

Appendix B

Reclamation's 2015 Water Quality Monitoring Report

RECLAMATION

Managing Water in the West

Delta-Mendota Canal Water Quality Monitoring Program

**Report of Flows, Concentrations and Loads of Salts
and Selenium**

October - December 2015

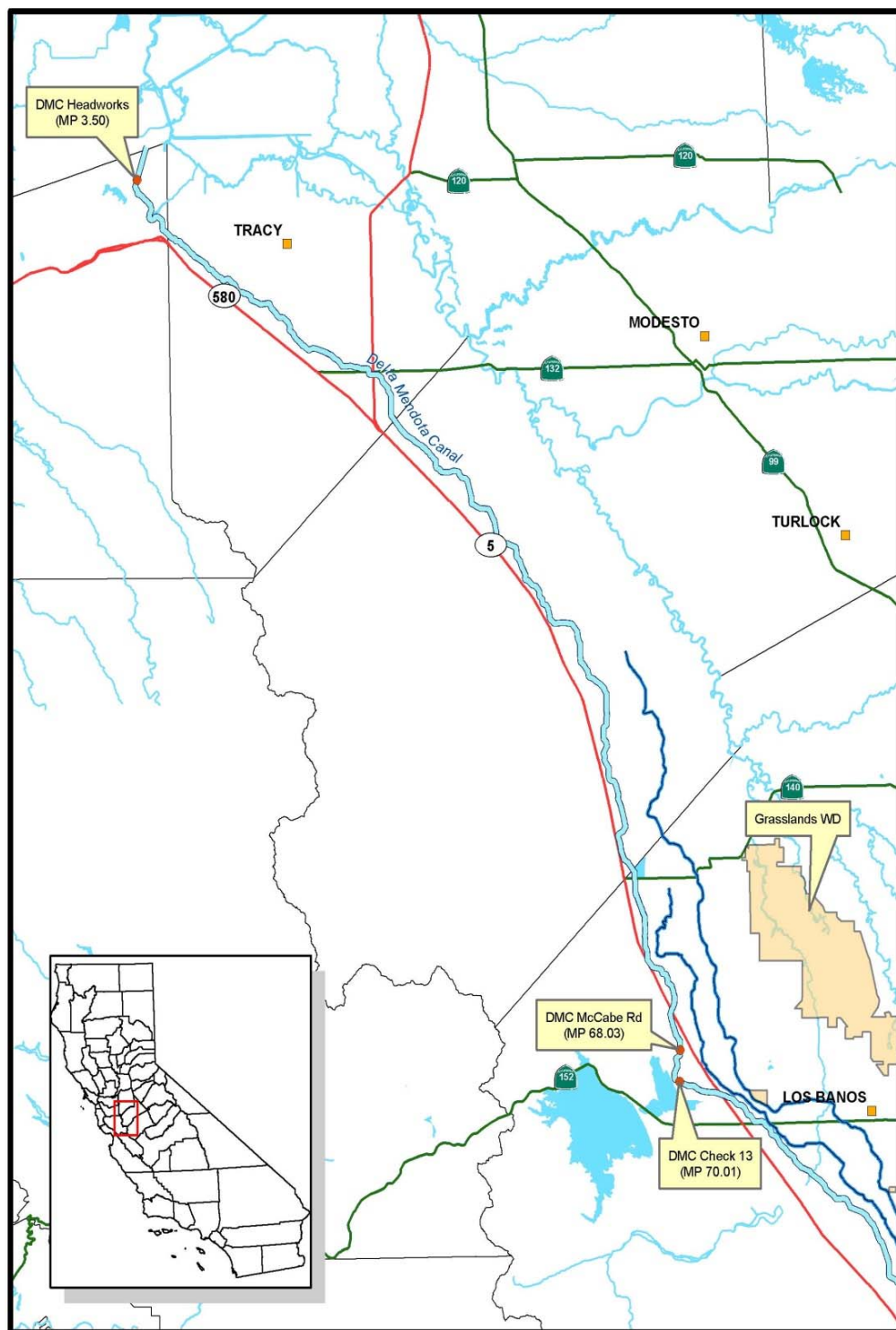


Delta-Mendota Canal Check 21

Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.



DMC Water Quality Monitoring

0 2.5 5 10 15 20 Miles



ArcGIS 9.2
Projection: WGS NAD 1984
DMC Water Quality Monitoring
U.S. Bureau of Reclamation

Delta-Mendota Canal Water Quality Monitoring Program

October - December 2015

Table 1. Continuous water quality monitoring near the DMC Headworks near Tracy (MP 3.50)

	Mean Daily Flow cfs	DCI + Release/ - Pumping cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
October 1, 2015	806	0	662	374	813	<0.4	0.2	0.9
October 2, 2015	806	0	667	377	819	<0.4	0.2	0.9
October 3, 2015	806	0	670	378	822	<0.4	0.2	0.9
October 4, 2015	811	0	672	379	829	<0.4	0.2	0.9
October 5, 2015	806	0	675	381	828	<0.4	0.2	0.9
October 6, 2015	805	0	678	382	830	<0.4	0.2	0.9
October 7, 2015	804	0	678	382	829	<0.4	0.2	0.9
October 8, 2015	805	0	682	385	835	<0.4	0.2	0.9
October 9, 2015	803	0	683	385	834	<0.4	0.2	0.9
October 10, 2015	804	0	682	385	834	<0.4	0.2	0.9
October 11, 2015	1,603	0	684	386	1,668	<0.4	0.2	1.7
October 12, 2015	1,607	0	680	384	1,662	<0.4	0.2	1.7
October 13, 2015	1,609	0	676	381	1,656	<0.4	0.2	1.7
October 14, 2015	1,612	0	674	380	1,654	<0.4	0.2	1.7
October 15, 2015	1,614	0	676	381	1,661	<0.4	0.2	1.7
October 16, 2015	1,616	0	677	382	1,665	<0.4	0.2	1.7
October 17, 2015	1,619	0	683	385	1,682	<0.4	0.2	1.7
October 18, 2015	1,046	0	678	382	1,079	<0.4	0.2	1.1
October 19, 2015	805	0	<u>681</u>	384	834	NA		
October 20, 2015	831	0	<u>690</u>	389	871	NA		
October 21, 2015	867	0	<u>693</u>	390	913	NA		
October 22, 2015	911	0	698	393	966	<0.4	0.2	1.0
October 23, 2015	955	0	707	398	1,025	<0.4	0.2	1.0
October 24, 2015	956	0	717	403	1,040	<0.4	0.2	1.0
October 25, 2015	956	0	721	405	1,046	<0.4	0.2	1.0
October 26, 2015	953	0	725	407	1,048	<0.4	0.2	1.0
October 27, 2015	955	0	739	415	1,069	<0.4	0.2	1.0
October 28, 2015	955	0	749	420	1,082	<0.4	0.2	1.0
October 29, 2015	957	0	760	426	1,100	<0.4	0.2	1.0
October 30, 2015	953	0	779	436	1,122	<0.4	0.2	1.0
October 31, 2015	952	0	796	445	1,143	<0.4	0.2	1.0
Mean flow (cfs)	1,045							
Total (acre-feet)	64,241							
Flow weighted monthly specific conductance (µS/cm)			693					
Flow weighted monthly total dissolved solids (mg/L)				391				
Total monthly salt load (tons)					34,118			
Flow weighted monthly selenium concentration (µg/L)							0.2	
Estimated monthly total (pounds)								35
Data Sources:	SLDMWA	Reclamation/CVO		calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS = 0.5325 * SC + 21.4					No samples 10/19 - 10/21; autosampler error		

Delta-Mendota Canal Water Quality Monitoring Program

October - December 2015

Table 1. Continuous water quality monitoring near the DMC Headworks near Tracy (MP 3.50)

	Mean Daily Flow cfs	DCI + Release / - Pumping cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
November 1, 2015	993	0	791	443	1,185	<0.4	0.2	1.1
November 2, 2015	951	0	786	440	1,129	<0.4	0.2	1.0
November 3, 2015	1,629	0	804	450	1,975	<0.4	0.2	1.8
November 4, 2015	1,785	0	770	431	2,078	<0.4	0.2	1.9
November 5, 2015	1,895	0	727	409	2,088	<0.4	0.2	2.0
November 6, 2015	1,904	0	680	384	1,969	<0.4 T	0.2	2.1
November 7, 2015	1,901	0	673	380	1,948	<0.4 T	0.2	2.1
November 8, 2015	1,907	0	702	395	2,033	<0.4 T	0.2	2.1
November 9, 2015	1,909	0	705	397	2,044	<0.4 T	0.2	2.1
November 10, 2015	1,907	0	691	389	2,003	<0.4	0.2	2.1
November 11, 2015	1,900	0	671	379	1,941	<0.4	0.2	2.1
November 12, 2015	1,900	0	698	393	2,015	<0.4	0.2	2.1
November 13, 2015	1,902	0	694	391	2,006	<0.4	0.2	2.1
November 14, 2015	1,906	0	678	382	1,967	<0.4	0.2	2.1
November 15, 2015	1,915	0	681	384	1,984	<0.4	0.2	2.1
November 16, 2015	1,908	0	702	395	2,034	<0.4	0.2	2.1
November 17, 2015	1,892	0	647	366	1,867	<0.4	0.2	2.0
November 18, 2015	1,888	0	631	357	1,820	<0.4	0.2	2.0
November 19, 2015	1,958	0	660	373	1,969	<0.4	0.2	2.1
November 20, 2015	1,916	0	660	373	1,927	<0.4	0.2	2.1
November 21, 2015	1,921	0	682	385	1,993	<0.4	0.2	2.1
November 22, 2015	830	0	670	378	847	<0.4	0.2	0.9
November 23, 2015	799	0	659	372	802	<0.4	0.2	0.9
November 24, 2015	807	0	666	376	818	<0.4	0.2	0.9
November 25, 2015	811	0	673	380	831	<0.4	0.2	0.9
November 26, 2015	801	0	672	379	820	<0.4	0.2	0.9
November 27, 2015	800	0	658	372	802	<0.4	0.2	0.9
November 28, 2015	800	0	656	371	800	<0.4	0.2	0.9
November 29, 2015	799	0	660	373	803	<0.4	0.2	0.9
November 30, 2015	798	0	657	371	799	<0.4	0.2	0.9
Mean flow (cfs)	1,501							
Total (acre-feet)	89,319							
Flow weighted monthly specific conductance (µS/cm)			691					
Flow weighted monthly total dissolved solids (mg/L)				389				
Total monthly salt load (tons)					47,297			
Flow weighted monthly selenium concentration (µg/L)							0.2	
Estimated monthly total (pounds)								49
Data Sources:	SLDMWA		Reclamation	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS = 0.5325 * SC + 21.4					"T" - sample analyzed past the holding time No samples Aug 18-19; autosampler malfunction.		

