

**APPENDIX E**

**COMMENT LETTERS RECEIVED ON DRAFT EA  
ALONG WITH RESPONSES TO EACH LETTER**

LETTER #1

SOUTH DELTA WATER AGENCY

3031 WEST MARCH LANE, SUITE 332 EAST  
POST OFFICE BOX 70392  
STOCKTON, CALIFORNIA 95267  
TELEPHONE (209) 956-0150  
FAX (209) 956-0154  
EMAIL Jherriaw@aol.com

Directors:

Jerry Robinson, Chairman  
Robert K. Ferguson, Vice-Chairman  
Alex Hildebrand, Secretary  
Natalino Bacchetti  
Mark Bacchetti

Counsel: John Herrick  
Engineer: Gerald T. Oriob

September 22, 2000

Via Fax (916) 978-5114

Water Acquisition Program Manager (MP 410)  
Bureau of Reclamation  
2800 Cottage Way  
Sacramento, CA 95825

Re: Draft Environmental Assessment for Water Acquisition

Dear Program Manager:

The South Delta Water Agency ("SDWA") hereby makes the following comments on the Draft Environmental Assessment for the Water Acquisition of 25,000 Acre-Feet from Merced Irrigation District.

1. The DEA Fails to Specify the Underlying Water Rights. The DEA states that the water to be used will be that which is stored in excess of Merced Irrigation District's needs. Under what authority can a dam operator store more water than it needs? California water law limits all use, including amounts authorized under any permit, to that which is actually and beneficially used. Since Merced Irrigation District does not assert that it has obtained this "surplus" water from a conservation program, but admits it is storing water in excess of its needs, it would appear that Merced Irrigation District has no right to the water it proposes to sell.

1-1

2. The DEA Fails to Examine the Effects on Other Downstream Users. The DEA does not include any analysis of the project's effects on downstream users. In the recent State Water Resources Control Board hearings to consider alternatives for

1-2

implementing the 1995 Water Quality Control Plan, Merced ID put on a case which indicated that in order to supply SJRA/VAMP water, it would shift "discretionary" power releases from summer to other times. This shifting of flows is also contemplated for the current project. Such a shift results in New Melones having to make additional releases to meet the Vernalis Salinity Standard, in excess of those that would be made if the project did not go forward.

When New Melones must release additional water, it decreases the amount in that reservoir for eastern San Joaquin County users, fishery needs, and downstream quality objectives. Without analyzing how much summer flow will be decreased, how much additional New Melones water will be released, and the effects of decreasing New Melones storage, the DEA falls woefully short of an adequate review.

Interestingly, at the SWRCB hearings, Merced Irrigation District put on testimony and exhibits discussing this very issue, yet it did not make it into this analysis. In addition, Stockton East Water District has complained of this effect in those same hearings as well as at the CALFED Ops Group, but the issue still did not make it into this analysis.

A complete analysis would examine how the change in flows affects the operation of New Melones and therefore other legal users. The issue cannot be brushed aside with "promises" that the USBR will meet downstream standards no matter what. Although the Bureau pretends that it will meet the Vernalis obligation, it budgets an amount of water from New Melones that is not based upon need. Further, in conversations this summer with Mr. John Burke of the USBR (one of the drafters herein), SDWA was informed that although the Bureau budgets a certain amount each year for water quality, that is only for budgeting purposes and does not reflect the Bureau's intent to release that budgeted amount even if needed.

Further still, the USBR and DWR are now required to meet the three interior South Delta water quality objectives for salinity. SDWA is aware of no plan to meet those newly created permit obligations. Any decrease in New Melones storage from this project would necessarily exacerbate or cause additional violations of the three interior South Delta standards as well as the Vernalis one. These standards protect agricultural beneficial users. Currently, the Bureau does not regularly meet the Vernalis standard and has no plan which will allow it to meet it on a yearly basis.

SDWA hereby incorporates (i) Merced Irrigation District's testimony, documents, exhibits, and the cross-examination thereof presented at the recent SWRCB hearings; and the USBR and SJRGA's testimony, documents, exhibits, and the cross-examination thereof presented at the SWRCB hearings into the record for the DEA. If Merced Irrigation District and USBR will not supply those documents to the drafters, SDWA can forward them.

3. The DEA Fails to Clarify the Ability to Export the Project Water. The DEA states that the purpose of the project is to supply an additional 25,000 acre-feet of water for wildlife refuges. The water is to be exported by DWR and wheeled by that agency to the USBR for delivery via the Delta-Mendota Canal. SWRCB D-1641, however, only allows USBR to use DWR's point of diversion to "recover export reductions taken to benefit fisheries . . .", "that there be no increase in annual exports," that the recovery be "within 12 months of the time the exports are reduced," (D-1641 at 156-157), and that a response plan to protect South Delta diverters has been approved by the SWRCB (D-1641 at 156).

There has been absolutely no showing of the three former requirements, and the latter has not occurred. Before the project can proceed, supplying additional water for refuges must first be shown to actually be makeup for lost exports. This calculation will require an explanation of amounts budgeted for AFRP, and (b)(2) under CVPIA which commits certain exports to other purposes and therefore would not be considered lost exports.

SDWA has objected to the Bureau's and DWR's proposed Response Plan which was developed without SDWA input or comment. This year, even with the three tidal barriers sometimes operating in conjunction, riparian diverters downstream and upstream of the barriers were harmed by export pumping. SDWA has taken the position that no joint point pumping should be allowed until those problems are corrected.

Clearly, if the project will decrease summer flows, it will exacerbate the ongoing harm to legal users in the Delta which result from export pumping which itself will be increased by the project.

5. The DEA Does Not Examine the Project's Effect on Obligations Under the Delta Protection Act. The Delta Protection Act requires the State and Federal Projects to provide salinity control in the Delta and "an adequate water supply for users of water in

the Sacramento-San Joaquin Delta." The Act also requires that storage releases be coordinated to accomplish these goals. Finally, the act precludes the export of water which is not surplus to in-Delta needs. (See Water Code §§ 12200 et seq.)

First, the USBR and DWR have made no effort to comply with these statutes. Second, the Bureau is specifically altering storage releases through this project which will decrease the amount of water needed for in-Delta use. Third, the statute precludes the export of the sale water (no matter the purpose) if the water is not surplus to in-Delta needs. The drafters have made no analysis of whether or not in-Delta needs will be met during the planned export of the project's water.

6. The DEA Fails to Examine the Effects on Groundwater. The DEA gives a cursory review of groundwater effects. However, it makes no analysis of how decreased summer flows, or refill obligations will affect groundwater and river flows.

Decreased summer flows increase the amount of groundwater which will accrete to the Merced and San Joaquin Rivers. Less water in the river during the summer months means that the temporary storage in groundwater will move more quickly to the river and thus be more quickly depleted. This increased loss of temporary groundwater storage will affect future flows as it will change the timing and magnitude of future losses and accretions to the rivers.

Refill obligations mean that the project will capture more water at a later time than before. This too affects the interplay between groundwater and surface water. Refill also decreases downstream flows in the Delta. Those flows provide water to assist in the flushing of salts from Delta soils. There is no analysis of how the project will affect those flushing needs.

None of these issues have been recognized or analyzed in any of the other environmental documents referenced in the DEA.

7. The DEA Fails to Examine Cumulative Effects. The various SJRA/VAMP flows, and the numerous supplemental and additional San Joaquin River tributary purchases over the last few years have all decreased summer flows and further burdened New Melones. None of the analyses to date have examined the cumulative effects of these transfers as a whole. Each transfer either decreases Merced Irrigation District storage, Merced River flows, New Melones storage, and/or San Joaquin River flows, yet

none of the analyses include those decreases. Each analysis starts anew without incorporating past or future decreases. This allows the analysis to conclude there are no significant effects resulting from the project. As an example, since neither New Melones or Merced Irrigation has been able to "recapture or refill" additional amounts that have been released for VAMP and other transfers, there now remains a "hole" in the overall storage which is only further exacerbated by the proposed transfer. At sometime in the future, this hole in storage will have adverse affects on downstream users if that has not already happened.

We have seen from the SWRCB hearings that the SJRA modeler (Mr. Dan Steiner) was instructed to assign a value of zero to return flows from the SJRGA tributary agencies with regard to the application and use of water. However, OID's own presentation included an analysis by Montgomery Watson that its sales will result in decreases of Stanislaus River flows of one-third of the amount of the sale. A complete analysis is necessary under NEPA, not a rigged one that makes assumptions that guarantee no impacts will be found. If USBR and Merced Irrigation District will not provide the drafters with these documents and supporting transcripts, SDWA will.

8. Incorporation of Other Documents. SDWA hereby incorporates its prior comments to the Environmental Assessments and Initial Studies for additional water acquisitions in the year 2000 as contained in its April 24, 2000 letter, as well as Central Delta Water Agency's letter of the same date. Attached hereto are: Effects on Vernalis Flow and Quality by Implementing the San Joaquin River Agreement During 1999, Supplemental Analysis of the Effects on Vernalis Flow and Quality by Implementing the San Joaquin River Agreement During 1999, April 20, 1999 Lester Snow letter to DWR, July 26, 1999, Draft Meeting Notes for No Name Group Conference Call, SDWA April 24 letter to Dan Fults, April 24, 2000 Central Delta Water Agency letter to Mike Delamore. These documents support the various issues set forth above.

SDWA is authorized to state that the Central Delta Water Agency joins in these comments.

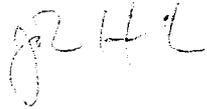
Water Acquisition Program Manager (MP 410)

September 22, 2000

Page - 6 -

Please call me if you have any questions or comments.

Very truly yours,

A handwritten signature in dark ink, appearing to read "JH", with a stylized flourish extending from the bottom left.

JOHN HERRICK

JH/dd

Enclosures

## Responses to Letter #1 from John Herrick, South Delta Water Agency

- 1-1: Merced ID's water right on the Merced is an appropriative water right under license #11395, which authorizes diversion to storage of up to 605,000 af annually in Lake McClure and Lake McSwain. Section 1725 of the Water Code requires that the transfer will involve only the amount of water that would have been consumptively use or stored by the permittee or licensee in the absence of the proposed temporary change. In the absence of this proposed temporary change, the water proposed for transfer would remain in storage in Lake McClure. The proposed transfer will reduce Merced ID's existing storage by 25,000 af. Merced ID has filed a petition with the State Water Resources Control Board (SWRCB) for a temporary change in their water right license to add a point of rediversion and add the wildlife refuges and areas within the CVP and SWP to their place of use. The SWRCB is required to make findings that all requirements under Section 1725 of the Water Code are satisfied prior to approval of such a petition.
- 1-2 Problems with both salinity and water supply in the South Delta are existing conditions. Revised Water Right Decision 1641 (Order WR 2000-02) issued by the State Water Resources Control Board on March 15, 2000 established current responsibilities for meeting flow objectives in the 1995 Water Quality Control Plan (WQCB) for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. This decision recognized the San Joaquin River Agreement (SJRA) and approves, for a period of twelve years, the conduct of the Vernalis Adaptive Management Plan (VAMP). VAMP consists of an adaptive fishery management plan and stipulates flow requirements that would change annually in response to hydrologic and biological conditions. Under SJRA and VAMP, Reclamation has pledged to comply with the flow-dependent objectives of the 1995 WQCP that can be reasonably met.

The Environmental Assessment (EA) prepared for the Proposed Action includes forecasting information to show operations with and without the water acquisition. An agreement between Merced ID and Reclamation will require monitoring of releases from Lake McClure, and will establish refill criteria for Lake McClure to ensure there are no future impacts to the Central Valley Project, the State Water Project, or other legal downstream users as a result of the water acquisition. Merced ID will assume full responsibility for refill impacts to storage at Lake McClure. As shown in the forecast operations information, the water provided for the proposed transfer will occur during fall months and therefore will have no direct affect on summer flows. The only potential for affecting summer flows would occur through refill obligations, and the likelihood

of refills obligation affecting summer flows requiring releases from New Melones is considered rare because all of the following would need to occur:

1. The water year 2001 would need to be a dry or below normal water year resulting in a refill obligation that could not be met during the winter and spring periods.
2. Water quality objectives would not be met during the summer period at Vernalis.
3. Releases at New Melones would have to be available and chosen to meet water quality objectives at Vernalis during the summer to meet refill obligations.

Evaluating potential changes to Delta tributary streams (including the Stanislaus River) due to any refill obligation on the Merced River resulting in a reduction in summer flows is speculative since any assessment involves a number of dynamic variables including SWP and CVP operations in the context of other commitments including Bay-Delta responsibilities, CVPIA and AFRP actions, CALFED objectives, ESA and the Coordinated Operating Agreement. With respect to meeting Vernalis water quality objectives, Reclamation also has several tools available to meet these objectives in addition to New Melones Reservoir releases, including operations of other components of the CVP, water purchases, and source control. Releases from New Melones would occur only as consistent with existing water rights.

The reviewer has not provided any evidence or data to demonstrate that injury occurs to any legal users as a result of the proposed action or that the proposed action will decrease the likelihood that South Delta water quality objectives will be met. The Proposed Action is not expected to degrade water quality or water levels in the South Delta.

- 1-3 Reclamation disagrees with any assertion that the proposed transfer is in conflict with SWRCB Decision 1641 (as revised). The reviewer suggests that the USBR is requesting use of Joint Point of Diversion under SWRCR Decision 1641, in order to use the SWP Banks Pumping Plant. However, the USBR is not requesting this action. Merced ID has petitioned the SWRCB to temporarily add Banks as an additional point of rediversion under Merced ID's water right license as described in the petition submitted to the SWRCB by Merced ID under cover letter dated August 16, 2000.
- 1-4 Comment noted. Water will be exported to the wildlife refuges only to the extent that pumping capacity is available. As fully discussed in the EA, the acquired water to be exported from the Delta will be transferred through unused SWP regulated capacity and in compliance with all existing environmental laws, regulations and agreements. These include the Delta Protection Act, 1994 Bay-

Delta Accord, the 1995 Water Quality Control Plan (WQCP), the biological opinions for the delta smelt and winter-run chinook salmon, the CALFED Program, and the SJRA which implements VAMP. The impacts on the Delta of the SWP making full use (within prescribed constraints) of its pumping capacities and any necessary mitigation have already been fully documented in prior environmental documents. The proposed transfer is consistent with the Delta Protection Act (Water Code Section 12201) in which the Legislature specifically found that the maintenance of an adequate water supply in the Delta for in-Delta uses and "as a common source of freshwater for export" was necessary to the peace, health, safety, and welfare of Californians.

The release pattern of water from Lake McClure for the transfer is being coordinated with the California Department of Fish and Game, Fish and Wildlife Service, National Marine Fisheries Service, CALFED, Merced ID, and SWP and CVP operations to assure that fishery flows are met while meeting water quality and flow objectives. Adjustments and accounting of CVP and SWP operations are routinely made on a daily basis to meet the complex set of demand placed on both of these projects include meeting ESA requirements, water quality objectives, pumping obligations, and pumping capacity constraints. The Proposed Action creates minor operation changes that will be coordinated between Reclamation and DWR as currently done on a routine basis.

