



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
2.2.4.21

MAR 08 2019

VIA ELECTRONIC MAIL ONLY

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 February 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 on the Sacramento River. During the month, the observed average monthly water temperature was 47.0°F at Balls Ferry.

Enclosed is the monitoring report for February 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		
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			

ID #	Station	Temperature*	Turbidity*	Dissolved Oxygen*	Flow*
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 rfield@usbr.gov or 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
Sacramento, CA 95812

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

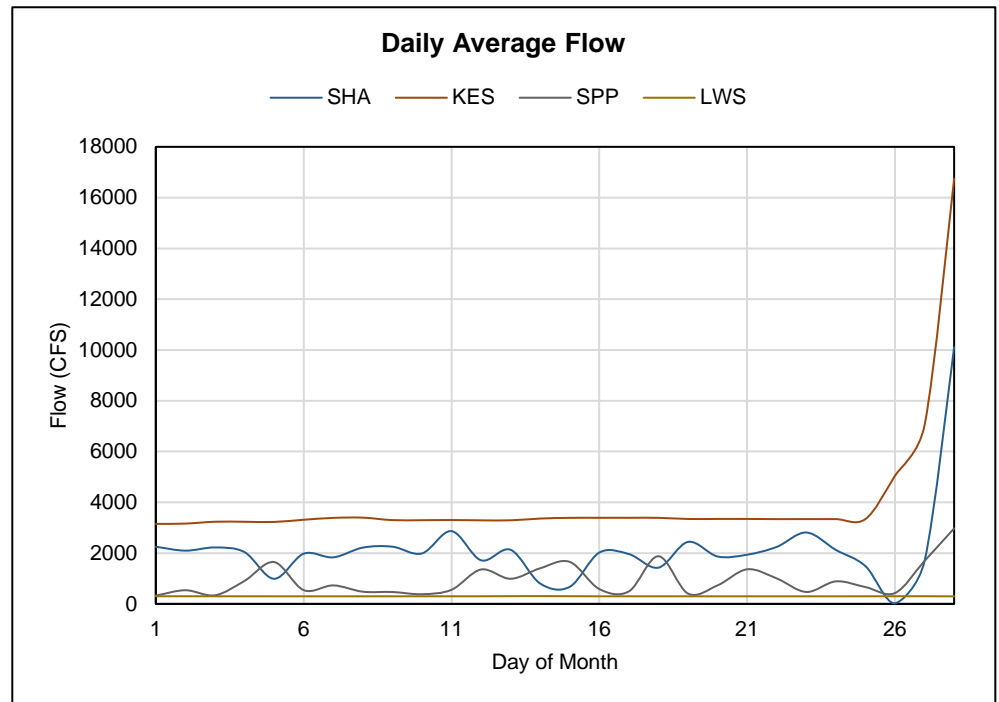
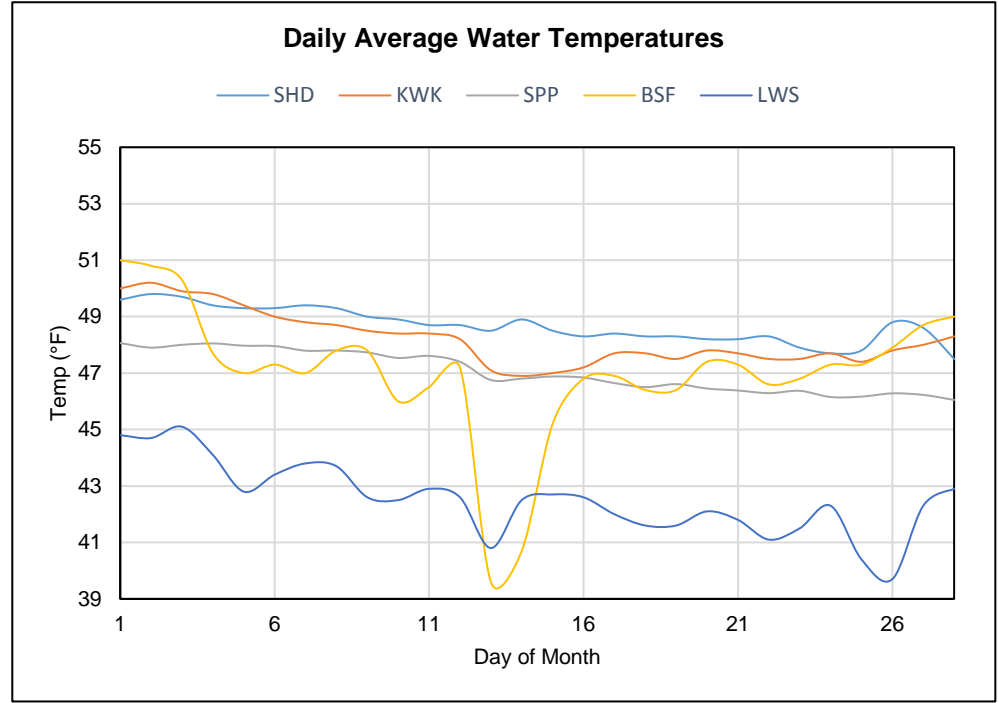
90-5 Required Water Monitoring Data

