



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

MAY 09 2019

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 April 2019, 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 in the Sacramento River with the exception of April 24 (56.8°F), April 25 (57.4°F), April 26 (57.6°F), April 27 (57.2°F), April 28 (57.2°F), April 29 (57.0°F), and April 30 (56.9°F). Temperature excursions occurred during a coincident period of record air temperature and low Keswick release to accommodate instream Sacramento River activities including: flashboard installation, gravel injection/habitat restoration, and flood damage repair.

Reclamation provided a temperature performance update to the Sacramento River Temperature Task Group meeting held on April 25, 2019. It was suggested by SRTTG team members that current fishery risk may be low due to low numbers of carcass collection/potential spawning. In the interim, Reclamation committed to consider Temperature Control Device gate adjustments if the warmer temperatures persisted and fishery risk increased. Therefore, no actions were taken at the end of April to avoid temperature excursions and bring temperature back into compliance.

During the month, the observed average monthly water temperature was 52.7°F at Balls Ferry.

Enclosed is the monitoring report for April 2019, 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		

ID #	Station	Temperature*	Turbidity*	Dissolved Oxygen*	Flow*
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
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: Ms. Alessia Siclari Melchor
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
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Ms. Diane Riddle
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Mr. Vadim Demchuk
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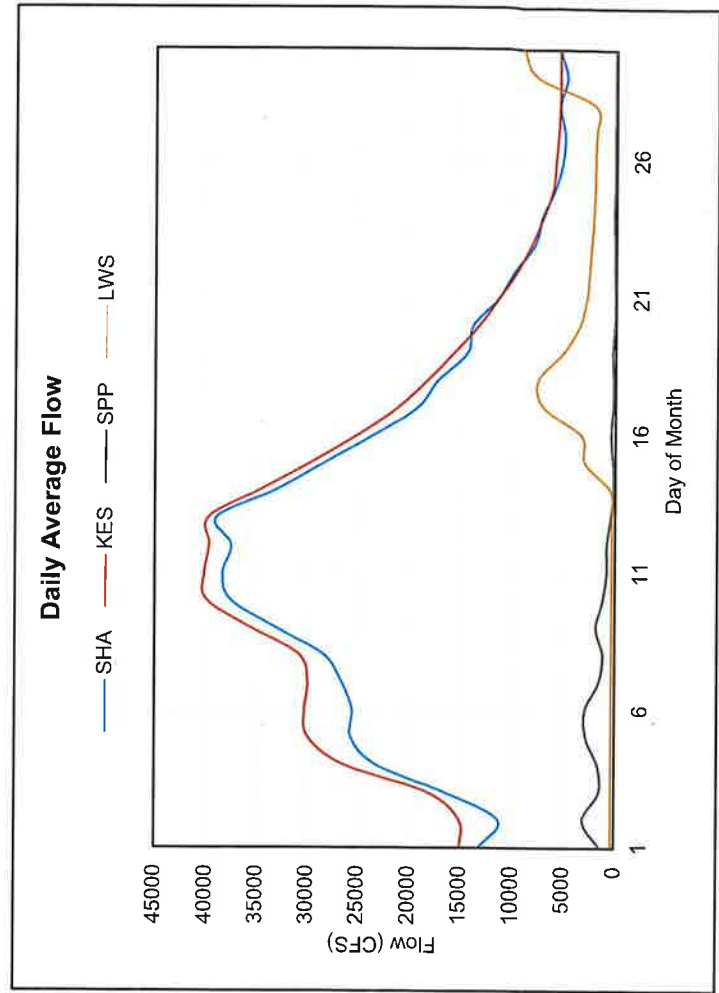
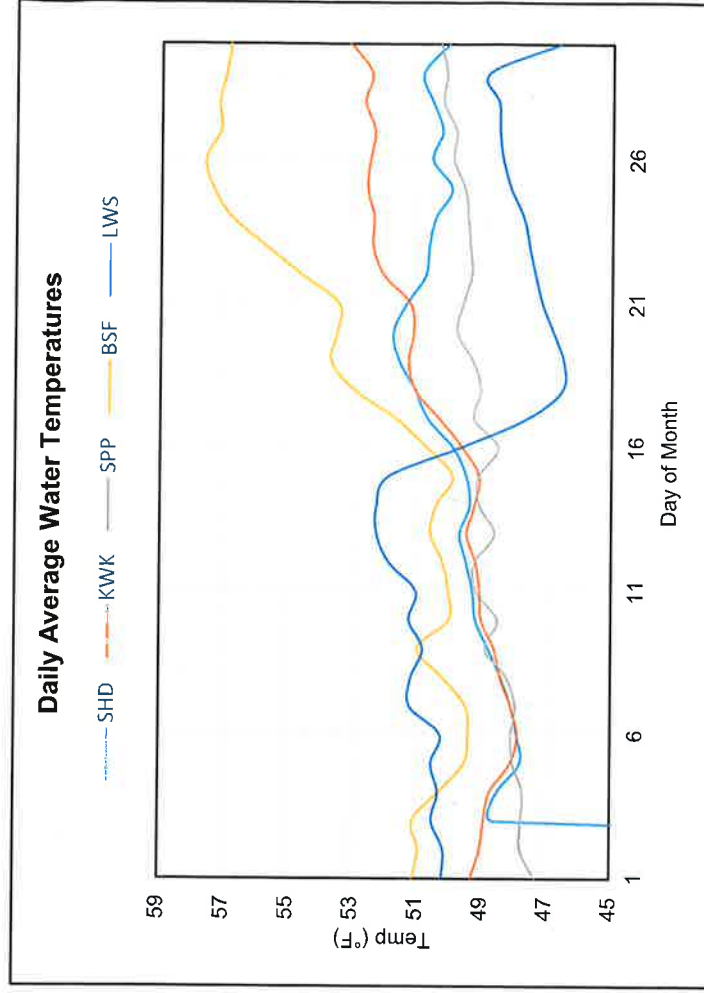
90-5 Required Water Monitoring Data

