



September 1, 1994

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Thomas Howard, Chief  
Bay/Delta Unit  
State Water Resources Control Board  
901 P Street  
Sacramento, CA 95814

**Subject: Bay Delta Estuary Standards Workshop on  
September 1-2**

Dear Mr. Howard:

The Suisun Resource Conservation District intended to present the enclosed comments at the September 1-2 workshop. An unanticipated conflict in my schedule made this impossible. Therefore, I am submitting them as written comments which reflect the District's concerns. We would welcome the opportunity to discuss them with you or your staff at your convenience.

Sincerely yours,

D. Chapin

Enclosures

**SUISUN RESOURCE  
CONSERVATION DISTRICT**

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COMMENTS OF THE SUISUN RESOURCE CONSERVATION  
DISTRICT ON THE ALTERNATIVE BAY/DELTA  
WATER QUALITY STANDARDS PROPOSED BY THE STATE  
WATER RESOURCES CONTROL BOARD AND DISCUSSED AT  
THE BOARD'S SEPTEMBER 1-2 WORK SHOP

Mr. Chairman and Members of the Board:

My name is Daniel Chapin, and I am representing the Suisun Resource Conservation District (SRCD). Section 9962 of the Public Resources Code designates the district as the local lead agency for the management of "marsh zone" established by the Suisun Marsh Preservation Act of 1977. Our comments today will focus on the significance of the Board's alternative proposals in preserving the wetland dependent wildlife habitat values in the Marsh.

The State of California's Suisun Marsh Protection Plan establishes the objective of maintaining the legally defined "primary management area" of the Marsh as a brackish water marsh (Sections 29002 and 29003 Public Resources Code). State Water Resources Control Board Decisions D1379 and subsequently D1485 established water quality standards at specified control stations within the Marsh for this purpose. These standards are intended to make it possible for marsh managers to achieve a level of soil salinity which will support the growth of salt tolerant marsh vegetation which will provide high-quality wildlife food supplies. Because of the high salinity values associated with the D1485 standards, intensive and sophisticated water management practices are necessary to achieve the required soil salinities.

Alternatives 1 through 5 of the Board's proposal contain identical provisions describing a proposed Suisun Marsh standard. Assuming that the phrase "contained in the water rights permits of the DWR and the USBR" is the functional equivalent of saying "D1485 as modified in 1985," the SRCD has no problem with this language and would support its implementation as a replacement standard.

Alternative 6 is an entirely different matter, and the District would vigorously oppose it both in concept and in regard to the specific Delta outflow standards proposed. To produce high quality marsh habitat, specific minimum water qualities must be available in the marsh channels at specified times of the year. The D1485 standards provide this assurance, but a simple Delta outflow standard does not. In essence, such a standard relieves the water agencies of any responsibility for providing any specific water quality in the Suisun Marsh at any particular time. However, Alternative 6 goes further! The Delta outflows proposed are so low in some months of all years and all months of some

years that high salinity water conditions can be guaranteed in the Marsh channels when the land managers are trying to leach the salt load out of the soil.

During the late 1980's and early 1990's the SRCD, in close coordination with the Department of Water Resources, developed its own hydrodynamic model for the Suisun Marsh. It did this for the specific purpose of providing itself with the capability of analyzing proposals such as Alternative 6. Like DWR's model, the SRCD model covers the area of the Delta/Estuary from Sacramento to Tracy to the Golden Gate Bridge. In fact DWR's decision to extend its model from Martinez to the Golden Gate resulted from the SRCD's modeling work.

In 1991, using its own model, the SRCD analyzed the impact on Suisun Marsh channel salinities at the various D1485 control stations for a variety of Delta outflows. The specific outflow conditions designated in Alternative 6 are covered by the data included in those analyses. Three runs were made based upon then current Delta conditions. The attached data set shows the salinity levels resulting under various Delta outflows with three different operating modes for the Montezuma Slough Control Structure (MSCS). Table A is based upon the MSCS being wide open; Table B reflects the MSCS operating with one gate; and Table C is the least saline because of full scale operation of the MSCS. Comparing these salinity results with D1485 standards on a month by month basis (Table D), the disastrous results of Alternative 6 are very clear. In dry and critical years the water applied to the wetlands at the time of fall flood up will be hypersaline, and, absent any storm events which are large enough to produce uncontrolled Delta outflows, will continue to be so until the end of January. Even with the MSCS in full operation there is a 30-day lag time before channel salinities in the western marsh fully respond to the February changes in Delta outflow so the full benefits of increased releases will not occur until the beginning of March. This leaves too short a time window for the Marsh managers to complete the leach cycles necessary to control soil salinity levels before the Marsh pond levels are stabilized on April 1, to comply with the vector control requirements of the Solano Mosquito Abatement District. In essence, Alternative 6 could destroy the existing brackish Marsh habitat by converting it into a hypersaline salt marsh which has significantly inferior wildlife values.