February 2019

Daily Averages from Hourly Automated Observations										
Parameter	Temp (°F)					Flow (CFS)				
Site	2	3	4	5	9	-	2a	3a	4	9a
	SHD	KWK	SPP	BSF ¹	LWS	-	SHA	KES	SPP	LWS
1	49.6	50.0	48.1	51.0	44.8		2251	3151	327	300
2	49.8	50.2	47.9	50.8	44.7		2097	3163	538	301
3	49.7	49.9	48.0	50.3	45.1		2223	3236	340	300
4	49.4	49.8	48.1	47.7	44.1		2039	3235	906	300
5	49.3	49.4	48.0	47.0	42.8		989	3228	1647	299
6	49.3	49.0	48.0	47.3	43.4		1978	3314	542	299
7	49.4	48.8	47.8	47.0	43.8		1833	3388	729	299
8	49.3	48.7	47.8	47.8	43.7		2217	3397	481	299
9	49.0	48.5	47.7	47.8	42.6		2254	3300	469	299
10	48.9	48.4	47.5	46.0	42.5		1987	3296	382	300
11	48.7	48.4	47.6	46.5	42.9		2866	3303	556	300
12	48.7	48.2	47.4	47.2	42.6		1718	3291	1355	300
13	48.5	47.1	46.8	39.6	40.8		2130	3292	990	305
14	48.9	46.9	46.8	40.7	42.5		802	3361	1404	307
15	48.5	47.0	46.9	45.2	42.7		673	3389	1654	303
16	48.3	47.2	46.8	46.8	42.6		2022	3391	585	300
17	48.4	47.7	46.6	46.9	42.0		1962	3391	494	300
18	48.3	47.7	46.5	46.4	41.6		1428	3389	1877	300
19	48.3	47.5	46.6	46.4	41.6		2442	3345	406	299
20	48.2	47.8	46.5	47.4	42.1		1867	3346	731	299
21	48.2	47.7	46.4	47.3	41.8		1938	3346	1363	299
22	48.3	47.5	46.3	46.6	41.1		2245	3339	1003	299
23	47.9	47.5	46.4	46.8	41.5		2812	3340	470	299
24	47.7	47.7	46.2	47.3	42.3		2125	3339	887	299
25	47.8	47.4	46.2	47.3	40.4		1487	3342	663	300
26	48.8	47.8	46.3	47.9	39.7		25	5047	428	301
27	48.6	48.0	46.2	48.7	42.3		1690	7037	1692	302
28	47.5	48.3	46.0	49.0	42.9		10109	16746	2973	297
-										
-										
-										
						Max	10109	16746	2973	307
						Mean	2150	3991	925	300
						Min	25	3151	327	297
						Volume (TAF)	119	222	51	17

