United States Department of the Interior

BUREAU OF RECLAMATION
Central Valley Operations Office
3310 El Camino Avenue, Suite 300
Sacramento, California 95821

IN REPLY
REFER TO:

CVO-400
WTR-1.10

APR 25 2005

Ms. Victoria A. Whitney
Division Chief, Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, California 95812-2000

Subject: Final Revised Water Quality Response Plan

Dear Ms. Whitney:

Bureau of Reclamation (Reclamation) and the California Department of Water Resources (Department) are submitting for your approval the Joint Point of Diversion (JPOD) Water Quality Response Plan (WQRP) for JPOD stages 1 and 2. The WQRP addresses the requirements of SWRCB D-1641 to develop and provide a response plan to ensure that water quality in the southern and central Delta will not be significantly degraded through operations of the JPOD to the injury of water users in the southern and central Delta.

The submitted final WQRP incorporates terms and conditions for your approval of the WQRP dated July 1, 2004. The final WQRP also incorporates similar terms and conditions to address any potential water quality impacts to South Delta Water Agency (SDWA) members. We have had discussions with SDWA and have shared draft WQRP language with SDWA.

If you have any questions please contact Paul Fujitani 916-979-2197 with Reclamation or John Leahigh 916-574-2722 with the Department.

Sincerely,

Ronald Milligan, Operations Manager
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U.S. Bureau of Reclamation
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Acting For
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Enclosure: (Final WQRP)

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U.S. Bureau of Reclamation and California Department of Water Resources Water Quality Response Plan for use of Joint Points of Diversion under Water Right Decision 1641

The State Water Resources Control Board (SWRCB) Water Right Decision 1641 (D-1641) establishes three stages under which Joint Points of Diversion (JPOD) can be used by either the Department of Water Resources (Department) or the United States Bureau of Reclamation (Reclamation) for diversions of Delta water supplies at the State Water Project (SWP) Banks pumping plant and Central Valley Project (CVP) Tracy pumping plant, respectively. Stage 1 allows JPOD use for selected purposes including the recovery of export reductions taken to benefit fish. Stage 2 allows JPOD use for any authorized purpose up to the current regulatory capacity of these facilities. Stage 3 allows JPOD use up to the physical capacity of these facilities authorized under their water right permits. The use of the JPOD in each of these stages requires, among other things, the development of a Water Quality Response Plan (Plan).

This plan does not address Stage 3 use of JPOD as such use is not contemplated at this time. However Reclamation and the Department acknowledge that Stage 3 is subject to the D-1641 permit term,

> Permittee shall protect water levels in the southern Delta through measures to maintain water levels at elevations adequate for diversion of water for agricultural uses. This requirement can be satisfied through construction and operation of three permanent tidal barriers in the southern Delta or through other measures that protect water quality in the southern and central Delta and protect water levels at elevations adequate to maintain agricultural diversions. If construction and operation of tidal barriers is used as a basis for Stage 3 operation, such construction and operation shall be subject to certification of a project-level Environmental Impact Report by Permittee that discloses the impacts of tidal barriers. (Page 153)

Reclamation and the Department will need to submit to the Executive Director an operations plan consistent with Stage 3 requirements at a future date based on information and analysis to address permanent tidal barriers or other measures.

Terms and Conditions for JPOD

The use of JPOD for all stages is subject to several D-1641 terms and conditions relating to Contra Costa Water District's (CCWD) Los Vaqueros Project operations and CCWD water right Permits 20749 and 20750. The first term and condition in D-1641 reads (Page 150):

Apr 25 05 12:59p CVO 916-979-2494 p.4

(1) Diversion by the USBR at Banks Pumping Plant is not authorized when the Delta is in excess condition and such diversion causes the location of X2 to shift upstream so far that:

(a) It is east of Chipps Island (75 river kilometers upstream of the Golden Gate Bridge) during the months of February through May, or
(b) It is east of Collinsville (81 kilometers upstream of the Golden Gate Bridge) during the months of January, June, July, and August, or
(c) During December it is east of Collinsville and delta smelt are present at Contra Costa Water District's point of diversion under Permits 20749 and 20750 (Application 20245).

