



United States Department of the Interior

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

JUL 07 2016

IN REPLY
REFER TO:

CVO-400
WTR-4.10

VIA ELECTRONIC MAIL

Ms. Barbara Evoy
Deputy Director, Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812

Subject: Monitoring and Reporting Program on Water Rights Order No. 90-5 (Water Rights)

Dear Ms. Evoy:

For the month of May, the temperature control point was set at Clear Creek, per the recommendation of the Sacramento River Temperature Task Group (SRTTG). The SRTTG met on May 3, 2016, and agreed to a 58° F daily average temperature until spawning occurred.

During May 2016, the average daily water temperature compliance of 58.0° F or less was met at the Clear Creek compliance point on the Sacramento River. During the month of May 2016, the average monthly water temperature was 54.1° F at Clear Creek.

Enclosed is the monitoring report for May 2016, under Order No. 90-5. The report contains the following data:

Station	Description
Shasta Inlets (R-1) “	Water Temperature Profile Turbidity, monthly, ntu
Shasta Dam (R-2) “	Water Temperature, daily average, degrees F Turbidity, ntu, monthly
Shasta Dam (R-2a)	Flow, average daily, cfs
Keswick (R-3) “	Water Temperature, daily average, degrees F Turbidity, ntu, monthly
Keswick (R-3a)	Flow, average daily, cfs
Spring Creek Power plant (R-4) “	Water Temperature, daily average, degrees F Turbidity, ntu, monthly Flow, average daily cfs

Station	Description
Jellys Ferry (R-5) (Control Point)	Water Temperature, daily average, degrees F Turbidity, ntu, monthly
Sacramento at Delta (R-6)	Water Temperature, monthly, degrees F Turbidity, ntu, monthly
McCloud (R-7) “	Water Temperature, monthly, degrees F Turbidity, ntu, monthly
Pit River (R-8) “	Water Temperature, monthly, degrees F Turbidity, ntu, monthly
Lewiston (R-9)	Water Temperature, daily average, degrees F
Lewiston (R-9a)	Flow, average daily, cfs

Please contact Ms. Thuy Washburn at 916-979-2193, should you have any questions regarding this data.

Sincerely,



Elizabeth Kiteck
Chief Water Operations

Enclosures

cc: Mr. Kenneth Emanuel
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812
(w/encl)

Central Valley Operations Office
 *Data obtained from the California Data Exchange Center
 **Data calculated by the Central Valley Operations Office
 ***Measurements taken by the Northern CA Area Office Personnel
Water Temperature Data in Degrees F
May 2016

Req. Sampling Frequency - Daily Average (Reading indicates daily average)							Req. Sampling Frequency - Monthly		
Date	Sta 2 Shd*	Sta 3 Kwk*	Sta 4 Spp**	Sta 5 Ccr**	Sta9 Lws*		Sta 6 Dlt***	Sta 7 Mss***	Sta 8 Pmn***
1	51.9	54.4	53.9	55.8	48.4				
2	52.3	54.6	54.3	56.1	47.9				
3	-	54.4	54.5	55.4	47.8				
4	-	53.9	54.6	54.8	47.6				
5	51.6	54.0	54.6	55.1	46.6			53.1	
6	51.9	54.2	54.5	54.9	46.5				
7	51.6	53.4	54.5	53.9	46.3				
8	52.2	53.0	53.9	54.3	46.7				
9	51.9	53.3	53.4	54.7	46.8				
10	51.0	54.1	53.3	55.4	46.1				
11	50.8	52.9	53.5	54.8	46.2				
12	50.5	52.9	53.3	54.4	46.6				
13	51.0	52.7	53.2	54.6	46.7				
14	50.6	52.8	53.3	54.2	46.2				
15	50.8	52.7	53.3	54.5	46.2				
16	50.1	52.6	53.3	54.4	46.7				
17	50.0	52.6	53.3	54.7	47.2				60.2
18	49.9	51.7	53.6	53.9	46.8				
19	50.2	51.8	52.9	53.6	47.2		57.8		
20	49.9	51.3	51.9	52.1	47.3				
21	49.4	50.8	51.8	51.8	46.5				
22	49.6	50.6	51.8	51.8	46.4				
23	50.2	51.0	51.9	52.3	46.7				
24	50.1	51.6	51.5	53.1	46.8				
25	50.0	51.8	52.2	53.5	47.0				
26	49.9	52.1	51.6	53.8	47.3				
27	50.2	52.1	52.4	53.8	47.5				
28	50.1	52.0	52.2	53.8	47.9				
29	49.9	52.0	52.3	53.8	47.7				
30	50.0	52.4	52.3	54.2	47.8				
31	50.4	52.5	52.3	54.5	47.9				