- 1-5 / The Proposed Action is not expected to significantly affect groundwater resources due to the proposed water transfer. Refer to Section 3.2.2 of the EA for the full analysis of the potential impacts to groundwater associated with the Proposed Action.

The Proposed Action could have some affect on groundwater levels due to changes in streamflow levels in the Merced River associated with the water transfer. The amount of water lost or gained by the groundwater basin adjacent to the Merced River would be a function of the wetted width and length of the river combined with the amount of time that the riverbed is wet. The affect is also dependent on the groundwater conditions near the stream. Although there is not sufficient data available to model the impact of the proposed transfer on groundwater levels due to changes in streamflow levels, it is clear that the Proposed Action would have offsetting impacts. The Proposed Action would result in increased streamflows on the Merced and San Joaquin Rivers in the fall months. An increase in stream flows would result in a minor increase in groundwater levels in those months near the stream corridors due to seepage to the groundwater aquifer. However, to the extent that streamflow levels are reduced to address refill impacts, there could be minor drawdown impacts to the adjacent groundwater aquifer that could offset benefits accrued from higher flows in the fall.

The affect of the Proposed Action on flushing flows to the Delta is considered less than significant. The increment of transfer water is too small to accurately model its effects on flushing flows. However, any decrease in streamflows to meet refill impacts, if required, would be offset by increased flows during the fall. Although the Proposed Action will change the timing of flows it will not decrease the magnitude of inflows to the Delta. Any water to be exported from the Delta will be transferred through unused SWP regulated capacity and in compliance with all existing environmental laws, regulations and agreements.

- 1-6 Reclamation disagrees with the reviewer regarding the adequacy of the cumulative analysis for the Proposed Action and for prior water transfers. Each historic water transfer has included environmental documentation as required by the National Environmental Quality Act (NEPA) that included an analysis of cumulative impacts including past, present and foreseeable projects. The EA prepared for the Proposed Action builds-off the analysis contained in the prior environmental documents and fully addresses cumulative impacts using the most current information (refer to Section 4.0 of the EA). The hydrologic forecast data contained in the EA assesses impacts under both existing conditions without the Proposed Action (including existing and expected transfers), and with the Proposed Action.
  
- 1-7 Comment Noted. Prior correspondence attached to the letter from South Delta Water Agency has been included in this Appendix.

## LETTER #2

**From:** John Burke  
**To:** Dan Fua  
**Date:** 9/26/00 6:54PM  
**Subject:** Re: FW: Merced ID 25,000 af transfer to USBR

Dan/Maureen:

Thanks for the comment. I think you are correct. Will pass this along to Dan Meier, our EnvSpec.

jb

>>> "Dan Fua" <dfua@water.ca.gov> 09/26/00 04:31PM >>>  
John,

Forwarding you a comment from Maureen Sargent of our staff on the Merced ID EA/FONSI. Sorry for the delay.

Dan

-----Original Message-----

**From:** Ilene Wellman-Barbree [<mailto:ilenewb@water.ca.gov>]  
**Sent:** Thursday, September 21, 2000 5:29 AM  
**To:** [dfua@water.ca.gov](mailto:dfua@water.ca.gov)  
**Subject:** FW: Merced ID 25,000 af transfer to USBR

-----Original Message-----

**From:** Maureen Sargent [<mailto:msergent@water.ca.gov>]  
**Sent:** Wednesday, September 20, 2000 2:37 PM  
**To:** Wellman-Barbree, Elizabeth Ilene  
**Subject:** Merced ID 25,000 af transfer to USBR

I reviewed the EA for the 25,000 af transfer from Merced ID to the USBR for level 4 refuge water. I was not sure if you were the one putting together a comment letter on the EA or if anyone was. They took out most of the references that I had a concern with in the Administrative Draft. However, there is still a statement on page 3-6 that I have a problem with. My comment is as follows:

Section 3.1.2.2 Proposed Action. At the top of page 3-6 the Draft EA states that the instream flows could be used to supplement flows in the San Joaquin River to help meet the 1995 WQCP flow objectives at Vernalis. The Bureau has consistently stated that these flows would be in addition to any flows required to meet objectives, and therefore would be new water to the Delta. The appendices show that in the with and without conditions there will be no change in the storage at New Melones which would seem to support there earlier statements that this water will not be used to meet minimum requirements at Vernalis. The statement on 3-6 should be clarified or deleted.

If you have a question regarding the above comment please give me a call. 3-9467.

2-1

**Response to Letter #2 from Maureen Sergent, California Department of Water Resources**

2-1: Comment noted. The first sentence on Page 3-6 has been modified to remove reference to the 1995 WCQP flow objectives at Vernalis.

**CORRESPONDENCE CITED AND ATTACHED  
BY SOUTH DELTA WATER AGENCY  
(COMMENT 1-7 OF LETTER #1)**

State of California

The Resources Agency

**Memorandum**

Date : April 20, 1999

To : Lester A. Snow  
Executive Director  
CALFED Bay-Delta Program

From : Department of Water Resources

Subject : 1999 San Joaquin River Pulse Flow Implementation

**RECEIVED**

APR 26 1999

Planning Dept.

This letter summarizes the discussion in the CALFED Qps Group meeting on March 23, 1999, regarding implementation of the pulse flow on the San Joaquin River this spring and reports the status of the process for assessing impacts associated with implementing the pulse flow for a period of 12 years. I apologize for the delay in sending this summary to you.

The implementation of the spring San Joaquin River pulse flow was the main topic of discussion at the Ops Group meeting. In addition to representatives from related State and federal agencies, representatives from Stockton East Water District, South Delta Water Agency, Central Delta Water Agency, Bay Institute, Environmental Defense Fund, and the San Joaquin River Authority attended.

A few days prior to the Ops Group meeting, the NoName Group received an analysis of the potential for this year's pulse flow to impact flows and reservoir storage next year. This analysis was discussed in the Ops Group meeting. Participants generally concluded implementation of the pulse flow this year would not significantly impact flows or reservoir storage next year.

Although conceding that this year's pulse flow would not produce significant impacts next year, Alex Hildebrand, SDWA, was adamantly against its implementation. His concern regards the cumulative impact resulting from implementing the pulse flow for the 12-year period. He is convinced flows on the San Joaquin River will eventually be lower during the summer and early fall, producing degraded water quality in the river.

The participants acknowledged Mr. Hildebrand's concerns. They observed that a determination by the Ops Group regarding the lack of negative impacts for this spring's pulse flow did not imply approval by the Ops Group of the 12-year program. It also was acknowledged that if the VAMP pulse flow were not to occur, the Bureau of Reclamation would seek purchases to support a similar pulse flow as required by their biological opinion for Delta smelt.

Kama Herrigfeld, representing SEWD, did not have an opportunity to review the analysis distributed to the NoName Group earlier in the week. Her concern related to the potential of the pulse flow to reduce storage in New Melones Reservoir and,

Lester A. Snow  
April 20, 1999  
Page 2

therefore, reduce the amount of water to be delivered to SEWD. Lowell Ploss of the Bureau assured her that implementation of the pulse flow did not increase this potential. Ms. Herrigfeld said she would rely upon Mr. Ploss' statement but requested a copy of the analysis and said she would follow up with Mr. Ploss regarding her concerns. (On March 30, Ms. Herrigfeld was briefed on the 1999/2000 operations plan for New Melones Reservoir by Bureau staff. This analysis distributed by the NoName Group shows, under the worse case, the allocation of CVP water to New Melones contractors has the potential of being reduced by 3000 acre-feet next year. The most current operation forecast by the Bureau, however, indicates no impact to New Melones contractors.)

Members of the Ops Group decided to report to the CALFED Policy Group that the implementation of the spring pulse flow would proceed with no significant impact to next year's flows or reservoir storage.

Monthly updates of the operation forecasts both with and without the spring pulse flow will be discussed at future Ops Group meetings. These comparisons will help identify where the water for the pulse flow originated and if any impacts resulting from the pulse flow materialized. Through these discussions, we hope participants will gain an understanding of the operational requirements of the individual reservoirs on the San Joaquin River and the specific concerns of third parties. We encourage representatives of SDWA, CDWA, SEWD, and the San Joaquin River Authority to continue participating in the Ops Group meetings.

Finally, during the Ops Group meeting, it became apparent the nature and extent of the commitment to mitigate impacts associated with the annual implementation of the pulse flow are not sufficiently defined. These issues have been brought to the attention of Allen Short, coordinator for the San Joaquin River Authority, and will be discussed at a future meeting of the management committee.

If you wish further information regarding the status of the San Joaquin River Agreement or the process of incorporating third parties into the agreement's technical group, please call Katherine Kelly at (916) 653-1099.

ORIGINAL SIGNED BY  
STEPHEN L. KASHIWADA

Stephen L. Kashiwada  
Deputy Director  
(916) 653-7092

cc: (See attached list.)

Honorable Michael J. Machado  
Member of the Assembly  
State Capitol, Room 5136  
Sacramento, California 95814

CALFED Policy Group, via CALFED  
Room 1155

Mr. Thomas M. Hannigan, Director  
Department of Water Resources  
1416 Ninth Street  
Sacramento, California 95814

NoName Group, via Greg Gartrell ✓  
Contra Costa Water District  
P.O. Box H20  
Concord, California 95424

Mr. Patrick Wright, Policy Advisor  
The Resources Agency  
1416 Ninth Street, Room 1311 -  
Sacramento, California 95814

Mr. Alex Hildebrand  
South Delta Water Agency  
3031 West March Lane, Suite 332 East  
Stockton, California 95267

Ms. Jeanne Zolezzi, Partner  
Herum, Crabtree, Dyer, Zolezzi & Terpstra  
2291 W. March Lane, Suite B-100  
Stockton, California 95207

Mr. Allen Short, General Manager  
Modesto Irrigation District  
1231 Eleventh Street  
Modesto, California 95354

Mr. Dan Fuits, Resource Analyst  
Friant Water Users Authority  
1521 I Street  
Sacramento, California 95814

Mr. Dante Nomelini, Partner  
Nomelini, Grilli & McDaniel  
235 East Weber  
Stockton, California 95201-1461

Mr. Ed Winkler  
Metropolitan Water District  
1121 L Street  
Sacramento, California 95814

**NoName Group Conference Call**  
**Monday, July 26, 1999**  
**Draft Meeting Notes**

**Attendees:** Dave Schuster (Ag/Urban), Victor Pacheco (DWR), Larry Gage (DWR), Twon Buoy (DWR), John Renning (USBR), Alex Hildebrand (SDWA), Jim White (DFG), Jim Snow (WWD), Mike Ford (DWR), John Herrick (SDWA), Jeanne Zolezzi (SEWD), Marc Carpenter (WWD), Nick Wilcox (SWRCB), Tom Boardman (SLDMWA), Heidi Rooks (DWR), Dave Briggs (CCWD).

This conference call was organized at the request of DWR to discuss water supply recovery proposals for the current and subsequent water year. The measures are designed to avoid a severe San Luis Reservoir storage low-point and to reduce impacts to SWP deliveries, including interruptible supplies.

The status of 500 cfs increase to Banks PP permit was reviewed by Victor Pacheco. DWR has received concurrence letters from the SWRCB, USFWS, DFG, and a draft approval from NMFS. The ACOE also requested (but did not require) a letter from the EPA, which remains outstanding. All ag barriers will be operational during the pumping increase (Aug. 6-Sept. 20).

DWR will release an update to the make-up proposals at the July 27, 1999 Ops Group meeting. The latest proposals include lower pumping rates in the fall due to adjustments to expected Cross Valley Canal demand but do not include Yuba purchases.

Several issues discussed during the call will be outlined at the July 27, 1999 Ops Group meeting during the NoName Group agenda item.

1. Stanislaus River purchases. The central issue is the effect of Stanislaus water purchases on New Melones storage and the probability of make-up through hydrology. Lower carryover storage could result in lower summer flows (next year) or impacts to New Melones CVP contractor allocations next year.
2. The USBR was requested by SEWD to clarify whether the use and purpose of the proposed Stanislaus River purchase this year is for Steelhead or for water make-up. Clarification on the timing of the releases was also requested.
3. DWR and SDWA have met frequently to discuss measures to avoid low stage problems for specific irrigators in the South Delta. DWR was requested to move forward with emergency measures to avoid low water levels in the South Delta caused by the proposed changes to export operations. DWR staff will need instruction from DWR policy members at the Ops Group meeting to expedite the agreements and funding. Mike Ford asked if the USBR would be willing to help fund these measures in the future.
4. Dave Schuster will clarify the availability and terms of Kern purchases for this year.

July 26, 1999

Draft NNG notes from July 26, 1999 conference call

Page 2

5. Supply impacts to the SWP could be carried into next year if the hydrology is dry enough. Dave Schuster requested a discussion of a make up plan that extended beyond March 2000 in case such hydrological conditions occurred.

6. Jim White mentioned that the projected elevated export rates in October 1999 and November 1999 could affect the spring-run take limit. DFG concurrence is contingent upon a response to spring-run issues if and when they occur in the fall.

July 26, 1999

## **Supplemental Analysis of the Effects on Vernalis Flow and Quality by Implementing the San Joaquin River Agreement During 1999**

This briefing paper supplements the document titled "*Effects on Vernalis Flow and Quality by Implementing the San Joaquin River Agreement During 1999.*" In that document the hydrologic effect at Vernalis of implementing the San Joaquin River Agreement (SJRA) during 1999 was described. The focus of that description was the hydrologic period March 1999 (today) through the end of the year (December 1999). This briefing paper describes the potential hydrologic effect of implementing the SJRA during 1999 as it may affect San Joaquin River operations next year. The analysis described for the earlier document is a subset of the longer-term analysis used herein, and the reader is directed to that document for a more robust description of the hydrologic and operational assumptions of the analysis.

### **Underlying Assumptions**

Vernalis flow and quality conditions for the period beginning March 1999 and continuing through September 2000 are simulated. For the current year (March 1999 through September 1999), two different hydrologic conditions were evaluated. The first condition is predicated on a 90 percent exceedence projection of hydrologic events. The second condition is predicated on a 50 percent exceedence projection of hydrologic events. For the subsequent period (October 1999 through September 2000), a median hydrologic condition is used as the follow-on to each of the two current water year hydrologic depictions. During the follow-on year, the SJRA is not assumed to be implemented in order to better identify the potential hydrologic impacts of this year's action in isolation.

New Melones Reservoir is assumed to operate consistent with the Interim Plan of Operation (IOP) with its out-migration pulse flow released during the month of May. The allocation of annual water supplies to the uses of the instream fishery, Vernalis water quality, Bay-Delta biological opinions, and CVP contractors are dependent on the water supply of New Melones. Allocations to OID and SSJID were assumed consistent with their 1988 agreement with Reclamation.

For the base condition, the Merced and Tuolumne River reservoir systems are modeled to operate to meet diversion demands and current minimum instream flow requirements. The FERC required spring pulse flows for the Tuolumne River are assumed to be scheduled coincident with the period of desired supplemental flow in the San Joaquin River (May). Releases in excess of minimum flow requirements on the tributaries occasionally occur in accordance with flood control storage reservation requirements.