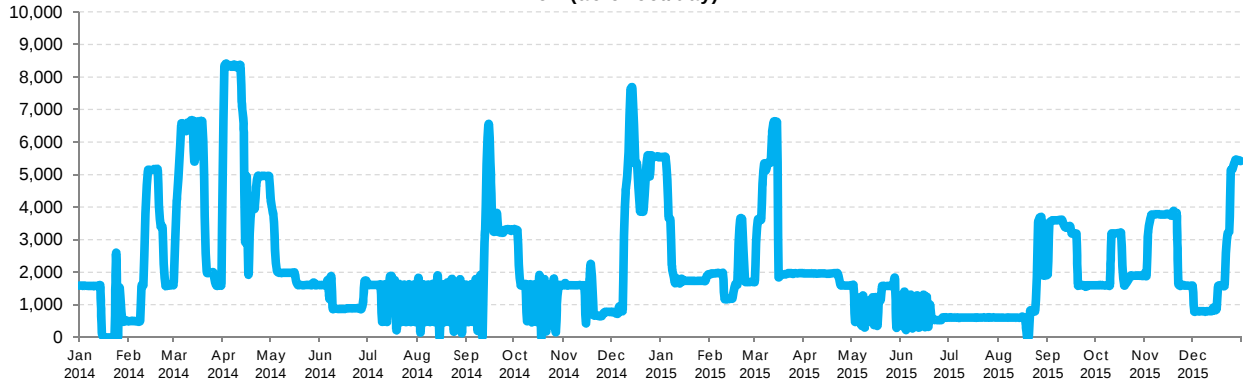
Delta-Mendota Canal Water Quality Monitoring Program

October - December 2015

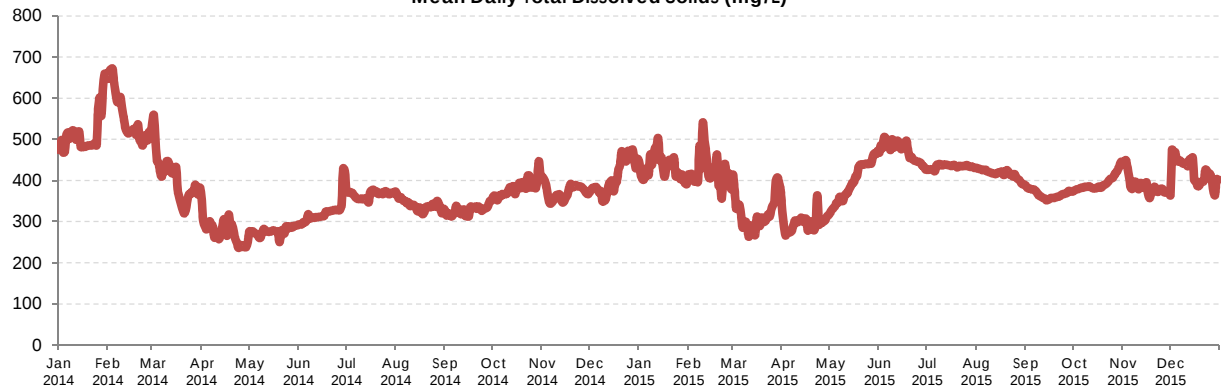
Table 1. Continuous water quality monitoring near the DMC Headworks near Tracy (MP 3.50)

	Mean Daily Flow cfs	DCI + Release / - Pumping cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
December 1, 2015	796	0	644	364	782	<0.4	0.2	0.9
December 2, 2015	401	0	850	474	513	<0.4 T	0.2	0.4
December 3, 2015	402	0	829	463	502	<0.4 T	0.2	0.4
December 4, 2015	404	0	840	469	511	<0.4 T	0.2	0.4
December 5, 2015	401	0	800	447	484	<0.4 T	0.2	0.4
December 6, 2015	405	0	799	447	488	<0.4 T	0.2	0.4
December 7, 2015	405	0	802	448	490	<0.4	0.2	0.4
December 8, 2015	404	0	793	444	483	<0.4	0.2	0.4
December 9, 2015	396	0	788	441	471	<0.4	0.2	0.4
December 10, 2015	406	0	791	443	485	<0.4	0.2	0.4
December 11, 2015	406	0	784	439	481	<0.4	0.2	0.4
December 12, 2015	408	0	777	435	479	<0.4	0.2	0.4
December 13, 2015	407	0	807	451	496	<0.4	0.2	0.4
December 14, 2015	459	0	801	448	555	<0.4	0.2	0.5
December 15, 2015	419	0	815	455	515	<0.4	0.2	0.5
December 16, 2015	436	0	713	401	471	<0.4 T	0.2	0.5
December 17, 2015	792	0	708	398	851	<0.4 T	0.2	0.9
December 18, 2015	806	0	686	387	841	<0.4 T	0.2	0.9
December 19, 2015	797	0	687	387	833	<0.4 T	0.2	0.9
December 20, 2015	797	0	703	396	850	<0.4 T	0.2	0.9
December 21, 2015	798	0	705	397	854	<0.4 T	0.2	0.9
December 22, 2015	1,365	0	709	399	1,469	<0.4	0.2	1.5
December 23, 2015	1,615	0	<u>760</u>	426	1,856	NA		
December 24, 2015	1,644	0	<u>754</u>	423	1,875	NA		
December 25, 2015	2,590	0	<u>745</u>	418	2,922	NA		
December 26, 2015	2,605	0	<u>739</u>	415	2,916	NA		
December 27, 2015	2,690	0	<u>715</u>	402	2,918	NA		
December 28, 2015	2,751	0	<u>660</u>	373	2,767	NA		
December 29, 2015	2,743	0	<u>645</u>	365	2,699	NA		
December 30, 2015	2,742	0	716	403	2,979	<0.4	0.2	3.0
December 31, 2015	2,731	0	715	402	2,962	<0.4	0.2	2.9
Mean flow (cfs)	1,110							
Total (acre-feet)	68,273							
Flow weighted monthly specific conductance (µS/cm)			724					
Flow weighted monthly total dissolved solids (mg/L)				407				
Total monthly salt load (tons)					37,798			
Flow weighted monthly selenium concentration (µg/L)							0.2	
Estimated monthly total (pounds)								37
Data Sources:	SLDMWA	Reclamation/CVO	calculated	calculated	Reclamation	calculated	calculated	calculated
Notes:	(1) SC => TDS = 0.5325 * SC + 21.4			"T" - sample analyzed past the holding time No samples Dec 23-29 due to autosampler error.				

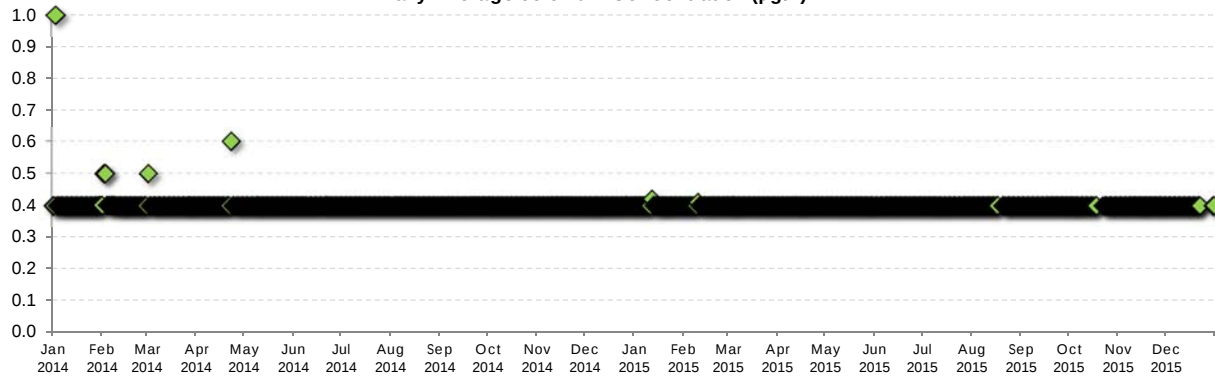
**Figure 1a. DMC Headworks
Flow (acre-feet/day)**



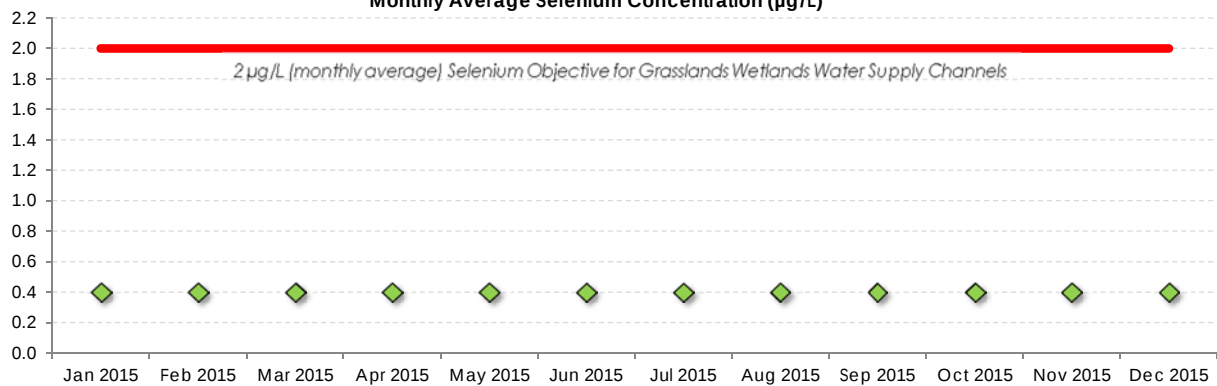
**Figure 1b. DMC Headworks
Mean Daily Total Dissolved Solids (mg/L)**



**Figure 1c. DMC Headworks
Daily Average Selenium Concentration (µg/L)**



**Figure 1d. DMC Headworks
Monthly Average Selenium Concentration (µg/L)**



Delta-Mendota Canal Water Quality Monitoring Program

October - December 2015

Table 2. Continuous water quality monitoring at DMC Check 13 at O'Neill Forebay (MP 70.01)

	Mean Daily Flow cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
October 1, 2015	1,200	699	393	1,271	<0.4	0.2	1.3
October 2, 2015	1,050	696	391	1,108	<0.4	0.2	1.1
October 3, 2015	1,000	693	389	1,051	<0.4	0.2	1.1
October 4, 2015	1,000	724	406	1,095	<0.4	0.2	1.1
October 5, 2015	1,000	726	407	1,098	<0.4	0.2	1.1
October 6, 2015	1,200	726	407	1,318	<0.4	0.2	1.3
October 7, 2015	1,200	718	403	1,304	<0.4	0.2	1.3
October 8, 2015	1,200	717	402	1,302	<0.4	0.2	1.3
October 9, 2015	1,250	743	416	1,403	<0.4	0.2	1.3
October 10, 2015	1,400	716	402	1,517	<0.4	0.2	1.5
October 11, 2015	1,350	736	412	1,502	<0.4	0.2	1.5
October 12, 2015	1,350	960	531	1,935	<0.4	0.2	1.5
October 13, 2015	1,350	716	402	1,463	<0.4	0.2	1.5
October 14, 2015	1,250	708	397	1,340	<0.4	0.2	1.3
October 15, 2015	1,250	707	397	1,338	<0.4	0.2	1.3
October 16, 2015	1,150	710	399	1,236	<0.4	0.2	1.2
October 17, 2015	1,100	713	400	1,187	<0.4	0.2	1.2
October 18, 2015	1,100	706	396	1,176	<0.4	0.2	1.2
October 19, 2015	1,100	705	396	1,175	<0.4	0.2	1.2
October 20, 2015	1,000	703	395	1,065	<0.4 T	0.2	1.1
October 21, 2015	750	712	400	808	<0.4 T	0.2	0.8
October 22, 2015	600	736	412	667	<0.4 T	0.2	0.6
October 23, 2015	600	730	409	662	<0.4 T	0.2	0.6
October 24, 2015	600	737	413	668	<0.4 T	0.2	0.6
October 25, 2015	600	736	412	667	<0.4 T	0.2	0.6
October 26, 2015	600	748	419	678	<0.4 T	0.2	0.6
October 27, 2015	600	747	418	677	<0.4 T	0.2	0.6
October 28, 2015	600	734	411	666	<0.4 T	0.2	0.6
October 29, 2015	800	737	413	891	<0.4	0.2	0.9
October 30, 2015	750	732	410	830	<0.4	0.2	0.8
October 31, 2015	800	742	416	897	<0.4	0.2	0.9
Mean flow (cfs)	994						
Total (acre-feet)	61,092						
Flow weighted monthly specific conductance (µS/cm)		730					
Flow weighted monthly total dissolved solids (mg/L)			409				
Total monthly salt load (tons)				33,995			
Flow weighted monthly selenium concentration (µg/L)						0.2	
Estimated monthly total (pounds)							33
Data Sources:	SLDMWA	Reclamation	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS conversion factor =		0.5317*SC + 21.0		"T" - sample analyzed past the holding time		

Delta-Mendota Canal Water Quality Monitoring Program

October - December 2015

Table 2. Continuous water quality monitoring at DMC Check 13 at O'Neill Forebay (MP 70.01)

