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CALFED Bay-Delta Program Role and Policy
With Respect to San Joaquin River Water Quality Problems
May 6, 1997

The CALFED Geographic Problem Area is the legally defined Delta. CALFED will seek to resolve problems within this area. It is understood that some species that inhabit the Delta are impacted by conditions outside the Delta. Also, areas outside the Delta are sources of water quality problems affecting the Delta, its inhabitant species, and users of Delta water. In resolving the problems of the Delta, CALFED may undertake actions throughout its Geographic Solution Area, as necessary. The Solution Area includes the San Joaquin River watershed. Water quality parameters of concern in the San Joaquin River and Delta Estuary, as defined by the Water Quality Technical Group, are shown in Table 1 attached. Correcting water quality problems associated with the Tulare Lake Basin is necessary to implement overall solutions to the drainage problems of the San Joaquin Valley. This drainage does not directly affect the Delta estuary and is, therefore, not specifically included in the CALFED water quality program. However, the indirect impacts of CALFED actions on drainage conditions and water quality in the Tulare Lake Basin need to be considered. An ideal solution would be one that corrects Tulare Lake Basin drainage problems as well as those affecting the Delta, and this consideration may enter into CALFED decision making.

Sources of water quality problems in the San Joaquin River and its tributaries include:

- agricultural tail water, or return flows, which may contribute salts, nutrients, pesticide residues, pathogens, and turbidity;
- subsurface agricultural drainage that may contribute salts, nutrients, pesticides (some fungicides), selenium, and other trace elements. The Grasslands area is the primary source of selenium entering the San Joaquin River and Delta (though refinery discharges are most significant in the Carquinez Straits/Grizzly Bay area of the estuary);
- storm inflows that may contribute selenium, turbidity, pathogens, organic carbon, nutrients, pesticides, and other chemical residues;
- municipal and industrial discharges that may contribute salts, trace elements, nutrients, metals, pathogens, chemical residues, oil and grease, and turbidity; and,
- acid drainage from inactive and abandoned mines which introduce metals such as zinc, cadmium, copper, and mercury.

Of these sources, subsurface agricultural drainage discharged to the San Joaquin River from the Grasslands area perhaps cause the most significant water quality problems in the River. During

times of low flow, agricultural drainage discharges to the River may constitute the majority of flow. At present, control measures largely consist of irrigation and drainage management (source reduction) activities. Incidental dilution of salt also occurs as a result of upstream reservoir releases. Other solutions for protection of water quality and wildlife, and sustainability of agriculture may include drainage reduction and reuse, timed drainage release, drainage treatment to reduce trace elements and other contaminants, salt separation and utilization, and land use changes.

A plan for managing agricultural-related water quality problems in the westside San Joaquin Valley portion of the San Joaquin River Watershed and the Tulare Basin was advanced in 1990 by a joint federal and State interagency program in a report entitled, "*A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley.*" In 1991, four federal and four State agencies signed a Memorandum of Understanding, forming the San Joaquin Valley Drainage Implementation Program in which all parties agreed to use the 1990 Management Plan recommendations "as the principal guide for remedying subsurface agricultural drainage problems" and to "work together...to implement all components" of the 1990 Plan. The SJVDIP adopted an Activity Plan in March 1997 that recommends formation of local committees to assess status of, and constraints to, implementation of the 1990 Plan along with utilization of salt as a by-product of drainage management. The work of the UC committees is to be followed by a joint Ad Hoc Coordination Committee to "identify interactions and tradeoffs between management options, and develop a set of recommendations to the SJVDIP".

In 1995, the State Water Resources Control Board, a SJVDIP member agency, adopted the *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary*. The Plan states, "ultimately, it will be necessary for the in-basin management of salts to be supplemented by the disposal of salts outside of the San Joaquin Valley" and that "it is necessary to begin planning for a long-term solution to the San Joaquin Valley drainage problem". The SJVDIP 1990 Plan also recognized that ultimately there will be a need for salt removal from the Valley, after in-Valley solutions had been implemented. The SWRCB has also recommended that consideration should be given to taking advantage of winter flood flows to dilute and remove salts from low-lying areas of the San Joaquin Valley as part of a general program to adjust the timing of salt load discharges from low flow to high flow periods.

In 1995, the Bureau of Reclamation and the San Luis Delta Mendota Water Authority negotiated an agreement allowing the interim use of a portion of the San Luis Drain to convey agricultural drainage water to a tributary of the San Joaquin River, bypassing wetlands areas in the Grasslands Water District. The agreement requires formation of a joint drainage authority to implement the program, and to meet increasingly stringent selenium load targets over a five year period. A Waste Discharge Requirement will be adopted by the Central Valley Regional Water Quality Control Board (CVRWQCB) for this project. Project oversight is provided through the Grasslands Oversight Committee that includes representatives of the CVRWQCB, Department of Fish and Game, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, and U.S. Environmental Protection Agency.