With the implementation of the SJRA, the two different hydrologic forecasts for the current year yield two different determinations of supplemental water required to meet the flow obligations. The drier forecast (90 percent exceedence forecast) could require up to 157,000 acre-feet of supplemental water for the VAMP test. The median forecast (50 percent exceedence forecast)

could require up to approximately 110,000 acre-feet of supplemental water for the VAMP test. Outside of the VAMP test period, certain SJRGA members will provide additional amounts of water under the SJRA. During 1999, the following amounts of water will be provided with their source identified:

**90 Percent Exceedence Projection (Dry Condition)**

VAMP Water - Up to 157,000 acre-feet		
Merced incremental increase to the Lower Merced River	Exchange Contractors' incremental increase to the San Joaquin River	MID and TID incremental increase to the Lower Tuolumne River
66,000 Includes SSJID Contribution	11,000	33,000 Includes OID Contribution
And up to an additional 47,000 acre-feet of VAMP water from the Merced and Tuolumne Rivers Modeled as a range within which this water may occur "Flow Division A" assumes the 47,000 acre-feet will originate from the Merced River "Flow Division B" assumes the 47,000 acre-feet will originate from the Tuolumne River		
Other Additional Water		
Merced incremental increase to the Lower Merced River	OID to Reclamation in New Melones Reservoir	
12,500 Provided in October	15,000 Occurs as a reduction in OID diversions during September and October	

All units in acre-feet

**50 Percent Exceedence Projection (Median Condition)**

VAMP Water - Up to 110,000 acre-feet		
Merced incremental increase to the Lower Merced River	Exchange Contractors' incremental increase to the San Joaquin River	MID and TID incremental increase to the Lower Tuolumne River
66,000 Includes SSJID Contribution	11,000	33,000 Includes OID Contribution
Other Additional Water		
Merced incremental increase to the Lower Merced River	OID to Reclamation in New Melones Reservoir	
12,500 Provided in October	15,000 Occurs as a reduction in OID diversions during September and October	

All units in acre-feet

**Summary of Results - Vernalis Water Quality and Flow**

For the period through December 1999, Figure 1 and Figure 2 depict average monthly Vernalis flows simulated for each of the base and SJRA settings. As described in the earlier document, in comparison to each of the base settings, flow at Vernalis during the VAMP test period will increase as a result of the SJRA. Although an increase in flow is shown in October, Vernalis flow may remain the same with or without the SJRA. If Reclamation makes releases from New Melones to meet the 1995 WQCP October flow objective at Vernalis, additional releases from Merced during that month may allow Reclamation to reduce its releases from New Melones. In this circumstance, flow at Vernalis would remain the same as projected for the base setting and water would be retained in New Melones Reservoir storage.

In the case of the drier forecast, flows at Vernalis show no difference for the other months of the year (year 1999). During these other months, each of the tributary streams is forecasted to operate at the same level of release with or without the SJRA.

In the case of the median forecast, the SJRA operation results in Merced shifting water released at its discretion during the summertime to the VAMP test period and October. However, this summertime reduction in releases from Merced is counteracted by additional releases from New Melones Reservoir (a result of the IOP) as a reaction to meet water quality objectives at Vernalis, and the net result is only a slight decrease in flow at Vernalis. There is also a very slight decrease in Vernalis flow during June which is the result of a reduction in spill on the Merced River which occurs as a result of releasing additional water during the VAMP test period.

For the Period through December 1999, Figure 3 and Figure 4 depict average monthly water quality at Vernalis simulated for each setting. Water quality data is presented as total dissolved solids (TDS). Changes in water quality in comparison to base settings will correspond to changes in flow due to the SJRA. Improvement to water quality at Vernalis will occur during the pulse flow period and during October due to the introduction of additional tributary releases. Water quality objectives at Vernalis are forecasted to be met under all circumstances during 1999.

Figures 1 through 4 also depict potential hydrologic effects of SJRA implementation during 1999 that may carry-over into year 2000. As described previously, water year 2000 has been modeled with median hydrology. Under the drier 1999 hydrology setting, the results of the analysis are depicted as two potentially different outcomes. These two potentially different outcomes result from the assumption of where the additional 47,000 acre-feet of VAMP water originates: "Division A" assumes the additional water originates from the Merced River, and "Division B" assumes the water originates from the Tuolumne River. As the result of the SJRA affecting carry-over reservoir storage in the tributaries the following effects could occur:

*Dry 1999 followed by a median year 2000*

*January through February - year 2000*

There is no change in flow at Vernalis (Figure 1). The Tuolumne and Merced rivers are operating to minimum instream flows and the Stanislaus is operating to the (IOP). Water Quality at Vernalis is unchanged (Figure 3).

March - year 2000

There is no change in flow at Vernalis (Figure 1) due to the IOP. The Tuolumne River system refills during this month but the IOP will meet the Vernalis flow objective with additional releases. Water quality at Vernalis may be slightly improved (Figure 3) due to better quality water being provided from the Stanislaus River.

April - year 2000

Vernalis flow under Division B will be reduced (Figure 1) due to the completion of Tuolumne River system refill. The IOP does not react to this decrease because Vernalis flow and quality objectives are still met.

May through June - year 2000

There is no change in flow at Vernalis (Figure 1). The Tuolumne River system has already refilled and the Merced River system is operating to minimum instream flows.

July through August - year 2000

There may be some flow reduction at Vernalis (Figure 1) due to a reduction in release from the Merced River that is otherwise in excess of minimum requirements. That excess release would be retained to ameliorate the decrease in storage from the previous year. The IOP counteracts that reduction in flow with releases for water quality objectives at Vernalis. All water quality objectives are met.

September - year 2000

There is no change in flow or water quality at Vernalis.

Median 1999 followed by a median year 2000

January - year 2000

There is some reduction in Vernalis flows (Figure 2) due to the refill operations on the Tuolumne and Merced rivers. A reduction in water quality occurs (Figure 4), but all water quality objectives are met.

February through September - year 2000

There are no changes to flows or water quality at Vernalis (Figure 2 and Figure 4).

*This year followed by a year other than median hydrology*

*Dry 1999 followed by dry 2000*

Releases in excess of minimum requirements from the Tuolumne River system during the March through May period may be reduced due to reduced inflow. Vernalis flows may be reduced, but not to levels less than the flow required by the 1995 WQCP which may be met under the IOP. The drier the follow-on year is assumed, the less refill operations will affect Vernalis flows as there will be less excess flow to use for refill. At some level of dry hydrology, no change in Vernalis flows will be seen as the Tuolumne and Merced rivers will be operated to minimum instream flow requirements with or without the SJRA implemented during 1999. Some of the effect of SJRA implementation would not occur until a subsequent year.

*Dry 1999 followed by wet 2000*

Changes to Vernalis flow conditions due to refill operations would occur earlier in year 2000 or possibly in late 1999. All water quality and flow objectives would still be met.

*Median 1999 followed by dry 2000*

Refill operations of the Tuolumne and Merced river systems would trend to extend beyond January and as drier conditions are assumed the "dry 2000" effects described above will evolve.

*Median 1999 followed by wet 2000*

Changes to Vernalis flow conditions due to refill operations would occur earlier in year 2000 or possibly in late 1999. All water quality and flow objectives would still be met.

(March 19, 1999)

Figure 1

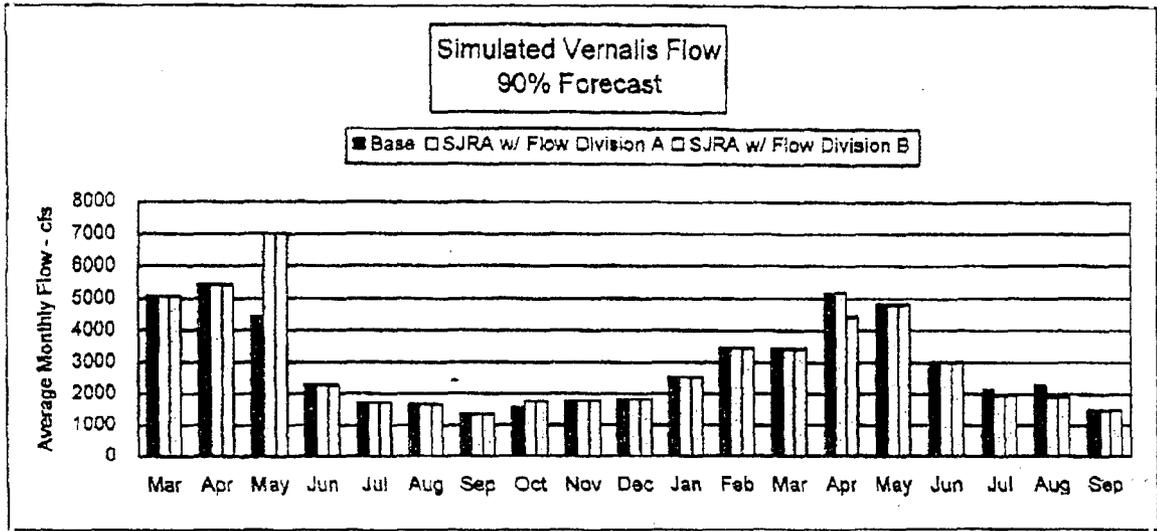


Figure 2

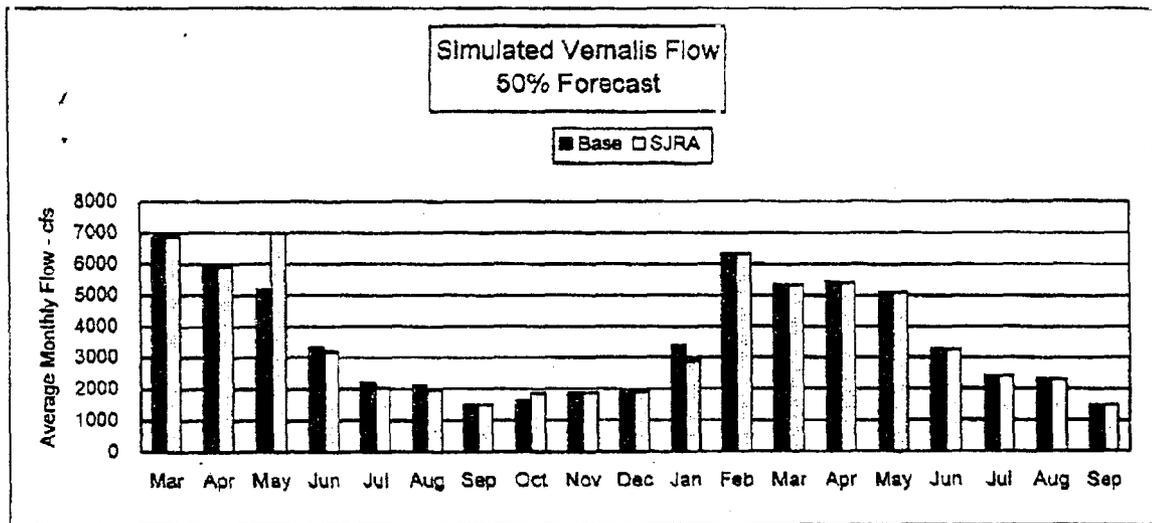


Figure 3

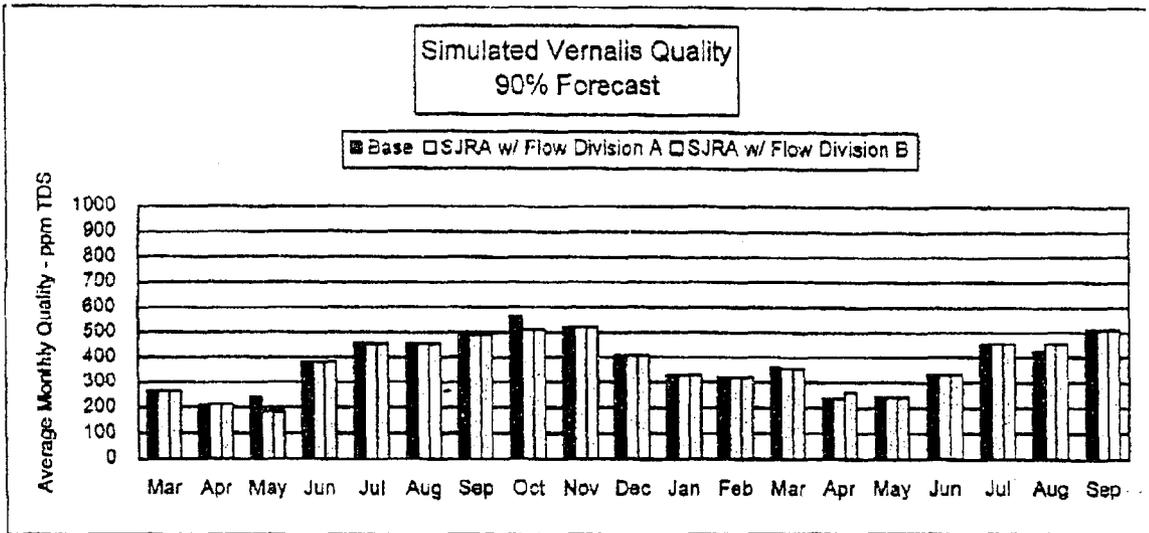
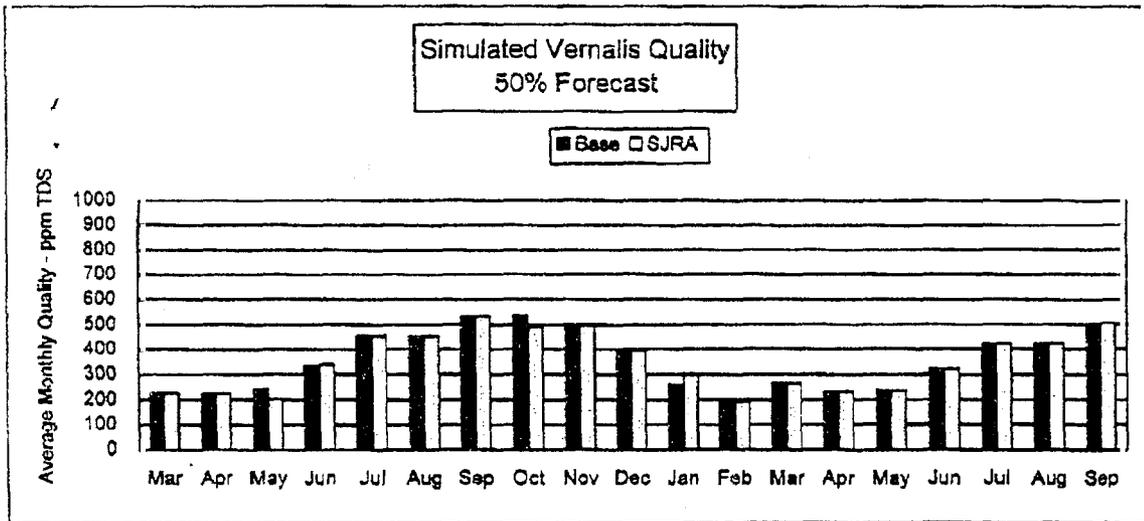


