ORIGINAL

TURLOCK IRRIGATION DISTRICT

June 25, 2007

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

RE: April 15- May 31 Flow Schedule under Article 37 for P-2299

Dear Ms. Bose:

This letter responds to correspondence dated May 30, 2007 from George H. Taylor of the FERC Biological Resources Branch regarding a flow schedule letter for the Tuolumne River of April 18, 2007 prepared by the Turlock Irrigation District. Mr. Taylor directed that seven copies of the Licensees' response be submitted to your office.

As discussed below, there has been no change to either the "flow determination process" or the "process of revising the flow release schedule" since they were implemented under the 1996 FERC Order.

TID, in its role as Project Manager of the Don Pedro Project, is the party that provides flow schedule correspondence to the required fishery agencies (CDFG and USFWS) on behalf of itself and the Modesto Irrigation District who are the joint licensees of the Project. The FERC is copied on all correspondence. This information is also contained in the Project's Annual Article 58 Report filed with the Commission by April 1st of each year.

Detailed information on the flow scheduling process was filed with the Commission in the Licensees Ten Year Summary Report in 2005 (see Section 3.2 and Appendix A of that report). The Districts coordinate with CDFG and USFWS, per Article 37 amended by the 1996 FERC order, on establishment of annual flow volumes, to establish the specific daily minimum flow schedules, and allocation of pulse flow volumes.

Our letter contained the initial flow schedule (not revised) for the period of April 15 to May 31, 2007. That period included the Outmigration Pulse Flow for the current Fish Flow Year that began on April 15. Your letter referenced the State Board 60-20-20 Water Supply Index and the DWR April 1 San Joaquin Valley unimpaired runoff forecast. Article 37 states the following:

> *"The water year classification shall be determined using the California State Water Resources Control Board's San Joaquin Basin 60-20-20 Water Supply Index and the California Department of Water Resources' (Water Resources Department) April 1 San Joaquin Valley unimpaired runoff forecast."*

TID
WATER & POWER

This is the practice that we follow. Our labeling of the source of information as "DWR April 1, 2007, 60-20-20 San Joaquin Basin Index" is simply our nomenclature for the terms contained in Article 37. We have attached for reference the following items:

1. Attachment 1. The San Joaquin Valley Water Year Hydrologic Classification from the 1995 Water Quality Control Plan for the San Francisco Bay/San Joaquin Delta Estuary by the California State Water Resources Control Board (SWRCB). That classification employs the defined San Joaquin Valley 60-20-20 Index that uses DWR unimpaired runoff values. The SWRCB does not calculate the index, but only developed the equation.
2. Attachment 2. The DWR published "San Joaquin Valley Water Year Type Index (60-20-20)" for 2007. The DWR monthly forecast is available at http://cdec.water.ca.gov/cgi-progs/iodir/WSI.
3. Attachment 3. The DWR within-month runoff forecasts by individual river basins (available at http://cdec.water.ca.gov/cgi-progs/iodir/B120UP) that are used to update the 60-20-20 Index between the monthly forecasts (the example shown are the updates for April and May 2007).

An initial annual stream flow volume is estimated each year with the first DWR runoff forecast in February. A series of meetings are routinely held throughout the February to April period among various parties, including MID, TID, CDFG, and USFWS as part of the Vernalis Adaptive Management Program (VAMP) process where the projected hydrologic conditions are discussed.

The Tuolumne River Fish Flow Year operations starting on April 15 are an element of the VAMP. The VAMP hydrology team determines the average "base" flow present at Vernalis on the Lower San Joaquin River for a selected 31-day period within the April-May time frame. For that purpose, TID initially calculates (based on the DWR index forecasts) what the expected Tuolumne River annual flow volume requirement may be (see Attachment 4) and supplies daily flow values for the pulse flow period to the participating agencies and organizations which includes CDFG and USFWS. The VAMP results in a coordinated development of flow schedules of the various San Joaquin tributaries. Thus, each tributary schedule is interrelated and the fishery agencies have an opportunity to provide input on each tributary schedule. The VAMP program requires the allocated volume of flow to remain constant once VAMP starts, as the target flow at Vernalis is intended to be an approximately steady flow for 31 days. The extensive coordination amongst the parties is illustrated by some of the numerous e-mails exchanged during the February 14 – April 19, 2007 period (Attachment 5), which included input from the CDFG and others. The VAMP flow period in 2007 was chosen to be from April 22 – May 22, so the corresponding flow period at La Grange was April 20th to May 20th as there is a two-day lag for releases at La Grange to reach Vernalis.

Our letter of April 18, 2007 was the standard notification, for purposes of the FERC flow schedule, of the outcome of the initial scheduling process, which had determined the flow allocation through May 31 (Attachment 6).

During dry years, more flow scheduling iterations are typically exchanged with the CDFG and USFWS. The current 2007-2008 fish flow year is the fifth year, following the 1996 FERC Order, during which the annual stream flow volume is less than the maximum Article 37 requirement of 300,923 acre-feet (AF). Further coordinated work continued on the FERC flow schedule after the spring pulse period as the DWR forecasts continued to change. A proposed flow schedule was emailed to CDFG and FWS on May 18th (Attachment 7) so that a daily flow schedule would be established and in effect after May 31. No changes to that schedule were recommended by the agencies, so our letter of May 31, 2007 contained the same schedule provided earlier for their review (Attachment 8). There will be at least one more flow schedule determination reached by the Districts, CDFG, and FWS for the current year after the 60-20-20 index and corresponding annual stream flow volume is finalized in August.

If you have any questions, please contact Wes Monier at 209-883-8321.

Sincerely,

Robert M. Nees
Assistant General Manager
Water Resources and Regulatory Affairs Administration

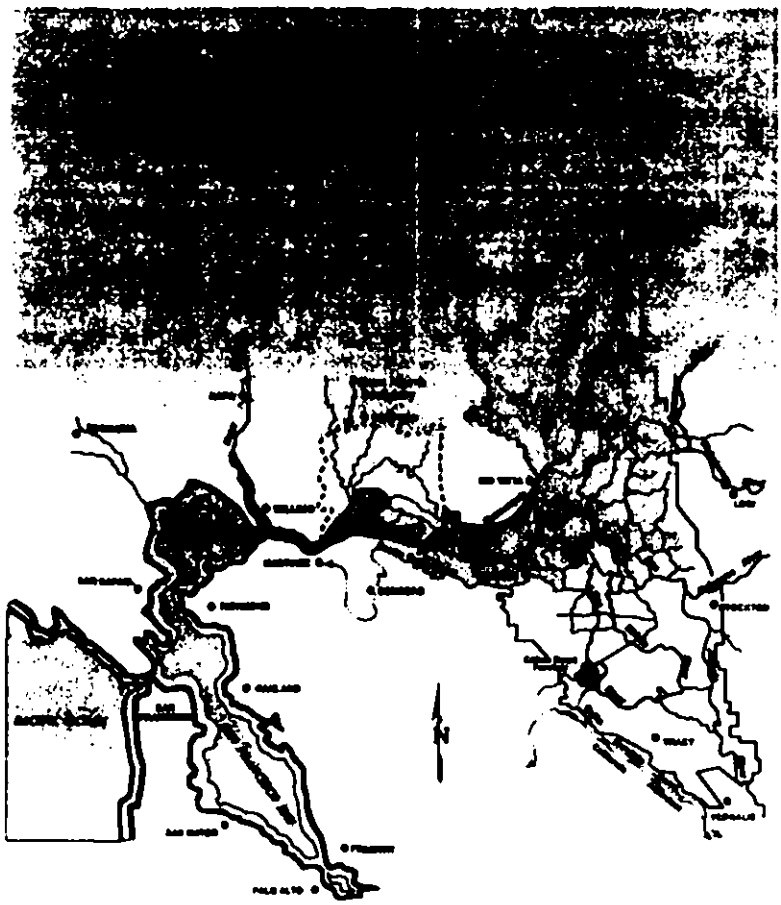
C: Larry Weis - TID
Allen Short – MID
George H. Taylor – FERC, Washington, D.C.
Philip Scordelis – FERC, San Francisco

Attachments:

1. SWRCB Water Quality Control Plan 60-20-20 Index
2. 2007 Monthly Index forecasts
3. April 2007 updates of April-July unimpaired runoff
4. DWR 2007 April-July Forecasts and Subsequent 60-20-20 Index Calculations
5. E-mail Correspondence re: flow schedules from March 27 – April 19
6. April 18, 2007 flow schedule letter from TID
7. May 18th Proposed schedule to CDFG and FWS
8. May 31, 2007 flow schedule letter from TID

APPENDIX

1. SWRCB Water Quality Control Plan 60-20-20 Index



WATER QUALITY CONTROL PLAN

for the San Francisco Bay/ Sacramento-San Joaquin Delta Estuary

95-1WR
MAY 1995

STATE WATER RESOURCES CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

FOOTNOTE 17 FOR TABLE 3

San Joaquin Valley
Water Year Hydrologic Classification

Year classification shall be determined by computation of the following equation:

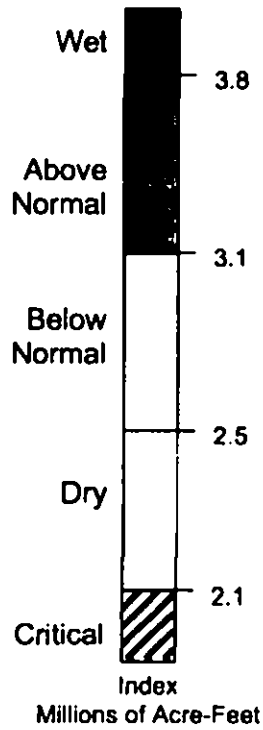
$$INDEX = 0.6 * X + 0.2 * Y + 0.2 * Z$$

Where:
- X = Current year's April – July San Joaquin Valley unimpaired runoff
- Y = Current October – March San Joaquin Valley unimpaired runoff
- Z = Previous year's index[1]

The San Joaquin Valley unimpaired runoff for the current water year (October 1 of the preceding calendar year through September 30 of the current calendar year), as published in California Department of Water Resources Bulletin 120, is a forecast of the sum of the following locations: Stanislaus River, total flow to New Melones Reservoir; Tuolumne River, total inflow to Don Pedro Reservoir; Merced River, total flow to Exchequer Reservoir; San Joaquin River, total inflow to Millerton Lake. Preliminary determinations of year classification shall be made in February, March, and April with final determination in May. These preliminary determinations shall be based on hydrologic conditions to date plus forecasts of future runoff assuming normal precipitation for the remainder of the water year.

Classification	Index Millions of Acre-Feet (MAF)
Wet	Equal to or greater than 3.8
Above Normal	Greater than 3.1 and less than 3.8
Below Normal	Equal to or less than 3.1 and greater than 2.5
Dry	Equal to or less than 2.5 and greater than 2.1
Critical	Equal to or less than 2.1

YEAR TYPE [2]
All Years for All Objectives



[1] A cap of 4.5 MAF is put on the previous year's index (Z) to account for required flood control reservoir releases during wet years.

[2] The year type for the preceding water year will remain in effect until the initial forecast of unimpaired runoff for the current water year is available.

2. 2007 Monthly Index forecasts

Note: file last modified 29 days ago

WSI (05/08/07 1603)

Department of Water Resources
California Cooperative Snow Surveys

2007 Water Year Hydrologic Classification Indices

2007 Water Year Forecast as of May 1, 2007

SACRAMENTO RIVER UNIMPAIRED RUNOFF (SACRAMENTO RIVER INDEX)

	Probability of Exceedence					
Forecast Date	99%	90%	75%	50%	25%	10%
Dec 1, 2006	6.7 (36%)	9.6 (52%)	12.1 (65%)	16.0 (86%)	21.0(113%)	25.9(139%)
Jan 1, 2007	8.2 (44%)	10.6 (57%)	12.7 (68%)	15.8 (85%)	20.0(107%)	24.2(130%)
Feb 1, 2007	6.6 (35%)	7.5 (40%)	8.9 (48%)	10.6 (57%)	12.9 (69%)	15.7 (84%)
Mar 1, 2007	8.9 (48%)	9.8 (53%)	11.0 (59%)	12.1 (65%)	14.2 (76%)	16.2 (87%)
Apr 1, 2007	8.9 (48%)	9.4 (50%)	9.9 (53%)	10.5 (56%)	11.6 (62%)	12.8 (69%)
May 1, 2007	9.2 (49%)	9.5 (51%)	9.9 (53%)	10.2 (55%)	10.8 (58%)	11.4 (61%)

Sacramento River Runoff is the sum of unimpaired flow in million acre-feet at:
Sacramento River above Bend Bridge
Feather River at Oroville (aka inflow to Lake Oroville)
Yuba River near Smartville
American River below Folsom Lake

Also known as the "Sacramento River Index", this index was previously used to determine year type classifications under SWRCB Decision 1485.
Also previously referred to as the "4 River Index" or "4 Basin Index".

Water Year Runoff through end of last month:
2007 (current year) = 7.8 MAF 57% of average
2006 (last year) = 24.6 MAF 180% of average
Previous Water Year Total Runoff:
2006 =31.9 MAF 171% of average
1977 (Min) = 5.1 MAF 28% of average
1983 (Max) =37.7 MAF 202% of average
1956-2005 average =18.6 MAF

SACRAMENTO VALLEY WATER YEAR TYPE INDEX (40-30-30)

	Probability of Exceedence					
Forecast Date	99%	90%	75%	50%	25%	10%
Dec 1, 2006	5.1	6.1	6.9	8.1	9.8	11.4
Jan 1, 2007	5.5	6.4	7.1	8.1	9.5	10.8
Feb 1, 2007	5.0	5.3	5.8	6.4	7.2	8.2
Mar 1, 2007	5.8	6.1	6.5	6.9	7.6	8.3
Apr 1, 2007	5.8	5.9	6.1	6.3	6.7	7.1

May 1, 2007	5.9	6.0	6.1	6.2	6.4	6.6

Index = 0.4 * Current Apr-Jul Runoff (1)
+ 0.3 * Current Oct-Mar Runoff (1)
+ 0.3 * Previous Year's Index (2)

Notes:
(1) Runoff is the sum of unimpaired flow in million acre-feet at:
Sacramento River above Bend Bridge
Feather River at Oroville (aka inflow to Lake Oroville)
Yuba River near Smartville
American River below Folsom Lake
(2) Maximum 10.0 for previous year index term

Previous Water Year Indices:

2006 =	13.1	158% of average
1977 (Min) =	3.1	37% of average
1983 (Max) =	15.3	184% of average
1956-2006 average =	8.3	

Year Type Classification:	Index based on flow in million acre-feet:
Wet	Equal to or greater than 9.2
Above Normal	Greater than 7.8, and less than 9.2
Below Normal	Greater than 6.5, and equal to or less than 7.8
Dry	Greater than 5.4, and equal to or less than 6.5
Critical	Equal to or less than 5.4

This index, originally specified in the 1995 SWRCB Water Quality Control Plan, is used to determine the Sacramento Valley water year type as implemented in SWRCB D-1641. Year types are set by first of month forecasts beginning in February. Final determination is based on the May 1 50% exceedence forecast.

SAN JOAQUIN VALLEY WATER YEAR TYPE INDEX (60-20-20)

	Probability of Exceedence					
Forecast Date	99%	90%	75%	50%	25%	10%
Dec 1, 2006	1.6	2.0	2.3	3.0	3.8	4.8
Jan 1, 2007	1.7	2.1	2.4	3.0	3.7	4.5
Feb 1, 2007	1.5	1.7	2.0	2.4	3.0	3.7
Mar 1, 2007	1.8	2.0	2.3	2.6	3.1	3.6
Apr 1, 2007	1.6	1.8	2.0	2.1	2.4	2.7
May 1, 2007	1.7	1.8	1.9	2.0	2.2	2.3

Water Year Index based on flow in million acre feet

Index = 0.6 * Current Apr-Jul Runoff (1)
+ 0.2 * Current Oct-Mar Runoff (1)
+ 0.2 * Previous Year's Index (2)

Notes:
(1) Runoff is the sum of unimpaired flow in million acre-feet at:
Stanislaus River below Goodwin Reservoir (aka inflow to New Melones Res.)
Tuolumne River below La Grange (aka inflow to New Don Pedro Reservoir)
Merced River below Merced Falls (aka inflow to Lake McClure)
San Joaquin River inflow to Millerton Lake
(2) Maximum 4.5 for previous year index term

Previous Water Year Indices:

2006 =	5.9	179% of average
1977 (Min) =	0.8	26% of average
1983 (Max) =	7.2	219% of average

[illegible] verage = 3.3

Year Type Classification:	Index based on flow in million acre-feet:
Wet	Equal to or greater than 3.8
Above Normal	Greater than 3.1, and less than 3.8
Below Normal	Greater than 2.5, and equal to or less than 3.1
Dry	Greater than 2.1, and equal to or less than 2.5
Critical	Equal to or less than 2.1

This index, originally specified in the 1995 SWRCB Water Quality Control Plan, is used to determine the San Joaquin Valley water year type as implemented in SWRCB D-1641. Year types are set by first of month forecasts beginning in February. Final determination for San Joaquin River flow objectives is based on the May 1 75% exceedence forecast.

SACRAMENTO VALLEY & SAN JOAQUIN R RIVER INDEX
Previous month: Apr 1730 TAF

This index is the sum of the previous month's unimpaired runoff for the 8 rivers that are included in the above SACRAMENTO RIVER UNIMPAIRED RUNOFF and the SAN JOAQUIN VALLEY WATER YEAR TYPE INDEX

A listing of reconstructed indices based on historical observed runoff is posted at http://cdec.water.ca.gov/water_supply.html
The official year types are based on May 1 forecasts, not the observed runoff.

For more information please contact:
Stephen Nemeth at (916) 574-2634 nemeth@water.ca.gov
David Rizzardo at (916) 574-2617 daver@water.ca.gov
John King at (916) 574-2657 kingjj@water.ca.gov

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Monthly Data | Historical Data | Custom Graph Plotter | Text Reports

3. April and May 2007 updates of April-July unimpaired runoff

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B120UP.200704 (04/26/07 1146)

DEPARTMENT OF WATER RESOURCES
California Cooperative Snow Surveys

WATER SUPPLY FORECAST UPDATE
2007 April-July Unimpaired Runoff (1,000 Acre-feet)

	Apr 1	%Avg	Apr 10	%Avg	Apr 17	%Avg	Apr 24	%Avg	
Shasta Lake, total inflow									average = 1819
90% Exceedence	860	47%	840	46%	860	47%	960	53%	
50% Exceedence	1210	67%	1160	64%	1150	63%	1220	67%	
10% Exceedence	1850	102%	1670	92%	1580	87%	1570	86%	
Feather River at Oroville									average = 1782
90% Exceedence	510	29%	480	27%	500	28%	560	31%	
50% Exceedence	700	39%	640	36%	650	36%	700	39%	
10% Exceedence	1270	71%	1110	62%	1050	59%	1030	58%	
Yuba River near Smartville									average = 1006
90% Exceedence	340	34%	320	32%	350	35%	400	40%	
50% Exceedence	470	47%	430	43%	450	45%	500	50%	
10% Exceedence	770	77%	670	67%	650	65%	650	65%	
American River, below Folsom Lake									average = 1240
90% Exceedence	430	35%	400	32%	420	34%	470	38%	
50% Exceedence	590	48%	540	44%	550	44%	590	48%	
10% Exceedence	940	76%	800	65%	760	61%	750	60%	
Mokelumne River, inflow to Pardee Reservoir									average = 461
90% Exceedence	170	37%	155	34%	160	35%	190	41%	
50% Exceedence	230	50%	210	46%	210	46%	230	50%	
10% Exceedence	350	76%	320	69%	310	67%	300	65%	
Stanislaus River, below Goodwin Res. (blw New Melones)									average = 702
90% Exceedence	220	31%	200	28%	210	30%	230	33%	
50% Exceedence	310	44%	280	40%	290	41%	310	44%	
10% Exceedence	500	71%	440	63%	430	61%	430	61%	
Tuolumne River, below La Grange Res. (blw Don Pedro)									average = 1220
90% Exceedence	450	37%	400	33%	430	35%	480	39%	
50% Exceedence	630	52%	570	47%	580	48%	610	50%	
10% Exceedence	910	75%	820	67%	800	66%	790	65%	
Merced River, below Merced Falls (below Lake McClure)									average = 632
90% Exceedence	200	32%	190	30%	200	32%	220	35%	
50% Exceedence	260	41%	240	38%	250	40%	260	41%	
10% Exceedence	430	68%	380	60%	370	59%	350	55%	
San Joaquin River, below Millerton Lake									average = 1254

90% Exceedence	360	29%	340	27%	350	28%	390	31%
50% Exceedence	530	42%	490	39%	490	39%	510	41%
10% Exceedence	790	63%	720	57%	690	55%	680	54%

Kings River, below Pine Flat Reservoir — average = 1224

90% Exceedence	350	29%	320	26%	330	27%	380	31%
50% Exceedence	510	42%	470	38%	460	38%	500	41%
10% Exceedence	750	61%	680	56%	640	52%	630	51%

Kaweah River, below Terminus Reservoir — average = 286

90% Exceedence	80	28%	75	26%	75	26%	85	30%
50% Exceedence	100	35%	95	33%	95	33%	100	35%
10% Exceedence	180	63%	160	56%	155	54%	150	52%

Tule River, below Lake Success — average = 64

90% Exceedence	13	20%	12	19%	14	22%	17	27%
50% Exceedence	20	31%	18	28%	20	31%	22	35%
10% Exceedence	41	65%	34	54%	35	55%	36	57%

Kern River, inflow to Isabella Lake — average = 461

90% Exceedence	100	22%	95	21%	110	24%	125	27%
50% Exceedence	150	33%	140	30%	150	33%	160	35%
10% Exceedence	280	61%	230	50%	220	48%	210	46%

Questions regarding this forecast:
John King: (916) 574-2637 (e-mail kingjj@water.ca.gov)
Steve Nemeth: (916) 574-2634 (e-mail nemeth@water.ca.gov)
Dave Rizzardo: (916) 574-2617 (e-mail daver@water.ca.gov)

Runoff forecasts are unimpaired (full natural) flows which represent the natural water production of the river basin, unaltered by upstream diversions, storage, or export or import of water to or from other watersheds.
The median (50%) forecast assumes median conditions after the date of forecast.
Runoff exceedence levels are derived from historical data.
The 90 percent exceedence level and the 10 percent exceedence level together comprise a range about the median forecast in which the actual runoff should fall 8 times out of 10.
Forecasts are stated in 1,000's of acre-feet and percent of (50-year) average.
The averages are for the period 1956 to 2005.

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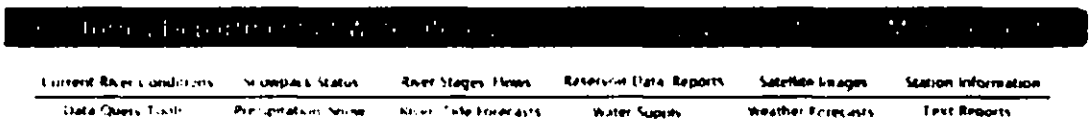
[redacted]



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B120UP (06/07/07 1444)

DEPARTMENT OF WATER RESOURCES
California Cooperative Snow Surveys

WATER SUPPLY FORECAST UPDATE
2007 April-July Unimpaired Runoff (1,000 Acre-feet)

	May 1	%Avg	May 15	%Avg	May 22	%Avg	May 29	%Avg	Jun 5	%Avg
Shasta Lake, total inflow								average =		1819
90% Exceedence	900	49%	910	50%	930	51%	930	51%	960	53%
50% Exceedence	1120	62%	1090	60%	1050	58%	1030	57%	1020	56%
10% Exceedence	1420	78%	1360	75%	1200	66%	1160	64%	1140	63%
Feather River at Oroville								average =		1782
90% Exceedence	570	32%	610	34%	610	34%	610	34%	640	36%
50% Exceedence	670	38%	700	39%	690	39%	690	39%	700	39%
10% Exceedence	920	52%	910	51%	850	48%	820	46%	820	46%
Yuba River near Smartville								average =		1006
90% Exceedence	360	36%	390	39%	380	38%	370	37%	400	40%
50% Exceedence	450	45%	470	47%	460	46%	440	44%	450	45%
10% Exceedence	580	58%	570	57%	550	55%	520	52%	520	52%
American River, below Folsom Lake								average =		1240
90% Exceedence	430	35%	460	37%	480	39%	480	39%	500	40%
50% Exceedence	530	43%	550	44%	540	44%	540	44%	540	44%
10% Exceedence	670	54%	660	53%	620	50%	600	48%	590	48%
Mokelumne River, inflow to Pardee Reservoir								average =		461
90% Exceedence	160	35%	180	39%	190	41%	185	40%	195	42%
50% Exceedence	200	43%	210	46%	205	44%	200	43%	210	46%
10% Exceedence	270	59%	260	56%	250	54%	230	50%	240	52%
Stanislaus River, below Goodwin Res. (blw New Melones)								average =		702
90% Exceedence	230	33%	250	36%	270	38%	270	38%	270	38%
50% Exceedence	290	41%	300	43%	295	42%	290	41%	290	41%
10% Exceedence	400	57%	390	56%	370	53%	360	51%	350	50%
Tuolumne River, below La Grange Res. (blw Don Pecro)								average =		1220
90% Exceedence	440	36%	480	39%	480	39%	470	39%	470	39%

50% Exceedence	560	46%	580	48%	570	47%	560	46%	550	45%
10% Exceedence	710	58%	700	57%	680	56%	660	54%	640	52%
Merced River, below Merced Falls (below Lake McClure)								average =		632
90% Exceedence	180	28%	190	30%	205	32%	195	31%	200	32%
50% Exceedence	230	36%	230	36%	225	36%	220	35%	220	35%
10% Exceedence	320	51%	310	49%	300	47%	290	46%	280	44%
San Joaquin River, below Millerton Lake								average =		1254
90% Exceedence	390	31%	400	32%	400	32%	390	31%	400	32%
50% Exceedence	490	39%	470	37%	460	37%	450	36%	450	36%
10% Exceedence	640	51%	600	48%	580	46%	560	45%	550	44%
Kings River, below Pine Flat Reservoir								average =		1224
90% Exceedence	380	31%	390	32%	410	34%	400	33%	410	34%
50% Exceedence	480	39%	480	39%	470	38%	460	38%	460	38%
10% Exceedence	580	47%	570	47%	560	46%	550	45%	540	44%
Kaweah River, below Terminus Reservoir								average =		286
90% Exceedence	75	26%	76	27%	86	30%	86	30%	88	31%
50% Exceedence	95	33%	94	33%	95	33%	94	33%	95	33%
10% Exceedence	135	47%	125	44%	120	42%	115	40%	115	40%
Tule River, below Lake Success								average =		64
90% Exceedence	14	22%	12	19%	12	19%	12	19%	12	19%
50% Exceedence	19	30%	16	25%	15	24%	14	22%	14	22%
10% Exceedence	32	50%	26	41%	22	35%	20	31%	19	30%
Kern River, inflow to Isabella Lake								average =		461
90% Exceedence	115	25%	115	25%	110	24%	110	24%	110	24%
50% Exceedence	145	31%	140	30%	135	29%	133	29%	130	28%
10% Exceedence	200	43%	190	41%	175	38%	165	36%	155	34%

Questions regarding this forecast:

John King: (916) 574-2637 (e-mail kingjj@water.ca.gov)
Steve Nemeth: (916) 574-2634 (e-mail nemeth@water.ca.gov)
Dave Rizzardo: (916) 574-2617 (e-mail daver@water.ca.gov)

Runoff forecasts are unimpaired (full natural) flows which represent the natural water production of the river basin, unaltered by upstream diversions, storage, or export or import of water to or from other watersheds.
The median (50%) forecast assumes median conditions after the date of forecast.
Runoff exceedence levels are derived from historical data.
The 90 percent exceedence level and the 10 percent exceedence level together comprise a range about the median forecast in which the actual runoff should fall 8 times out of 10.
Forecasts are stated in 1,000's of acre-feet and percent of (50-year) average.
The averages are for the period 1956 to 2005.

