7-1596B (9-89) Bureau of Reclamation

DEC 03 2014

CVO-400 WTR-4.10

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

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

Dear Ms. Evoy:

During October 2014, average daily water temperature compliance of 56.0 °F or less was not met at the Clear Creek compliance point on the Sacramento River. The following actions were taken to draw the coldest water out of Shasta to attempt to bring temperatures back into compliance. These actions were also taken with consideration to stretch out the minimal cold water pool left in Shasta reservoir.

On October 8, 2014, Reclamation began to prioritize releases from Shasta through Units 5 and 4 to draw colder water to the Sacramento River. On October 14, 2014, Reclamation began to bring approximately 1,100 acre feet a day of cooler Trinity water through the Trinity power plant. Despite these measures, a temperature compliance of 56.0 °F at Clear Creek was not attainable.

During the month of October 2014, the average monthly water temperature was 61.0 °F at Clear Creek.

Enclosed is the monitoring report for October 2014, under Order No. 90-5. The report contains the following data:

Station	9	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

Station	Description
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
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
Places contact Mc Thuy We	ashburn at 016,070,2103, should you have any questions regard

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 October 2014

Req, Sampling Frequency - Daily Average Control Pt									Req. Sampling Frequency - Monthly			
(Read	Sta 2	daily average) Sta 3	Sta 4	10/1 to 10/31 Sta 5	Sta9	Sta10	Sta11	Sta 6	Sta 7	Sta 8		
Date	Shd*	Kwk*	Spp**	Ccr**	Lws*	Dgc*	Nfh*	Dit***	Mss***	Pmn**		
1	60.1	60.3	57.6	61.1	53.5	55.2	57.9					
2	60.5	60.1	57.6	61.1	53.2	54.8	57.0					
3	61.4	60.4	57.6	61.3	52.1	54.9	57.2					
4	61.0	60.7	57.6	61.7	51.8	54.5	57.5					
5	61.2	61.2	57.7	62.1	51.7	54.2	57.1					
6	61.4	61.2	57.7	62.2	51.8	54.0	56.9					
7	61.1	61.3	57.7	62.3	51.7	54.1	56.7					
8	61.0	61.6	57.8	62.3	51.6	53.8	56.5					
9	60.4	61.2	57.9	62.3	51.6	53.7	56.3					
10	61.4	60.8	57.8	61.9	51.7	53.5	56.0	1				
11	62.0	60.5	57.7	61.6	51.4	53.9	56.3					
12	62.5	60.5	57.8	61.2	51.1	53.6	56.4					
13	61.1	60.6	57.8	61.2	50.8	52.5	55.0					
14	61.6	60.6	57.7	60.6	50.5	52.3	54.0					
15	61.5	60.4	57.8	60.9	50.8	52.8	54.6					
16	61.7	60.7	57.8	61.3	50.6	53.1	55.7					
17	61,2	60.5	57.8	60.9	51.1	52.7	55.1					
18	61.6	60.6	57.8	61.4	52.4	54.0	56.9					
19	61.8	60.8	57.8	61.3	53.0	54.9	56.8					
20	59.9	60.6	57.8	60.7	54.3	54.8	56.8					
21	59.9	60.2	57.8	60.3	55.8	54.1	55.6	55.0	51.1			
22	62.6	59.6	57.9	59.7	55.5	54.2	54.0					
23	61.7	59.5	58.0	59.4	55.0	54.7	53.9					
24	62.6	60.1	58.0	60.5	55.5	55.3	54.2					
25	62.0	60.0	58.0	60.2	54.2	55.6	54.9					
26	61.1	60.1	58.3	60.1	52.0	53.1	53.0					
27	61.5	60.0	58.2	59.9	51.5	52.5	52.5					
28	61.4	60.2	58.4	60.2	51.0	52.1	52.8			55.4		
29	62.8	60.2	58.2	60.8	51.1	53.5	54.6					
30	62.2	60.0	58.1	60.4	51.1	53.6	55.3					
31	61.1	59.9	57.9	59.7	50.9	53.4	54.9					
								1				

Control Point: 56.0 degrees at Balls Ferry from 03/01/2014 to 03/27/2014.
58.0 degrees at Clear Creek from 03/28/2014 to 04/24/2014.
56.0 degrees at Clear Creek from 04/25/2014 to 10/31/2014.