	Mean Daily Flow cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
November 1, 2015	600	741	415	672	<0.4	0.2	0.6
November 2, 2015	600	742	416	673	<0.4	0.2	0.6
November 3, 2015	300	753	421	341	<0.4	0.2	0.3
November 4, 2015	200	794	443	239	<0.4 T	0.2	0.2
November 5, 2015	200	784	438	236	<0.4 T	0.2	0.2
November 6, 2015	500	794	443	598	<0.4 T	0.2	0.5
November 7, 2015	1,100	747	418	1,241	<0.4 T	0.2	1.2
November 8, 2015	1,200	698	392	1,269	<0.4 T	0.2	1.3
November 9, 2015	850	678	381	875	<0.4 T	0.2	0.9
November 10, 2015	750	697	392	792	<0.4	0.2	0.8
November 11, 2015	800	701	394	850	<0.4	0.2	0.9
November 12, 2015	700	711	399	754	<0.4	0.2	0.8
November 13, 2015	750	703	395	799	<0.4	0.2	0.8
November 14, 2015	850	853	475	1,088	<0.4	0.2	0.9
November 15, 2015	850	716	402	921	<0.4	0.2	0.9
November 16, 2015	850	713	400	917	<0.4	0.2	0.9
November 17, 2015	850	698	392	899	<0.4	0.2	0.9
November 18, 2015	900	715	401	974	<0.4	0.2	1.0
November 19, 2015	1,050	690	388	1,099	<0.4	0.2	1.1
November 20, 2015	1,200	631	357	1,154	<0.4	0.2	1.3
November 21, 2015	1,150	657	370	1,149	<0.4	0.2	1.2
November 22, 2015	1,050	660	372	1,053	<0.4	0.2	1.1
November 23, 2015	1,050	695	391	1,106	<0.4	0.2	1.1
November 24, 2015	950	654	369	945	<0.4	0.2	1.0
November 25, 2015	825	717	402	895	<0.4	0.2	0.9
November 26, 2015	750	732	410	830	<0.4	0.2	0.8
November 27, 2015	675	743	416	758	<0.4	0.2	0.7
November 28, 2015	675	723	405	738	<0.4	0.2	0.7
November 29, 2015	675	702	394	718	<0.4	0.2	0.7
November 30, 2015	675	714	401	729	<0.4	0.2	0.7
Mean flow (cfs)	786						
Total (acre-feet)	46,761						
Flow weighted monthly specific conductance (µS/cm)		709					
Flow weighted monthly total dissolved solids (mg/L)			398				
Total monthly salt load (tons)				25,311			
Flow weighted monthly selenium concentration (µg/L)						0.2	
Estimated monthly total (pounds)							25
Data Sources:	SLDMWA	Reclamation	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS conversion factor =		0.5317*SC + 21.0		"T" - sample analyzed past the holding time		

Delta-Mendota Canal Water Quality Monitoring Program

October - December 2015

Table 2. Continuous water quality monitoring at DMC Check 13 at O'Neill Forebay (MP 70.01)

	Mean Daily Flow cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
December 1, 2015	775	713	713	1,491	<0.4 T	0.2	0.8
December 2, 2015	900	712	712	1,729	<0.4 T	0.2	1.0
December 3, 2015	900	688	688	1,670	<0.4 T	0.2	1.0
December 4, 2015	800	706	706	1,524	<0.4 T	0.2	0.9
December 5, 2015	800	683	683	1,474	<0.4 T	0.2	0.9
December 6, 2015	800	702	702	1,515	<0.4 T	0.2	0.9
December 7, 2015	800	705	705	1,521	<0.4	0.2	0.9
December 8, 2015	800	721	721	1,556	<0.4	0.2	0.9
December 9, 2015	950	717	717	1,837	<0.4	0.2	1.0
December 10, 2015	850	729	729	1,672	<0.4	0.2	0.9
December 11, 2015	800	732	732	1,580	<0.4	0.2	0.9
December 12, 2015	800	742	742	1,601	<0.4	0.2	0.9
December 13, 2015	700	743	743	1,403	<0.4	0.2	0.8
December 14, 2015	700	726	726	1,371	<0.4	0.2	0.8
December 15, 2015	650	720	720	1,262	<0.4 T	0.2	0.7
December 16, 2015	550	704	704	1,044	<0.4 T	0.2	0.6
December 17, 2015	500	709	709	956	<0.4 T	0.2	0.5
December 18, 2015	400	732	732	790	<0.4 T	0.2	0.4
December 19, 2015	350	751	751	709	<0.4 T	0.2	0.4
December 20, 2015	350	756	756	714	<0.4 T	0.2	0.4
December 21, 2015	300	751	751	608	<0.4 T	0.2	0.3
December 22, 2015	325	779	779	683	<0.4	0.2	0.4
December 23, 2015	250	769	769	519	<0.4	0.2	0.3
December 24, 2015	250	731	731	493	<0.4	0.2	0.3
December 25, 2015	250	759	759	512	<0.4	0.2	0.3
December 26, 2015	300	778	778	630	<0.4	0.2	0.3
December 27, 2015	350	780	780	736	<0.4	0.2	0.4
December 28, 2015	300	775	775	627	<0.4	0.2	0.3
December 29, 2015	300	767	767	621	<0.4	0.2	0.3
December 30, 2015	300	708	708	573	<0.4	0.2	0.3
December 31, 2015	350	710	710	670	<0.4	0.2	0.4
Mean flow (cfs)	563						
Total (acre-feet)	34,612						
Flow weighted monthly specific conductance (µS/cm)		724					
Flow weighted monthly total dissolved solids (mg/L)			406				
Total monthly salt load (tons)				19,114			
Flow weighted monthly selenium concentration (µg/L)						0.2	
Estimated monthly total (pounds)							19
Data Sources:	SLDMWA	Reclamation/CVO	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS conversion factor =		0.5317*SC + 21.0		"T" - sample analyzed past the holding time		

Figure 2a. DMC Check 13
Flow (acre-feet/day)

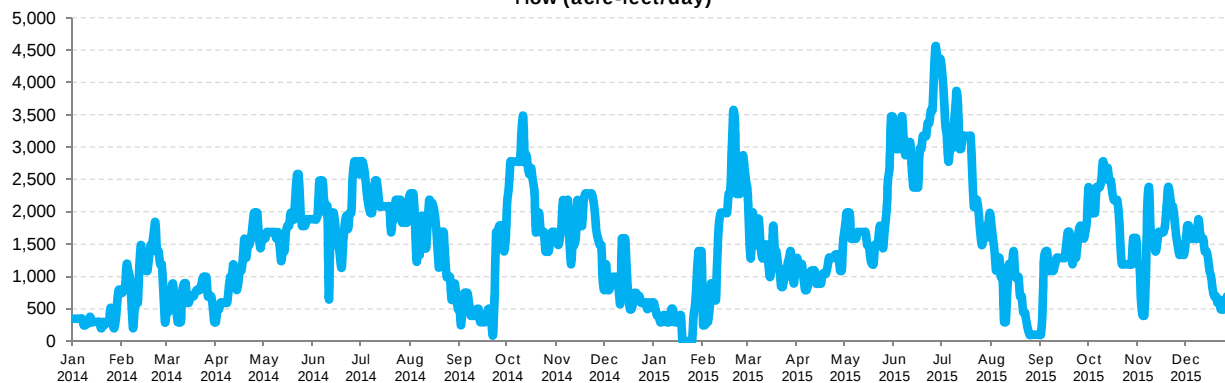


Figure 2b. DMC Check 13
Mean Daily TDS

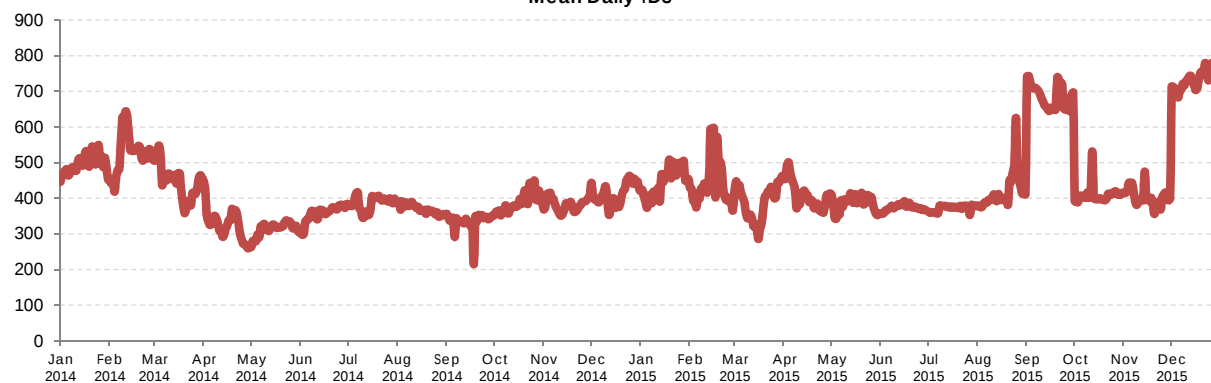


Figure 2c. DMC Check 13
Mean Daily Selenium Concentration ($\mu\text{g/L}$)

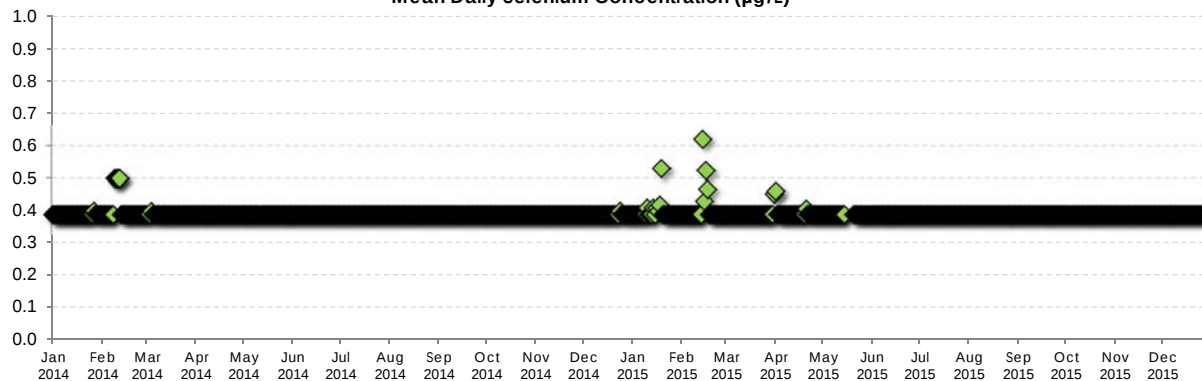
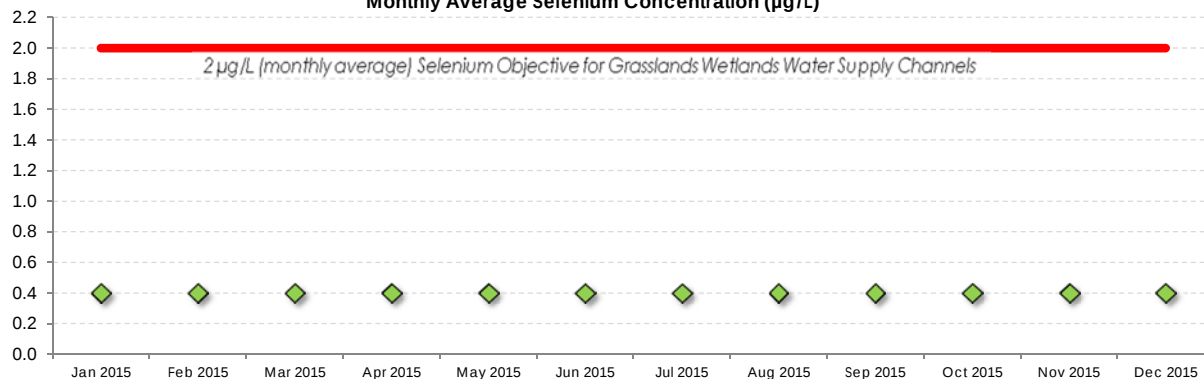


Figure 2d. DMC Check 13
Monthly Average Selenium Concentration ($\mu\text{g/L}$)



Delta-Mendota Canal Water Quality Monitoring Program

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Table 3. Continuous water quality monitoring, DMC Check 21 at Bass Avenue (MP 116.48)

