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

AUG 13 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 July 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. During the month, the observed average monthly water temperature was 54.4°F at Balls Ferry.

Enclosed is the monitoring report for July 2018, under Order No. 90-5. Some directly measured information is not available due to the Carr Fire near Shasta and Keswick Dams. Reclamation is working towards recovering communication systems as quickly as possible. 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	X			

ID #	Station	Temperature*	Turbidity*	Dissolved Oxygen*	Flow*
	Lewiston Dam				
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

Elizabeth Kiteck
Chief, Water Operations

Enclosures

cc: Ms. Alessia Siclari Melchor
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812

Mr. Vadim Demchuk
Division of Water Rights
State Water Resources Control Board
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Sacramento, CA 95812

Ms. Diane Riddle
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812
(w/encl)

90-5 Required Water Monitoring Data

July 2018

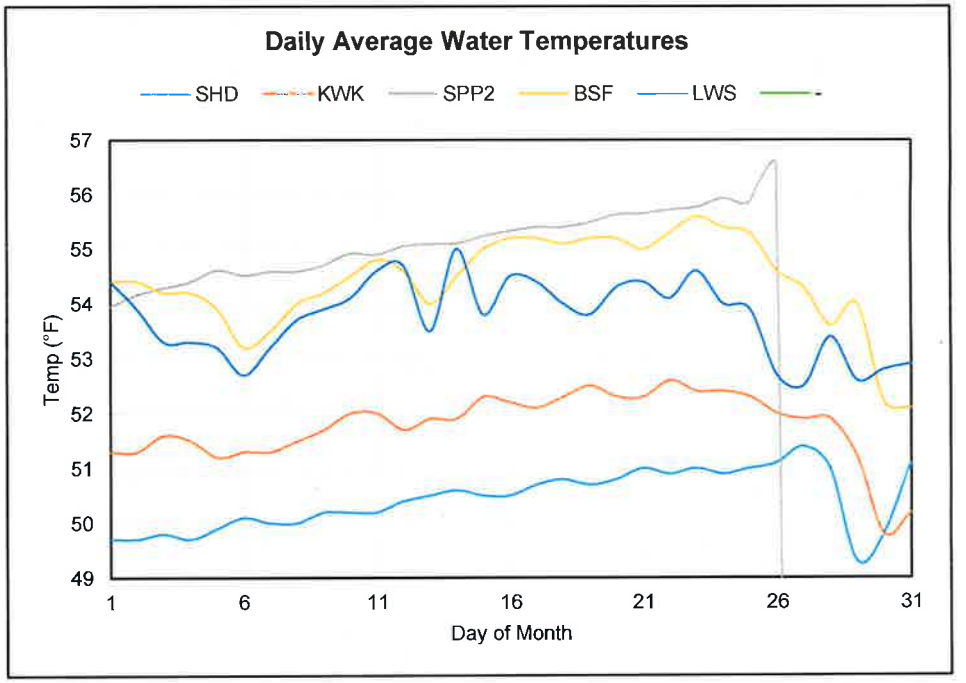
Daily Averages from Hourly Automated Observations

