U.S. GEOLOGICAL SURVEY

Table 2x. Summary of load calculations for total mercury, Cache Creek Settling Basin, California, water years 2010-17

[THg, total mercury; pTHg, particulate total mercury; fTHg, filtered total mercury; p+fTHg, particulate plus filtered total mercury; wwTHg, whole-water total mercury; SS-L, suspended sediment load from LOADEST model; SS-G, suspended sediment load from GLCAS model; pTHg-L, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration times SS-L; pTHg-G, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration; light gray and orange shading indicates whole-water total mercury load; dark gray and orange shading indicates whole-water total mercury load]

indicates particulate to	ntai mercury it	Jau, uari	c gray and	a Orange S	naumg mun	cates whole-wat	ei totai	mercury	oauj					Total Mercury			Suspended	d Sediment	1
	Total flow	pTHg	fTHg	p+fTHg	wwTHg	pTHg		SS-L	pTHg-L	SS-G	pTHg-G	pTHg-L + fTHg	pTHg-G + fTHg	Average	Average	Average	Average	Average	1
	volume	load	load	load	load	conc.		load	load	load	load	load	load	wwTHg load	wwTHg load	SS-L load	SS-G Load	SS-L and SS-G loads	1
						(geometric	İ												1
	10 ⁹ L	kg	kg	kg	kg	mean)		10 ⁶ kg	kg	10 ⁶ kg	kg	kg	kg			10 ⁶ kg/yr	10 ⁶ kg/yr	10 ⁶ kg/yr	
						ng/g								kg/8 yrs	kg/yr		0.7	J.,	
Inflow 11452600	•													. ,	,				•
WY 2010	205	16	0.66	17	18	251		129	32	181	45	33	46					155	
WY 2011	485	100	2.0	102	107	177		475	84	377	67	86	69					426	1
WY 2012	37	1.0	0.12	1.1	1.2	259		3.2	0.8	4.7	1.2	1.0	1.3					4	
WY 2013	117	21	1.1	22	22	255		119	30	82	21	31	22					100	1
WY 2014	3	0.05	0.01	0.07	0.07	242		0.1	0.02	0.12	0.03	0.04	0.04					0	min
WY 2015	86	41	1.2	42	40	318		131	42	101	32	43	33					116	
WY 2016	141	34	0.88	34	35	175	İ	180	32	151	26	32	27					166	
WY 2017	1044	305	6.9	312	312	265		1222	324	971	257	331	264	•				1097	max
WY 2010-2017 sum	2118	517	12.7	530	535		sum	2259	545	1867	450	557	463					2063	
WY 2010-2017 sum				•		239	8-yr	2259	540	1867	446	553	459	(n=6)	8-yr average			8-yr average	1
Outflow Weir (Spil	llwav) 1145	2800					,							516	65	282	233	258	(n=2)
WY 2010	86	1.9	0.31	2.2	4.2	318	Ī	33	10.4	36	12								(11 -7
WY 2011	360	30	1.14	31	29	217	1	106	23	67	15								
WY 2012	0	0	0	0	0	na		0	na	0	na								
WY 2013	63	5.3	0.60	5.9	7.3	243		27	6.6	34	8.2								
WY 2014	0	0	0	0	0	na	1	0	0	0	0								
WY 2015	66	11	0.88	12	14	356	1	31	11.1	23	8.3								
WY 2016	61	3.8	0.46	4.3	4.2	203	1	16	3.2	14	2.7								
WY 2017	1026	111	4.19	116	116	237		287	68	278	66								
WY 2010-2017 sum	1664	163	7.6	171	176		sum	500	122	451	111								
WY 2010-2017 sum					-70	236	8-yr	500	118	451	106								
Outflow Gate 1145	2900					233	<i>J</i> ,.	300	110	.52	200								
WY 2010	85	2.0	0.33	2.4	2.3	318	Ī	8.6	2.7	6.1	1.9								
WY 2011	96	2.6	0.39	3.0	2.9	266		11	2.9	20	5.4								
WY 2012	22	0.39	0.066	0.46	0.44	348		1.5	0.52	1.3	0.5								
WY 2013	39	1.4	0.26	1.6	1.7	286		6.9	2.0	9.1	2.6								
WY 2014	0.65	0.01	0.001	0.01	0.01	na		0.008	0	0.01	0								
WY 2015	17	0.50	0.16	0.66	0.60	304		2.0	0.6	3.8	1.2								
WY 2016	52	3.5	0.10	3.9	3.8	217		15.6	3.4	8.8	1.9								
WY 2017	32	0.46	0.17	0.63	0.57	366		1.7	0.6	1.3	0.5								
WY 2010-2017 sum	344	11	1.7	13	12	300	sum	47	12.8	51	14								
WY 2010-2017 sum	344	11	1.7	13	12	280	8-yr	47	13.2	51	14								
Total Outflow 1145] 	of 11/	152000	and 1141	-2000	200	о-уі	47	15.2	21	14								
							ī	44	12	42	12	1.4	1.4	Ī				42	1
WY 2010	171	3.9	0.64	4.5	6.5		•	41	13	42	13	14	14					42	A
WY 2011	456	32.2	1.5	34	32			117	26	87	20	28	21					102	A
WY 2012	22	0.39	0.066	0.46	0.44		ŀ	1.5	0.5 8.5	1.3	0.5	0.6	0.5					1	A
WY 2013	102	6.7	0.87	7.6	9.0			34		43	11	9	12					38	A
WY 2014	0.7	0.01	0.001	0.01	0.01			0.008	0	0.01	0	0.0	0.0					0	A
WY 2015	83	11.9	1.0	13	15	<u> </u>	1	33	12 7	27	9.4	13 7	10					30	A
WY 2016	113	7.3	0.8	8.1	8	<u> </u>		32		22	4.7	,	5					27	A
WY 2017	1058	112	4.4	116	117			289	69	279	66.3	73	71					284	A
WY 2010-2017 sum	2007	174	9.3	184	188	<u> </u>	sum	547	135	502	125	144	134	(z, c)	0.100			525	A
WY 2010-2017 sum] . /4.4.4=335.5		-l-4		£ 4.4.4====	00 44	8-yr	547	131	502	121	141	130	(n=6)	8-yr average		60	8-yr average	1. 2.
Combined Outflow	-						900 I							154	19	68	63	66	(n=2)
WY 2010	171	7.6	0.66	8.3	11	318		38	12	42	13	13	14					40	A
WY 2011	456	39	2.3	41	42	228		171	39	87	20	41	22					129	A
WY 2012	22	0.44	0.073	0.51	0.43	348	ļ	1.7	0.6	1.3	0.5	1	1					2	4
WY 2013	102	11	1.2	12	12	259		64	17	43	11	18	12					53	
WY 2014	0.7	0.01	0.002	0.01	0.01	na		0.011	0	0.01	0	0	0					0	min
WY 2015	83	24	1.5	25	25	346		74	26	27	9.3	27	11					51	4
WY 2016	113	7.8	0.8	8.6	11	209		45	9.4	22	4.7	10	5					34	
WY 2017	1058	134	4.4	138	108	238		407	97	279	66	101	71					343	max
WY 2010-2017 sum	2007	223	11	234	209		sum	800	200	502	125	211	136					651	
WY 2010-2017 sum]					247	8-yr	800	198	502	124	209	135	(n=6)	8-yr average			8-yr average	
														189	24	100	63	81	(n=2)
																			