The District appreciates the opportunity of providing these comments and hopes that they will be helpful to the Board. If there are any questions, I will try to answer them.

Conditions versus Net Delta Outflow  
24.75 Hour Repeating Tide, Initial Facilities Only

**MARSH SALINITIES - MEAN HIGH TIDE EC (mhtEC)**

Node Number	Measurement Location	Net Delta Outflow, cfs				
		2700	3500	6000	9000	12000
EASTERN MARSH						
355	COLLINSVILLE @ C-2	13722	10353	3983	1233	460
405	POTRERO HILLS INPUT	22160	18077	9120	3639	1525
419	NATIONAL STEEL @ S-64	20369	16390	7885	3000	1207
424	BELDEN'S LANDING @ S-49	23919	19781	10474	4492	1976
NORTH CENTRAL MARSH						
371	HILL SL @ POT.HILL OUT.	23950	19878	10707	4683	2127
374	SUISUN SLOUGH @ S-42	24354	20228	10892	4795	2163
387	WELLS SL @ S-21	22707	18853	10178	4522	2071
393	BOYNTON-CORDELIA INPUT	23536	19536	10527	4606	2097
425	CUT OFF SL @ MONTEZUMA SL	24049	19914	10590	4576	2022
426	TREE SL @ MONTEZUMA SL	24212	20081	10717	4668	2075
428	HUNTER CUT @ S-54	25110	20969	11446	5170	2362
WESTERN MARSH						
357	CHIPPS ISLAND	18346	14482	6576	2428	958
378	SUISUN SLOUGH @ S-36	25569	21407	11825	5435	2509
380	CORDELIA SL @ B-C	23664	19688	10633	4718	2147
382	CORDELIA SL @ S-33	24448	20330	10986	4876	2208
383	GOODYEAR SL @ CORD	24600	20464	11071	4921	2225
384	GOODYEAR SL @ S-35	24599	20454	11058	4911	2221
472	CORDELIA SL @ S-97.	NA	NA	NA	NA	NA

**MARSH CHANNEL FLOW RATES (cfs)**

Channel Number	+ Flow Direction	Measurement Location	Net Delta Outflow, cfs				
			2700	3500	6000	9000	12000
513	N	MSCS THROUGHPUT	-165.8	-150.3	-101.2	-41.3	19.0
528	E	HUNTER CUT @ S_54	166.2	165.0	161.1	156.5	152.0
462	S	SUISUN SL @ S-42	-30.0	-29.9	-29.6	-29.2	-28.8
469	N	CORDELIA SL E OF S-97	7.2	7.2	7.1	7.1	7.0
471	S	GOODYEAR SL @ CORDELIA	67.1	67.2	67.5	67.7	67.8
473	S	GOODYEAR @ MOTHBALL	42.1	42.2	44.9	44.9	45.1
479	W	FRANK HORAN SLOUGH	6.5	6.5	6.4	6.4	6.3
484	W	BOYNTON-CORD INPUT	-0.9	-0.9	-0.9	-0.9	-0.9
491	E	CUT-OFF SLOUGH	32.7	32.6	32.3	31.9	31.5
497	E	POTRERO HILLS	0.0	0.0	0.0	0.0	0.0
577	E	DF&G. JOICE IS PONDS	NA	NA	NA	NA	NA
583	S	CORD-GOODYEAR DITCH	0.0	0.0	0.0	0.0	0.0
379	NA	CORDELIA SL INFLOW	1.0	1.0	1.0	1.0	1.0

**MAJOR EXPORT SALINITIES - MEAN TIDAL PERIOD EC (mtPEC)**

Channel Number	Node Number	Measurement Location	Net Delta Outflow, cfs				
			2700	3500	6000	9000	12000
212	180	USBR: CVP	1799	1257	555	399	379
232	193	DWR: CAL AQUADUCT	2281	1481	444	211	183
247	206	CONTRA COSTA	2977	1938	547	226	185
441	360	MARTINEZ ==> SF BAY	33096	29382	19833	12025	7393

Computed using HYDRAL 1.85 by Paul Crapuchettes

NON-RESTRICTED DATA

TABLE A

**Conditions versus Net Delta Outflow**  
 24.75 Hour Repeating Tide, MSCS and Initial Facilities Only  
**MARSH SALINITIES - MEAN HIGH TIDE EC (mhtEC)**