A similar permit term applies for diversion by the Department at Tracy Pumping Plant.

Reclamation and the Department recognize that this permit term and condition has its genesis from conditions in the 1993 biological opinion by the U.S. Fish and Wildlife Service addressing the impact of the Los Vaqueros Project operations on delta smelt. Recently, at the request of CCWD, the applicable conditions in that biological opinion were modified for a three-year trial period. The modification will bring the terms of the biological opinion into closer conformance with D-1641 criteria for X2. Therefore, the modified terms and conditions in the biological opinion for this trial period, CCWD may divert water to Los Vaqueros storage under less stringent X2 conditions than applies to JPOD under D-1641.

Reclamation and the Department recognize that JPOD export is not authorized, and will not pursue such an operation when the Delta is in excess conditions, until the location of X2 is west of Chipps Island in February through May, west of Collinsville in January, June, July, or August, or during December, X2 is west of Collinsville and no delta smelt are present at CCWD's point of diversions under Permits 20749 and 20750 (Application 20245).

Reclamation and the Department monitor water quality at these locations and estimate the current location of X2. Reclamation and the Department will use EC measurements taken at their Collinsville and Mallard Slough continuous monitoring stations to determine when X2 is downstream of the permit term locations. Reclamation and the Department will comply with the permit term by monitoring when the daily average or 14-day running average EC at Collinsville is at or below 2.64 mmhos/cm, then X2 is west of Collinsville. Similarly, when the daily average or 14-day running average EC for Chipps Island (as estimated from the Mallard Slough station) is 2.64 mmhos/cm or less, then X2 is west of Chipps Island.

The second permit term and condition reads (Page 150):

(2) Any diversion by Permittee at the Banks Pumping Plant that causes the Delta to change from excess to balanced conditions shall be junior in priority to Permits 20749 and 20750 of the Contra Costa Water District.

Apr 25 05 12:59p CVO 916-979-2494 p.5

A similar permit term applies to the use at Tracy Pumping Plant by the Department.

The plain meaning of this term is that the water right permits held by CCWD are senior in priority to the use of JPOD during the **transition period from excess to balanced conditions** in the Delta. Reclamation and the Department will coordinate with CCWD on a timely basis to determine the extent to which the quantities of water diverted by CCWD pursuant to its water service contract with Reclamation should be adjusted to recognize the senior priority of CCWD's permits during this transition period. Reclamation and the Department assert that there is no issue of priority between JPOD operation and CCWD permits 20749 and 20750 under excess conditions in the Delta.

Under the combination of all the below listed project operational conditions, an accounting adjustment is appropriate during the transition period from excess to balanced conditions in the Delta to recognize CCWD's senior water permits: (Refer to attached hypothetical scenario as an example illustration of project operations records and the water rights/contractual adjustment process)

(a) The Delta changes from excess conditions to balanced conditions in order to meet a D-1641 beneficial use standard and to account for the relative CVP and SWP water responsibilities in the Coordinated Operations Agreement (COA) process. (Generally, the COA directs which project needs to first modify reservoir releases or exports in order to continue meeting D-1641 beneficial use standards.)
(b) CCWD continues to exercise water right permits 20749 and 20750 by diverting available water supplies to Los Vaqueros storage.
(c) JPOD export continues at a recorded rate per day.

An accounting adjustment is made to credit CCWD for Los Vaqueros water right diversion under balanced conditions rather than CVP contract water on a daily basis for the minimum of either:

(a) The daily rate of JPOD export.
(b) The CCWD diversion to Los Vaqueros storage.

The water right crediting continues until one of the following conditions is met:

(a) JPOD has ceased on a daily basis.
(b) CVP or SWP reservoir release increases by an amount equal to or exceeding the JPOD export rate enter the Delta to support the JPOD under balanced water conditions.