															Overall 8-yr				
														(n=12)	average			Overall 8-yr average	
														171	21	84	63	73	(n=4)
																-			

PRELIMINARY - SUBJECT TO REVISION December 8, 2018

Table 3x. Trap efficiency calculations for total mercury, Cache Creek Settling Basin, California, water years 2010-17

[THg, total mercury; pTHg, particulate total mercury; fTHg, filtered total mercury; p+fTHg, particulate plus filtered total mercury; wwTHg, whole-water total mercury; SS-L, suspended sediment load from LOADEST model; SS-G, suspended sediment load from GLCAS model; pTHg-L, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration times SS-L; pTHg-G, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration times SS-G; TE, Trap Efficiency; TE computed as (LoadIn-LoadOut)/(LoadIn) using load data in table 2, as indicated]

SS-L

76%

pTHg-L

76%

SS-G

73%

Total flow pTHg fTHg p+fTHg wwTHg TE TE TE TE TE

Inflow (11452600) vs. Total Outflow (11452901) - sum of 11452800 and 11452900

		(,		
WY 2010	16%	76%	3%	73%	65%
WY 2011	6%	68%	22%	67%	70%
WY 2012	40%	59%	45%	57%	63%
WY 2013	13%	68%	19%	66%	59%
WY 2014	78%	87%	90%	88%	88%
WY 2015	3%	71%	10%	69%	62%
WY 2016	20%	78%	8%	76%	77%
WY 2017	-1%	63%	37%	63%	63%
WY 2010-2017 sum	5%	66%	27%	65%	65%
WY 2010-2017 sum					
·					

sum 8-yr

TE	TE	TE	TE	TE	TE
68%	60%	77%	70%	58%	69%
75%	69%	77%	70%	68%	69%
54%	38%	71%	62%	39%	60%
71%	72%	47%	48%	70%	47%
92%	100%	91%	100%	96%	97%
75%	72%	73%	71%	70%	69%
82%	79%	85%	82%	77%	80%
76%	79%	71%	74%	78%	73%
76%	75%	73%	72%	74%	71%

73%

pTHg-G

pTHg-L + fTHg

75%

pTHg-G + fTHg

72%

Inflow (11452600) vs. Combined Outflow (11452901) - weighted average of 11452800 and 11452900

WY 2010	16%	52%	-1%	50%	42%
WY 2011	6%	61%	-17%	60%	61%
WY 2012	40%	54%	40%	52%	64%
WY 2013	13%	47%	-8%	45%	45%
WY 2014	78%	78%	85%	79%	82%
WY 2015	3%	42%	-29%	40%	37%
WY 2016	20%	77%	9%	75%	67%
WY 2017	-1%	56%	36%	56%	65%
WY 2010-2017 sum	5%	57%	15%	56%	61%
WY 2010-2017 sum					

sum 8-yr

71%	63%	77%	70%	62%	69%
64%	54%	77%	70%	52%	68%
46%	28%	71%	62%	29%	60%
46%	45%	47%	47%	43%	44%
89%	100%	90%	100%	95%	95%
43%	38%	73%	71%	37%	67%
75%	70%	85%	82%	68%	80%
67%	70%	71%	74%	69%	73%
65%	63%	73%	72%	62%	71%
65%	63%	73%	72%	62%	71%

	n	avg.	s.d.
avg TE SS	8	72%	5%
avg TE p.THg	10	69%	6%
avg TE ww.THg	12	67%	6%
avg TE f.THg	2	21%	6%

