



## CENTRAL DELTA WATER AGENCY

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January 5, 2007

Gita Kapahi, Chief  
Bay-Delta/Special Projects Unit  
c/o Division of Water Rights, Records Unit  
1001 "I" Street, 2nd Floor  
Sacramento, CA 95814

Re: Southern Delta Water Quality Objectives for Salinity in the Water Quality  
Control Plan for the San Francisco bay/Sacramento-San Joaquin Delta Estuary -  
Public Workshop commencing January 16, 2007

Dear Ms. Kapahi:

The Central Delta Water Agency is very concerned that there is a SWRCB acquiescence or worse an agreed upon "buy in" to the legally unsupportable position that the SWP and CVP obligation to provide salinity control in the San Joaquin River and Delta is somehow limited to only addressing salinity caused by the projects.

### **Public Trust and Statutory Responsibilities of the CVP and SWP for Salinity Control**

Although the projects are the obvious cause of most salinity problems in the San Joaquin River and southern Delta, both projects have public trust and statutory responsibilities for salinity control and other responsibilities with regard to environmental impacts including impacts to endangered species that would extend beyond their responsibility for their own impacts.

The Department of Water Resources has the duty to protect the public interest and comply with the Watershed Protection Act, Delta Protection Act and San Joaquin River Act.

The Water Code provides:

“§ 102. State ownership of water; right to use

All water within the State is the property of the people of the State, but the right to the use of water may be acquired by appropriation in the manner provided by law.

“§ 105. Development for public benefit

It is hereby declared that the protection of the public interest in the development of the water resources of the State is of vital concern to the people of the State and that the State shall determine in what way the water of the State, both surface and underground, should be developed for the greatest public benefit.

§ 107. Declarations of state policy

The declaration of the policy of the State in this chapter is not exclusive, and all other or further declarations of policy in this code shall be given their full force and effect.

In the case of National Audubon Society v. Superior Court, 33 Cal.3d 419, the California

Supreme Court at page 446 found:

“c. The state has an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible.”

DWR is, of course, a Department of the State. It cannot set aside its public trust or public interest responsibilities.

Apart from the more general public trust and public interest responsibilities there are a number of statutes which specifically apply to this matter.

Water Code section 12232 which provides:

“§ 12232. Duty of state agencies not to cause degradation of quality of water

The State Water Resources Control Board, the State Department of Water Resources, the California Water Commission, and any other agency of the state having jurisdiction, shall do nothing, in connection with their responsibilities, to cause further significant degradation of the quality of water in that portion of the San Joaquin River between the points specified in Section 12230.” (Emphasis added.)

Water Code section 12230 provides:

“§ 12230. Legislative findings and declaration

The Legislature hereby finds and declares that a serious problem of water quality exists in the San Joaquin River between the junction of the San Joaquin River and the Merced River and the junction of the San Joaquin River with Middle River; that by virtue of the nature and causes of the problem and its effect upon water supplies in the Sacramento-San Joaquin Delta, it is a matter of statewide interest and is the responsibility of the State to determine an equitable and feasible solution to this problem.”

Brandt Bridge is of course clearly within the area of concern.

Water Code section 12201 provides:

“§ 12201. Necessity of maintenance of water supply

The Legislature finds that the maintenance of an adequate water supply in the Delta sufficient to maintain and expand agriculture, industry, urban, and recreational development in the Delta area as set forth in Section 12220, Chapter 2, of this part, and to provide a common source of fresh water for export to areas of water deficiency is necessary to the peace, health, safety and welfare of the people of the State, except that delivery of such water shall be subject to the provisions of Section 10505 and Sections 11460 to 11463, inclusive, of this code.”

“§ 12202. Salinity control and adequate water supply; substitute water supply; deliver

Among the functions to be provided by the State Water Resources Development System, in coordination with the activities of the United States in providing salinity control for the Delta through operation of the Federal Central Valley Project, shall be the provision of salinity control and an adequate water supply for the users of water in the

Sacramento-San Joaquin Delta. If it is determined to be in the public interest to provide a substitute water supply to the users in said Delta in lieu of that which would be provided as a result of salinity control no added financial burden shall be placed upon said Delta water users solely by virtue of such substitution. Delivery of said substitute water supply shall be subject to the provisions of Section 10505 and Sections 11460 to 11463, inclusive, of this code.”

“§ 12204. Exportation of water from delta

In determining the availability of water for export from the Sacramento-San Joaquin Delta no water shall be exported which is necessary to meet the requirements of Sections 12202 and 12203 of this chapter.” (Emphasis added.)