Node Number	Measurement Location	Net Delta Outflow, cfs				
		2700	3500	6000	9000	12000
<b>EASTERN MARSH</b>						
355	COLLINSVILLE @ C-2	14609	11088	4387	1389	509
405	POTRERO HILLS INPUT	12758	9555	3592	1098	420
419	NATIONAL STEEL @ S-64	12510	9284	3432	1022	384
424	BELDEN'S LANDING @ S-49	15451	12047	5244	1935	809
<b>NORTH CENTRAL MARSH</b>						
371	HILL SL @ POT.HILL OUT.	21099	17371	8912	3882	1739
374	SUISUN SLOUGH @ S-42	21581	17784	9142	3987	1782
387	WELLS SL @ S-21	20302	16760	8662	3822	1741
393	BOYNTON-CORDELIA INPUT	20736	17077	8769	3821	1717
425	CUT OFF SL @ MONTEZUMA SL	16315	12847	5768	2212	936
426	TREE SL @ MONTEZUMA SL	17563	14020	6566	2627	1130
428	HUNTER CUT @ S-54	23441	19505	10357	4650	2103
<b>WESTERN MARSH</b>						
357	CHIPPS ISLAND	19108	15215	7023	2823	1032
378	SUISUN SLOUGH @ S-36	25026	21052	11495	5313	2458
380	CORDELIA SL @ B-C	22619	18838	9959	4461	2022
382	CORDELIA SL @ S-33	23506	19583	10376	4646	2099
383	GOODYEAR SL @ CORD	23873	19907	10586	4753	2149
384	GOODYEAR SL @ S-35	23807	19849	10535	4724	2134
472	CORDELIA SL @ S-97	NA	NA	NA	NA	NA

**MARSH CHANNEL FLOW RATES (cfs)**

Channel Number	+ Flow Direction	Measurement Location	Net Delta Outflow, cfs				
			2700	3500	6000	9000	12000
513	N	MSCS THROUGHPUT	973.9	977.2	986.6	997.0	1007.9
528	E	HUNTER CUT @ S_54	77.5	77.3	78.8	78.2	75.7
462	S	SUISUN SL @ S-42	1.0	1.1	1.2	1.4	1.5
469	N	CORDELIA SL E OF S-97	7.2	7.2	7.1	7.0	7.0
471	S	GOODYEAR SL @ CORDELIA	67.3	67.3	67.3	67.5	67.7
473	S	GOODYEAR @ MOTHBALL	42.1	42.1	43.2	39.9	41.4
479	W	FRANK HORAN SLOUGH	6.8	6.8	6.7	6.6	6.6
484	W	BOYNTON-CORD INPUT	-0.9	-0.9	-0.9	-0.9	-0.9
491	E	CUT-OFF SLOUGH	1.7	1.6	1.5	1.3	1.2
497	E	POTRERO HILLS	0.0	0.0	0.0	0.0	0.0
577	E	DF&G JOICE IS PONDS	NA	NA	NA	NA	NA
583	S	CORD-GOODYEAR DITCH	0.0	0.0	0.0	0.0	0.0
379	NA	CORDELIA SL INFLOW	1.0	1.0	1.0	1.0	1.0

**MAJOR EXPORT SALINITIES - MEAN TIDAL PERIOD EC (mtpEC)**

Channel Number	Node Number	Measurement Location	Net Delta Outflow, cfs				
			2700	3500	6000	9000	12000
212	180	USBR: CVP	1905	1338	575	403	380
232	193	DWR: CAL AQUADUCT	2440	1600	473	218	184
247	206	CONTRA COSTA	3188	2094	588	235	186
441	360	MARTINEZ ==> SF BAY	33072	29474	19830	12096	7441