Table 4x. Summary of load calculations for total mercury, standard error of the mean, Cache Creek Settling Basin, California, water years 2010-17

[THg, total mercury; pTHg, particulate total mercury; fTHg, filtered total mercury; p+fTHg, particulate plus filtered total mercury; wwTHg, whole-water total mercury; SS-L, suspended sediment load from LOADEST model; SS-G, suspended sediment load from GLCAS model; pTHg-L, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration times SS-L; pTHg-G, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration times SS-G; conc., concentration; SE, standard error of the mean; light gray shading indicates particulate total mercury load; dark gray shading indicates whole-water total mercury load]

	Total flow	pTHg	fTHg	p+fTHg	wwTHg		pTHg		SS-L	pTHg-L	SS-G	pTHg-G
	volume	load (SE)	load (SE)	load (SE)	load (SE)		conc.		load (SE)	load (SE)	load (SE)	load (SE)
							(geometric					
	10 ⁹ L	kg	kg	kg	kg		mean)		$10^6 \mathrm{kg}$	kg	10 ⁶ kg	kg
							ng/g		,			
Inflow 11452600												
WY 2010	205	3.9	0.10	4.0	3.1		251		22.3	5.6	nd	nd
WY 2011	485	22	0.30	23	17		177		107	19	nd	nd
WY 2012	37	0.12	0.01	0.14	0.12		259		0.51	0.13	nd	nd
WY 2013	117	3.7	0.13	3.8	3.2		255		25.4	6.5	nd	nd
WY 2014	3	0.010	0.002	0	0.011		242		0	0	nd	nd
WY 2015	86	11	0.19	11	9		318		32	10.1	nd	nd
WY 2016	141	7.0	0.14	7	7		175		37	6.5	nd	nd
WY 2017	1044	60	1.21	61	61		265		237	62.8	nd	nd
WY 2010-2017 sum	2118	108	2.09	110	101			sum	461	111	nd	nd
WY 2010-2017 sum]						239	8-yr	461	110	nd	nd
Outflow Weir (Spillly	way) 11452	2800						•				
WY 2010	86	0.8	0.058	0.87	2.9		318		14.1	4.5	nd	nd
WY 2011	360	11	0.13	12	17		217		36.3	7.9	nd	nd
WY 2012	0	0	0	0	0		na		0	na	nd	nd
WY 2013	63	1.2	0.055	1.2	3.6		243		10.2	2.5	nd	nd
WY 2014	0	0	0	0	0		na		0	0	nd	nd
WY 2015	66	12	0.091	12	6.4		356		10	3.6	nd	nd
WY 2016	61	0.9	0.07	1.0	0.9		203		6.0	1.2	nd	nd
WY 2017	1026	29	0.45	29	28		237		72	17	nd	nd
WY 2010-2017 sum	1664	55	0.85	56	58			sum	149	37	nd	nd
WY 2010-2017 sum]						236	8-yr	149	35	nd	nd
Outflow Gate 11452	900							•				
WY 2010	85	0.49	0.062	0.55	0.45		318		1.8	0.58	nd	nd
WY 2011	96	0.57	0.043	0.61	0.54		266		2.1	0.6	nd	nd
WY 2012	22	0.10	0.009	0.11	0.094		348		0.35	0.12	nd	nd
WY 2013	39	0.39	0.038	0.42	0.46		286		2.3	0.64	nd	nd
WY 2014	0.65	0.004	0.0004	0.005	0.005		na		0.003	0.000	nd	nd
WY 2015	17	0.12	0.034	0.16	0.13		304		0.47	0.14	nd	nd
WY 2016	52	1.02	0.05	1.07	0.99		217		4.7	1.0	nd	nd
WY 2017	32	0.24	0.03	0.27	0.27		366		0.90	0.33	nd	nd
WY 2010-2017 sum	344	2.9	0.27	3.2	2.9			sum	13	3.4	nd	nd
WY 2010-2017 sum]						280	8-yr	13	3.5	nd	nd
Total Outflow (1145)								1				
WY 2010	171	1.3	0.12	1.4	3.3				16	5	nd	nd
WY 2011	456	12	0.17	12	17				38	8	nd	nd
WY 2012	22	0.10	0.009	0.11	0.09				0.35	0.12	nd	nd
WY 2013	102	1.6	0.09	1.7	4.1				12	3	nd	nd
WY 2014	0.7	0.004	0.0004	0.005	0.005				0.00	0.00	nd	nd
WY 2015	83	12	0.13	12	6.6				11	3.7	nd	nd
WY 2016	113	2	0.12	2	1.9				11	2.2	nd	nd
WY 2017	1058	29	0.48	29	27.8				73	17	nd	nd
WY 2010-2017 sum	2007	58	1.12	59	61			sum	161	40	nd	nd
WY 2010-2017 sum	11453331	!	d a	-f 44 4530	00 amil 444		.000	8-yr	161	40	nd	nd
Combined Outflow (-					152 		1	40	2.2	1	1
WY 2010	171	4.0	0.11	4.1	2.9		318		10	3.3	nd	nd
WY 2011	456	14	0.32	15	12		228		50	11	nd	nd
WY 2012	22	0.17	0.0090	0.18	0.11		348		0.46	0.16	nd	nd
WY 2013	102	4.0	0.14	4.2	3.5		259		18	4.7	nd	nd
WY 2014	0.7	0.009	0.0005	0.010	0.0075		na		0.005	nd	nd	nd
WY 2015	83	8.9	0.23	9.1	7.7		346		26	9.2	nd	nd
WY 2016	113	1.7	0.18	1.9	3.1		209		14	2.9	nd	nd
WY 2017	1058	37	0.44	37.0	28		238	C1,255	118	28.1	nd	nd
WY 2010-2017 sum WY 2010-2017 sum	2007	70	1.42	32	57	l	247	Sum 8-vr	237 237	60 50	nd	nd nd
AA 1 5010-5017 2011	j						247	8-yr	237	59	nd	nd

