Appendix 8C
Screening Analysis

8C.1 Constituent Screening Analysis

8C.1.2 Data Query

Because modeling performed in support of the Environmental Consequences impact assessments assumed no new sources of water quality constituents, water quality concerns arise primarily through altered mixing of Delta source waters. Thus, the purpose of this section is to analyze the aggregated data by individual source water locations. Therefore, the BDCP versions of the DWR and BDAT databases were queried by major source water locations (i.e., BAY, SAC, and SJR)to analyze and summarize water quality characteristics by source water. These analyses provide a convenient means to review data quality and trends and consist of three major elements: data review, summary statistics, and summary statistics for total criteria. Based on the initial public comments received on the Draft EIR/EIS released in October 2013, further query and evaluation of available data for aluminum and hexavalent chromium was performed. Dissolved and total aluminum data were identified in DWR's data collected during the period of September 2013 through July 2014. No comprehensive source water data from the Sacramento River, San Joaquin River, or Delta were identified for hexavalent chromium.

8C.1.5 Constituents Receiving Further Assessment in Screening Appendix

8C.1.5.6 PCBs (Polychlorinated biphenyls)

Polychlorinated biphenyls (PCBs) are a class of organic compounds composed of many congeners – compounds of similar chemical structure but slightly different chemical formula. As a congener class, there are 209 possible different PCBs. PCBs were used in numerous industrial applications, possibly most notably in transformers as electrical coolants and as hydraulic fluids. PCB manufacture in the United States was discontinued in 1979. Today, PCBs can enter the environment from a variety of sources such as leaking pre-1979 electrical transformers still in use, atmospheric deposition over connected watersheds, and industrial and municipal wastewater discharges.

Sensitive receptors that have the potential to be affected by PCBs are consumers of drinking water (i.e., the Municipal and Domestic Supply beneficial use), consumers of fish and shellfish (Commercial and Sport Fishing, Shellfish Harvesting), aquatic organisms (Cold, Warm, and Estuarine water fisheries), wildlife (Wildlife Habitat) and threatened and endangered species. Consumption of drinking water or organisms contaminated with PCBs is generally of greatest concern.

Applicable PCB objectives for the affected environment are as follows: California Toxics Rule (based on sum of ~~6~~ PCBs in seven commercial aroclor product mixtures 1242, 1254, 1221, 1232, 1248, 1260, and 1016) freshwater chronic criterion of 0.014 µg/L, saltwater chronic criterion of 0.03µg/L, and human health (based on consumption of water and organisms) of 0.00017 µg/L; federal and state MCLs based on the sum of PCBs of 0.5 µg/L (as decachlorobiphenyl equivalent). Segments of

the Stockton Deep Water Ship Canal at the Port of Stockton as well the western portion and northern portion of the Delta are Clean Water Action Section 303(d) listed for PCBs. Within the affected environment, the California Office of Environmental Health Hazard Assessment (OEHHA) has issued a fish consumption health advisory for the entire Delta and portions of the Sacramento River and American River inhabited by striped bass and sturgeon based on residues of PCBs found in these fish species (OEHAA 2009).

PCBs are extremely stable, and once released to the environment can cycle through various phases including water, sediment, soil, air, and biota. Although sources of loading to the Delta have not been quantified, suspension and transport of contaminated sediments is likely a dominant process. Owing to their stability, lipophilicity (i.e., affinity for accumulation in the fats of animals), and slow biodegradation rates, PCBs can bioaccumulate in the tissues of exposed organisms. Although PCB concentrations in water may be very low, the process of bioaccumulation in organisms presents a human health concern, particularly for pregnant and nursing women that consume fish and shellfish.

A study by deVlaming (2008) indicated that while high concentrations of PCBs can be found in older, fattier fish (e.g., the Sacramento Sucker, which should not be considered an appropriate model for other species because of its high lipid (i.e., fat) content and because it is unpopular for human consumption (p.1,2)) in specific regions of the Delta (north Delta, Sacramento, and Stockton), Delta PCB concentrations are generally below Office of Environmental Health Hazard Assessment (OEHHA) screening values, and generally, PCB levels in fish in the Delta are "neither extensive nor extreme" (p.2,3). The study also suggests that the results indicate that the north Delta may be eligible for 303(d) delisting (p.126).

Data, both in the form of water concentrations and toxicity testing, is insufficient to draw conclusions of impact based on the water quality criteria for these compounds. Water column measurement data for PCB compounds in Sacramento, Bay, and San Joaquin source waters contain no detections above analytical reporting limits in the data used for the Screening Analysis, but trace level analytical reporting conducted by the San Francisco Estuary Institute (SFEI 2010) that achieves extremely low detection limits suggests that PCBs are present in the Sacramento and San Joaquin Rivers in the Delta.

Leatherbarrow et al. (2005) found that PCB concentrations in Delta outflow at Mallard Island ranged from 200 to 6,700 pg/L during and after major storm events in 2002 and 2003. In their study PCB concentrations at Mallard Island fluctuated with tide, with highest PCB concentrations associated with flood tide (i.e., Bay water influenced).This observation was consistent with their hypothesis that legacy contaminants resuspended from the Bay and transported into the west Delta on a flood tide contain higher concentrations of PCBs than riverine suspended sediment being transported from the Delta into the Bay. Furthermore, the mixture of PCBs in riverine suspended sediment is indicative of stormwater runoff of relatively recent atmospherically deposited PCBs rather than resuspension of PCBs deposited in the Delta decades earlier.

It is not known whether sediment transported from the Bay into the Delta in this manner remains in the Delta, or if it is flushed back out into the Bay during storm events. It is also not possible at this time to accurately model sediment resuspension and subsequent transport in this area of the Bay-Delta. Even so, if these dynamics were to change under the alternatives, it is not possible to predict how bioaccumulation of PCBs in the Delta would be altered, if at all. Many of the larger fish that bioaccumulate PCBs to problematic levels migrate through the San Francisco Bay and the Delta, and

therefore, would likely not experience substantially different bioaccumulation if distribution of sediment high in PCBs were to change somewhat under the alternatives. Finally, because PCBs are no longer in production, the 2008 TMDL for PCBs in San Francisco Bay states that PCBs are expected to attenuate naturally and be lost through outflow from the Golden Gate (SFBRWQCB 2008:A-2).