The fifth term and condition of D-1641 reads (Page 150):

(3) Permittee shall develop a response plan to ensure that water quality in the southern and central Delta will not be significantly degraded through operations

of the JPOD to the injury of water users in the southern and central Delta. Such a plan shall be prepared with input from the designated representative of the Contra Costa Water District (CCWD) and approved by the Chief, Division of Water Rights.

Reclamation and Department operations staff have met with representatives of CCWD. The parties differ on the interpretation and determination of significant degradation to water quality and injury to legal users within the context of the 1995 Bay Delta Plan and D-1641 water quality standards for the protection of beneficial uses.

Delta Conditions Applicable to the Plan

The use of JPOD by the Department or Reclamation occurs during two distinct types of water balance conditions in the Delta:

(1) "excess conditions" when releases from upstream reservoirs plus unregulated flow exceed Sacramento Valley inbasin uses plus exports. Inbasin uses in this definition include western Delta salinity standards and fishery beneficial use standards contained in D-1641.

(2) "balanced conditions" when both Projects agree that releases from upstream reservoirs plus unregulated flow approximately equal the water supply needed to meet inbasin uses (including D-1641 standards) plus exports.[1]

During excess conditions water quality in the Delta is by definition better than required by D-1641 standards.

Additionally, Reclamation and the Department recognize that JPOD export is not authorized under excess conditions until the location of X2 is west of Chipps Island in February through May, west of Collinsville in January, June, July, or August, or during December, X2 is west of Collinsville and no delta smelt are present at CCWD's point of diversions under Permits 20749 and 20750 (Application 20245).

During the transition from excess to balanced conditions, the applicable terms and conditions in D-1641 have protected CCWD from injury by requiring that any diversion by the Department and Reclamation for JPOD that causes a change from excess to balanced conditions is junior in priority to the CCWD Permits 20749 and 20750 (Los Vaqueros Project). Under balanced conditions, CCWD Permits 20749 and 20750 do not have an unappropriated water source to support the permits. Although it is unlikely that JPOD would cause a distinct transition from excess to balanced conditions, if this occurred, Reclamation and the Department would meet with CCWD to agree on the water right adjustment associated with the quantity impact to CCWD's senior water rights. In such a transition period, CCWD would likely continue to divert water to Los Vaqueros storage, because the interior water quality is generally very good.

[1] Excess and Balanced Conditions in the Delta are defined on page 4 of the Agreement between the U.S. and California for the Coordinated Operation of the CVP and SWP (Nov. 24, 1986).

Apr 25 05 12:59p CVO 916-979-2494 p.7

During balanced conditions, Reclamation and the Department operate the CVP and SWP to meet the standards in D-1641. Under balanced conditions and during most of the summer/fall period when water quality concerns for municipal and industrial beneficial uses typically occur in the Delta, CCWD diverts water from the Delta under a water supply contract with Reclamation (Amendatory Contract No.I75r-3401) utilizing water rights held by Reclamation. The water supply contract does not guarantee any water quality better than that required by Reclamation's water right permits (ie. D-1641 standards). [2] Therefore, changes in water quality during balanced conditions and periods when CCWD obtains water under its contract with Reclamation will not affect CCWD's water rights or cause CCWD injury to their water rights.

In addition to the terms and conditions listed above, the use of Stage 1 and Stage 2 JPOD is also subject to terms and conditions pertaining to water quality in the South Delta. The South Delta Water Agency (SDWA) raised water quality concerns associated with JPOD during consideration of the Water Level Response Plan for JPOD. Therefore, in its conditional approval of the WQRP dated June 15, 2004, the SWRCB included the condition that the Department and Reclamation must consult with SDWA to determine and address any potential water quality impacts to SDWA and submit a revised WQRP based on that consultation. Staff from the Department and Reclamation have coordinated with SDWA to develop the following process to address potential water quality impacts in the South Delta resulting from JPOD actions.

All JPOD actions would be contingent upon forecasted and actual water quality conditions at the Southern Delta stations. The Department, Reclamation, and SDWA shall strive to maintain diligent communication regarding the planning and execution of any action referencing this WQRP.