Table 5x. Trap efficiency standard error calculations for total mercury, Cache Creek Settling Basin, California, water years 2010-17

[THg, total mercury; pTHg, particulate total mercury; fTHg, filtered total mercury; p+fTHg, particulate plus filtered total mercury; wwTHg, whole-water total mercury; SS-L, suspended sediment load from LOADEST model; SS-G, suspended sediment load from GLCAS model; pTHg-L, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration times SS-L; pTHg-G, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration times SS-G; TE, Trap Efficiency; SE, standard error; TE data in Table 3]

	pTHg	fTHg	p+fTHg	wwTHg		SS-L	pTHg-L	SS-G	pTHg-G	pTHg-L + fTHg	pTHg-G + fTHg
	TE (SE)	TE (SE)	TE (SE)	TE (SE)		TE (SE)	TE (SE)	TE (SE)	TE (SE)	TE (SE)	TE (SE)
Inflow (11452600) vs	. Total Out	flow (1145	2901) - su	m of 11452	2800 and 1	1452900					
WY 2010	10%	23%	11%	19%		13%	17%	nd	nd	20%	nd
WY 2011	14%	15%	14%	17%		10%	12%	nd	nd	25%	nd
WY 2012	12%	10%	12%	9%		13%	18%	nd	nd	25%	nd
WY 2013	9%	13%	10%	19%		12%	12%	nd	nd	16%	nd
WY 2014	nd	nd	nd	nd		nd	nd	nd	nd	nd	nd
WY 2015	31%	18%	31%	19%		10%	11%	nd	nd	38%	nd
WY 2016	7%	20%	8%	7%		7%	8%	nd	nd	0%	nd
WY 2017	12%	13%	12%	12%		8%	7%	nd	nd	0%	nd
WY 2010-2017 sum	13%	15%	13%	13%	sum	9%	9%	nd	nd	18%	nd
WY 2010-2017 sum					8-yr	9%	9%	nd	nd	9%	nd
Inflow (11452600) vs	. Combine	d Outflow	(11452901) - weighte	ed average	of 114528	800 and 11	452900			
WY 2010	28%	22%	27%	19%		9%	12%	nd	nd	7%	nd
WY 2011	17%	24%	17%	13%		13%	17%	nd	nd	11%	nd
WY 2012	19%	10%	18%	10%		16%	22%	nd	nd	11%	nd
WY 2013	21%	19%	21%	18%		19%	20%	nd	nd	12%	nd
WY 2014	nd	nd	nd	nd		nd	nd	nd	nd	nd	nd
WY 2015	27%	29%	27%	24%		24%	27%	nd	nd	15%	nd
WY 2016	7%	25%	8%	11%		9%	11%	nd	nd	0%	nd
WY 2017	15%	13%	15%	11%		12%	10%	nd	nd	0%	nd
WY 2010-2017 sum	16%	18%	11%	13%		13%	13%	nd	nd	8%	nd
WY 2010-2017 sum					sum	13%	13%	nd	nd	8%	nd
	_				8-yr						

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Table 6x. Summary of load calculations for methylmercury, Cache Creek Settling Basin, California, water years 2010-17

[MeHg, methylmercury; pMeHg, particulate methylmercury; fMeHg, filtered methylmercury; p+fMeHg, particulate plus filtered methylmercury; wwMeHg, whole-water methylmercury; SS-L, suspended sediment load from LOADEST model; SS-G, suspended sediment load from GLCAS model; pMeHg-L, particulate methylmercury load from multiplying geometric mean gravimetric pMeHg concentration times SS-L; pMeHg-G, particulate methylmercury load from multiplying geometric mean gravimetric pMeHg concentration times SS-G; kg, kilogram; ng/g, nanogram per gram; conc., concentration; light gray and orange shading indicates particulate methylmercury load; dark gray and orange shading indicates whole-water methylmercury load]