Water Code section 11460 provides:

“§ 11460. Prior right to watershed water

In the construction and operation by the department of any project under the provisions of this part a watershed or area wherein water originates, or an area immediately adjacent thereto which can conveniently be supplied with water therefrom, shall not be deprived by the department directly or indirectly of the prior right to all of the water reasonably required to adequately supply the beneficial needs of the watershed, area, or any of the inhabitants or property owners therein.”

In addition to the duty of Reclamation to conform to State water rights laws, the duty of Reclamation to meet SWRCB standards has repeatedly been made clear by numerous Acts of Congress.

PL 99-546 (H.R. 3113) October 27, 1986, 100 Stat. 3050 in pertinent part provides as follows:

“(b)(1) Unless the Secretary of the Interior determines that operation of the Central Valley project in conformity with State water quality standards for the San Francisco Bay/Sacramento-San Joaquin Delta and Estuary is not consistent with the congressional directives applicable to the project, the Secretary is authorized and directed to operate the project, in conjunction with the State of California water project, in conformity with such standards. Should the Secretary of the

Interior so determine, then the Secretary shall promptly request the Attorney General to bring an action in the court of proper jurisdiction for the purposes of determining the applicability of such standards to the project.”

No such determination has been made by the Secretary of the Interior as to the .7 EC standards.

Title 34 of PL 102-575 (CVPIA) in Section 3406 (b)(8) directs the Secretary to

“(7) meet flow standards and objectives and diversion limits set forth in all laws and judicial decisions that apply to Central Valley Project facilities, including, but not limited to, provisions of this title and all obligations of the United States under the “Agreement Between the United States and the Department of Water Resources of the State of California for Coordinated Operation of the Central Valley Project and the State Water Project” dated May 20, 1985, as well as Pub. L. 99-546.

More recently in PL 108-361 (H.R. 2828) October 25, 2004, Congress provided:

“(D) PROGRAM TO MEET STANDARDS.—

(I) IN GENERAL.—Prior to increasing export limits from the Delta for the purposes of conveying water to south-of-Delta Central Valley Project contractors or increasing deliveries through an intertie, the Secretary shall, not later than 1 year after the date of enactment of this Act, in consultation with the Governor, develop and initiate implementation of a program to meet all existing water quality standards and objectives for which the Central Valley Project has responsibility.” (Emphasis.)

The water quality standards referred to are those in D-1641.

Since DWR coordinates the SWP operations with the CVP operations of Reclamation, jointly owns and operates San Luis and other facilities with Reclamation; has joint points of diversions with Reclamation and wheels water for CVP service areas and others in the San Joaquin Valley including those on the west side of the San Joaquin Valley including refuges which directly or indirectly contribute to degradation of the San Joaquin, it is responsible for a significant portion of the degradation of the San Joaquin River.

In addition to existing facilities such as San Luis Reservoir and the various canals, DWR could borrow, rent or acquire and/or construct additional facilities to provide dilution flows in the San Joaquin River. Exchanges and transfers could be made to provide such water. DWR contributes money for the San Joaquin River Agreement and administers grants for drainage control projects in the San Joaquin Valley. Water Code section 1810(d) which provides:

“(d) This use of a water conveyance facility is to be made without injuring any legal user of water and without unreasonably affecting fish, wildlife, or other instream beneficial uses and without unreasonably affecting the overall economy or the environment of the county from which the water is being transferred.”

In D-1641 at page 89 the SWRCB provided as follows:

“Salinity problems in the southern Delta result from low flows in the San Joaquin River and discharges of saline drainage water to the river. The actions of the CVP are the principal causes of the salinity concentrations exceeding the objectives at Vernalis. Downstream of Vernalis, salinity is influenced by San Joaquin River inflow, tidal action, diversions of water by the SWP, CVP, and local water users, agricultural return flows, and channel capacity. Measures that affect circulation in the Delta, such as barriers, can help improve the salinity concentrations.” (Emphasis added.)

**The Need For .7 EC Or Better Water Quality Water For Protection of Beneficial Uses at the Southern Delta Stations Has Been Exhaustively Analyzed and Demonstrated in Prior Proceedings of the SWRCB.**

The hearings leading to D-1379 and D-1485 contain extensive evidence on the water quality needs for agricultural use. There is also evidence related to salinity requirements for other beneficial uses. What the DWR, USBR and their export contractors seek with regard to agricultural use is that the SWRCB somehow overlook the restraint on theoretical leaching factors related to the drainage characteristics of land including the permeability of the soil, the depth of the water table and the constraints of required farming practices.