Prior to commencing JPOD diversions, the Department and Reclamation shall conduct water quality modeling that will forecast water quality on a short-term basis at the Southern Delta interior water quality compliance sites (San Joaquin River at Brandt Bridge, Old River near Middle River, and Old River at Tracy Road Bridge) under planned JPOD diversions. The DSM2 model will be used as the forecast model to predict water quality trends, and modeling results will be shared with SDWA and the SWRCB in a timely manner.

In addition, both the Department and Reclamation will monitor real-time EC data at the compliance stations to confirm standard compliance and water quality trends.

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[2] The actual operation of CCWD's Los Vaqueros Project is highly influenced by the availability of high quality water in the Delta at CCWD's Old River Intake, not just the water right permit under which the water is diverted. There will be times when CCWD will not divert under Permit 20749 because the salinity of the water at the Old River intake is not suitable to be used as blending water later in the year. There will be other times when CCWD will divert to Los Vaqueros storage under Reclamation water rights because the salinity is suitable to be used as blending water later in the year. The determination of water quality suitability of the available water supplies is at the discretion of CCWD.

If water quality standards at Vernalis and the three Southern Delta interior stations are being met, and shared modeling analysis does not indicate future non-compliance at the Southern Delta interior water quality stations with the incremental export program action (JPOD or water transfer), then the incremental export program effects to Southern Delta water quality shall be deemed acceptable. However, if water quality standards at Vernalis or any of the three Southern Delta interior stations are not being met, or shared modeling analysis indicates the trend effect of the incremental export program (JPOD or water transfer) is to degrade salinity conditions at the South Delta interior compliance stations to the extent that the standards would not be met, then the incremental export program effects to South Delta water quality would be deemed unacceptable, and the incremental export program cannot occur without other mitigation measures for South Delta salinity effects.

Currently, the temporary barrier program (TBP) is being implemented to address water level concerns in the southern Delta channels. By allowing water to enter south Delta channels during incoming tidal phases and holding the water during outgoing tidal phases, the TBP is effective at improving water levels in those channels. However, TBP operations cannot effectively produce the water circulation patterns necessary to manage for water quality compliance concerns, the way that permanent, operable barriers will be able to do. Therefore, the Department and Reclamation anticipate there may be operational scenarios when the southern Delta water quality objectives would not be in compliance.

If SDWA were to object to the planned JPOD diversions on the basis of shared model results, and the Department, Reclamation, and SDWA are unable to agree on operations of JPOD, the Department and Reclamation shall contact the Chief of the Division for a determination regarding required mitigation, if any, for potential water quality impacts associated with JPOD operations. In order to substantiate an allegation of potential harm to its use of water, SDWA should submit detailed information concerning how the change in salinity levels would impact SDWA's operations.

Transfers by Third Parties

In addition to operating JPOD for the CVP and the SWP consistent with this Plan, Reclamation and the Department will also follow this Water Quality Response Plan when operating the Delta pumping facilities to facilitate potential water transfers of their own, and water transfers of third parties.

Reclamation and the Department coordinate and facilitate water transfers through the Delta to project export facilities, under balanced conditions. As part of CVP-SWP operations to meet water quality beneficial use standards, Reclamation and the Department assess a water cost to third party water transfers, known as "carriage water." Carriage water offsets any added water costs needed to maintain compliance with Western Delta water quality standards. When Reclamation and the Department utilize

each other's project facility under JPOD authority under balanced conditions, carriage water costs are met by the party using the JPOD.

Response Plan Actions

As discussed, some minor degradation in Delta water quality could be caused from JPOD operations during excess conditions when water quality is better than that required by D-1641 standards. However, during balanced conditions, Reclamation and the Department are responsible to maintain D-1641 water quality standards with or without the use of JPOD operations. Therefore, Reclamation and the Department will take the following actions to address JPOD and water transfers at the CVP and SWP in order to assure that these operations will not injure any legal user of water in the southern and central Delta and to meet requirements of D-1641 and Water Code Section 1702:

- Reclamation and the Department will meet D-1641 standards required by their water right permits for western Delta agricultural beneficial uses and for Delta municipal and industrial beneficial uses assuring that no change in water quality will rise to the level that would cause injury to water users in the southern and central Delta.