The 1996 Amendments to the Water Quality Control Plan for the Central Valley Basin (Basin Plan Amendments) prepared by the CVRWQCB is consistent with the Grasslands Bypass Project. The CVRWQCB will also be developing a total maximum monthly load (TMML) for selenium in certain reaches of the San Joaquin River.

Due to a lack of funding, uncertainty in the feasibility of implementing some of the 1990 Plan recommendations, and other factors affecting overall leadership, limited success has been achieved in implementing the drainage plans and policies established by the 1990 Management Plan and the 1991 MOU. These difficulties suggest an appropriate role for CALFED.

CALFED establishes the following policies with respect to its role with respect to water quality problems of the San Joaquin River:

- CALFED will facilitate implementation of measures to correct water quality problems of the San Joaquin River and its watershed, particularly those related to drainage management, by encouraging coordination among regulatory agencies, service agencies and local drainage entities; helping to facilitate funding; and, helping to increase awareness of drainage problems and other water quality problems, and the need for corrective actions.
- CALFED will adopt an overall watershed approach for encouraging comprehensive solutions to the water quality and other problems of the Valley that affect the Delta and its inhabitant aquatic and terrestrial plant and animal species, and to gain broad stakeholder support for these solutions.
- CALFED endorses and supports continuing monitoring, assessment, applied research, and demonstration projects that will advance knowledge to solve the drainage and water quality problems of the San Joaquin River and its watershed that affect the Delta.
- CALFED recognizes the 1991 MOU as the continuing basis for interagency cooperation and joint actions to solve drainage problems.
- CALFED recognizes the SJVDIP as the primary entity to provide technical direction for managing implementation of interim solutions to drainage problems in the San Joaquin River and its watershed. Because development of long term solutions is not within the scope of the SJVDIP, CALFED will encourage development of durable, long term solutions to Valley drainage problems affecting the Delta.
- In working toward long term solutions to Valley drainage problems, CALFED will encourage consideration of various mechanisms for removing salts from the Valley and reducing salt loadings to the San Joaquin River and its watershed, consistent with its goal to develop balanced solutions.

- CALFED will facilitate implementation of measures to correct non-drainage water quality problems within the San Joaquin River watershed that affect the Delta as part of the overall CALFED program. Potential actions to correct these problems are being developed under the CALFED Water Quality Program, and may include on-farm management practices that reduce sources of chemical introductions to the San Joaquin River and Delta estuary.
- CALFED water quality actions in the San Joaquin River watershed must meet the CALFED Solution Principles of affordability, durability, implementability, equity, conflict reduction, and non-redirection of significant impacts.

The mechanisms by which CALFED will implement these policies may include CALFED staff, CALFED agencies, and/or an implementing institution created by CALFED.

In determining priorities for action, the following points will be considered:

- the degree to which the proposed activity will improve the quality of Sacramento-San Joaquin Delta Estuary waters, in comparison to the cost of implementing the solution. ideal solution would correct Tulare Lake Basin drainage problems as well as those affecting the Delta, and this consideration may enter into CALFED decision making.
- whether proposed activities related to water quality are consistent with CALFED objectives related to ecosystem restoration, water supply reliability, and system integrity goals;
- the extent to which the problem and proposed solutions have been investigated and technically documented;
- the degree to which the proposed solution employs proven technology;
- though all proposals would be considered, priority may be given to projects having prospective local/state/federal participants or partnerships to support problem resolution, and where a suitable management infrastructure can be organized;
- whether CALFED participation would reduce responsibilities of any party for compliance with cleanup orders, site remediation, environmental mitigation, or other requirements arising from law or regulation. If so, CALFED would not share this burden, but may consider partnerships that would institute water quality improvements beyond those mandated of other parties..
- To fulfill its role to facilitate implementation of detailed policies, plans and actions, CALFED staff will involve San Joaquin Valley stakeholders in developing solutions, and undertake an outreach program to assure the interests of all stakeholders are

represented.

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TABLE 1

CALFED Bay-Delta Program Water Quality Parameters of Concern

Cadmium	Dissolved Oxygen
Copper	Salinity (TDS, EC)
Mercury	Temperature
Selenium	Turbidity
Zinc	Unknown Toxicity
Carbofuran	Bromide
Chlordane	Nutrients (Nitrate)
Chlorpyrifos	Pathogens
DDT	Organic Carbon
Diazinon	Boron
PCBs	Chloride
Toxaphene	pH
Ammonia	Sodium Absorption Ratio
Temperature	Alkalinity

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