Figure 4



Simulated Vernails Flow - cfs

Table 1

	Base	With SJRA		Base	With SJRA
	90% Forecast	90% Forecast		50% Forecast	50% Forecast
		Flow Division A	Flow Division B		
1999 Mar	5067	5067	5067	6875	6875
Apr	5427	5427	5427	5920	5920
May	4451	7009	7009	5207	6996
Jun	2280	2280	2280	3332	3181
Jul	1721	1721	1721	2199	2036
Aug	1660	1660	1660	2116	1953
Sep	1346	1346	1346	1493	1493
Oct	1559	1763	1763	1651	1854
Nov	1782	1782	1782	1871	1871
Dec	1816	1816	1816	1904	1904
2000 Jan	2532	2532	2532	3388	2876
Feb	3453	3453	3453	6341	6341
Mar	3419	3419	3419	5340	5336
Apr	5149	5172	4422	5432	5396
May	4817	4817	4817	5088	5088
Jun	3013	3013	3013	3272	3272
Jul	2118	1966	1966	2424	2421
Aug	2302	1895	1895	2317	2314
Sep	1467	1469	1469	1491	1488

Simulated Vernails Water Quality - ppm TDS

Table 2

	Base	With SJRA		Base	With SJRA
	90% Forecast	90% Forecast		50% Forecast	50% Forecast
		Flow Division A	Flow Division B		
1999 Mar	266	266	266	227	227
Apr	212	212	212	225	225
May	241	186	186	242	202
Jun	380	380	380	333	340
Jul	455	455	455	455	455
Aug	455	455	455	455	455
Sep	490	490	490	533	533
Oct	564	510	510	537	489
Nov	520	520	520	499	499
Dec	410	410	410	394	394
2000 Jan	331	331	331	259	298
Feb	322	322	322	191	191
Mar	362	356	355	266	266
Apr	238	238	261	229	230
May	245	245	245	237	237
Jun	334	334	334	322	322
Jul	455	455	455	422	422
Aug	428	455	455	426	426
Sep	512	511	511	505	505



## CENTRAL DELTA WATER AGENCY

235 East Weber Avenue • P. O. Box 1461 • Stockton, CA 95201  
Phone 209/465-5883

DIRECTORS  
George Biagi, J  
Rudy Mussi  
Alfred R. Zucke

COUNSEL  
Dante John Non  
Thomas M. Zuc

April 24, 2000

Via Facsimile # (559) 487-5130  
and Regular U.S. Mail

Mr. Michael Delamore  
Bureau of Reclamation  
South-Central California Area Office  
2666 North Grove Industrial Drive, Suite 106  
Fresno, California 93727-1551

Re: Comments on the Draft Environmental Assessment and Initial Study for the  
Additional Water Acquisition for Meeting VAMP Flow Objectives in 2000.

Thank you for the opportunity to comment on the above matter. As with all significant upstream water acquisitions, the Central Delta Water Agency ("CDWA") is concerned about the potential impacts that the proposed upstream water acquisitions will have on downstream water quality and flow. The California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) require lead agencies to adequately investigate, analyze and discuss the potential environmental impacts from their proposed projects prior to the adoption of those projects. The CDWA believes the lead agencies of the proposed project have failed to adequately fulfill their respective obligations pursuant to CEQA and NEPA.

**I. EA/IS Fails to Analyze When, Where, and How the Transferred Water Would Have Been Used in the Absence of the Transfer.**

Pursuant to CEQA and NEPA, a proper and meaningful analysis of the proposed project's impacts on the environment necessarily involves the determination of when, where, and how the transferred water would have been used in the absence of the transfer. As such, the EA/IS must identify and discuss the extent to which in the absence of the proposed transfers the transferred water would have been used for agricultural purposes, for groundwater recharge, hydropower releases, etc., or would have remained in storage for future use. Only after such a determination has been made can a proper and meaningful analysis of the potential downstream impacts from the proposed project take place. Unfortunately, neither the EA/IS, nor the FEIR/FEIS upon which the EA/IS relies, have conducted this determination.

## II. The EA/IS Fails to Analyze the Project's Potential Impacts on Surface and Subsurface Return Flows.

To the extent the transferred water would have been used for agricultural purposes in the absence of the proposed transfer, the EA/IS must assess the potential reduction of surface and subsurface return flows to the various tributaries as a result of the proposed transfer. Thus far, the EA/IS has failed to investigate or examine these potential impacts. As a result, the EA/IS's findings and conclusions regarding the project's impacts on the river system (e.g., findings regarding impacts on river flows, water quality, fishery resources, etc.) are inaccurate, misleading and incomplete. As such, the EA/IS has failed to achieve one of its fundamental purposes: "[T]o provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment." (Laurel Heights Improvement Assn. v. Regents of University of California, (1988) 47 Cal.3d 376, 391).

CEQA Guidelines § 15064(d) states:

"In evaluating the significance of the environmental effect of a project, the Lead Agency shall consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project. (1) A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project."

The project's impacts on surface and subsurface return flows constitute "direct physical change[s] in the environment . . . which are caused by and immediately related to the project" within the meaning of § 15064(d), and as such must be adequately investigated and analyzed in the EA/IS.

A proper evaluation of the project's impacts on surface and subsurface return flows would include, but not be limited to, the following:

- (1) Quantification of the participants' historic (i.e., without the proposed project) contribution of return flows--surface and subsurface, etc.--to the various tributaries in particular days and months of particular year types (the use of annual, average measurements is not sufficient).
  - (a) This analysis should include a detailed description of the method and data by which the amount of return flows is calculated, including an identification of the various locations on the canals and other waterways where surface and subsurface return flows are measured.
- (2) Quantification of the amount these return flows will be reduced as a result of the proposed project (i.e., as a result of the project's anticipated tailwater recovery and/or conservation, etc.) during each particular day and month of each particular year type (the use of annual, average measurements is not sufficient).
  - (a) This analysis should likewise include a detailed description of the method and data by which the participants use to determine the amount

- return flows will be reduced by the various conservation measures.
- (3) Quantification of the degree to which the given reductions in return flows will affect the water quality, temperature and flow in the affected tributaries in particular days and months of particular year types (the use of annual, average measurements is not sufficient).
    - (a) Again, this analysis should fully set forth in detail both the method and data used by the participants to arrive at their estimations.
    - (b) Furthermore, particular attention should be given to potential impacts during the peak irrigation season (May-September) of drier year types since during these periods (1) the water quality in the Lower San Joaquin, for example, is often the poorest, and since (2) a given reduction in return flows would be expected to constitute a higher proportion of the total flow in affected tributaries.

### III. The Modeling Time Frame is Insufficient.

On page 6 of Appendix "A", it states: "The Model is a spreadsheet tool that simulates a 19-month operation of the San Joaquin River." The study period of 19 months is not sufficient to fully evaluate and appreciate the potential impacts from the proposed project. To get a proper handle on the long term, as well as short-term, potential impacts of the proposed project, the model should simulate the effects of the proposed action over a series of dry years, particularly the series of dry years from 1928-1934 and 1987-1992.

As such, not only is the time frame insufficient, but, in addition, the model's assumption that "the subsequent water year (October 2000 through September 2001) [will be] a median hydrologic condition" does not fairly depict the full range of potential impacts from the proposed project. (Appendix "A", pg. 7). As stated above, the modeling should simulate the effects of the proposed action over a series of dry years.

### IV. The EA/IS Fails to Analyze VAMP Flows and Supplemental Water Acquisitions in Years Subsequent to 2000.

CEQA Guidelines section 15126(d)(4) states in pertinent part:

"The 'no project' analysis shall discuss the existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." (14 Cal. Code of Regs. section 15126(d)(4), emphasis added).

The modeling for the base case, as well as for the proposed action, apparently assumes that there will not be any VAMP and/or San Joaquin River Agreement flows in the "subsequent water year (Oct 2000-Sept 2001)." The EA/IS must describe the assumed VAMP and/or SJRA flows (including any "additional purchases from willing sellers"--i.e., "supplemental water"), if any, that are taken into consideration by the modeling. Moreover, if such flows are not assumed for the subsequent years, the EA/IS should explain why these flows are not "reasonably expected to occur" during the subsequent years. To the extent the

precise amount of such flows can not be adequately determined, the modeling should simulate the full range of "reasonably expected" flows.

**V. Inadequate Base Case With Allocations of New Melones Water Contrary to the Mandates of the CVPIA.**

On page 9 of Appendix "A", it states: "New Melones Reservoir is assumed to operate consistent with the allocations of the Interim Plan of Operation . . . ." The Interim Operation Plan allocates water to "CVPIA 3406(b)(1) and 3406(b)(2) purposes" in priority to allocations for meeting the Vernalis Salinity Standards. (See Attachment "A"). The CVPIA clearly requires that the (b)(2) water is dedication of CVP yield after meeting the "fishery, water quality, and other flow and operational requirements imposed by terms and conditions existing in licenses, permits, and other agreements pertaining to the Central Valley Project under applicable State or Federal Law existing at the time of enactment" of the CVPIA (October 30, 1992). Moreover, CVPIA 3406(b)(1) is not intended to require water other than (b)(2) or (b)(3) water. As such the base case is based on actions contrary to law and are therefore inappropriate.

Similarly, to the extent that the proposed action's water purchases are in fact CVPIA(b)(3) purchases they must be supplemental to the (b)(2) allocations and therefore cannot aggravate the Vernalis Salinity violations.

Furthermore, in the event the project proponents elect to properly analyze the proposed action's potential impacts during a series of dry years as discussed above, the use of the current New Melones Interim Operations Plan is further inappropriate since this operations plan will result in substantial violations of the SWRCB salinity standards at Vernalis. The USBR has assured the SWRCB that it would meet such standards. The USBR's statements in this regard have at times been unequivocal and at other times been subject to the reservation that no one can accurately predict future hydrology and therefore no absolute assurance can be provided. In the context of analysis based on previously experienced hydrology it is inappropriate to have a base case which provides for continued violations of the Vernalis Salinity Standard.

**VI. The EA/IS Fails to Investigate and Evaluate the Project's Impacts on Hydropower Releases.**

The EA/IS fails to analyze the extent to which the proposed 47,000 af of water is water that would in the absence of the project be released to the river system in order to provide peak hydropower generation during the summer months. As the EA/IS explains:

"In the competitive, deregulated energy market, electric utilities take all reasonable measures to maximize the value of their hydroelectric power production. Power produced during peak energy demand period is more valuable than that produced during lower demand periods. Because hydropower is a low cost energy source that can be turned on and off quickly, utilities generally employ it to meet peak loads. In California, these peak loads typically occur in the summer when maximum

groundwater pumping, industrial, and air conditioning demands occur." (EA/IS pg. 3-33).

In order to determine the extent to which the proposed 47,000 acre-feet of water will come from water that would have otherwise been used for hydropower generation during the summer, the decision-makers and the public need to know when, where, and how this water would have been used in the absence of the project. CEQA provides the mechanism for conducting such a determination by requiring the lead agency to evaluate a "no project" alternative. (Guidelines § 15126.6). Guidelines § 15126.6 states:

"(1) The specific alternative of 'no project' shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. . . . (2) The 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published, . . . as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

As such, in order to properly evaluate the proposed project's impacts on summer flows, the modeling assumptions for summer reservoir hydropower operations should be described in detail and compared with recent summer historical operations. As it stands, there is no factual basis to support the EA/IS's findings relating to river flows (e.g, downstream water quality, flow, and temperature--see EA/IS pg. ES-2)) without an analysis of the reservoir hydropower operations with and without the proposed project.

#### VII. The EA/IS Fails to Establish the Basis for its Assumption that OID and SSJID Will Transfer 22,000 Acre Feet of Water to Modesto ID.

On page 2-4 of the EA/IS, it states:

"During the year 2000, it is assumed that the South San Joaquin Irrigation District and the Oakdale Irrigation District will arrange for the Modesto Irrigation District to provide its share of VAMP test flow through releases to the Tuolumne River."

The EA/IS fails to establish the basis for this assumption. In OID's and SSJID's petition to the SWRB for a long term change of their licenses, filed April 27, 1999 and noticed March 9, 2000, these districts request to add Modesto ID to the authorized place of use for delivery of up to 11,000 acre-feet of water under their licenses. The modeling assumes OID and SSJID will each transfer 11,000 af of water to Modesto ID in the year 2000 for the April to May VAMP pulse flows. The EA/IS must explain the basis for this assumption. Do OID and SSJID have the present authority to transfer 22,000 to Modesto ID during April and May of 2000? If so, the EA/IS should indicate the precise authorization from the SWRCB for these transfers.

///

Additionally, the above assumption does not appear reasonable since it is not clear that OID and SSJID have the distribution system in place to transfer 22,000 af of water to Modesto ID in April and May of 2000. In the abovementioned SWRCB notice dated March 9, 2000, it states:

“To facilitate this transfer [from OID to Modesto ID of 11,000 af per year], a 1,600-foot-long pipeline connecting OID’s Claribel Lateral to Modesto ID’s Main Canal will be constructed within the vicinity of Albers Road and Dusty Lane in Stanislaus County.” (Notice pg. 2). (Emphasis added).

Is this pipeline already constructed? If so, will it enable the transmission of 22,000 af per year, as opposed to only 11,000 af per year? The EA/IS must again fully explain the basis for its assumption that OID and SSJID will transfer 22,000 to Modesto during April and May of 2000. As it stands, this assumption does not appear reasonable or lawful, and to the extent it is neither reasonable nor lawful, the environmental analysis must be redone using reasonable and lawful assumptions.

#### **VIII. The EA/IS Fails to Investigate and Evaluate the Project’s Impacts on the Imprinting of Fish.**

The EA/IS apparently fails to address imprinting issues associated with the proposed transfer. For example, the EA/IS should fully address the extent to which OID’s and SSJID’s transfer to MID will result in Stanislaus water entering the Tuolumne River via return flows or surface spills, etc. To the extent Stanislaus River water does enter the Tuolumne River, the EA/IS should fully analyze the potential impacts this transfer may have on the imprinting of fish in the Tuolumne River.

A similar analysis must be conducted with regard to the Exchange Contractor’s contributions to the San Joaquin River.

#### **IX. The EA/IS Fails to Address the Project’s Impacts on the Southern Delta Water Quality Standards.**

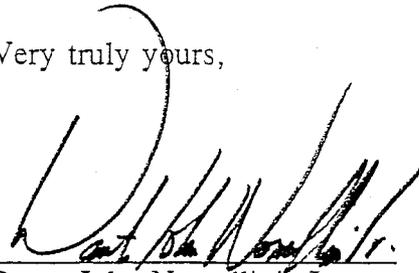
Pursuant to the SWRCB’s D-1641, the USBR and the DWR are required to meet and maintain the Southern Delta water quality objectives for agricultural beneficial uses (See D-1641, Table 2). Thus far the EA/IS has improperly failed to investigate and evaluate the project’s potential impacts on these standards.

#### **X. Conclusion.**

For the foregoing reasons in addition to the comments submitted by the South Delta Water Agency (which the CDWA hereby joins in and incorporates by reference), the lead agencies have thus far failed to fulfill their obligations under CEQA and NEPA to the environment, the public and to downstream water users. The CDWA respectfully requests the lead agencies to provide a "detail[ed] good faith, reasoned analysis in response" to the above comments and to those of other commenting parties as required by CEQA Guidelines

section 15088(b).