Based on the discussion above, any changes in PCB concentrations in water or sediment that may occur upstream of the Delta, within the Delta, or in the SWP and CVP Service Area would not be of frequency, magnitude and geographic extent that would adversely affect any beneficial uses or substantially degrade the quality of the water bodies within the affected environment, with regards to PCBs.

TableSA-6. Step 1: All constituents (totaling 182) measured at boundary stations, number of times analyzed and detected, and minimum and maximum vales reported in the data set

			SAC						SJR						BAY										
Constituent	Fraction	Units	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	Lowest Min RL	Highest Max Detect	Max of Averages	Detected at any locations?	Carried Forward?
1,1,1,2-Tetrachloroethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,1,1-Trichloroethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,1,2,2-Tetrachloroethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,1,2-Trichloroethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,1-Dichloroethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,1-Dichloroethene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,1-Dichloropropene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,2,3-Trichlorobenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,2,3-Trichloropropane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,2,4-Trichlorobenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,2,4-Trimethylbenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,2-Dibromo-3-chloropropane (DBCP)	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,2-Dibromoethane (EDB)	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,2-Dichlorobenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,2-Dichloroethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,2-Dichloropropane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,3,5-Trimethylbenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,3-Dichlorobenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,3-Dichloropropane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
1,4-Dichlorobenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
2,2-Dichloropropane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
2,4-D	Total	µg/L	0	2	0.250	0	0.250	0	0	1	0.250	0	0.250	0	0	1	0.250	0	0.250	0	0.250	0	0.250	NO	Step 3
2-Chlorotoluene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
4-Chlorotoluene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
4-Isopropyltoluene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Alachlor	Total	µg/L	0	14	0.0500	0	0.0607	0.0213	0	1	0	0	0	0	0	12	0.0500	0	0.0542	0.0144	0.0500	0	0.0607	NO	Step 3
Aldrin	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
Alkalinity	Total	mg/L as CaCO3	175	175	0	86.0	58.6	10.9	0	0	0	0	0	0	266	266	0	105	69.6	12.6	0	105	69.6	YES	Step 2
Aluminum	Dissolved	µg/L	22	22	10	157	39	48	5	22	10	27	7	5	--	--	--	--	--	--	10	157	39	YES	
Aluminum	Total	µg/L	22	22	10	901	151	155	22	22	10	258	122	57	--	--	--	--	--	--	10	901	151	YES	
Ammonia	Dissolved	mg/L as N	574	576	0.00822	0.860	0.256	0.164	499	581	0	1.40	0.0795	0.125	802	803	0.0822	0.260	0.0749	0.0476	0.00822	1.40	0.256	YES	Step 2
Ammonia	Total	mg/L as N	78	78	0	0.470	0.159	0.0979	62	62	0	0.770	0.172	0.183	89	89	0	0.610	0.0865	0.0890	0	0.770	0.172	YES	Step 2
Arsenic	Dissolved	µg/L	34	85	0	2.00	0.741	0.804	55	89	0	20.0	1.44	2.22	16	25	0	3.00	1.48	1.12	0	20.0	1.48	YES	Step 2
Arsenic	Total	µg/L	15	16	0	10.0	2.44	2.13	1	1	0	20.0	20.0	0	19	19	0	10.0	4.95	3.36	0	20.0	20.0	YES	Step 2
Asbestos, Chrysotile	None	MFL	14	14	0	3200	794	882	14	14	0	3300	1150	760	2	2	0	3490	1870	2300	0	3490	1870	YES	Step 2
Atra Simazine (Atrazine & Simazine together)	Total	µg/L	1	1	0	0.0600	0.0600	0	0	0	0	0	0	0	4	4	0	0.150	0.115	0.0451	0	0.150	0.115	YES	Step 2
Atrazine	Total	µg/L	0	14	0.0200	0	0.0329	0.0289	0	1	0.100	0	0.100	0	0	12	0.0200	0	0.0217	0.00577	0.0200	0	0.100	NO	Step 3
Barium	Dissolved	µg/L	0	0	0	0	0	0	0	37	1000	0	1000	0	0	0	0	0	0	0	1000	0	1000	NO	Step 3
Benzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3

