.639	16
nar-out	12.37	6.66	8.24	161.00	0.237	0.203	15

Summary of Fish Tissue Data from the 1999 Sampling Events

Fish Type	Sample No.	Length (in.)	Weight (g)	Total Mercury (ug/g - wet wt.)	Methylmercury (ug/g - wet wt.)	Tissue Wt. (g)	Percent Moisture	Date	Origin
McPhee Reservoir									
Smallmouth bass	MP01	15.35	760	0.6432	0.7451	85	79.3%	7/13/99	CDOW
Smallmouth bass	MP02	13.98	560	0.4118	0.3280	84	78.9%	7/13/99	CDOW
Smallmouth bass	MP03	7.09	79	0.1212	0.1019	19	79.2%	7/13/99	CDOW
Smallmouth bass	MP04	9.06	145	0.2834	0.2153	22	79.0%	7/13/99	CDOW
Smallmouth bass	MP05	4.37	15	0.1295	0.1130	2.5	80.3%	7/13/99	CDOW
Smallmouth bass	MP06	13.78	650	0.5147	0.4090	110	77.1%	7/13/99	CDOW
Smallmouth bass	MP06 (rep.)	13.78	650	0.9930	0.4889	110	77.1%	7/13/99	CDOW
Smallmouth bass	MP07	7.09	70	0.1711	0.1302	25	78.9%	7/13/99	CDOW
Smallmouth bass	MP08	11.02	310	0.1808	0.1693	50	79.5%	7/13/99	CDOW
Smallmouth bass	MP09	9.84	170	0.1978	0.1939	25	80.5%	7/13/99	CDOW
Smallmouth bass	MP10	12.60	440	0.2623	0.2514	65	77.4%	7/13/99	CDOW
Smallmouth bass	MP10 (rep.)	12.60	440	0.2597	NA	65	77.4%	7/13/99	CDOW
Black crappie	MP11	5.91	55	0.0832	0.0690	15	78.8%	7/13/99	CDOW
Black crappie	MP12	4.33	18	0.0733	0.0713	6	77.4%	7/13/99	CDOW
Black crappie	MP13	6.10	62	0.1146	0.1237	10	78.7%	7/13/99	CDOW
Yellow perch	MP14	6.30	55	0.1460	0.1557	9	77.1%	7/13/99	CDOW
Yellow perch	MP15	7.87	110	0.1416	0.1576	20	78.8%	7/13/99	CDOW
Yellow perch	MP16	6.50	68	0.2294	0.2334	10	78.4%	7/13/99	CDOW
Yellow perch	MP17	5.71	36	0.1629	0.1458	6	78.4%	7/13/99	CDOW
Yellow perch	MP18	5.91	50	0.1223	0.1031	7	77.2%	7/13/99	CDOW
Yellow perch	MP19	5.12	28	0.1112	0.0942	4	76.2%	7/13/99	CDOW
Yellow perch	MP20	4.72	18	0.0743	0.0794	3	79.8%	7/13/99	CDOW
Yellow perch	MP21	6.69	70	0.1665	NA	12	77.9%	7/13/99	CDOW
Yellow perch	MP22	7.09	90	0.1176	NA	14	78.6%	7/13/99	CDOW
Yellow perch	MP23	4.37	15	0.1140	NA	2	79.1%	7/13/99	CDOW
Rainbow trout	MP24	8.07	84	0.0308	NA	15	80.4%	7/13/99	CDOW
Rainbow trout	MP25	9.06	126	0.0264	NA	22	79.6%	7/13/99	CDOW
Rainbow trout	MP26	10.63	215	0.3078	NA	40	80.7%	7/13/99	CDOW
Rainbow trout	MP27	8.86	125	0.0268	NA	24	79.9%	7/13/99	CDOW
Rainbow trout	MP28	8.66	105	0.0280	NA	16	79.4%	7/13/99	CDOW
Rainbow trout	MP29	8.27	84	0.0392	NA	12	80.1%	7/13/99	CDOW
Rainbow trout	MP30	8.27	105	0.0246	NA	17	79.6%	7/13/99	CDOW
Narraguinnep Reservoir									
Walleye	NR01	18.11	1000	0.5914	NA	185	78.5%	7/13/99	CDOW
Walleye	NR02	16.93	750	0.5811	NA	104	74.6%	7/13/99	CDOW
Walleye	NR03	14.17	380	0.3435	NA	78	79.1%	7/13/99	CDOW
Walleye	NR04	13.39	340	0.3084	NA	62	78.6%	7/13/99	CDOW
Walleye	NR05	16.93	650	1.4977	NA	118	78.8%	7/13/99	CDOW
Walleye	NR06	16.14	625	0.7400	NA	125	78.1%	7/13/99	CDOW
Walleye	NR06 (rep.)	16.14	625	0.7416	NA	125	78.1%	7/13/99	CDOW
Walleye	NR07	15.35	550	0.5430	NA	105	78.6%	7/13/99	CDOW
Walleye	NR08	11.02	170	0.1709	NA	25	79.1%	7/13/99	CDOW
Northern pike	NR09	18.90	600	0.2215	NA	110	79.2%	7/13/99	CDOW
Northern pike	NR10	20.08	700	0.4197	NA	148	79.3%	7/13/99	CDOW
Yellow perch	NR11	11.42	400	0.1736	NA	55	76.6%	7/13/99	CDOW
Yellow perch	NR11 (rep.)	11.42	400	0.1736	NA	55	76.6%	7/13/99	CDOW
Yellow perch	NR12	11.81	455	0.1744	NA	85	76.1%	7/13/99	CDOW
Yellow perch	NR13	11.02	320	0.1250	NA	60	76.2%	7/13/99	CDOW
Yellow perch	NR14	13.58	580	0.2793	NA	100	72.9%	7/13/99	CDOW
Yellow perch	NR15	9.45	250	0.1152	NA	39	76.9%	7/13/99	CDOW
Yellow perch	NR16	7.09	85	0.1387	NA	20	77.0%	7/13/99	CDOW
Yellow perch	NR17	8.66	170	0.1397	NA	27	80.0%	7/13/99	CDOW
Yellow perch	NR18	7.48	95	0.0904	NA	16	77.5%	7/13/99	CDOW
Yellow perch	NR19	11.22	240	0.1512	NA	64	75.1%	7/13/99	CDOW
Yellow perch	NR20	9.06	175	0.1342	NA	23	76.4%	7/13/99	CDOW