	Total flow	рМеНg	fMeHg	p+fMeHg	wwMeHg	pMeHg	I	SS-L	pMeHg-L	SS-G	pMeHg-G	pMeHg-L + fMeHg	pMeHg-G + fMeHg		Average	Average
	volume	load	load	load	load	conc.		load	load	load	load	load	load		wwMeHg load	wwMeHg load
						(geometric										
	10 ⁹ L	kg	kg	kg	kg	mean) ng/g		10 ⁶ kg	kg	10 ⁶ kg	kg	kg	kg			. ,
Inflow 11452600						3,0								L	kg/6 yrs	kg/yr
WY 2010	205	0.18	0.022	0.20	0.10	3.7	Ī	129	0.48	181	0.68	0.50	0.70			
WY 2011	485	0.70	0.041	0.74	0.68	3.4	•	475	1.6	377	1.27	1.6	1.3			
WY 2012	37	0.013	0.0043	0.02	0.039	4.4	Ì	3.2	0.014	4.7	0.021	0.019	0.025			
WY 2013	117	0.12	0.011	0.13	0.16	4.0	Ì	119	0.47	82	0.32	0.48	0.33			
WY 2014	3	0.0007	0.0004	0.0011	0.0024	3.3	1	0.1	0.0003	0.12	0.0004	0.0007	0.0008	min		
WY 2015	86	0.12	0.0064	0.13	0.10	0.9	1	131	0.12	101	0.09	0.127	0.099			
WY 2016	141	0.15	0.0091	0.16	0.19	1.1	1	180	0.20	151	0.17	0.21	0.18			
WY 2017	1044	1.59	0.043	1.6	1.1	1.5	1	1222	1.83	971	1.46	1.9	1.5	max		
WY 2010-2017 sum	2118	2.9	0.138	3.0	2.4		sum	2259	4.7	1867	4.0	4.9	4.1			
WY 2010-2017 sum						2.3	8-yr	2259	5.2	1867	4.3	5.3	4.4		(n=8)	8-yr average
Outflow Weir (Spill	- lway) 1145	2800				•						•			4.0	0.50
WY 2010	86	0.047	0.0038	0.051	0.014	8.1		33	0.26	36	0.29			-		
WY 2011	360	0.23	0.032	0.26	0.35	3.5]	106	0.37	67	0.23					
WY 2012	0	0	0	0	0	na		0	0	0	0					
WY 2013	63	0.042	0.015	0.057	0.067	2.2		27	0.060	34	0.075					
WY 2014	0	0	0	0	0	na		0	0	0	0					
WY 2015	66	0.033	0.0053	0.039	0.034	1.0		31	0.031	23	0.023					
WY 2016	61	0.018	0.0052	0.023	0.024	1.0	ļ	16	0.016	14	0.014					
WY 2017	1026	0.45	0.055	0.51	0.52	1.7		287	0.49	278	0.47					
WY 2010-2017 sum	1664	0.82	0.12	0.94	1.01		sum		1.23	451	1.11					
WY 2010-2017 sum	_					2.1	8-yr	500	1.03	451	0.92					
Outflow Gate 11452		0.074			2 2 1 7	2.1	ī	0.0			2 2 4 2					
WY 2010	85	0.051	0.021	0.073	0.045	8.1	ļ	8.6	0.070	6.1	0.049					
WY 2011	96	0.055	0.020	0.075	0.071	4.2	ļ	11	0.046	20	0.086					
WY 2012	22	0.0115	0.0046	0.016	0.022	5.9	ļ	1.5	0.0089	1.3	0.01					
WY 2013 WY 2014	39 0.65	0.019 0.00046	0.0072 0.00012	0.026 0.00057	0.036 0.00080	4.4	ļ	6.9 0.008	0.030 nd	9.1	0.040 nd					
WY 2014 WY 2015	17	0.00046	0.00012	0.00037	0.00080	2.5	ł	2.0	0.0050	3.8	0.0094					
WY 2016	52	0.0074	0.0021	0.010	0.010	1.5	ŀ	15.6	0.0030	8.8	0.0034					
WY 2017	32	0.013	0.0033	0.024	0.024	2.6	ł	1.7	0.023	1.3	0.013					
WY 2010-2017 sum	344	0.15	0.064	0.24	0.18	2.0	sum		0.19	51	0.21					
WY 2010-2017 sum	0,1	0.123	0.00	0.2	0.10	4.7	8-yr		0.22	51	0.24					
Total Outflow 1145	่ 2901 - sum	of 114528	800 and 11	452900			, , ,		0.111		0.21					
WY 2010	171	0.10	0.025	0.12	0.059		Ī	41	0.33	42	0.34	0.36	0.37			
WY 2011	456	0.28	0.052	0.34	0.42		ļ	117	0.41	87	0.32	0.47	0.370			
WY 2012	22	0.012	0.0046	0.016	0.022		1	1.5	0.009	1.3	0.01	0.013	0.013			
WY 2013	102	0.061	0.022	0.083	0.10			34	0.090	43	0.11	0.11	0.14			
WY 2014	0.7	0.00046	0.00012	0.00057	0.00080		Ì	0.008	0	0.01	0	0.0001	0.0001			
WY 2015	83	0.041	0.0075	0.048	0.044		I	33	0.036	27	0.03	0.044	0.040			
WY 2016	113	0.037	0.0105	0.048	0.048			32	0.039	22	0.03	0.050	0.037			
WY 2017	1058	0.46	0.058	0.52	0.53			289	0.492	279	0.48	0.551	0.534			
WY 2010-2017 sum	2007	0.96	0.18	1.2	1.2		sum	547	1.4	502	1.3	1.6	1.5			
WY 2010-2017 sum							8-yr	547	1.2	502	1.2	1.4	1.3	r	(n=8)	8-yr average
Combined Outflow	(11452901)	- weighte	ed average	of 114528	00 and 1145 ₂	29 <u>00</u>	•		_						1.4	0.17
WY 2010	171	0.11	0.029	0.14	0.069	8.1		38	0.31	42	0.34	0.33	0.37			
WY 2011	456	0.38	0.058	0.44	0.37	3.6		171	0.62	87	0.31	0.676	0.37			
WY 2012	22	0.010	0.0048	0.01	0.029	5.9	ļ	1.7	0.010	1.3	0.0080	0.015	0.013			
WY 2013	102	0.086	0.018	0.10	0.11	3.0		64	0.19	43	0.13	0.21	0.15			
WY 2014	0.7	0.00043	0.00014	0.00057	0.0012	na	ļ	0.011	nd	0.01	nd	nd	nd	min		
WY 2015	83	0.070	0.014	0.084	0.098	1.3	.	74	0.097	27	0.04	0.11	0.049			
WY 2016	113	0.047	0.011	0.058	0.058	1.2	}	45	0.054	22	0.03	0.07	0.038			
WY 2017	1058	0.62	0.064	0.68	0.67	1.7		407	0.69	279	0.47	0.76	0.54	max		
WY 2010-2017 sum	2007	1.3	0.20	1.5	1.4	2.0	sum		2.0	502	1.3	2.2	1.5		(m. 0)	0
WY 2010-2017 sum	J					2.8	8-yr	800	2.2	502	1.4	2.4	1.6	ſ	(n=8)	8-yr average
														l	1.8	0.22
																Overall 8-yr
															(n=12)	•
														ſ	1.6	average 0.20

