



United States Department of the Interior

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

IN REPLY REFER TO:

CVO-400
WTR-4.10

JUL 11 2018

VIA ELECTRONIC MAIL

Mr. Erik Ekdahl
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 Mr. Ekdahl:

For the month of June 2018, the temperature control point was set at Balls Ferry, per the May 2018, Sacramento River Temperature Plan.

During the month, the average daily water temperature compliance of 56.0°F or less was met at the Balls Ferry compliance point on the Sacramento River with the exception of June 3 (56.1°F). During the month, the observed average monthly water temperature was 54.9°F at Balls Ferry.

Enclosed is the monitoring report for June 2018, under Order No. 90-5. The report contains the following data as required:

ID #	Station	Temperature*	Turbidity*	Dissolved Oxygen*	Flow*
1	Shasta Inlets	X	X		
2	Shasta Dam	X	X	X	
2a	Shasta Dam				X
3	Sacramento River below Keswick Dam	X		X	
3a	Keswick Dam		X		X
4	Spring Creek Power Plant	X	X		X
5	Temperature Control Point	X	X	X	
6	Sacramento River at Delta	X	X		
7	McCloud River	X	X		
8	Pit River	X	X		
9	Trinity River below Lewiston Dam	X			
9a	Lewiston Dam				X

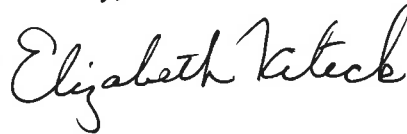
Subject: Monitoring and Reporting Program on Water Rights Order No. 90-5 (Water Rights)

ID #	Station	Temperature*	Turbidity*	Dissolved Oxygen*	Flow*
10	Trinity River at Douglas City Bridge	X			
11	Trinity River at confluence of North Fork	X			

*Monitoring frequency, period, and units are specified in enclosures

Please contact Ms. Randi Field at 916-979-2066, should you have any questions regarding this data.

Sincerely,



Elizabeth Kiteck
Chief, Water Operations

Enclosures

cc: Mr. Chris Kwan
Division of Water Rights
State Water Resources Control Board
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Sacramento, CA 95812

Mr. Vadim Demchuk
Division of Water Rights
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Ms. Diane Riddle
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(w/encl)