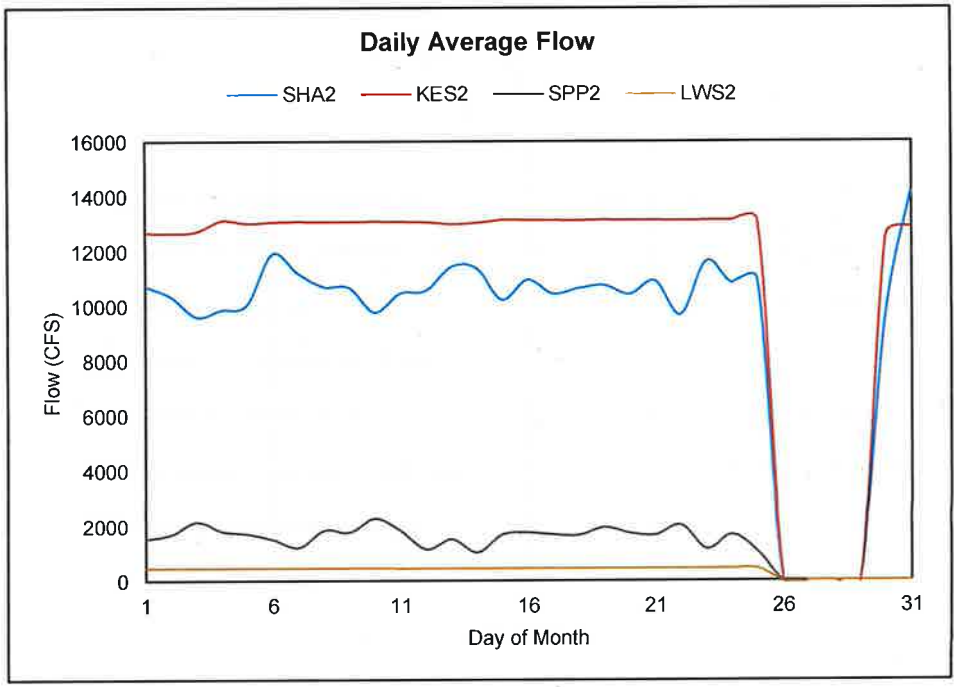
Day of Month	Temp (°F)						Flow (CFS)			
Parameter	2	3	4	5	9	-	2a	3a	4	9a
Site	SHD	KWK	SPP[2]	BSF[1]	LWS	-	SHA[2]	KES[2]	SPP[2]	LWS[2]
1	49.7	51.3	53.9	54.4	54.4		10741	12674	1526	458
2	49.7	51.3	54.2	54.4	53.9		10357	12667	1697	458
3	49.8	51.6	54.3	54.2	53.3		9606	12725	2160	457
4	49.7	51.5	54.4	54.2	53.3		9857	13129	1812	455
5	49.9	51.2	54.6	53.9	53.2		10042	13029	1715	454
6	50.1	51.3	54.5	53.2	52.7		11908	13077	1510	456
7	50.0	51.3	54.6	53.5	53.2		11196	13093	1213	457
8	50.0	51.5	54.6	54.0	53.7		10696	13089	1850	456
9	50.2	51.7	54.7	54.2	53.9		10666	13090	1774	457
10	50.2	52.0	54.9	54.5	54.1		9752	13092	2290	456
11	50.2	52.0	54.9	54.8	54.6		10448	13084	1818	452
12	50.4	51.7	55.1	54.6	54.7		10538	13064	1144	445
13	50.5	51.9	55.1	54.0	53.5		11418	12990	1516	446
14	50.6	51.9	55.1	54.5	55.0		11365	13037	1034	446
15	50.5	52.3	55.2	55.0	53.8		10204	13139	1694	447
16	50.5	52.2	55.3	55.2	54.5		10942	13137	1763	443
17	50.7	52.1	55.4	55.2	54.4		10423	13127	1689	444
18	50.8	52.3	55.4	55.1	54.0		10622	13125	1674	443
19	50.7	52.5	55.5	55.2	53.8		10729	13138	1954	441
20	50.8	52.3	55.6	55.2	54.3		10402	13128	1746	443
21	51.0	52.3	55.7	55.0	54.4		10897	13127	1675	443
22	50.9	52.6	55.7	55.3	54.1		9641	13116	2034	443
23	51.0	52.4	55.8	55.6	54.6		11613	13135	1153	442
24	50.9	52.4	55.9	55.4	54.0		10821	13132	1682	441
25	51.0	52.3	55.9	55.3	53.9		10959	13122	1062	440
26	51.1	52.0	56.5	54.6	52.7		-	-	-	-
27	51.4	51.9	-	54.3	52.5		-	-	-	-
28	51.0	51.9	-	53.6	53.4		-	-	-	-
29	49.3	51.2	-	54.0	52.6		-	-	-	-
30	49.8	49.8	-	52.2	52.8		9595	12550	-	-
31	51.1	50.2	-	52.1	52.9		14166	12872	-	-
						Max	14166	13139	2290	458
						Mean	10726	13025	1647	449
						Min	9595	12550	1034	440
						Volume (TAF)	574	698	82	22