	Mean Daily Flow DMC Check 21 cfs	Firebaugh Wasteway cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
October 1, 2015	1,100		741	414	1,229	<0.4	0.2	1.2
October 2, 2015	950		732	409	1,049	<0.4	0.2	1.0
October 3, 2015	900		740	414	1,004	<0.4	0.2	1.0
October 4, 2015	900		750	419	1,017	<0.4	0.2	1.0
October 5, 2015	900		748	418	1,014	<0.4	0.2	1.0
October 6, 2015	1,050	2.5	745	416	1,182	<0.4	0.2	1.1
October 7, 2015	1,050		775	432	1,223	<0.4	0.2	1.1
October 8, 2015	1,050		779	434	1,229	<0.4	0.2	1.1
October 9, 2015	1,050		758	423	1,198	<0.4	0.2	1.1
October 10, 2015	1,050		758	423	1,198	<0.4	0.2	1.1
October 11, 2015	1,100		760	424	1,258	<0.4	0.2	1.2
October 12, 2015	1,100		766	427	1,268	<0.4	0.2	1.2
October 13, 2015	1,100	2.5	761	425	1,263	<0.4	0.2	1.2
October 14, 2015	1,000		784	437	1,178	<0.4	0.2	1.1
October 15, 2015	1,050		766	427	1,210	<0.4	0.2	1.1
October 16, 2015	950		756	422	1,081	<0.4	0.2	1.0
October 17, 2015	900		751	419	1,018	<0.4	0.2	1.0
October 18, 2015	900		757	422	1,026	<0.4	0.2	1.0
October 19, 2015	900		762	425	1,032	<0.4	0.2	1.0
October 20, 2015	800	2.5	761	425	919	<0.4 T	0.2	0.9
October 21, 2015	600		753	420	680	<0.4 T	0.2	0.6
October 22, 2015	450		752	420	510	<0.4 T	0.2	0.5
October 23, 2015	450		749	418	508	<0.4 T	0.2	0.5
October 24, 2015	450		773	431	523	<0.4 T	0.2	0.5
October 25, 2015	450		792	441	535	<0.4 T	0.2	0.5
October 26, 2015	450		792	441	535	<0.4 T	0.2	0.5
October 27, 2015	450	2.5	815	453	553	<0.4 T	0.2	0.5
October 28, 2015	450		832	462	561	<0.4 T	0.2	0.5
October 29, 2015	650		827	459	805	<0.4	0.2	0.7
October 30, 2015	600		820	456	737	<0.4	0.2	0.6
October 31, 2015	650		821	456	800	<0.4	0.2	0.7
Mean flow (cfs)	821							
Total (acre-feet)	50,480	19.8						
Average monthly specific conductance (µS/cm)			766					
Average monthly total dissolved solids (mg/L)				427				
Total monthly salt load (tons)					29,341			
Average monthly selenium concentration (µg/L)							0.2	
Estimated monthly total (pounds)								27
Data Sources:	SLDMWA	SLDMWA	Reclamation/CVO	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS conversion factor =		0.5252 * SC + 24.87			"T" - sample analyzed past the holding time		

Delta-Mendota Canal Water Quality Monitoring Program

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Table 3. Continuous water quality monitoring, DMC Check 21 at Bass Avenue (MP 116.48)

	Mean Daily Flow			Total			Selenium value	Selenium
	DMC	Firebaugh	Specific	Dissolved	Salt	Total	used for	Load
	Check 21	Wasteway	Conductance	Solids (1)	Load	Selenium	load calculation	Load
	cfs	cfs	µS/cm	mg/L	tons/day	µg/L	µg/L	computed
								pounds/day
November 1, 2015	450		821	456	554	<0.4	0.2	0.5
November 2, 2015	450		815	453	550	<0.4	0.2	0.5
November 3, 2015	300	2.5	825	458	374	<0.4 T	0.2	0.3
November 4, 2015	100		846	469	127	<0.4 T	0.2	0.1
November 5, 2015	100		859	476	128	<0.4 T	0.2	0.1
November 6, 2015	100		852	472	127	<0.4 T	0.2	0.1
November 7, 2015	950		974	536	1,375	<0.4 T	0.2	1.0
November 8, 2015	950		809	450	1,153	<0.4 T	0.2	1.0
November 9, 2015	700		845	469	885	<0.4 T	0.2	0.8
November 10, 2015	550	2.5	826	459	684	<0.4	0.2	0.6
November 11, 2015	600		815	453	733	<0.4	0.2	0.6
November 12, 2015	500		786	438	590	<0.4	0.2	0.5
November 13, 2015	500		766	427	576	<0.4	0.2	0.5
November 14, 2015	600		778	433	702	<0.4	0.2	0.6
November 15, 2015	600		804	447	724	<0.4	0.2	0.6
November 16, 2015	650		803	447	783	<0.4	0.2	0.7
November 17, 2015	650	2.5	794	442	778	<0.4	0.2	0.7
November 18, 2015	700		772	430	813	<0.4	0.2	0.8
November 19, 2015	800		787	438	946	<0.4	0.2	0.9
November 20, 2015	800		772	430	929	<0.4	0.2	0.9
November 21, 2015	800		782	436	940	<0.4	0.2	0.9
November 22, 2015	750		766	427	864	<0.4	0.2	0.8
November 23, 2015	750		698	391	792	<0.4	0.2	0.8
November 24, 2015	650	2.5	722	404	711	<0.4	0.2	0.7
November 25, 2015	550		708	397	589	<0.4	0.2	0.6
November 26, 2015	500		784	437	589	<0.4	0.2	0.5
November 27, 2015	425		768	428	491	<0.4	0.2	0.5
November 28, 2015	425		783	436	500	<0.4	0.2	0.5
November 29, 2015	425		744	416	476	<0.4	0.2	0.5
November 30, 2015	425		840	466	534	<0.4	0.2	0.5
Mean flow (cfs)	558							
Total (acre-feet)	33,220	19.8						
Average monthly specific conductance (µS/cm)			796					
Average monthly total dissolved solids (mg/L)				443				
Total monthly salt load (tons)					20,013			
Average monthly selenium concentration (µg/L)							0.2	
Estimated monthly total (pounds)								18
Data Sources:	SLDMWA	SLDMWA	Reclamation/CVQ	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS conversion factor =		0.5252 * SC + 24.87			"T" - sample analyzed past the holding time		

Delta-Mendota Canal Water Quality Monitoring Program

October - December 2015

Table 3. Continuous water quality monitoring, DMC Check 21 at Bass Avenue (MP 116.48)

	DMC Check 21 cfs	Mean Daily Flow Firebaugh Wasteway cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
December 1, 2015	525	2.5	629	355	505	<0.4 T	0.2	0.6
December 2, 2015	525		628	355	502	<0.4 T	0.2	0.6
December 3, 2015	650		600	340	596	<0.4 T	0.2	0.7
December 4, 2015	550		600	340	504	<0.4 T	0.2	0.6
December 5, 2015	550		613	347	515	<0.4 T	0.2	0.6
December 6, 2015	550		616	348	517	<0.4 T	0.2	0.6
December 7, 2015	550		637	359	533	<0.4	0.2	0.6
December 8, 2015	550	2.5	653	368	548	<0.4	0.2	0.6
December 9, 2015	650		662	373	653	<0.4	0.2	0.7
December 10, 2015	550		661	372	552	<0.4	0.2	0.6
December 11, 2015	550		669	376	558	<0.4	0.2	0.6
December 12, 2015	550		685	385	571	<0.4	0.2	0.6
December 13, 2015	450		680	382	464	<0.4	0.2	0.5
December 14, 2015	450		677	380	462	<0.4	0.2	0.5
December 15, 2015	400	2.5	819	455	494	<0.4 T	0.2	0.4
December 16, 2015	350		828	460	434	<0.4 T	0.2	0.4
December 17, 2015	300		840	466	377	<0.4 T	0.2	0.3
December 18, 2015	250		837	464	313	<0.4 T	0.2	0.3
December 19, 2015	200		846	469	253	<0.4 T	0.2	0.2
December 20, 2015	200		863	478	258	0.4 T	0.4	0.5
December 21, 2015	200		805	448	242	<0.4 T	0.2	0.2
December 22, 2015	250	2.5	865	479	326	0.5	0.5	0.7
December 23, 2015	250		889	492	332	<0.4	0.2	0.3
December 24, 2015	250		883	489	330	<0.4	0.2	0.3
December 25, 2015	250		861	477	322	<0.4	0.2	0.3
December 26, 2015	250		875	484	327	<0.4	0.2	0.3
December 27, 2015	250		851	472	318	<0.4	0.2	0.3
December 28, 2015	250		877	485	327	<0.4	0.2	0.3
December 29, 2015	250	2.5	914	505	344	<0.4	0.2	0.3
December 30, 2015	250		911	503	339	<0.4	0.2	0.3
December 31, 2015	250		912	504	340	<0.4	0.2	0.3
Mean flow (cfs)	389							
Total (acre-feet)	23,900	24.8						
Average monthly specific conductance (µS/cm)			723					
Average monthly total dissolved solids (mg/L)				404				
Total monthly salt load (tons)					13,156			
Average monthly selenium concentration (µg/L)							0.2	
Estimated monthly total (pounds)								14
Data Sources:	SLDMWA	SLDMWA	Reclamation/CVO	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC =>	TDS conversion factor =	0.5252 * SC + 24.87					

Figure 3a. DMC Check 21
Flow (acre-feet/day)

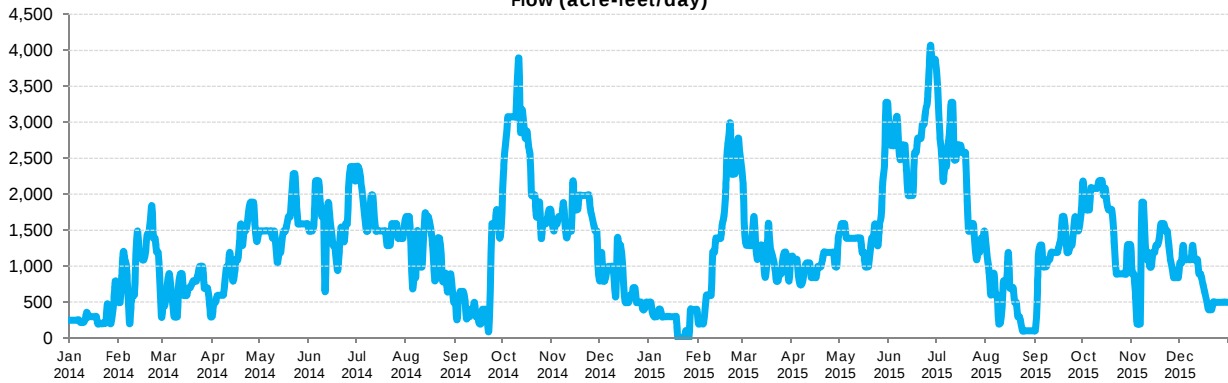


Figure 3b. DMC Check 21
Mean Daily Total Dissolved Solids (mg/L)

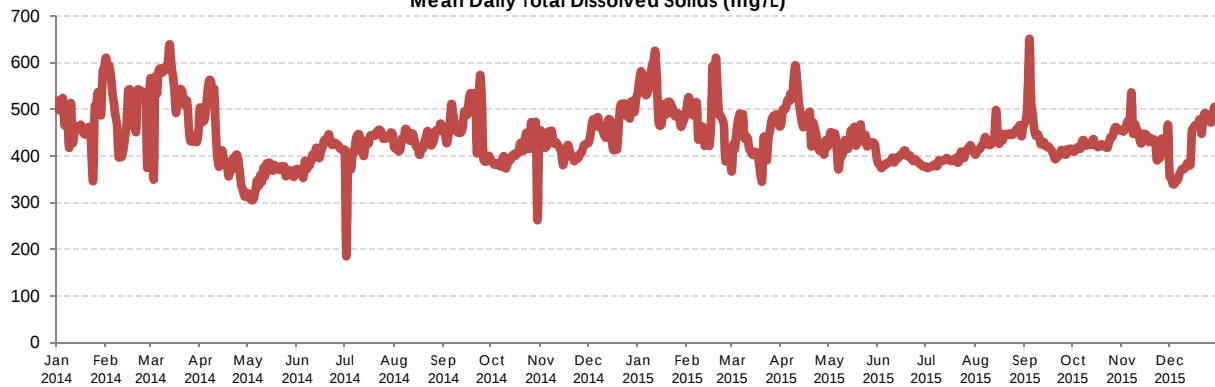


Figure 3c. DMC Check 21
Mean Daily Selenium (µg/L)