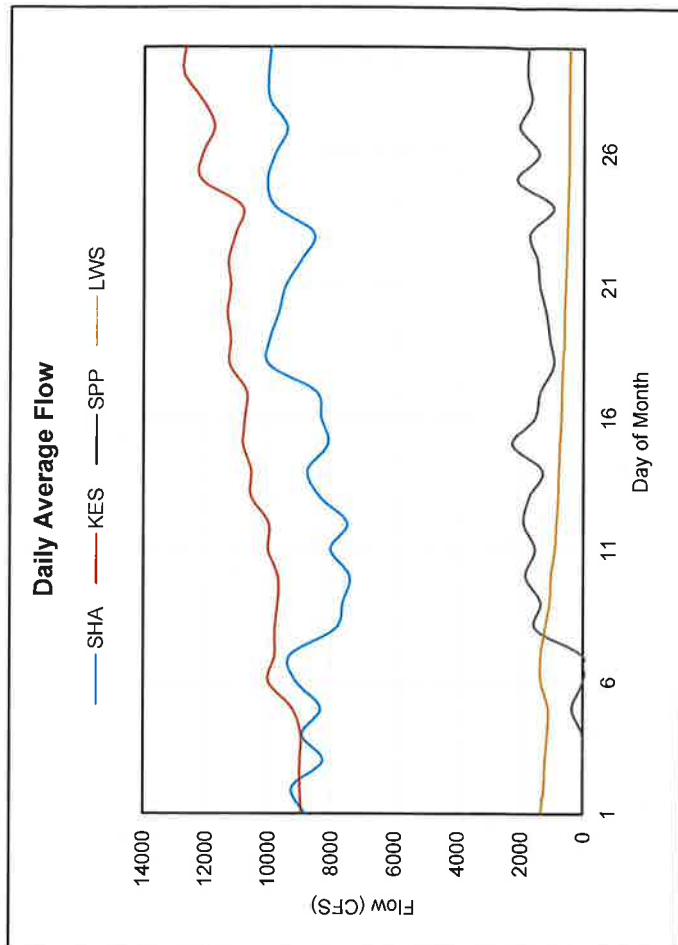
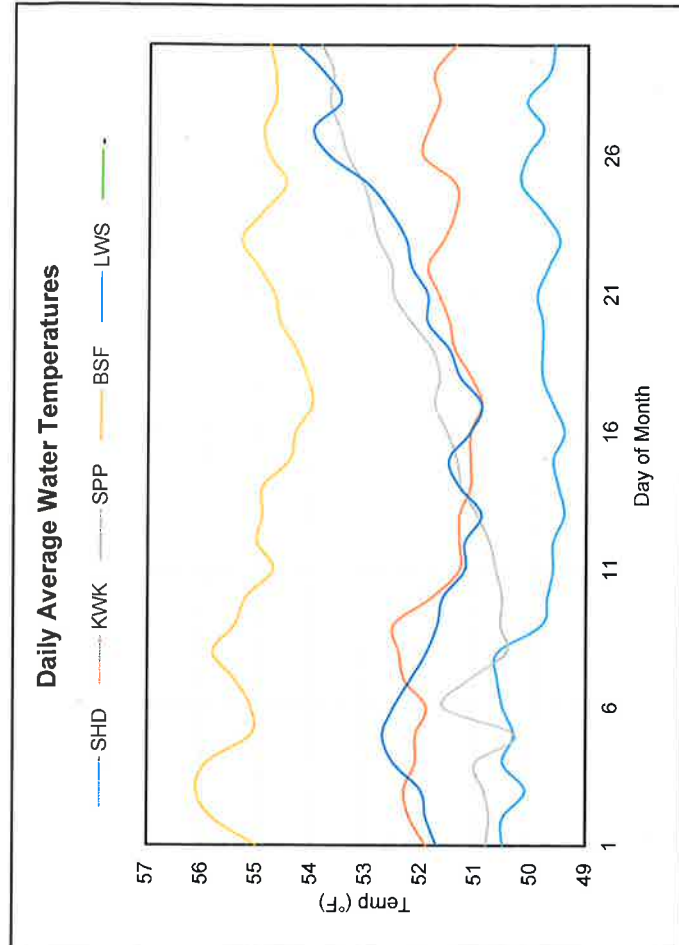
90-5 Required Water Monitoring Data