4. DWR 2007 April-July Forecasts and Subsequent 60-20-20 Index

		California Department of Water Resources April-July Runoff Forecasts											
		90%				50%				10%			
Forecast	Month	STANISLAUS	TUOLUMNE	MERCED	FRIANT	STANISLAUS	TUOLUMNE	MERCED	FRIANT	STANISLAUS	TUOLUMNE	MERCED	FRIANT
2/1/2007	FEB	150,000	380,000	170,000	330,000	380,000	730,000	360,000	730,000	790,000	1,330,000	710,000	1,380,000
2/13/2007	FEB	160,000	410,000	190,000	350,000	380,000	750,000	360,000	720,000	770,000	1,310,000	690,000	1,330,000
2/20/2007	FEB	150,000	390,000	180,000	340,000	360,000	710,000	340,000	680,000	710,000	1,240,000	660,000	1,240,000
2/25/2007	FEB	170,000	440,000	210,000	360,000	370,000	750,000	360,000	690,000	700,000	1,260,000	670,000	1,220,000
3/1/2007	MAR	290,000	550,000	250,000	460,000	480,000	850,000	390,000	770,000	780,000	1,320,000	690,000	1,280,000
3/13/2007	MAR	280,000	520,000	230,000	430,000	440,000	770,000	350,000	690,000	700,000	1,180,000	610,000	1,100,000
3/20/2007	MAR	240,000	450,000	200,000	380,000	390,000	680,000	300,000	590,000	620,000	1,050,000	520,000	960,000
3/26/2007	MAR	250,000	460,000	210,000	390,000	370,000	660,000	280,000	560,000	590,000	990,000	480,000	880,000
4/1/2007	APR	220,000	450,000	200,000	360,000	310,000	630,000	260,000	530,000	500,000	910,000	430,000	790,000
4/10/2007	APR	200,000	400,000	190,000	340,000	280,000	570,000	240,000	490,000	440,000	820,000	380,000	720,000
4/17/2007	APR	210,000	430,000	200,000	350,000	290,000	580,000	250,000	490,000	430,000	800,000	370,000	690,000
4/24/2007	APR	230,000	480,000	220,000	390,000	310,000	610,000	260,000	510,000	430,000	790,000	350,000	680,000
5/1/2007	MAY	230,000	440,000	180,000	390,000	290,000	560,000	230,000	490,000	400,000	710,000	320,000	640,000
5/15/2007	MAY	250,000	480,000	190,000	400,000	300,000	580,000	230,000	470,000	390,000	700,000	310,000	600,000
5/22/2007	MAY	270,000	480,000	205,000	400,000	295,000	570,000	225,000	460,000	370,000	680,000	300,000	580,000
5/29/2007	MAY	270,000	470,000	195,000	390,000	290,000	560,000	220,000	450,000	360,000	660,000	290,000	560,000

		60-20-20 Index Based on DWR Forecasts							
				Dry		Average		Wet	
Forecast	Month	2007 Index	Oct-Mar	60-20-20	River Req. A.F.	60-20-20	River Req. A.F.	60-20-20	River Req. A.F.
2/1/2007	FEB	5,899,081	975,915	1,713,183	109,319	2,415,183	140,996	3,621,183	300,923
2/13/2007	FEB	5,899,081	975,915	1,761,183	110,599	2,421,183	141,350	3,555,183	300,923
2/20/2007	FEB	5,899,081	975,915	1,731,183	109,799	2,349,183	137,097	3,405,183	300,923
2/25/2007	FEB	5,899,081	975,915	1,803,183	111,719	2,397,183	139,932	3,405,183	300,923
3/1/2007	MAR	5,899,081	975,915	2,025,183	118,339	2,589,183	154,457	3,537,183	300,923
3/13/2007	MAR	5,899,081	975,915	1,971,183	116,198	2,445,183	142,865	3,249,183	300,923
3/20/2007	MAR	5,899,081	975,915	1,857,183	113,159	2,271,183	132,489	2,985,183	242,778
3/26/2007	MAR	5,899,081	975,915	1,881,183	113,798	2,217,183	129,299	2,859,183	205,797
4/1/2007	APR	5,899,081	975,915	1,833,183	112,519	2,133,183	124,463	2,673,183	161,219
4/10/2007	APR	5,899,081	975,915	1,773,183	110,919	2,043,183	119,360	2,511,183	148,178
4/17/2007	APR	5,899,081	975,915	1,809,183	111,879	2,061,183	120,380	2,469,183	144,797
4/24/2007	APR	5,899,081	975,915	1,887,183	113,958	2,109,183	123,102	2,445,183	142,865
5/1/2007	MAY	5,899,081	975,915	1,839,183	112,679	2,037,183	119,019	2,337,183	136,388
5/15/2007	MAY	5,899,081	975,915	1,887,183	113,958	2,043,183	119,360	2,295,183	133,907
5/22/2007	MAY	5,899,081	975,915	1,908,183	114,518	2,025,183	118,339	2,253,183	131,425
5/29/2007	MAY	5,899,081	975,915	1,890,183	114,038	2,007,183	117,318	2,217,183	129,299

5. E-mail Correspondence re: flow schedules from March 27 – April 19

From: Mike Archer <archer@mbkengineers.com>
To: Steve Chedester <schedester@sbcglobal.net>, Larry Freeman <wtrmstr@sbcglobal.net>, Art Godwin <afg@mrgb.org>, Chuck Hanson <CHansonEnv@aol.com>, Tim Heyne <theyne@dfg.ca.gov>, Bill Johnston <billj@mid.org>, Peggy Manza <pmanza@mp.usbr.gov>, Dean Marston <dmarston@dfg.ca.gov>, "Tim O'Laughlin" <towater@olaughlinparis.com>, Nigel Quinn <nwquinn@lbl.gov>, Ken Robbins <kmr@mrgb.org>, John Stella <stella@stillwatersci.com>, Marc Van Camp <vancamp@mbkengineers.com>, Dave Vogel <dvogel@resourcescientists.com>, Art Hinojosa <hinojosa@water.ca.gov>, Ed Kisling <edk@mlode.com>, Simon Kwan <skwan@water.ca.gov>, Bruce Herbold <herbold.bruce@epa.gov>, Wes Monier <fwm@tid.org>, Tim Ford <tjford@tid.org>, Gary Bardini <gbardini@water.ca.gov>, John Leahigh <leahigh@water.ca.gov>, Mark Holderman <markho@water.ca.gov>, Mike Ford <mford@water.ca.gov>, Maury Roos <mroos@water.ca.gov>, Vickie Whitney <vwhitney@waterrights.swrcb.ca.gov>, Jon Burau <jrburau@usgs.gov>, Jeff Stuart <j.stuart@noaa.gov>, Bill Loudermilk <wlouderm@dfg.ca.gov>, Dan Nelson <dan.nelson@sldmwa.org>, Tom Birmingham <tbirmingham@westlandswater.org>, Lowell Ploss <lowellploss@aol.com>, Tom Boardman <hydrobro@ix.netcom.com>, Nick Hindman <nick_hindman@fws.gov>, Frances Mizuno <frances.mizuno@sldmwa.org>, Derek Hilts <Derek_Hilts@fws.gov>, Roger Guinee <Roger_Guinee@fws.gov>, Russ Bellmer <russell_bellmer@fws.gov>, Jim Snow <jsnow@kmtg.com>, Elizabeth Kiteck <ekiteck@mp.usbr.gov>, Mike Abiouli <mabiouli@water.ca.gov>, Ted Selb <tselb@mercedid.org>, Byron Buck <bbuck@mwdh2o.com>, David Fullerton <dfullerton@mwdh2o.com>, Michael Tsang <mtsang@sfwater.org>, Dan Steiner <steinerd@ix.netcom.com>, Walter Ward <walterw@mid.org>, "Pettit, Tracy" <pettit@water.ca.gov>, "Mayr, Shawn" <sdmayr@water.ca.gov>, Mike Archer <archer@mbkengineers.com>, "Hinojosa, Tracy" <tracyh@water.ca.gov>, Joe Tapia <jtapia@water.ca.gov>, Karna Harrigfeld <kharrigfeld@herumcrabtree.com>, Maya Hayden <maya@stillwatersci.com>, "Chu, Andy" <andychu@water.ca.gov>, Pat Brandes <Pat_Brandes@fws.gov>, Ron Milligan <rmilligan@mp.usbr.gov>, Diane Riddle <driddle@waterboards.ca.gov>, Alan Ng <ang@water.ca.gov>, Tom Stephens <tstephens@mercedid.org>, <advorak@swc.org>
Date: 2/14/2007 1:55:41 PM
Subject: VAMP Hydrology and Biology Groups meeting notice

From: Mike Archer <archer@mbkengineers.com>
To: Steve Chedester <schedester@sbcglobal.net>, Larry Freeman <wtrmstr@sbcglobal.net>, Art Godwin <afg@mrgb.org>, Chuck Hanson <CHansonEnv@aol.com>, Tim Heyne <theyne@dfg.ca.gov>, Bill Johnston <billj@mid.org>, Peggy Manza <pmanza@mp.usbr.gov>, Dean Marston <dmarston@dfg.ca.gov>, "Tim O'Laughlin" <towater@olaughlinparis.com>, Nigel Quinn <nwquinn@lbl.gov>, Ken Robbins <kmr@mrgb.org>, John Stella <stella@stillwatersci.com>, Marc Van Camp <vancamp@mbkengineers.com>, Dave Vogel <dvogel@resourcescientists.com>, Art Hinojosa <hinojosa@water.ca.gov>, Ed Kisling <edk@mlode.com>, Simon Kwan <skwan@water.ca.gov>, Bruce Herbold <herbold.bruce@epa.gov>, Wes Monier <fwm@tid.org>, Tim Ford <tjford@tid.org>, Gary Bardini <gbardini@water.ca.gov>, John Leahigh <leahigh@water.ca.gov>, Mark Holderman <markho@water.ca.gov>, Mike Ford <mford@water.ca.gov>, Maury Roos <mroos@water.ca.gov>, Vickie Whitney <vwhitney@waterrights.swrcb.ca.gov>, Jon Burau <jrburau@usgs.gov>, Jeff Stuart <j.stuart@noaa.gov>, Bill Loudermilk <wlouderm@dfg.ca.gov>, Dan Nelson <dan.nelson@sldmwa.org>, Tom Birmingham <tbirmingham@westlandswater.org>, Lowell Ploss <lowellploss@aol.com>, Tom Boardman <hydrobro@ix.netcom.com>, Nick Hindman <nick_hindman@fws.gov>, Frances Mizuno <frances.mizuno@sldmwa.org>, Derek Hilts <Derek_Hilts@fws.gov>, Roger Guinee <Roger_Guinee@fws.gov>, Russ Bellmer <russell_bellmer@fws.gov>, Jim Snow <jsnow@kmtg.com>, Elizabeth Kiteck <ekiteck@mp.usbr.gov>, Mike Abiouli <mabiouli@water.ca.gov>, Ted Selb <tselb@mercedid.org>, Byron Buck <bbuck@mwdh2o.com>, David Fullerton <dfullerton@mwdh2o.com>, Michael Tsang <mtsang@sfwater.org>, Dan Steiner <steinerd@ix.netcom.com>, Walter Ward <walterw@mid.org>, "Pettit, Tracy" <pettit@water.ca.gov>, "Mayr, Shawn" <sdmayr@water.ca.gov>, Mike Archer <archer@mbkengineers.com>, "Hinojosa, Tracy" <tracyh@water.ca.gov>, Joe Tapia <jtapia@water.ca.gov>, Karna Harrigfeld <kharrigfeld@herumcrabtree.com>, Maya Hayden <maya@stillwatersci.com>, "Chu, Andy" <andychu@water.ca.gov>, Pat Brandes <Pat_Brandes@fws.gov>, Ron Milligan <rmilligan@mp.usbr.gov>, Diane Riddle <driddle@waterboards.ca.gov>, Alan Ng <ang@water.ca.gov>, Tom Stephens <tstephens@mercedid.org>, <advorak@swc.org>
Date: 2/15/2007 11:20:24 AM
Subject: [Fwd: Fw: (VAMP) conference call number on 2/22/07 at 9:00am]

From: Mike Archer <archer@mbkengineers.com>
To: Steve Chedester <schedester@sbcglobal net>, Larry Freeman <wtrmstr@sbcglobal.net>, Art Godwin <afg@mrgb.org>, Chuck Hanson <CHansonEnv@aol.com>, Tim Heyne <theyne@dfg.ca.gov>, Bill Johnston <billj@mid.org>, Peggy Manza <pmanza@mp.usbr.gov>, Dean Marston <dmarston@dfg.ca.gov>, "Tim O'Laughlin" <towater@olaughlinparis.com>, Nigel Quinn <nwquinn@lbl.gov>, Ken Robbins <kmr@mrgb.org>, John Stella <stella@stillwatersci.com>, Marc Van Camp <vancamp@mbkengineers.com>, Dave Vogel <dvogel@resourcescientists.com>, Art Hinojosa <hinojosa@water.ca.gov>, Ed Kisling <edk@mlode.com>, Simon Kwan <skwan@water.ca.gov>, Bruce Herbold <herbold.bruce@epa.gov>, Wes Monier <fwm@tid.org>, Tim Ford <tjford@tid.org>, Gary Bardini <gbardini@water.ca.gov>, John Leahigh <leahigh@water.ca.gov>, Mark Holderman <markho@water.ca.gov>, Maury Roos <mroos@water.ca.gov>, Vickie Whitney <vwhitney@waterrights.swrcb.ca.gov>, Jon Burau <jrburau@usgs.gov>, Jeff Stuart <j.stuart@noaa.gov>, Bill Loudermilk <wlouderm@dfg.ca.gov>, Dan Nelson <dan.nelson@sldmwa.org>, Tom Birmingham <tbirmingham@westlandswater.org>, Lowell Ploss <lowellploss@aol.com>, Tom Boardman <hydrobro@ix.netcom.com>, Nick Hindman <nick_hindman@fws.gov>, Frances Mizuno <frances.mizuno@sldmwa.org>, Derek Hilts <Derek_Hilts@fws.gov>, Roger Guinee <Roger_Guinee@fws.gov>, Jim Snow <jsnow@kmtg.com>, Elizabeth Kiteck <ekiteck@mp.usbr.gov>, Mike Abiouli <mabiouli@water.ca.gov>, Ted Selb <tselb@mercedid.org>, Byron Buck <bbuck@mwdh2o.com>, David Fullerton <dfullerton@mwdh2o.com>, Michael Tsang <mtsang@sfwater.org>, Dan Steiner <steinerd@ix.netcom.com>, Walter Ward <walterw@mid.org>, "Pettit, Tracy" <pettit@water.ca.gov>, "Mayr, Shawn" <sdmayr@water.ca.gov>, Mike Archer <archer@mbkengineers.com>, "Hinojosa, Tracy" <tracyh@water.ca.gov>, Joe Tapia <jtapia@water.ca.gov>, Karna Harrigfeld <kharrigfeld@herumcrabtree.com>, Maya Hayden <maya@stillwatersci.com>, "Chu, Andy" <andychu@water.ca.gov>, Pat Brandes <Pat_Brandes@fws.gov>, Ron Milligan <rmilligan@mp.usbr.gov>, Diane Riddle <driddle@waterboards.ca.gov>, Alan Ng <ang@water.ca.gov>, Tom Stephens <tstephens@mercedid.org>, <advorak@swc.org>
Date: 2/16/2007 2:16:00 PM
Subject: Preliminary agenda for 2/22 VAMP meeting

Attached is preliminary agenda for the VAMP Hydrology/Biology Groups meeting next week.

--

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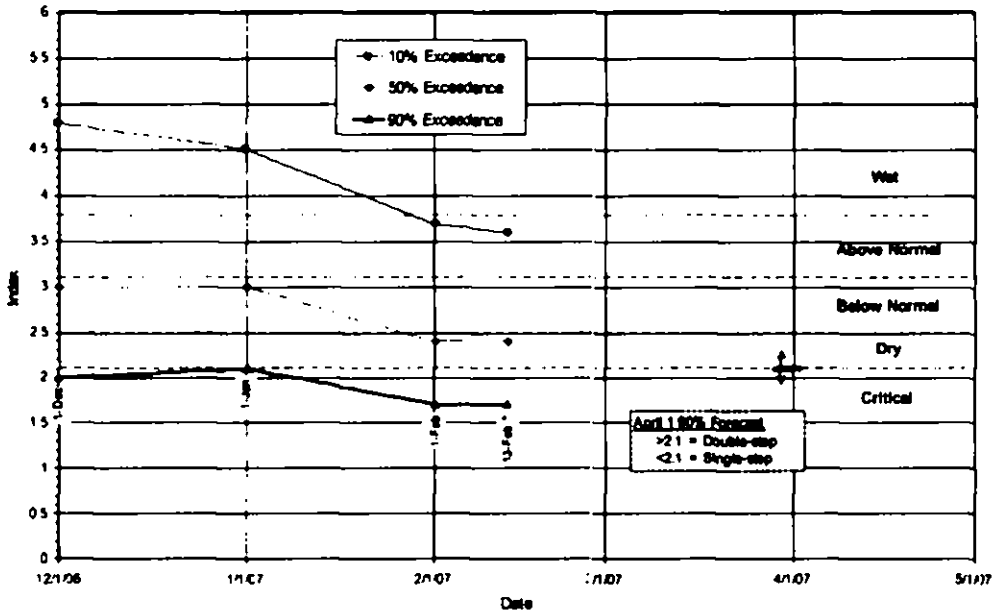
From: Mike Archer <archer@mbkengineers.com>
To: Steve Chedester <schedester@sbcglobal.net>, Larry Freeman <wtrmstr@sbcglobal.net>, Art Godwin <afg@mrgb.org>, Chuck Hanson <CHansonEnv@aol.com>, Tim Heyne <theyne@dfg.ca.gov>, Bill Johnston <billj@mid.org> Peggy Manza <pmanza@mp.usbr.gov>, Dean Marston <dmarston@dfg.ca.gov>, "Tim O'Laughlin" <towater@olaughlinparis.com>, Nigel Quinn <nwquinn@lbl.gov>, Ken Robbins <kmr@mrgb.org>, John Stella <stella@stillwatersci.com>, Marc Van Camp <vancamp@mbkengineers.com>, Dave Vogel <dvogel@resourcescientists.com>, Art Hinojosa <hinojosa@water.ca.gov>, Ed Kisling <edk@mlode.com>, Simon Kwan <skwan@water.ca.gov>, Bruce Herbold <herbold.bruce@epa.gov>, Wes Monier <fwm@tid.org>, Tim Ford <tjford@tid.org>, Gary Bardini <gbardini@water.ca.gov>, John Leahigh <leahigh@water.ca.gov>, Mark Holderman <markho@water.ca.gov>, Tom Stephens <tstephens@mercedid.org>, Maury Roos <mroos@water.ca.gov>, Vickie Whitney <vwhitney@waterrights.swrcb.ca.gov>, Jon Burau <jrburau@usgs.gov>, Jeff Stuart <j.stuart@noaa.gov>, Bill Loudermilk <wlouderm@dfg.ca.gov>, Dan Nelson <dan.nelson@sldmwa.org>, Tom Birmingham <tbirmingham@westlandswater.org>, Lowell Ploss <lowellploss@aol.com>, Tom Boardman <hydrobro@ix.netcom.com>, Nick Hindman <nick_hindman@fws.gov>, Frances Mizuno <frances.mizuno@sldmwa.org>, Derek Hilts <Derek_Hilts@fws.gov>, Roger Guinee <Roger_Guinee@fws.gov>, <advorak@swc.org>, Jim Snow <jsnow@kmtg.com>, Elizabeth Kiteck <ekiteck@mp.usbr.gov>, Mike Abiouli <mabiouli@water.ca.gov>, Ted Selb <tselb@mercedid.org>, Byron Buck <bbuck@mwdh2o.com>, David Fullerton <dfullerton@mwdh2o.com>, Michael Tsang <mtsang@sfwater.org>, Dan Steiner <steinerd@ix.netcom.com>, Walter Ward <walterw@mid.org>, "Pettit, Tracy" <pettit@water.ca.gov>, "Mayr, Shawn" <sdmayr@water.ca.gov>, Mike Archer <archer@mbkengineers.com>, "Hinojosa, Tracy" <tracyh@water.ca.gov>, Joe Tapia <jtapia@water.ca.gov>, Karna Harrigfeld <kharrigfeld@herumcrabtree.com>, Maya Hayden <maya@stillwatersci.com>, "Chu, Andy" <andychu@water.ca.gov>, Pat Brandes <Pat_Brandes@fws.gov>, Ron Milligan <rmilligan@mp.usbr.gov>, Diane Riddle <driddle@waterboards.ca.gov>, Alan Ng <ang@water.ca.gov>, Mike Ford <jmford@water.ca.gov>
Date: 2/27/2007 11:29:09 AM
Subject: [Fwd: Re: NOTES 2/22 VAMP meeting]

San Joaquin Valley Water Year Type Index (60-20-20)
Water Year 2007 Forecasts



* Index computed by MBK from Exhibit 120 Update runoff forecasts

MBK Engineers 2/21/07
File SJR Index forecast 2007.xls [2007 progress plot (2)]

2006 VAMP Hydrologic Summary

Date Prepared: August 15, 2006

Target Flow Period: May 1 - May 31

Target Flow (San Joaquin River near Vernalis): > 7,000 cfs
(last forecast prior to Target Flow Period on 4/25/05 was for mean flow of 30,000 cfs)

Observed Flows

San Joaquin River near Vernalis

Target Flow Period Average:	26,020 cfs	
Min. Mean Daily Flow:	21,000 cfs	(May 31)
Max. Mean Daily Flow:	30,600 cfs	(May 1)

Ungaged Flow at Vernalis (accretions/depletions)

Target Flow Period Mean:	-110 cfs	
Min. Mean Daily:	-1,143 cfs	(May 11)
Max. Mean Daily:	1,427 cfs	(May 31)

Supplemental Water:

No supplemental water provided

Mean Delta Export

5/3/06-5/17/06:	Target: 1,500 cfs	Observed: 1,559 cfs
5/18/06-6/2/06:	Target: 6,000 cfs	Observed: 5,748 cfs

Figure 2-1. 2006 VAMP: San Joaquin River near Vernalis
With Lagged Contributions from Primary Sources

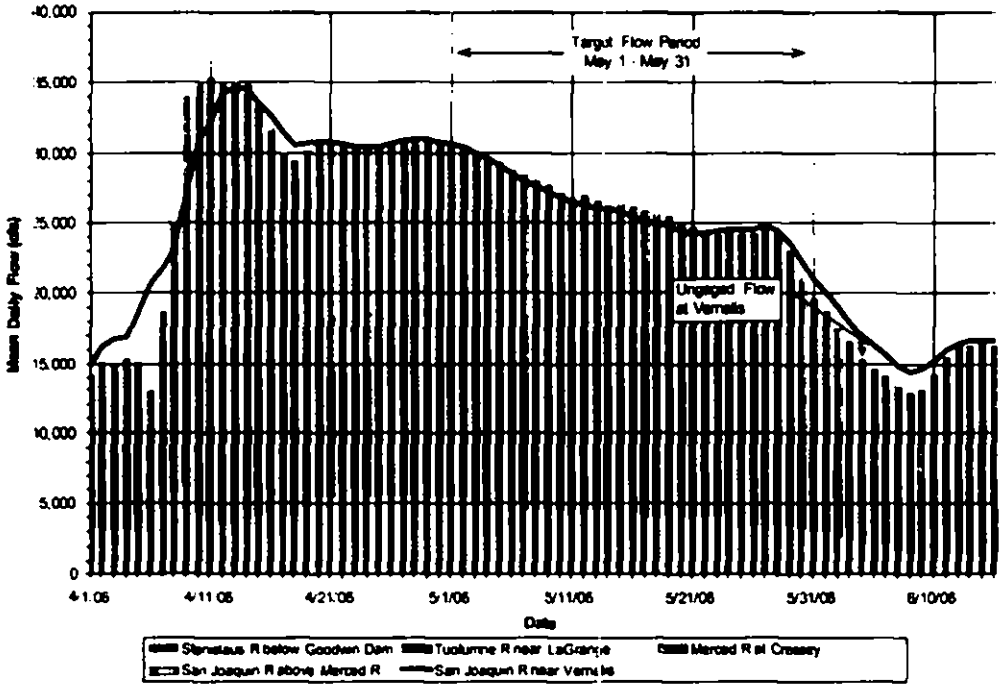
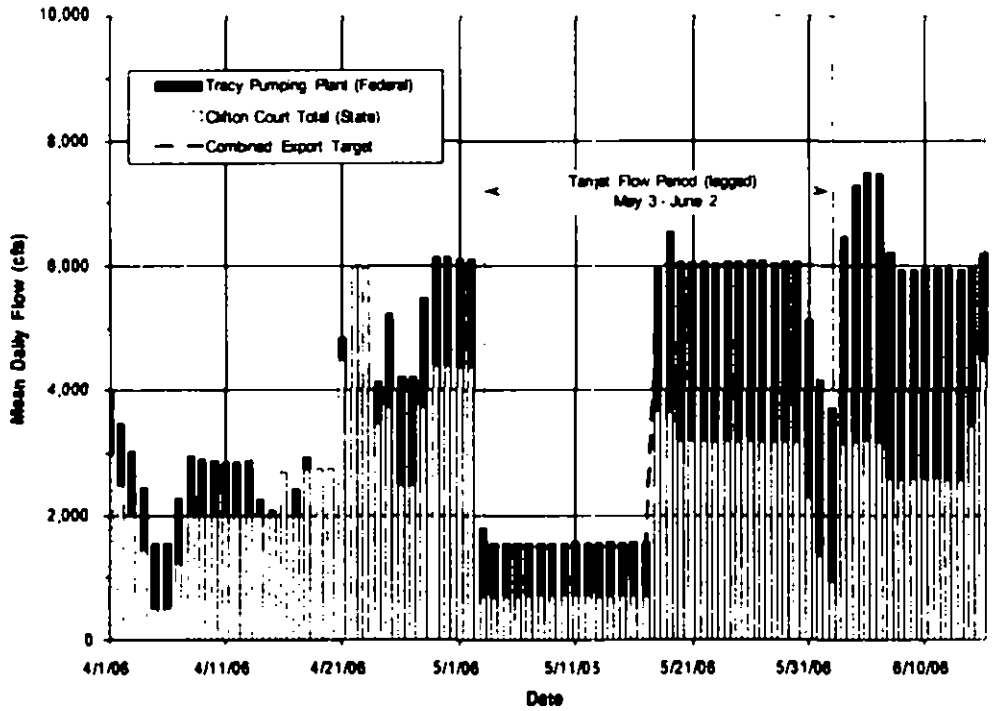


Figure 2-5. 2006 VAMP - Federal and State Delta Exports



MEETING NOTES

San Joaquin River Technical Committee
Hydrology and Biology Groups

February 22, 2007
9:00 - 12:00

USFWS, Stockton
4001 N. Wilson Way

Agenda with NOTES

1. Introduction

2. Recap of 2006 VAMP: Mike Archer presented a recap of the 2006 VAMP pulse period. Over the period of May 1 through May 31, 2006 the average observed flow at Vernalis was 26,020 cfs, ranging from 30,600 cfs (May 1) to 21,000 cfs (May 31). The mean Delta exports were 1,559 cfs (May 3 – May 17) and 5,748 cfs (May 18 – June 2).

3. 2007 VAMP Outlook; Initial Monthly Operation Forecast: (Liz Kiteck, Mike Archer) The February 1 San Joaquin Valley water year index (60-20-20) is 1.7 MAF at the 90 % exceedence, 2.0 MAF at the 75 % exceedence, and 2.4 MAF at the 50 % exceedence. This results in a CRITICAL year classification at both the 90 and 75 % exceedence and DRY at the 50 % exceedence level. Based on the February 14 update from DWR no change took place since February 1. The USBR projects the Vernalis existing flow to be 1,721 and 1,797 cfs during the respective first and second half of the VAMP period in its 90 % exceedence operations forecast. This would result in a VAMP target flow of 2,000 cfs. In the 50 % exceedence forecast the Vernalis existing flow is projected to be 2,661 cfs and 2,958 cfs for the first and second half of the period. A question was asked what the criteria are for determining the double-step target flow. Appendix B of the San Joaquin River Agreement states that the 90 % exceedence level will be used. Therefore the double-step criteria would not be applied using the February 1 forecast.

4. Head of Old River Barrier: (Mike Abiouli, Mike Ford) The DWR gage at Head of Old River is operational at this time. DWR reported that repairs are being made to the gage on the San Joaquin River near Lathrop but will be operational during VAMP. DWR has obtained the necessary land use permits and construction contract for installation of the temporary HORB in 2007. They are awaiting a biological opinion from NOAA Fisheries covering the Green Sturgeon. NOAA expects to issue the biological opinion next week. The Delta smelt work group made a recommendation to the state/federal agencies' Water Operation Management Team the temporary HORB not be installed based on particle tracking model results. The WOMT has not made a final decision as of yet.

5. Tributary Operations: (Ted Selb, Tim Ford, Liz Kiteck) The Merced Irrigation District is maintaining a flow in the Merced River about 200 cfs through the coming months. It is not expected Lake McClure will encroach in the flood space under the current water supply conditions. New Don Pedro is below the designated flood space at this time. Current releases to the Tuolumne River are about 300 cfs and will be maintained until mid-April. During the VAMP pulse period the base release will be reduced to about 150 cfs with an additional 500 cfs released as a FERC pulse flow. The USBR is currently releasing 800 cfs to the Stanislaus River at Goodwin, but releases will be adjusted based on inflow conditions. During the VAMP the release is projected to be 1,250 cfs under the 90 % exceedence operations forecast.

6. Vernalis Gage Measurements (Liz Kiteck) The USBR will be requesting the USGS to initiate weekly flow measurement at the Vernalis gaging station beginning in early April through mid-May.

7. Update on proposed sonic tagging study: (Pat Brandes, Lowell Ploss) (See attached preliminary study plan.) Currently the SJRGA has issued a purchase order for the acoustic tags from Hydroacoustic Technology, Inc. In addition SJRGA, USFWS, and USBR are working on a Memorandum of Understanding between the USBR and USGS for the use of a boat, training of tagging personnel, and data analysis. USFWS, CDFG, and KDH Environmental Services have each offered personnel to be trained and to perform the tagging. CDFG raised question as to the signal coverage of the acoustic receivers to be deployed at Chipps Island and the ability to detect each tagged fish leaving the Delta. It is acknowledged that it is not anticipated that every tagged fish can be tracked in the Delta and unknown if fish leaving the Delta can escape detection The 2007 study may be limited in the number of tagged fish and number of acoustic receivers but will build on the knowledge gained from the 2006 pilot program. Some of this will be answered as we work with the USGS laboratory in Cook, WA. The question of coverage at Chipps island was deferred to Dave Vogel, not in attendance) for a response.

8. Other Items: Roger Guinee reported the SWRCB will be holding a Pelagic Organism Decline workshop on March 22-23. Lowell Ploss reported that the coded wire tags on hand for VAMP will be used by Merced Irrigation District in its Merced River tagging program.

9. Future Meeting Schedule: The next SJRA technical committee meeting will take place on March 21, 1:00 pm at the USFWS offices, Stockton. Some intervening small group meetings to work on the acoustic study plan will be taking place.

ATTACHMENT

Preliminary 2007 VAMP Design
By the San Joaquin River Agreement Technical Committee
DRAFT 2/22/07

1. The 2006 VAMP numerical indicator was five (5) based on the 60-20-20 water year classification of "Wet". There is a potential the 2007 numerical indicator will be two (2) or greater if the 60-20-20 classification is "Dry" or better and when added to the 2006 indicator will result in a "double step" VAMP year. With a "double step" the VAMP target flow will be one level higher than that established in the single-step target flow. The following flow/export conditions are recommended by the SJRATC:

Flow based preference:	1	2	3	4 **
Target flow:	7,000 cfs	7,000 cfs	5,700 cfs	5,700 cfs
Proposed flow:	7,000 cfs	7,000/7,000 cfs*	4,450/7,000cfs*	5,700/5,700 cfs*
Target export rate:	1,500 or 3,000 cfs	1,500 or 3,000 cfs	2,250 cfs	2,250 cfs
Proposed export rate:	1,500 cfs	3,000/1,500 cfs	1,500/1,500 cfs	1,500/1,500 cfs

Flow based preference:	5		6	
Target flow:	4,450 cfs		3,200 cfs	
Proposed flow:	4,450 cfs		3,200 cfs	
Target export rate:	1,500 cfs		1,500 cfs	
Proposed export rate:	1,500 cfs		1,500 cfs	

* Split flows and export rates over the VAMP period.
** At a flow target of 3,200 or 4,450 cfs the export rate will be 1,500 cfs .

Note: The SJRA Management Committee suggested looking at higher export levels.