Summary of Fish Tissue Data from the 1999 Sampling Events

Fish Type	Sample No.	Length (in.)	Weight (g)	Total Mercury	Methylmercury	Tissue Wt. (g)	Percent Moisture	Date	Origin
				(ug/g - wet wt.)	(ug/g - wet wt.)				
Narraguinnep Reservoir (Cont.)									
Channel catfish	NR21	24.02	2730	0.3595	NA	360	76.4%	7/13/99	CDOW
Channel catfish	NR22	23.62	2755	0.3371	NA	355	74.9%	7/13/99	CDOW
Channel catfish	NR23	19.49	1420	0.3663	NA	170	62.9%	7/13/99	CDOW
Channel catfish	NR24	16.54	885	0.3027	NA	85	73.9%	7/13/99	CDOW
Channel catfish	NR25	23.43	2445	0.4374	NA	265	75.8%	7/13/99	CDOW
Channel catfish	NR26	20.47	1640	0.3101	NA	140	69.7%	7/13/99	CDOW
Yellow perch	NR27	11.22	415	0.1619	NA	82	74.8%	7/13/99	CDOW
Yellow perch	NR28	10.43	305	0.1378	NA	60	76.1%	7/13/99	CDOW
Yellow perch	NR29	7.87	130	0.1284	NA	23	77.4%	7/13/99	CDOW
Yellow perch	NR30	7.87	125	0.1046	NA	22	77.4%	7/13/99	CDOW
Sanchez Reservoir					NA				
Northern pike (female)	SAN01	45.67	8900	1.25	NA	1000	76	10/5/99	CDOW
Northern pike (female)	SAN02	44.09	7600	1.03	NA	950	77	10/5/99	CDOW
Northern pike	SAN03	38.19	5100	1.15	NA	550	79	10/5/99	CDOW
Northern pike	SAN04	15.35	330	0.128	NA	46	80.2	10/5/99	CDOW
Northern pike	SAN05	14.96	272	0.098	NA	38	82.2	10/5/99	CDOW
Walleye	SAN06	18.90	1000	0.0993	NA	160	77.6	10/5/99	CDOW
Walleye	SAN07	18.90	1025	0.899	NA	175	75.7	10/5/99	CDOW
Walleye	SAN08	15.16	610	0.289	NA	135	73.6	10/5/99	CDOW
Walleye	SAN09	22.44	1850	0.835	NA	300	78.7	10/5/99	CDOW
Walleye	SAN10	18.31	1100	0.292	NA	209	79.4	10/5/99	CDOW
Walleye	SAN11	19.69	1250	1.58	NA	200	76	10/5/99	CDOW
Walleye	SAN12	18.11	950	0.598	NA	158	79	10/5/99	CDOW
Walleye	SAN13	18.50	1150	1.3(1.35)	NA	205	76.5	10/5/99	CDOW
Walleye	SAN14	18.90	1150	0.441	NA	218	74.9	10/5/99	CDOW
Walleye	SAN15	15.75	650	0.429	NA	116	78.4	10/5/99	CDOW
Northern pike	SAN16	20.47	800	0.362	NA	171	80	10/5/99	CDOW
Northern pike	SAN17	23.43	1070	0.328	NA	203	79.2	10/5/99	CDOW
Yellow perch	SAN18	6.89	64	0.051	NA	18	81.1	10/5/99	CDOW
Walleye	SAN19	17.32	850	0.933	NA	159	77.7	10/5/99	CDOW
Walleye	SAN20	17.13	925	0.491	NA	162	72.1	10/5/99	CDOW
Walleye	SAN21	18.50	1020	1.14	NA	175	77	10/5/99	CDOW