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Table 7x. Trap efficiency calculations for methylmercury, Cache Creek Settling Basin, California, water years 2010-17

[MeHg, methylmercury; pMeHg, particulate methylmercury; fMeHg, filtered methylmercury; p+fMeHg, particulate plus filtered methylmercury; wwMeHg, whole-water methylmercury; SS-L, suspended sediment load from LOADEST model; SS-G, suspended sediment load from GLCAS model; pMeHg-L, particulate methylmercury load from multiplying geometric mean gravimetric pMeHg concentration times SS-L; pMeHg-G, particulate methylmercury load from multiplying geometric mean gravimetric pMeHg concentration times SS-G; TE, Trap Efficiency; TE computed as (LoadIn-LoadOut)/(LoadIn) using load data in table 6, as indicated; nd, not determined]

	Total flow	pMeHg	fMeHg	p+fMeHg	wwMeHg		SS-L	pMeHg-L	SS-G	pMeHg-G	pMeHg-L + fMeHg	pMeHg-G + fMeHg
	TE	TE	TE	TE	TE		TE	TE	TE	TE	TE	TE
Inflow (11452600)	vs. Total Ou	itflow (114	1 52901) - s	um of 1145	2800 and 114	452900	<u>.</u>					
WY 2010	16%	44%	-13%	38%	40%		68%	31%	77%	49%	29%	47%
WY 2011	6%	59%	-28%	54%	38%		75%	74%	77%	75%	72%	72%
WY 2012	40%	8%	-5%	5%	43%		54%	38%	71%	62%	28%	50%
WY 2013	13%	50%	-104%	37%	37%		71%	81%	47%	65%	77%	59%
WY 2014	78%	37%	67%	47%	67%		92%	100%	91%	100%	83%	84%
WY 2015	3%	67%	-18%	62%	57%		75%	70%	73%	65%	66%	60%
WY 2016	20%	75%	-15%	70%	74%		82%	80%	85%	84%	76%	79%
WY 2017	-1%	71%	-34%	69%	53%		76%	73%	71%	67%	71%	64%
WY 2010-2017 sum	5%	66%	-31%	61%	50%	sum	76%	70%	73%	67%	67%	64%
WY 2010-2017 sum						8-yr	76%	76%	73%	73%	73%	70%

Inflow (11452600) vs. Combined Outflow (11452901) - weighted average of 11452800 and 11452900

WY 2010	16%	38%	-29%	30%	30%		71%	36%	77%	49%	33%	47%
WY 2011	6%	46%	-42%	41%	46%		64%	62%	77%	75%	59%	72%
WY 2012	40%	19%	-10%	12%	25%		46%	28%	71%	62%	19%	49%
WY 2013	13%	29%	-63%	21%	31%		46%	59%	47%	60%	56%	56%
WY 2014	78%	41%	60%	47%	52%		89%	nd	90%	nd	nd	nd
WY 2015	3%	43%	-120%	35%	6%		43%	20%	73%	62%	13%	51%
WY 2016	20%	68%	-20%	63%	69%		75%	73%	85%	84%	69%	78%
WY 2017	-1%	61%	-47%	58%	41%		67%	62%	71%	67%	60%	64%
WY 2010-2017 sum	5%	54%	-44%	50%	42%	sum	65%	58%	73%	67%	55%	63%
WY 2010-2017 sum						8-yr	65%	58%	73%	68%	55%	64%

	n	avg.	s.d.
avg TE SS	8	72%	5%
avg TE p.MeHg	10	66%	7%
avg TE ww.MeHg	12	60%	9%
avg TE f.MeHg	2	-38%	7%

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Table 8x. Summary of load calculations for methylmercury, standard error of the mean, Cache Creek Settling Basin, California, water years 2010-17

[MeHg, methylmercury; pMeHg, particulate methylmercury; fMeHg, filtered methylmercury; p+fMeHg, particulate plus filtered methylmercury; wwMeHg, whole-water methylmercury; SS-L, suspended sediment load from LOADEST model; SS-G, suspended sediment load from GLCAS model; pMeHg-L, particulate methylmercury load from multiplying geometric mean gravimetric pMeHg concentration times SS-L; pMeHg-G, particulate methylmercury load from multiplying geometric mean gravimetric pMeHg concentration times SS-G; SE, standard error of the mean; kg, kilogram; ng/g, nanogram per gram; conc., concentration; light gray and orange shading indicates particulate methylmercury load; dark gray and orange shading indicates whole-water methylmercury load]