			SAC						SJR						BAY										
Constituent	Fraction	Units	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	Lowest Min RL	Highest Max Detect	Max of Averages	Detected at any locations?	Carried Forward?
BHC	Total	µg/L	0	48	0.0100	0	0.0108	0.00279	1	1	0	0.0200	0.0200	0	0	48	0.0100	0	0.0108	0.00279	0.0100	0.0200	0.0200	YES	Step 2
BHC-alpha	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
BHC-beta	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
BHC-delta	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
BHC-gamma (Lindane)	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
Biochemical Oxygen Demand (BOD)	Total	mg/L	36	36	0	2.60	1.53	0.423	0	0	0	0	0	0	71	71	0	2.80	1.23	0.459	0	2.80	1.53	YES	Step 2
Boron	Dissolved	µg/L	66	469	100	1900	106	92.9	469	483	100	1100	349	185	223	264	100	1600	517	409	100	1900	517	YES	Step 2
Bromacil	Total	µg/L	0	0	0	0	0	0	0	13	1.00	0	1.00	0	0	0	0	0	0	0	1.00	0	1.00	NO	Step 3
Bromide	Dissolved	µg/L	402	560	1.00	90.0	14.9	8.83	545	545	0	650	250	130	257	258	10.0	22600	6370	6100	1.00	22600	6370	YES	Step 2
Bromobenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Bromochloroacetic Acid (BCAA)	Total	µg/L	20	24	1.00	8.00	2.76	1.69	49	53	1.00	49.0	17.6	9.40	26	26	0	31.0	8.52	6.32	1.00	49.0	17.6	YES	Step 2
Bromochloromethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Bromodichloromethane	Total	µg/L	173	266	1.00	28.0	12.7	4.24	205	228	0.500	250	93.1	56.1	187	191	0.500	370	76.1	60.4	0.500	370	93.1	YES	Step 2
Bromoform	Total	µg/L	2	253	0.750	18.0	5.25	3.80	59	227	0.500	63.0	9.26	6.66	154	187	0.500	1400	362	266	0.500	1400	362	YES	Step 2
Bromomethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Cadmium	Dissolved	µg/L	11	12	5.00	5.00	5.00	0	0	0	0	0	0	0	14	14	0	10.0	5.71	1.82	5.00	10.0	5.71	YES	Step 2
Cadmium	Total	µg/L	12	13	5.00	5.00	5.00	0	1	1	0	10.0	10.0	0	18	18	0	20.0	7.22	3.92	5.00	20.0	10.0	YES	Step 2
Calcium	Dissolved	µg/L	190	190	0	17000	11700	2050	0	0	0	0	0	0	304	304	0	249000	51900	36700	0	249000	51900	YES	Step 2
Captafol	Total	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.0200	0.0200	0	0	0.0200	0.0200	YES	Step 2
Captan	Total	µg/L	0	14	0.0200	0	0.0614	0.128	0	1	0.100	0	0.100	0	0	12	0.0200	0	0.0217	0.00577	0.0200	0	0.100	NO	Step 3
Carbaryl	Total	µg/L	0	2	2.00	0	2.00	0	0	1	2.00	0	2.00	0	0	0	0	0	0	0	2.00	0	2.00	NO	Step 3
Carbofuran	Total	µg/L	0	2	0.500	0	0.500	0	0	1	0.500	0	0.500	0	0	1	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Carbon tetrachloride	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Chlordane	Total	µg/L	0	12	0.0500	0	0.0542	0.0144	0	0	0	0	0	0	0	12	0.0500	0	0.0542	0.0144	0.0500	0	0.0542	NO	Step 3
Chloride	Dissolved	µg/L	866	866	0	33000	6380	2690	844	844	0	221000	81400	43600	820	820	0	12600000	3750000	3380000	0	12600000	3750000	YES	Step 2
Chloride	Total	µg/L	85	85	0	18000	7680	3170	85	85	0	383000	134000	96800	173	173	0	14700000	5300000	4260000	0	14700000	5300000	YES	Step 2
Chlorobenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Chloroethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Chloroform	Total	µg/L	256	256	0	1100	228	124	205	228	0.500	1400	277	175	123	194	0.750	700	81.2	136	0.500	1400	277	YES	Step 2
Chloromethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Chlorophyll a	Total	µg/L	609	610	0.0500	38.6	2.63	3.08	471	471	0	499	31.1	51.4	963	964	0.0500	49.4	4.14	5.92	0.0500	499	31.1	YES	Step 2
Chlorothalonil	Total	µg/L	0	10	0.0100	0	0.0110	0.00316	0	0	0	0	0	0	0	10	0.0100	0	0.0110	0.00316	0.0100	0	0.0110	NO	Step 3
Chlorpropham	Total	µg/L	0	10	0.0200	0	0.0220	0.00632	0	0	0	0	0	0	0	10	0.0200	0	0.0220	0.00632	0.0200	0	0.0220	NO	Step 3
Chlorpyrifos	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	13	0.0100	0	0.0100	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
Chromium	Dissolved	µg/L	12	13	5.00	10.0	5.77	1.88	0	0	0	0	0	0	15	15	0	10.0	6.33	2.29	5.00	10.0	6.33	YES	Step 2
Chromium	Total	µg/L	17	18	5.00	10.0	6.67	2.43	6	6	0	10.0	10.0	0	27	27	0	30.0	11.0	7.44	5.00	30.0	11.0	YES	Step 2
cis-1,2-Dichloroethene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
cis-1,3-Dichloropropene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Clostridium perfringens	Total	CFU/100ml	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NO	Step 3
Color	Total	Color Units	195	200	5.00	150	21.8	24.7	152	153	5.00	406	30.0	37.0	151	151	0	150	30.0	21.7	5.00	406	30.0	YES	Step 2
Conductance (EC)	None	µS/cm	748	748	0	1230	157	59.3	666	666	0	1550	650	274	313	313	0	18500	6210	5110	0	18500	6210	YES	Step 2
Copper	Dissolved	µg/L	28	79	1.00	10.0	5.13	2.07	51	121	1.00	20.0	4.52	2.41	26	27	1.00	149	14.6	27.5	1.00	149	14.6	YES	Step 2
Copper	Total	µg/L	32	32	0	30.0	11.6	7.87	7	7	0	40.0	15.7	11.3	40	40	0	478	27.7	74.2	0	478	27.7	YES	Step 2
Cryptosporidium	None	Cysts/100L	0	11	10.0	0	10.0	0	0	11	10.0	0	10.0	0	0	0	0	0	0	0	10.0	0	10.0	NO	Step 3
Dacthal (DCPA)	Total	µg/L	0	14	0.0100	0	0.0236	0.0325	1	1	0	0.480	0.480	0	0	13	0.0100	0	0.0177	0.0249	0.0100	0.480	0.480	YES	Step 2