All samples were left fillet from one fish.

Table 1. Water quality data for Sanchez Reservoir 1999. DRAFT- Preliminary Data Only
Monitored by Colorado Water Quality Monitoring Program

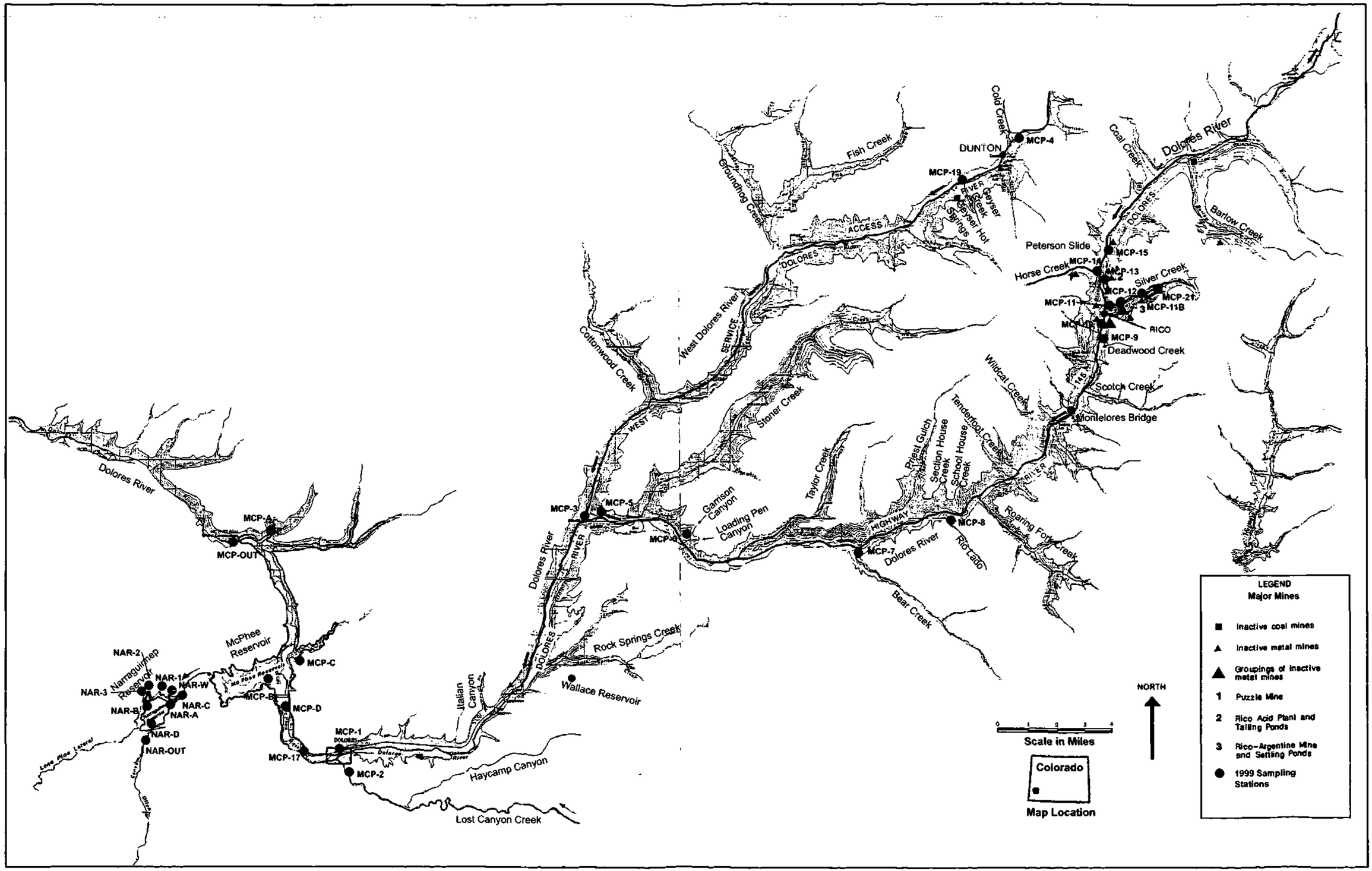
Station #	Sampling Site	Level	Date			Time	Sampling Depth (m)	Site Depth (m)	Secchi Depth (m)
8340A	Dam	Upper	July 8, 1999	37 6.488N	105 24.846W	1:50 PM	1-5	19.1	3.4
8340A Filt Blk	filt metals blank		July 8, 1999						
8340B	Dam	Lower	July 8, 1999				14-19		
8340M	Dam	Mid	July 8, 1999				6-9		
8350A	Mid lake	Upper	July 8, 1999	37 4.456N	105 24.854W	11:15 AM	0-2	6.7	3.8
8350B	Mid lake	Lower	July 8, 1999				4-6		
8350M	Mid lake	Mid	July 8, 1999				2-4		
8340A	Dam	Upper	Sept 7, 1999	37 6.631N	105 24.761W	1:10 PM	2-8	19.5	2.20
8340M	Dam	Mid	Sept 7, 1999				9-11		
8340M	Filt. Duplicate		Sept 7, 1999						
8340M	Filt Blank		Sept 7, 1999						
8340B	Dam	Lower	Sept 7, 1999				12-19		
8350A	Mid lake	Upper	Sept 7, 1999	37 4.456N	105 24.854W	11:00 AM	0-2	5.9	3.3
8350M	Mid lake	Mid	Sept 7, 1999				2-4		