April 2019

Daily Averages from Hourly Automated Observations												
Parameter	Temp (°F)										Flow (CFS)	
	2	3	4	5	9	-	2a	3a	4	9a		
Site	SHD	KWK	SPP	BSF ¹	LWS	-	SHA	KES	SPP	LWS		
1	-	49.3	47.3	51.1	50.2		13113	14931	1367	311		
2	-	49.0	47.8	50.9	50.2		11203	14957	3054	311		
3	48.6	48.9	47.8	51.1	50.5		16408	18162	1472	307		
4	48.5	48.7	47.7	50.3	50.3		23154	26364	1613	310		
5	47.8	48.1	48.0	49.5	50.5		25633	29893	2735	309		
6	47.9	47.9	48.1	49.4	50.3		25482	30220	2880	309		
7	48.1	48.1	48.0	49.5	51.2		26526	29903	1553	308		
8	48.4	48.4	48.2	50.2	51.2		28304	30762	1134	308		
9	48.8	48.6	48.9	51.0	50.8		33137	35669	1794	308		
10	49.2	49.0	48.5	50.0	51.3		37565	39956	1166	308		
11	49.3	49.1	49.2	50.1	51.1		38324	40139	781	307		
12	49.5	49.2	49.2	50.2	51.9		37491	39664	797	307		
13	49.7	49.5	48.6	50.6	52.3		38964	39749	425	307		
14	49.4	49.3	49.1	50.4	52.3		33087	34602	152	435		
15	49.5	49.1	49.1	49.9	51.9		28278	29602	227	2935		
16	49.9	49.6	48.5	50.7	49.7		23438	24956	427	3270		
17	50.7	50.3	49.3	51.7	47.7		19134	21027	233	6980		
18	51.1	51.1	49.1	53.0	46.6		17113	18127	184	7561		
19	51.6	51.3	49.3	53.7	46.5		14251	15494	302	5082		
20	51.8	51.2	49.8	53.5	46.8		13715	13105	106	3498		
21	51.4	51.3	49.6	53.5	47.2		11197	11159	77	2806		
22	50.8	52.1	49.4	54.6	47.4		9765	9561	128	2572		
23	50.7	52.4	49.4	55.8	47.6		7881	8202	147	2357		
24	50.5	52.4	49.5	56.8	47.8		7155	7019	236	2167		
25	50.0	52.6	49.6	57.4	48.2		5884	6107	146	2052		
26	50.6	52.5	49.9	57.6	48.4		5163	5873	135	2027		
27	50.3	52.4	49.9	57.2	48.5		4995	5612	123	1939		
28	50.6	52.7	50.3	57.2	48.6		5465	5488	88	2112		
29	50.9	52.5	50.2	57.0	48.9		4766	5452	106	7755		
30	50.1	53.2	50.4	56.9	46.7		5458	5463	85	9002		
-												
							Max	38964	40139	3054	9002	
							Mean	19068	20574	789	2285	
							Min	4766	5452	77	307	
							Volume (TAF)	1135	1224	47	136	