			SAC						SJR						BAY										
Constituent	Fraction	Units	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	Lowest Min RL	Highest Max Detect	Max of Averages	Detected at any locations?	Carried Forward?
Diazinon	Total	µg/L	0	2	0.100	0	0.300	0.283	0	14	0.0100	0	0.0450	0.131	0	0	0	0	0	0	0.0100	0	0.300	NO	Step 3
Dibromoacetic Acid (DBAA)	Total	µg/L	0	24	1.00	0	1.00	0	21	53	1.00	23.0	5.25	6.26	15	26	1.00	110	31.4	32.8	1.00	110	31.4	YES	Step 2
Dibromochloromethane	Total	µg/L	6	258	0.500	13.0	6.73	3.49	163	225	0.500	180	46.0	36.3	164	197	0.500	590	189	125	0.500	590	189	YES	Step 2
Dibromomethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Dichloran	Total	µg/L	0	10	0.0100	0	0.0110	0.00316	0	0	0	0	0	0	0	10	0.0100	0	0.0110	0.00316	0.0100	0	0.0110	NO	Step 3
Dichloroacetic Acid (DCAA)	Total	µg/L	24	24	0	54.0	26.6	11.5	53	53	0	140	49.6	26.0	25	26	1.00	130	21.8	28.0	1.00	140	49.6	YES	Step 2
Dichlorodifluoromethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Dicofol	Total	µg/L	0	12	0.0100	0	0.0150	0.0117	0	0	0	0	0	0	0	12	0.0100	0	0.0175	0.0154	0.0100	0	0.0175	NO	Step 3
Dieldrin	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
Diuron	Total	µg/L	0	11	0.0500	0	0.0545	0.0151	0	0	0	0	0	0	0	11	0.0500	0	0.0573	0.0168	0.0500	0	0.0573	NO	Step 3
Endosulfan (mixed isomers)	Total	µg/L	0	12	0.0100	0	0.0125	0.00452	0	0	0	0	0	0	0	12	0.0100	0	0.0125	0.00452	0.0100	0	0.0125	NO	Step 3
Endosulfan-I	Total	µg/L	0	24	0.0100	0	0.0108	0.00282	0	0	0	0	0	0	0	24	0.0100	0	0.0108	0.00282	0.0100	0	0.0108	NO	Step 3
Endosulfan-II	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
Endrin	Total	µg/L	0	24	0.0100	0	0.0108	0.00282	0	0	0	0	0	0	0	24	0.0100	0	0.0108	0.00282	0.0100	0	0.0108	NO	Step 3
Endrin aldehyde	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
Escherichiacoli	Total	MPN/100ml	8	14	1.00	50.4	10.3	14.1	11	17	1.00	3440	402	919	11	11	0	78.2	18.2	20.9	1.00	3440	402	YES	Step 2
Ethyl benzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Fecal Coliform	Total	MPN	0	5	1.00	0	1.00	0	0	5	1.00	0	1.00	0	0	0	0	0	0	0	1.00	0	1.00	NO	Step 3
Fluorescence	Total	Fluorescence Uni	11	11	0	4.38	0.257	0.826	0	0	0	0	0	0	182	182	0	56.7	14.3	15.3	0	56.7	14.3	YES	Step 2
Giardia lamblia	Total	Cysts/100L	0	11	10.0	0	10.0	0	0	11	10.0	0	10.0	0	0	0	0	0	0	0	10.0	0	10.0	NO	Step 3
Hardness	Dissolved	mg/L as CaCO3	0	0	0	0	0	0	146	146	0	247	133	51.8	70	70	0	1710	586	520	0	1710	586	YES	Step 2
Hardness	Total	mg/L as CaCO3	189	189	0	84.0	56.2	11.3	372	372	0	347	147	61.3	234	234	0	2520	719	578	0	2520	719	YES	Step 2
Heptachlor	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
Hexachlorobutadiene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Iron	Dissolved	µg/L	39	39	0	110	31.5	21.3	9	9	0	50.0	25.6	15.1	37	37	0	100	21.3	24.8	0	110	31.5	YES	Step 2
Iron	Total	µg/L	42	42	0	3700	849	656	9	9	0	8400	3690	2520	49	49	0	3200	997	705	0	8400	3690	YES	Step 2
Isopropylbenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Kjeldahl Nitrogen	Total	mg/L as N	629	630	0.100	1.50	0.502	0.210	608	611	0.100	3.40	0.837	0.429	927	927	0	2.10	0.422	0.176	0.100	3.40	0.837	YES	Step 2
Lead	Dissolved	µg/L	13	14	5.00	10.0	5.71	1.82	1	1	0	10.0	10.0	0	12	12	0	12.0	5.58	2.02	5.00	12.0	10.0	YES	Step 2
Lead	Total	µg/L	17	18	5.00	10.0	6.39	2.30	1	1	0	10.0	10.0	0	16	16	0	270	27.7	67.6	5.00	270	27.7	YES	Step 2
m + p Xylene	Total	µg/L	0	0	0	0	0	0	0	1	0.500	0	0.500	0	0	0	0	0	0	0	0.500	0	0.500	NO	Step 3
Magnesium	Dissolved	µg/L	190	190	0	10000	6530	1560	517	517	0	40000	16100	7100	304	304	0	461000	136000	116000	0	461000	136000	YES	Step 2
Malathion	Total	µg/L	0	0	0	0	0	0	0	13	0.0100	0	0.0100	0	0	0	0	0	0	0	0.0100	0	0.0100	NO	Step 3
Manganese	Dissolved	µg/L	28	28	0	29.0	11.7	5.45	9	9	0	710	158	213	25	25	0	32.0	9.72	6.17	0	710	158	YES	Step 2
Manganese	Total	µg/L	42	42	0	80.0	27.7	13.1	9	9	0	950	297	290	48	48	0	100	31.0	18.3	0	950	297	YES	Step 2
MCPA	Total	µg/L	0	1	50.0	0	50.0	0	0	0	0	0	0	0	0	1	50.0	0	50.0	0	50.0	0	50.0	NO	Step 3
Mercury	Dissolved	µg/L	0	1	1.00	0	1.00	0	0	2	1.00	0	1.00	0	0	0	0	0	0	0	1.00	0	1.00	NO	Step 3
Mercury	Total	µg/L	14	15	1.00	1.00	0.773	0.392	5	5	0	0.200	0.120	0.0447	20	20	0	1.00	0.650	0.441	1.00	1.00	0.773	YES	Step 2
Methamidophos	Total	µg/L	0	1	1.00	0	1.00	0	0	0	0	0	0	0	0	1	1.00	0	1.00	0	1.00	0	1.00	NO	Step 3
Methoxychlor	Total	µg/L	1	13	0.0100	0.0900	0.0208	0.0236	0	0	0	0	0	0	0	12	0.0100	0	0.0175	0.0154	0.0100	0.0900	0.0208	YES	Step 2