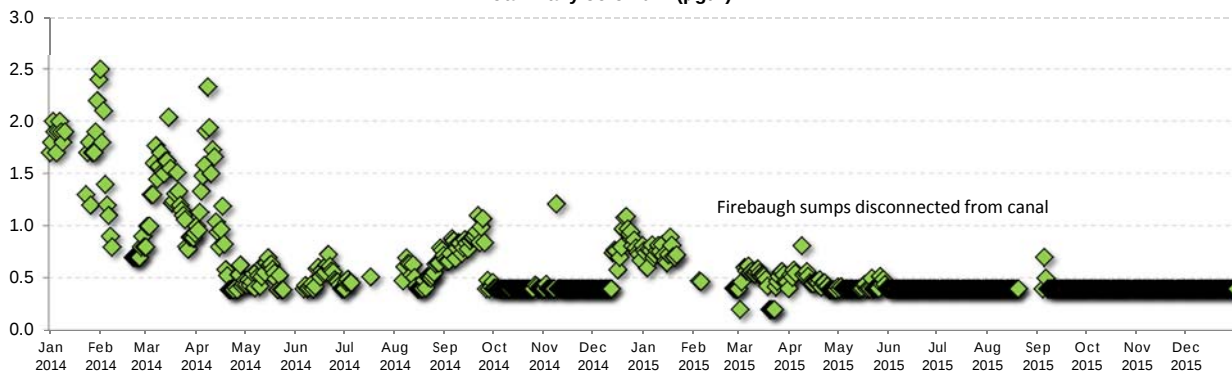
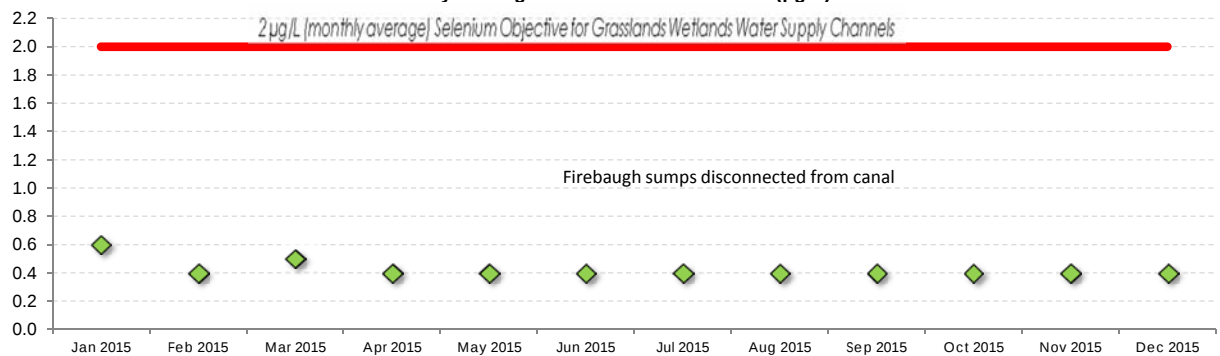


Figure 3d. DMC Check 21
Monthly Average Selenium Concentration (µg/L)



Delta-Mendota Canal Water Quality Monitoring Program

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Table 4. Continuous water quality monitoring on the CCID Main Canal at Bass Ave

	Mean Daily Flow cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
October 1, 2015	536	741	414	599	<0.4	0.2	0.6
October 2, 2015	594	733	410	657	<0.4	0.2	0.6
October 3, 2015	584	740	414	652	<0.4	0.2	0.6
October 4, 2015	579	751	419	655	<0.4	0.2	0.6
October 5, 2015	579	747	417	652	<0.4	0.2	0.6
October 6, 2015	663	744	416	743	<0.4	0.2	0.7
October 7, 2015	683	773	431	794	<0.4	0.2	0.7
October 8, 2015	713	779	434	835	<0.4	0.2	0.8
October 9, 2015	713	756	422	812	<0.4	0.2	0.8
October 10, 2015	713	756	422	812	<0.4	0.2	0.8
October 11, 2015	733	755	422	833	<0.4	0.2	0.8
October 12, 2015	743	764	426	854	<0.4	0.2	0.8
October 13, 2015	748	760	424	856	<0.4	0.2	0.8
October 14, 2015	733	783	436	863	<0.4	0.2	0.8
October 15, 2015	733	765	427	844	<0.4	0.2	0.8
October 16, 2015	733	754	421	832	<0.4	0.2	0.8
October 17, 2015	633	752	420	717	<0.4	0.2	0.7
October 18, 2015	594	755	422	675	<0.4	0.2	0.6
October 19, 2015	599	761	425	686	<0.4	0.2	0.6
October 20, 2015	507	760	424	580	<0.4 T	0.2	0.5
October 21, 2015	397	753	420	450	<0.4 T	0.2	0.4
October 22, 2015	322	751	419	364	<0.4 T	0.2	0.3
October 23, 2015	290	749	418	327	<0.4 T	0.2	0.3
October 24, 2015	251	767	428	290	<0.4 T	0.2	0.3
October 25, 2015	251	790	440	298	<0.4 T	0.2	0.3
October 26, 2015	243	789	440	288	<0.4 T	0.2	0.3
October 27, 2015	236	811	451	287	<0.4 T	0.2	0.3
October 28, 2015	282	834	463	352	<0.4 T	0.2	0.3
October 29, 2015	306	826	459	379	<0.4	0.2	0.3
October 30, 2015	282	820	456	347	<0.4	0.2	0.3
October 31, 2015	273	820	456	335	<0.4	0.2	0.3
Mean flow (cfs)	524						
Total (acre-feet)	32,220						
Flow weighted monthly specific conductance (µS/cm)		764					
Flow weighted monthly total dissolved solids (mg/L)			426				
Total monthly salt load (tons)				18,668			
Flow weighted monthly selenium concentration (µg/L)						0.2	
Estimated monthly total (pounds)							18
Data Sources:	SJRECWA	Reclamation	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS conversion factor =		0.5296*SC + 21.67		"T" - sample analyzed past the holding time		

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Table 4. Continuous water quality monitoring on the CCID Main Canal at Bass Ave

	Mean Daily Flow cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
November 1, 2015	314	820	456	386	<0.4	0.2	0.3
November 2, 2015	367	817	454	450	<0.4	0.2	0.4
November 3, 2015	330	919	508	453	<0.4 T	0.2	0.4
November 4, 2015	282	1015	559	425	<0.4 T	0.2	0.3
November 5, 2015	310	1130	620	519	<0.4 T	0.2	0.3
November 6, 2015	306	1108	608	502	<0.4 T	0.2	0.3
November 7, 2015	398	977	539	579	0.406 T	0.2	0.4
November 8, 2015	306	804	447	369	<0.4 T	0.2	0.3
November 9, 2015	314	844	469	397	<0.4 T	0.2	0.3
November 10, 2015	306	826	459	379	<0.4	0.2	0.3
November 11, 2015	298	810	451	362	<0.4	0.2	0.3
November 12, 2015	282	793	442	336	<0.4	0.2	0.3
November 13, 2015	274	763	426	315	<0.4	0.2	0.3
November 14, 2015	302	774	432	352	<0.4	0.2	0.3
November 15, 2015	334	801	446	402	<0.4	0.2	0.4
November 16, 2015	346	798	444	415	<0.4	0.2	0.4
November 17, 2015	0	800	445	0	<0.4	0.2	0.0
November 18, 2015	0	769	429	0	<0.4	0.2	0.0
November 19, 2015	0	784	437	0	<0.4	0.2	0.0
November 20, 2015	0	771	430	0	<0.4	0.2	0.0
November 21, 2015	0	780	435	0	<0.4	0.2	0.0
November 22, 2015	0	767	428	0	<0.4	0.2	0.0
November 23, 2015	0	701	393	0	<0.4	0.2	0.0
November 24, 2015	0	717	401	0	<0.4	0.2	0.0
November 25, 2015	0	714	400	0	<0.4	0.2	0.0
November 26, 2015	0	733	410	0	<0.4	0.2	0.0
November 27, 2015	0	760	424	0	<0.4	0.2	0.0
November 28, 2015	0	790	440	0	<0.4	0.2	0.0
November 29, 2015	0	735	411	0	<0.4	0.2	0.0
November 30, 2015	0	840	467	0	<0.4	0.2	0.0
Mean flow (cfs)	169						
Total (acre-feet)	10,050						
Flow weighted monthly specific conductance (µS/cm)		876					
Flow weighted monthly total dissolved solids (mg/L)			486				
Total monthly salt load (tons)				6,637			
Flow weighted monthly selenium concentration (µg/L)						0.2	
Estimated monthly total (pounds)							5
Data Sources:	SJRECWA	Reclamation/SJRECWA	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS conversion factor =		0.5296*SC + 21.67		"T" - sample analyzed past the holding time		

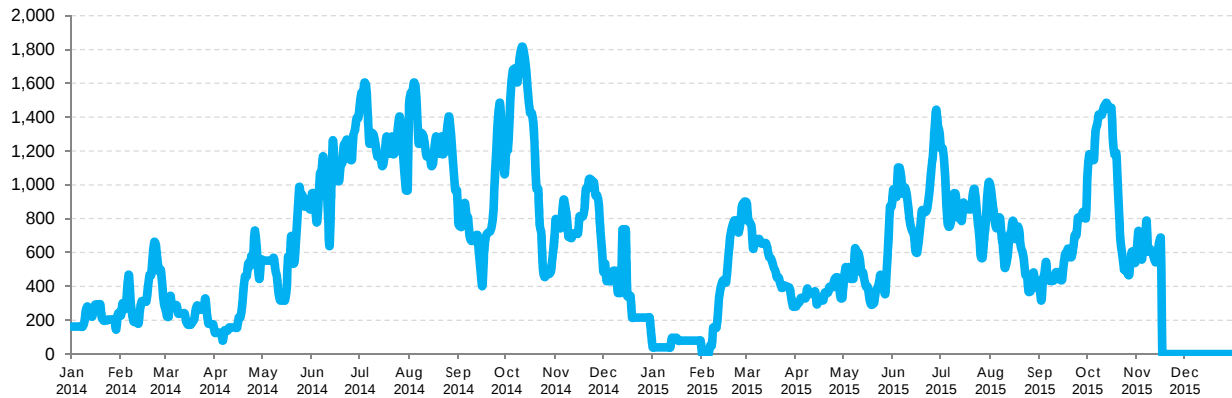
Delta-Mendota Canal Water Quality Monitoring Program

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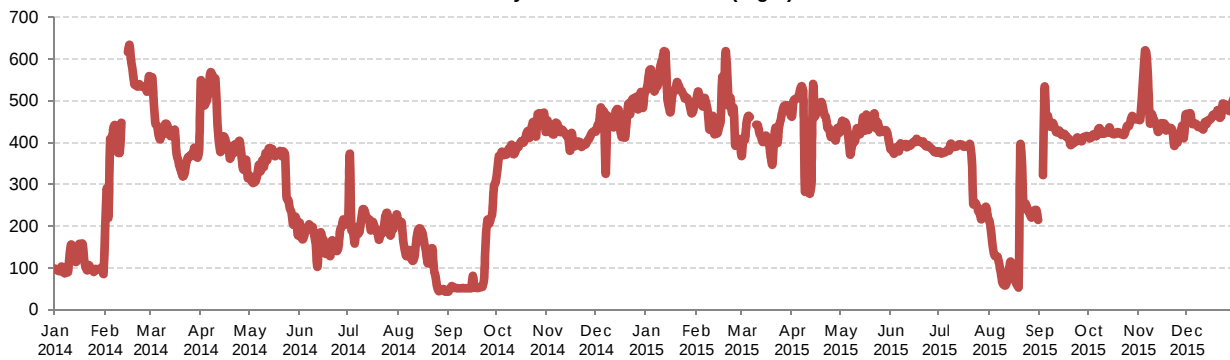
Table 4. Continuous water quality monitoring on the CCID Main Canal at Bass Ave