2. VAMP period of April 22 through May 22. Final VAMP period may be adjusted based on conditions at the time.
3. The SJRAMC approved the Proposed Acoustic Telemetry to include the use of 1,000 tagged Chinook salmon smolts. Acoustic monitoring will be conducted through the use

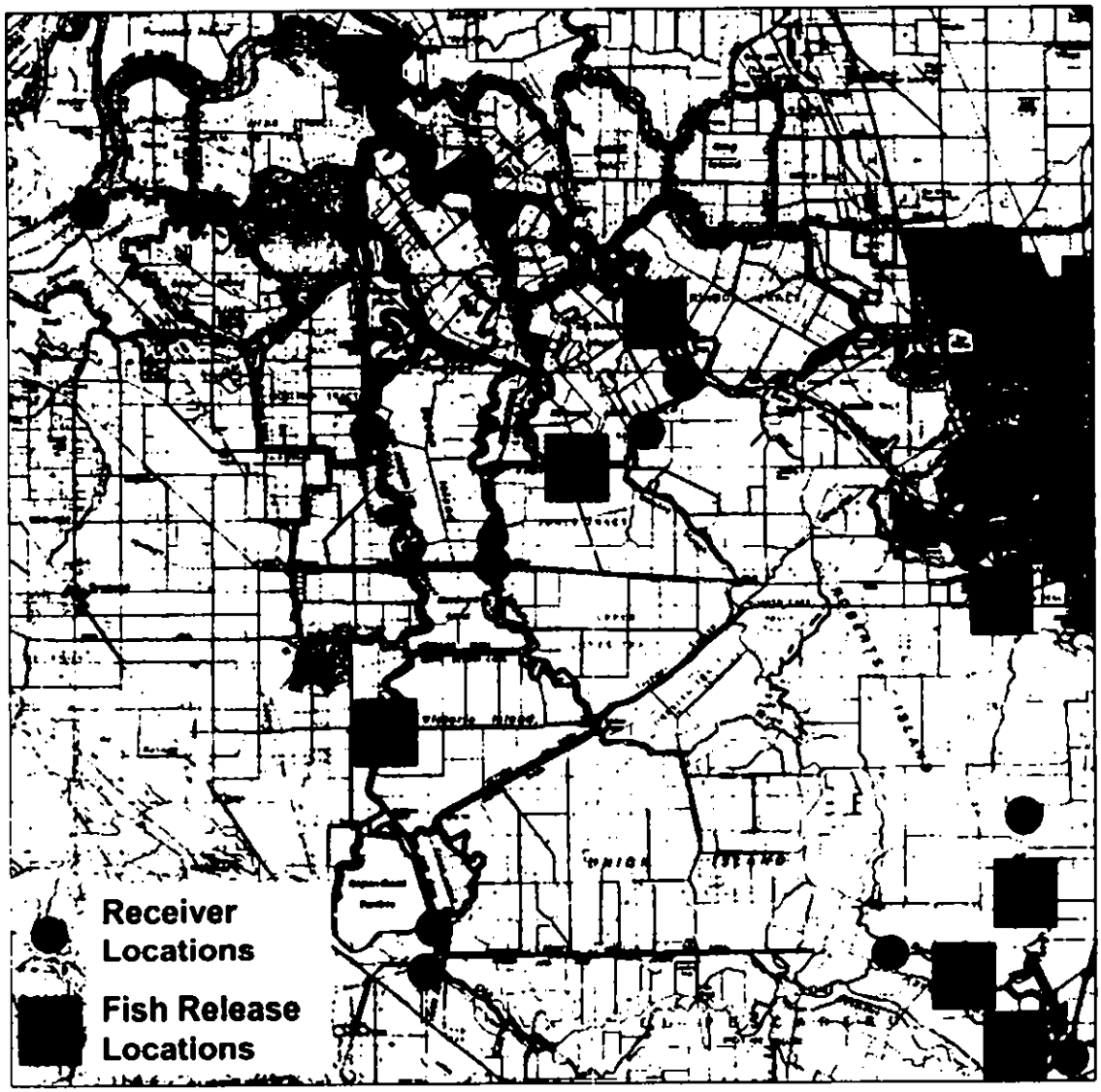
of 10 existing acoustic receivers on loan from the Department of Water Resources, plus 2 rental receivers. SWC will also be purchasing one receiver to be located at the Skinner Fish Facility.

a. The acoustic study will serve as an acceptable fish monitoring alternative for 2007 VAMP and NOT a surrogate for the traditional CWT studies.
b. Source of the 1,000 test fish is approved by the Department of Fish and Game to be from the Merced River Hatchery.
c. Procurement of the acoustic tags is underway by SJRGA.
d. The 2 rental receivers will be deployed at Jersey Point and Chipps Island. These are specialized receivers with multiple hydrophones capable of covering the wider channel. The Jersey Point receiver will also serve as a dual station to analyze detection probabilities.
e. All hatchery fish will be used in 2007.
f. The final release locations of the test fish and number to be released at each site are recommended as follows:

2007 TEST FISH RELEASE SCHEDULE			
LOCATION	NUMBER	FIRST RELEASE	SECOND RELEASE
Durham Ferry	100	May 3	May 10
Mossdale	100	May 3	May 10
Old River below HOR	50	May 3	May 10
Dos Reis	50	May 3	May 10
Channel Point	40	May 4	May 11
SJR below Turner Cut	40	May 4	May 11
SJR at Prisoner's Pt.	40	May 4	May 11
Turner Cut	40	May 4	May 11
Old River @ Hwy 4	40	May 4	May 11

4. SJRGA/USBR is making arrangements with USGS for use of boat to deploy the acoustic receivers. USFWS will provide maintenance support during the test.
5. USFWS is working with the USGS Columbia River Research Laboratory (Cook, WA) on the training of staff to perform the acoustic tagging. Training will take place at the Mokelumne Fish Hatchery.
6. Deployment of temperature data loggers throughout the lower San Joaquin River consistent with previous VAMP studies.
7. Continuous flow measurements at the San Joaquin River – Head of Old River split consistent with previous VAMP studies.
8. Health and physiology studies as appropriate and consistent with SJRA objectives
9. USFWS to determine survival estimates as appropriate and consistent with SJRA objectives. (Continuation of Ken Newman's work.)
10. USFWS will work closely with the USGS Columbia River Research Laboratory (Cook, WA) on the data analysis.
11. SJRATC to initiate process to obtain test fish from alternate out of basin sources for the 2008 and subsequent VAMP studies.

12. USBR to submit 2007 VAMP plan to the SWRCB as appropriate.



From: Mike Archer <archer@mbkengineers.com>
To: Elizabeth Kiteck <EKITECK@mp.usbr.gov>, Wes Monier <fwm@tid.org>, Ted Selb <tselb@mercedid.org>
Date: 3/9/2007 1:44:47 PM
Subject: April-May daily flow forecast

From: Mike Archer <archer@mbkengineers.com>
To: Wes Monier <fwmonier@tid.org>
Date: 3/13/2007 5:31:13 PM
Subject: Re: April-May daily flow forecast

From: <Lowellploss@aol.com>
To: <Pat_Brandes@fws.gov>, <billj@mid.org>, <pmanza@mp.usbr.gov>, <steinerd@ix.netcom.com>, <walterw@mid.org>, <hydrobro@ix.netcom.com>, <CHansonEnv@aol.com>, <Paul_Cadrett@fws.gov>, <skwan@water.ca.gov>, <dmarston@dfg.ca.gov>, <markho@water.ca.gov>, <tselb@mercedid.org>, <arockriv@delta.dfg.ca.gov>, <Roger_Guinee@fws.gov>, <tjford@tid.org>, <theyne@dfg.ca.gov>, <trose@delta.dfg.ca.gov>, <herbold.bruce@epa.gov>, <edk@mlode.com>, <fwmonier@tid.org>, <derek_hilts@fws.gov>, <bdmmid@newexchequer.org>, <j.stuart@noaa.gov>, <ekiteck@mp.usbr.gov>, <fuller@inreach.com>, <JGUIGNARD@dfg.ca.gov>, <dfullerton@mwdh2o.com>, <Nick_Hindman@fws.gov>, <dvogel@resourcescientists.com>, <Jeff_McLain@fws.gov>, <wtrmstr@sbcglobal.net>, <vancamp@mbkengineers.com>, <mford@water.ca.gov>, <Andrew_Hamilton@fws.gov>, <tustison@mbkengineers.com>, <msimpson@usgs.gov>, <stella@stillwatersci.com>, <aholmes@delta.dfg.ca.gov>, <eirc_volkman@fws.gov>, <cmesick@fws.gov>, <DFMITCHELL@dfg.ca.gov>, <Mike_Marshall@fws.gov>, <jgwill@dcn.davis.ca.us>, <JHANNON@mp.usbr.gov>, <jburau@usgs.gov>, <jstarr@delta.dfg.ca.gov>, <KDH@volcano.net>, <miyamoto@ebmud.com>, <pfb@stillwatersci.com>, <rsitts@mwdh2o.com>, <Ryan_Olah@fws.gov>, <Victoria_Poage@fws.gov>
Date: 3/19/2007 1:16:52 PM
Subject: VAMP Technical Meeting

All;
A reminder that the next VAMP technical meeting is scheduled for Wednesday, March 21, 1:00 pm - ??pm. The meeting will be held at the USFWS office in Stockton, 4001 N. Wilson.

The meeting will provide an update to the water operations plan based on the March 1 water supply conditions. A status report of the planning and coordination for the acoustic telemetry study will also be provided.

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From: <Lowellploss@aol.com>
To: <Pat_Brandes@fws.gov>, <billj@mid.org>, <pmanza@mp.usbr.gov>, <steinerd@ix.netcom.com>, <walterw@mid.org>, <hydrobro@ix.netcom.com>, <CHansonEnv@aol.com>, <Paul_Cadrett@fws.gov>, <skwan@water.ca.gov>, <dmarston@dfg.ca.gov>, <markho@water.ca.gov>, <tselb@mercedid.org>, <arockriv@delta.dfg.ca.gov>, <Roger_Guinee@fws.gov>, <tjford@tid.org>, <theyne@dfg ca.gov>, <trose@delta.dfg.ca.gov>, <herbold.bruce@epa.gov>, <edk@mlode.com>, <fwmonler@tid.org>, <derek_hilts@fws.gov>, <bdmmid@newexchequer.org>, <j.stuart@noaa.gov>, <ekiteck@mp.usbr.gov>, <fuller@inreach.com>, <JGUIGNARD@dfg.ca.gov>, <dfullerton@mwdh2o.com>, <Nick_Hindman@fws.gov>, <dvogel@resourcescientists.com>, <Jeff_McLain@fws.gov>, <wtrmstr@sbcglobal.net>, <vancamp@mbkengineers.com>, <mford@water.ca.gov>, <Andrew_Hamilton@fws.gov>, <tustison@mbkengineers.com>, <msimpson@usgs.gov>, <stella@stillwatersci.com>, <aholmes@delta.dfg.ca.gov>, <eirc_volkman@fws.gov>, <cmesick@fws.gov>, <DFMITCHELL@dfg.ca.gov>, <Mike_Marshall@fws.gov>, <jgwill@dcn.davis.ca.us>, <JHANNON@mp.usbr.gov>, <jburau@usgs.gov>, <jstarr@delta.dfg.ca.gov>, <KDH@volcano.net>, <miyamoto@ebmud.com>, <pfb@stillwatersci.com>, <rsitts@mwdh2o.com>, <Ryan_Olah@fws.gov>, <Victoria_Poage@fws.gov>
Date: 3/19/2007 4:37:01 PM
Subject: VAMP Tech Meeting, Call-in Number

SJRA Technical Committee:

Here is the call in information:

Conference Name: VAMP TECHNICAL MEETING

Start Time Mar 21 2007 01:00 PM US Pacific
Start Date Start Time Time Zone

Dial-in Number(s): (888) 622-5357

Host Code: 843768 (Lowell you will use this code)

Participant Code: 529307

Pat: Please arrange for conference phone in the meeting room. Thanks

Lowell Ploss
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From: Mike Archer <archer@mbkengineers.com>
To: Lowell Ploss <lowellploss@aol.com>, Elizabeth Kiteck <EKITECK@mp.usbr.gov>, Ted Selb <tselb@mercedid.org>, Wes Monier <fwm@tid.org>, Larry Freeman <wtrmstr@sbcglobal.net>
Date: 3/20/2007 9:45:57 AM
Subject: Initial discussion draft VAMP Daily Op Plan

2007 VAMP DAILY OPERATION PLAN
Updated: 3/20/2007
San Joaquin River Technical Committee Hydrology Group

(A1) double-step

Unregulated Flow at Vernalis = 100 cfs

PRELIMINARY
SUBJECT TO REVISION

Target Flow Period April 22 - May 22

Flow Target [illegible] cfs

Values in bold are observed real-time data

Date	San Joaquin River near Vernalis: Existing Flow (cfs)	VAMP Supplemental Flow (cfs)	Other Supplemental Flow (cfs)	Cumulative VAMP Supplemental Flow (TAF)	VAMP Flow (cfs)	Salt above Merced R (2day lag) (cfs)	Unregulated Flow above Vernalis (cfs)	Merced River at Cressey: Existing Flow (cfs)	MeID VAMP Supplemental Flow (cfs)	SJREC VAMP Supplemental Flow (cfs)	VAMP Flow (3day lag) (cfs)	Tuolumne River at LaGrange: Existing Flow base FERC volume (cfs)	Existing Flow Adjusted FERC Pulse (cfs)	VAMP Supplemental Flow (cfs)	VAMP Flow (2day lag) (cfs)	Stanislaus, Goodwin: Existing Flow Base (cfs)	Existing Flow reshaped	VAMP Supplemental Flow (cfs)	Other Supplemental Flow (cfs)	VAMP Flow (2day lag) (cfs)	Maintain Priority Flow Level
3/15/07	2,330				2,330	782	4	215			215	340	340		340	884				884	
3/16/07	2,210				2,210	783	22	220			220	340	340		340	880				880	
3/17/07	2,200				2,200	732	110	213			213	330	330		330	882				882	
3/18/07	2,230				2,230	722	100	212			212	330	330		330	887				887	
3/19/07	2,220				2,220	701	110	210			210	337	337		337	883				883	
3/20/07																					
3/21/07																					
3/22/07								Discussion Draft													
3/23/07																					
3/24/07																					
3/25/07																					
3/26/07																					
3/27/07																					
3/28/07																					
3/29/07						588		250													
3/30/07						584		250				300	300			788	788				
3/31/07						580		250				300	300			788	788				
4/1/07	2,002					576	100	250			250	300	300		300	788	788			788	
4/2/07	1,988					572	100	250			250	300	300		300	788	788			788	
4/3/07	1,994					568	100	250			250	300	300		300	788	788			788	
4/4/07	1,990				1,990	564	100	250			250	300	300		300	788	788			788	
4/5/07	1,986				1,986	560	100	250			250	300	300		300	788	788			788	
4/6/07	1,982				1,982	556	100	250			250	300	300		300	788	788			788	
4/7/07	1,978				1,978	552	100	250			250	300	300		300	788	788			788	
4/8/07	1,974				1,974	548	100	250			250	300	300		300	788	788			788	
4/9/07	1,970				1,970	544	100	250			250	300	300		300	788	788			788	
4/10/07	1,966				1,966	540	100	250			250	300	300		300	788	788			788	
4/11/07	1,962				1,962	536	100	250			250	300	300		300	788	788			788	
4/12/07	1,958				1,958	532	100	250			250	300	300		300	788	788			788	
4/13/07	1,954	0			1,954	528	100	250			250	300	300		300	788	788			788	
4/14/07	1,950	0			1,950	524	100	250			250	300	300		300	788	788			788	
4/15/07	1,946	0	0	0.00	1,946	520	100	250			250	250	250		250	788	788			788	
4/16/07	1,942	0	0	0.00	1,942	516	100	250			250	250	250		250	788	788			788	
4/17/07	1,888	0	0	0.00	1,888	512	100	250			250	250	250		250	788	788			788	
4/18/07	1,884	0	0	0.00	1,884	508	100	250			250	250	250		250	788	788			788	
4/19/07	1,880	0	0	0.00	1,880	504	100	[illegible]	[illegible]	170	[illegible]	250	250		250	788	788			788	
4/20/07	1,876	0	0	0.00	1,876	[illegible]	100	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
4/21/07	1,872	0	0	0.00	1,872	[illegible]	100	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	7.30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	14.10	4,410	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4,414	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	1,323	[illegible]	[illegible]	[illegible]	1,000	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	374	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	401	170	[illegible]	[illegible]	[illegible]	[illegible]	1,000	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	401	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	1,000	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	401	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4,317	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	170	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	741	741	[illegible]	401	1,500	
[illegible]	2,118	[illegible]	401	[illegible]	[illegible]	[illegible]	[illegible]	250			250	[illegible]	[illegible]	[illegible]	[illegible]	741	741	358	401	1,500	
[illegible]	2,114	[illegible]	[illegible]	[illegible]	[illegible]	345	[illegible]	250			250	450	450		450	741	741			741	
[illegible]	2,018	1,700	401	118.99	[illegible]	341	[illegible]	250			250	350	350		350	741	741			741	
5/23/07	1,906	0	0		1,906	357	100	250			250	250	250		250	741	741			741	
5/24/07	1,802	0	0		1,802	353	100	250			250	150	150		150	741	741			741	
5/25/07	1,698	0	0		1,698	349	100	250			250	150	150		150	741	741			741	
5/26/07	1,594		0		1,594	345	100	250			250	150	150		150	741	741			741	
5/27/07	1,590		0		1,590	341	100	250			250	150	150		150	741	741			741	
5/28/07	1,586				1,586	337	100	250			250	150	150		150	741	741			741	
5/29/07	1,582				1,582	333	100	250			250	150	150		150	741	741			741	
5/30/07	1,578				1,578	329	100	250			250	150	150		150	741	741			741	
5/31/07	1,574				1,574	325	100	250			250	150	150		150	741	741			741	
VAMP Period Mean (cfs)	[illegible]	[illegible]			4,292	415	100	250	894	170	1,323	647	647	358	1,006	751		358	391	1,500	

Supplemental water (TAF)

Provided	[illegible]	34.07	11.01	22.01	22.01 / 24.07
Target	[illegible]	34.00	11.00	22.00	22.00

[illegible]

2007 VAMP DAILY OPERATION PLAN
Updated: 3/20/2007
San Joaquin River Technical Committee Hydrology Group

(A2) single-step

PRELIMINARY
SUBJECT TO REVISION

Unregulated Flow at Vernalis = [illegible] cfs

Target Flow Period: April 22 - May 22
Flow Target: 3200 cfs

Values in bold are observed real-time data

Date	San Joaquin River near Vernalis: Existing Flow (cfs)	VAMP Supplemental Flow (cfs)	Other Supplemental Flow (cfs)	Cumulative VAMP Supplemental Flow (TAF)	VAMP Flow (cfs)	SJR above Merced R (2day lag) (cfs)	Unregulated Flow above Vernalis (cfs)	Merced River at Cressey: Existing Flow (cfs)	MeID VAMP Supplemental Flow (cfs)	SJREC VAMP Supplemental Flow (cfs)	VAMP Flow (3day lag) (cfs)	Tuolumne River at LaGrange: Existing Flow - base FERC volume (cfs)	Existing Flow - Adjusted FERC Pulse (cfs)	VAMP Supplemental Flow (cfs)	VAMP Flow (2day lag) (cfs)	Stanislaus at Goodwin: Existing Flow - Base (cfs)	Existing Flow - reshaped	VAMP Supplemental Flow (cfs)	Other Supplemental Flow (cfs)	VAMP Flow (2day lag) (cfs)	Maximum Priority Flow Level
3/15/07	2,330				2,330	782	4	219			219	340	340		340	884				884	
3/16/07	2,219				2,219	753	22	228			229	340	340		340	888				888	
3/17/07	2,209				2,209	733	110	213			213	339	339		330	882				882	
3/18/07	2,239				2,239	723	108	212			212	338	338		338	887				887	
3/19/07	2,229				2,229	701	110	210			210	337	337		337	883				883	
3/20/07																					
3/21/07																					
3/22/07											Unknown Draft										
3/23/07																					
3/24/07																					
3/25/07																					
3/26/07																					
3/27/07																					
3/28/07																					
3/29/07						588		250													
3/30/07						584		250				300	300			788	788				
3/31/07						580		250				300	300			788	788				
4/1/07	2,002					576	100	250			250	300	300		300	788	788			788	
4/2/07	1,998					572	100	250			250	300	300		300	788	788			788	
4/3/07	1,994					568	100	250			250	300	300		300	788	788			788	
4/4/07	1,990				1,990	564	100	250			250	300	300		300	788	788			788	
4/5/07	1,986				1,986	560	100	250			250	300	300		300	788	788			788	
4/6/07	1,982				1,982	556	100	250			250	300	300		300	788	788			788	
4/7/07	1,978				1,978	552	100	250			250	300	300		300	788	788			788	
4/8/07	1,974				1,974	548	100	250			250	300	300		300	788	788			788	
4/9/07	1,970				1,970	544	100	250			250	300	300		300	788	788			788	
4/10/07	1,966				1,966	540	100	250			250	300	300		300	788	788			788	
4/11/07	1,962				1,962	536	100	250			250	300	300		300	788	788			788	
4/12/07	1,958				1,958	532	100	250			250	300	300		300	788	788			788	
4/13/07	1,954	0			1,954	528	100	250			250	300	300		300	788	788			788	
4/14/07	1,950	0			1,950	524	100	250			250	300	300		300	788	788			788	
4/15/07	1,946	0	0	0.00	1,946	520	100	250			250	250	250		250	788	788			788	
4/16/07	1,942	0	0	0.00	1,942	516	100	250			250	250	250		250	788	788			788	
4/17/07	1,938	0	0	0.00	1,938	512	100	250			250	250	250		250	788	788			788	
4/18/07	1,934	0	0	0.00	1,934	508	100	250			250	250	250		250	788	788			788	
4/19/07	1,930	0	0	0.00	1,930	504	100	[illegible]	[illegible]	0	819	250	250		250	788	788			788	
4/20/07	1,926	0	0	0.00	1,926	[illegible]	100	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
4/21/07	1,922	0	0	0.00	1,922	[illegible]	100	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	732	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,800	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
[illegible]	[illegible]	[illegible]	750	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
[illegible]	[illegible]	[illegible]	750	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
[illegible]	[illegible]	[illegible]	750	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
[illegible]	[illegible]	[illegible]	750	[illegible]	[illegible]	421	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
[illegible]	[illegible]	[illegible]	750	[illegible]	[illegible]	417	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/10/07	[illegible]	[illegible]	750	10.14	[illegible]	413	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/11/07	[illegible]	[illegible]	750	10.67	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/12/07	[illegible]	200	750	11.20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/13/07	2,149	200	750	11.74	3,177	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/14/07	2,145	200	750	12.27	3,173	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/15/07	2,141	200	750	12.81	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/16/07	2,136	200	750	13.34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/17/07	2,132	200	750	13.87	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/18/07	2,127	200	750	14.41	[illegible]	[illegible]	[illegible]	[illegible]	200	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/19/07	2,123	200	750	14.94	3,151	[illegible]	[illegible]	[illegible]	200	0	819	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/20/07	2,119	200	750	15.47	3,147	[illegible]	[illegible]	250			250	[illegible]	[illegible]	0	[illegible]	741	741	0	750	1,800	
5/21/07	2,114	200	750	16.01	3,142	365	[illegible]	250			250	450	450		450	740	740			740	
5/22/07	2,110	200	750	16.54	[illegible]	361	[illegible]	250			250	350	350		350	740	740			740	
[illegible]	1,905	0	0		1,905	357	100	250			250	250	250		250	740	740			740	
[illegible]	1,901	0	0		1,901	353	100	250			250	150	150		150	740	740			740	
[illegible]	1,897	0	0		1,897	349	100	250			250	150	150		150	740	740			740	
[illegible]	1,893	0	0		1,893	345	100	250			250	150	150		150	740	740			740	
[illegible]	1,889	0	0		1,889	341	100	250			250	150	150		150	740	740			740	
[illegible]	1,885	0	0		1,885	337	100	250			250	150	150		150	740	740			740	
[illegible]	1,881	0	0		1,881	333	100	250			250	150	150		150	740	740			740	
[illegible]	1,877	0	0		1,877	329	100	250			250	150	150		150	740	740			740	
[illegible]	1,873	0	0		1,873	325	100	250			250	150	150		150	740	740			740	
VAMP Period Mean Flow (cfs)	[illegible]	[illegible]			[illegible]	415	100	250	269	0	819	647	647	0	647	751		0	749	1,500	

Supplemental Water (TAF)
Estimated [illegible]
Target [illegible]

16.54	0.00	0.00	0.00	40.00	
16.52	0.00	0.00	0.00		

[illegible]

2007 VAMP DAILY OPERATION PLAN
Updated: 3/20/2007
San Joaquin River Technical Committee Hydrology Group

(B1) double-step

Unregulated Flow at Vernalis = [illegible] cfs

PRELIMINARY
SUBJECT TO REVISION

Target Flow Period: April 22 - May 22

Values in bold are observed real-time data

Discussion Draft

Date	San Joaquin River near Vernalis: Existing Flow (cfs)	VAMP Supplemental Flow (cfs)	Other Supplemental Flow (cfs)	Cumulative VAMP Supplemental Flow (TAF)	VAMP Flow (cfs)	SJR above Merced R (2day lag) (cfs)	Irrigation Flow above Vernalis (cfs)	Merced River at Cressey: Existing Flow (cfs)	MeID VAMP Supplemental Flow (cfs)	SJREC VAMP Supplemental Flow (cfs)	VAMP Flow (3day lag) (cfs)	Tuolumne River at La Grange: Existing Flow - Base FERC Minimum (cfs)	Existing Flow - Adjusted FERC Pulse (cfs)	VAMP Supplemental Flow (cfs)	VAMP Flow (2day lag) (cfs)	Stanislaus at Goodwin: Existing Flow - Base (cfs)	Existing Flow - reshaped	VAMP Supplemental Flow (cfs)	Other Supplemental Flow (cfs)	VAMP Flow (2day lag) (cfs)	[illegible]
3/15/07	2,330				2,330	767	4	218			218	340	340		340	804				804	
3/16/07	2,210				2,210	763	22	220			220	340	340		340	800				800	
3/17/07	2,200				2,200	723	110	213			213	330	330		330	802				802	
3/18/07	2,230				2,230	723	100	212			212	330	330		330	807				807	
3/19/07	2,220				2,220	701	118	210			210	337	337		337	803				803	
3/20/07																					
3/21/07																					
3/22/07																					
3/23/07																					
3/24/07																					
3/25/07																					
3/26/07																					
3/27/07																					
3/28/07																					
3/29/07						580		250													
3/30/07						594		250				300	300			768	768				
3/31/07						585		250				300	300			768	768				
4/1/07	2,462					578	500	250			250	300	300		300	768	768			768	
4/2/07	2,398					572	500	250			250	300	300		300	768	768			768	
4/3/07	2,394					568	500	250			250	300	300		300	768	768			768	
4/4/07	2,360				2,366	564	500	250			250	300	300		300	768	768			768	
4/5/07	2,366				2,366	560	500	250			250	300	300		300	768	768			768	
4/6/07	2,362				2,362	556	500	250			250	300	300		300	768	768			768	
4/7/07	2,378				2,378	552	500	250			250	300	300		300	768	768			768	
4/8/07	2,374				2,374	548	500	250			250	300	300		300	768	768			768	
4/9/07	2,370				2,370	544	500	250			250	300	300		300	768	768			768	
4/10/07	2,366				2,366	540	500	250			250	300	300		300	768	768			768	
4/11/07	2,362				2,362	538	500	250			250	300	300		300	768	768			768	
4/12/07	2,358				2,358	532	500	250			250	300	300		300	768	768			768	
4/13/07	2,354	0			2,354	528	500	250			250	300	300		300	768	768			768	
4/14/07	2,350	0			2,350	524	500	250			250	300	300		300	768	768			768	
4/15/07	2,346	0	0	0.00	2,346	520	500	250			250	250	250		250	768	768			768	
4/16/07	2,342	0	0	0.00	2,342	516	500	250			250	250	250		250	768	768			768	
4/17/07	2,298	0	0	0.00	2,298	512	500	250			250	250	250		250	768	768			768	
4/18/07	2,284	0	0	0.00	2,284	508	500	250			250	250	250		250	768	768			768	
4/19/07	2,280	0	0	0.00	2,280	504	500	[illegible]	732	140	[illegible]	250	250		250	768	768			768	
4/20/07	2,276	0	0	0.00	2,276	[illegible]	500	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
4/21/07	2,272	0	0	0.00	2,272	[illegible]	500	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	11.20	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	768	768	293	430	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
[illegible]	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/10/07	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/11/07	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/12/07	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/13/07	[illegible]	1,412	[illegible]	[illegible]	4,487	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/14/07	[illegible]	1,412	[illegible]	64.42	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/15/07	[illegible]	1,412	[illegible]	[illegible]	4,410	391	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/16/07	[illegible]	1,412	[illegible]	[illegible]	4,414	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/17/07	[illegible]	1,412	[illegible]	72.82	4,419	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/18/07	[illegible]	1,412	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/19/07	[illegible]	1,412	[illegible]	78.42	4,401	373	[illegible]	[illegible]	732	140	[illegible]	[illegible]	[illegible]	341	881	741	741	293	490	1,800	
5/20/07	2,310	1,412	[illegible]	81.22	4,387	[illegible]	[illegible]	250			250	[illegible]	[illegible]	341	781	741	741	293	490	1,800	
5/21/07	2,814	1,412	[illegible]	84.02	[illegible]	365	[illegible]	250			250	450	480		450	740	740			740	
5/22/07	2,419	1,412	[illegible]	86.87	[illegible]	361	[illegible]	250			250	350	370		300	740	740			740	
5/23/07	2,335	0	0		2,306	357	500	250			250	250	250		250	740	740			740	
5/24/07	2,221	0	0		2,201	353	500	250			250	150	150		150	740	740			740	
5/25/07	2,097	0	0		2,097	349	500	250			250	150	150		150	740	740			740	
5/26/07	1,993	0	0		1,993	345	500	250			250	150	150		150	740	740			740	
5/27/07	1,989	0	0		1,989	341	500	250			250	150	150		150	740	740			740	
5/28/07	1,985	0	0		1,985	337	500	250			250	150	150		150	740	740			740	
5/29/07	1,981	0	0		1,981	333	500	250			250	150	150		150	740	740			740	
5/30/07	1,977	0	0		1,977	329	500	250			250	150	150		150	740	740			740	
5/31/07	1,973	0	0		1,973	325	500	250			250	150	150		150	740	740			740	
VAMP Period Mean (cfs)	[illegible]	1,412			4,45[illegible]	415	522	250	732	140	1,128	847	847	341	888	751		293	458	1,800	