It is universally recognized that increased salinity in water at the levels relevant herein are detrimental. As explained in Department of Water Resources, the California Water Plan Update Bulletin 160-93 at pages 131 and 132 (CDWA-14)

“Salty irrigation water presents several costly problems for farmers. In many agricultural areas, it is common to recirculate irrigation water a number of times to increase irrigation efficiency. Salty water can be recycled fewer times than water that is initially low in salt. Also, more salty water must be used for irrigation than is required when using supplies low in salt. The requirement to use more water results in significant additional cost for pumping and handling the water and, perhaps, additional cost to purchase the water.

Generally, the most salt-tolerant crops are not the ones having highest value. Therefore, given a salty water supply, a farmer may be required to grow less valuable crops than is possible when low-salt irrigation water is available.

Finally, crop yields fall as salt in the irrigation water increases beyond the optimal ranges specific to individual crops.”

In addition to the question of whether or not there will be a substantial loss in crop yield, there are obvious impacts associated with the increased water diversion and the drainage pumping of the additional water for leaching. Changes in farming practices, application of soil amendments and drainage improvements cost money and could result in detrimental environmental impacts.

Exceeding the .7 EC standard will result in degradation of the San Joaquin River downstream of the head of Old River and in Old River, Middle River and Grantline Canal. This degradation will result in increased salinity in the water exported by the CVP and SWP from the South Delta. The amount of degradation occurring at the CVP pumps and the SWP pumps will vary depending on a number of factors including temporary barrier operation, pumping rates and the proportion of San Joaquin River water reaching each of the export pumps. The significance

of increased salinity is well documented. DWR Bulletin 160-93 The California Water Plan Update at pages 130-132 (CDWA-14) outlines the many impacts resulting from reduced water quality. As to the impact on urban consumers, the bulletin provides:

“Many studies have cited the impacts of water quality on the value of water to urban consumers, and all have cited the difficulty of expressing quality impacts in a simple way. A 1989 review of consumer impacts of the mineral content of Delta water proposed a generalized cost of \$0.68 per acre-foot per milligram per liter of incremental total dissolved solids. The current generalized value would be about \$0.80 per acre-foot per milligram per liter (adjusted using the Consumer Price Index), or about \$0.30 per pound of dissolved mineral matter in the water. The impact of this added cost can be quite significant.”

The degraded export water which is delivered to the west side of the San Joaquin Valley which contributes to the salinity of the San Joaquin River will of course aggravate the problems. Even with reduced direct drainage discharges to the river, much of the salt accumulating in the land and groundwater will eventually adversely impact the San Joaquin River through accretions and other uncontrolled flows.

**The Motive of DWR, USBR and Their Export Contractors To Degrade The Southern Delta Is Obviously To Facilitate Greater Export.**

In order to properly set or reset water quality objectives, the impacts associated with any change must be considered.

The waters of the San Joaquin River flow into the Central Delta Water Agency and contribute to the water supply therein. Such water supply is used within the Central Delta Water Agency for agricultural, recreational and domestic purposes as well as fish, wildlife and general environmental purposes.

Degradation of the water flow and water quality of the San Joaquin River adversely



impacts the water supply in the southern Delta and in portions of the Central Delta Water Agency as follows:

1) Increased San Joaquin River salinity increases the salinity of the Central Delta Water Agency water supply and when such water supply is used for irrigation, the salinity within the soil increases, thereby increasing the need for costly artificial leaching of the soils. The impact varies with the degree to which the San Joaquin River flow and quality contribute to such water supply and many other factors including operation of the Delta cross-channel, operation of barriers in the South Delta, operation of the export pumps, rainfall and quality of other sources. During periods of low rainfall soil salinity becomes more acute and when combined with lower diluting flows from other Delta tributaries degradation from the San Joaquin River can become critical.

2) Increased concentrations of San Joaquin River selenium increases the amount of selenium in the Central Delta Water Supply and in turn when such water supply is applied on or seeps into the land the accumulation in the soil and soil water increases. Under certain conditions such accumulated selenium is returned to the channels contributing to possible adverse environmental impacts and possible restrictive and costly regulatory responses impacting other water users within the southern Delta and portions of the Central Delta Water Agency.

3) Degradation of San Joaquin River flow aggravates low dissolved oxygen problems in the San Joaquin River in the Vernalis/Stockton reach. This low dissolved oxygen has adverse environmental impacts particularly to fish and has resulted in regulatory efforts which could result in burdens on water uses within the Central Delta Water Agency.