	Mean Daily Flow cfs	Specific Conductance µS/cm	Total Dissolved Solids (1) mg/L	Salt Load tons/day	Total Selenium µg/L	Selenium value used for load calculation µg/L	Selenium Load computed pounds/day
December 1, 2015	0	844	469	0	0.4 T	0.4	0.0
December 2, 2015	0	821	456	0	<0.4 T	0.2	0.0
December 3, 2015	0	847	470	0	<0.4 T	0.2	0.0
December 4, 2015	0	800	445	0	0.4 T	0.4	0.0
December 5, 2015	0	798	444	0	<0.4 T	0.2	0.0
December 6, 2015	0	801	446	0	<0.4 T	0.2	0.0
December 7, 2015	0	793	442	0	<0.4	0.2	0.0
December 8, 2015	0	784	437	0	<0.4	0.2	0.0
December 9, 2015	0	789	440	0	<0.4	0.2	0.0
December 10, 2015	0	788	439	0	<0.4	0.2	0.0
December 11, 2015	0	774	432	0	<0.4	0.2	0.0
December 12, 2015	0	807	449	0	<0.4	0.2	0.0
December 13, 2015	0	798	444	0	<0.4	0.2	0.0
December 14, 2015	0	815	453	0	<0.4	0.2	0.0
December 15, 2015	0	817	454	0	<0.4 T	0.2	0.0
December 16, 2015	0	824	458	0	<0.4 T	0.2	0.0
December 17, 2015	0	840	467	0	<0.4 T	0.2	0.0
December 18, 2015	0	836	464	0	<0.4 T	0.2	0.0
December 19, 2015	0	846	470	0	<0.4 T	0.2	0.0
December 20, 2015	0	861	478	0	<0.4 T	0.2	0.0
December 21, 2015	0	827	460	0	<0.4 T	0.2	0.0
December 22, 2015	0	833	463	0	<0.4	0.2	0.0
December 23, 2015	0	890	493	0	<0.4	0.2	0.0
December 24, 2015	0	886	491	0	<0.4	0.2	0.0
December 25, 2015	0	885	490	0	<0.4	0.2	0.0
December 26, 2015	0	871	483	0	<0.4	0.2	0.0
December 27, 2015	0	857	476	0	<0.4	0.2	0.0
December 28, 2015	0	864	479	0	<0.4	0.2	0.0
December 29, 2015	0	899	498	0	<0.4	0.2	0.0
December 30, 2015	0	917	507	0	<0.4	0.2	0.0
December 31, 2015	0	907	502	0	<0.4	0.2	0.0
Mean flow (cfs)	0						
Total (acre-feet)	0						
Flow weighted monthly specific conductance (µS/cm)							
Flow weighted monthly total dissolved solids (mg/L)							
Total monthly salt load (tons)							
Flow weighted monthly selenium concentration (µg/L)							
Estimated monthly total (pounds)							
Data Sources:	SJRECWA	Reclamation/SJRECWA	calculated	calculated	Reclamation	calculated	calculated
Notes:	(1) SC => TDS conversion factor =		0.5296*SC + 21.67		"T" - sample analyzed past the holding time		

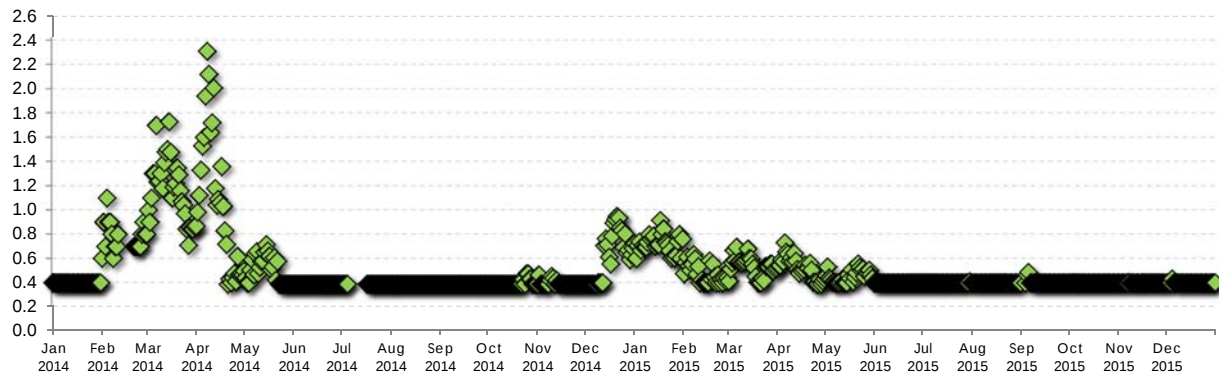
**Figure 4a. CCID Main Canal at Bass Ave
Flow (acre-feet/day)**



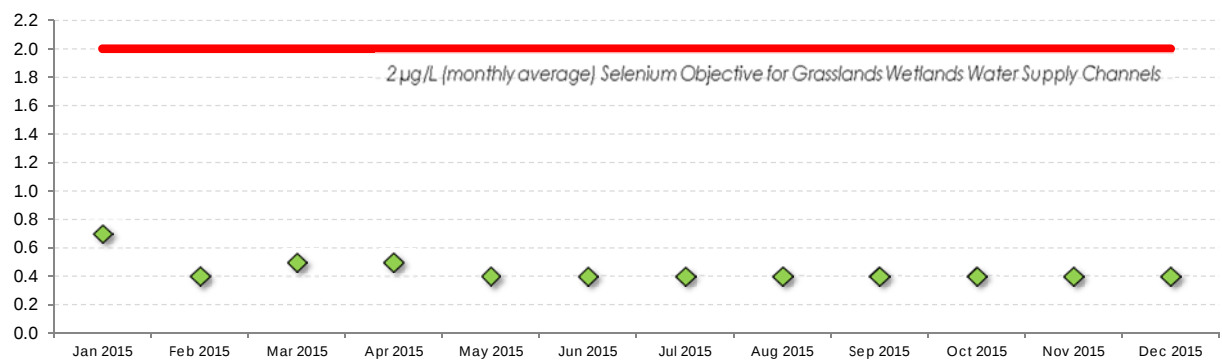
**Figure 4b. CCID Main Canal at Bass Ave
Mean Daily Total Dissolved Solids (mg/L)**



**Figure 4c. CCID Main Canal at Bass Ave
Mean Daily Selenium (µg/L)**



**Figure 4d. CCID Main Canal at Bass Ave
Monthly Average Selenium Concentration (µg/L)**



Delta-Mendota Canal Water Quality Monitoring Program

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Table 5a. Calculated Flows of Ground Water Discharged into the Delta-Mendota Canal from the Sumps near Firebaugh, California

Sample Site:	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Combined Sumps	
DMC Milepost:	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	acre-feet	acre-feet
Units:	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	per month
January 2, 2015	Four sumps have been removed from the canal				2.67	0.23	3	
January 6, 2015					6.35	0.56	7	
January 16, 2015					3.03	0.29	3	
January 21, 2015					7.82	0.70	9	22
February 3, 2015					4.13	0.33	4	
February 10, 2015					4.73	0.33	5	
February 18, 2015					4.20	0.45	5	
February 25, 2015					3.53	0.40	4	18
March 3, 2015					4.54	0.41	5	
March 10, 2015					5.82	0.52	6	
March 19, 2015					4.95	0.47	5	
March 27, 2015					3.71	0.31	4	21
April 2, 2015					3.10	0.30	3	
April 7, 2015					5.70	0.50	6	
April 17, 2015					3.30	0.30	4	
April 23, 2015					3.40	0.30	4	
April 29, 2015					3.90	0.30	4	21
May 6, 2015					0.00	0.29	0	
May 14, 2015					8.39	0.21	9	
May 20, 2015					Sumps removed from the canal		0	
May 28, 2015							0	9

Summary of USBR data: March 1987 - Present

Sample Site:	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Combined Sumps	
DMC Milepost:	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	acre-feet	acre-feet
Units:	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	acre-feet	per month
Maximum	62.4	87.0	45.4	102.5	72.2	50.7	293	376
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Median	4.9	2.4	4.9	5.8	5.5	0.8	27	95
Average	7.6	4.3	7.1	10.3	8.6	1.5	38	96
Number of readings	819	819	819	819	846	845	848	340

Data Source: Flow calculated from power used by each sump pump.

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Table 5b. Concentration of Selenium in Ground Water Discharged into the Delta-Mendota Canal from the Sumps near Firebaugh, California

Sample Site:	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Flow-weighted concentration	Month
DMC Milepost:	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50		Average
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
January 2, 2015	Sumps disconnected from the canal				89	329	108	
January 6, 2015					95	364	117	
January 16, 2015					87	361	111	
January 21, 2015					92	375	115	113
February 3, 2015					92	394	115	
February 10, 2015					88	399	108	
February 18, 2015					86	397	116	
February 25, 2015					84	306	107	111
March 3, 2015					78	297	96	
March 10, 2015					85	334	106	
March 19, 2015					83	361	107	
March 27, 2015					83	384	107	104
April 2, 2015					75	397	104	
April 7, 2015					73	396	99	
April 17, 2015					74	421	103	
April 23, 2015					72	435	101	
April 29, 2015					73	463	100	102
May 6, 2015					79	480	480	
May 14, 2015						492	89	
May 20, 2015					72	515	294	
May 28, 2015					Sumps removed from the canal			288

Note: Blank = no sample collected

Summary of USBR data: March 1987 - Present

Sample Site:	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Combined Sumps	
DMC Milepost:	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50		
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Maximum	870	940	450	320	510	2,000	480	399
Minimum	100	170	86	43	70	90	78	79
Median	220	360	170	90	210	420	192	200
Average	272	368	177	93	197	463	198	203
Number of measurements	737	725	738	725	763	765	770	262
Data Sources:	Reclamation	Reclamation	Reclamation	Reclamation	Reclamation	Reclamation	calculated	

Delta-Mendota Canal Water Quality Monitoring Program

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Table 5c. Estimated Loads of Selenium Discharged into the Delta-Mendota Canal from the Sumps near Firebaugh, California

Sample Site:	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Combined Sumps	
DMC Milepost:	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50		
Units:	pounds	pounds	pounds	pounds	pounds	pounds	pounds	pounds/month
January 2, 2015	sumps disconnected from the canal				0.6	0.2	0.9	
January 6, 2015					1.6	0.6	2.2	
January 16, 2015					0.7	0.3	1.0	
January 21, 2015					2.0	0.7	2.7	6.7
February 3, 2015					1.0	0.4	1.4	
February 10, 2015					1.1	0.4	1.5	
February 18, 2015					1.0	0.5	1.5	
February 25, 2015					0.8	0.3	1.1	5.5
March 3, 2015					1.0	0.3	1.3	
March 10, 2015					1.4	0.5	1.8	
March 19, 2015					1.1	0.5	1.6	
March 27, 2015					0.8	0.3	1.2	5.9
April 2, 2015					0.6	0.3	1.0	
April 7, 2015					1.1	0.5	1.7	
April 17, 2015					0.7	0.3	1.0	
April 23, 2015					0.7	0.4	1.0	
April 29, 2015					0.8	0.4	1.1	5.8
May 6, 2015					0.0	0.4	0.4	
May 14, 2015					1.8	0.3	2.1	
May 20, 2015					0.0	0.0	0.0	
May 28, 2015					Sumps removed from the canal			2.5

Summary of USBR data: March 1987 - Present

Sample Site:	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Combined Sumps	
DMC Milepost:	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50		
Units:	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/month
Maximum	49.2	59.6	20.2	41.8	53.3	103.4	193.3	5798
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Median	2.9	2.1	2.1	1.3	2.4	0.7	12.9	77
Average	4.1	3.8	3.1	2.5	3.9	1.5	18.4	669
Number of samples	742	742	742	742	771	770	769	281
Data Sources:	Reclamation	Reclamation	Reclamation	Reclamation	Reclamation	Reclamation	calculated	calculated

Delta-Mendota Canal Water Quality Monitoring Program

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Table 5d. Specific Conductance of Ground Water Discharged into the Delta-Mendota Canal from the Sumps near Firebaugh, California

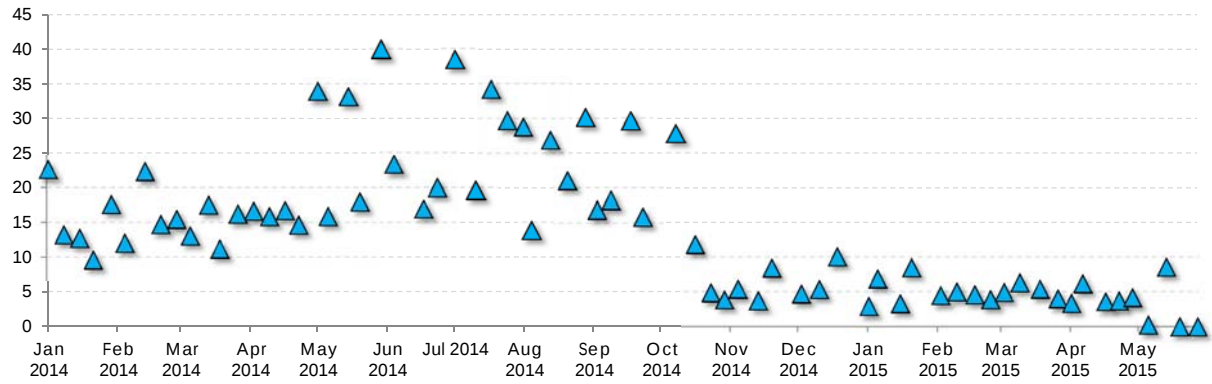
Sample Site:	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Flow-weighted		Salt load
DMC Milepost:	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	Conductance	TDS	
Units:	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm	mg/L	tons/month
January 2, 2015	Sumps disconnected from the canal				4,862	8,494			
January 6, 2015					5,175	8,533			
January 16, 2015					4,875	8,704			
January 21, 2015					4,692	8,810	5,209	3,386	100
February 3, 2015					5,290	9,257			
February 10, 2015					5,283	9,304			
February 18, 2015					5,153	9,345			
February 25, 2015					5,128	7,664	5,520	3,588	88
March 3, 2015					4,743	7,383			
March 10, 2015					4,994	8,120			
March 19, 2015					4,871	8,576			
March 27, 2015					5,219	9,136	5,232	3,401	96
April 2, 2015					4,827	9,301			
April 7, 2015					4,781	9,314			
April 17, 2015					4,822	9,729			
April 23, 2015					4,791	9,905			
April 29, 2015					4,700	9,977	5,137	3,339	96
May 6, 2015					5,066	5,214			
May 14, 2015						10362			
May 20, 2015					5013	10460			
May 28, 2015					Sumps removed from the canal		3,840	2,496	60