Constituent	Fraction	Units	SAC						SJR						BAY						Lowest Min RL	Highest Max Detect	Max of Averages	Detected at any locations?	Carried Forward?
			# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev					
Methyl tert-butyl ether (MTBE)	Total	µg/L	4	13	1.00	5.00	1.52	1.22	3	207	0.500	2.80	1.01	0.141	0	50	0.500	0	0.980	0.0990	0.500	5.00	1.52	YES	Step 2
Methylene chloride	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Molinate	Total	µg/L	0	1	0.500	0	0.500	0	0	0	0	0	0	0	0	1	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Monobromoacetic Acid (MBAA)	Total	µg/L	2	24	1.00	1.10	1.00	0.0204	9	53	1.00	2.80	1.21	0.461	13	26	1.00	6.50	2.43	1.84	1.00	6.50	2.43	YES	Step 2
Monochloroacetic Acid (MCAA)	Total	µg/L	0	24	1.00	0	1.00	0	0	53	1.00	0	1.11	0.375	0	25	1.00	0	1.04	0.200	1.00	0	1.11	NO	Step 3
m-Xylene	Total	µg/L	0	6	0.500	0	0.500	0	0	32	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Naphthalene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
n-Butylbenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Nickel	Dissolved	µg/L	0	0	0	0	0	0	1	39	5.00	10.0	5.13	0.801	0	0	0	0	0	0	5.00	10.0	5.13	YES	Step 2
Nitrate	Dissolved	mg/L as N	365	366	0.0226	2.80	0.188	0.271	392	392	0	9.79	1.49	0.797	165	165	0	1.85	0.419	0.206	0.0226	9.79	1.49	YES	Step 2
Nitrite	Dissolved	mg/L as N	629	637	0.0100	0.790	0.144	0.0871	626	628	0.0100	4.60	1.33	0.697	944	946	0.0100	1.60	0.333	0.153	0.0100	4.60	1.33	YES	Step 2
Nitrite + Nitrate	Dissolved	mg/L as N	629	637	0.0100	0.790	0.144	0.0871	608	610	0.0100	4.60	1.36	0.669	936	938	0.0100	1.60	0.336	0.150	0.0100	4.60	1.36	YES	Step 2
n-Propylbenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Organic Carbon	Dissolved	mg/L as C	753	755	0.100	7.90	2.02	0.737	568	568	0	11.4	3.49	1.30	268	268	0	11.0	2.55	1.05	0.100	11.4	3.49	YES	Step 2
Organic Carbon	Total	mg/L as C	562	564	0.100	11.0	2.33	1.13	452	452	0	14.9	4.39	1.77	152	152	0	6.60	2.68	1.04	0.100	14.9	4.39	YES	Step 2
Organic Nitrogen	Dissolved	mg/L as N	488	503	0.100	1.00	0.200	0.132	483	483	0	1.80	0.370	0.193	822	824	0.100	1.40	0.238	0.106	0.100	1.80	0.370	YES	Step 2
Organic Nitrogen	Total	mg/L as N	78	78	0	1.39	0.262	0.164	79	79	0	2.00	0.928	0.444	142	142	0	1.20	0.333	0.174	0	2.00	0.928	YES	Step 2
Oxygen	Dissolved	mg/L	955	955	0	834	9.73	26.6	479	479	0	22.3	8.93	2.35	937	937	0	11.3	8.26	2.07	0	834	9.73	YES	Step 2
o-Xylene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
p,p'-DDD	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
p,p'-DDE	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
p,p'-DDT	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
Parathion (Ethyl)	Total	µg/L	0	2	0.100	0	0.300	0.283	0	14	0.0100	0	0.0450	0.131	0	0	0	0	0	0	0.0100	0	0.300	NO	Step 3
Parathion, Methyl	Total	µg/L	0	2	0.100	0	0.300	0.283	0	14	0.0100	0	0.0450	0.131	0	1	0.500	0	0.500	0	0.0100	0	0.500	NO	Step 3
PCB-1016	Total	µg/L	0	12	0.100	0	0.108	0.0289	0	0	0	0	0	0	0	12	0.100	0	0.108	0.0289	0.100	0	0.108	NO	Step 3
PCB-1221	Total	µg/L	0	12	0.100	0	0.108	0.0289	0	0	0	0	0	0	0	12	0.100	0	0.108	0.0289	0.100	0	0.108	NO	Step 3
PCB-1232	Total	µg/L	0	12	0.100	0	0.108	0.0289	0	0	0	0	0	0	0	12	0.100	0	0.108	0.0289	0.100	0	0.108	NO	Step 3
PCB-1242	Total	µg/L	0	12	0.100	0	0.108	0.0289	0	0	0	0	0	0	0	12	0.100	0	0.108	0.0289	0.100	0	0.108	NO	Step 3
PCB-1248	Total	µg/L	0	12	0.100	0	0.108	0.0289	0	0	0	0	0	0	0	12	0.100	0	0.108	0.0289	0.100	0	0.108	NO	Step 3
PCB-1254	Total	µg/L	0	12	0.100	0	0.108	0.0289	0	0	0	0	0	0	0	12	0.100	0	0.108	0.0289	0.100	0	0.108	NO	Step 3
PCB-1260	Total	µg/L	0	12	0.100	0	0.108	0.0289	0	0	0	0	0	0	0	12	0.100	0	0.108	0.0289	0.100	0	0.108	NO	Step 3
Pentachloronitrobenzene (PCNB)	Total	µg/L	0	12	0.0100	0	0.0108	0.00289	0	0	0	0	0	0	0	12	0.0100	0	0.0108	0.00289	0.0100	0	0.0108	NO	Step 3
pH	None	pH Units	809	809	0	8.50	7.29	0.427	795	795	0	10.7	7.61	0.559	830	830	0	8.60	7.76	0.348	0	369	7.76	YES	Step 2
Pheophytin a	Total	µg/L	607	610	0.0100	10.8	1.71	1.39	471	471	0	168	11.9	15.3	954	957	0	27.0	2.46	2.81	0.0100	168	11.9	YES	Step 2
Phosphorus	Dissolved	µg/L as P	523	523	0	6.52	0.0803	0.284	502	502	0	0.450	0.106	0.0553	738	738	0	0.210	0.0788	0.0296	0	6.52	0.106	YES	Step 2
Phosphorus	Total	µg/L as P	537	537	0	330	109	45.2	515	515	0	970	233	117	756	756	0	1400	142	77.7	0	1400	233	YES	Step 2
Potassium	Dissolved	µg/L	187	187	0	3900	1400	382	0	0	0	0	0	0	282	282	0	134000	37800	35100	0	134000	37800	YES	Step 2
Propanil	Total	µg/L	0	2	0.100	0	0.300	0.283	0	0	0	0	0	0	0	0	0	0	0	0	0.100	0	0.300	NO	Step 3
Propham	Total	µg/L	0	2	2.00	0	2.00	0	0	0	0	0	0	0	0	0	0	0	0	0	2.00	0	2.00	NO	Step 3
p-Xylene	Total	µg/L	0	6	0.500	0	0.500	0	0	32	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
sec-Butylbenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Secchi	Total	cm	501	501	0	300	75.1	37.7	95	95	0	76.0	26.0	20.7	972	972	0	208	48.8	24.8	0	300	75.1	YES	Step 2
Selenium	Dissolved	µg/L	2	75	1.00	1.00	1.00	0	163	217	1.00	7.00	2.00	1.36	0	15	1.00	0	1.00	0	1.00	7.00	2.00	YES	Step 2