Very truly yours,

A handwritten signature in black ink, appearing to read "Dante John Nomellini, Jr.", written over a horizontal line.

Dante John Nomellini, Jr.  
Co-counsel for the  
Central Delta Water Agency

DJR:djr  
Enclosures

P.S. Attachments submitted with mailed copy only.

# SOUTH DELTA WATER AGENCY

3031 WEST MARCH LANE, SUITE 332 EAST

POST OFFICE BOX 70392

STOCKTON, CALIFORNIA 95267

TELEPHONE (209) 956-0150

FAX (209) 956-0154

EMAIL Jherriaw@aol.com

Directors:

Jerry Robinson, Chairman  
Robert K. Ferguson, Vice-Chairman  
Alex Hildebrand, Secretary  
Natalino Bacchetti  
Mark Bacchetti

Counsel:  
John Herrick  
Engineer:  
Gerald T. Orlob

April 24, 2000

Via Fax (916) 449-8277

Mr. Dan M. Fults  
San Joaquin River Group Authority  
400 Capitol Mall Suite 900  
Sacramento, CA 95814

Re: EA & IS for Additional Water Acquisition 2000

Dear Mr. Fults,

The South Delta Water Agency continues to oppose upstream purchases of water which result in the shifting of the timing of downstream flows. The analyses performed by the Bureau and the SJRGA continue to be done in such a manner that they intentionally ignore the effects of these projects. Our Agency submits the following comments to the EA and IS for the Additional Water Acquisition for meeting the VAMP Flows 2000.

1. This purchase, like many others including the one done for the same amount and for the same purpose last year continue to conduct only a short term analysis. The analysis done last year only examined the effects on 1999 and 2000. This year's analysis only examines the effects on 2000 and 2001, *but* without incorporating how the 1999 purchase affected 2000. The current project is modeled to show a large decrease in Merced River flows resulting from the purchase. There is no mention of how this effect was compounded by the effects of last year's purchase or how it may be exacerbated by a similar purchase next year. When a project causes a decrease in Merced flows of 649cfs for a month, a similar purchase in the next year may result in the seller being unable to simply make up the lost releases. Similarly, this type of compounded problem puts additional stress on the limited New Melones supply which must make up for the lost flow.

2. The analysis contains no review of the effect the additional water may have on the imprinting of fish. At the SWRCB Bay-Delta hearings last year, the U.S. Department of Interior put on extensive testimony that the provision of water for the VAMP flows from the

Delta Mendota Canal should be assumed to cause imprinting problems for fisheries. The DOI witness stated clearly that water from that source should not be used until additional testing had been accomplished. This project seeks to double the amount of Delta Mendota Canal water to be used in the VAMP program. The EA/IS makes no mention of this issue and provides no data regarding the supposed additional testing that was required.

3. The analysis is clearly incomplete in that it only examines the effects of the project on the Vernalis water quality objective. The authors have failed to include any examination of the project's effects on the other three South Delta water quality objectives (Brandt Bridge, Old River near Middle River, and Old River at Tracy Road Bridge). Both the Bureau and DWR are now responsible for maintaining these other South Delta objectives. SJRGA and the Bureau are aware from their participation in the Bay-Delta hearings that meeting these objectives will require additional flows at Vernalis and/or other actions. This project decreases the amount of New Melones water available for this purpose. Is the Bureau taking any actions in order to comply with this new requirement? How can it take an action that hinders its ability to comply with a water quality objective?

4. The EA/IS states in Appendix A that the modeling done for this project includes the operation of New Melones as set forth on page 8 of the Appendix. Those operational criteria are in conflict with the Bureau's recent statements at the last Stanislaus Stakeholder meeting wherein they stated that they would abide by the terms of the 1987 DFG Agreement. By the terms of that agreement, additional water releases for fisheries above (approx) 98 TAF are limited by other beneficial needs, including water quality. If the EA/IS is using a different set of assumptions, the results are not reliable. Please have the Bureau clarify its position.

5. In the recent Bay-Delta hearings, the SJRGA consultant who performed the modeling analysis, and who assisted in this EA/IS, stated that one of the modeling input assumptions he used was that a value of zero was assigned to return flows from the districts who were providing water for the VAMP experiment. Contrary to this assumption, OID provided evidence from one of its consultants that showed that the result of any transfer from OID included a decrease in Stanislaus River flows of one-third of the transfer amount. This evidence was not challenged by OID, the Bureau, or SJRGA. In fact, the OID witnesses assumed that the consultant's statements were correct. Given this, the analysis of this project must be repeated using the more reliable data regarding return flows. As SDWA has often stated, it is impossible to increase spring flows without causing adverse downstream effects.

6. The EA/IS refers to the fact that OID and the Exchange Contractors may be providing return flow water for their contribution. This action needs to be more clearly explained. There is no description of how such return flows would be provided. Are the authors trying to say that the Exchange Contractor portion of the additional flow will simply be return flows that would previously have reached the river anyway? If that flow is accretion to the river, by what method has it been quantified? Similarly, by what method is OID using its return flows to provide Modesto ID with water?

7. The EA/IS assumes that decreased storage carryover will be recovered in the following year. There is no basis for such an assumption. Given the range of future water year types, there could certainly be instances where the lost water can not be recovered. In addition, the capture of additional water to make up for the lost storage will necessarily decrease the amount available for other beneficial uses such as Delta outflow, quality, etc...

8. The analysis assumes that a 10-20% decrease in flow resulting from the project is considered less than significant. In light of the federal listing of steelhead, a species that remains in San Joaquin waterways year round, there would appear to be no basis for the assumption. Similarly, in light of the Bureau's decision to budget insufficient amounts of water for quality purposes, such a decrease in flows would have to be considered significant.

9. The analysis assumes the presence and operation of the Head of Old River barrier. The DWR has committed to protect downstream diverters should the HOR barrier deprive them of the downstream flows to which they are entitled. Regardless of how the additional VAMP flows are characterized, the HOR redirects natural flows away from riparians who may need it. Protection of those rights may require the removal of the barrier before the VAMP test is completed. The EA/IS must analyse the benefit to fisheries if the barrier must be removed. No such analysis has been done. If the barrier is removed, the additional flows may transport *more* fish to the export pumps where they are killed.

10. The drafters have again ignored CVPIA Section 3405(a)(1)(I). This federal statute prevents the Bureau from purchasing water from the Exchange Contractors unless it is a decrease in consumptive use or water previously lost to beneficial use. No such analysis has been done. This limitation also applies to OID and SSJID.

11. The SDWA incorporates its previous comments to prior VAMP related purchases, and sales by the individual SJRGA parties. SDWA also joins in the comments submitted by the CDWA.

Mr. Dan Fults  
April 24, 2000  
Page Four

Very truly yours,

A handwritten signature in cursive script, appearing to read "John Herrick".

JOHN HERRICK

## Effects on Vernalis Flow and Quality by Implementing the San Joaquin River Agreement During 1999

The U.S. Bureau of Reclamation (Reclamation), and the San Joaquin River Group Authority (SJRG) and its members are parties to the "San Joaquin River Agreement" (SJRA) which provides for a San Joaquin River flow and SWP/CVP export study during the April-May pulse flow period to gather better scientific fisheries information on the lower San Joaquin River while at the same time provide environmental benefits in the lower San Joaquin River and Delta. The SJRA is for a 12-year period beginning in 1999. In accordance with the SJRA, the parties to the SJRA have petitioned the State Water Resources Control Board (SWRCB) to adopt and implement the SJRA through an appropriate SWRCB order. However, such an order is not expected to be issued by April 1999 when actions required under the SJRA are anticipated to be required. Reclamation and the SJRG and its members have agreed to implement the SJRA's flow regimens for one year under an agreement titled "One Year Funding Agreement Between the United States and the San Joaquin River Group Authority."

The proposed action is the acquisition of water by Reclamation from the San Joaquin River Group Authority and its members to provide a pulse flow at Vernalis during April and May, and the acquisition of other water identified by the SJRA. The water is needed to support the Vernalis Adaptive Management Plan (VAMP) during the pulse flow period and to assist Reclamation in meeting the Anadromous Fish Restoration Plan, Bay-Delta flow objectives and the U.S. Fish and Wildlife Service 1995 Biological Opinion for Delta Smelt.

As part of the VAMP, Central Valley Project (CVP) and State Water Project (SWP) exports during the VAMP test period (April/May) will be managed to specified levels. These levels in relation to Vernalis flows are less than allowed under current regulatory requirements. The San Joaquin River Agreement provides for the development of an operations plan acceptable to all parties including address of export reductions caused by VAMP.

This briefing paper illustrates the hydrologic effect at Vernalis of implementing the SJRA during 1999 as compared to its non-implementation.

### **Hydrologic Assumptions**

Vernalis flow and quality conditions for the period beginning March 1999 and continuing through December 2000 are simulated. For the current year (March 1999 through September 1999), two different hydrologic conditions were evaluated. The first condition is predicated on a 90 percent exceedence projection of hydrologic events. This condition represents an expectation that weather conditions will be dry for the remainder of the year and that there will be a 90 percent chance that conditions will be wetter than projected. The second condition is predicated on a 50 percent exceedence projection of hydrologic events. This condition represents an expectation that weather conditions and resultant hydrologic conditions have a 50 percent change of being greater or less than that depicted. For the subsequent period (October 1999 through

December 1999), a median hydrologic condition is used as the follow-on to each of the two current water year hydrologic depictions.

**Non-implementation Setting**

New Melones Reservoir is assumed to operate consistent with the Interim Plan of Operation with its out-migration pulse flow released during the month of May. The allocation of annual water supplies to the uses of the instream fishery, Vernalis water quality, Bay-Delta biological opinions, and CVP contractors are dependent on the water supply of New Melones. Allocations to OID and SSJID were assumed consistent with their 1988 agreement with Reclamation.

The Merced and Tuolumne River reservoir systems are modeled to operate to meet diversion demands and current minimum instream flow requirements. The FERC required spring pulse flows for the Tuolumne River are assumed to be scheduled coincident with the period of desired supplemental flow in the San Joaquin River (May). Releases in excess of minimum flow requirements on the tributaries occasionally occur in accordance with flood control storage reservation requirements.

**SJRA Setting**

The two different hydrologic forecasts for the current year yield two different determinations of supplemental water required to meet the flow obligations under the SJRA. The drier forecast (90 percent exceedence forecast) could require up to 157,000 acre-feet of supplemental water for the VAMP test. The median forecast (50 percent exceedence forecast) could require up to approximately 110,000 acre-feet of supplemental water for the VAMP test. Outside of the VAMP test period, certain SJRGA members will provide additional amounts of water. During 1999, the following amounts of water will be provided with their source identified:

**90 Percent Exceedence Projection (Dry Condition)**

VAMP Water - Up to 157,000 acre-feet		
Merced incremental increase to the Lower Merced River	Exchange Contractors' incremental increase to the San Joaquin River	MID and TID incremental increase to the Lower Tuolumne River
66,000	11,000	33,000
Includes SSJID Contribution		Includes OID Contribution
And up to an additional 47,000 acre-feet of VAMP water from the Merced and Tuolumne Rivers		
Other Additional Water		
Merced incremental increase to the Lower Merced River	OID to Reclamation in New Melones Reservoir	
12,500	15,000	
Provided in October	Occurs as a reduction in OID diversions during September and October	

All units in acre-feet

50 Percent Exceedence Projection (Median Condition)

VAMP Water - Up to 110,000 acre-feet		
Merced incremental increase to the Lower Merced River	Exchange Contractors' incremental increase to the San Joaquin River	MID and TID incremental increase to the Lower Tuolumne River
66,000 Includes SSJID Contribution	11,000	33,000 Includes OID Contribution
Other Additional Water		
Merced incremental increase to the Lower Merced River	OID to Reclamation in New Melones Reservoir	
12,500 Provided in October	15,000 Occurs as a reduction in OID diversions during September and October	

All units in acre-feet

Water originating from Merced occurs as increased stream releases from New Exchequer Dam. This release is modeled as an increase in flow above the release which would otherwise be made in the absence of the action. Merced's VAMP contribution is added to the Merced River flow that occurred within the Base simulation. Merced's additional provision of water during October is a 12,500 acre-feet addition to Merced's minimum flow requirement during October.

Water originating from MID and TID also occurs as additional stream releases, in this case from La Grange Dam. As with the Merced release, this release is an increase in flow above the release which would otherwise be made in the absence of the action.

Since the flow below Goodwin under either hydrologic condition is projected to be 1,500 cfs during the pulse flow period, water will not be provided to the lower Stanislaus River during VAMP by OID or SSJID. VAMP water originating from OID will occur through an exchange with MID. Water from OID will be conveyed to MID for delivery to MID customers. MID water deliveries offset by OID will reduce the amount of water required for diversion by MID from the Tuolumne River and thus make available additional water in the Tuolumne River Basin for release to the lower Tuolumne River.

During 1999, SSJID will arrange with Merced the release of its determined share of VAMP water to the lower Merced River. These releases are in addition to Merced's own contribution of flows.

Water originating from the Exchange Contractors will be released from the canals of the Exchange Contractors into the San Joaquin River.

Under the SJRA setting, New Melones Reservoir is assumed to operate consistent with the allocations of the Interim Plan of Operation as described above for the Base setting with the exception that subsequent to the determination of water available to OID and SSJID, 15,000 acre-feet plus any unrequired VAMP flow from OID (up to 11,000 acre-feet) will be reduced from OID's allocation and diversion. The reduction in diversion will result as additional storage in New Melones and be subsequently reallocated (to a large extent remaining in storage) to other ★

uses in subsequent years consistent with the allocations of the Interim Plan of Operation. OID water that is reduced from OID's allocation of New Melones supplies is assumed as a reduction to OID's diversions during the months of September and October.

### Results -Vernalis Flow and Quality Conditions

Figure 1 and Figure 2 depict average monthly Vernalis flows simulated for each of the Base and SJRA settings. In comparison to each of the Base settings, flow at Vernalis during the VAMP test period (assumed as May) and October will increase as the result of the SJRA. In the case of the drier forecast, flows at Vernalis show no difference for the other months of the year. During these other months, each of the tributary streams is forecasted to operate at the same level of release with or without the SJRA.

In the case of the median forecast, the SJRA operation results in Merced shifting water released at its discretion during the summertime to the VAMP test period and October. However, this summertime reduction in releases from Merced is counteracted by additional releases from New Melones Reservoir as a reaction to meet water quality objectives at Vernalis, and the net result is only a slight decrease in flow at Vernalis. There is also a very slight decrease in Vernalis flow during June which is the result of a reduction in spill on the Merced River which occurs as a result of releasing additional water during the VAMP test period.

Figure 3 and Figure 4 depict average monthly water quality at Vernalis simulated for each setting. Water quality data is presented as total dissolved solids (TDS). Changes in water quality in comparison to Base settings will correspond to changes in flow due to the SJRA. Improvement to water quality at Vernalis will occur during the pulse flow period and during October due to the introduction of additional tributary releases. Water quality objectives at Vernalis are forecasted to be met under all circumstances during 1999.