Note: blank = no samples collected

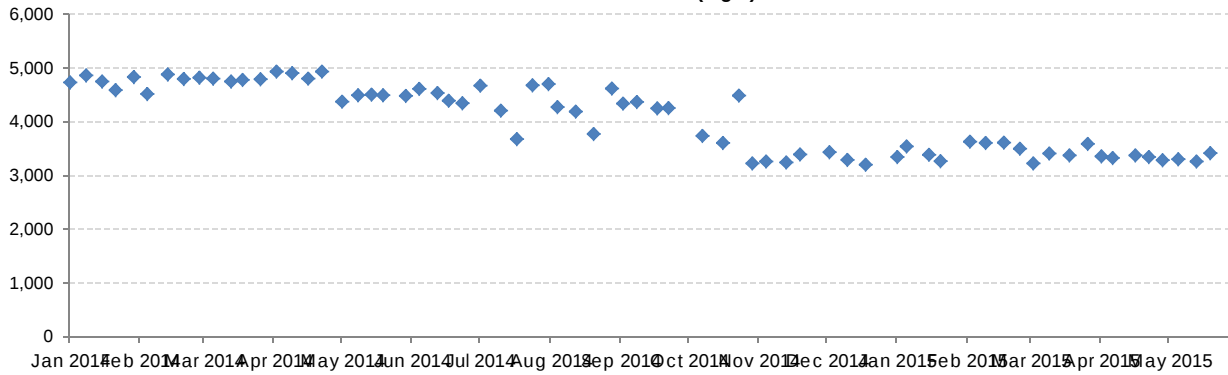
Summary of USBR data: March 1987 - Present

Sample Site:	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Combined Sumps	
DMC Milepost:	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	Conductance	TDS
Units:	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm	mg/L
Maximum	12,740	13,770	9,665	11,890	10,370	18,900	9,867	6,414
Minimum	996	4,268	4,490	4,659	1,084	1,720	1,695	1,102
Median	7,041	9,466	6,650	7,090	7,079	9,049	7,462	4,850
Average	7,595	9,375	6,632	7,108	6,856	9,018	7,338	4,770
Number of samples	727	717	730	718	753	755	206	206
Data Sources:	Reclamation	Reclamation	Reclamation	Reclamation	Reclamation	Reclamation	calculated	calculated

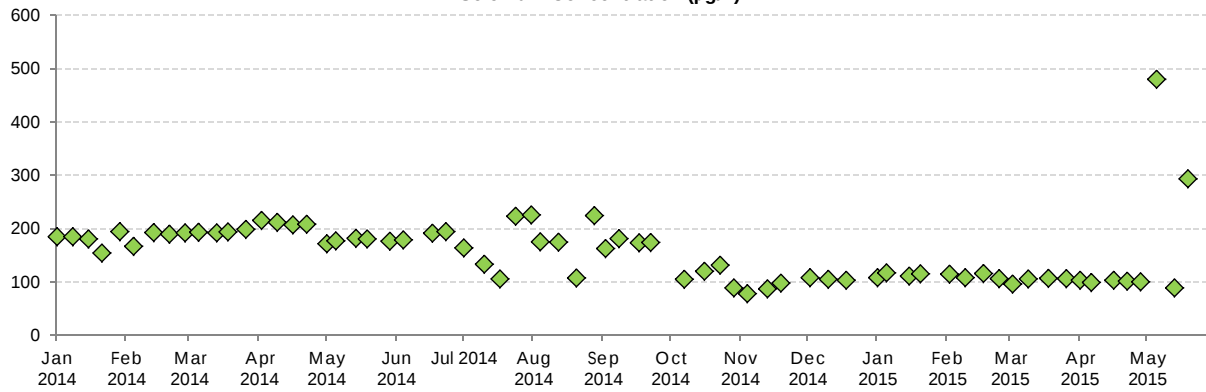
**Figure 5a. Firebaugh Sumps
Flow (acre-feet)**



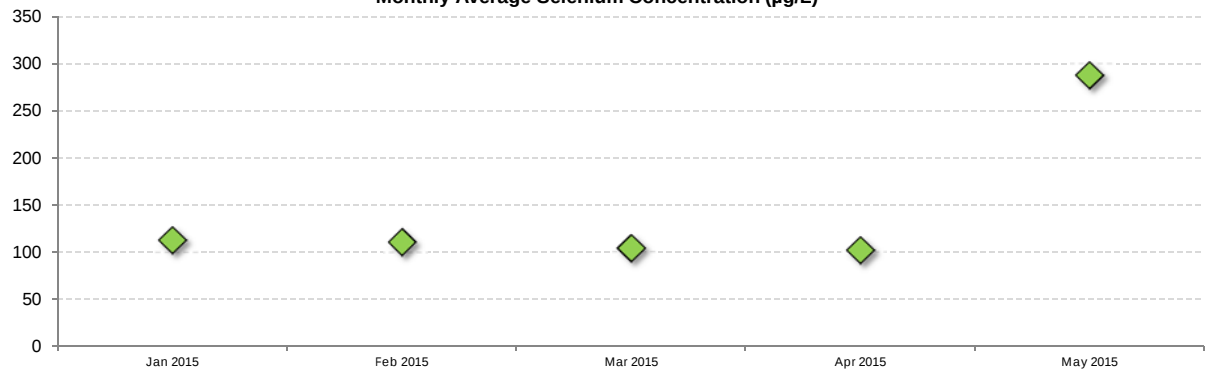
**Figure 5b. Firebaugh Sumps
Total Dissolved Solids (mg/L)**



**Figure 5c. Firebaugh Sumps
Selenium Concentration (µg/L)**



**Figure 5d. Firebaugh Sumps
Monthly Average Selenium Concentration (µg/L)**



Delta-Mendota Canal Water Quality Monitoring Program

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Table 6a. Electrical conductivity of water in the Delta-Mendota Canal and Central California Irrigation District canals, grab samples

Sample Site:	DMC Farm bridge	DMC McCabe Rd	DMC Russell Ave	DMC Telles Ranch	DMC Washoe Ave	DMC Bass Ave	CCID Main Canal	CCID Outside Canal
DMC Milepost:	MP-67.15	MP-68.03	MP-97.68	MP-100.850	MP-110.120	MP-116.48	Bass Ave	Bass Ave
Units:	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm	µS/cm
January 7, 2015			774	1,151	1,050	958	976	959
February 3, 2015			809	750	942	941	955	920
March 3, 2015			820	714	725	733	697	733
April 7, 2015		622	887	1,099	909	991	972	981
May 6, 2015			607	661	675	717	741	769
June 3, 2015		659						
July 8, 2015			637	661	671	664	667	668
August 4, 2015			679	767	751	743	176	770
September 2, 2015			785	1,191	1,013	881	168	779
October 7, 2015			772	773	776	772	773	772
November 4, 2015	874		716	864	838	815	943	1,035
December 1, 2015	733		726	765	764	876	863	833
January 6, 2016			753	842	939	913	905	783

Data Source: Electrical conductivity in monthly grab samples collected by Reclamation
After August 2015 samples are collected at farm bridge upstream of McCabe Road bridge.

Summary of USBR data: January 2001 to present

Sample Site:	DMC Farm bridge	DMC McCabe Rd	DMC Russell Ave	DMC Telles Ranch	DMC Washoe Ave	DMC Bass Ave	CCID Main Canal	CCID Outside Canal
DMC Milepost:	MP-67.15	MP-68.03	MP-97.68	MP-100.850	MP-110.120	MP-116.48	Bass Ave	Bass Ave
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Maximum	874.0	659.0	1055	1830	1880	6650	5064	1037
Minimum	733.0	622.0	160	2	165	181	44	35
Median	803.5	640.5	517	535	565	539	513	523
Average	803.5	640.5	536	560	592	591	525	529
Number of samples	2	2	196	299	307	207	206	189

Delta-Mendota Canal Water Quality Monitoring Program

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Table 6b. Concentration of Selenium in the Delta-Mendota Canal and Central California Irrigation District canals, grab samples

Sample Site: DMC Milepost: Units:	DMC Farm bridge MP-67.15 µg/L	DMC McCabe Rd MP-68.03 µg/L	DMC Russell Ave MP-97.68 µg/L	DMC Telles Ranch MP-100.850 µg/L	DMC Washoe Ave MP-110.120 µg/L	DMC Bass Ave MP-116.48 µg/L	CCID Main Canal Bass Ave µg/L	CCID Outside Canal Bass Ave µg/L
January 7, 2015		0.8		<0.4	<0.4	0.7	0.7	0.8
February 2, 2015		<0.4	<0.4	<0.4	<0.4	0.4	0.5	0.8
March 2, 2015		<0.4						
March 3, 2015			0.4			0.6	0.5	0.5
April 7, 2015			0.5	0.6	0.6	0.5	0.7	0.6
April 23, 2015		<0.4						
May 5, 2015		<0.4						
May 6, 2015			<0.4	<0.4	<0.4	0.4	0.4	0.4
June 3, 2015			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
June 4, 2015		<0.4						
July 8, 2015		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
August 4, 2015			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
August 5, 2015	<0.4							
September 1, 2015	<0.4							
September 2, 2015			0.4	0.8	0.4	<0.4	<0.4	<0.4
October 6, 2015	<0.4							
October 7, 2015			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
November 3, 2015			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
November 4, 2015	<0.4							
November 30, 2015	<0.4							
December 1, 2015			<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Data Source: Selenium concentration in monthly grab samples collected by Reclamation
After August 2015 samples are collected at farm bridge upstream of McCabe Road bridge.

Summary of USBR data: January 2001 to present

Sample Site: DMC Milepost: Units:	DMC Farm bridge MP-67.15 µg/L	DMC McCabe Rd MP-68.03 µg/L	DMC Russell Ave MP-97.68 µg/L	DMC Telles Ranch MP-100.850 µg/L	DMC Washoe Ave MP-110.120 µg/L	DMC Bass Ave MP-116.48 µg/L	CCID Main Canal Bass Ave µg/L	CCID Outside Canal Bass Ave µg/L
Maximum	0.4	1.1	5.8	27.0	12.0	11.0	3.6	4.0
Minimum	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Median	0.4	0.4	0.5	1.0	0.8	0.8	0.6	0.7
Average	0.4	0.5	0.8	1.3	1.4	1.2	0.9	0.9
Number of samples	6	174	219	360	240	205	201	167

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Table 7a. Summary of the monthly average selenium concentrations (flow-weighted)

Sample Site:	DMC Near Headworks	DMC Check 13	Firebaugh Sumps	DMC Bass Ave	CCID Main Canal
DMC Milepost:	MP-3.50	MP-70.01	MP 100.86 - 109.50	MP-116.48	Bass Ave
Units:	µg/L	µg/L	µg/L	µg/L	µg/L
January 2015	<0.4	<0.4	113	0.6	0.7
February 2015	<0.4	<0.4	111	<0.4	0.4
March 2015	<0.4	<0.4	104	0.5	0.5
April 2015	<0.4	<0.4	102	0.4	0.5
May 2015	<0.4	<0.4	288	<0.4	0.4
June 2015	<0.4	<0.4		<0.4	<0.4
July 2015	<0.4	<0.4		<0.4	<0.4
August 2015	<0.4	<0.4		<0.4	<0.4
September 2015	<0.4	<0.4		<0.4	<0.4
October 2015	<0.4	<0.4		<0.4	<0.4
November 2015	<0.4	<0.4		<0.4	<0.4
December 2015	<0.4	<0.4		<0.4	<0.4