Constituent	Fraction	Units	SAC						SJR						BAY						Lowest Min RL	Highest Max Detect	Max of Averages	Detected at any locations?	Carried Forward?
			# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev	# Detects	# Measured	Non-Detect Min RL	Max Detect	Average	Stdev					
Selenium	Total	µg/L as P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NO	Step 3
Silica (SiO2)	Dissolved	mg/L	515	515	0	23.6	17.1	2.06	485	485	0	28.0	15.1	3.09	858	858	0	23.3	11.3	3.50	0	28.0	17.1	YES	Step 2
Simazine	Total	µg/L	0	12	0.0200	0	0.0217	0.00577	0	0	0	0	0	0	0	12	0.0200	0	0.0217	0.00577	0.0200	0	0.0217	NO	Step 3
Sodium	Dissolved	µg/L	224	224	0	19000	10000	3130	0	0	0	0	0	0	313	313	0	3320000	1060000	917000	0	3320000	1060000	YES	Step 2
Total Dissolved Solids	Total Dissolved	mg/L	889	889	0	414	99.0	23.7	871	871	0	1150	379	183	943	943	0	25300	7620	6730	0	25300	7620	YES	Step 2
Total Suspended Solids	Total Suspended	mg/L	515	515	0	264	22.7	29.5	487	487	0	296	63.7	41.0	860	860	0	569	35.9	33.4	0	569	63.7	YES	Step 2
Volatile Suspended Solids	Volatile Suspended	mg/L	485	492	1.00	22.0	3.25	2.66	487	487	0	31.0	8.56	5.19	842	847	1.00	46.0	5.06	3.46	1.00	46.0	8.56	YES	Step 2
Styrene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Sulfate	Dissolved	µg/L	172	172	0	19000	8590	3260	517	517	0	251000	82400	42700	263	264	1000	874000	250000	230000	1000	874000	250000	YES	Step 2
tert-Butylbenzene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Tetrachloroethene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Thiobencarb	Total	µg/L	0	12	0.0200	0	0.102	0.186	0	1	0.500	0	0.500	0	0	11	0.0200	0	0.0655	0.144	0.0200	0	0.500	NO	Step 3
Toluene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Total Coliform	None	MPN	0	5	1.00	0	1.00	0	0	5	1.00	0	1.00	0	0	0	0	0	0	0	1.00	0	1.00	NO	Step 3
Toxaphene	Total	µg/L	0	12	0.200	0	0.217	0.0577	0	0	0	0	0	0	0	12	0.200	0	0.217	0.0577	0.200	0	0.217	NO	Step 3
trans-1,2-Dichloroethene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
trans-1,3-Dichloropropene	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Trichloroacetic Acid (TCAA)	Total	µg/L	24	24	0	88.0	28.3	21.3	53	53	0	190	58.1	42.2	21	26	1.00	160	22.9	33.9	1.00	190	58.1	YES	Step 2
Trichloroethene	Total	µg/L	0	4	0.500	0	0.500	0	0	32	0.500	0	0.500	0	0	5	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Trichlorofluoromethane	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Turbidity	None	NTU	1239	1239	0	194	15.9	19.1	1105	1105	0	196	22.8	15.5	1229	1229	0	360	21.4	18.7	0	360	22.8	YES	Step 2
Unknown hydrocarbon	Total	µg/L	4	4	0	0.0300	0.0200	0.00816	2	2	0	0.110	0.0800	0.0424	1	1	0	0.220	0.220	0	0	0.220	0.220	YES	Step 2
UV Absorbance @254nm	None	absorbance/cm	230	230	0	0.219	0.0591	0.0295	0	0	0	0	0	0	258	258	0	0.295	0.0842	0.0391	0	0.295	0.0842	YES	Step 2
Vinyl chloride	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
Water Temperature	None	°C	973	973	0	34.6	16.3	5.14	486	486	0	28.0	17.8	5.44	979	979	0	24.0	16.8	4.36	0	34.6	17.8	YES	Step 2
Yttrium	Dissolved	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	5	100	0	860	767	100	0	860	NO	Step 3
Zinc	Dissolved	µg/L	23	23	0	12.0	8.78	2.26	34	43	5.00	120	15.7	20.0	26	26	0	163	15.2	30.4	5.00	163	15.7	YES	Step 2
Zinc	Total	µg/L	35	35	0	30.0	11.7	5.73	9	9	0	60.0	25.6	18.1	40	40	0	590	30.2	91.7	0	590	30.2	YES	Step 2
Totals																									
PCBs (Polychlorinated biphenyls)	Total	µg/L	0	12	0.100	0	0.108	0.0289	0	0	0	0	0	0	0	12	0.100	0	0.108	0.0289	0.100	0	0.108	NO	Step 3
Haloacetic acids	Total	µg/L	24	24	1.00	144	57.5	32.5	53	53	1.00	330	113	63.7	26	26	1.00	141	61.4	26.7	1.00	330	113	YES	Step 2
Total Trihalomethanes	Total	µg/L	253	256	0.500	1110	236	129	205	206	0.500	1470	462	176	188	188	0.500	1640	518	212	0.500	1640	518	YES	Step 2
Xylenes	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3
PAHs	Total	µg/L	0	6	0.500	0	0.500	0	0	33	0.500	0	0.500	0	0	8	0.500	0	0.500	0	0.500	0	0.500	NO	Step 3

Table SA-7. Step 2: All Constituents (Totaling 65) that were Detected at Least Once at a Source Water Monitoring Location

Detected Constituents	Fraction	Units	Criteria	Maximum Detect	Exceeds Water Quality Objective or Criteria	2010 303(d) listed	Concern Based on Professional Judgment	Concern Based on Public Scoping	Carried Forward?	Altered Water Quality (e.g., degradation) Possible
Alkalinity	Total	mg/L as CaCO3	None	105					NO	
Aluminum	Dissolved	µg/L	87	157	X		X		Step 5	YES
Aluminum	Total	µg/L	200	901	X	X	X		Step 5	YES
Ammonia	Dissolved	mg/L as N	25	1.40			X	X	Step 5	NO
Ammonia	Total	mg/L as N	25	0.770			X	X	Step 5	NO
Arsenic	Dissolved	µg/L	10	20.0	X		X		Step 5	YES
Arsenic	Total	µg/L	10	20.0	X		X		Step 5	YES
Asbestos, Chrysotile	None	MFL	7	3,490	X				Step 5	
Atra Simazine (Atrazine & Simazine together)	Total	µg/L	None	0.150					NO	
BHC	Total	µg/L	None	0.0200		X			Step 5	
Biochemical Oxygen Demand (BOD)	Total	mg/L	None	2.80					NO	
Boron	Dissolved	µg/L	800	1,900	X	X	X	X	Step 5	YES
Bromide	Dissolved	µg/L	None	22,600			X	X	Step 5	
Bromochloroacetic Acid (BCAA)	Total	µg/L	None	49.0					NO	
Bromodichloromethane	Total	µg/L	0.56	370	X				Step 5	
Bromoform	Total	µg/L	4.3	1,400	X				Step 5	
Cadmium	Dissolved	µg/L	1.1	10.0	X		X	X	Step 5	
Cadmium	Total	µg/L	1.1	20.0	X		X	X	Step 5	
Calcium	Dissolved	µg/L	None	249,000					NO	
Captafol	Total	µg/L	None	0.0200					NO	
Chloride	Dissolved	µg/L	250,000	12,600,000	X	X	X		Step 5	