Cross Channel Gate Operation:

October 1-27 Open October 28-29 Closed October 30-31 Open

Measurements taken by the Northern CA Area Office Personnel October 2014

TEMPERATURE

Sampling Frequency
Every two weeks May 1 through November 30.

	Sample 1	Sample 2	Sample 3	Sample 4	
	10/8/2014	10/15/2014	10/21/2014	10/29/2014	
Lake Elev	Temperature	Temperature	Temperature	Temperature	
MSL	Degrees F	Degrees F	Degrees F	Degrees F	
	(40	0 Feet Upstream of Da	am)		
	Time: 10:000	Time: 10:30	Time: 12:000	Time: 12:12	
625	46.3	46.3	46.3	46.7	
650	46.6	46.6	46.8	48.8	
675	47.2	47.2	47.8	50.0	
700	48.9	50.3	53.8	56.6	
725	56.2	59.7	61.5	60.5	
750	63.0	63.2	62.7	61.2	
775	65.1	64.3	63.9	62.5	
800	65.9	65.3	65.0	64.3	
825	66.9	66.2	66.2	64.6	
850	69.2	67.0	66.4	64.7	
875	69.3	67.8	66.5	64.7	
900					
925					
950					
975					
1000					
1025					
1050		-			
Lake Surface	897.12' 69.3	895.83' 67.8	895.04' 66.5	895.22' 64.9	

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
	9/9/2014	10/15/2014	10/21/2014	10/29/2014
Lake Elev	Turbidity	Turbidity	Turbidity	Turbidity
MSL	ntu	ntu	ntu	ntu
	(40	0 Feet Upstream of Da	am)	
	Time: 11:00	Time: 10:30	Time: 12:00	Time: 12:12
625	3.1	3.4	3.3	8.9
650	2.5	3.3	3.1	32.2
675	2.2	2.5	2.2	13.9
700	2.1	2.0	2.0	9.1
725	1.8	1.9	3.5	9.5
750	1.8	2.2	2.8	6.8
775	1.6	1.6	1.6	4.1
800	1.4	1.5	1.4	4.8
825	1.8	1.6	1.9	4.8
850	2.3	2.5	1.9	4.4
875	2.3	2.7	1.9	4.3
900				
925				
950				
975				
1000				
1025				
1050				
Lake Surface	897.12' 2.2	895.83' 2.7	895.04' 1.8	895.22' 4.0

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

Summary of Turbidity and Dissolved Oxygen Water Sampling October 2014

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	Control Point		McCloud	Pit	
Day	at Bridge	Discharge	Discharge	10/1 to 10/31	River (DLT)	River	River	
15			1.3					
16				1.0				
21	2.0				1.0	14.6		
27		4.7						
28							2.8	
	Į .							

^{*}Water turbidity due to major mudslide in McCloud on 9/20/2014.

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	
	Shasta Dam			Hour
	Discharge	Keswick		Time Sample
Day	at Bridge	Discharge	Clear Creek	Taken
	No Requirer	nent October	through April	

Temperature Control Point:

56.0 degrees at Balls Ferry from 03/01/2014 to 03/27/2014. 58.0 degrees at Clear Creek from 03/28/2014 to 04/24/2014.

56.0 degrees at Clear Creek from 04/25/2014 to 10/31/2014.