Notes

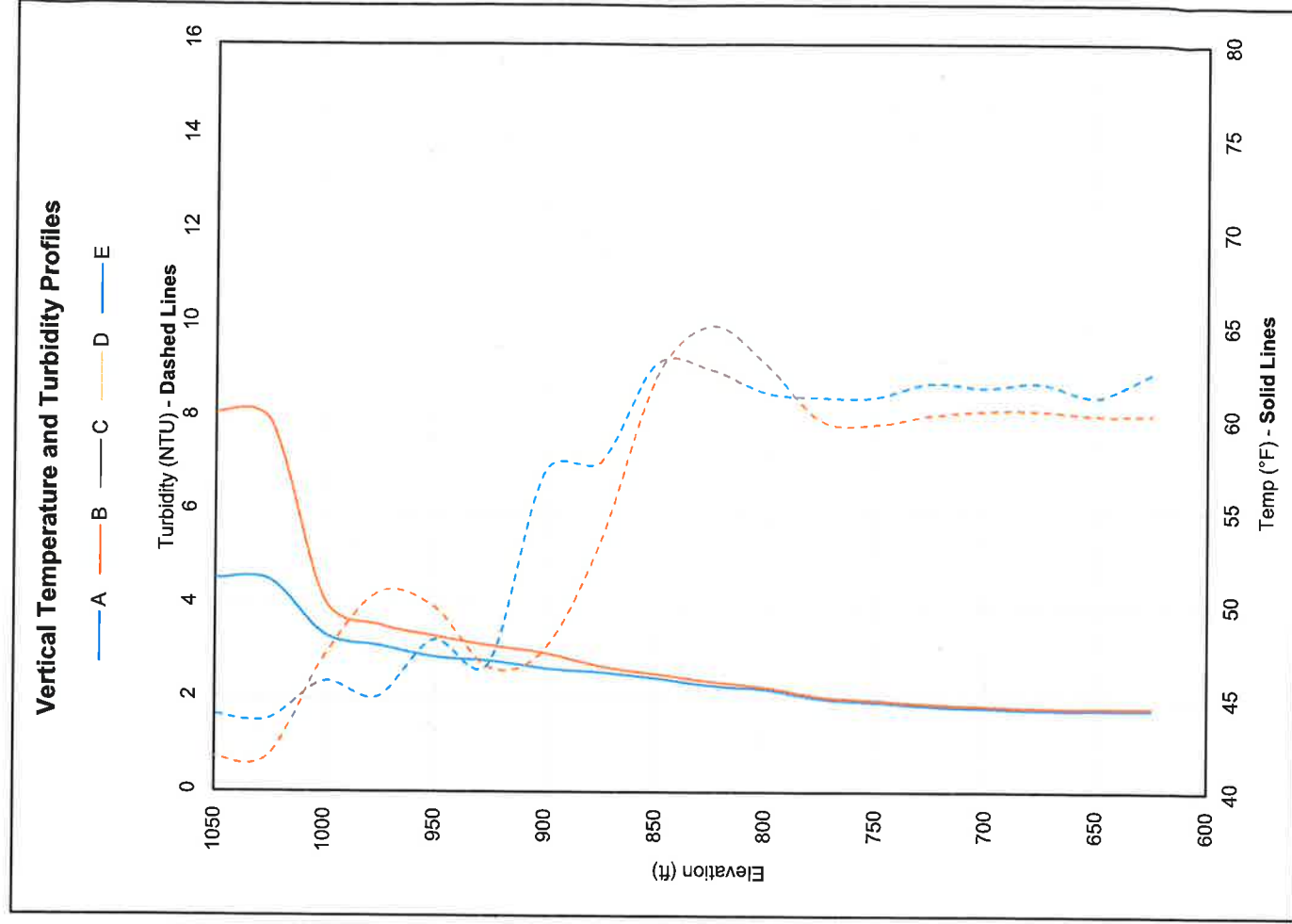
¹ Current temperature control point



90-5 Required Water Monitoring Data (Continued)

April 2019

Vertical Profiles Taken at Site 1 (Shasta Lake at Dam Inlets)												
Profile	A		B		C		D		E			
Day of Month	9		23									
Lake Elev.	1053.58		1051.19									
Parameter	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb
L.E.	51.8	1.5	60.3	0.7	-	-	-	-	-	-	-	-
1050	51.4	1.6	60.3	0.7	-	-	-	-	-	-	-	-
1025	51.3	1.5	59.8	0.7	-	-	-	-	-	-	-	-
1000	48.4	2.3	50.2	2.8	-	-	-	-	-	-	-	-
975	47.8	2.0	48.9	4.2	-	-	-	-	-	-	-	-
950	47.2	3.2	48.3	3.9	-	-	-	-	-	-	-	-
925	47.0	2.7	47.8	2.6	-	-	-	-	-	-	-	-
900	46.6	6.8	47.4	3.0	-	-	-	-	-	-	-	-
875	46.4	7.0	46.7	5.3	-	-	-	-	-	-	-	-