June 2018

Parameter	Daily Averages from Hourly Automated Observations										Flow (CFS)			
	Temp (°F)													
Site	2	3	4	5	9	9a	2a	3a	4	9a	SHA	KES	SPP	LWS
1	50.5	51.9	50.8	55.0	51.7	-	8819	8940	14	1352				
2	50.5	52.2	50.7	55.8	51.9	-	9250	8983	14	1237				
3	50.1	52.3	50.8	56.1	52.0		8262	8981	14	1205				
4	50.5	52.1	51.0	55.9	52.5		8922	8954	14	1134				
5	50.3	52.1	50.3	55.1	52.7		8333	9239	345	1107				
6	50.5	51.9	51.6	55.1	52.5		9112	9990	14	1338				
7	50.6	52.3	51.1	55.4	52.2		9303	9789	18	1350				
8	50.6	52.4	50.4	55.8	51.9		7866	9791	1527	1212				
9	49.8	52.5	50.5	55.4	51.7		7624	9695	1355	1060				
10	49.7	51.8	50.5	55.2	51.6		7407	9690	1859	1027				
11	49.6	51.3	50.6	54.7	51.2		8014	10005	1549	899				
12	49.6	51.3	50.8	55.0	51.2		7484	9979	1916	854				
13	49.4	51.3	51.0	54.9	50.9		8360	10546	1749	794				
14	49.5	51.1	51.3	54.9	51.3		8744	10539	1308	780				
15	49.6	51.1	51.4	54.4	51.5		8096	10802	2268	745				
16	49.4	51.1	51.5	54.3	51.1		8309	10743	1556	693				
17	49.6	50.9	51.8	54.0	50.9		8473	10696	1381	685				
18	49.8	51.1	51.7	54.1	51.3		9975	11233	956	654				
19	49.8	51.4	51.8	54.3	51.5		9952	11205	1077	609				
20	49.8	51.5	52.2	54.6	51.9		9662	11305	1187	602				
21	49.9	51.7	52.5	54.7	51.9		9447	11205	1396	573				
22	49.7	51.9	52.6	55.0	52.2		8934	11276	1481	541				
23	49.5	51.6	52.8	55.3	52.3		8539	11041	1725	526				
24	49.8	51.4	52.9	54.9	52.6		9782	10845	964	500				
25	50.2	51.4	53.1	54.5	53.0		10029	12156	2129	486				
26	50.1	52.0	53.4	54.8	53.7		9791	12113	1430	473				
27	49.8	51.9	53.5	54.9	54.0		9394	11735	2057	471				
28	50.1	51.7	53.7	54.7	53.5		9941	12125	1683	470				
29	49.7	51.8	53.6	54.7	53.8		9996	12713	1824	461				
30	49.6	51.4	53.9	54.8	54.3		9915	12658	1783	456				
-														
							Max	10029	12713	2268	1352			
							Mean	8925	10632	1220	810			
							Min	7407	8940	14	456			
							Volume (TAF)	531	633	73	48			

