

From: Leahigh, John@DWR  
Sent: Friday, June 06, 2014 5:53 PM  
To: Grober, Les@Waterboards  
Cc: Stein, Russell@DWR; Rea, Maria@NOAA; pfujitani@usbr.gov; Wilcox, Carl@Wildlife; Wilson, Craig@Waterboards; Castleberry, Dan@fws; Garwin.Yip@noaa.gov; Riddle, Diane@Waterboards; RMILLIGAN@usbr.gov; Hinojosa, Tracy@DWR; Pettit, Tracy@DWR; Mizell, James@DWR; michael\_chotkowski@fws.gov  
Subject: Conserved Water Accounting under TUCP Order

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Les--

In its May 2, 2014 Order Modifying and Renewing an Order that Approved a Temporary Urgency Change in License and Permit Terms and Conditions Requiring Compliance with the Delta Water Quality Objectives in Response to Drought Conditions, the State Water Resources Control Board (Board) required the Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (Reclamation) to “calculate and maintain a record of the amount of water conserved through the changes authorized by this Order” and to “submit such records on a monthly basis to the State Water Board by the end of the following month.”

In compliance with that requirement, DWR and Reclamation (the Projects) presented estimates of total conserved water for the months of February, March, and April at the May 6, 2014 State Water Board workshop. As a follow-up we are submitting the more detailed summary below, along with the attached tables showing daily accounting for conserved water under the Order.

#### February

Although the Delta Cross Channel gates were open February 1-10, the “X2 requirement” was met through salinity at Collinsville or by outflow in excess of 7,100 cubic feet per second (cfs) during all ten days. Therefore, all D-1641 objectives were being met, and no water was conserved under the Order during this period.

The modified Order was in effect on February 23, when Delta outflow dropped below 7,100 cfs, and salinity at Collinsville was greater than 2.64 millimhos per centimeter (mmhos/cm). Calculated outflow that day was 6,969 cfs—131 cfs below the D-1641 requirement—and not increasing net Delta outflow conserved approximately 260 acre-feet (AF), of water that day. X2 at Collinsville was met for the remainder of the month.

#### March

The March X2 requirement was 29 days at Chipps Island and 31 days at Collinsville. Outflow was greater than 11,400 cfs for 15 days in March, and the 14-day average electrical conductivity (EC) was less than 2.64 mmhos/cm for five more days. Seven days of carryover from February were applied to the March requirement, leaving only two days in March when X2 at Chipps Island was not met and one day when X2 at Collinsville was not met. Although Delta inflows began increasing at the end of March due to storm events upstream, outflow values were still below 7,100 cfs on March 28 and below 11,400 cfs on March 30 and 31. (Calculated outflow values were 6,341 cfs, 9,405 cfs, and 11,386 cfs on these three days, and the differences between calculated outflow and X2 equivalent outflow were 759 cfs, 1,995 cfs, and 14 cfs, respectively.) By not increasing outflow to meet X2 on those three days, as allowed under the Order, the Projects conserved approximately 5.5 TAF.

#### April

Under D-1641, the April X2 requirement was 25 days at Chipps Island and 30 days at Collinsville. Outflows in excess of 11,400 cfs satisfied X2 for the first seven days of April; however, on April 8, outflows dropped below 11,400 cfs, and from April 9-26, outflows were lower than 7,100 cfs. Therefore, the Projects were operating under the TUC for a total of 19 days in April. (On April 27, outflow again exceeded 7,100 cfs, thereby satisfying the Collinsville X2 requirement for the last 5 days of April.) By not increasing outflows to meet X2 at Chipps Island for 18 days between April 8 and April 25, and at Collinsville for one additional day on April 26, approximately 212 TAF was conserved.

In total, the Order has allowed the Projects to conserve approximately 218 TAF in February, March, and April.

If you have any questions or would like more information, please contact John Leahigh at (916) 574-2722 or Mr. Paul Fujitani at (916) 979-2197.