Figure 1

Simulated Vernalis Flow  
90% Forecast  
Projected WY 1999 & 2000

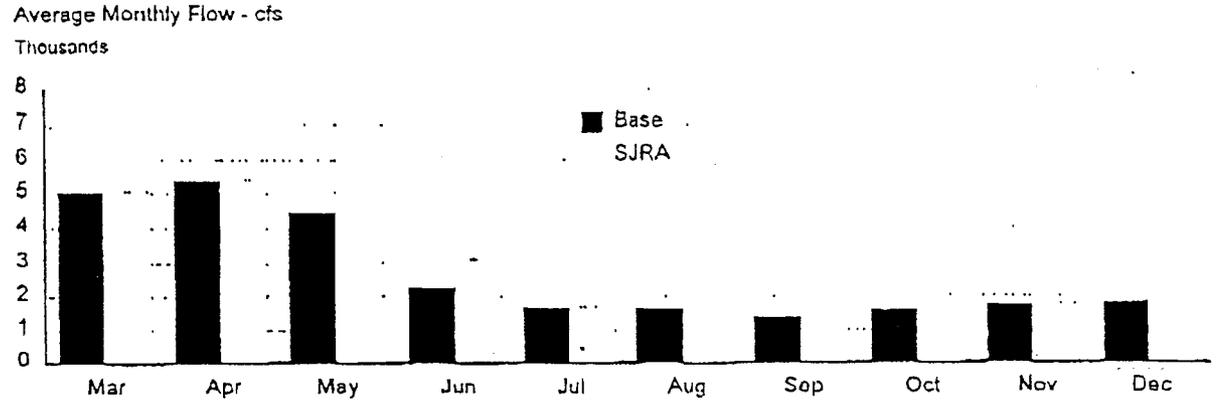


Figure 2

Simulated Vernalis Flow  
50% Forecast  
Projected WY 1999 & 2000

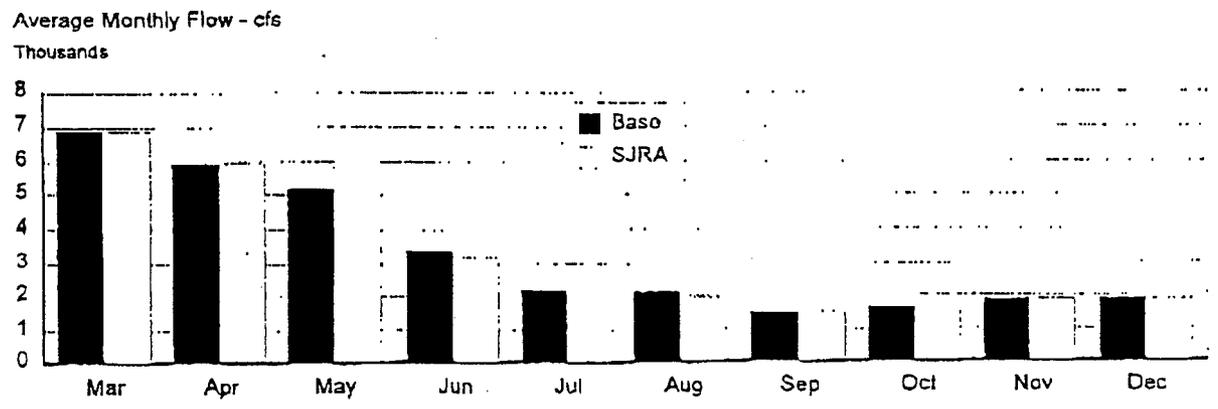


Figure 3

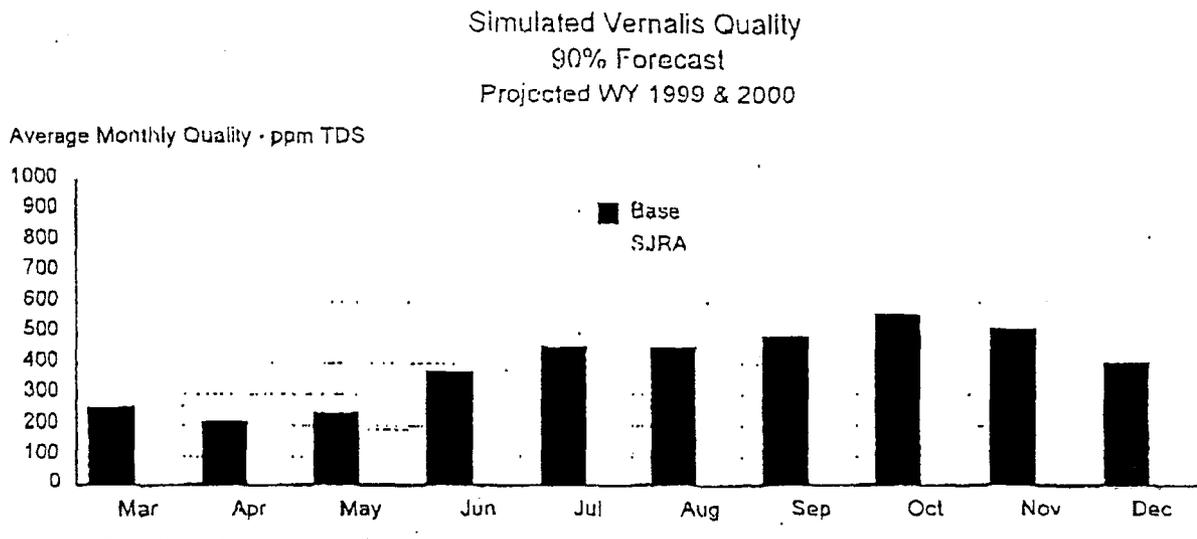
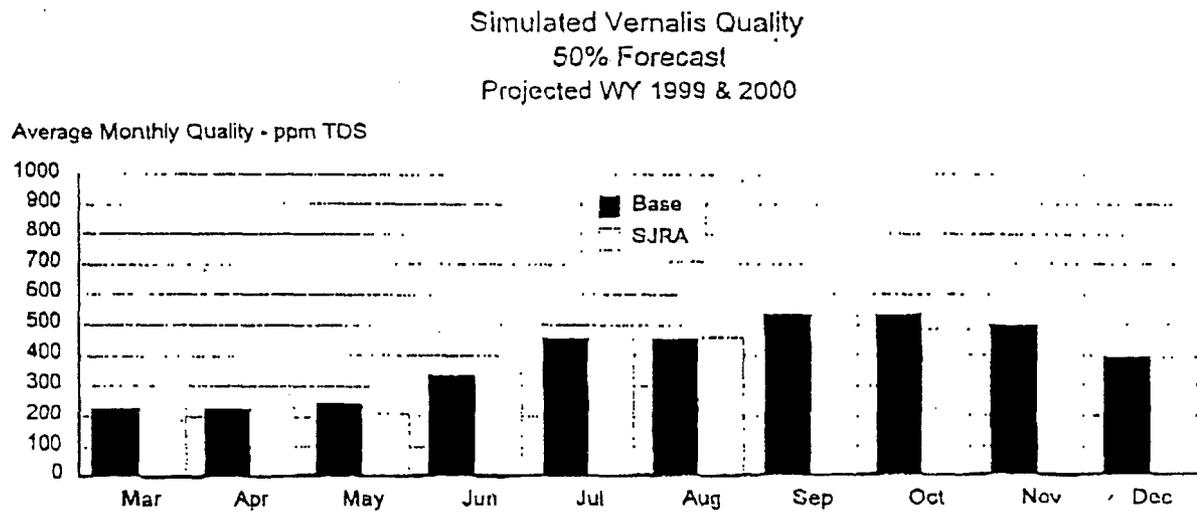


Figure 4



Simulated Vernalis Flow - cfs

Table 1

		Base	With SJRA		Base	With SJRA	
		90% Forecast	90% Forecast		50% Forecast	50% Forecast	
			Flow Division A	Flow Division B			
1999	Mar	5067	5067	5067	6875	6875	
	Apr	5427	5427	5427	5920	5920	
	May	4451	7009	7009	5207	6996	
	Jun	2280	2280	2280	3332	3181	
	Jul	1721	1721	1721	2199	2036	
	Aug	1660	1660	1660	2116	1953	
	Sep	1348	1346	1346	1493	1493	
	Oct	1559	1763	1763	1651	1854	
	Nov	1782	1782	1782	1871	1871	
	Dec	1816	1816	1816	1904	1904	
	2000	Jan	2532	2532	2532	3388	2878
		Feb	3453	3453	3453	6341	6341
Mar		3419	3419	3419	5340	5336	
Apr		5149	5172	4422	5432	5396	
May		4817	4817	4817	5088	5088	
Jun		3013	3013	3013	3272	3272	
Jul		2118	1966	1966	2424	2421	
Aug		2302	1895	1895	2317	2314	
Sep		1467	1469	1469	1491	1488	

Simulated Vernalis Water Quality - ppm TDS

Table 2

		Base	With SJRA		Base	With SJRA	
		90% Forecast	90% Forecast		50% Forecast	50% Forecast	
			Flow Division A	Flow Division B			
1999	Mar	266	266	266	227	227	
	Apr	212	212	212	225	225	
	May	241	186	186	242	202	
	Jun	380	380	380	333	340	
	Jul	455	455	455	455	455	
	Aug	455	455	455	455	455	
	Sep	490	490	490	533	533	
	Oct	564	510	510	537	489	
	Nov	520	520	520	499	499	
	Dec	410	410	410	394	394	
	2000	Jan	331	331	331	259	298
		Feb	322	322	322	191	191
Mar		362	356	355	266	266	
Apr		238	238	261	229	230	
May		245	245	245	237	237	
Jun		334	334	334	322	322	
Jul		455	455	455	422	422	
Aug		428	455	455	426	426	
Sep		512	511	511	505	505	

*Floss, Burke, Steiner, Fults, Snow.*

Simulated New Melones Reservoir Storage - TAF

Table 3

		Base	With SJRA		Base	With SJRA
		90% Forecast	90% Forecast		50% Forecast	50% Forecast
			Flow Division A	Flow Division B		
1989	Mar	2030.0	2030.0	2030.0	2030.0	2030.0
	Apr	1970.4	1970.4	1970.4	2006.8	2006.8
	May	1911.3	1911.3	1911.3	2029.5	2029.5
	Jun	1864.0	1864.0	1864.0	1964.5	1964.5
	Jul	1759.6	1759.6	1759.6	1892.4	1871.4
	Aug	1644.6	1644.6	1644.6	1794.9	1755.0
	Sep	1585.0	1596.3	1596.3	1745.1	1716.6
	Oct	1570.8	1585.8	1585.8	1728.9	1704.2
	Nov	1582.1	1597.0	1597.0	1737.8	1713.1
	Dec	1816.7	1631.6	1631.6	1769.9	1745.3
2000	Jan	1714.2	1729.2	1729.2	1865.1	1840.4
	Feb	1764.0	1779.0	1779.0	1954.6	1929.9
	Mar	1816.8	1809.7	1807.5	2022.8	1998.4
	Apr	1767.6	1759.3	1757.1	1956.5	1934.3
	May	1791.1	1782.7	1780.6	1979.4	1957.3
	Jun	1754.6	1746.3	1744.1	1942.3	1920.2
	Jul	1662.4	1636.3	1634.1	1856.1	1834.3
	Aug	1558.5	1507.4	1505.3	1750.6	1729.1
	Sep	1487.9	1436.9	1434.7	1678.1	1656.8

Simulated Goodwin Release to Lower Stanislaus River - cfs

Table 4

		Base	With SJRA		Base	With SJRA
		90% Forecast	90% Forecast		50% Forecast	50% Forecast
			Flow Division A	Flow Division B		
1999	Mar	466	466	466	1184	1184
	Apr	1343	1343	1343	1500	1500
	May	1500	1500	1500	1500	1500
	Jun	986	986	986	1500	1500
	Jul	648	648	648	394	736
	Aug	619	619	619	425	734
	Sep	287	287	287	300	300
	Oct	324	324	324	350	350
	Nov	337	337	337	375	375
	Dec	337	337	337	375	375
2000	Jan	337	337	337	375	375
	Feb	1092	1092	1092	378	378
	Mar	603	961	997	348	345
	Apr	1190	1212	1212	1473	1436
	May	1500	1500	1500	1500	1500
	Jun	1500	1500	1500	1500	1500
	Jul	409	698	698	298	295
	Aug	283	691	691	298	295
	Sep	274	276	276	298	295

Simulated New Don Pedro Reservoir Storage - TAF

Table 5

		Base	With SJRA		Base	With SJRA
		90% Forecast	90% Forecast		50% Forecast	50% Forecast
			Flow Division A	Flow Division B		
1999	Mar	1690	1690	1690	1690	1690
	Apr	1713	1713	1713	1713	1713
	May	1691	1659	1612	1812	1780
	Jun	1737	1706	1659	2024	1993
	Jul	1585	1555	1508	1913	1883
	Aug	1455	1427	1380	1783	1755
	Sep	1401	1376	1329	1727	1702
	Oct	1328	1306	1259	1650	1628
	Nov	1314	1292	1245	1633	1611
	Dec	1328	1306	1260	1644	1622
2000	Jan	1408	1386	1339	1690	1690
	Feb	1558	1534	1487	1690	1690
	Mar	1690	1690	1645	1690	1690
	Apr	1713	1713	1713	1713	1713
	May	1745	1745	1745	1745	1745
	Jun	1904	1904	1904	1904	1904
	Jul	1775	1775	1775	1775	1775
	Aug	1634	1634	1634	1634	1634
	Sep	1561	1561	1561	1561	1561

Simulated La Grange Release to Lower Tuolumne River - cfs

Table 6

		Base	With SJRA		Base	With SJRA
		90% Forecast	90% Forecast		50% Forecast	50% Forecast
			Flow Division A	Flow Division B		
1999	Mar	2407	2407	2407	2911	2911
	Apr	1968	1966	1966	1697	1697
	May	1756	2293	3054	1756	2293
	Jun	168	168	168	252	252
	Jul	163	163	163	244	244
	Aug	163	163	163	244	244
	Sep	168	168	168	252	252
	Oct	325	325	325	390	390
	Nov	252	252	252	303	303
	Dec	244	244	244	293	293
2000	Jan	244	244	244	789	431
	Feb	252	252	252	2932	2932
	Mar	637	280	244	2813	2813
	Apr	1926	1926	1176	1926	1926
	May	1758	1758	1756	1756	1756
	Jun	252	252	252	252	252
	Jul	244	244	244	244	244
	Aug	244	244	244	244	244
	Sep	252	252	252	252	252

Simulated Lake McClure Storage - TAF

Table 7

		Base	With SJRA		Base	With SJRA
		90% Forecast	90% Forecast		50% Forecast	50% Forecast
			Flow Division A	Flow Division B		
1999	Mar	720	720	720	737	737
	Apr	787	787	787	825	825
	May	883	770	817	969	903
	Jun	882	769	816	1024	967
	Jul	782	669	716	920	894
	Aug	671	558	605	792	795
	Sep	602	489	536	728	731
	Oct	549	424	471	675	666
	Nov	544	419	466	670	661
	Dec	549	424	470	675	665
2000	Jan	567	442	488	676	676
	Feb	618	493	540	676	676
	Mar	659	534	581	717	717
	Apr	746	621	668	804	804
	May	928	803	849	969	969
	Jun	998	873	920	1024	1024
	Jul	905	807	854	905	905
	Aug	757	709	756	757	757
	Sep	695	647	694	695	695

Simulated Release to Lower Merced River - cfs

Table 8

		Base	With SJRA		Base	With SJRA
		90% Forecast	90% Forecast		50% Forecast	50% Forecast
			Flow Division A	Flow Division B		
1999	Mar	228	228	228	309	309
	Apr	67	67	67	67	67
	May	81	1915	1154	455	1528
	Jun	17	17	17	168	17
	Jul	33	33	33	537	33
	Aug	33	33	33	504	33
	Sep	17	17	17	17	17
	Oct	81	285	285	81	285
	Nov	218	218	218	218	218
	Dec	228	228	228	228	228
2000	Jan	228	228	228	501	346
	Feb	216	216	216	1142	1142
	Mar	228	228	228	228	228
	Apr	67	67	67	67	67
	May	81	81	81	353	353
	Jun	17	17	17	276	276
	Jul	473	33	33	891	891
	Aug	849	33	33	849	849
	Sep	17	17	17	17	17

Δ 47700 ...  
 Δ 47700 ...