Supplemental Water (TAF)

Provided	45.01 / 8.88	14.82	14.02	28.00
Target	45.00 / 8.00	14.00	14.00	

2007 VAMP DAILY OPERATION PLAN
Updated: 3/20/2007
San Joaquin River Technical Committee Hydrology Group

(B2) single-step

PRELIMINARY
SUBJECT TO REVISION

Unimpaired Flow at Vernalis = [illegible] cfs

Target Flow Period April 22 - May 22

Flow Target 3200 cfs

Values in bold are observed real-time data

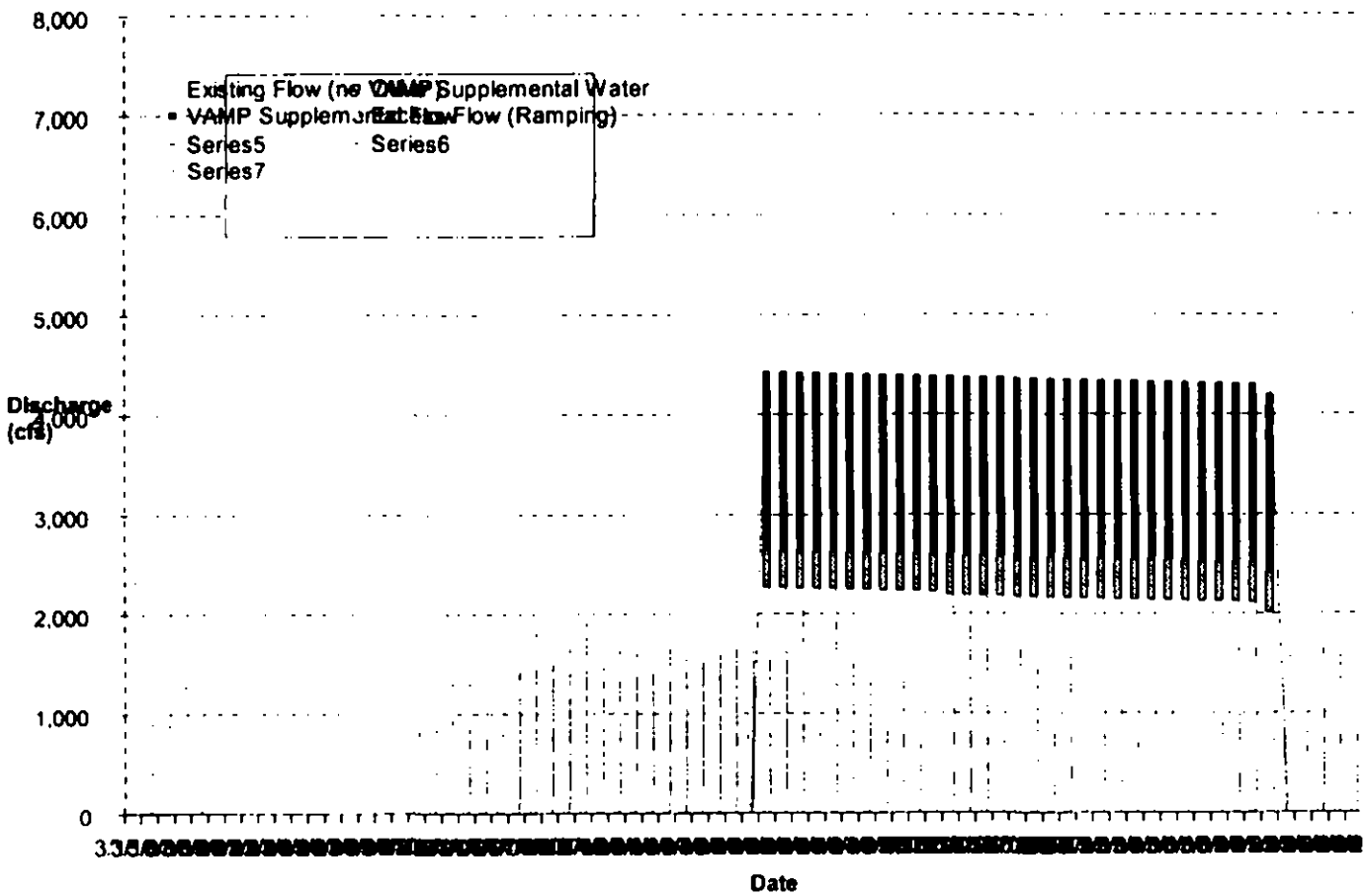
Date	San Joaquin River near Vernalis: Existing Flow (cfs)	VAMP Supplemental Flow (cfs)	Other Supplemental Flow (cfs)	Cumulative VAMP Supplemental Flow (TAF)	VAMP Flow (cfs)	SJR above Merced R (2day lag) (cfs)	Ungaged Flow above Vernalis (cfs)	Merced River at Cressey: Existing Flow (cfs)	MerID VAMP Supplemental Flow (cfs)	SJREC VAMP Supplemental Flow (cfs)	VAMP Flow (3day lag) (cfs)	Tuolumne River at La Grange: Existing Flow - base FERC volume (cfs)	Existing Flow - Adjusted FERC Pulse (cfs)	VAMP Supplemental Flow (cfs)	VAMP Flow (2day lag) (cfs)	Stanislaus at Goodwin: Existing Flow - Base (cfs)	Existing Flow - reshaped	VAMP Supplemental Flow (cfs)	Other Supplemental Flow (cfs)	VAMP Flow (2day lag) (cfs)	Monthly Priority Flow Level
3/15/07	2,330				2,330	732	4	215			215	340	340		340	804				804	
3/16/07	2,210				2,210	733	22	220			220	340	340		340	809				809	
3/17/07	2,200				2,200	732	119	213			213	338	338		338	802				802	
3/18/07	2,220				2,220	723	100	212			212	336	336		336	807				807	
3/19/07	2,230				2,230	791	119	210			216	337	337		337	803				803	
3/20/07																					
3/21/07																					
3/22/07																					
3/23/07																					
3/24/07																					
3/25/07																					
3/26/07																					
3/27/07																					
3/28/07																					
3/29/07						588		250													
3/30/07						584		250				300	300			788	788				
3/31/07						580		250				300	300			788	788				
4/1/07	2,402					576	500	250			250	300	300		300	788	788			788	
4/2/07	2,398					572	500	250			250	300	300		300	788	788			788	
4/3/07	2,394					568	500	250			250	300	300		300	788	788			788	
4/4/07	2,390				2,390	564	500	250			250	300	300		300	788	788			788	
4/5/07	2,386				2,386	560	520	250			250	300	300		300	788	788			788	
4/6/07	2,382				2,382	556	520	250			250	300	300		300	788	788			788	
4/7/07	2,378				2,378	552	500	250			250	300	300		300	788	788			788	
4/8/07	2,374				2,374	548	520	250			250	300	300		300	788	788			788	
4/9/07	2,370				2,370	544	506	250			250	300	300		300	788	788			788	
4/10/07	2,366				2,366	540	500	250			250	300	300		300	788	788			788	
4/11/07	2,362				2,362	536	500	250			250	300	300		300	788	788			788	
4/12/07	2,358				2,358	532	500	250			250	300	300		300	788	788			788	
4/13/07	2,354	0			2,354	528	500	250			250	300	300		300	788	788			788	
4/14/07	2,350	0			2,350	524	500	250			250	300	300		300	788	788			788	
4/15/07	2,346	0	0	0.00	2,346	520	500	250			250	250	250		250	788	788			788	
4/16/07	2,342	0	0	0.00	2,342	516	500	250			250	250	250		250	788	788			788	
4/17/07	2,298	0	0	0.00	2,298	512	500	250			250	250	250		250	788	788			788	
4/18/07	2,294	0	0	0.00	2,294	508	500	250			250	250	250		250	788	788			788	
4/19/07	2,290	0	0	0.00	2,290	504	500	[illegible]	0	0	[illegible]	250	250		250	788	788			788	
4/20/07	2,276	0	0	0.00	2,276	[illegible]	500	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
4/21/07	2,272	0	0	0.00	2,272	[illegible]	500	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	788	788	0	732	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	417	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/10/07	[illegible]	0	759	[illegible]	[illegible]	413	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/11/07	[illegible]	0	759	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/12/07	[illegible]	0	759	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/13/07	[illegible]	0	759	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/14/07	[illegible]	0	759	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/15/07	2,441	0	759	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/16/07	[illegible]	0	759		[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/17/07	[illegible]	0	759		[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/18/07	2,527	0	759		[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/19/07	[illegible]	0	759		[illegible]	[illegible]	[illegible]	[illegible]	0	0	[illegible]	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/20/07	2,519	0	759		[illegible]	[illegible]	[illegible]	250			250	[illegible]	[illegible]	0	[illegible]	741	741	0	759	1,500	
5/21/07	2,414	0	759		[illegible]	385	[illegible]	250			250	450	450		450	740	740			740	
5/22/07	2,410	0	759		[illegible]	361	[illegible]	250			250	350	350		350	740	740			740	
5/23/07	[illegible]	0	0		2,305	[illegible]	500	250			250	250	250		250	740	740			740	
5/24/07	2,201	0	0		2,201	353	500	250			250	150	150		150	740	740			740	
5/25/07	2,097	0	0		2,097	349	500	250			250	150	150		150	740	740			740	
5/26/07	[illegible]	0	0		1,993	345	500	250			250	150	150		150	740	740			740	
5/27/07	[illegible]	[illegible]	0		1,989	341	500	250			250	150	150		150	740	740			740	
5/28/07	[illegible]	[illegible]	0		1,985	337	500	250			250	150	150		150	740	740			740	
5/29/07	[illegible]	[illegible]	0		1,981	333	500	250			250	150	150		150	740	740			740	
5/30/07	[illegible]	[illegible]	0		1,977	329	500	250			250	150	150		150	740	740			740	
5/31/07	[illegible]	[illegible]	0		1,973	325	500	250			250	150	150		150	740	740			740	
VAMP Period Mean (cfs)	[illegible]	0			3,331	4?5	502	250	0	0	250	647	647	0	647	751		0	740	1,500	

[illegible] Draft

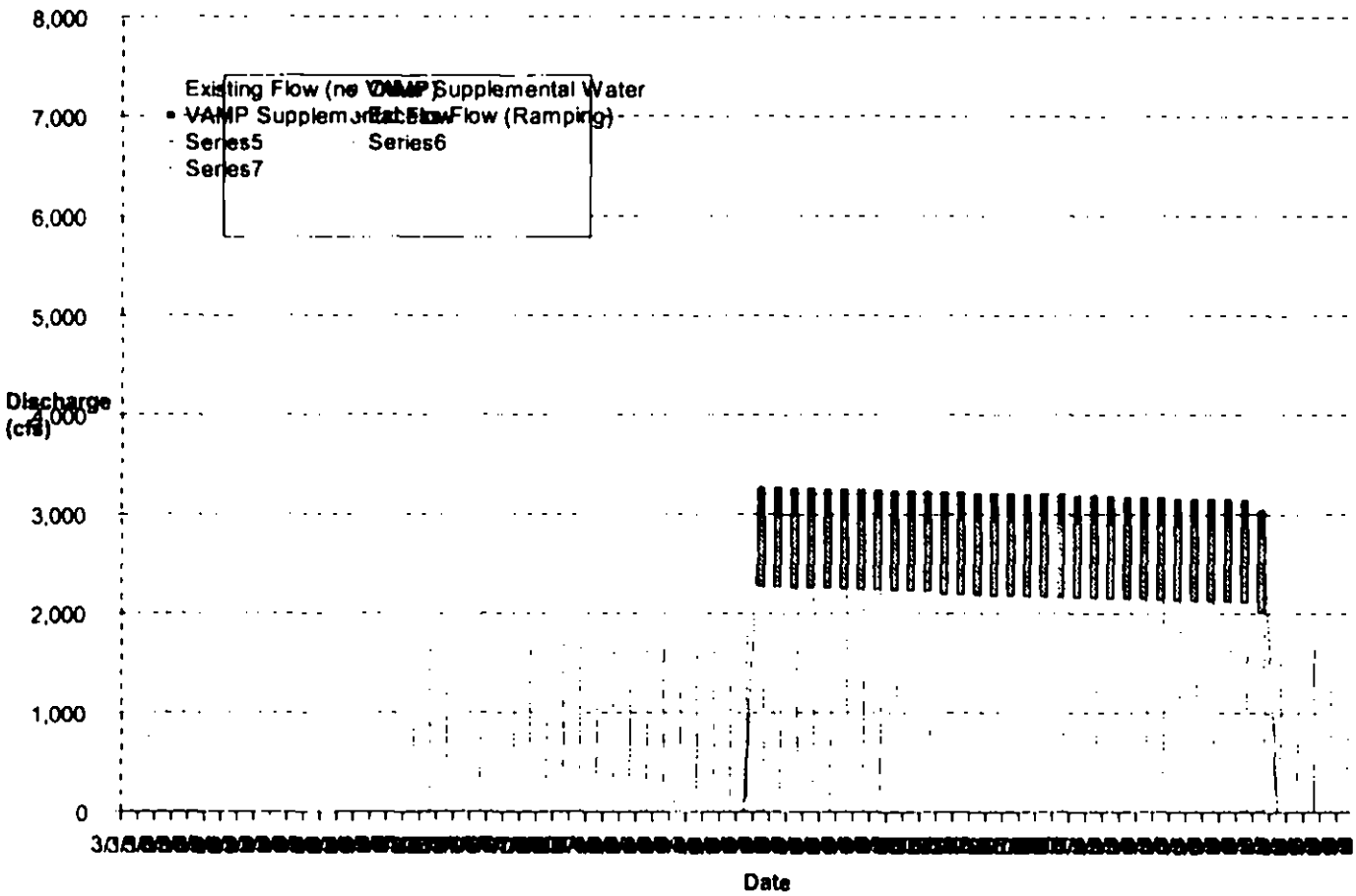
Supplemental Water (TAF)

Provided	[illegible]	0.70	5.00	5.00	0.00	49.00
Target	[illegible]	-0.07	5.30	5.00	0.00	

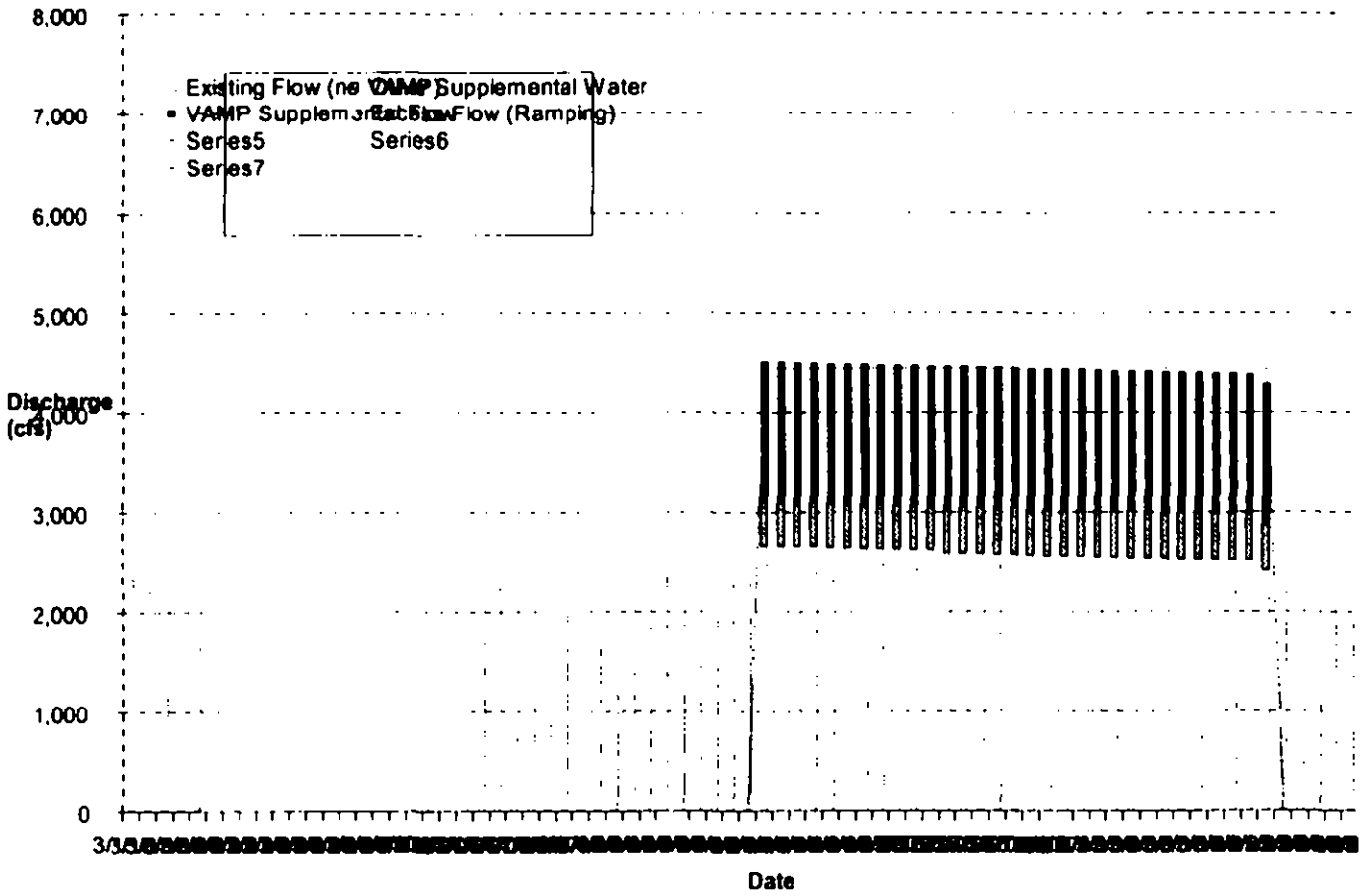
2007 VAMP Daily Operation Plan --- March 20, 2007 Vernalis Target Flow Period: April 22 - May 22 San Joaquin River near Vernalis



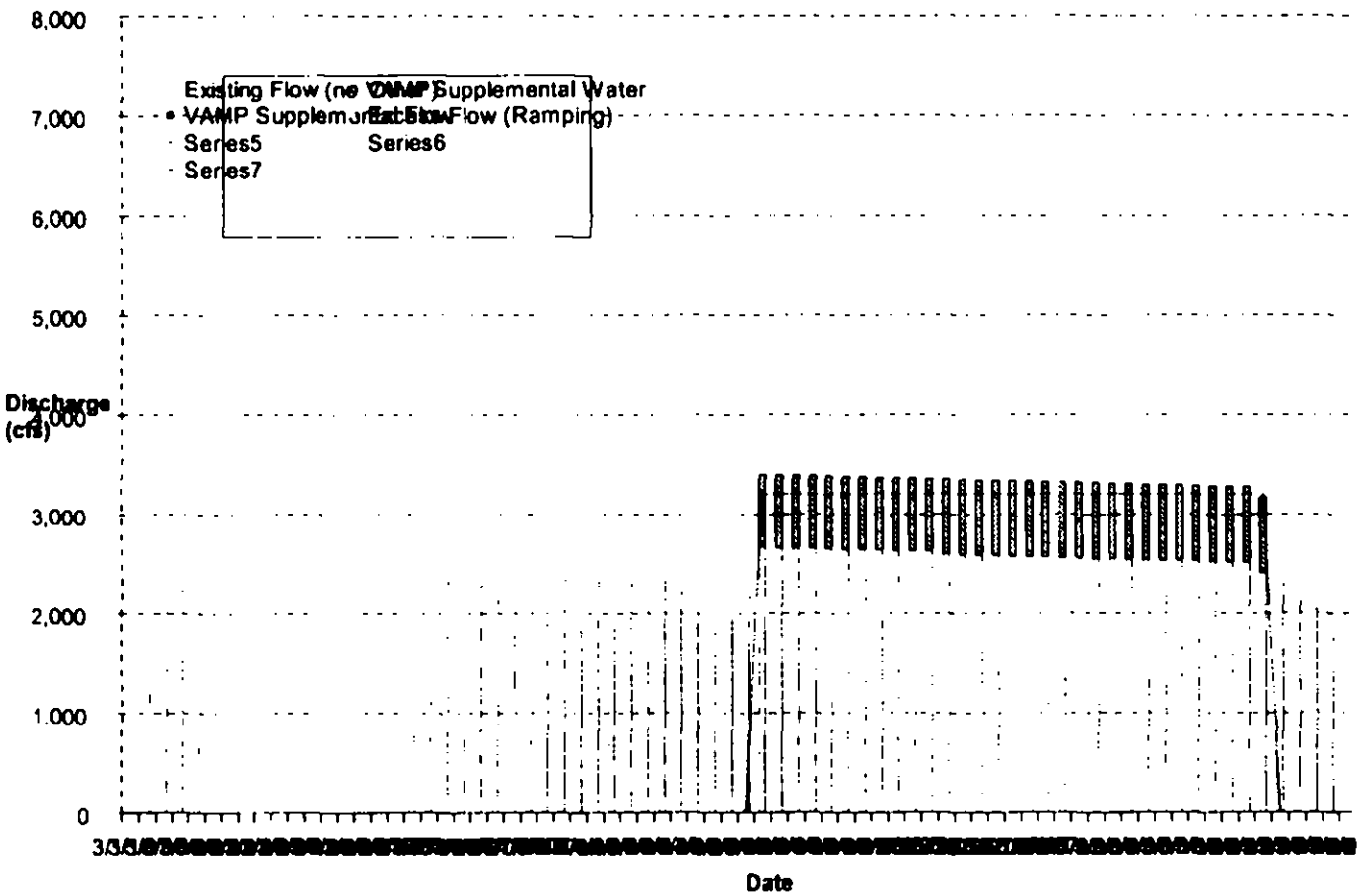
2007 VAMP Daily Operation Plan --- March 20, 2007 Vernalis Target Flow Period: April 22 - May 22 San Joaquin River near Vernalis



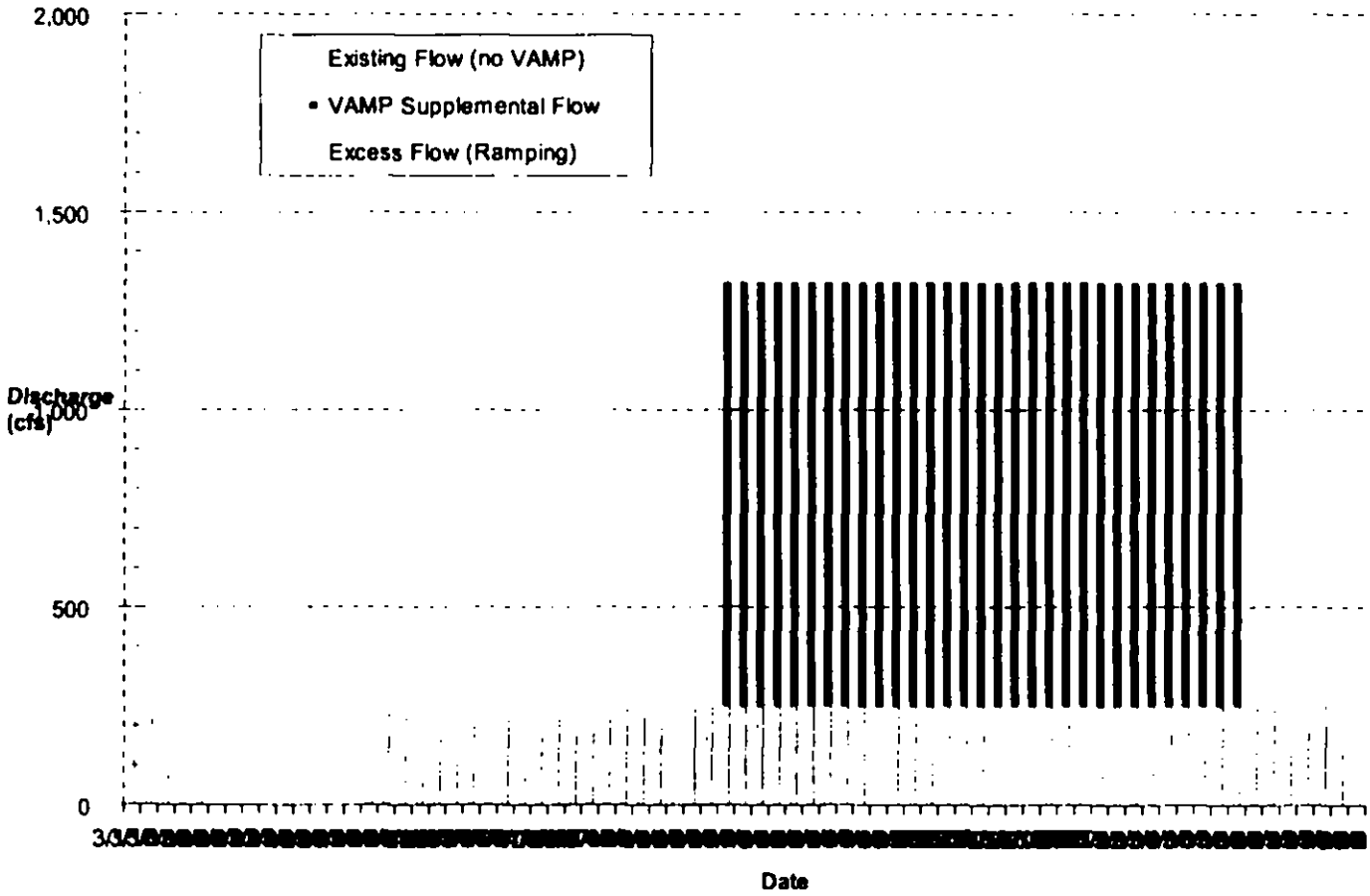
2007 VAMP Daily Operation Plan --- March 20, 2007 Vernalis Target Flow Period: April 22 - May 22 San Joaquin River near Vernalis



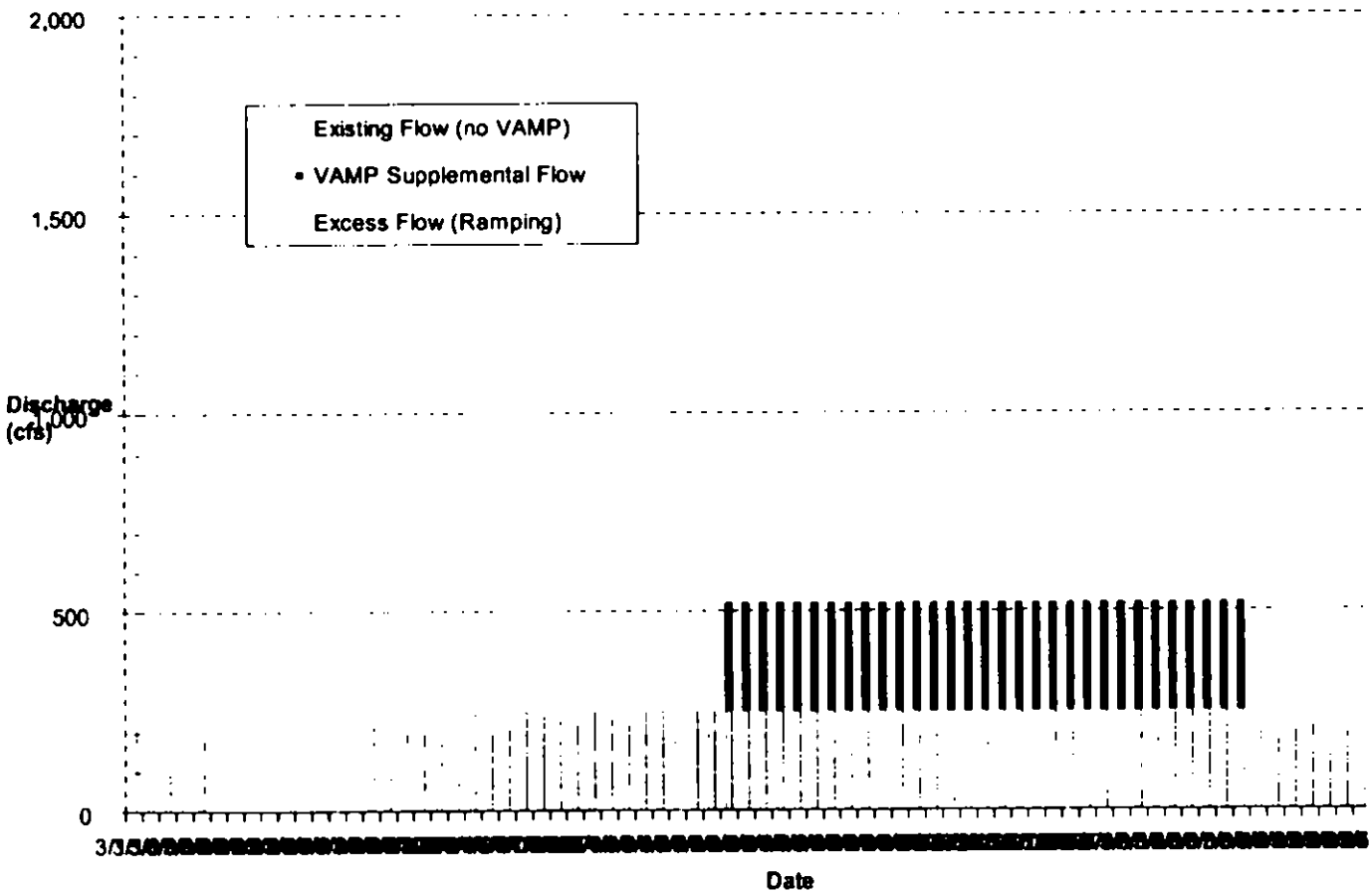
2007 VAMP Daily Operation Plan — March 20, 2007 Vernalis Target Flow Period: April 22 - May 22 San Joaquin River near Vernalis