	Total flow	pMeHg	fMeHg	p+fMeHg	wwMeHg	pMeHg		SS-L	pMeHg-L	SS-G	pMeHg-G
	volume	load (SE)	load (SE)	load (SE)	load (SE)	conc.		load (SE)	load (SE)	load (SE)	load (SE)
						(geometric					
	10 ⁹ L	kg	kg	kg	kg	mean)		$10^6 \mathrm{kg}$	kg	10 ⁶ kg	kg
						ng/g					
Inflow 11452600					ı						
WY 2010	205	0.038	0.0030	0.041	0.029	3.7		22.3	0.08	nd	nd
WY 2011	485	0.14	0.0052	0.142	0.21	3.4		107	0.36	nd	nd
WY 2012	37	0.0014	0.00039	0.002	0.0097	4.4		0.51	0.0023	nd	nd
WY 2013	117	0.018	0.0009	0.019	0.048	4.0		25.4	0.101	nd	nd
WY 2014	3	0.00013	0.00005	0.00017	0.00068	3.3		0	na	nd	nd
WY 2015	86	0.029	0.00093	0.030	0.037	0.9		32	0.029	nd	nd nd
WY 2016	141	0.007	0.00130	0.008	0.16	1.1		37	0.041	nd	
WY 2017 WY 2010-2017 sum	1044 2118	0.019 0.25	0.00810 0.0199	0.027 0.27	0.26 0.75	1.5	sum	237 461	0.356 1.0	nd nd	nd nd
WY 2010-2017 sum	2110	0.25	0.0199	0.27	0.75	2.2					nd
WY 2010-2017 sum 2.3 8-yr 461 1.1 nd nc Outflow Weir (Spilllway) 11452800											Hu
WY 2010	86	0.047	0.0022	0.05	0.027	8.1		14.1	0.11	nd	nd
WY 2010 WY 2011	360	0.15	0.0054	0.05	0.10	3.5		36.3	0.11	nd	nd
WY 2012	0	0.13	0.0034	0.10	0.10	na		0	0.13	nd	nd
WY 2013	63	0.042	0.0034	0.05	0.067	2.2		10.2	0.023	nd	nd
WY 2014	0	0.012	0	0	0	na		0	0	nd	nd
WY 2015	66	0.015	0.00091	0.016	0.014	1.0		10	0.0101	nd	nd
WY 2016	61	0.004	0.0006	0.005	0.004	1.0		6.0	0.006	nd	nd
WY 2017	1026	0.072	0.0047	0.077	0.070	1.7		72	0.123	nd	nd
WY 2010-2017 sum	1664	0.33	0.017	0.35	0.29		sum	149	0.40	nd	nd
WY 2010-2017 sum						2.1	8-yr	149	0.31	nd	nd
Outflow Gate 114529	900										
WY 2010	85	0.013	0.0031	0.016	0.013	8.1		1.8	0.015	nd	nd
WY 2011	96	0.011	0.0022	0.013	0.0144	4.2		2.1	0.009	nd	nd
WY 2012	22	0.0021	0.00047	0.0026	0.0061	5.9		0.35	0.0021	nd	nd
WY 2013	39	0.0038	0.00082	0.0046	0.0099	4.4		2.3	0.0098	nd	nd
WY 2014	0.65	0.00028	0.000034	0.00031	0.00052	na		0.003	nd	nd	nd
WY 2015	17	0.0025	0.00040	0.0029	0.0045	2.5		0.47	0.0012	nd	nd
WY 2016	52	0.020	0.0039	0.0239	0.0210	1.5		4.7	0.0071	nd	nd
WY 2017	32	0.0040	0.0014	0.0054	0.0052	2.6		0.90	0.0023	nd	nd
WY 2010-2017 sum	344	0.053	0.012	0.069	0.075		sum	13	0.037	nd	nd
WY 2010-2017 sum						4.7	8-yr	13	0.058	nd	nd
Total Outflow (11452							ı				
WY 2010	171	0.06	0.0053	0.07	0.040			16	0.13	nd	nd
WY 2011	456	0.16	0.0076	0.17	0.12			38	0.13	nd	nd
WY 2012	22	0.0021	0.00047	0.0026	0.0061			0.35	0.0021	nd	nd
WY 2013	102	0.05	0.0042	0.05	0.08			12	0.032	nd	nd
WY 2014	0.7	0.00028	0.00003	0.00031	0.00052			0.00	0.00	nd	nd
WY 2015	83	0.018	0.0013	0.019	0.019			11	0.011	nd	nd
WY 2016	113	0.024	0.0045	0.028	0.025			11	0.013	nd	nd
WY 2017	1058	0.076	0.0061	0.082	0.075		61	73	0.125	nd	nd
WY 2010-2017 sum	2007	0.39	0.029	0.42	0.36		sum	161	0.45	nd	nd
WY 2010-2017 sum] 11452001\			11452000	and 1145200		8-yr	161	0.45	nd	nd
Combined Outflow (2								10	0.00	nd	nd
WY 2010 WY 2011	171 456	0.019 0.099	0.0031 0.0084	0.022 0.108	0.019 0.10	8.1		10 50	0.08	nd	nd
WY 2011 WY 2012	22	0.0022	0.00068	0.108	0.10	3.6 5.9		0.46	0.18	nd nd	nd nd
WY 2012 WY 2013	102	0.0022	0.0008	0.0029	0.0086	3.0		18	0.0027	nd	nd
WY 2013 WY 2014	0.7	0.0023	0.0022	0.020	0.032			0.005	0.055	nd	nd
WY 2014 WY 2015	83	0.00023	0.00043	0.00027	0.00079	1.3		26	0.034	nd	nd
WY 2015 WY 2016	113	0.015	0.0017	0.016	0.052	1.2		14	0.034	nd	nd
WY 2016 WY 2017	1058	0.055	0.0072	0.36	0.051	1.7		118	0.017	nd	nd
WY 2017 WY 2010-2017 sum	2007	0.55	0.0190	0.59	0.29	1./	sum	237	0.20	nd	nd
WY 2010-2017 sum	2007	0.55	0.042	0.33	0.34	2.8	8-yr	237	0.65	nd	nd
	1					2.0	J yı	237	0.00		110