UNITED STATES DEPARTMENT OF THE INTERIOR U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

RUN DATE: November 5, 2014

SHASTA LAKE, DAM AND POWERPLANT

QG

GENERATION RELEASE, CFS

WATER YEAR OCTOBER 2014 TO SEPTEMBER2015

			•••					DEINEOIO				
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,560											
2	1,679											
2 3	1,082											
4	1,059											
5	1,426											
6	1,647											
7	1,511											
8	2,679											
9	3,874											
10	4,003											
11	3,435											
12	3,015											
13	3,726											
14	3,496											
15	4,156											
16	3,146											
17	3,618											
18	3,358											
19	3,309											
20	2,894											
21	2,876											
22	3,540											
23	4,896											
24	2,343											
25	2,453											
26 27	4,158											
27	4,106											
28	4,414											
29	2,666											
30	2,337											
31	4,519											
TOTAL	92,981											
MEAN	2,999											
MAX	4,896											
MIN	1,059											
	.,000				WATE	P VEAR TOT	AI S					

WATER YEAR TOTALS

TOTAL	92,981	
DAILY MEAN	2,999	
DAILY MAX	4,896	10/23/2014
DAILY MIN	1.059	10/04/2014

UNITED STATES DEPARTMENT OF THE INTERIOR U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

RUN DATE: November 5, 2014

KESWICK DAM, RESERVOIR, AND POWERPLANT

QT

TOTAL RELEASE, CFS

WATER YEAR OCTOBER 2014 TO SEPTEMBER2015

DAY	ОСТ	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1 2 3 4 5	4,500 4,647 4,409 4,403 4,395											
6 7 8 9 10	4,504 4,462 4,542 4,490 4,512											
11 12 13 14 15	4,545 4,535 4,536 4,544 4,521	æ					- FE - E					
16 17 18 19 20	4,545 4,533 4,538 4,533 4,535											
21 22 23 24 25	4,528 4,528 4,540 4,527 4,504											
26 27 28 29 30	4,420 4,449 4,450 4,443 4,449											
31	4,503											
TOTAL	139,570											
MEAN	4,502											
MAX	4,647											
MIN	4,395											
					WATE	R YEAR TO	ΓALS					

WATER YEAR TOTALS

TOTAL	139,570	
DAILY MEAN	4,502	
DAILY MAX	4,647	10/02/2014
DAILY MIN	4,395	10/05/2014

UNITED STATES DEPARTMENT OF THE INTERIOR U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

RUN DATE: November 5, 2014

LEWISTON DAM, LAKE, AND JUDGE FRANCIS CARR POWERPLANT

QR

RELEASE TO RIVER, CFS

WATER YEAR OCTOBER 2014 TO SEPTEMBER2015

DAY	ост	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	490											
2	494											
2 3 4	512											
4	517											
5	517											
6 7 8	498											
7	487											
8	488											
9	488											
10	486											
11	474											
12	454											
13	450											
14	452											
15	399											
16 17 18	370											
17	311											
18	303 302 305											
19	302											
20	305											
21 22 23	298											
22	292											
23	292 307											
24 25	320											
25	323											
26	318											
27	318											
26 27 28 29	317											
29	317											
30	315											
31	316											
TOTAL	12,238											
MEAN	395											
MAX	517											
MIN	292											
					WATE	R YEAR TOT	ALS					

WATER YEAR TOTALS

TOTAL	12,238	
DAILY MEAN	395	
DAILY MAX	517	10/04/2014
DAILY MIN	292	10/22/2014

UNITED STATES DEPARTMENT OF THE INTERIOR U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

RUN DATE: November 5, 2014

WHISKEYTOWN DAM, LAKE, AND SPRING CREEK POWERPLANT

QG

GENERATION RELEASE, CFS

WATER YEAR OCTOBER 2014 TO SEPTEMBER2015

DAY	ОСТ	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1 2 3 4 5	545 510 654 689 646											
6 7 8 9 10	704 849 761 660 676											
11 12 = 13 14 15	1,266 1,240 1,056 997 585											
16 17 18 19 20	1,185 1,106 1,154 1,012 1,570											
21 22 23 24 25	1,620 1,662 1,235 2,019 2,068											
26 27 28 29 30	1,018 476 178 1,439 2,111											
31	718											
TOTAL	32,409											
MEAN	1,045											
MAX	2,111											
MIN	178				WATE	R YEAR TOT	ΔΙς					
					TTALE	C I LAIC 10 I						

TOTAL	32,409	
DAILY MEAN	1,045	
DAILY MAX	2,111	10/30/2014
DAILY MIN	178	10/28/2014