8350B	Mid lake	Lower	Sept 7, 1999				3.5-5.5		

Detection Limits
LEGEND:
'-1 = Below Colorado Dept. of Health Laboratory Detection Limits

Tot. Phos (mg/l)	Total Nitrogen as N (mg/l)	Fecal coliform (#/100 ml)	pH	Total hardness (mg/l)	Total alkalinity (mg/l)	Conductivity @25 (umhos/cm)	Aluminum Total	Aluminum Diss	Silver Total	Silver dissolved (ug/l)	Cadmium Total	Cadmium dissolved (ug/l)
-1	0.06		7.63	71	80	180	58	-1	-1	-1	-1	-1
								-1		-1		-1
1.5	0.06		7.20	71	84	180	83	-1	-1	-1	-1	-1
-1	0.06		7.73	71	82	180	-1	-1	-1	-1	-1	-1
0.01	0.08		7.85	71	84	180	-1	-1	-1	-1	-1	-1
-1	0.06	4.00	7.91	71	92	180	-1	-1	-1	-1	-1	-1
-1	0.06		7.90	72	82	170	-1	-1	-1	-1	-1	-1
0.01	-1		8.4	66	80	163	-1	-1	-1	-1	-1	-1
0.02	-1		7.2	66	82	167	55	-1	-1	-1	-1	-1
				66				-1		-1		-1
								-1		-1		-1
0.14	-1		7.2	68	82	173	-1	54	-1	-1	-1	-1
0.02	-1		8	66	82	164	-1	72	-1	-1	-1	-1
0.01	-1		8	66	78	164	-1	-1	-1	-1	-1	-1
0.02	-1		7.8	66	82	165	-1	-1	-1	-1	-1	-1
< 0.01	<0.05						< 50		< 0.2	<0.2	< 0.3	< 0.3
									??	<0.2		<0.25