850	46.1	9.1	46.3	8.8	-	-	-	-	-	-	-	-
825	45.7	9.0	45.9	9.9	-	-	-	-	-	-	-	-
800	45.5	8.5	45.6	9.1	-	-	-	-	-	-	-	-
775	45.0	8.4	45.1	7.9	-	-	-	-	-	-	-	-
750	44.8	8.4	44.9	7.8	-	-	-	-	-	-	-	-
725	44.6	8.7	44.7	8.0	-	-	-	-	-	-	-	-
700	44.5	8.6	44.6	8.1	-	-	-	-	-	-	-	-
675	44.4	8.7	44.5	8.1	-	-	-	-	-	-	-	-
650	44.4	8.4	44.5	8.0	-	-	-	-	-	-	-	-
625	44.4	8.9	44.5	8.0	-	-	-	-	-	-	-	-



Monthly Manual Observations																				
Parameter	Temp (°F)						Turb (NTU)													
	6	7	8	2	3	4	5	6	7	8	2	3	4	5	6	7	8			
Site	DLT	MSS	PMN	SHD	KWK	SPP	RDB	DLT	MSS	PMN	DLT	MSS	PMN	DLT	MSS	PMN	DLT	MSS	PMN	
Value	47.1	48.7	50.1	4.3	4.3	12.8	9.6	2.5	3.3	18.7	4.3	4.3	12.8	9.6	2.5	3.3	18.7	4.3	4.3	12.8
Day of Month	4	18	12	5	25	5	16	4	18	12	5	16	4	18	4	18	12	5	16	4