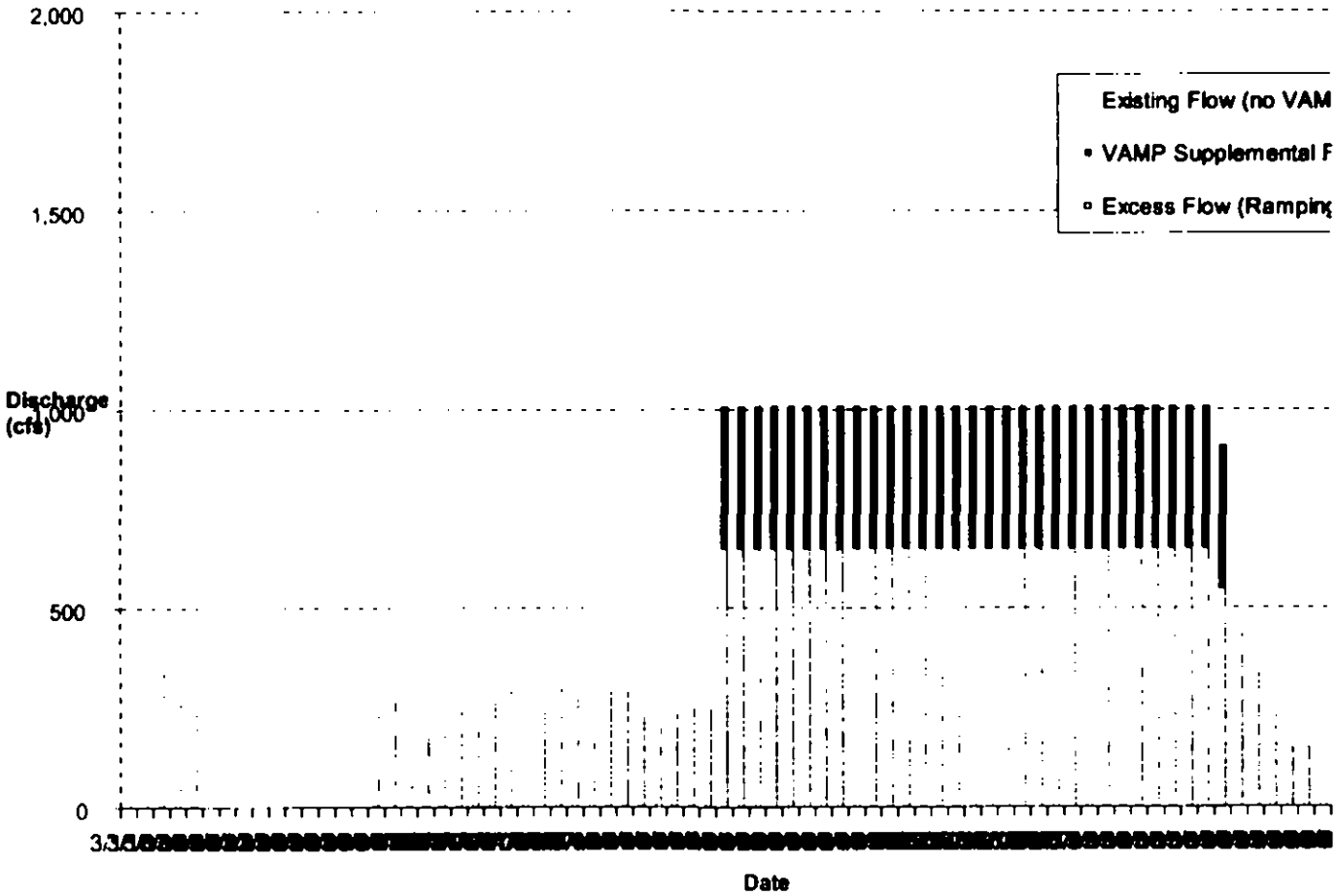
2007 VAMP Daily Operation Plan --- March 19, 2007 Vernalis Target Flow Period: April 22 - May 22 Merced River at Cressey



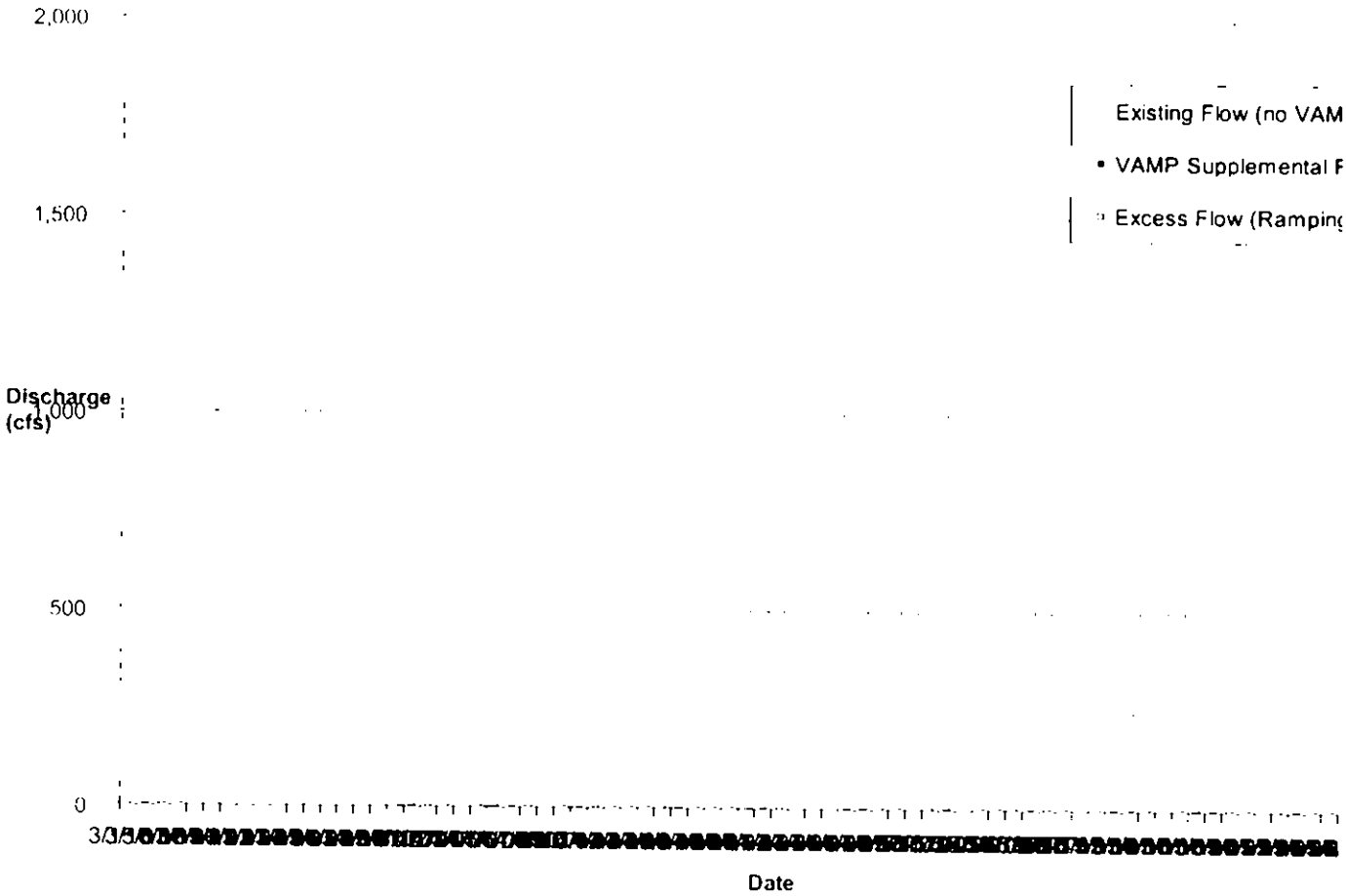
2007 VAMP Daily Operation Plan --- March 20, 2007 Vernalis Target Flow Period: April 22 - May 22 Merced River at Cressey



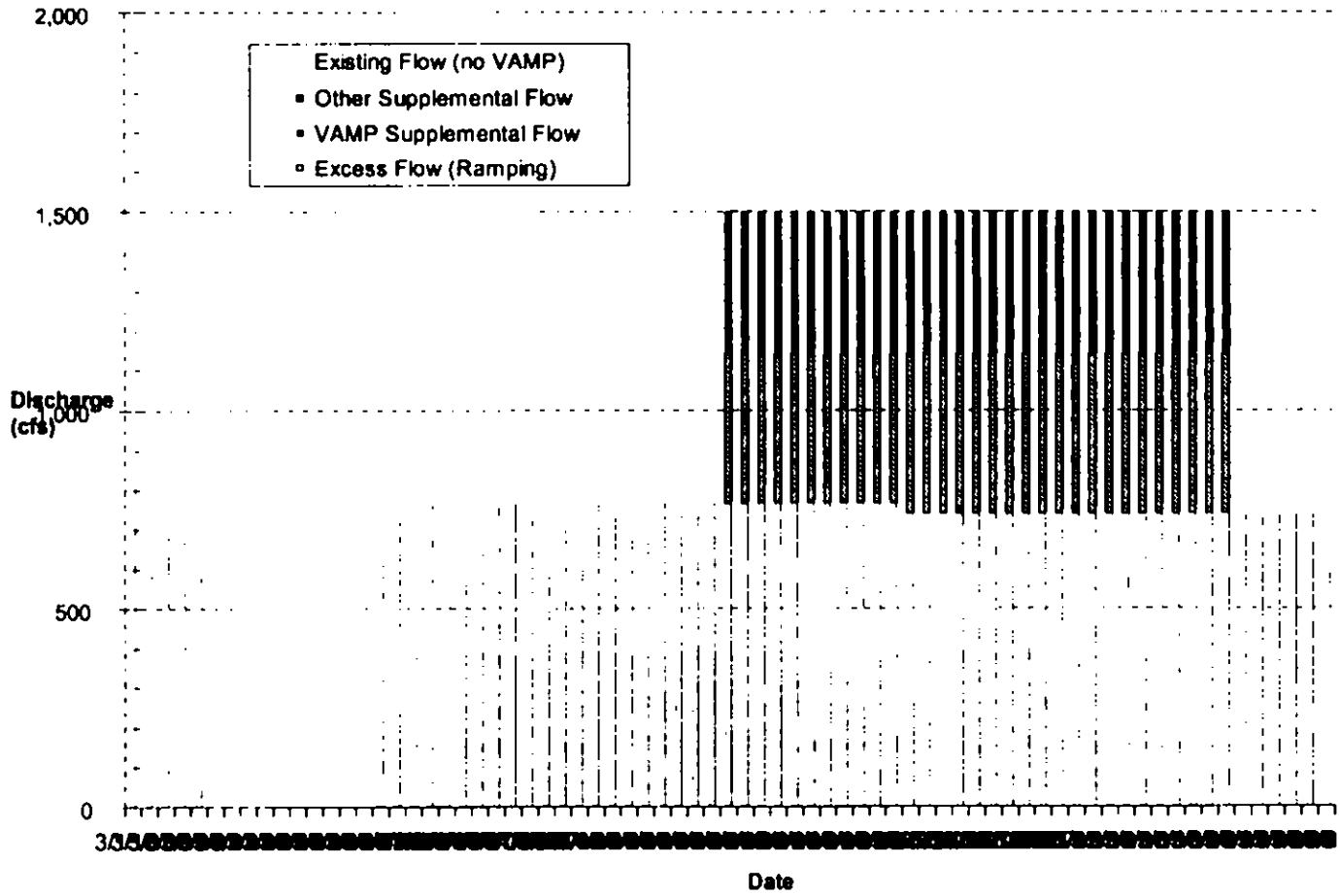
2007 VAMP Daily Operation Plan --- March 20, 2007 Vernalis Target Flow Period: April 22 - May 22 Tuolumne River at LaGrange



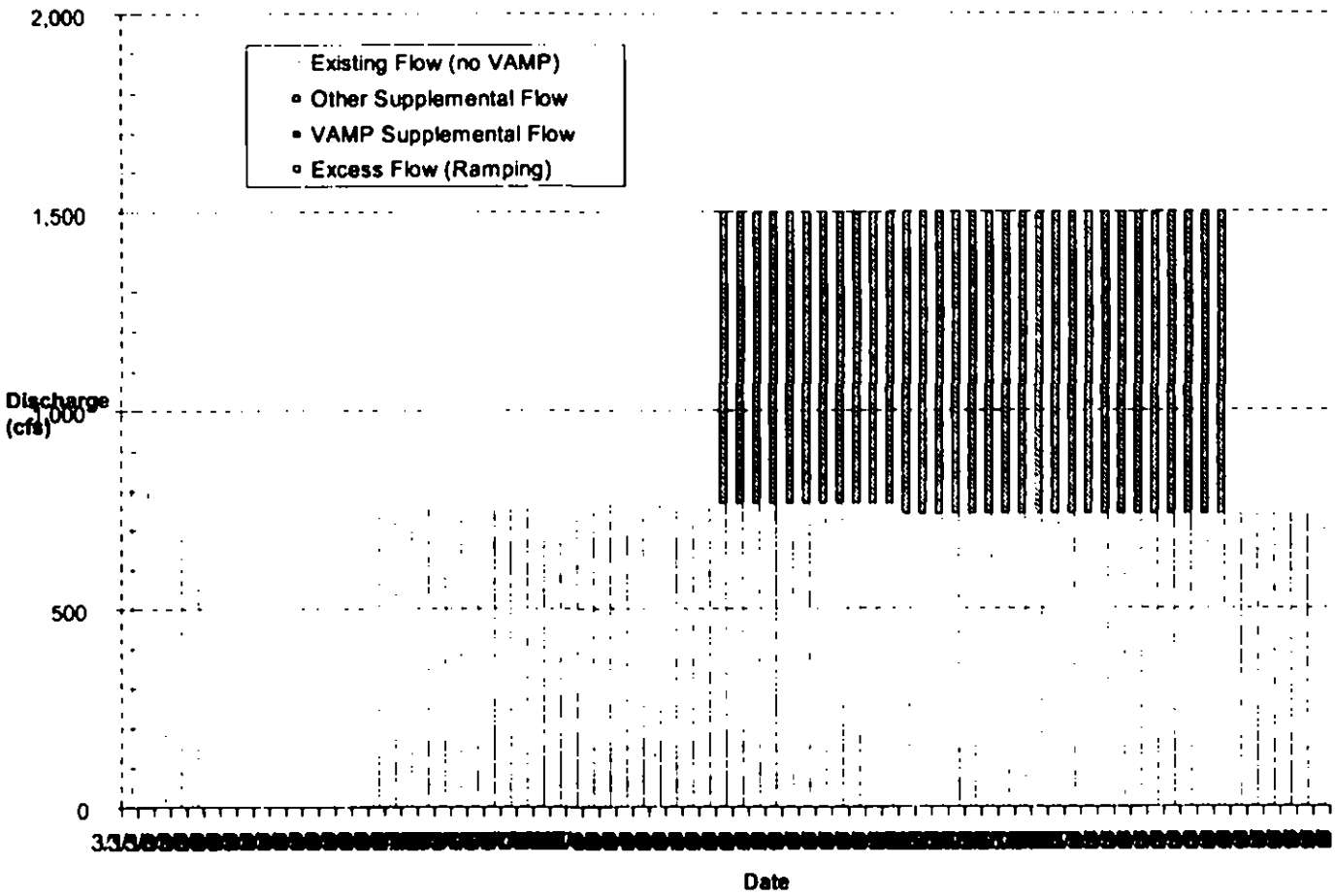
2007 VAMP Daily Operation Plan --- March 20, 2007 Vernalis Target Flow Period: April 22 - May 22 Tuolumne River at LaGrange



2007 VAMP Daily Operation Plan --- March 20, 2007 Vernalis Target Flow Period: April 22 - May 22 Stanislaus River below Goodwin Dam



2007 VAMP Daily Operation Plan --- March 20, 2007 Vernalis Target Flow Period: April 22 - May 22 Stanislaus River below Goodwin Dam



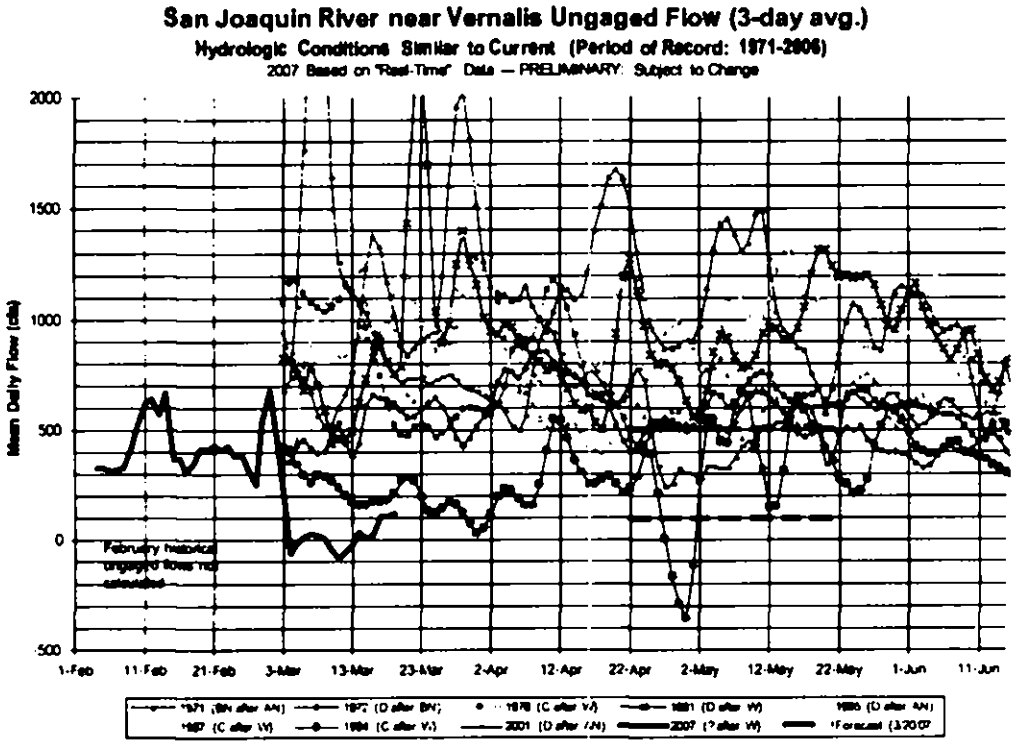
	Division of Pulse Flows			from Draft EIS 9/25	
	0 to 50 kaf	next 23 kaf	next 17 kaf	next 20 kaf	total 110 kaf
Merced	25	11.5	8.5	10	55
OID/SSJID	10	4.6	3.4	4	22
Exchange	5	2.3	1.7	2	11
MID/TID	10	4.6	3.4	4	22

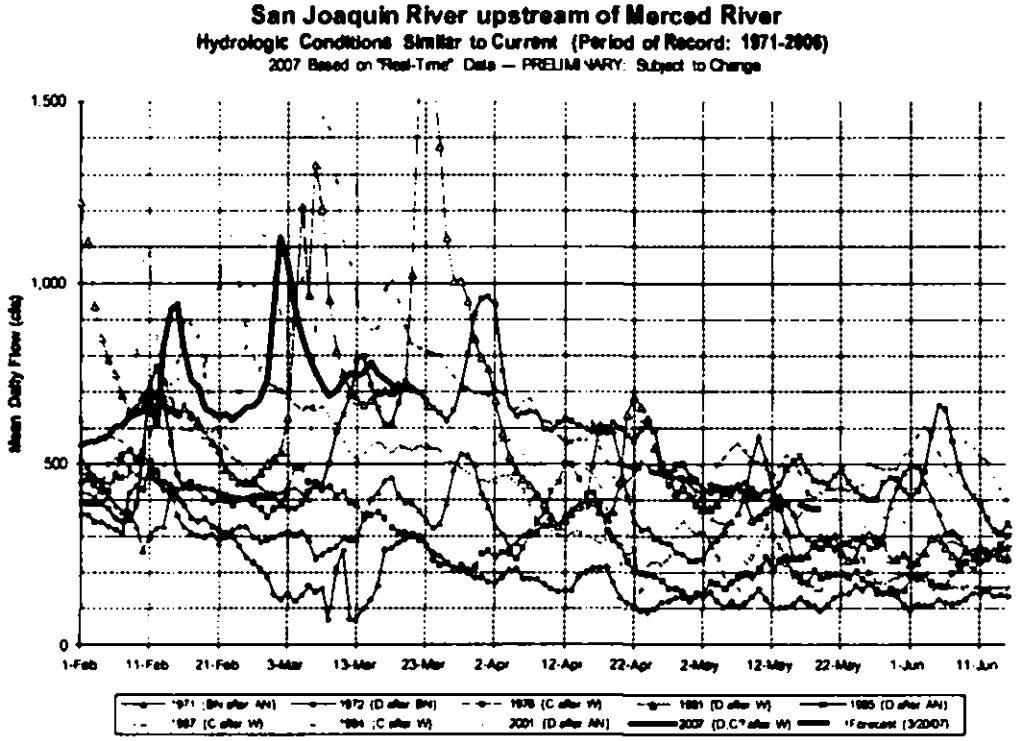
Distribution of Supplemental Water Worksheet for Total less than 110 TAF

Enter supplemental water requirement in highlighted cell.

Supplemental Water Requirement: **110.00**

	Firs: 50 TAF	Next 23 TAF	Next 17 TAF	Next 20 TAF	Total (TAF)
Merced	25.00	11.50	8.50	10.00	55.00
OID/SSJID	10.00	4.60	3.40	4.00	22.00
Exchange	5.00	2.30	1.70	2.00	11.00
MID/TID	10.00	4.60	3.40	4.00	22.00
Total	50.00	23.00	17.00	20.00	110.00





From: Mike Archer <archer@mbkengineers.com>
To: Steve Chedester <schedester@sbcglobal.net>, Larry Freeman <wtrmstr@sbcglobal.net>, Art Godwin <afg@mrgb.org>, Chuck Hanson <CHansonEnv@aol.com>, Tim Heyne <theyne@dfg.ca.gov>, Bill Johnston <billj@mid.org>, Peggy Manza <pmanza@mp.usbr.gov>, Dean Marston <dmarston@dfg.ca.gov>, "Tim O'Laughlin" <towater@olaughlinparis.com>, Nigel Quinn <nwquinn@lbl.gov>, Ken Robbins <kmr@mrgb.org>, John Stella <stella@stillwatersci.com>, Marc Van Camp <vancamp@mbkengineers.com>, Dave Vogel <dvogel@resourcescientists.com>, Art Hinojosa <hinojosa@water.ca.gov>, Ed Kisling <edk@mlode.com>, Simon Kwan <skwan@water.ca.gov>, Bruce Herbold <herbold.bruce@epa.gov>, Wes Monier <fwm@tid.org>, Tim Ford <tjford@tid.org>, Gary Bardini <gbardini@water.ca.gov>, John Leahigh <leahigh@water.ca.gov>, Mark Holderman <markho@water.ca.gov>, Tom Stephens <tstephens@mercedid.org>, Maury Roos <mroos@water.ca.gov>, Vickie Whitney <vwhitney@waterrights.swrcb.ca.gov>, Jon Burau <jrburau@usgs.gov>, Jeff Stuart <j.stuart@noaa.gov>, Bill Loudermilk <wlouderm@dfg.ca.gov>, Dan Nelson <dan.nelson@sldmwa.org>, Tom Birmingham <tbirmingham@westlandswater.org>, Lowell Ploss <lowellploss@aol.com>, Tom Boardman <hydrobro@ix.netcom.com>, Nick Hindman <nick_hindman@fws.gov>, Frances Mizuno <frances.mizuno@sldmwa.org>, Derek Hilts <Derek_Hilts@fws.gov>, Roger Guinee <Roger_Guinee@fws.gov>, <advorak@swc.org>, Jim Snow <jsnow@kmtg.com>, Elizabeth Kiteck <ekiteck@mp.usbr.gov>, Mike Abiouli <mabiouli@water.ca.gov>, Ted Selb <tselb@mercedid.org>, Byron Buck <bbuck@mwdh2o.com>, David Fullerton <dfullerton@mwdh2o.com>, Michael Tsang <mtsang@sfwater.org>, Dan Steiner <steinerd@ix.netcom.com>, Walter Ward <walterw@mid.org>, "Pettit, Tracy" <pettit@water.ca.gov>, "Mayr, Shawn" <sdmayr@water.ca.gov>, Mike Archer <archer@mbkengineers.com>, "Hinojosa, Tracy" <tracyh@water.ca.gov>, Joe Tapia <jtapia@water.ca.gov>, Karna Harrigfeld <kharrigfeld@herumcrabtree.com>, Maya Hayden <maya@stillwatersci.com>, "Chu, Andy" <andychu@water.ca.gov>, Pat Brandes <Pat_Brandes@fws.gov>, Ron Milligan <rmilligan@mp.usbr.gov>, Diane Riddle <driddle@waterboards.ca.gov>, Alan Ng <ang@water.ca.gov>, Mike Ford <jmford@water.ca.gov>
Date: 3/20/2007 4:47:28 PM
Subject: Agenda for 3/21 VAMP meeting

San Joaquin River Technical Committee
Hydrology and Biology Groups

March 21, 2007
1:00 - ?

USFWS, Stockton
4001 N. Wilson Way

Agenda

1. Introductions

2. 2007 VAMP Outlook, Daily Operation Forecast (Archer, Kiteck)
   a. VAMP Period
   b. VAMP Flow Target
   c. Export Target
   d. Alternatives ?

3. Tributary Operations (Selb, Monier, Kiteck)

4. Head of Old River Barrier (Abiouli, Kwan)

5. Acoustic Telemetry Study (Brandes, Vogel)
   a. VAMP Timing
   b. Release of Tagged Fish
   c. Tagging Training
   d. Receiver Deployment/Retreaval
   e. Acquisition of Supplies
   f. Fish Tagging
   g. Receiver Maintenance
   h. Data Analysis
   i. Coordination ?

6. Other Items

7. Future Meeting Schedule

From: Mike Archer <archer@mbkengineers.com>
To: Steve Chedester <schedester@sbcglobal.net>, Larry Freeman <wtrmstr@sbcglobal.net>, Art Godwin <afg@mrgb.org>, Chuck Hanson <CHansonEnv@aol.com>, Tim Heyne <theyne@dfg.ca.gov>, Bill Johnston <billj@mid.org>, Peggy Manza <pmanza@mp.usbr.gov>, Dean Marston <dmarston@dfg.ca.gov>, "Tim O'Laughlin" <towater@olaughlinparis.com>, Nigel Quinn <nwquinn@lbl.gov>, Ken Robbins <kmr@mrgb.org>, John Stella <stella@stillwatersci.com>, Marc Van Camp <vancamp@mbkengineers.com>, Dave Vogel <dvogel@resourcescientists.com>, Art Hinojosa <hinojosa@water.ca.gov>, Ed Kisling <edk@mlode.com>, Simon Kwan <skwan@water.ca.gov>, Bruce Herbold <herbold.bruce@epa.gov>, Wes Monier <fwm@tid.org>, Tim Ford <tjford@tid.org>, Gary Bardini <gbardini@water.ca.gov>, John Leahigh <leahigh@water.ca.gov>, Mark Holderman <markho@water.ca.gov>, Tom Stephens <tstephens@mercedid.org>, Maury Roos <*mroos@water.ca.gov*>, *Vickie Whitney* <*vwhitney@waterrights.swrcb.ca.gov*>, *Jon Burau* <jrburau@usgs.gov>, Jeff Stuart <j.stuart@noaa.gov>, Bill Loudermilk <wlouderm@dfg.ca.gov>, Dan Nelson <dan.nelson@sldmwa.org>, Tom Birmingham <tbirmingham@westlandswater.org>, Lowell Ploss <lowellploss@aol.com>, Tom Boardman <hydrobro@ix.netcom.com>, Nick Hindman <nick_hindman@fws.gov>, Frances Mizuno <frances.mizuno@sldmwa.org>, Derek Hilts <Derek_Hilts@fws.gov>, Roger Guinee <Roger_Guinee@fws.gov>, <advorak@swc.org>, Jim Snow <jsnow@kmtg.com>, Elizabeth Kiteck <ekiteck@mp.usbr.gov>, Mike Abiouli <mabiouli@water.ca.gov>, Ted Selb <tselb@mercedid.org>, Byron Buck <bbuck@mwdh2o.com>, David Fullerton <dfullerton@mwdh2o.com>, Michael Tsang <mtsang@sfwater.org>, Dan Steiner <steinerd@ix.netcom.com>, Walter Ward <walterw@mid.org>, "Pettit, Tracy" <pettit@water.ca.gov>, "Mayr, Shawn" <sdmayr@water.ca.gov>, Mike Archer <archer@mbkengineers.com>, "Hinojosa, Tracy" <*tracyh@water.ca.gov*>, *Joe Tapia* <*jtapia@water.ca.gov*>, *Karna Harrigfeld* <kharrigfeld@herumcrabtree.com>, Maya Hayden <maya@stillwatersci.com>, "Chu, Andy" <andychu@water.ca.gov>, Pat Brandes <Pat_Brandes@fws.gov>, Ron Milligan <rmilligan@mp.usbr.gov>, Diane Riddle <driddle@waterboards.ca.gov>, Alan Ng <ang@water.ca.gov>, Mike Ford <jmford@water.ca.gov>
Date: 3/21/2007 12:03:28 PM
Subject: 3/21 VAMP meeting Archer handouts

2007 VAMP Forecast Summary **Updated: 3/21/07**

Single or Double Step Status	
Previous Year's Year Type Indicator [1]	5
Current Year's Year Type Indicator [1],[2]	1
Sum	6

Greater than 7 ==> Double Step

Daily Operation Plan Scenarios

Scenario ID	A1	A2	B1	B2
VAMP Target Flow Period	Apr. 22 - May 22	Apr. 22 - May 22	Apr. 22 - May 22	Apr. 22 - May 22
Single or Double Step	Double	Single	Double	Single
Forecasted Ungaged Flow at Vernalis (cfs)	100	100	500	500
Forecasted Vernalis Flow (cfs)				
Existing Flow [3]	2,182	2,182	2,582	2,582
VAMP Target Flow	4,460	3,200	4,460	3,200
Supplemental Water Requirement (1000 AF)				
Total	115.40	16.52	86.80	0.00
Merced ID	55.00	16.52	45.00	0.00
OID/SSJID	22.00	0.00	18.00	0.00
Exchange Contractors	11.00	0.00	9.00	0.00
MID/TID	22.00	0.00	14.80	0.00

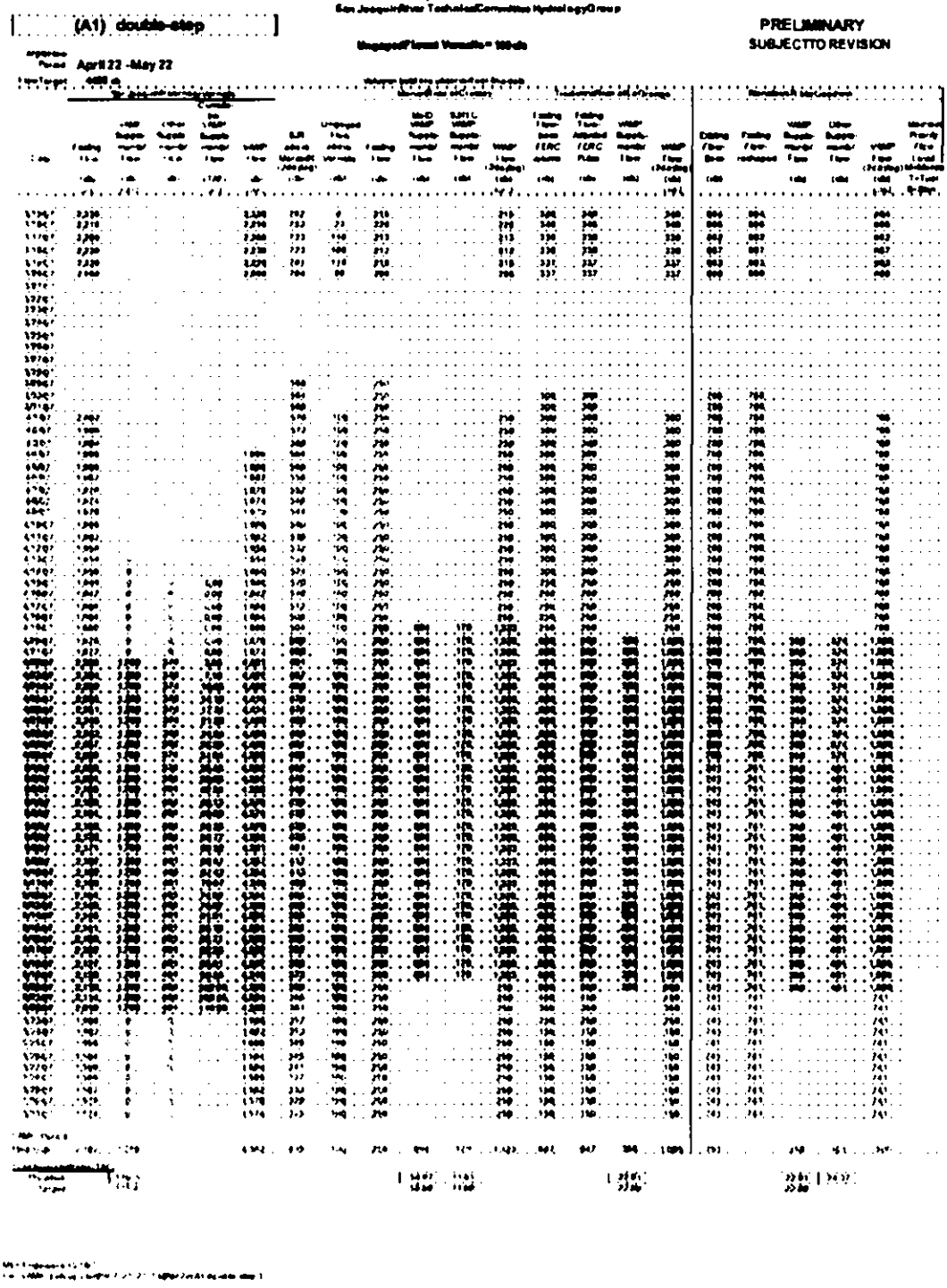
[1] 60-20-20 Year Type: Wet=5, Above Normal=4, Below Normal=3, Dry=2, Critical=1
[2] Based on DWR March 13 runoff forecast (90% exceedance)
[3] VAMP target flow period average without VAMP supplemental water.