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MARCH date	X2 (29 days at Chipps Island, 31 days at Collinsville; 7 Chipps carry-over days)							TUC in Effect		Daily Combined Exports (cfs)	Δ Outflow (cfs)	Water Conserved (TAF)
	equivalent 3- day outflow under D1641	calculated 3-day outflow	daily EC at Chipps Isl.	14-day EC at Chipps Isl.	daily EC at CLL	14-day EC at CLL	Carry-Over Days Applied? <sup>1</sup>	for Chipps Isl.	for Collinsville			
3/1/2014	7,100	10,964	8.10	5.56	3.86	2.82	Y			1,505	0	0.00
3/2/2014	11,400	15,494	7.24	5.77	3.72	2.95				3,953	0	0.00
3/3/2014	11,400	21,430	5.22	5.86	2.49	2.99				4,257	0	0.00
3/4/2014	11,400	24,056	4.14	5.89	1.84	3.00				4,638	0	0.00
3/5/2014	11,400	24,455	3.60	5.86	1.50	2.97				5,663	0	0.00
3/6/2014	11,400	21,436	3.09	5.83	1.41	2.96				5,803	0	0.00
3/7/2014	11,400	20,768	2.13	5.70	0.87	2.89				6,784	0	0.00
3/8/2014	11,400	21,369	1.46	5.47	0.62	2.76				6,788	0	0.00
3/9/2014	11,400	22,835	1.17	5.16	0.41	2.57				6,546	0	0.00
3/10/2014	11,400	21,137	1.32	4.86	0.46	2.40				6,822	0	0.00
3/11/2014	11,400	17,677	1.08	4.46	0.39	2.15				6,756	0	0.00
3/12/2014	11,400	14,557	1.24	4.04	0.42	1.92				6,331	0	0.00
3/13/2014	11,400	13,538	2.28	3.62	0.48	1.64				7,026	0	0.00
3/14/2014	11,400	14,457	2.67	3.20	0.59	1.36				6,193	0	0.00
3/15/2014	11,400	14,933	2.18	2.77	0.56	1.12				6,390	0	0.00
3/16/2014	11,400	13,056	2.15	2.41	0.64	0.90				6,626	0	0.00
3/17/2014	11,400	10,067	2.64	2.22	0.88	0.79				5,280	0	0.00
3/18/2014	11,400	7,629	3.03	2.15	1.12	0.74				5,582	0	0.00
3/19/2014	11,400	6,423	3.49	2.14	1.32	0.73				4,783	0	0.00
3/20/2014	11,400	5,504	4.22	2.22	1.92	0.76				4,149	0	0.00
3/21/2014	11,400	5,308	5.29	2.45	2.70	0.89				2,575	0	0.00
3/22/2014	7,100	5,229	5.38	2.73	2.94	1.06	Y			2,192	0	0.00
3/23/2014	7,100	5,473	5.19	3.01	2.95	1.24	Y			1,705	0	0.00
3/24/2014	7,100	5,613	5.10	3.28	2.82	1.41	Y			1,499	0	0.00
3/25/2014	7,100	5,617	5.60	3.61	2.93	1.59	Y			1,960	0	0.00
3/26/2014	7,100	5,208	5.93	3.94	3.11	1.78	Y			1,941	0	0.00
3/27/2014	7,100	5,432	5.71	4.19	2.85	1.95	Y			1,523	0	0.00
3/28/2014	7,100	6,341	5.52	4.39	2.84	2.11		x		1,462	759	1.50
3/29/2014	7,100	7,535	6.18	4.67	3.02	2.29				1,496	0	0.00
3/30/2014	11,400	9,405	6.11	4.96	3.15	2.47		x		1,499	1,995	3.96
3/31/2014	11,400	11,386	5.80	5.18	2.77	2.60		x		1,407	14	0.03

Total for March (TAF): 5.49

<sup>1</sup>Even when carry-over days for Chipps Island are applied, the Collinsville requirement must still be met. On those days, equivalent 3-day outflow has been changed to 7,100.