Notes

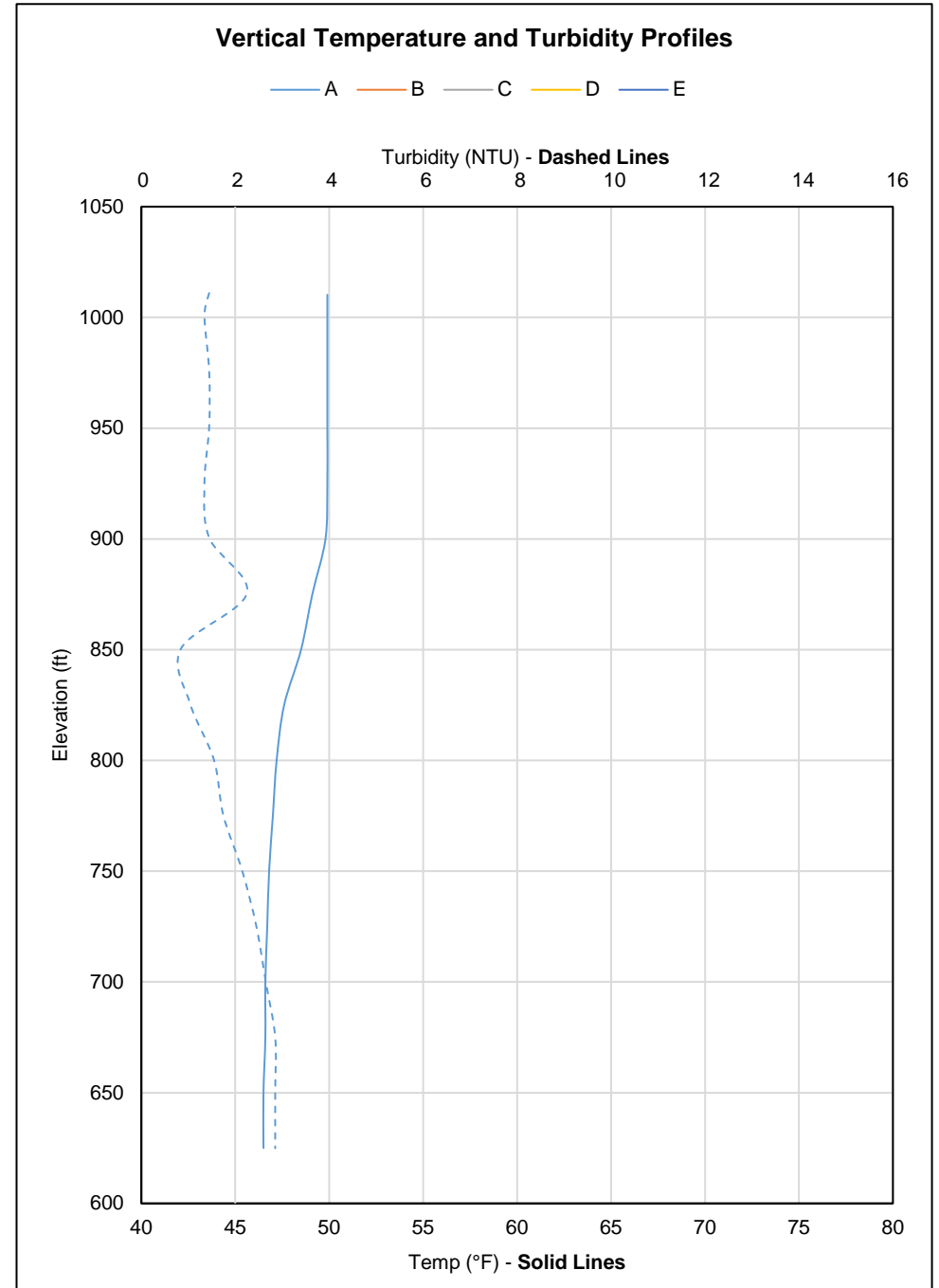
¹ Current temperature control point



Vertical Profiles Taken at Site 1 (Shasta Lake at Dam Inlets)										
Profile	A		B		C		D		E	
Day of Month	7		-		-		-		-	
Lake Elev.	1010.24		-		-		-		-	
Parameter	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb
Elevation (ft)	L.E.	49.9	1.4	-	-	-	-	-	-	-
	1050	-	-	-	-	-	-	-	-	-
	1025	-	-	-	-	-	-	-	-	-
	1000	49.9	1.3	-	-	-	-	-	-	-
	975	49.9	1.4	-	-	-	-	-	-	-
	950	49.9	1.4	-	-	-	-	-	-	-
	925	49.9	1.3	-	-	-	-	-	-	-
	900	49.8	1.4	-	-	-	-	-	-	-
	875	49.1	2.2	-	-	-	-	-	-	-
	850	48.5	0.8	-	-	-	-	-	-	-
	825	47.6	1.0	-	-	-	-	-	-	-
	800	47.2	1.5	-	-	-	-	-	-	-
	775	47.0	1.7	-	-	-	-	-	-	-
	750	46.8	2.1	-	-	-	-	-	-	-
	725	46.7	2.4	-	-	-	-	-	-	-
	700	46.6	2.6	-	-	-	-	-	-	-
675	46.6	2.8	-	-	-	-	-	-	-	
650	46.5	2.8	-	-	-	-	-	-	-	
625	46.5	2.8	-	-	-	-	-	-	-	

Monthly Manual Observations											
Parameter	Temp (°F)			Turb (NTU)							
Site	6	7	8	2	3	4	5	6	7	8	
	DLT	MSS	PMN	SHD	KWK	SPP	RDB	DLT	MSS	PMN	
Value	41.5	45.9	44.1	2.9	64.3	2.7	74.6	4.0	25.6	9.3	
Day of Month	7	28	8	21	27	26	26	7	28	8	