Notes

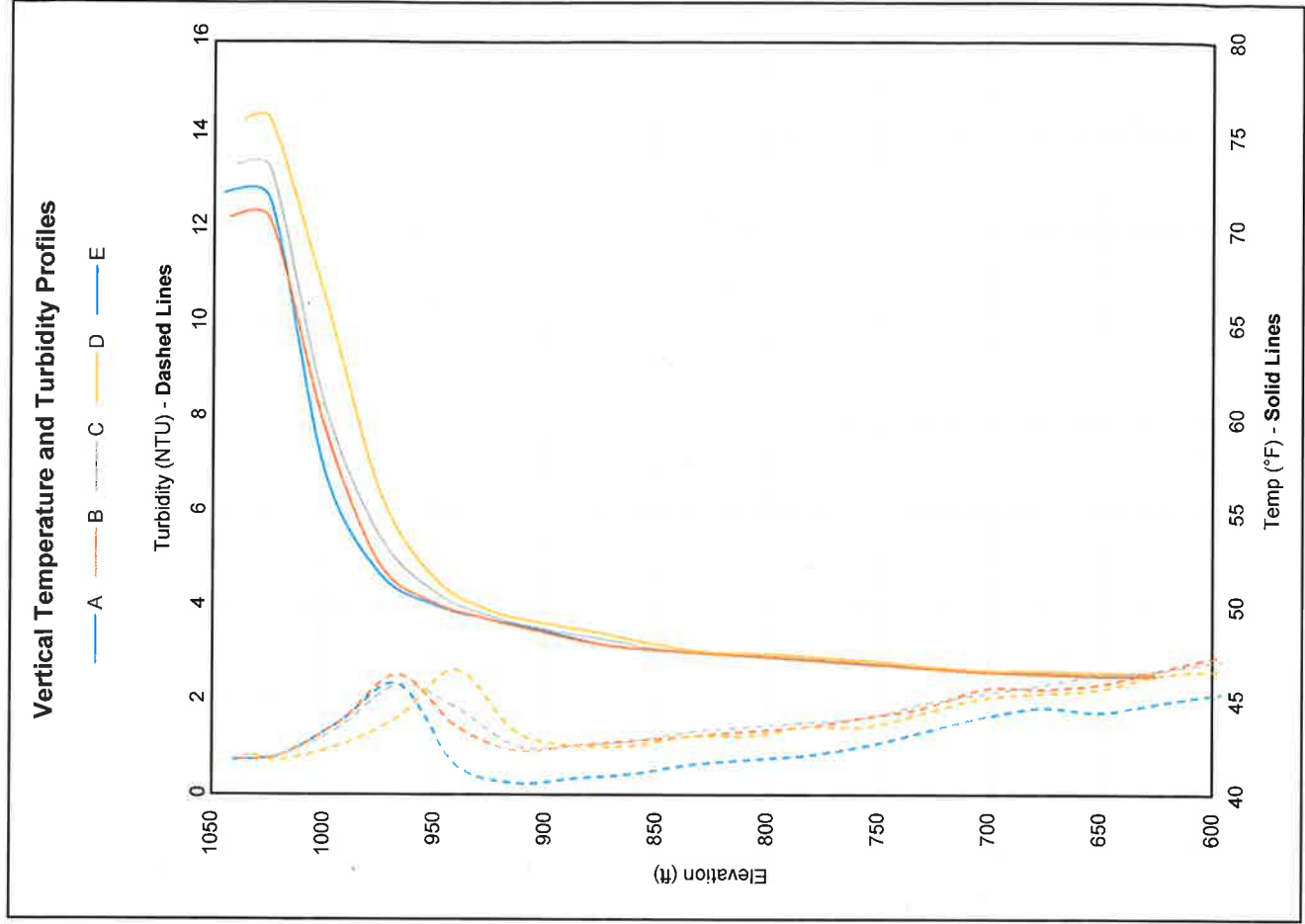
¹ Current temperature control point



90-5 Required Water Monitoring Data (Continued)

June 2018

Vertical Profiles Taken at Site 1 (Shasta Lake at Dam Inlets)												
Profile	A		B		C		D		E			
Day of Month	5		12		19		26					
Lake Elev.	1045.17		1042.81		1040.22		1036.61					
Parameter	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb
L.E.	72.0	0.7	70.7	0.7	73.5	0.8	75.9	0.8	75.9	0.8	-	-
1050	-	-	-	-	-	-	-	-	-	-	-	-
1025	71.7	0.8	70.6	0.8	73.3	0.8	75.9	0.7	-	-	-	-
1000	57.3	1.5	59.6	1.5	60.8	1.4	66.5	1.0	-	-	-	-
975	51.8	2.3	52.3	2.5	53.8	2.3	56.2	1.6	-	-	-	-
950	50.1	0.6	50.2	1.4	50.8	1.8	51.5	2.6	-	-	-	-
925	49.3	0.2	49.3	0.9	49.5	1.0	49.8	1.3	-	-	-	-
900	48.7	0.3	48.6	1.0	48.8	1.0	49.1	1.0	-	-	-	-
875	48.0	0.4	48.0	1.1	48.3	1.1	48.6	1.0	-	-	-	-
850	47.7	0.6	47.7	1.2	47.8	1.3	48.0	1.2	-	-	-	-
825	47.6	0.7	47.5	1.3	47.6	1.4	47.6	1.2	-	-	-	-
800	47.4	0.8	47.3	1.4	47.4	1.5	47.5	1.4	-	-	-	-
775	47.2	1.0	47.1	1.6	47.2	1.6	47.3	1.4	-	-	-	-
750	46.9	1.3	46.9	1.8	47.0	1.9	47.1	1.7	-	-	-	-
725	46.7	1.6	46.7	2.2	46.8	2.1	46.8	2.0	-	-	-	-
700	46.5	1.8	46.5	2.2	46.6	2.3	46.6	2.1	-	-	-	-
675	46.5	1.7	46.4	2.3	46.5	2.5	46.6	2.2	-	-	-	-
650	46.4	1.9	46.3	2.6	46.4	2.6	46.5	2.5	-	-	-	-
625	46.4	2.1	46.3	2.9	46.4	2.8	46.5	2.6	-	-	-	-