Computed using HYDRA 1.95 by Paul Crapuchese

**NON-RESTRICTED DATA**

**TABLE B**

### Conditions versus Net Delta Outflow

24.75 Hour Repeating Tide, MSCS and Initial Facilities Only

#### MARSH SALINITIES - MEAN HIGH TIDE EC (mhtEC)

Node Number	Measurement Location	Net Delta Outflow, cfs				
		2700	3500	6000	9000	12000
EASTERN MARSH						
355	COLLINSVILLE @ C-2	15068	11477	4650	1482	538
405	POTRERO HILLS INPUT	12938	9646	3865	1093	405
419	NATIONAL STEEL @ S-64	12929	9618	3651	1086	403
424	BELDEN'S LANDING @ S-49	13838	10466	4213	1369	530
NORTH CENTRAL MARSH						
371	HILL SL @ POT.HILL OUT.	19347	15586	7849	3279	1440
374	SUISUN SLOUGH @ S-42	19809	16000	8081	3384	1491
387	WELLS SL @ S-21	18725	15159	7718	3277	1481
393	BOYNTON-CORDELIA INPUT	19021	15326	7720	3228	1422
425	CUT OFF SL @ MONTEZUMA SL	14356	10944	4552	1538	609
426	TREE SL @ MONTEZUMA SL	15373	11876	5163	1870	766
428	HUNTER CUT @ S-54	22384	18443	9769	4315	1943
WESTERN MARSH						
357	CHIPPS ISLAND	19464	15510	7290	2755	1072
378	SUISUN SLOUGH @ S-36	24627	20565	11334	5191	2402
380	CORDELIA SL @ B-C	21801	17935	9538	4179	1890
382	CORDELIA SL @ S-33	22712	18699	9979	4376	1980
383	GOODYEAR SL @ CORD	23226	19188	10299	4550	2055
384	GOODYEAR SL @ S-35	23096	19051	10206	4488	2029
472	CORDELIA SL @ S-97	NA	NA	NA	NA	NA

#### MARSH CHANNEL FLOW RATES (cfs)

Channel Number	+ Flow Direction	Measurement Location	Net Delta Outflow, cfs				
			2700	3500	6000	9000	12000
513	N	MSCS THROUGHPUT	1789.6	1795.6	1815.4	1834.6	1855.2
528	E	HUNTER CUT @ S_54	9.6	9.2	7.7	6.2	4.8
462	S	SUISUN SL @ S-42	3.9	3.9	4.1	4.4	4.6
469	N	CORDELIA SL E OF S-97	7.5	7.4	7.4	7.3	7.2
471	S	GOODYEAR SL @ CORDELIA	67.4	67.4	67.4	67.5	67.8
473	S	GOODYEAR @ MOTHBALL	42.2	42.2	43.3	40.1	41.5
479	W	FRANK HORAN SLOUGH	7.2	7.2	7.1	7.1	7.0
484	W	BOYNTON-CORD INPUT	-0.9	-0.9	-0.9	-0.9	-0.9
491	E	CUT-OFF SLOUGH	-1.2	-1.2	-1.4	-1.7	-1.9
497	E	POTRERO HILLS	0.0	0.0	0.0	0.0	0.0
577	E	DF&G JOICE IS PONDS	NA	NA	NA	NA	NA
583	S	CORD-GOODYEAR DITCH	0.0	0.0	0.0	0.0	0.0
379	NA	CORDELIA SL INFLOW	1.0	1.0	1.0	1.0	1.0

#### MAJOR EXPORT SALINITIES - MEAN TIDAL PERIOD EC (mtpEC)

Channel Number	Node Number	Measurement Location	Net Delta Outflow, cfs				
			2700	3500	6000	9000	12000
212	180	USBR: CVP	1957	1363	590	405	380
232	193	DWR: CAL AQUADUCT	2515	1638	496	221	184
247	206	CONTRA COSTA	3292	2148	621	240	186
441	360	MARTINEZ ==> SF BAY	32931	29219	19807	12050	7395

Computed using HYD8AL 1.95 by Paul Crapuchettes

NON-RESTRICTED DATA

TABLE C

TABLE D

PROJECTED WATER QUALITY AT THE D1485 SALINITY CONTROL STATIONS IN THE SUISUN MARSH ASSUMING THE DELTA OUTFLOW LEVELS DESIGNATED BY ALTERNATIVE 6 OF THE BAY/DELTA ESTUARY STANDARDS BEING CONSIDERED BY THE STATE WATER RESOURCES CONTROL BOARD AT ITS SEPTEMBER 1-2 1994 WORKSHOP

Control Station S35 - full operation of the MSCS

MONTH	WET	AN	BN	DRY	CRIT	D1485
September	19.1*	19.1	19.1	19.1	19.1	-
October	15.5**	15.5	15.5	19.1	19.1	19.0
November	15.5	15.5	15.5	19.1	19.1	16.5
December	15.5	15.5	15.5	15.5	19.1	15.5
January	15.5	15.5	15.5	15.5	19.1	12.5
February	2.0	2.0	2.0	2.0	2.0	8.0
March	2.0	2.0	2.0	2.0	2.0	8.0
April	2.0	2.0	2.0	2.0	2.0	11.0
May	2.0	2.0	2.0	2.0	2.0	11.0
June	2.0	2.0	2.0	2.0	2.0	-

\* Electrical conductivity expressed in mmhos/cm

\*\* Calculated conversion of 4500 cfs to mmhos based upon a linear extrapolation of 6,000 cfs outflow data