Table 9x. Trap efficiency standard error calculations for methylmercury, Cache Creek Settling Basin, California, water years 2010-17

[MeHg, methylmercury; pMeHg, particulate methylmercury; fMeHg, filtered methylmercury; p+fMeHg, particulate plus filtered methylmercury; wwMeHg, whole-water methylmercury; SS-L, suspended sediment load from LOADEST model; SS-G, suspended sediment load from GLCAS model; pMeHg-L, particulate methylmercury load from multiplying geometric mean gravimetric pMeHg concentration times SS-L; pMeHg-G, particulate methylmercury load from multiplying geometric mean gravimetric pMeHg concentration times SS-G;TE, Trap Efficiency; SE, standard error; TE data in Table 7]

	Total flow	pMeHg	fMeHg	p+fMeHg	wwMeHg		SS-L	pMeHg-L	SS-G	pMeHg-G	pMeHg-L + fMeHg	pMeHg-G + fMeHg
	TE (SE)	TE (SE)	TE (SE)	TE (SE)	TE (SE)		TE (SE)	TE (SE)	TE (SE)	TE (SE)	TE (SE)	TE (SE)
Inflow (11452600) vs. Total Outflow (11452901) - sum of 11452800 and 11452900												
WY 2010		36%	28%	35%	nd		13%	29%	nd	nd	39%	nd
WY 2011		25%	25%	25%	26%		10%	10%	nd	nd	19%	nd
WY 2012		20%	14%	19%	21%		13%	18%	nd	nd	25%	nd
WY 2013		39%	42%	39%	50%		12%	8%	nd	nd	17%	nd
WY 2014		40%	10%	30%	23%		4%	nd	nd	nd	nd	nd
WY 2015		17%	27%	17%	24%		10%	12%	nd	nd	24%	nd
WY 2016		16%	52%	18%	25%		7%	8%	nd	nd	18%	nd
WY 2017		5%	29%	5%	13%		8%	9%	nd	nd	12%	nd
WY 2010-2	2017 sum	14%	29%	nd	nd	sum	9%	11%	nd	nd	18%	nd
WY 2010-2	2017 sum					8-yr	9%	10%	nd	nd	10%	nd
Inflow (11	L452600) vs.	Combined	Outflow ([<mark>11452901</mark>] -	weighted av	verage of 1	1452800 a	nd 1145290	00			
WY 2010		17%	22%	18%	28%		9%	21%	nd	nd	68%	nd
WY 2011		18%	27%	19%	22%		13%	14%	nd	nd	42%	nd
WY 2012		20%	18%	19%	29%		16%	22%	nd	nd	81%	nd
WY 2013		18%	25%	19%	28%		19%	15%	nd	nd	45%	nd
WY 2014		33%	13%	26%	35%		6%	nd	nd	nd	nd	nd
WY 2015		18%	42%	20%	45%		24%	34%	nd	nd	89%	nd
WY 2016		37%	81%	39%	38%		9%	10%	nd	nd	32%	nd
WY 2017		21%	52%	22%	29%		12%	13%	nd	nd	41%	nd
WY 2010-2	2017 sum	19%	37%	20%	29%	sum	13%	15%	nd	nd	46%	nd
WY 2010-2	2017 sum					8-yr	13%	15%	nd	nd	42%	nd

Table 11x. Summary of load calculations for total mercury, Cache Creek at Yolo and Road 102, water year 2017

[THg, total mercury; pTHg, particulate total mercury; fTHg, filtered total mercury; p+fTHg, particulate plus filtered total mercury; wwTHg, whole-water total mercury; SS-L, suspended sediment load from LOADEST model; SS-G, suspended sediment load from GLCAS model; pTHg-L, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration times SS-L; pTHg-G, particulate total mercury load from multiplying geometric mean gravimetric pTHg concentration times SS-G; conc., concentration; light gray and orange shading indicates particulate total mercury load; dark gray and orange shading indicates whole-water total mercury load]

	Total flow	pTHg	fTHg	p+fTHg	wwTHg	pTHg	SS-L	pTHg-L	SS-G	pTHg-G	pTHg-L + fTHg	pTHg-G + fTHg
	volume	load	load	load	load	conc.	load	load	load	load	load	load
						(geometric						
	10 ⁹ L	kg	kg	kg	kg	mean)	10 ⁶ kg	kg	10 ⁶ kg	kg	kg	kg
						ng/g		· ·				J
Yolo 11452500	•	•		•			•		•	<u>'</u>		
WY 2017	1044	334				261	1094	286	1061	277		
Inflow 11452600							·					
WY 2017 (from 2016-17)	1044	305	6.9	312	312	265	1222	324	971	257	331	264
Inflow 11452600							•				•	
WY 2017	1044	275				265	1066	282	971	257		
Standard Error												
Yolo 11452500												
WY 2017	1044	58				261	132	34	nd	nd		
Inflow 11452600										•		
WY 2017 (from 2016-17)	1044	60				265	237	63	nd	nd		
Inflow 11452600				-								
WY 2017	1044	70				265	181	48	nd	nd		