Monthly Manual Observations												
Parameter	Temp (°F)						Turb (NTU)					
	6	7	8	2	3	4	5	6	7	8		
Site	DLT	MSS	PMN	SHD	KWK	SPP ¹	RDB	DLT	MSS	PMN		
Value	65.3	60.0	64.4	1.2	1.1	-	7.0	1.0	0.5	3.0		
Day of Month	13	20	19	22	21	-	13	13	20	19		

Monthly Manual** & Bi-Monthly Automated Observations												
Parameter	DO (mg/L)											
	2			3			5			RDB		
Site	SHD			KWK			RDB			RDB		
Value	10.4	10.5	10.7**	12.2	11.5	12.1**	11.3	11.7**	11.9			
Day of Month	2	12	22	1	11	21	3	13	23			
Time	9:00	9:00	8:45	9:00	9:00	10:10	9:00	9:51	9:00			

Notes ¹ SPP not visited this month

90-5 Required Water Monitoring Details

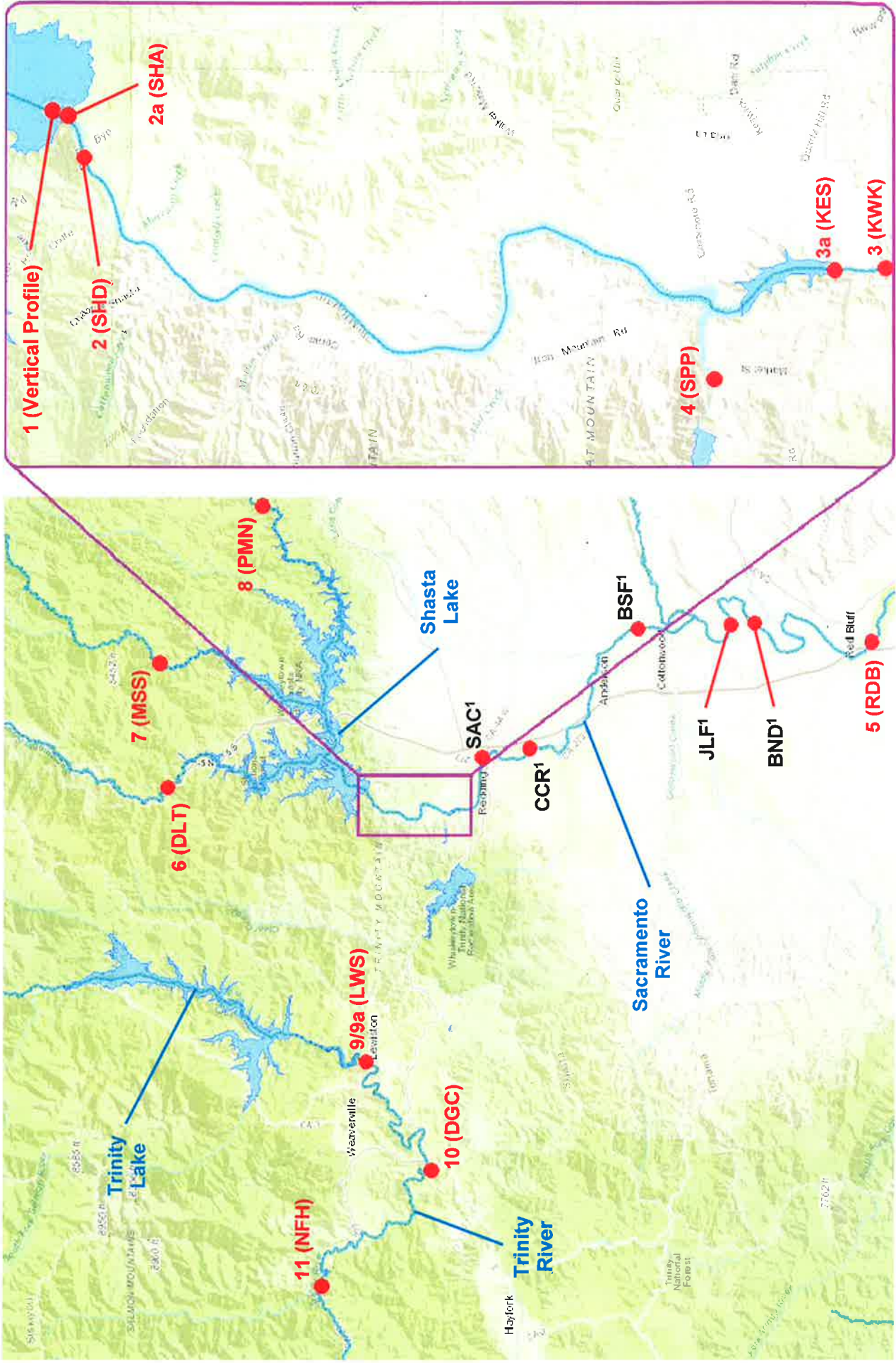
Site	CDEC ID	Description
1	-	Shasta Dam inlets or lake adjacent to the dam face. ¹
2	SHD	Shasta Dam release immediately downstream from the power plant.
2a	SHA	Shasta Dam release.
3	KWK	Sacramento River immediately downstream from Keswick Dam.
3a	KES	Keswick Dam release.
4	SPP	Spring Creek Power Plant release.
5	RDB	Sacramento River downstream from Red Bluff Diversion Dam.
6	DLT ²	Sacramento River (above Shasta Dam).
7	MSS	McCloud River (above Shasta Dam).
8	PMN	Pit River (above Shasta Dam).
9	LWS	Trinity River immediately downstream from Lewiston Dam.
9a	LWS	Lewiston Dam release.
10	DGC	Trinity River at the Douglas City Bridge.
11	NFH	Trinity River at the confluence of the North Fork Trinity River.