Detected Constituents	Fraction	Units	Criteria	Maximum Detect	Exceeds Water Quality Objective or Criteria	2010 303(d) listed	Concern Based on Professional Judgment	Concern Based on Public Scoping	Carried Forward?	Altered Water Quality (e.g., degradation) Possible
Chloride	Total	µg/L	250,000	14,700,000	X	X	X		Step 5	
Chloroform	Total	µg/L	None	1,400					NO	
Chlorophyll a	Total	µg/L	None	499					NO	
Chromium	Dissolved	µg/L	50	10.0					NO	YES
Chromium	Total	µg/L	50	30.0					NO	YES
Color	Total	Color Units	15	406	X				Step 5	
Conductance (EC)	None	µS/cm	900	18,500	X	X	X		Step 5	
Copper	Dissolved	µg/L	3.1	149	X	X	X		Step 5	
Copper	Total	µg/L	3.1	478	X	X	X		Step 5	
Dacthal (DCPA)	Total	µg/L	None	0.480					NO	
Dibromoacetic Acid (DBAA)	Total	µg/L	60	110	X				Step 5	YES
Dibromochloromethane	Total	µg/L	0.401	590	X				Step 5	
Dichloroacetic Acid (DCAA)	Total	µg/L	60	140	X				Step 5	YES
Escherichiacoli	Total	MPN/100ml	None	3,440		X	X		Step 5	
Fluorescence	Total	Fluoresence Uni	None	56.7					NO	
Hardness	Dissolved	mg/L as CaCO3	None	1,710					NO	
Hardness	Total	mg/L as CaCO3	None	2,520					NO	
Iron	Dissolved	µg/L	300	110					NO	YES
Iron	Total	µg/L	300	8,400	X				Step 5	YES
Kjeldahl Nitrogen	Total	mg/L as N	None	3.40					NO	
Lead	Dissolved	µg/L	2.5	12.0	X		X		Step 5	
Lead	Total	µg/L	2.5	270	X		X		Step 5	
Magnesium	Dissolved	µg/L	None	461,000					NO	

Detected Constituents	Fraction	Units	Criteria	Maximum Detect	Exceeds Water Quality Objective or Criteria	2010 303(d) listed	Concern Based on Professional Judgment	Concern Based on Public Scoping	Carried Forward?	Altered Water Quality (e.g., degradation) Possible
Manganese	Dissolved	µg/L	50	710	X				Step 5	
Manganese	Total	µg/L	50	950	X				Step 5	
Mercury	Total	µg/L	0.025	1.00	X	X	X		Step 5	
Methoxychlor	Total	µg/L	30	0.0900					NO	NO
Methyl tert-butyl ether (MTBE)	Total	µg/L	5	5.00					NO	YES
Monobromoacetic Acid (MBAA)	Total	µg/L	60	6.50					NO	NO
Nickel	Dissolved	µg/L	8.2	10.0	X	X	X	X	Step 5	YES
Nitrate	Dissolved	mg/L as N	10	9.79			X	X	Step 5	YES
Nitrite	Dissolved	mg/L as N	1	4.60	X				Step 5	
Nitrite + Nitrate	Dissolved	mg/L as N	10	4.60			X	X	Step 5	YES
Organic Carbon	Dissolved	mg/L as C	2	11.4	X		X	X	Step 5	
Organic Carbon	Total	mg/L as C	2	14.9	X		X	X	Step 5	
Organic Nitrogen	Dissolved	mg/L as N	None	1.80					NO	
Organic Nitrogen	Total	mg/L as N	None	2.00					NO	
Oxygen	Dissolved	mg/L	7	834	X	X		X	Step 5	
pH	None	pH Units	6.5	10.7	X				Step 5	
Pheophytin a	Total	µg/L	None	168					NO	
Phosphorus	Dissolved	µg/L as P	None	6.52			X	X	Step 5	
Phosphorus	Total	µg/L as P	None	1400			X	X	Step 5	
Potassium	Dissolved	µg/L	None	134,000					NO	
Secchi	Total	cm	None	300					NO	
Selenium	Dissolved	µg/L	4	7.00	X	X	X	X	Step 5	YES
Silica (SiO2)	Dissolved	mg/L	None	28.0					NO	
Sodium	Dissolved	µg/L	None	3,320,000					NO	

Detected Constituents	Fraction	Units	Criteria	Maximum Detect	Exceeds Water Quality Objective or Criteria	2010 303(d) listed	Concern Based on Professional Judgment	Concern Based on Public Scoping	Carried Forward?	Altered Water Quality (e.g., degradation) Possible
Total Dissolved Solids	Total Dissolved	mg/L	500	25,300	X	X	X		Step 5	
Total Suspended Solids	Total Suspended	mg/L	None	569			X		Step 5	
Volatile Suspended Solids	Volatile Suspended	mg/L	None	46.0			X		Step 5	
Sulfate	Dissolved	µg/L	250,000	874,000	X				Step 5	
Trichloroacetic Acid (TCAA)	Total	µg/L	60	190	X				Step 5	YES
Turbidity	None	NTU	5	360	X		X	X	Step 5	
Unknown hydrocarbon	Total	µg/L	None	0.220					NO	
UV Absorbance @254nm	None	absorbance/ cm	None	0.295					NO	
Water Temperature	None	°C	None	34.6			X	X	Step 5	
Zinc	Dissolved	µg/L	81	163	X	X	X		Step 5	YES
Zinc	Total	µg/L	81	590	X	X	X		Step 5	YES
Haloacetic acids	Total	µg/L	60	330	X		X		Step 5	
Total Trihalomethanes	Total	µg/L	80	1,640	X		X		Step 5	

Table SA-10. Step 5: Determination of whether constituents detected at least once at a source water monitoring location (totaling 39) will be assessed quantitatively.