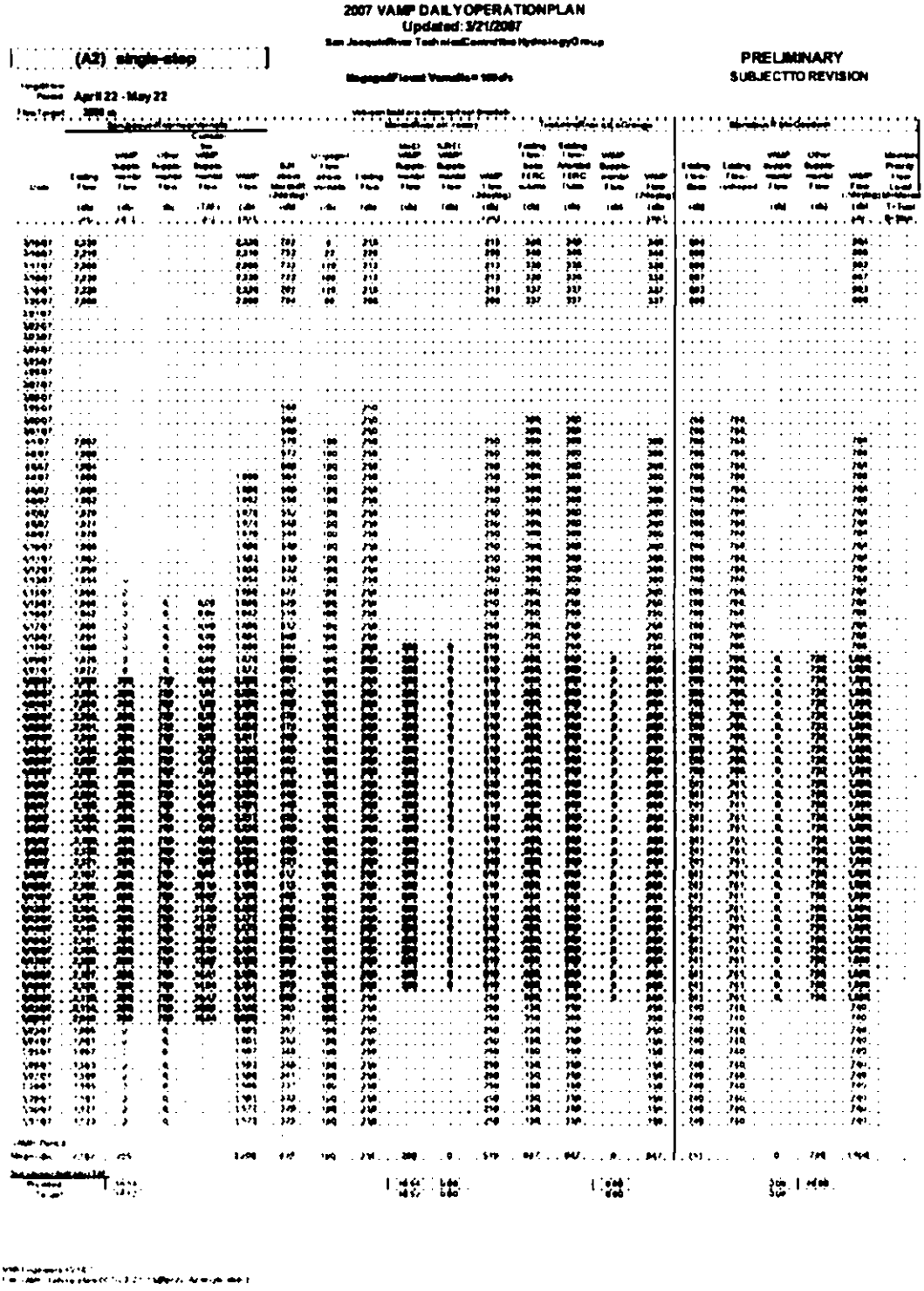
2007 VAMP DAILY OPERATION PLAN
Updated: 3/21/2007

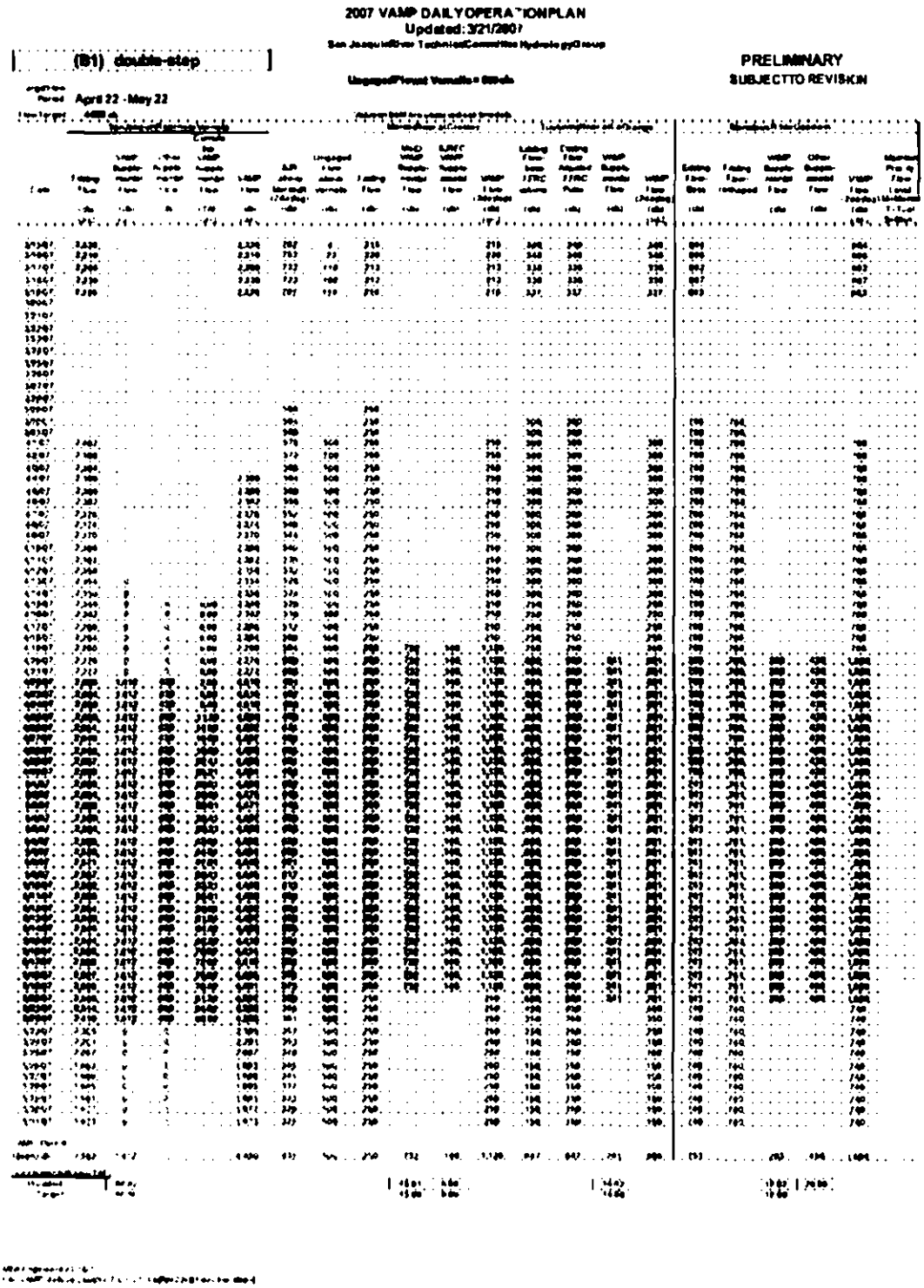
(A1) double-step

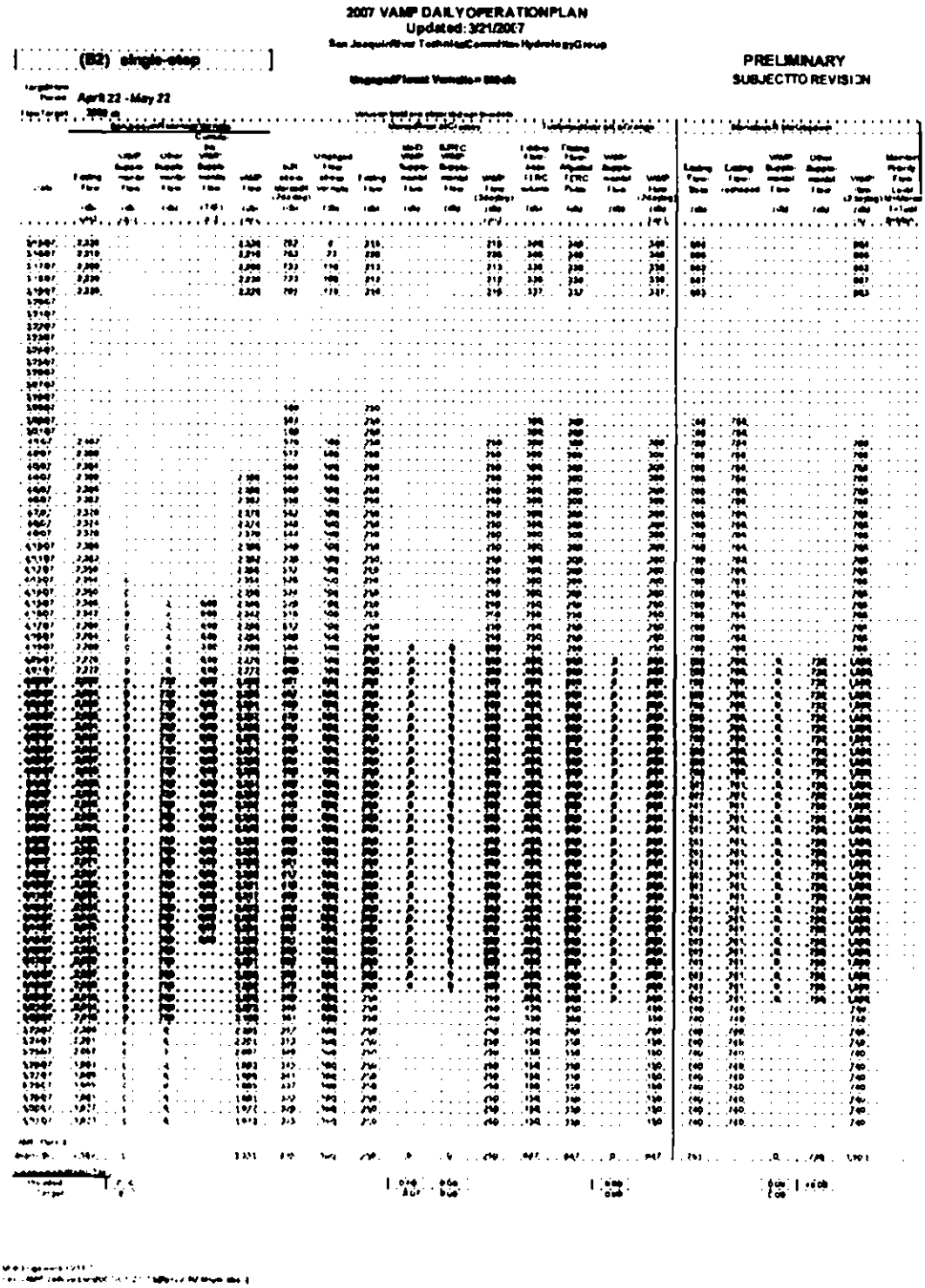
PRELIMINARY
SUBJECT TO REVISION

April 22 - May 22



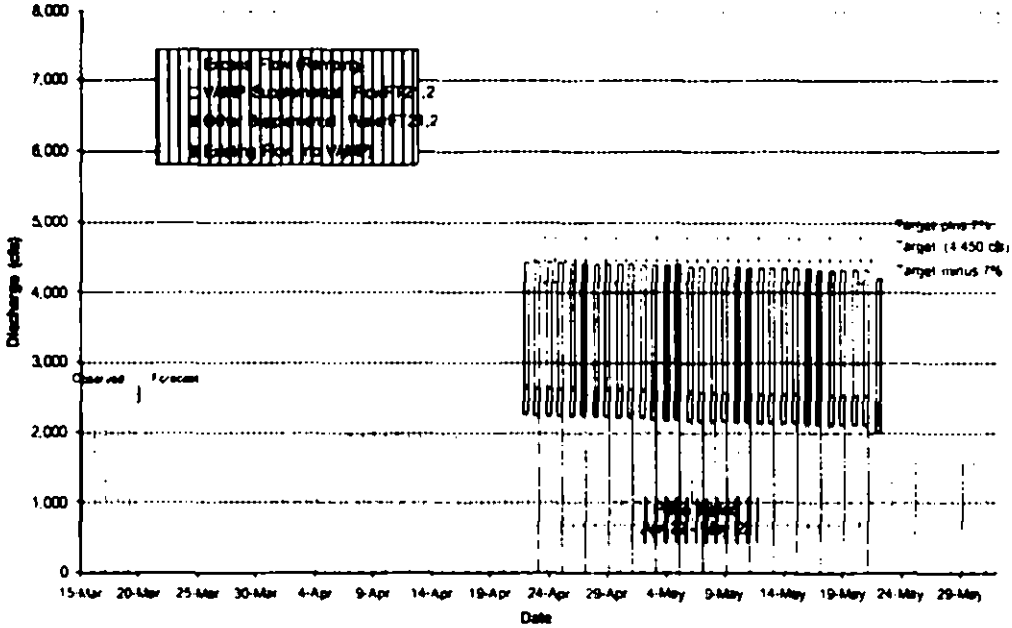






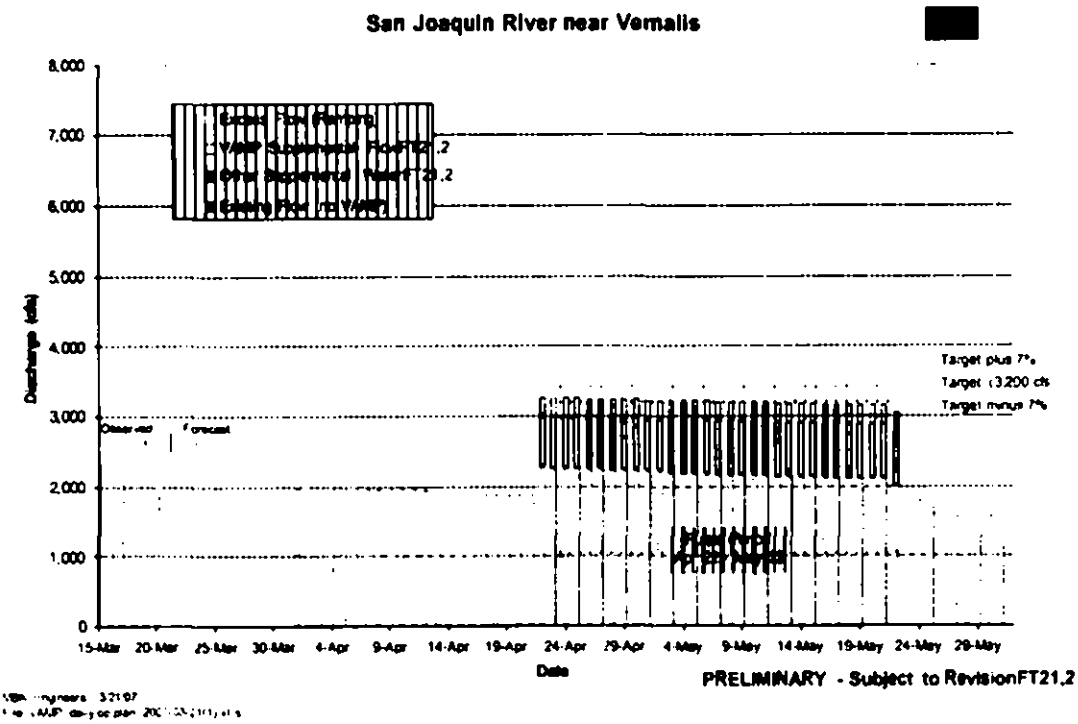
2007 VAMP Daily Operation Plan --- March 21, 2007
Vernalis Target Flow Period: April 22 - May 22

San Joaquin River near Vernalis

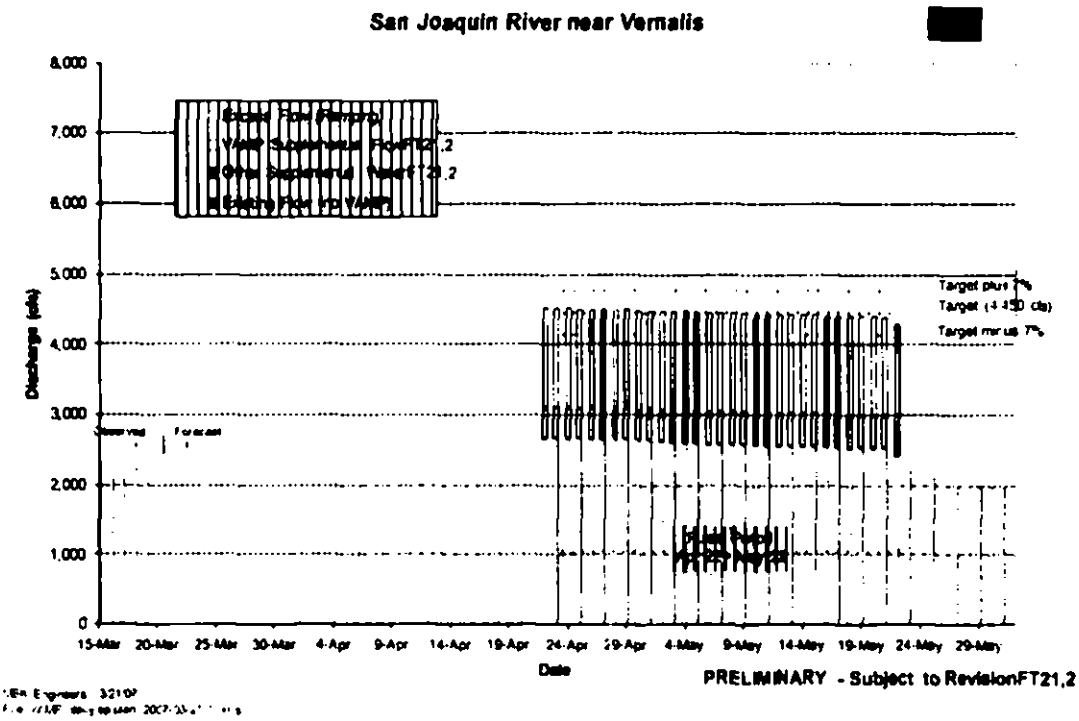


PRELIMINARY - Subject to RevisionFT21.2

2007 VAMP Daily Operation Plan --- March 21, 2007
Vernalis Target Flow Period: April 22 - May 22

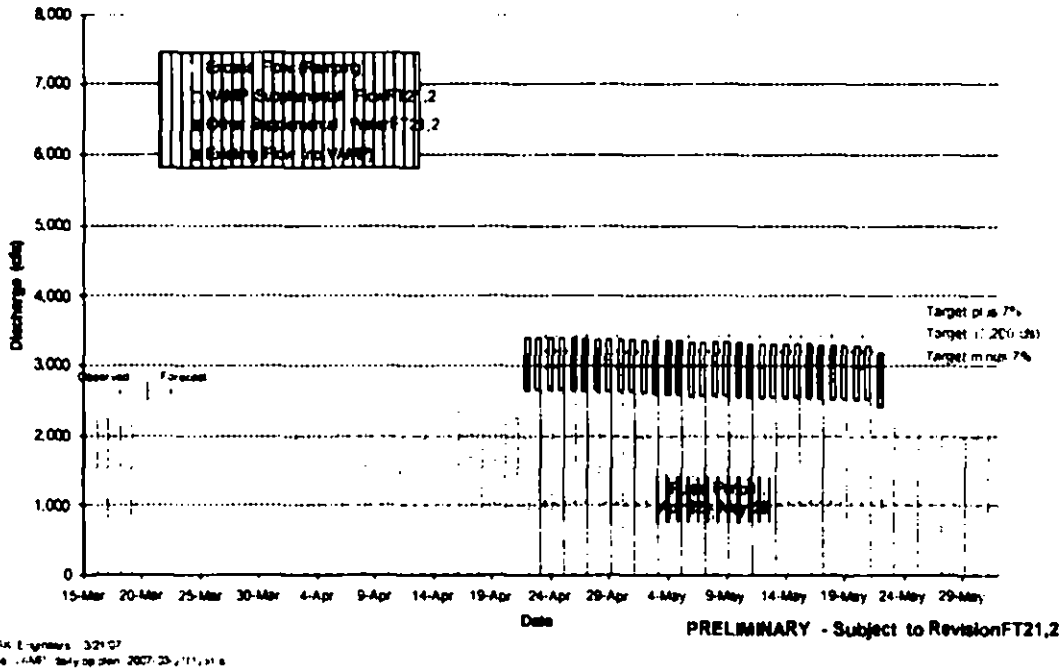


2007 VAMP Daily Operation Plan --- March 21, 2007
Vernalis Target Flow Period: April 22 - May 22



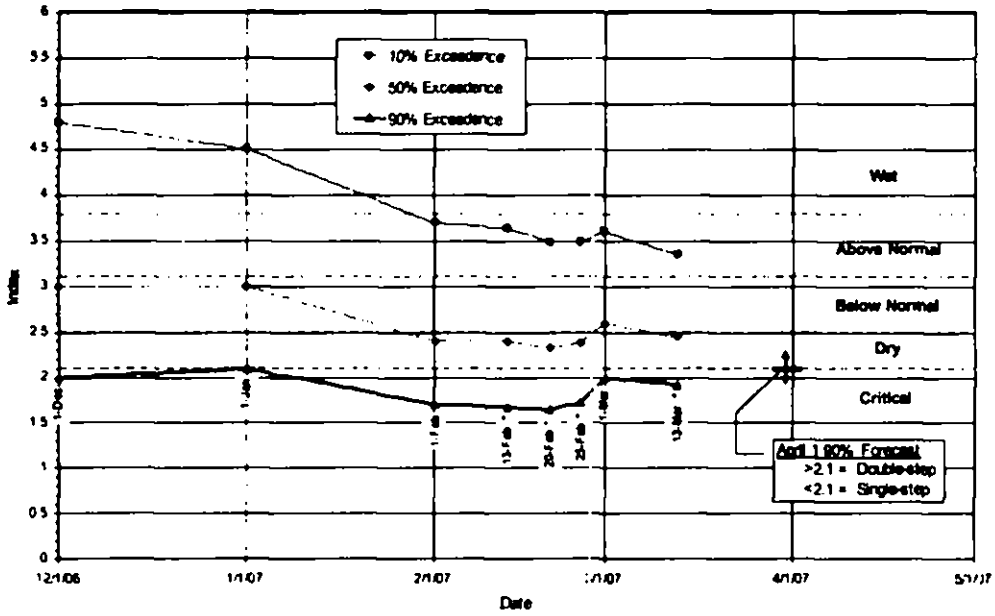
2007 VAMP Daily Operation Plan --- March 21, 2007
Vernalis Target Flow Period: April 22 - May 22

San Joaquin River near Vernalis



PRELIMINARY - Subject to RevisionFT21,2

San Joaquin Valley Water Year Type Index (60-20-20)
Water Year 2007 Forecasts



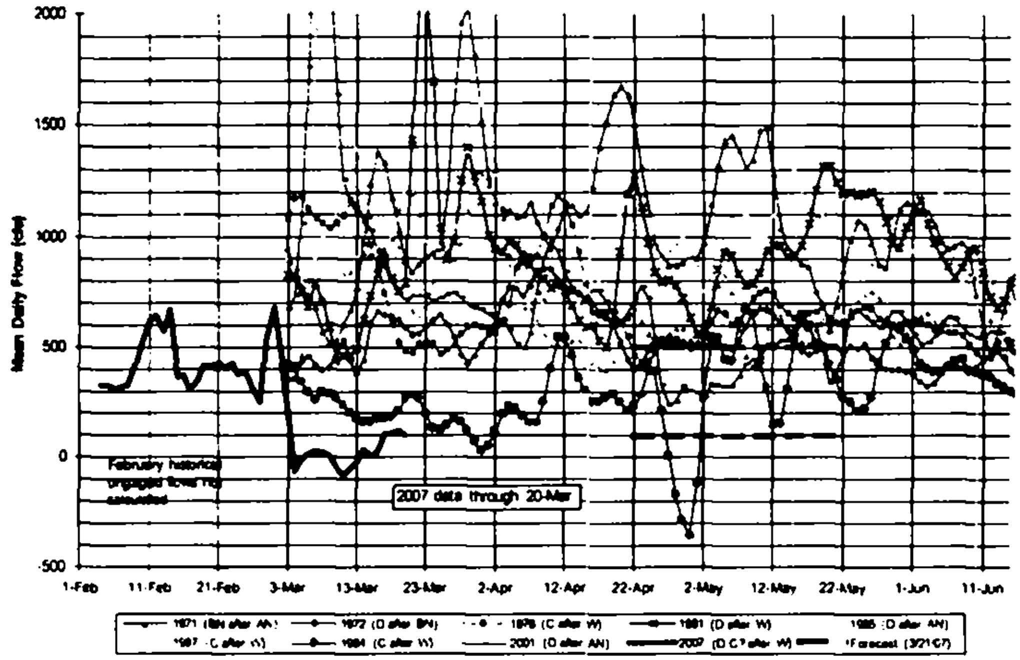
* Index computed by MBK from Bulletin 120 Update runoff forecasts

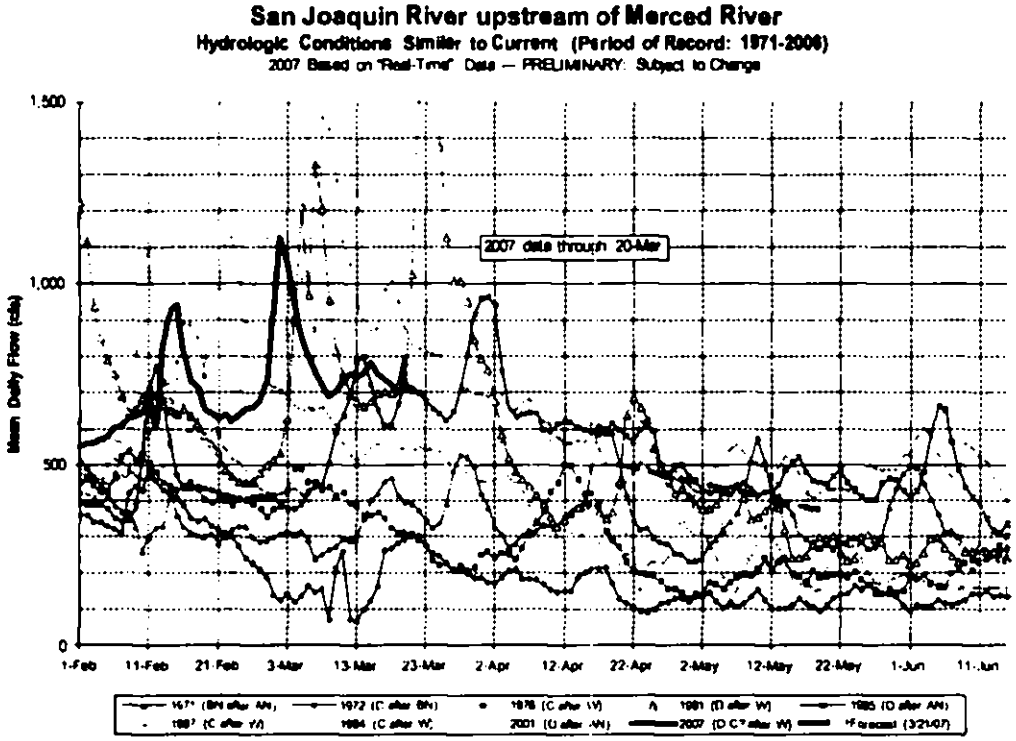
[illegible]

San Joaquin River near Vernalis Ungaged Flow (3-day avg.)