Notes

[1] Current temperature control point

[2] Missing data due to Carr Fire





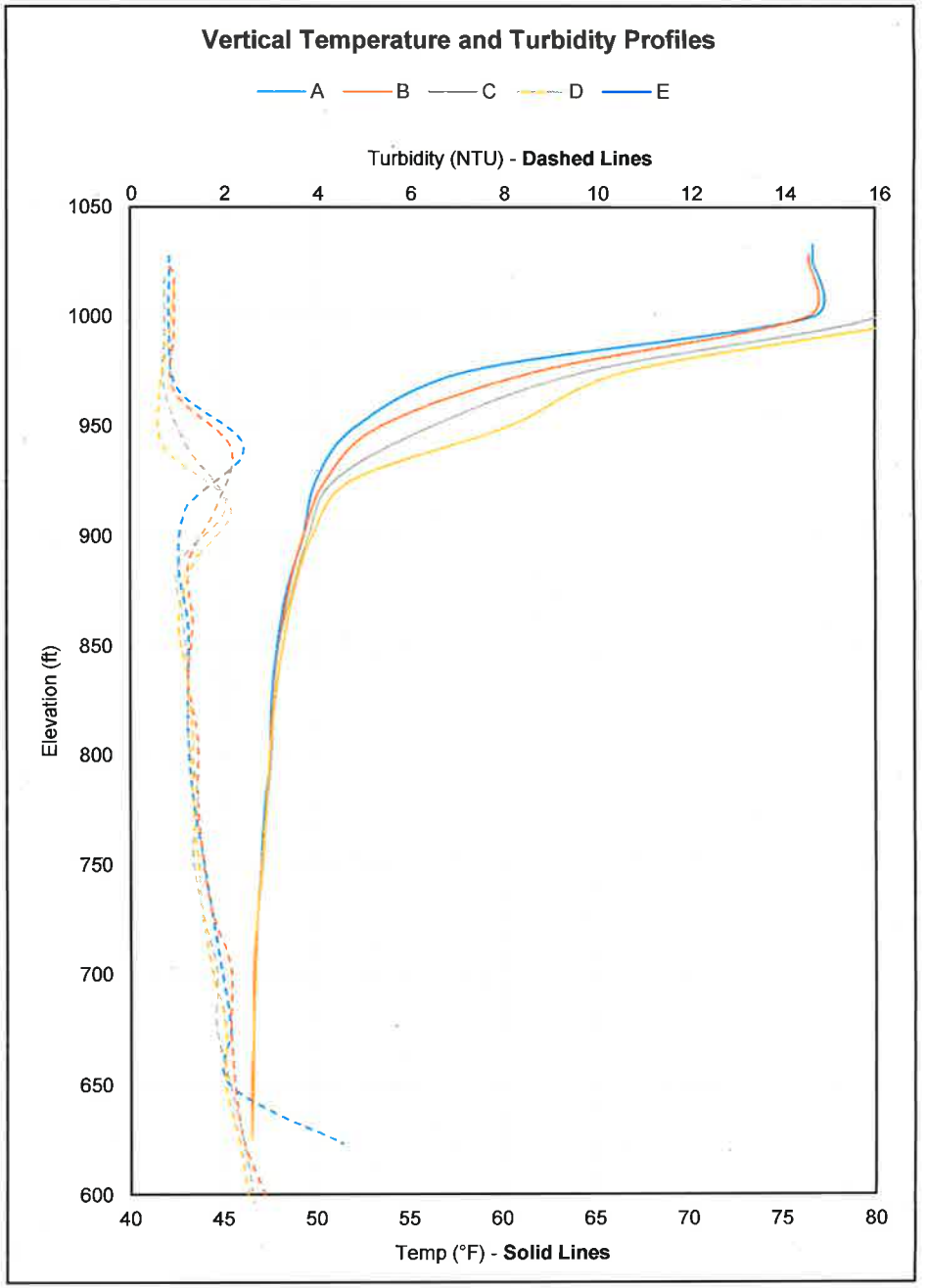
90-5 Required Water Monitoring Data (Continued)