Copper Total	Copper dissolved (ug/l)	Iron Total (ug/l)	Iron dissolved (ug/l)	Lead Total	Lead dissolved (ug/l)	Manganese Total (ug/l)	Manganese dissolved (ug/l)	Mercury total (ug/l)	Nickel Total	Nickel Diss	Selenium Total
-1	-1	72	20	-1	-1	16	-1	-1	-1	-1	-1
	15		-1		-1		5			-1	
-1	-1	120	38	-1	-1	99	69	-1	-1	-1	-1
-1	-1	53	22	-1	-1	20	6	-1	-1	-1	-1
-1	-1	45	15	-1	-1	17	-1	-1	-1	-1	-1
-1	-1	53	15	-1	-1	18	-1	-1	-1	-1	-1
-1	-1	46	15	-1	-1	17	-1	-1	-1	-1	-1
-1	-1	43	23	-1	-1	15	-1	-1	-1	-1	-1
-1	-1	55	25	-1	-1	26	-1	-1	-1	-1	-1
	-1		25		-1		-1			-1	
	-1		-1		-1		-1			-1	
-1	-1	200	38	-1	-1	660	590	-1	-1	-1	-1
-1	15	27	24	-1	2	11	-1	-1	-1	-1	-1
-1	-1	25	16	-1	-1	12	-1	-1	-1	-1	-1
-1	-1	22	17	-1	-1	9	-1	-1	-1	-1	-1
	<4				<1		<4	<0.2	< 20		
	<4		36		<1		<4	<0.2			

Selenium dissolved (ug/l)	Zinc Total	Zinc dissolved (ug/l)	Chloride	Dissolved Solids	Suspended solids (mg/l)	Sulfate (mg/l)	NH3 (mg/l)	Sulfide (mg/l)
-1	-1	-1	-1	100	-1	7	-1	
-1		-1						
-1	53	34	-1	130	-1	7	-1	
-1	-1	-1	-1	130	-1	7	-1	
-1	-1	-1	-1	120	-1	6	-1	
-1	-1	-1	-1	120	-1	-9	-1	
-1	-1	-1	-1	120	-1	6	-1	
-1	-1	11	-1	100	-1	5	-1	
-1	-1	-1	-1	100	-1	6	0.05	
-1		-1						
-1		32						
-1	46	56	-1	110	-1	-1	0.3	-1
-1	-1	21	-1	100	-1	5	0.02	
-1	-1	64	-1	100	-1	6	0.03	
-1	11	19	-1	100	-1	6	0.03	
<1	< 10	< 10	< 50		<20	< 5	< .01	< 0.2
<1		<8			<20		< .01	



1999 Mercury Sampling Locations

~~Krumberger says Landau will call~~

~~Sanchez also sick~~

1130-1330
noon R Phil returned, but back 15 Jun
• got Keystone minutes. where is my copy?

SAP team: Mo reading it; Ginny on leave.

660: Art Varnado 1400-1530 today
Phil Stoffey
Eleanor Dwight
Greg Oberley

Send student his requested documents

---

un Call RG re Hagler-Bailly Ktr

eschneider@esacorp.com

return Rico Argentine 970.484.3611 f 4118
~~viewed~~ ESA Consultants (Ed Schneider) Project Mgr
Chuck Stilwell (MT) — former Anaconda employee
PM 2 2637 Midpt Dr. Ste F since 1980 moly geologist PG, UP
Ft Collins CO 80525-4415

July NFAD ~~action~~ requests planned
August field trip
NPDES permit transferred in '86 to Rico Dev Corp.
Grandview Smelter site not ready (no stormwater releases)

Blaine Tunnel: not zero discharge, acidic AMD

FOIA request can be ignored