	Temperature			Turbidity ³			Dissolved Oxygen ⁴			Flow		
	Frequency	Period	Period	Frequency	Period	Period	Frequency	Period	Period	Frequency	Period	Period
1	Every 2 weeks	5/1 to 11/30	All Year	Monthly	All Year	All Year	-	-	-	-	-	-
2	Average Daily	All Year	All Year	Monthly	All Year	All Year	Every 2 weeks	5/1 to 9/30	-	-	-	-
2a	-	-	-	-	-	-	-	-	-	Average Daily	-	All Year
3	Average Daily	All Year	-	-	-	-	Every 2 weeks	5/1 to 9/30	-	-	-	-
3a	-	-	All Year	Monthly	All Year	All Year	-	-	-	Average Daily	-	All Year
4	Average Daily	All Year	All Year	Monthly	All Year	All Year	-	-	-	Average Daily	-	All Year
5	Average Daily ⁵	All Year	All Year	Monthly	All Year	All Year	Every 2 weeks	5/1 to 9/30	-	-	-	-
6	Monthly	All Year	All Year	Monthly	All Year	All Year	-	-	-	-	-	-
7	Monthly	All Year	All Year	Monthly	All Year	All Year	-	-	-	-	-	-
8	Monthly	All Year	All Year	Monthly	All Year	All Year	-	-	-	-	-	-
9	Average Daily	All Year	-	-	-	-	-	-	-	-	-	-
9a	-	-	-	-	-	-	-	-	-	-	-	-
10	Average Daily	9/15 to 10/1	-	-	-	-	-	-	-	Average Daily	-	All Year
11	Average Daily	10/1 to 12/31	-	-	-	-	-	-	-	-	-	-

Notes

- Take sufficient collection points to characterize the vertical profile for temperature and turbidity.
- Site 6 (DLT) is not accessible year round making it unsuitable for real-time Dissolved Oxygen monitoring do to calibration requirements.
- From 5/1 to 9/30 if turbidity at site 2 is greater than or equal to 10 ntu's then frequency must be weekly.
- To be taken before 10:00 am.
- If the temperature control point is moved upstream from site 5, then temperature monitoring shall continue at the new site.

90-5 Required Water Monitoring Site Map



Notes

¹ SAC, CCR, BSF, JLF and BND are alternative upstream temperature control points to RDB