July 2018

Vertical Profiles Taken at Site 1 (Shasta Lake at Dam Inlets)										
Profile		A		B		C		D		E	
Day of Month		3		10		17		24		-	
Lake Elev.		1032.99		1028.6		1024.07		1019.67		-	
Parameter		Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb
Elevation (ft)	L.E.	76.7	0.8	76.5	0.8	80.6	0.7	83.0	0.9	-	-
	1050	-	-	-	-	-	-	-	-	-	-
	1025	76.7	0.8	76.5	0.9	-	-	-	-	-	-
	1000	76.7	0.8	76.4	0.9	80.2	0.7	82.8	0.8	-	-
	975	58.3	1.0	62.0	0.9	64.7	0.7	66.8	0.6	-	-
	950	52.2	2.4	53.5	2.1	56.3	1.2	60.4	0.7	-	-
	925	50.0	1.2	50.5	1.8	51.0	2.0	51.9	2.1	-	-
	900	49.3	1.0	49.3	1.2	49.6	1.0	49.8	1.3	-	-
	875	48.4	1.2	48.5	1.3	48.7	1.1	48.8	1.0	-	-
	850	47.9	1.2	48.0	1.2	48.0	1.2	48.2	1.2	-	-
	825	47.6	1.2	47.7	1.4	47.7	1.2	47.8	1.3	-	-
	800	47.5	1.3	47.5	1.4	47.6	1.4	47.5	1.3	-	-
	775	47.2	1.5	47.3	1.5	47.3	1.3	47.3	1.4	-	-
	750	47.0	1.7	47.1	1.7	47.0	1.5	47.1	1.5	-	-
	725	46.8	1.9	46.8	2.1	46.8	1.8	46.8	1.7	-	-
	700	46.6	2.1	46.6	2.1	46.7	1.8	46.7	2.0	-	-
	675	46.6	2.1	46.6	2.2	46.6	2.1	46.6	2.0	-	-
	650	46.5	4.5	46.5	2.4	46.6	2.4	46.6	2.3	-	-
	625	-	-	46.5	2.9	46.5	2.6	46.5	2.5	-	-

Monthly Manual Observations										
Parameter	Temp (°F)			Turb (NTU)						
Site	6	7	8	2	3	4	5	6	7	8
	DLT	MSS	PMN	SHD[1]	KWK	SPP	RDB	DLT	MSS	PMN
Value	66.1	63.2	67.5	-	51.9	1.7	1.9	1.0	0.5	1.7
Day of Month	5	19	18	-	16	5	10	5	19	18

Monthly Manual** & Bi-Monthly Automated Observations									
Parameter	DO (mg/L)								
Site	2			3			5		
	SHD[1]			KWK			RDB		
Value	10.7	10.6	10.5	11.9	10.8**	11.6	12.5**	11.3	10.2
Day of Month	5	15	25	6	16	26	10	20	30
Time	9:00	9:00	9:00	9:00	9:34	9:00	12:50	9:00	9:00



Notes [1] SHD not visited this month due to Carr Fire

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	Frequency	Period	Frequency	Period	Frequency	Period
1	Every 2 weeks	5/1 to 11/30	Monthly	All Year	-	-	-	-
2	Average Daily	All Year	Monthly	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	-	-	Monthly	All Year	-	-	Average Daily	All Year
4	Average Daily	All Year	Monthly	All Year	-	-	Average Daily	All Year
5	Average Daily[5]	All Year	Monthly	All Year	Every 2 weeks	5/1 to 9/30	-	-
6	Monthly	All Year	Monthly	All Year	-	-	-	-
7	Monthly	All Year	Monthly	All Year	-	-	-	-
8	Monthly	All Year	Monthly	All Year	-	-	-	-
9	Average Daily	All Year	-	-	-	-	-	-
9a	-	-	-	-	-	-	Average Daily	All Year
10	Average Daily	9/15 to 10/1	-	-	-	-	-	-
11	Average Daily	10/1 to 12/31	-	-	-	-	-	-

Notes

[1] Take sufficient collection points to characterize the vertical profile for temperature and turbidity.