Control Point: Undetermined

Cross Channel Gate Operation:

May 1-27 closed
 May 27-31 open
 May 31 closed

**Measurements taken by the Northern CA Area Office Personnel
May 2016**

TEMPERATURE						
Sampling Frequency						
Every two weeks May 1 through November 30.						
	Sample 1	Sample 2	Sample 3	Sample 4		
Lake Elev	5/3/2016	5/16/2016	5/31/2016			
MSL	Temperature	Temperature	Temperature	Temperature	Temperature	Temperature
	Degrees F	Degrees F	Degrees F	Degrees F	Degrees F	Degrees F
	(400 Feet Upstream of Dam)					
	Time: 1020	Time: 1000	Time: 1035			Time:
625	45.7	45.7	45.8			
650	45.7	45.7	45.8			
675	45.7	45.8	45.9			
700	45.8	45.9	46.0			
725	46.0	46.0	46.1			
750	46.1	46.1	46.2			
775	46.4	46.4	46.5			
800	46.6	46.7	46.9			
825	47.0	47.0	47.3			
850	47.4	47.4	47.7			
875	47.7	47.8	48.0			
900	48.2	48.2	48.4			
925	48.5	48.6	48.8			
950	48.8	49.3	49.3			
975	49.3	50.1	50.5			
1000	50.5	52.5	54.5			
1025	60.4	61.2	69.3			
1050	63.0	67.4	70.7			
Lake Surface	1056.16' @ 63.5	1055.45' @ 67.4	1053.94' @ 70.7			

TURBIDITY						
Sampling Frequency						
Monthly, except weekly May 1 through Sep 30, when turbidity at Station 2 is equal to or greater than 10 NTU						
	Sample 1	Sample 2	Sample 3	Sample 4		
Lake Elev	5/3/2016	5/16/2016	5/31/2016			
MSL	Turbidity	Turbidity	Turbidity	Turbidity	Turbidity	Turbidity
	ntu	ntu	ntu	ntu	ntu	ntu
	(400 Feet Upstream of Dam)					
	Time: 1020	Time: 1000	Time: 1035			Time:
625	6.1	6.6	6.2			
650	6.0	6.3	6.0			
675	5.8	6.1	5.7			
700	5.8	5.8	5.5			
725	5.6	5.7	5.2			
750	5.2	5.5	5.0			
775	4.8	5.1	4.7			
800	4.4	4.7	4.4			
825	4.2	4.5	3.8			
850	3.7	3.9	3.7			
875	3.6	3.7	3.5			
900	3.2	3.4	3.2			
925	2.9	2.8	2.4			
950	2.3	2.4	2.2			
975	1.7	2.1	1.6			
1000	1.5	1.8	0.9			
1025	0.7	0.5	0.4			
1050	0.5	0.5	0.5			
Lake Surface	1056.16' @ 0.5	1055.45' @ 0.5	1053.94' @ 0.5			

Central Valley Operations Office
 Measurements taken by the Northern CA Area Office Personnel

**Summary of Turbidity and Dissolved Oxygen Water Sampling
 May 2016**

Turbidity Measurements, NTU

Sampling Frequency

Monthly, except weekly from May 1 through September 30, when turbidity at Station 2 is equal to or greater than 10 NTU.