Hydrologic Conditions Similar to Current (Period of Record: 1971-2006)

2007 Based on "Real-Time" Data -- PRELIMINARY Subject to Change





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Date: 3/26/2007 1:47:07 PM
Subject: NOTES - VAMP Technical Mtg, 3/21/07

SAN JOAQUIN RIVER AGREEMENT
Technical Committee
Meeting Notes - March 21, 2007

HYDROLOGY: The hydrology of the San Joaquin River basin remains unchanged from the previous month. Based on the March 1 and March 13 runoff forecasts the water year (WY)classification continues as a Critical. The March 1 60-20-20 runoff forecast was 2.0 MAF at the 90 percent exceedence level. This has declined slightly through March 13. In accordance with the San Joaquin River Agreement (SJRA) the combination of the 2006 WY classification plus the 2007 classification would result in a single-step VAMP flow target. Since the WY classification is close to meeting the DRY year condition the VAMP operations forecast has been run for both a single-step (3,200 cfs) and double-step (4,450 cfs) VAMP flow target.

VAMP Pulse Flow Period	
Apr. 22 – May 22	
Apr. 22 – May 22	
Apr. 22 – May 22	
Apr. 22 – May 22	
Single or Double Step	
Double	
Single	
Double	
Single	
Forecasted Ungaged Flow at Vernalis (cfs)	
100	
100	
500	
500	
Forecasted Vernalis Flow (cfs)	
Existing Flow	
2,182	
2,182	
2,582	

2,582
VAMP Target Flow
4,450
3,200
4,450
3,200
Forecasted Export Rate (cfs)
1,500
1,500
1,500
1,500

Merced ID reported a projected inflow of 230,000 AF, the lowest since 1994 with irrigation demands the highest since that same year. Turlock ID reported a similar condition. USBR reported they are reducing releases to the Stanislaus River in anticipation of being out of encroachment.

HEAD OF OLD RIVER: DWR continues to plan for the HORB depending on the recommendation by the Delta Smelt workgroup and final decision by the Water Operations Management Team. DWR is hoping a final Biological Opinion from the NOAA Fisheries on Green Sturgeon will be available in time.

ACOUSTIC TELEMETRY STUDY: The proposed acoustic study plans were reviewed by the technical committee. Significant coordination has taken place in order to accomplish the final study design, layout of receiver locations, and fish release sites, training, and fish tagging. Training of personnel for fish tagging will take place at the Mokelumne Hatchery the second and third week of April. Various agencies have offered personnel to take part in the training and the actual tagging that will take place between April 30 and May 10 at the Merced River Hatchery.

2007 TEST FISH RELEASE SCHEDULE
LOCATION
NUMBER
FIRST RELEASE
SECOND RELEASE
Durham Ferry
100
May 3
May 10
Mossdale
100
May 3
May 10
Old River below HOR
50
May 3
May 10
Dos Reis
50
May 3
May 10
Channel Point
40
May 4

May 11
SJR below Turner Cut
40
May 4
May 11
SJR at Prisoner's Pt.
40
May 4
May 11
Turner Cut
40
May 4
May 11
Old River @ Hwy 4
40
May 4
May 11

USGS' Columbia River Laboratory, Cook, WA will provide the training and oversee the actual fish tagging. In addition, USGS will provide a work boat suitable to deploy and retrieve the acoustic receivers.
DFG will provide space at the Merced River Hatchery for the final tagging, will maintain the fish in separate lots, and will transport the fish to the nine release sites.
USFWS has offered to provide bi-daily maintenance of the acoustic receivers to maintain the batteries, download data, and provide general site maintenance and security.
USFWS continues discussion with the Columbia River Laboratory to conduct analysis of the retrieved data and assist in the design of future studies.

OTHER: DFG will not be conducting trawling in the Head of Old River due a lack CWT test fish this year.
DWR is repairing the flow gage stations in the Head of Old River and the San Joaquin River downstream of the Old River. These are expected to be fully operations for the VAMP.

FUTURE MEETING: The next meeting of the VAMP technical committee will be April 16, USFWS, Stockton. This allows for a final review of the water supply forecast and operations plan before initiation of the pulse period. The San Joaquin River Agreement specifies that the parties have up to 5 days before the pulse period to disagree with the operations plan.

ATTACHED IS A DESCRIPTION OF THE 2007 PLAN STUDY.

Lowell Ploss
Project Administrator
San Joaquin River Group
7580 Paiute Point Road
Roseville, CA 95747
Ph: 916-771-7022
FAX:916-771-7025
Cell: 916-212-3957

SAN JOAQUIN RIVER AGREEMENT
2007 VERNALIS ADAPTIVE MANAGEMENT PROGRAM
MONITORING PLAN DESCRIPTION
AS OF MARCH 23, 2007

2007 Study Plan

1. Introduction.

During the 2006 Vernalis Adaptive Management Program (VAMP), a pilot study was conducted to monitor the migration of juvenile Chinook salmon in the San Joaquin River and Delta using acoustic telemetry. The study was prompted by interest from VAMP participants to determine if the applied technology would provide detailed information about the movements of juvenile salmon through the Delta. In particular, there was a need to evaluate how lack of a barrier at the Old River/San Joaquin River flow split may affect juvenile salmon and determine migration pathways used by salmon at other locations further downstream in the San Joaquin River. The project was a short-term, small-scale pilot effort to evaluate if the equipment, techniques, and results would be valuable toward supplementing existing VAMP studies in future years. The following are the conclusions from the 2006 study:

- The equipment and techniques worked well, but the study was limited by the number of available acoustic receivers; additional receivers deployed at other locations throughout the Delta would maximize collection of data useful to determine the fate of salmon migrating through the Delta.
- A higher than anticipated number of fish were diverted into Old River; the proportion of fish diverted into Old River was higher than the proportion of flow diverted.
- Study results suggested a high rate of predation; future use of a mobile receiver would locate areas of predation.

2. Proposed 2007 Study.

The San Joaquin River Agreement (SJRA) defines the Vernalis Adaptive Management Program (VAMP) target flow based on the combined 60-20-20 water year classification (90 % exceedence) for the previous year and the current year. A combined VAMP numeric indicator of seven or greater calls for a VAMP "double-step" target flow. The 2006 VAMP numerical indicator was five (5) based on the 60-20-20 water year classification of "Wet". Currently the 2007 water year classification is "Critical" with a VAMP numerical indicator of one (1) calling for a single-step flow target. There is a potential the 2007 numerical indicator will be two (2) or greater and when added to the 2006 indicator will result in a "double-step" VAMP year. With a "double-step" the VAMP target flow will be one level higher than that established in the single-step target flow.

VAMP Pulse Flow Period	Apr. 22 – May 22	Apr. 22 – May 22	Apr. 22 – May 22	Apr. 22 – May 22
Single or Double Step	Double	Single	Double	Single
Forecasted Ungaged Flow at Vernalis (cfs)	100	100	500	500
Forecasted Vernalis Flow (cfs)				
Existing Flow	2,182	2,182	2,582	2,582
VAMP Target Flow	4,450	3,200	4,450	3,200
Forecasted Export Rate (cfs)	1,500	1,500	1,500	1,500

For the 2007 VAMP experiments, we propose to use 13 acoustic receivers[1] at specific sites and release 1,000 acoustic-tagged salmon at a variety of locations to determine the migration pathways and reach-specific mortality in the Delta. These receivers will be deployed as shown in Figure 1. This design will allow coverage of all major Delta channels where salmon may migrate between Mossdale and Jersey Point. Reach-specific fish mortality or survival could be determined with this experimental design. Also, an additional receiver (built to function as a mobile receiver) will be used to locate fish in between fixed-station sites (e.g., predation "hot spots"). Positioning receivers at the entrance to the state and federal south Delta export facilities would quantify the numbers of fish entrained at those sites. A receiver, located at the Skinner Fish Facility, in conjunction with one located at the entrance to the Clifton Court Forebay will evaluate mortality within the Forebay.

2007 TEST FISH RELEASE SCHEDULE			
LOCATION	NUMBER	FIRST RELEASE	SECOND RELEASE
Durham Ferry	100	May 3	May 10
Mossdale	100	May 3	May 10
Old River below HOR	50	May 3	May 10
Dos Reis	50	May 3	May 10
Channel Point	40	May 4	May 11
SJR below Turner Cut	40	May 4	May 11
SJR at Prisoner's Pt.	40	May 4	May 11
Turner Cut	40	May 4	May 11
Old River @ Hwy 4	40	May 4	May 11

As recommended by the SJRA technical committee the 1,000 fish will be released at nine locations in the Delta during flow/export conditions to maximize opportunities to

[1] Receivers used in this study are made available from the Department of Water Resources, State Water Contractors, USGS, and equipment rented from the manufacturer.

determine fish survival/mortality rates in different regions. Figure 1 shows proposed locations[1] where groups of 40-100 acoustic-tagged salmon will be released during different weeks of the VAMP experiments. The multiple-release locations will increase data collected within strategic reaches where young salmon may migrate as compared to a single release of fish at Durham Ferry or Mossdale. Fish used for the experiments would be obtained from the California Department of Fish and Game's Merced River Hatchery.

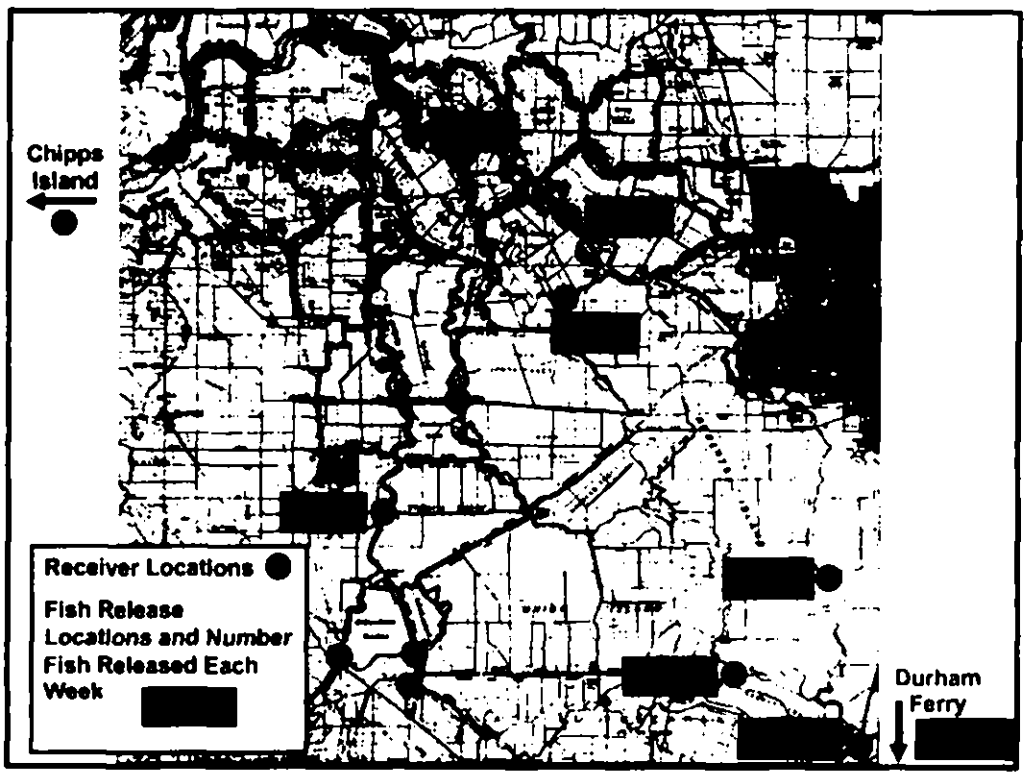

Figure 1. Proposed deployment locations (blue dots) for 13 fixed-station receivers to monitor the movements of acoustic-tagged juvenile salmon during the 2007 VAMP experiments and fish release locations. The receiver shown on the bottom right would be positioned upstream of fish release location no. 1 (either Mossdale or Durham Ferry). *Locations are approximate and would be determined through site reconnaissance.* Additionally, a mobile receiver would be used to locate transmitters between fixed-station sites.

Arrangements are currently being discussed with the USGS Columbia River

[1] Proposed fish release locations were developed by a sub-group of the VAMP Biological Technical Committee.

Laboratory, Cook, WA, to assist in the 2007 data analysis and refinement of the design for future years. A draft technical report of acoustic results on the 2007 VAMP study will be completed by September 15, 2007. The report would describe the methods and results. Migration pathways utilized by each of the 1,000 acoustic-tagged fish would be described and reach-specific mortality/survival would be quantified.

>>> "Tim Heyne" <theyne@dfg.ca.gov> 4/3/2007 10:26 PM >>>
Mike

Sorry it took me so long to deal with this but I just made myself do it tonight. I made a general pattern that I would look at doing in the A1 option on the attached sheet. I know this is an unlikely scenario but it will give you the best idea of what I am hoping to do. Basically I tried to play Merced and Tuolumne off on one another. I was shooting for the high flow on the Merced to be later to keep that river and the SJR cooler as best we can. It was requested that we hit 1,700 for Tom Dunne's crew doing geomorphic monitoring on the Merced so that sort of set the pulse. And hopefully the shifting flows will encourage the chinook smolts to exit the system. I tried to soften the transitions but the drop at the end of the Merced VAMP flows is way too steep.

Tim Heyne ><<<<<<<' >
Senior Fishery Biologist
Tuolumne River Restoration Center
California Dept. of Fish and Game
P.O. Box 10, La Grange, CA 95329
(209) 853-2533 Fax:(209) 853-9017

theyne@dfg.ca.gov

>>> Mike Archer <archer@mbkengineers.com> 4/2/2007 11:54 AM >>>
Tim,
I'm going to try to get an updated Daily Op Plan out in the next couple of days and would like to incorporate you're latest thinking on potential trib pulses. In the past the key info that I asked for was periods of desired pulse flow and desired flow rates and then I would work with that and the potential volumes of supplemental water. Based on the latest (Mar 27) runoff forecast, the chances of this being a double step year are diminishing, so most of what you have done using the 3/16 VAMP daily op plan may not be applicable, but the basis and desired pulse periods is important.

Thanks,
Mike

Tim Heyne wrote: Thank you Mike.Tim Heyne ><<<<<<<' >Senior Fishery BiologistTuolumne River Restoration CenterCalifornia Dept. of Fish and GameP.O. Box 10, La Grange, CA 95329(209) 853-2533 Fax:(209) 853-9017theyne@dfg.ca.gov Mike Archer <archer@mbkengineers.com> 3/27/2007 5:11:11 PM >>> Tim,Here's a copy of the spreadsheet with observed data updated through the26th. Haven't gotten any updates on the trib existing flows to reflectthe 3/20 DWR runoff forecast update (which was a bit of a drop from the3/13 forecast). I need to send out an inquiry to see if there are anysignificant changes. Your right on the next step which is to startlooking at potential pulses on the tribs and juggling them to meet theVernalis objective. If Stan R is below 1500 cfs there may be someshaping flexibility there, but would need to check with Liz Kiteck. When I have more info and update the Daily Op Plan next, which shouldincorporate any potential pulses you come up with. I will make sure tosend you spreadsheet version.MikeTim Heyne

wrote: Mikels it possible to get an electronic version of theVAMP daily ops plan? I am having several discussions about the use ofwater and would liketo game some pulsing posibilities on the Merced,with contingent changeson the TR. Would probably need a phoneconversation with several of usonce I see what we can do. I thought mybest option was to modify allfour as I can so that we have an option foreach possible outcomealready done. Although some of the four sheets youhave are withoutwater to rearrange.Tim Heyne ><<<<<<<' >Senior FisheryBiologistTuolumne River Restoration CenterCalifornia Dept. of Fish andGameP.O. Box 10, La Grange, CA 95329(209) 853-2533 Fax:(209)853-9017theyne@dfg.ca.gov

--

Mike Archerarcher@mbkengineers.comVoice: (916) 456-4400 ext. 123Fax: (916) 456-0253MBKENGINEERS
2450 Alhambra Blvd, 2nd FloorSacramento, CA 95817http://www.mbkengineers.com

Wes Monier - Re: April-May flow schedule

From: Wes Monier
To: Mike Archer
Date: 4/3/2007 10:26:47 AM
Subject: Re: April-May flow schedule

I should have something today. We are still working on it. It has been a while since it has been this dry.

Wes

>>> Mike Archer <archer@mbkengineers.com> 3/30/2007 8:36:53 AM >>>
Wes and Liz,
I'd like to send out an updated VAMP Daily Operation Plan and would like to get your latest expectations for April-May non-VAMP flows. If the flows in the 3/16 Daily Op Plan are still OK let me know, otherwise please send me your updated numbers as soon as possible.

Thanks,
Mike

--
Mike Archer
archer@mbkengineers.com
Voice: (916) 456-4400 ext. 123
Fax: (916) 456-0253

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Wes Monier - Re: Current flow forecast

From: Wes Monier
To: Elizabeth Kiteck; Mike Archer; Ted Selb
Date: 4/4/2007 11:03:55 AM
Subject: Re: Current flow forecast
CC: theyne@dfg.ca.gov; Tim Ford

Attached is a spreadsheet that has our latest forecast of flows for the Tuolumne River for the VAMP period. These are based on current DWR 90% exceedence estimate for the runoff. The reduction from the last update is due to the lack of rainfall and shift of some runoff to March. The 2-pulse pattern is similar to other years and will need to be coordinated for the Vernalis target flow.

Thanks
Wes

Wes Monier
Strategic Issues & Planning Manager
Turlock Irrigation District
333 East Canal Drive
Post Office Box 949
Turlock, California 95381-0949

office: (209) 883-8321
fax: (209) 656-2180
email: fwmonier@tid.org

TABLE 1

Tuolumne River Flow Schedule

CHEDULE FOR 2007 - 2008 Fish Flow Year

DATE		Number of	TOTAL FERC FLOW	
From:	To:	DAYS	CFS	ACCUM. A F
15-Apr-2006	15-Apr-2006	1	250	496
16-Apr-2006	16-Apr-2006	1	250	992
17-Apr-2006	17-Apr-2006	1	250	1,488
18-Apr-2006	18-Apr-2006	1	250	1,983
19-Apr-2006	19-Apr-2006	1	250	2,479
20-Apr-2006	20-Apr-2006	1	703	3,875
21-Apr-2006	21-Apr-2006	1	703	5,270
22-Apr-2006	22-Apr-2006	1	703	6,665
23-Apr-2006	23-Apr-2006	1	703	8,060
24-Apr-2006	24-Apr-2006	1	703	9,455
25-Apr-2006	25-Apr-2006	1	703	10,851
26-Apr-2006	26-Apr-2006	1	593	12,026
27-Apr-2006	27-Apr-2006	1	482	12,983
28-Apr-2006	28-Apr-2006	1	390	13,756
29-Apr-2006	29-Apr-2006	1	390	14,529
30-Apr-2006	30-Apr-2006	1	390	15,302
01-May-2006	01-May-2006	1	390	16,075
02-May-2006	02-May-2006	1	390	16,849
03-May-2006	03-May-2006	1	390	17,622
04-May-2006	04-May-2006	1	390	18,395
05-May-2006	05-May-2006	1	482	19,351
06-May-2006	06-May-2006	1	593	20,527
07-May-2006	07-May-2006	1	703	21,922
08-May-2006	08-May-2006	1	703	23,317
09-May-2006	09-May-2006	1	703	24,712
10-May-2006	10-May-2006	1	703	26,108
11-May-2006	11-May-2006	1	703	27,503
12-May-2006	12-May-2006	1	703	28,898
13-May-2006	13-May-2006	1	593	30,074
14-May-2006	14-May-2006	1	482	31,030
15-May-2006	15-May-2006	1	390	31,803
16-May-2006	16-May-2006	1	390	32,576
17-May-2006	17-May-2006	1	390	33,350
18-May-2006	18-May-2006	1	390	34,123
19-May-2006	19-May-2006	1	390	34,896
20-May-2006	20-May-2006	1	300	35,491
21-May-2006	21-May-2006	1	250	35,987
22-May-2006	22-May-2006	1	200	36,384
23-May-2006	23-May-2006	1	200	36,780
24-May-2006	24-May-2006	1	150	37,078
25-May-2006	25-May-2006	1	150	37,375
26-May-2006	26-May-2006	1	150	37,673
27-May-2006	27-May-2006	1	150	37,970
28-May-2006	28-May-2006	1	150	38,268
29-May-2006	29-May-2006	1	150	38,565
30-May-2006	30-May-2006	1	135	38,833
31-May-2006	31-May-2006	1	120	39,071

April 2--May 20th Ave.= 537

Wes Monier - Updated VAMP daily operation plan

From: Mike Archer <archer@mbkengineers.com>
To: Steve Chedester <schedester@sbcglobal.net>, Larry Freeman <wtrmstr@sbcglobal.net>, Art Godwin <afg@mrgb.org>, Chuck Hanson <CHansonEnv@aol.com>, Tim Heyne <theyne@dfg.ca.gov>, Bill Johnston <billj@MID.ORG>, Peggy Manza <pmanza@mp.usbr.gov>, Dean Marston <dmarston@dfg.ca.gov>, "Tim O'Laughlin" <towater@olaughlinparis.com>, Nigel Quinn <nwquinn@lbl.gov>, Ken Robbins <kmr@mrgb.org>, John Stella <stella@stillwatersci.com>, Marc Van Camp <vancamp@mbkengineers.com>, Dave Vogel <dvogel@resourcescientists.com>, Art Hinojosa <hinojosa@water.ca.gov>, Ed Kisling <edk@mlode.com>, Simon Kwan <skwan@water.ca.gov>, Bruce Herbold <herbold.bruce@epa.gov>, Wes Monier <fwm@tid.org>, Tim Ford <tjford@tid.org>, Gary Bardini <gbardini@water.ca.gov>, John Leahigh <leahigh@water.ca.gov>, Mark Holderman <markho@water.ca.gov>, Tom Stephens <tstephens@mercedid.org>, Maury Roos <mroos@water.ca.gov>, Vickie Whitney <vwhitney@waterrights.swrcb.ca.gov>, Jon Burau <jrburau@usgs.gov>, Jeff Stuart <j.stuart@noaa.gov>, Bill Loudermilk <wlouderm@dfg.ca.gov>, Dan Nelson <dan.nelson@sldmwa.org>, Tom Birmingham <tbirmingham@westlandswater.org>, Lowell Ploss <lowellploss@aol.com>, Tom Boardman <hydrobro@ix.netcom.com>, Nick Hindman <nick_hindman@fws.gov>, Frances Mizuno <frances.mizuno@sldmwa.org>, Derek Hilts <Derek_Hilts@fws.gov>, Roger Guinee <Roger_Guinee@fws.gov>, <advorak@swc.org>, Jim Snow <jsnow@kmtg.com>, Elizabeth Kiteck <ekiteck@mp.usbr.gov>, Mike Abiouli <mabiouli@water.ca.gov>, Ted Selb <tselb@mercedid.org>, Byron Buck <bbuck@mwdh2o.com>, David Fullerton <dfullerton@mwdh2o.com>, Michael Tsang <mtsang@sfwater.org>, Dan Steiner <steinerd@ix.netcom.com>, Walter Ward <walterw@MID.ORG>, "Pettit, Tracy" <pettit@water.ca.gov>, "Mayr, Shawn" <sdmayr@water.ca.gov>, Mike Archer <archer@mbkengineers.com>, "Hinojosa, Tracy" <tracyh@water.ca.gov>, Joe Tapia <jtapia@water.ca.gov>, Karna Harrigfeld <kharrigfeld@herumcrabtree.com>, Maya Hayden <maya@stillwatersci.com>, "Chu, Andy" <andychu@water.ca.gov>, Pat Brandes <Pat_Brandes@fws.gov>, Ron Milligan <rmilligan@mp.usbr.gov>, Diane Riddle <driddle@waterboards.ca.gov>, Alan Ng <ang@water.ca.gov>, Mike Ford <jmford@water.ca.gov>
Date: 4/18/2007 11:16:48 AM
Subject: Updated VAMP daily operation plan

Attached is an updated VAMP daily operation plan. The 4/16 plan was revised to

incorporate revised Tuolumne river existing flows. The operation for the first one-third of VAMP target flow period is essentially unchanged from the 4/16 plan with the revisions primarily affecting the latter two-thirds.

--

Mike Archer
SJRGA Lead Co-coordinator
SJR Technical Committee Hydrology Group

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Fax: (916) 456-0253

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2007 VAMP Forecast Summary

Updated: 4/18/07

Based on April 1 DWR Bulletin 120 Water Supply Forecast

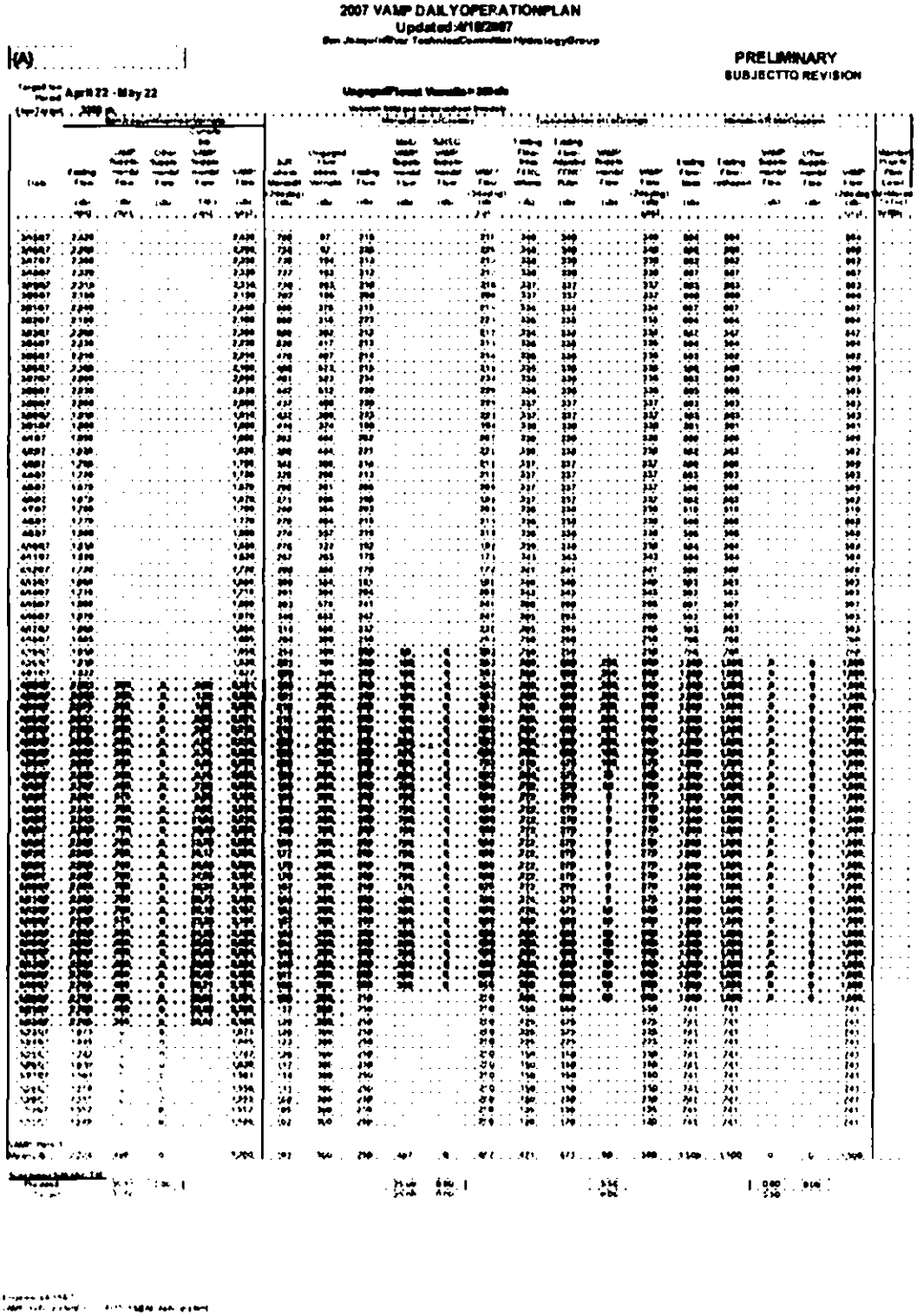
Single or Double Step Status	
Previous Year's Year Type Indicator [1]	5
Current Year's Year Type Indicator [1],[2]	1
Sum	6

Greater than 7 ==> Double Step

Daily Operation Plan Scenarios

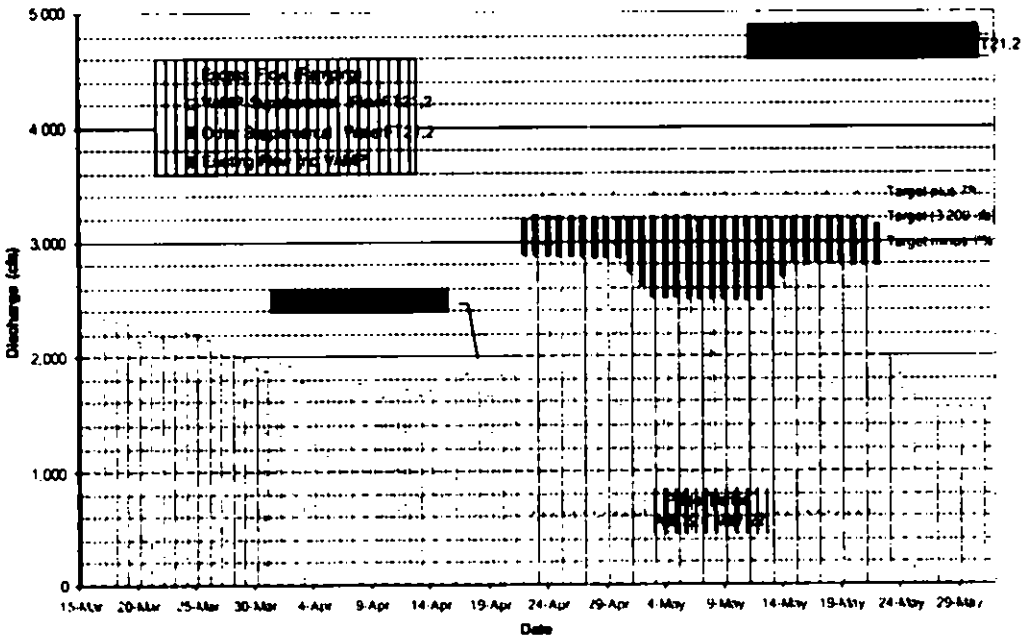
Scenario ID	A]
VAMP Target Flow Period	Apr. 22 - May 22
Single or Double Step	Single
Forecasted Ungaged Flow at Vernalis (cfs)	300
Forecasted Vernalis Flow (cfs)	
Existing Flow [3]	2,700
VAMP Target Flow	3,200
Supplemental Water (1000 AF)	
Total	30.50
Merced ID	25.00
OID/SSJID	5.50
Exchange Contractors	0.00
MID/TID	0.00

[1] 60-20-20 Year Type: Wet=5, Above Normal=4, Below Normal=3, Dry=2, Critical=1
[2] Based on April 1 DWR Bulletin 120 water supply forecast (90% exceedence)
[3] VAMP target flow period average without VAMP supplemental water.