Detected Constituents of Concern	Measured at all locations	# Measured Exceeds Threshold at Each Location [1]	# Detects Exceeds Threshold at Each Location [2]	Adequate Delta Modeling Tools	Modeling Needed for Impact Assessment	Type of Assessment
Aluminum						Qualitative
Ammonia	X	X	X			Qualitative
Arsenic	X	X	X	X		Qualitative
Asbestos, Chrysotile	X					Qualitative
BHC	X					Qualitative
Boron	X	X	X	X	X	Quantitative
Bromide	X	X	X	X	X	Quantitative
Bromodichloromethane	X	X	X			Qualitative
Bromoform	X	X				Qualitative
Cadmium	X			X		Qualitative
Chloride	X	X	X	X	X	Quantitative
Color	X	X	X			Qualitative
Conductance (EC)	X	X	X	X	X	Quantitative
Copper	X	X	X	X		Qualitative
Dibromoacetic Acid (DBAA)	X	X				Qualitative
Dibromochloromethane	X	X				Qualitative
Dichloroacetic Acid (DCAA)	X	X	X			Qualitative
Escherichiacoli	X	X				Qualitative
Lead	X			X		Qualitative
Manganese	X			X		Qualitative
Mercury	X			X	X	Qualitative
Nickel				X		Qualitative
Nitrate	X	X	X			Qualitative
Nitrite	X	X	X			Qualitative
Nitrite + Nitrate	X	X	X			Qualitative
Organic Carbon	X	X	X	X	X	Quantitative
Oxygen	X	X	X			Qualitative
pH	X	X	X			Qualitative
Phosphorus	X	X	X			Qualitative
Selenium	X	X	X [3]	X	X	Quantitative
Total Dissolved Solids	X	X	X	X	X	Quantitative
Total Suspended Solids	X	X	X			Qualitative
Volatile Suspended Solids	X	X	X			Qualitative
Sulfate	X	X	X	X		Qualitative
Trichloroacetic Acid (TCAA)	X	X	X			Qualitative
Turbidity	X	X	X			Qualitative
Water Temperature	X	X	X	X		Qualitative
Zinc	X	X	X	X		Qualitative
Haloacetic acids	X	X	X			Qualitative
Total Trihalomethanes	X	X	X			Qualitative

[1] Threshold was at least 10 measurements at each location.
[2] Threshold was at least 10 detects at a single location.
[3] Additional data not included in the original Screening Analysis database allowed for a quantitative assessment for selenium

Table SA-11. Step 6 Water quality constituents (totaling 72) for which detailed assessments were performed

Constituents Carried Forward for Further Analysis	Quantitative	Qualitative	Location of Assessment
Aluminum		X	Trace Metals
Ammonia		X	Ammonia
Boron	X		Boron
Bromide	X		Bromide
Chloride	X		Chloride
Oxygen		X	Dissolved Oxygen
Conductance (EC)	X		Electrical Conductivity (EC)/TDS
Total Dissolved Solids	X		Electrical Conductivity (EC)/TDS
Mercury	X		Mercury
Nitrate	X	X	Nitrate
Nitrite		X	Nitrate
Nitrite + Nitrate		X	Nitrate
Bromodichloromethane		X	Organic Carbon (DOC/TOC)
Bromoform		X	Organic Carbon (DOC/TOC)
Dibromoacetic Acid (DBAA)		X	Organic Carbon (DOC/TOC)
Dibromochloromethane		X	Organic Carbon (DOC/TOC)
Dichloroacetic Acid (DCAA)		X	Organic Carbon (DOC/TOC)
Organic Carbon	X		Organic Carbon (DOC/TOC)
Trichloroacetic Acid (TCAA)		X	Organic Carbon (DOC/TOC)
Haloacetic acids		X	Organic Carbon (DOC/TOC)
Total Trihalomethanes		X	Organic Carbon (DOC/TOC)
Cryptosporidium		X	Pathogens
Escherichiacoli		X	Pathogens
Aldrin		X	Pesticides and Herbicides
BHC		X	Pesticides and Herbicides
BHC-alpha		X	Pesticides and Herbicides
BHC-beta		X	Pesticides and Herbicides
BHC-delta		X	Pesticides and Herbicides
BHC-gamma (Lindane)		X	Pesticides and Herbicides
Chlordane		X	Pesticides and Herbicides
Chlorpyrifos		X	Pesticides and Herbicides
Diazinon		X	Pesticides and Herbicides
Dieldrin		X	Pesticides and Herbicides
Endosulfan (mixed isomers)		X	Pesticides and Herbicides
Endosulfan-I		X	Pesticides and Herbicides
Endosulfan-II		X	Pesticides and Herbicides
Endrin		X	Pesticides and Herbicides
Heptachlor		X	Pesticides and Herbicides
p,p'-DDD		X	Pesticides and Herbicides
p,p'-DDE		X	Pesticides and Herbicides
p,p'-DDT		X	Pesticides and Herbicides
Toxaphene		X	Pesticides and Herbicides
Pyrethroids		X	Pesticides and Herbicides
Phosphorus		X	Phosphorus
Selenium	X		Selenium
Arsenic		X	Trace Metals

Constituents Carried Forward for Further Analysis	Quantitative	Qualitative	Location of Assessment
Cadmium		X	Trace Metals
Copper		X	Trace Metals
Lead		X	Trace Metals
Manganese		X	Trace Metals
Nickel		X	Trace Metals
Zinc		X	Trace Metals
Aluminum		X	Trace Metals
Silver		X	Trace Metals
Total Suspended Solids		X	Turbidity and TSS
Volatile Suspended Solids		X	Turbidity and TSS
Turbidity		X	Turbidity and TSS
Water Temperature		X	Fisheries and Aquatic Resources
Asbestos, Chrysotile		X	Screening Analysis
Color		X	Screening Analysis
Dioxins/Furans		X	Screening Analysis
Endocrine Disruptors and CECs		X	Screening Analysis
PAHs		X	Screening Analysis
PCB-1016		X	Screening Analysis
PCB-1221		X	Screening Analysis
PCB-1232		X	Screening Analysis
PCB-1242		X	Screening Analysis
PCB-1248		X	Screening Analysis
PCB-1254		X	Screening Analysis
PCB-1260		X	Screening Analysis
PCBs (Polychlorinated biphenyls)		X	Screening Analysis
pH		X	Screening Analysis
Sulfate		X	Screening Analysis

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