Station

	R-2	R-3a	R-4	R-5	R-6	R-7	R-8
	Shasta Dam		Spring	Clear Creek			
	Discharge	Keswick	Creek PP		Sacramento	McCloud	Pit
Day	at Bridge	Discharge	Discharge		River (DLT)	River	River
3	3.2						
5						0.8	
12		3.2					
13				3.1			
17							2.0
18			1.2				
19					1.1		

Dissolved Oxygen, mg/l

Sampling Frequency

Every two weeks from May 1 through September 30; samples to be taken before 1000 hours.

Station

	R-2	R-3	R-5	Hour
	Shasta Dam			Time Sample
	Discharge	Keswick		Taken
Day	at Bridge	Discharge	Clear Creek	
3	11.8			10:31
12		11.3		13:30
13			11.7	9:49

Control Point: Undetermined

UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA
SHASTA LAKE, DAM AND POWERPLANT

RUN DATE: June 10, 2016

QG

GENERATION RELEASE, CFS

WATER YEAR OCTOBER 2015 TO SEPTEMBER 2016

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,701	4,248	4,120	2,851	1,110	2,381	4,584	5,242				
2	5,680	4,351	3,597	2,573	1,133	2,353	3,474	5,090				
3	5,648	5,011	4,233	2,570	2,192	1,546	5,461	5,425				
4	5,222	4,048	3,150	2,693	2,234	2,223	4,787	5,403				
5	5,649	4,740	2,511	2,020	2,166	2,079	4,678	5,577				
6	5,732	4,341	3,604	2,058	2,086	1,179	5,062	5,974				
7	6,419	4,456	3,756	2,175	2,413	2,407	5,124	5,855				
8	6,374	4,480	4,236	2,223	3,037	975	4,644	5,462				
9	5,750	4,508	3,565	2,199	3,452	1,198	3,622	5,628				
10	5,635	4,975	3,349	2,245	3,326	833	4,799	6,251				
11	5,559	4,165	3,288	2,621	2,713	560	3,401	5,895				
12	6,084	4,206	3,219	2,790	2,322	401	4,462	5,890				
13	5,843	4,281	3,129	1,760	2,756	551	4,229	5,820				
14	5,619	4,308	3,404	1,382	2,851	445	4,694	5,853				
15	4,995	4,018	3,847	1,851	2,723	1,262	4,492	5,725				
16	5,560	3,170	4,295	1,753	2,361	1,880	4,442	5,800				
17	5,747	4,073	4,139	827	2,110	3,097	4,760	6,264				
18	5,165	3,737	3,327	1,070	1,901	17,515	4,887	6,124				
19	5,503	3,900	3,626	1,098	3,150	17,239	4,468	6,492				
20	6,131	3,685	3,497	962	2,982	16,888	4,826	6,069				
21	4,776	3,481	2,724	109	3,242	17,088	4,025	5,913				
22	4,020	3,554	3,411	400	2,364	17,034	4,535	5,653				
23	4,646	3,593	3,556	762	2,668	14,719	4,982	6,077				
24	4,441	4,062	3,346	764	2,590	13,787	4,781	6,475				
25	4,711	4,045	3,848	867	2,725	11,638	4,818	5,828				
26	4,218	3,492	2,388	1,993	3,106	9,849	4,708	4,796				
27	4,444	3,605	2,222	1,784	2,704	6,758	4,508	6,297				
28	3,627	3,796	3,235	1,072	2,653	4,247	4,550	5,571				
29	4,538	3,572	2,967	1,077	3,002	4,327	4,381	6,369				
30	4,774	3,771	2,958	491		5,232	4,757	5,548				
31	4,687		2,974	393		5,651		6,478				
TOTAL	162,898	121,672	105,521	49,433	74,072	187,342	136,941	180,844				
MEAN	5,255	4,056	3,404	1,595	2,554	6,043	4,565	5,834				
MAX	6,419	5,011	4,295	2,851	3,452	17,515	5,461	6,492				
MIN	3,627	3,170	2,222	109	1,110	401	3,401	4,796				

WATER YEAR TOTALS

TOTAL	1,018,723
DAILY MEAN	4,175
DAILY MAX	17,515 03/18/2016
DAILY MIN	109 01/21/2016

UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA
KESWICK DAM, RESERVOIR, AND POWERPLANT