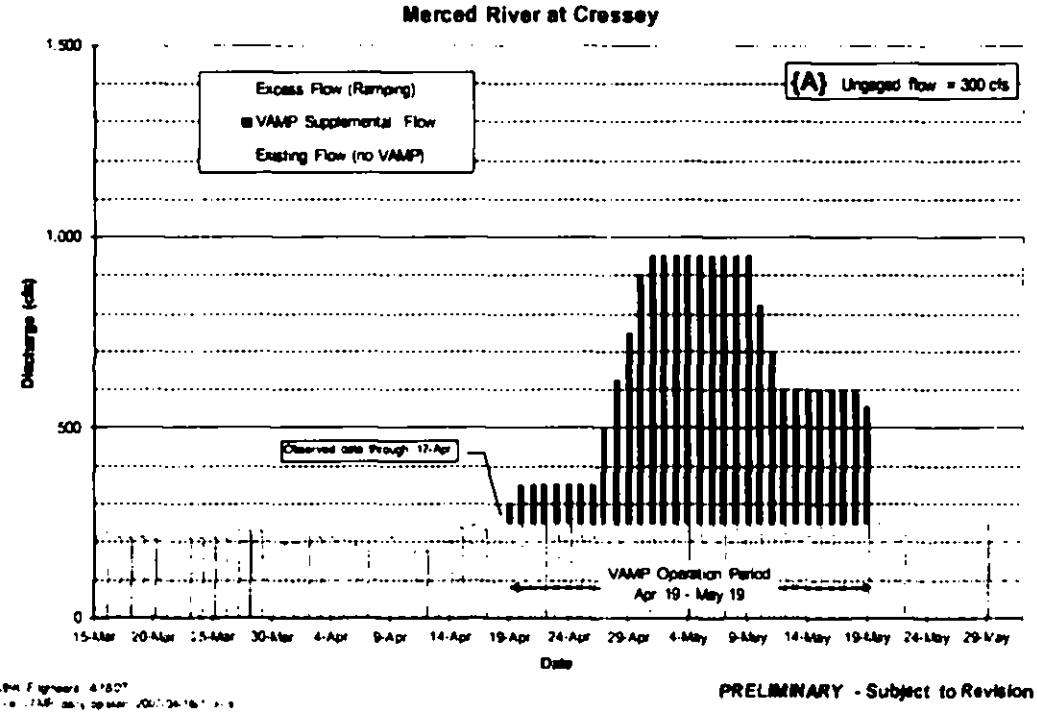
2007 VAMP Daily Operation Plan --- April 18, 2007
Vernalis Target Flow Period: April 22 - May 22

San Joaquin River near Vernalis



PRELIMINARY - Subject to RevisionFT21.2

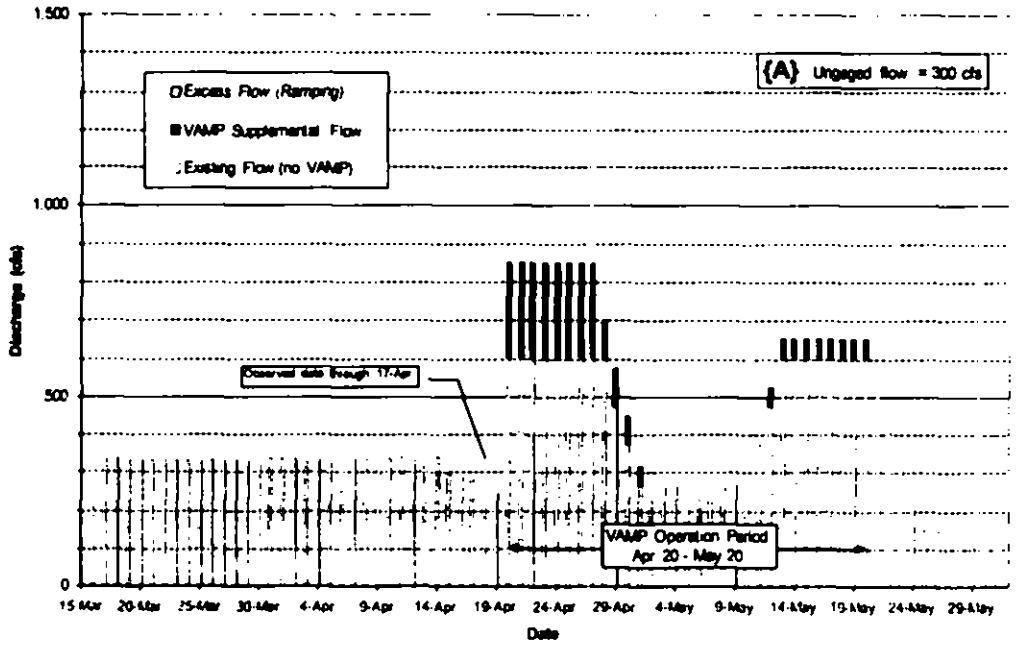
2007 VAMP Daily Operation Plan --- April 18, 2007
Vernalis Target Flow Period: April 22 - May 22



PRELIMINARY - Subject to Revision

2007 VAMP Daily Operation Plan --- April 18, 2007
Vernalis Target Flow Period: April 22 - May 22

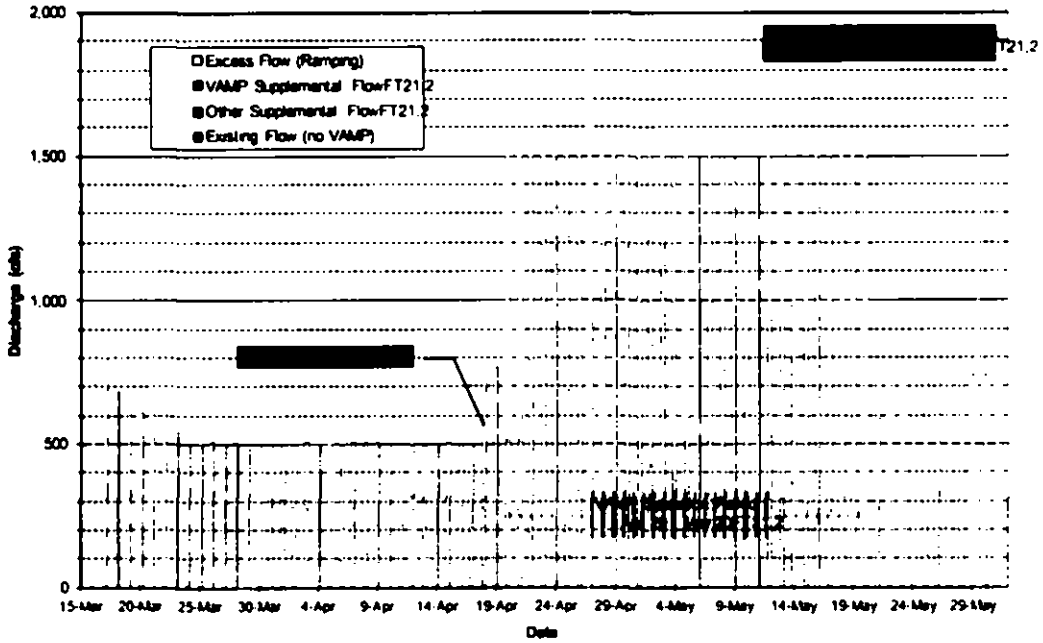
Tuolumne River at LaGrange



PRELIMINARY - Subject to Revision

2007 VAMP Daily Operation Plan --- April 18, 2007
Vernalis Target Flow Period: April 22 - May 22

Stanislaus River below Goodwin Dam



PRELIMINARY - Subject to Revision

From: "Dean Marston" <DMarston@dfg.ca.gov>
To: "Wes Monier" <fwmonier@tid.org>
Date: 4/19/2007 9:34:42 AM
Subject: Re: April 18, 2007 Letter regarding Tuolumne River Minimum Flow Requirement

Good Morning Wes,

For future correspondence regarding Tuolumne River flows, please address the correspondence to the Regional Manager (Bill Loudermilk) and cc Tim Heyne. Thank you.

Dean

>>> "Wes Monier" <fwmonier@tid.org> 4/18/2007 4:19 PM >>>
Attached is a copy of a letter regarding the Tuolumne River minimum flow requirement.

Thanks
Wes

Wes Monier
office: (209) 883-8321
Strategic Issues & Planning Manager
fax: (209) 656-2180
Turlock Irrigation District
email: fwmonier@tid.org
333 East Canal Drive
Post Office Box 949
Turlock, California 95381-0949

CC: "Tim Heyne" <THEYNE@dfg.ca.gov>

6. April 18, 2007 flow schedule letter from TID

TURLOCK IRRIGATION DISTRICT
333 EAST CANAL DRIVE
POST OFFICE BOX 949
TURLOCK, CALIFORNIA 95381
(209) 883-8300

Don Pedro Dam and Powerhouse

April 18, 2007 (via e-mail)

Mr. Dean Marston
California Dept. of Fish and Game
1234 E. Shaw Ave.
Fresno, CA 93710

Ms. Deborah Giglio
U.S. Fish and Wildlife Service
2300 Cottage Way, W-2605
Sacramento, CA 95825

RE: Tuolumne River 2007-2008 FERC Article 37 Flow Schedule for P-2299

Dear Fishery Agency representatives:

In a letter dated January 11, 2007, and pursuant to the 1996 FERC Order, Amended Article 37, I provided to you an updated Water Year Classification Index for determining the volume of scheduled stream flows for the fish flow year based on the San Joaquin Basin 60-20-20 Index.

As you know, the 2007 Water Year is likely to be the driest year since the 1996 FERC Order. The DWR April 1, 2007 60-20-20 San Joaquin Basin Index forecasts were 2,133,183 for 50% exceedence and 1,827,183 for 90% exceedence. The forecasts had dropped to 2,043,183 for 50% exceedence and 1,773,183 for 90% exceedence in the DWR April 10 update. Those latest indices correspond to annual volumes of 119,360 AF (including 32,619 AF outmigration pulse flow) and 110,919 AF (including 20,091 AF outmigration pulse flow) respectively, with additional water based on interpolation above the applicable basin index threshold.

It has been determined that the 2007 Vernalis Adaptive Management Plan (VAMP) is scheduled to begin on April 22, meaning increased La Grange flows must be scheduled to start by April 20 as two days are needed for those flows to reach Vernalis in the San Joaquin River. The Districts have been coordinating a daily flow schedule with your agencies in the VAMP process for the spring pulse flow period. Attached is the Tuolumne River flow schedule for the April 15-May 31 period, utilizing 22,564 AF in spring pulse flow due to the overall dry trend. Later DWR forecast updates will be used to determine the summer flow level starting in June, which appears now to be in the 50-75 cfs range. The annual fish flow year volume will not be available until August after the basin index is finalized.

If you have any questions, please contact Wes Monier at 209-883-8321.

Sincerely,

Robert Nees
Assistant General Manager
Water Resources and Regulatory Affairs Administration

TID

C: Larry Weis - TID
Allen Short - MID
Phylis Posey - FERC Secretary

TABLE 1

Tuolumne River Flow Schedule

SCHEDULE FOR 2007 - 2008 Fish Flow Year

DATE		Number of	BASE FLOW			PULSE FLOW			ADDITIONAL FLOW			TOTAL FERC FLOW	
From	To	DAYS	CFS	AF	ACCUM A.F.	CFS	AF	ACCUM A.F.	CFS	AF	ACCUM A.F.	CFS	ACCUM A.F.
15-Apr-2007	15-Apr-2007	1	150	298	298	[illegible]	198	198	0	0	0	250	496
16-Apr-2007	16-Apr-2007	1	150	298	595	[illegible]	198	397	0	0	0	250	992
17-Apr-2007	17-Apr-2007	1	150	298	893	100	198	595	0	0	0	250	1,488
18-Apr-2007	18-Apr-2007	1	150	298	1,190	100	198	793	0	0	0	250	1,983
19-Apr-2007	19-Apr-2007	1	150	298	1,488	[illegible]	198	992	0	0	0	250	2,479
20-Apr-2007	20-Apr-2007	1	150	298	1,785	392	778	1,770	56	111	111	599	3,667
21-Apr-2007	21-Apr-2007	1	150	298	2,083	392	778	2,548	56	111	223	599	4,854
22-Apr-2007	22-Apr-2007	1	150	298	2,380	392	778	3,327	56	111	334	599	6,041
23-Apr-2007	23-Apr-2007	1	150	298	2,678	392	778	4,105	56	111	446	599	7,229
24-Apr-2007	24-Apr-2007	1	150	298	2,975	392	778	4,883	56	111	557	599	8,416
25-Apr-2007	25-Apr-2007	1	150	298	3,273	392	778	5,662	56	111	669	599	9,603
26-Apr-2007	26-Apr-2007	1	150	298	3,570	392	778	6,440	56	111	780	599	10,791
27-Apr-2007	27-Apr-2007	1	150	298	3,868	392	778	7,218	56	111	892	599	11,978
28-Apr-2007	28-Apr-2007	1	150	298	4,165	392	778	7,997	56	111	1003	599	13,165
29-Apr-2007	29-Apr-2007	1	150	298	4,463	285	566	8,563	41	81	1084	476	14,110
30-Apr-2007	30-Apr-2007	1	150	298	4,760	196	389	8,952	28	56	1140	374	14,853
01-May-2007	01-May-2007	1	150	298	5,058	107	212	9,164	15	30	1171	272	15,393
02-May-2007	02-May-2007	1	150	298	5,355	107	212	9,377	15	30	1201	272	15,933
03-May-2007	03-May-2007	1	150	298	5,653	107	212	9,589	15	30	1231	272	16,473
04-May-2007	04-May-2007	1	150	298	5,950	107	212	9,801	15	30	1262	272	17,013
05-May-2007	05-May-2007	1	150	298	6,248	107	212	10,013	15	30	1292	272	17,554
06-May-2007	06-May-2007	1	150	298	6,545	107	212	10,226	15	30	1323	272	18,094
07-May-2007	07-May-2007	1	150	298	6,843	107	212	10,438	15	30	1353	272	18,634
08-May-2007	08-May-2007	1	150	298	7,140	107	212	10,650	15	30	1383	272	19,174
09-May-2007	09-May-2007	1	150	298	7,438	107	212	10,863	15	30	1414	272	19,714
10-May-2007	10-May-2007	1	150	298	7,736	107	212	11,075	15	30	1444	272	20,255
11-May-2007	11-May-2007	1	150	298	8,033	196	389	11,464	28	56	1500	374	20,997
12-May-2007	12-May-2007	1	150	298	8,331	285	566	12,030	41	81	1581	476	21,942
13-May-2007	13-May-2007	1	150	298	8,628	392	778	12,808	56	111	1693	599	23,129
14-May-2007	14-May-2007	1	150	298	8,926	392	778	13,587	56	111	1804	599	24,316
15-May-2007	15-May-2007	1	150	298	9,223	392	778	14,365	56	111	1916	599	25,504
16-May-2007	16-May-2007	1	150	298	9,521	392	778	15,143	56	111	2027	599	26,691
17-May-2007	17-May-2007	1	150	298	9,818	392	778	15,922	56	111	2139	599	27,878
18-May-2007	18-May-2007	1	150	298	10,116	392	778	16,700	56	111	2250	599	29,066
19-May-2007	19-May-2007	1	150	298	10,413	392	778	17,478	56	111	2362	599	30,253
20-May-2007	20-May-2007	1	150	298	10,711	392	778	18,257	56	111	2473	599	31,440
21-May-2007	21-May-2007	1	150	298	11,008	400	793	19,050	0	0	2,473	550	32,531
22-May-2007	22-May-2007	1	150	298	11,306	275	545	19,596	0	0	2,473	425	33,374
23-May-2007	23-May-2007	1	150	298	11,603	175	347	19,943	0	0	2,473	325	34,019
24-May-2007	24-May-2007	1	150	298	11,901	75	149	20,091	0	0	2,473	225	34,465
25-May-2007	25-May-2007	1	150	298	12,198	0	0	20,091	0	0	2,473	150	34,763
26-May-2007	26-May-2007	1	150	298	12,496	0	0	20,091	0	0	2,473	150	35,060
27-May-2007	27-May-2007	1	150	298	12,793	0	0	20,091	0	0	2,473	150	35,358
28-May-2007	28-May-2007	1	150	298	13,091	0	0	20,091	0	0	2,473	150	35,655
29-May-2007	29-May-2007	1	150	298	13,388	0	0	20,091	0	0	2,473	150	35,953
30-May-2007	30-May-2007	1	135	268	13,656	0	0	20,091	0	0	2,473	135	36,221
31-May-2007	31-May-2007	1	[illegible]	238	13,894	0	0	20,091	0	0	2,473	120	36,459

7. May 18th Proposed schedule to CDFG and FWS

Wes Monier - Tuolumne River Minimum Flow Requirement

From: Wes Monier
To: deborah_giglio@fws.gov; theyne@dfg.ca.gov; wlouderm@dfg.ca.gov
Date: 5/18/2007 11:59:58 AM
Subject: Tuolumne River Minimum Flow Requirement
CC: Amy Petersen; Debbie Liebersbach; Jason Carkeet; Randy Baysinger; Robert M. Nees; Tim Ford; Walter Ward

The DWR forecast update for 15May results in a basin index of 2,043,183 (50% exceedance) and 1,887,183 (90 % exceedance). These correspond to 119,360 AF (50%) and 113,958 AF (90%) of annual FERC flow volume. Attached is a spreadsheet that shows how these numbers have varied since the March 1 DWR forecast.
Also attached is a flow schedule for the Tuolumne River minimum flow requirement through the remainder of the fish flow year using an intermediate volume. I have scheduled some of the presently "available" water (subject to change due to runoff) during June 1 to October 15 as that is the lowest flow period. We will have a final volume known after July and will be watching the forecasts and runoff closely to see if we might need to make any more adjustments in the meantime.

Please indicate your concurrence on this interim schedule so that we can send out another letter on this before the end of the month.

Wes Monier
Strategic Issues & Planning Manager
Turlock Irrigation District
333 East Canal Drive
Post Office Box 949
Turlock, California 95381-0949

office: (209) 883-8321
fax (209) 656-2180
email: fwmonier@tid.org

8. May 31, 2007 flow schedule letter from TID

TURLOCK IRRIGATION DISTRICT

May 31, 2007 (via e-mail)

Mr. Bill Loudermilk
California Dept. of Fish and Game
1234 E. Shaw Ave.
Fresno, CA 93710

Ms. Deborah Giglio
U.S. Fish and Wildlife Service
2800 Cottage Way, W-2605
Sacramento, CA 95825

RE: Tuolumne River 2007-2008 FERC Article 37 Flow Schedule for P-2299

Dear Fishery Agency representatives:

A letter dated April 18, 2007, and pursuant to the 1996 FERC Order, Amended Article 37, contained the initial flow schedule for the April 15 through May 31 period of the current Fish Flow Year, encompassing the spring pulse flow period. That schedule was established using the April 10 DWR forecast update for the San Joaquin Basin 60-20-20 Index.

The DWR May 22, 2007 60-20-20 San Joaquin Basin Index forecasts were 2.025183 for 50% exceedence and 1.908183 for 90% exceedence. Those latest indices correspond to annual volumes of 118,339 AF and 114,518 AF respectively, based on interpolation above the applicable basin index threshold.

An interim flow schedule for the remainder of the fish flow year using 117,335 AF (attached) was provided to you by e-mail from Wes Monier on May 18 and we will proceed to use that schedule as of June 1. We will see if further schedule adjustments become necessary as the forecasts and runoff continue. The final annual fish flow year volume will not be available until August when the basin index is finalized.

If you have any questions, please contact Wes Monier at 209-883-8321.

Sincerely,

Robert Nees
Assistant General Manager
Water Resources and Regulatory Affairs Administration

C: Larry Weis - TID
Allen Short - MID
Phylis Posey – FERC Secretary

TID

TABLE 1

Truckee River Flow Schedule

SCHEDULE FOR 20[illegible] - 20[illegible] Fish Flow Year

DATE		Number of	BASE FLOW			PULSE FLOW			ADDITIONAL FLOW			TOTAL FERC FLOW	
From	To	DAYS	CFS	AF	ACCUM A.F.	CFS	AF	ACCUM. A.F.	CFS	AF	ACCUM A.F.	CFS	ACCUM A.F.
15-Apr-2007	15-Apr-2007	1	150	298	298	[illegible]	198	198	0	0	0	250	496
16-Apr-2007	16-Apr-2007	1	150	298	595	[illegible]	198	397	0	0	0	250	992
17-Apr-2007	17-Apr-2007	1	150	298	893	[illegible]	198	595	0	0	0	250	1,488
18-Apr-2007	18-Apr-2007	1	150	298	1,190	[illegible]	198	793	0	0	0	250	1,983
19-Apr-2007	19-Apr-2007	1	150	298	1,488	[illegible]	198	992	0	0	0	250	2,479
20-Apr-2007	20-Apr-2007	1	150	298	1,785	[illegible]	778	1,770	57	111	111	599	3,667
21-Apr-2007	21-Apr-2007	1	150	298	2,083	[illegible]	778	2,548	57	111	223	599	4,854
22-Apr-2007	22-Apr-2007	1	150	298	2,380	[illegible]	778	3,327	57	111	334	599	6,041
23-Apr-2007	23-Apr-2007	1	150	298	2,678	[illegible]	778	4,105	57	111	446	599	7,229
24-Apr-2007	24-Apr-2007	1	150	298	2,975	[illegible]	778	4,883	57	111	557	599	8,416
25-Apr-2007	25-Apr-2007	1	150	298	3,273	[illegible]	778	5,662	57	111	669	599	9,603
26-Apr-2007	26-Apr-2007	1	150	298	3,570	[illegible]	778	6,440	57	111	780	599	10,791
27-Apr-2007	27-Apr-2007	1	150	298	3,868	[illegible]	778	7,218	57	111	892	599	11,978
28-Apr-2007	28-Apr-2007	1	150	298	4,165	[illegible]	778	7,997	57	111	1003	599	13,165
29-Apr-2007	29-Apr-2007	1	150	298	4,463	[illegible]	566	8,563	41	81	1084	476	14,110
30-Apr-2007	30-Apr-2007	1	150	298	4,760	[illegible]	389	8,952	28	56	1140	374	14,853
01-May-2007	01-May-2007	1	150	298	5,058	[illegible]	212	9,164	15	30	1171	272	15,393
02-May-2007	02-May-2007	1	150	298	5,355	[illegible]	212	9,377	15	30	1201	272	15,933
03-May-2007	03-May-2007	1	150	298	5,653	[illegible]	212	9,589	15	30	1231	272	16,473
04-May-2007	04-May-2007	1	150	298	5,950	[illegible]	212	9,801	15	30	1262	272	17,013
05-May-2007	05-May-2007	1	150	298	6,248	[illegible]	212	10,013	15	30	1292	272	17,554
06-May-2007	06-May-2007	1	150	298	6,545	[illegible]	212	10,226	14	30	1323	272	18,094
07-May-2007	07-May-2007	1	150	298	6,843	[illegible]	212	10,438	15	30	1353	272	18,634
08-May-2007	08-May-2007	1	150	298	7,140	[illegible]	212	10,650	15	30	1383	272	19,174
09-May-2007	09-May-2007	1	150	298	7,438	[illegible]	212	10,863	15	30	1414	272	19,714
10-May-2007	10-May-2007	1	150	298	7,736	[illegible]	212	11,075	14	30	1444	272	20,255
11-May-2007	11-May-2007	1	150	298	8,033	[illegible]	389	11,464	25	56	1500	374	20,997
12-May-2007	12-May-2007	1	150	298	8,331	[illegible]	566	12,030	41	81	1581	476	21,942
13-May-2007	13-May-2007	1	150	298	8,628	[illegible]	778	12,808	55	111	1693	599	23,129
14-May-2007	14-May-2007	1	150	298	8,926	[illegible]	778	13,587	55	111	1804	599	24,316
15-May-2007	15-May-2007	1	150	298	9,223	[illegible]	778	14,365	55	111	1916	599	25,504
16-May-2007	16-May-2007	1	150	298	9,521	[illegible]	778	15,143	55	111	2027	599	26,691
17-May-2007	17-May-2007	1	150	298	9,818	[illegible]	778	15,922	55	111	2139	599	27,878
18-May-2007	18-May-2007	1	150	298	10,116	[illegible]	778	16,700	55	111	2250	599	29,066
19-May-2007	19-May-2007	1	150	298	10,413	[illegible]	778	17,478	55	111	2362	599	30,253
20-May-2007	20-May-2007	1	150	298	10,711	[illegible]	778	18,257	55	111	2473	599	31,440
21-May-2007	21-May-2007	1	150	298	11,008	[illegible]	793	19,050	0	0	2,473	550	32,531
22-May-2007	22-May-2007	1	150	298	11,306	[illegible]	545	19,596	0	0	2,473	425	33,374
23-May-2007	23-May-2007	1	150	298	11,603	[illegible]	347	19,943	0	0	2,473	325	34,019
24-May-2007	24-May-2007	1	150	298	11,901	[illegible]	149	20,091	0	0	2,473	225	34,465
25-May-2007	25-May-2007	1	150	298	12,198	0	0	20,091	0	0	2,473	150	34,763
26-May-2007	26-May-2007	1	150	298	12,496	0	0	20,091	0	0	2,473	150	35,060
27-May-2007	27-May-2007	1	150	298	12,793	0	0	20,091	0	0	2,473	150	35,358
28-May-2007	28-May-2007	1	150	298	13,091	0	0	20,091	0	0	2,473	150	35,655
29-May-2007	29-May-2007	1	150	298	13,388	0	0	20,091	0	0	2,473	150	35,953
30-May-2007	30-May-2007	1	[illegible]	268	13,656	0	0	20,091	0	0	2,473	135	36,221
31-May-2007	31-May-2007	1	[illegible]	198	13,855	0	0	20,091	40	2,513	12[illegible]	12[illegible]	36,459
01-Jun-2007	01-Jun-2007	1	[illegible]	159	14,013	0	0	20,091	50	2,562	10[illegible]	10[illegible]	36,667
02-Jun-2007	02-Jun-2007	1	[illegible]	149	14,162	0	0	20,091	40	2,602	9[illegible]	9[illegible]	36,855
03-Jun-2007	03-Jun-2007	1	[illegible]	119	14,281	0	0	20,091	69	2,671	9[illegible]	9[illegible]	37,044
04-Jun-2007	04-Jun-2007	1	50	99	14,380	0	0	20,091	89	2,761	9[illegible]	9[illegible]	37,232
05-Jun-2007	30-Jun-2007	26	50	2,579	16,959	0	0	20,091	2,321	5,081	9[illegible]	9[illegible]	42,131
01-Jul-2007	31-Jul-2007	31	50	3,074	20,033	0	0	20,091	2,767	7,848	9[illegible]	9[illegible]	47,973
01-Aug-2007	31-Aug-2007	31	50	3,074	23,107	0	0	20,091	2,767	10,615	9[illegible]	9[illegible]	53,814
01-Sep-2007	30-Sep-2007	30	50	2,975	26,083	0	0	20,091	2,678	13,293	9[illegible]	9[illegible]	59,467
01-Oct-2007	13-Oct-2007	13	[illegible]	2,579	28,661	0	0	20,091	645	13,937	12[illegible]	12[illegible]	62,690
14-Oct-2007	15-Oct-2007	2	[illegible]	397	29,058	0	0	20,091	99	14,037	12[illegible]	12[illegible]	63,136
16-Oct-2007	26-Oct-2007	11	[illegible]	3,273	32,331	0	0	20,091	0	0	14,037	15[illegible]	66,459
27-Oct-2007	28-Oct-2007	2	[illegible]	595	32,926	0	0	20,091	0	0	14,037	15[illegible]	67,054
29-Oct-2007	29-Oct-2007	1	[illegible]	298	33,223	0	0	20,091	0	0	14,037	15[illegible]	67,351
30-Oct-2007	30-Oct-2007	1	[illegible]	298	33,521	0	0	20,091	0	0	14,037	15[illegible]	67,649
31-Oct-2007	31-Oct-2007	1	[illegible]	298	33,818	0	0	20,091	0	0	14,037	15[illegible]	67,946
01-Nov-2007	16-Nov-2007	16	150	4,760	38,579	0	0	20,091	0	0	14,037	15[illegible]	72,707
17-Nov-2007	30-Nov-2007	14	150	4,165	42,744	0	0	20,091	0	0	14,037	15[illegible]	76,872
01-Dec-2007	31-Dec-2007	31	150	9,223	51,967	0	0	20,091	0	0	14,037	15[illegible]	86,095
01-Jan-2008	31-Jan-2008	31	150	9,223	61,190	0	0	20,091	0	0	14,037	15[illegible]	95,318
01-Feb-2008	28-Feb-2008	29	150	8,628	69,818	0	0	20,091	0	0	14,037	15[illegible]	103,946
01-Mar-2008	31-Mar-2008	31	150	9,223	79,041	0	0	20,091	0	0	14,037	15[illegible]	113,169
01-Apr-2008	15-Apr-2008	15	150	4,165	83,207	0	0	20,091	0	0	14,037	15[illegible]	117,335
No of days		366	(April 15 through April 14)										

1. [illegible] - 199347 acre-feet (af)

Note: [illegible] July 31, 1996 FERC Dec Flow Interpolated as 119,360 AF fish flow year requirement

2. The pulse flows are a target that represents a daily average