4) Export pumping causes the loss of large numbers of fish which results in the need or at least the desire to mitigate for such loss through other actions. In the case of fall-run Chinook salmon, large quantities of water are being provided from the Stanislaus River, Tuolumne River and Merced Rivers to increase the survival of such fish. The provision of such water results in the depletion of natural flow into the San Joaquin River and the reduction of physical solution flows, thereby degrading the flow and quality of the San Joaquin particularly in months of June through September. Such degradation increases the amount of salt in the soil within the Central Delta Water Agency area. To the extent the provision of such water depletes the stored water available in the surface reservoirs and groundwater basins tributary to the San Joaquin River the adverse impacts to San Joaquin River flow and water quality during drier years will be substantially aggravated.

Additionally and more importantly, the ongoing operations of the State Water Project and Central Valley Project include ongoing egregious unreasonable uses and unreasonable methods of use and unreasonable methods of diversion of water which constitute clear violations particularly of California Constitution Article 10, Section 2, Water Code sections 100, 105, 275, 11460 et seq. (Area of Origin Law), 12200 et seq. (Delta Protection Act), and 12230 et seq. (San Joaquin River Act).

In D-1641, at pages 81-83, the SWRCB found:

Although water quality problems on the San Joaquin River began with the reduction of flows due to upstream development and the advent of irrigated agriculture, they were exacerbated with construction of the CVP. (R.T. pp. 3988, 4781; SDWA 39; SWRCB 1e, pp. II-15, VIII-2.) The CVP consists of 18 federally operated reservoirs and four reservoirs operated jointly with the DWR.

(SWRCB 1e, p. III-5; SWRCB 167.) The Delta-Mendota Canal and pumping plant first began operating in 1951. (SDWA 48, pp. 10-11.) The San Luis Dam and the California Aqueduct were completed in 1967. (SWRCB 167, Technical Appendix, pp. [II-11]-[II-13].) SDWA's witness testified that between 1930 and 1950 the average salt load at Vernalis was 750,000 tons per year. Between 1951 and 1997, the salt load has averaged more than 950,000 tons per year. Peak loads have exceeded 1.5 million tons per year following extended droughts. (SDWA 34A.) Central Valley RWQCB staff testified that from the 1960s onward there has been an increase in salt load and concentrations. (R.T. pp. 4835-4836.) The April through August salt load in the 1980s was 62 percent higher than the load in the 1960s and the corresponding annual load increase was 38 percent. (SWRCB 1e, p. VIII-11; SWRCB 97.)

Central Valley RWQCB staff described geographic sources of salinity based on historical data from 1977 through 1997. (R.T. p.4791.) The Central Valley RWQCB staff concluded that high salinity at Vernalis is caused by surface and subsurface discharges to the river of highly saline water. The sources of the discharges are agricultural lands and wetlands. (R.T. pp. 4857-4858; SEWD 17, p. 5.) Approximately 35 percent of the salt load comes from the northwest side of the San Joaquin River, and approximately 37 percent of the salt load comes from the Grasslands area. (SEWD 7a.) These areas receive approximately 70 percent of their water supply from the CVP, 20 percent from precipitation and 10 percent from groundwater. (SWRCB 8, p. V-11.) The TDS concentration of agricultural drainage water from the Grasslands area that discharges to the river through Mud Slough is approximately 4,000 mg/l. (R.T. p. 4869; SWRCB 1e, p. VIII-27.) In some cases, drainage water is more than ten times the concentration of the Vernalis salinity standard. (R.T. pp. 7850-7851.)

The subsurface drainage problem is region-wide. The total acreage of lands impacted by rising water tables and increasing salinity is approximately 1 million acres. (SWRCB 147, p. 21.) The drainage problem may not be caused entirely by the farmer from whose lands the drainage water is discharged. In the western San Joaquin Valley, the salts originate from the application of irrigation water and from soil minerals, which dissolve as water flows through the soil. The salts are stored in groundwater. As more water is applied, hydraulic pressures increase, water moves down gradient, and salt-laden waters are discharged through existing drainage systems and directly to the river as groundwater accretion. (SJREC 5a.) Drainage found in a farmer's field may originate upslope and may not have risen into the tile drains on the downslope farmer's land but for the pressures caused by upslope irrigation. (SJREC 5a, pp. 27-29.)