RUN DATE: June 10, 2016

QT

TOTAL RELEASE, CFS

WATER YEAR OCTOBER 2015 TO SEPTEMBER 2016

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,542	5,068	3,995	3,121	2,974	3,118	4,991	5,178				
2	6,544	4,685	3,996	3,121	2,973	3,118	4,881	5,192				
3	6,545	4,698	3,993	3,121	2,970	3,119	4,834	5,192				
4	6,543	4,702	3,997	3,119	2,969	3,091	4,840	5,672				
5	6,545	4,704	4,058	3,076	2,972	3,163	4,728	5,696				
6	6,544	4,704	4,208	3,080	2,994	3,161	4,588	5,692				
7	6,544	4,701	4,211	3,091	2,996	3,163	4,594	5,756				
8	6,536	4,704	4,213	3,086	2,992	3,109	4,587	5,842				
9	6,505	4,702	4,204	3,078	3,012	3,025	4,582	5,953				
10	6,534	4,701	4,161	3,051	3,067	3,091	4,588	6,237				
11	6,510	4,697	4,190	3,064	3,070	4,219	4,588	6,242				
12	6,511	4,505	4,192	3,065	3,051	4,514	4,612	6,241				
13	6,509	4,288	4,139	3,068	3,052	4,609	4,659	6,199				
14	6,506	4,290	4,137	3,033	3,055	4,504	4,645	6,193				
15	6,510	4,150	4,156	3,088	3,054	4,598	4,648	6,194				
16	6,509	3,953	4,162	3,120	3,055	4,692	4,644	6,193				
17	6,506	3,944	4,171	3,013	3,055	4,692	4,647	6,195				
18	6,498	4,039	4,171	2,994	3,050	18,000	4,648	6,192				
19	6,652	4,081	4,172	2,970	3,054	18,874	4,648	6,191				
20	6,188	4,035	4,171	2,981	3,055	18,591	4,650	6,193				
21	5,913	4,053	4,170	2,974	3,057	18,537	4,667	6,193				
22	5,732	4,054	4,153	2,973	3,052	18,558	4,669	6,193				
23	5,472	4,061	3,889	2,932	3,066	16,063	4,667	6,192				
24	5,467	4,054	3,632	2,961	3,092	13,226	4,669	6,194				
25	5,388	4,044	3,335	3,045	3,119	10,631	4,669	6,192				
26	5,164	4,017	3,079	3,047	3,121	8,552	4,589	6,229				
27	5,164	4,012	3,082	3,046	3,118	7,136	4,689	6,243				
28	5,166	4,005	3,092	3,046	3,119	4,890	4,717	6,242				
29	5,168	3,996	3,133	3,063	3,119	4,885	4,720	6,241				
30	4,866	3,996	3,101	3,044		4,936	4,743	6,243				
31	4,803		3,103	2,999		4,942		6,244				
TOTAL	188,584	129,643	120,466	94,470	88,333	230,807	140,401	186,849				
MEAN	6,083	4,321	3,886	3,047	3,046	7,445	4,680	6,027				
MAX	6,652	5,068	4,213	3,121	3,121	18,874	4,991	6,244				
MIN	4,803	3,944	3,079	2,932	2,969	3,025	4,582	5,178				