Figure 1

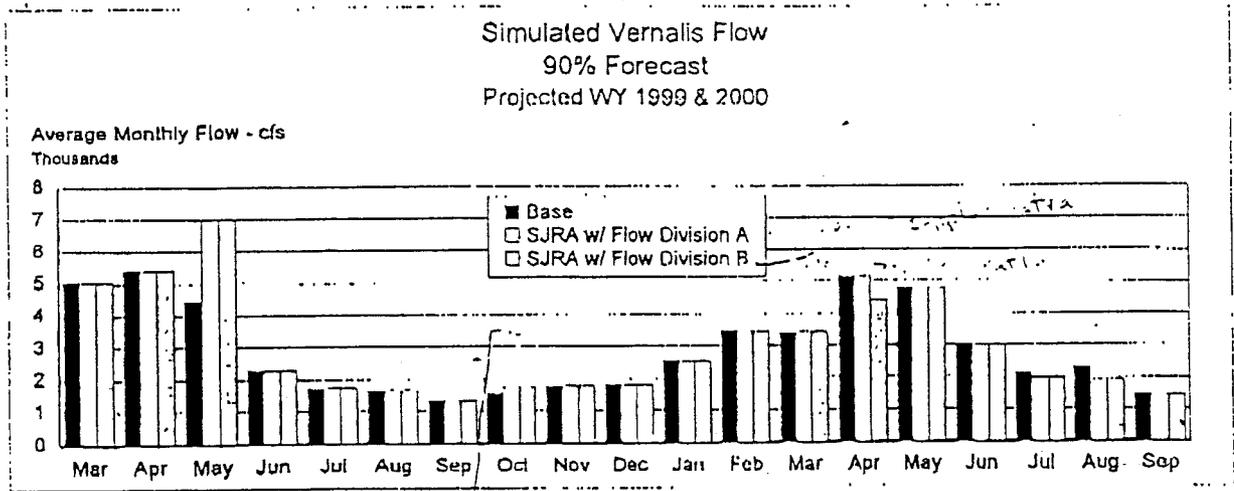
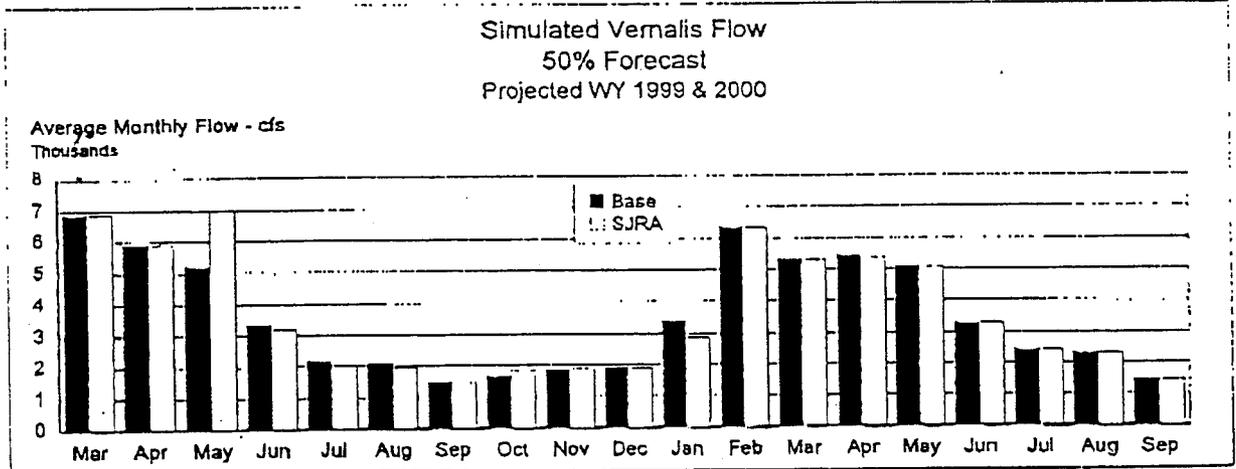


Figure 2



↑  
 ↘ water from  
 some resp ⇒ load water moved to river

Div. A ⇒ out of Merced  
 Div B ⇒ out of Tuolumne  
 47 TAF = highest amt.

WY 2000 = median for both.