Based on the above discussion, the SWRCB finds that the actions of the CVP are the principal cause of the salinity concentrations exceeding the objectives at Vernalis. The salinity problem at Vernalis is the result of saline discharges to the river, principally from irrigated agriculture, combined with low flows in the river due to upstream water development. The source of much of the saline discharge to the San Joaquin River is from lands on the west side of the San Joaquin Valley which are irrigated with water provided from the Delta by the CVP, primarily through the Delta-Mendota Canal and the San Luis Unit. The capacity of the lower San Joaquin River to assimilate the agricultural drainage has been significantly reduced through the diversion of high quality flows from the upper San Joaquin River by the CVP at Friant. The USBR, through its activities associated with operating the CVP in the San Joaquin River basin, is responsible for significant deterioration of water quality in the southern Delta.

The San Luis Act of June 3, 1960, Public Law 86-488, 77 Stat. 156 provided that:

Construction of the San Luis unit shall not be commenced until the Secretary has . . . received satisfactory assurance from the State of California that it will make provision for a master drainage outlet and disposal channel for the San Joaquin Valley, as generally outlined in the California water plan, Bulletin Numbered 3, of the California Department of Water Resources, which will adequately serve, by connection therewith, the drainage system for the San Luis unit, or has made provision for constructing the San Luis interceptor drain to the delta designed to meet the drainage requirements of the San Luis unit as generally outlined in the report of the Department of the Interior, entitled 'San Luis Unit Central Valley project,' dated December 17, 1956.

(Emphasis added.)

Such drain to remove salts from the valley was never constructed yet over a million acre feet of water per annum from the San Luis Unit was committed to use. With every acre foot of water delivered to the San Joaquin Valley from the Delta Mendota Canal and San Luis Unit, there is delivered a significant quantity of salt which must be retained in the San Joaquin Valley or returned to the Delta via the San Joaquin River.

In D-1641 at page 86, the SWRCB stated:

Public Law 86-488 required assurance that the San Luis Drain would be constructed. [Citation.] In 1963 and 1967, the SJREC filed suit against the USBR. The USBR assured the judge that a drain would be constructed. [Citation.] Nevertheless, the USBR continues to delay making progress on an out-of-valley drain. [Citation.] A USBR witness testified that USBR has no specific plans to improve quality of the river upstream of Vernalis. [Citation.] The USBR has been directed by the court to initiate activities to resolve the drainage problems in the San Joaquin Valley. It should proceed promptly to initiate such activities and file any necessary applications.

**To Facilitate the Review of Salinity Issues For the Interior Southern Delta, the Source and Cause of Salinity Problems in the San Joaquin River Should Be More Completely Analyzed And Defined by Competent Independent Experts of the SWRCB.**

The following should be included in such analysis:

Effect of upstream diversions by the CVP including project-induced diversions on the present and future assimilative capacity of the San Joaquin River down to the Delta.

Effect of other upstream diversions on the present and future assimilative capacity of the San Joaquin River.

Present and future San Joaquin River salinity impacts, resulting from increased gradients, discharges, accretions, stormwater flows and any other mechanism due to use of water delivered through facilities of the SWP and CVP and water use induced by such projects. Such analysis should include all water involving the SWP or CVP facilities including without limitation SWP and CVP project water, transferred water, exchanged water, EWA water and any other water.

Present and future San Joaquin River salinity impacts resulting from water transfers by CVP water users and other water users upstream of Vernalis including those along the westside of the San Joaquin Valley. The analysis should include transfers and exchanges within the valley

as well as outside.

Impacts on present and future San Joaquin River salinity from the leaching of the saline soils along the west side of the valley as well as the import of salts from exports from the Delta should be quantified. Discharges and accretions should be included.

Effects on present and future San Joaquin River salinity from water use in wetlands should be quantified.

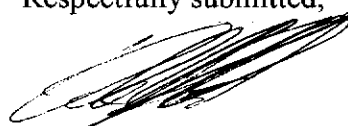
Effects on present and future San Joaquin River salinity from water reuse practices including without limitation those in the Grasslands Bypass Project should be quantified.

Effects on present and future southern Delta salinity resulting from operations of the SWP and CVP including without limitation export pumping, changes in Delta outflow, operation of cross-channel gates, operation of barriers, operation of reservoirs and direct and induced upstream diversions.

Analysis should be made of the possible alternative actions which could be used to meet the salinity objectives including without limitation addition of dilution flows from sources other than New Melones including Friant Dam, San Luis Reservoir and recirculation.

Since southern Delta salinity is determined in great part by the salinity contributions upstream of the confluence with the Merced River. The setting of objective for upstream locations should be a part of the periodic review.

Respectfully submitted,



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