WATER YEAR TOTALS

TOTAL	1,179,553
DAILY MEAN	4,834
DAILY MAX	18,874 03/19/2016
DAILY MIN	2,932 01/23/2016

UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA
LEWISTON DAM, LAKE, AND JUDGE FRANCIS CARR POWERPLANT

RUN DATE: June 10, 2016

QR

RELEASE TO RIVER, CFS

WATER YEAR OCTOBER 2015 TO SEPTEMBER 2016

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	439	331	313	305	305	305	316	2,158				
2	439	321	305	305	305	303	315	2,408				
3	439	321	305	305	305	305	315	2,869				
4	436	323	305	305	305	305	314	3,436				
5	449	323	305	305	305	304	318	3,281				
6	466	323	305	305	305	305	314	3,992				
7	468	324	305	305	305	305	316	3,809				
8	464	323	305	305	305	305	317	5,643				
9	467	308	305	305	305	337	319	8,708				
10	468	300	305	305	305	305	317	9,452				
11	464	300	305	305	305	316	323	7,513				
12	465	299	305	305	305	316	331	5,941				
13	467	296	305	305	305	313	330	8,490				
14	467	296	305	305	305	312	320	9,218				
15	467	295	305	305	305	310	331	7,417				
16	467	297	305	305	305	316	330	5,645				
17	467	305	305	305	305	321	330	4,411				
18	467	326	305	305	305	320	325	4,206				
19	467	323	305	305	305	319	325	4,235				
20	426	326	305	305	305	319	324	4,146				
21	346	328	305	305	305	319	572	4,041				
22	309	327	305	305	305	320	488	3,961				
23	301	325	305	305	305	319	484	3,960				
24	301	325	305	305	305	318	484	3,914				
25	303	327	305	305	305	313	1,024	3,447				
26	305	326	305	305	305	312	1,383	3,615				
27	305	325	305	305	305	311	1,988	3,381				
28	309	327	305	305	305	314	1,594	3,335				
29	318	328	305	305	305	315	2,126	3,294				
30	318	327	305	305	305	315	2,946	3,484				
31	319		305	305	305	314		3,334				
TOTAL	12,593	9,525	9,463	9,455	8,845	9,711	19,519	146,744				
MEAN	406	318	305	305	305	313	651	4,734				
MAX	468	331	313	305	305	337	2,946	9,452				
MIN	301	295	305	305	305	303	314	2,158				

WATER YEAR TOTALS

TOTAL	225,855
DAILY MEAN	926
DAILY MAX	9,452 05/10/2016
DAILY MIN	295 11/15/2015

UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA
WHISKEYTOWN DAM, LAKE, AND SPRING CREEK POWERPLANT

RUN DATE: June 10, 2016

QG

GENERATION RELEASE, CFS

WATER YEAR OCTOBER 2015 TO SEPTEMBER 2016

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	756	344	69	14	1,708	304	28	14				
2	669	353	16	14	1,480	450	14	14				
3	670	14	35	14	1,147	482	19	14				
4	593	14	1,064	14	144	116	15	14				
5	667	22	1,612	430	16	342	15	14				
6	589	30	14	1,011	14	687	27	14				
7	458	42	50	346	14	1,081	18	14				
8	375	33	109	656	14	1,761	14	14				
9	807	16	14	14	19	2,061	893	14				
10	788	34	45	14	514	1,908	18	14				
11	14	86	36	771	731	1,775	1,124	14				
12	511	87	22	351	348	1,888	18	14				
13	535	19	216	900	14	1,988	14	14				
14	571	17	361	1,220	189	1,964	14	14				
15	677	52	14	685	369	1,999	14	14				
16	811	18	14	207	342	1,930	14	14				
17	270	227	15	733	285	2,062	14	14				
18	597	24	277	792	14	2,043	14	14				
19	654	17	15	703	189	2,131	14	20				
20	664	57	14	1,960	247	2,133	14	14				
21	409	21	550	2,467	191	2,136	14	14				
22	865	20	401	1,325	360	2,141	14	14				
23	609	15	495	1,306	485	2,100	14	14				
24	803	16	71	753	40	380	14	70				
25	632	23	103	1,640	14	179	14	14				
26	800	14	14	1,362	14	160	14	1,089				
27	729	25	14	2,047	389	261	14	14				
28	788	14	14	1,903	273	704	14	14				
29	214	14	16	1,401	14	154	14	14				
30	188	15	14	2,144	14	14	14	14				
31	185	14	14	2,112	14	45	14	20				
TOTAL	17,898	1,683	5,718	29,309	9,578	37,379	2,455	1,577				
MEAN	577	56	184	945	330	1,206	82	51				
MAX	865	353	1,612	2,467	1,708	2,141	1,124	1,089				
MIN	14	14	14	14	14	14	14	14				

WATER YEAR TOTALS

TOTAL	105,597
DAILY MEAN	433
DAILY MAX	2,467
DAILY MIN	14
	01/21/2016
	10/11/2015