Notes



90-5 Required Water Monitoring Details

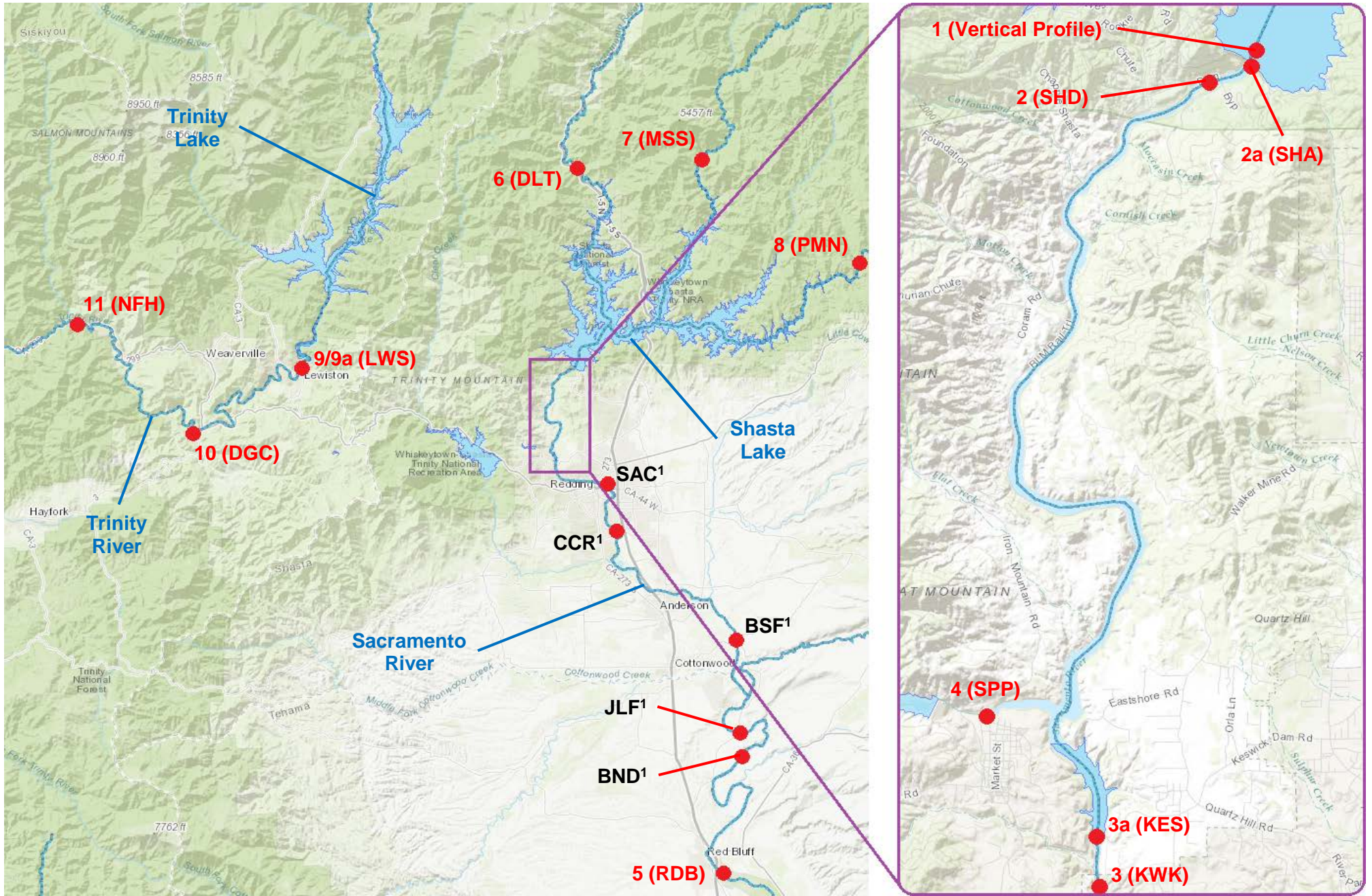
Site	CDEC ID	Description
1	-	Shasta Dam inlets or lake adjacent to the dam face. ¹
2	SHD	Shasta Dam release immediately downstream from the power plant.
2a	SHA	Shasta Dam release.
3	KWK	Sacramento River immediately downstream from Keswick Dam.
3a	KES	Keswick Dam release.
4	SPP	Spring Creek Power Plant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