- Reclamation and the Department will assess carriage water costs to third parties for water transfers to maintain D-1641 water quality standards and to protect the SWP and CVP water supplies from the increased water costs associated with facilitating the transfer.

  (When JPOD operations are performed by Reclamation and the Department, the CVP and SWP supply the carriage water from their own resources to meet the cost of JPOD use.)

- Reclamation and the Department will provide to CCWD seasonal forecasts of use of CVP and SWP Delta export facilities for JPOD and water transfers.

- Reclamation and the Department will meet with CCWD to determine the extent to which the quantities of water diverted by CCWD pursuant to its water service contract with Reclamation should be adjusted.

- Prior to commencing JPOD diversions during excess conditions when CCWD is authorized to divert water under its Los Vaqueros water rights, the Department and Reclamation shall conduct water quality modeling that will forecast water quality on a short-term basis in the southern Delta near CCWD's intakes associated with planned JPOD diversions. The Department and Reclamation shall submit results of the modeling forecasts to CCWD and the SWRCB. If CCWD objects to the planned JPOD diversions, and the Department, Reclamation, and CCWD are unable to agree on operations of JPOD, the Department and Reclamation shall contact the Chief of the Division for a determination regarding

Apr 25 05 01:00p CVO 916-979-2494 p.10

required mitigation, if any, for potential water quality impacts associated with JPOD operations. In order to substantiate an allegation of potential harm to its use of water, CCWD should submit detailed information concerning how the change in chloride levels would impact CCWD's operation (including potential health concerns, treatments costs, blending ability, and availability of water to meet environmental and customer demands).

- Prior to commencing JPOD diversions the Department and Reclamation shall conduct water quality modeling that will forecast water quality on a short-term basis in the southern Delta at the Southern Delta interior water quality compliance sites (San Joaquin River at Brandt Bridge, Old River near Middle River, and Old River at Tracy Road Bridge) associated with planned JPOD diversions. The Department and Reclamation shall submit results of the modeling forecasts to SDWA and the SWRCB. If SDWA objects to the planned JPOD diversions, and the Department, Reclamation, and SDWA are unable to agree on operations of JPOD, the Department and Reclamation shall contact the Chief of the Division for a determination regarding required mitigation, if any, for potential water quality impacts associated with JPOD operations. In order to substantiate an allegation of potential harm to its use of water, SDWA should submit detailed information concerning how the change in salinity levels would impacts SDWA's operations and beneficial uses.

Apr 25 05 01:00p CVO 916-979-2494 p.11

Apr 25 05 01:00p CVO 916-979-2494 p.12

Example - Hypothetical Adjustment to CCWD WR Permits Diversion Accounting
while JPOD is in use during an Excess to Balanced Delta Conditions transistion period.

Day	Delta Condition	JPOD Export Rate CFS	CCWD Permit to LV storage CFS	USBR Permit to LV storage CFS	Increased Reservoir Release to support Delta Exports CFS	Adjustment to CCWD Permit CFS
1	Excess	500	200	0	No	0
2	Excess	500	200	0	No	0
3	Balanced	300	0	200	No	200
4	Balanced	200	0	200	No	200
5	Balanced	100	0	200	No	100
6	Balanced	100	0	200	Yes-100	0
7	Balanced	500	0	200	Yes-500	0
8	Balanced	500	0	200	Yes-500	0
					Total Adjustment to CCWD WR Permit Use (TAF) =	1.0

Note: Days 3 & 4 diversion accounting are adjusted due to the senior priority of CCWD permit and JPOD continues at a rate greater than diversion to LV storage.

Note: Day 5 diversion accounting is adjusted to match JPOD diversion rate due to senior priority of CCWD permit.

Note: Days 6,7 & 8 diversion accounting are not adjusted due to CVP/SWP increasing reservoir releases to compensate for desired JPOD export under balanced conditions.