Figure 3

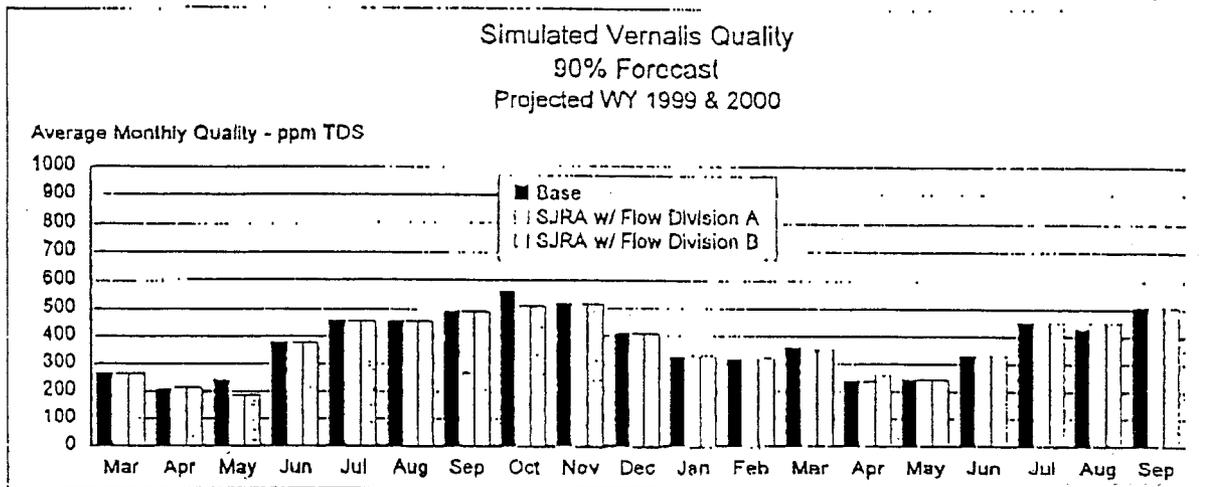


Figure 4

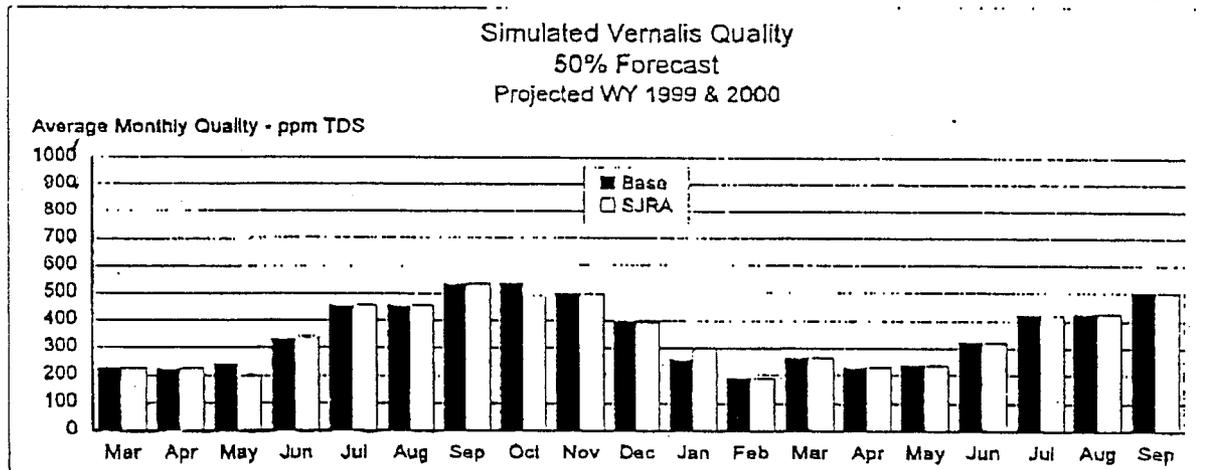


Figure 5

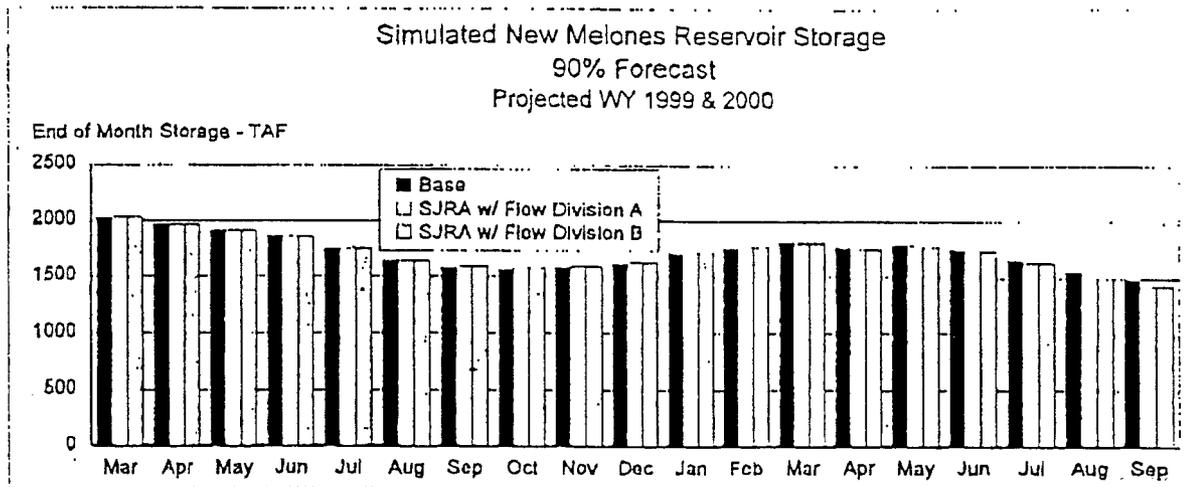


Figure 6

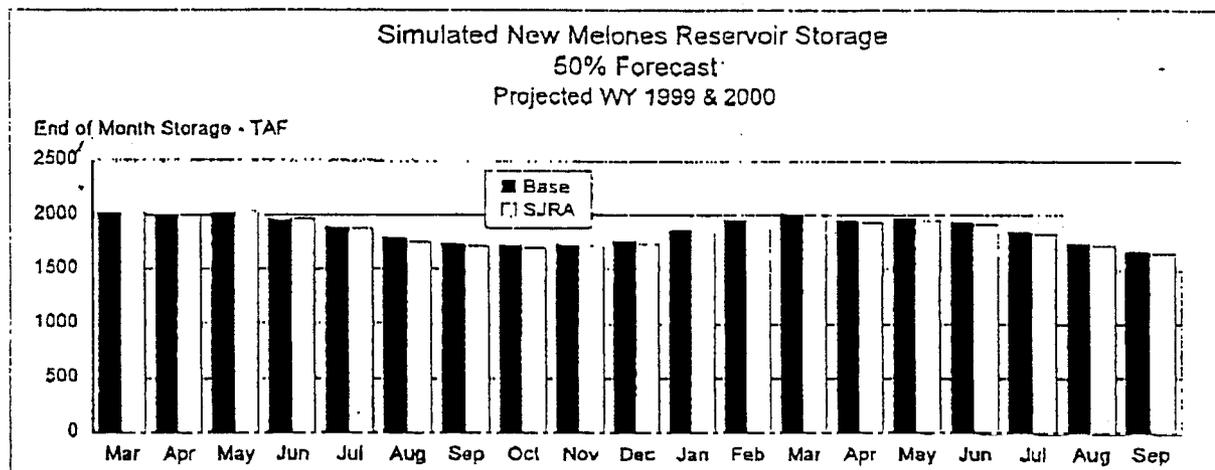


Figure 7

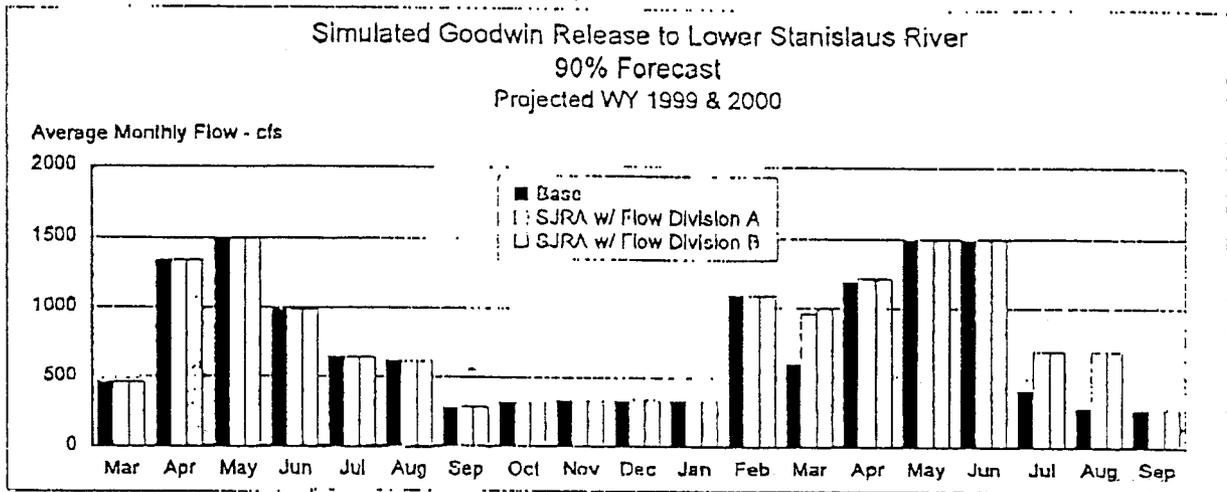


Figure 8

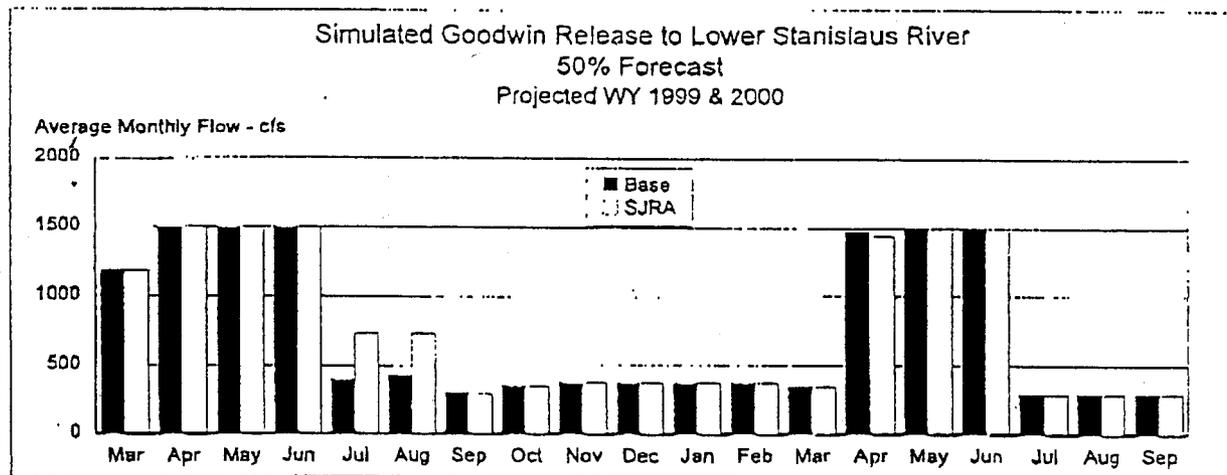


Figure 9

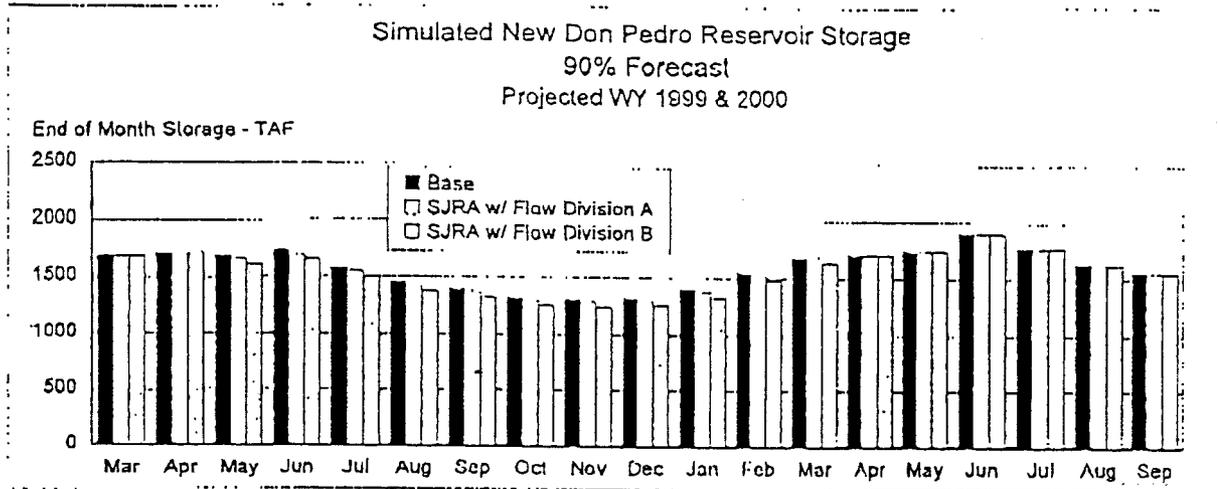


Figure 10

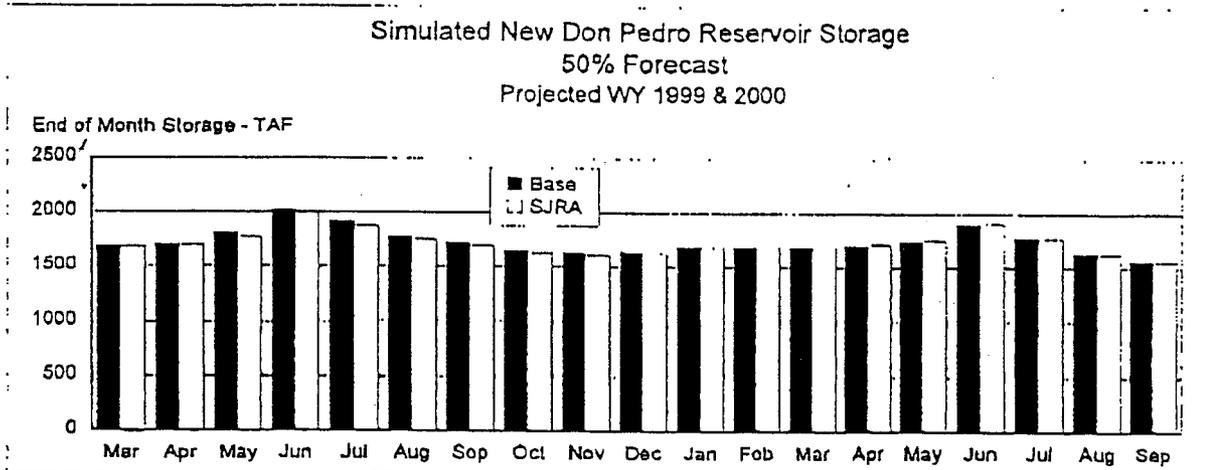


Figure 11

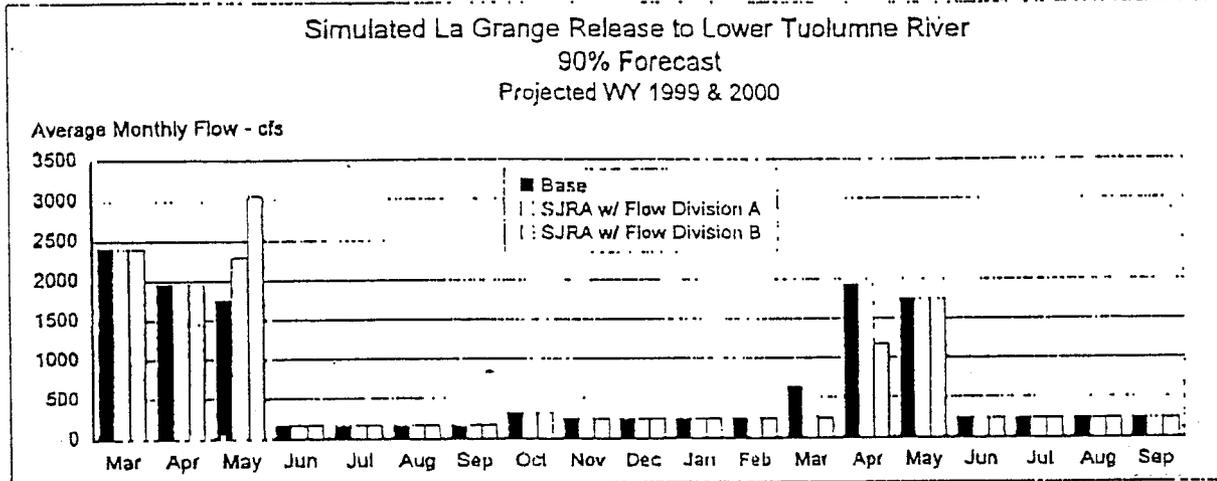


Figure 12

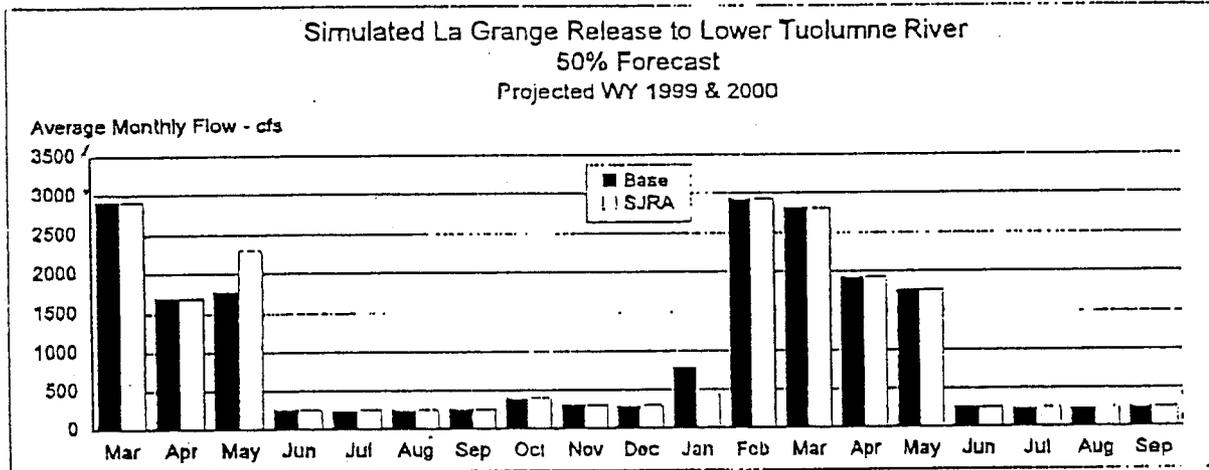


Figure 13

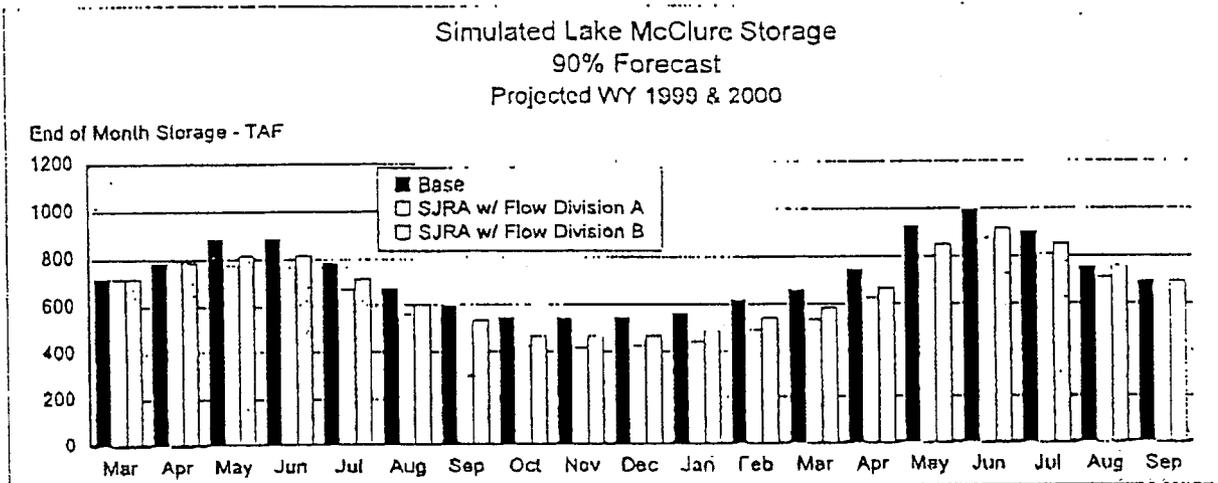


Figure 14

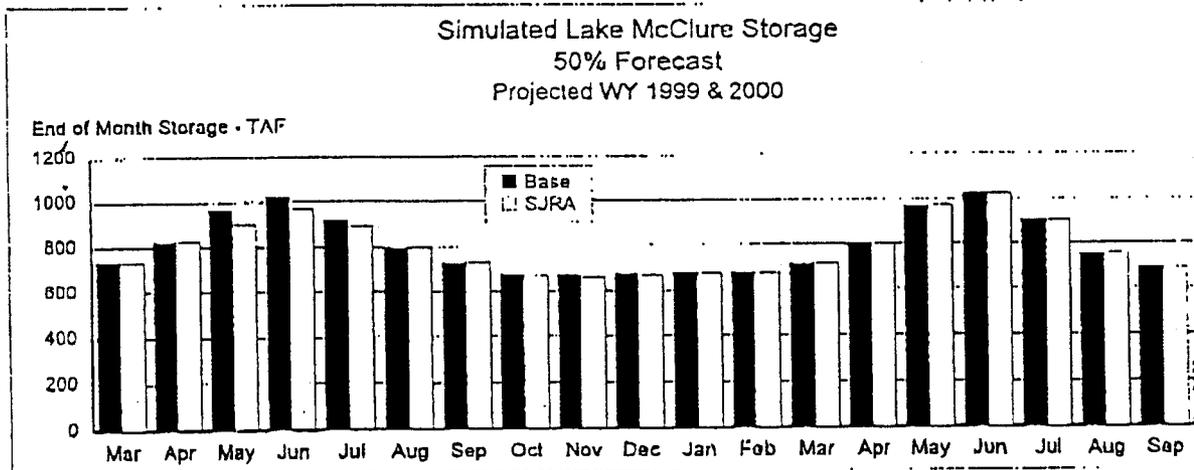


Figure 15

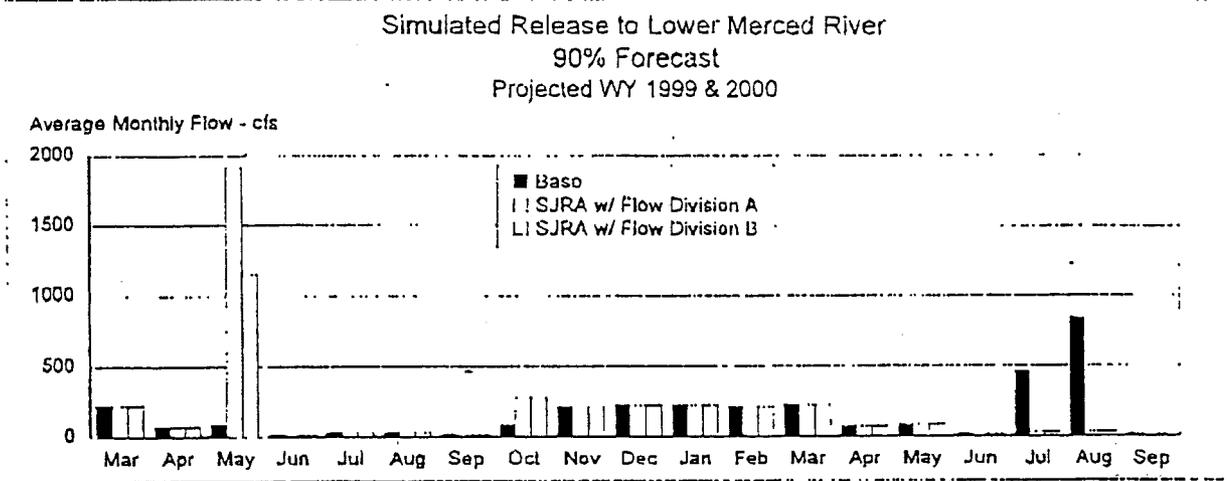


Figure 16