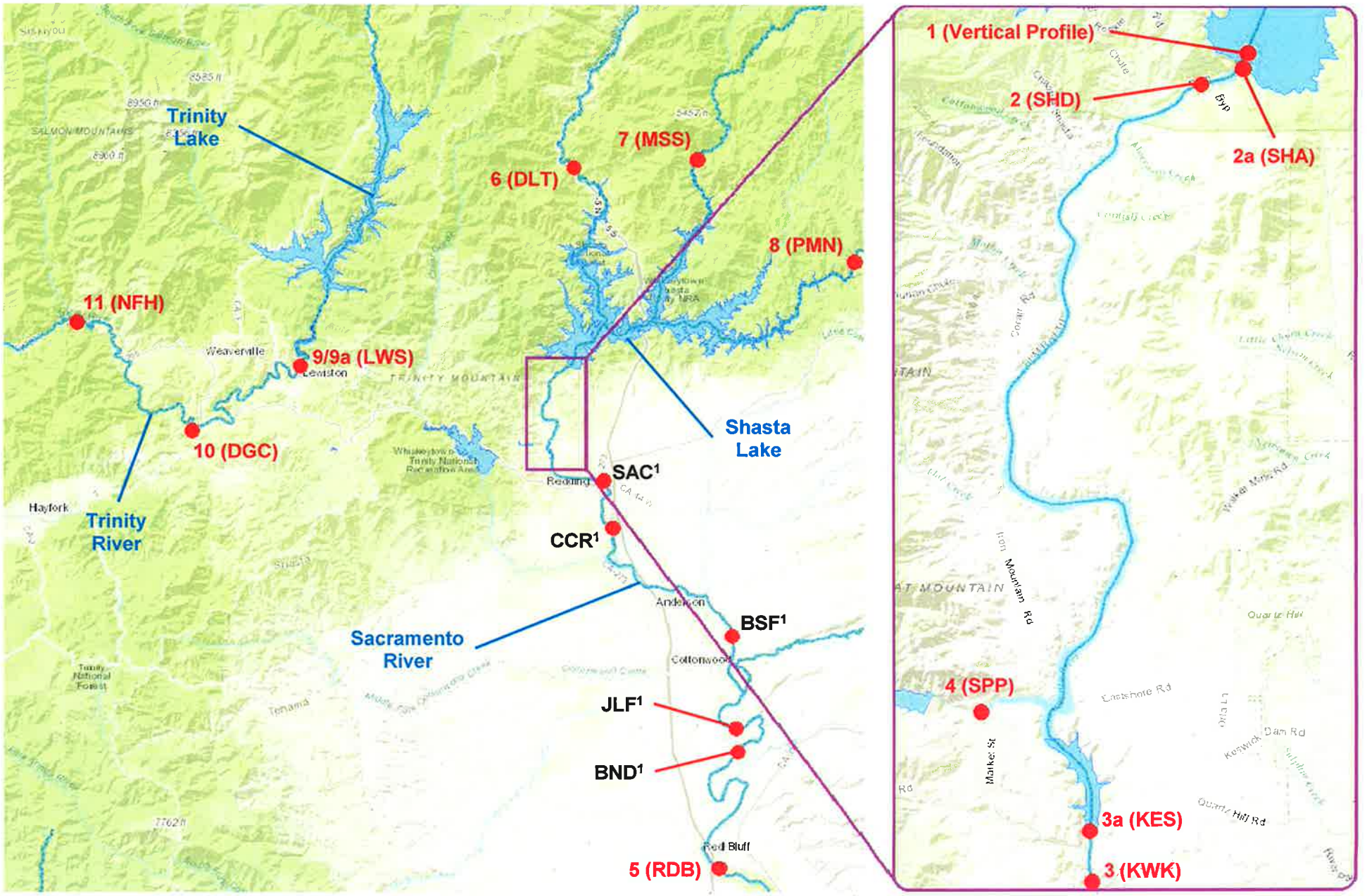
[2] Site 6 (DLT) is not accessible year round making it unsuitable for real-time Dissolved Oxygen monitoring do to calibration requirements.

[3] 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.

[4] To be taken before 10:00 am.

[5] 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