Notes

90-5 Required Water Monitoring Details

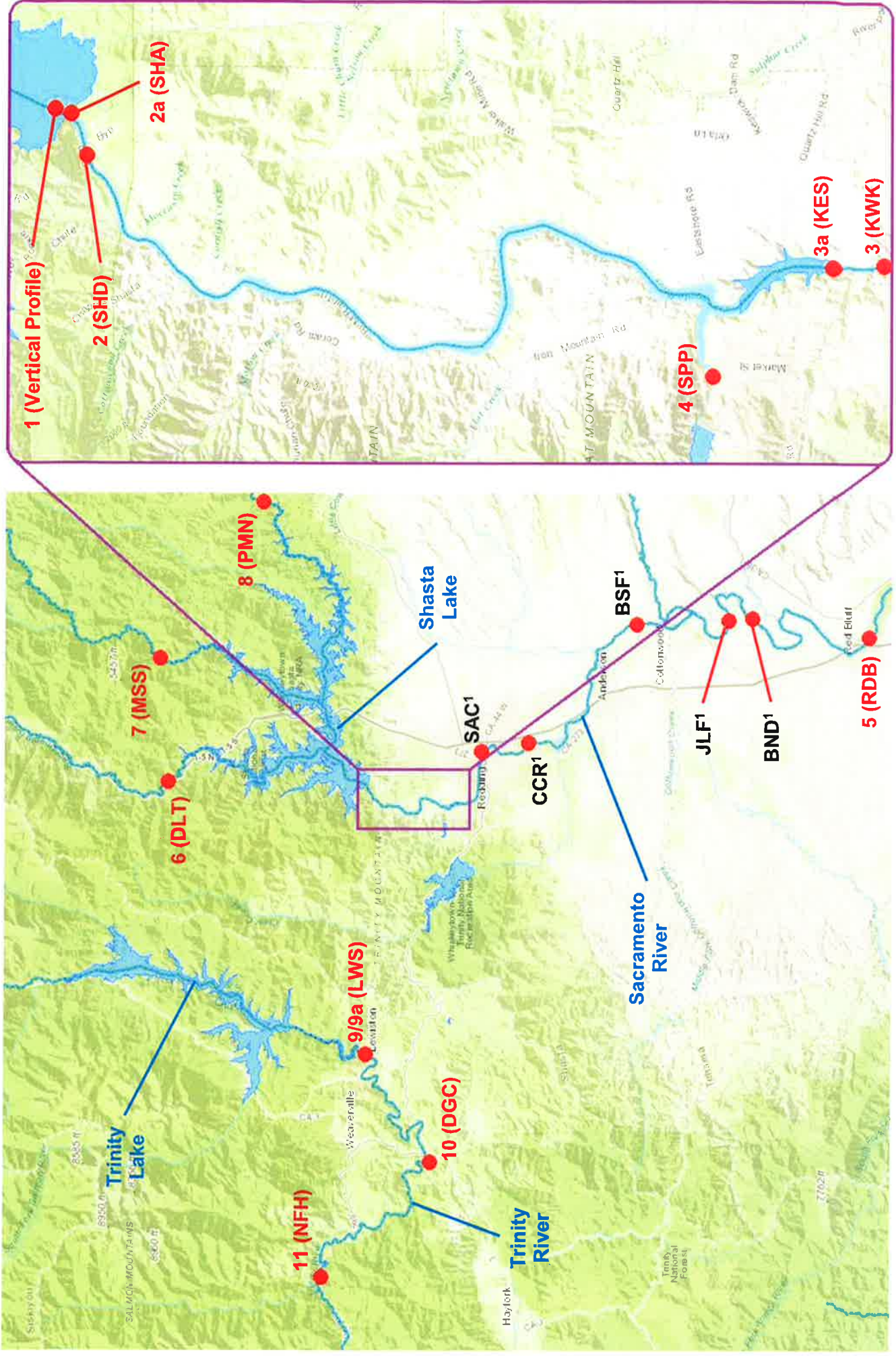
Site	CDEC ID	Description
1	-	Shasta Dam inlets or lake adjacent to the dam face. ¹
2	SHD	Shasta Dam release immediately downstream from the power plant.
2a	SHA	Shasta Dam release.
3	KWK	Sacramento River immediately downstream from Keswick Dam.
3a	KES	Keswick Dam release.
4	SPP	Spring Creek Power Plant 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