Data Source: US Bureau of Reclamation, MP-157, Sacramento, California

Summary of USBR data: July 2002 to present

Sample Site:	DMC Near Headworks	DMC Check 13	Firebaugh Sumps	DMC Bass Ave	CCID Main Canal
DMC Milepost:	MP-3.50	MP-70.01	MP 100.86 - 109.50	MP-116.48	Bass Ave
Units:	µg/L	µg/L	µg/L	µg/L	µg/L
Maximum	1.0	1.0	314	8.4	2.7
Minimum	<0.4	<0.4	88	<0.4	<0.4
Median	<0.4	<0.4	184	0.7	0.4
Average	<0.4	<0.4	191	1.0	0.6
Number of samples	161	161	156	159	157

Delta-Mendota Canal Water Quality Monitoring Program

October - December 2015

Table 7b. Summary of the estimated selenium loads

Sample Site:	DMC Near Headworks	DMC Check 13	Firebaugh Sumps	DMC Bass Ave	CCID Main Canal
DMC Milepost:	MP-3.50	MP-70.01	MP 100.86 - 109.50	MP-116.48	Bass Ave
Units:	pounds/month	pounds/month	pounds/month	pounds/month	pounds/month
January 2015	43	8	7	12	4
February 2015	31	34	6	31	13
March 2015	57	24	6	47	25
April 2015	31	20	6	37	14
May 2015	11	30	5	43	16
June 2015	12	53	0	47	16
July 2015	10	47	0	38	15
August 2015	18	13	0	9	7
September 2015	44	22	0	24	10
October 2015	35	33	0	27	18
November 2015	49	25	0	18	5
December 2015	37	19	0	13	0

Data Sources: Loads calculated by Reclamation

Summary of USBR data: July 2002 to present

Sample Site:	DMC Near Headworks	DMC Check 13	Firebaugh Sumps	DMC Bass Ave	CCID Main Canal
DMC Milepost:	MP-3.50	MP-70.01	MP 100.86 - 109.50	MP-116.48	Bass Ave
Units:	pounds/month	pounds/month	pounds/month	pounds/month	pounds/month
Maximum	721	217	106	416	121
Minimum	10	2	0	0	0
Median	137	47	51	87	28
Average	143	56	50	115	39
Number of samples	161	160	162	161	161

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Table 8a. Summary of the Total Dissolved Solids

Sample Site:	DMC Near Headworks	DMC Check 13	Firebaugh Sumps	DMC Bass Ave	CCID Main Canal
DMC Milepost:	MP-3.50	MP-70.01	MP 100.86 - 109.50	MP-116.48	Bass Ave
Units:	mg/L	mg/L	mg/L	mg/L	mg/L
January 2015	428	441	3,386	527	524
February 2015	419	449	3,588	473	469
March 2015	309	388	3,401	434	430
April 2015	297	408	3,331	477	438
May 2015	403	384	2,496	428	428
June 2015	475	373		390	390
July 2015	434	372		390	343
August 2015	412	397		434	352
September 2015	367	383		435	418
October 2015	391	409		427	426
November 2015	451	398		383	486
December 2015	407	406		404	0
Data Sources:	Total Dissolved Solids calculated by Reclamation				
Notes:	Conversion factors for Electrical Conductivity to Total Dissolved Solids:				
	0.5325 EC + 21.4	0.5317 EC + 21.0	0.65 EC	0.5252 EC + 24.87	0.5296 EC + 21.67
Summary of USBR data:	July 2002 to present				
Sample Site:	DMC Near Headworks	DMC Check 13	Firebaugh Sumps	DMC Bass Ave	CCID Main Canal
DMC Milepost:	MP-3.50	MP-70.01	MP 100.86 - 109.50	MP-116.48	Bass Ave
Units:	mg/L	mg/L	mg/L	mg/L	mg/L
Maximum	527	525	7,095	735	524
Minimum	94	105	2,496	156	0
Median	292	303	4,579	327	299
Average	285	289	4,569	326	278
Number of samples	162	162	153	161	157

Delta-Mendota Canal Water Quality Monitoring Program

October - December 2015

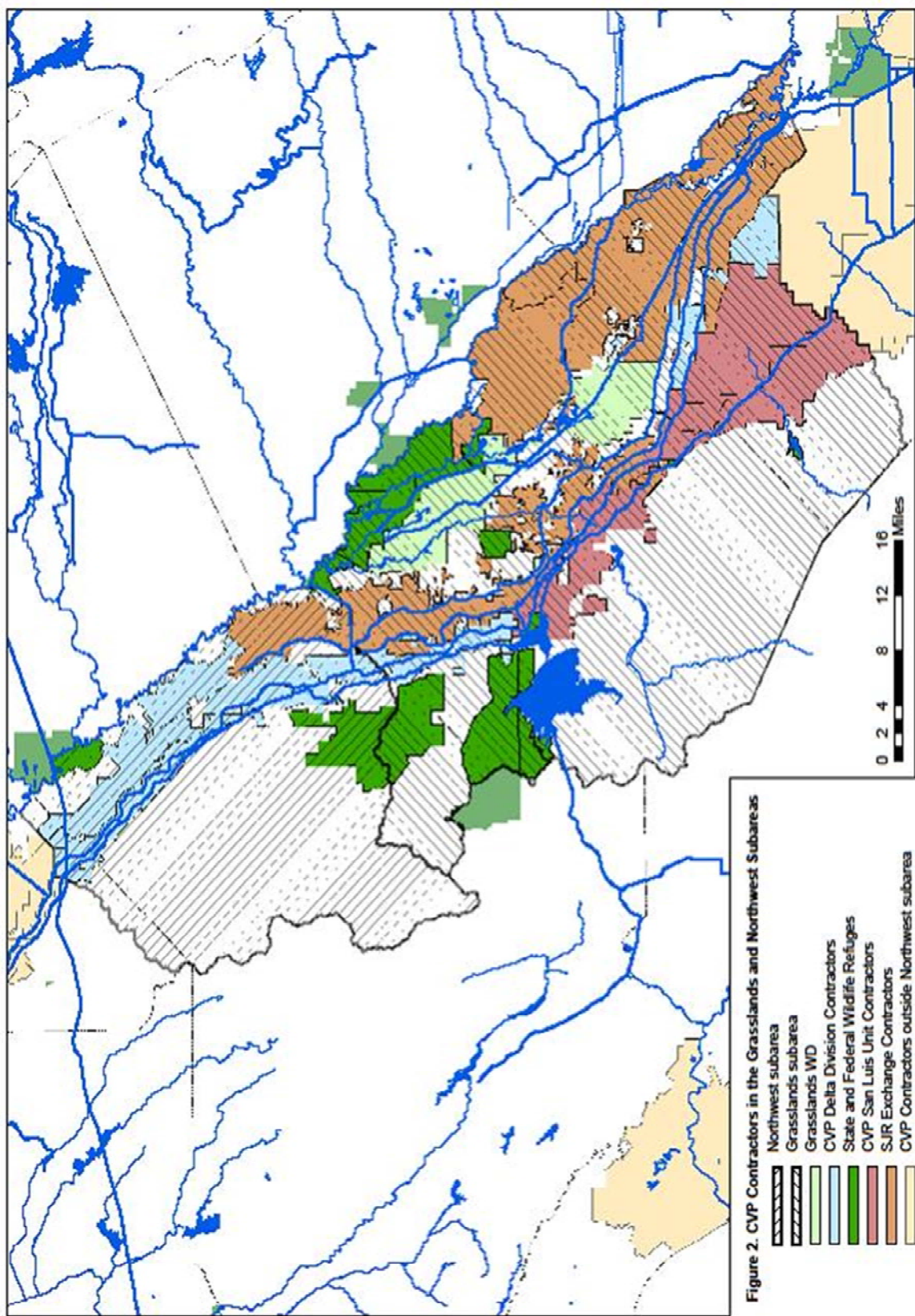
Table 8b. Summary of the estimated salt loads

Sample Site:	DMC Near Headworks	DMC Check 13	Firebaugh Sumps	DMC Bass Ave	CCID Main Canal
DMC Milepost:	MP-3.50	MP-70.01	MP 100.86 - 109.50	MP-116.48	Bass Ave
Units:	tons/month	tons/month	tons/month	tons/month	tons/month
January 2015	44,841	7,734	100	5,874	1,460
February 2015	31,648	30,331	88	27,023	7,643
March 2015	43,926	22,179	96	21,790	9,991
April 2015	22,630	18,554	96	20,024	6,367
May 2015	10,764	29,209	60	27,996	8,626
June 2015	13,933	49,455	0	45,357	15,131
July 2015	11,098	43,215	0	36,815	12,554
August 2015	18,075	12,524	0	9,330	9,392
September 2015	40,653	20,874	0	22,174	9,719
October 2015	34,118	33,995	0	29,341	18,668
November 2015	54,737	25,311	0	17,335	6,637
December 2015	37,798	19,114	0	12,156	0

Data Sources: Loads calculated by Reclamation

Summary of USBR data: July 2002 to present

Sample Site:	DMC Near Headworks	DMC Check 13	DMC Combined	DMC Bass Ave	CCID Main Canal
DMC Milepost:	MP-3.50	MP-70.01	Sumps	MP-116.48	Bass Ave
Units:	tons/month	tons/month	tons/month	tons/month	tons/month
Maximum	125,596	62,405	1,943	52,560	23,754
Minimum	8,650	900	0	0	0
Median	64,683	27,019	630	25,624	9,996
Average	64,385	28,197	660	24,825	10,513
Number of samples	162	162	160	162	162



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Table 9. Salt Load in CVP Water Delivered to Districts in the Grasslands Subarea (1)

	CVP Water Delivery	Electrical Conductivity of CVP Water (2)	Total Dissolved Solids of CVP Water (3)	Calculated Salt Load	Supply Water Allocation (4)	Excess of background
	1000 acre-feet	µS/cm	mg/L	tons	tons	tons
January 2015	5.326	620	399	3,987	376	3,611
February 2015	34.981	563	364	25,643	2,472	23,171
March 2015	45.479	573	370	29,781	3,214	26,567
April 2015	36.414	733	469	25,985	2,573	23,412
May 2015	53.976	696	446	34,747	3,814	30,932
June 2015	88.976	662	425	52,443	6,288	46,155
July 2015	96.988	663	426	57,559	6,854	50,705
August 2015	61.623	730	467	41,139	4,355	36,785
September 2015	43.967	654	420	28,218	3,107	25,110
October 2015	65.735	710	455	41,193	4,645	36,548
November 2015	35.186	696	446	22,888	2,487	20,402
December 2015	20.338	725	464	13,834	1,437	12,397

Notes:

(1) Subarea defined in Appendix 41 of The Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basin

(2) Average EC at DMC Check 13 published by Central Valley Operations Office, Sacramento: <http://www.usbr.gov/mp/cvo/wqrpt.html>

(3) TDS (mg/L) = 0.618 x EC (µS/cm) + 16

(4) Supply Water Allocation salt load at 85 µS/cm (52 mg/L TDS) from Page IV-32.07 of Basin Plan

Table 10. Salt Load in CVP Water Delivered to the Northwest Subarea (1)

	CVP Water Delivery	Electrical Conductivity of CVP Water (2)	Total Dissolved Solids of CVP Water (3)	Calculated Salt Load	Supply Water Allocation (4)	Excess of background
	1000 acre-feet	µS/cm	mg/L	tons	tons	tons
January 2015	0.163	702	450	113	11	102
February 2015	2.312	612	394	1,608	163	1,445
March 2015	5.942	599	386	3,700	420	3,280
April 2015	5.307	544	352	3,259	375	2,884
May 2015	8.339	681	437	5,184	589	4,595
June 2015	17.747	866	551	12,470	1,254	11,216
July 2015	19.347	770	492	12,569	1,367	11,202
August 2015	12.296	731	468	8,006	869	7,137
September 2015	5.334	636	409	3,151	377	2,774
October 2015	2.266	689	442	1,389	160	1,229
November 2015	1.224	665	427	806	86	720
December 2015	0.937	663	426	609	66	543

Notes:

(1) Subareas defined in Appendix 41 of The Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basin

(2) Monthly average EC at DMC Headworks published by Central Valley Operations Office, Sacramento: <http://www.usbr.gov/mp/cvo/wqrpt.html>

(3) TDS (mg/L) = 0.618 x EC (µS/cm) + 16

(4) Supply Water Allocation salt load at 85 µS/cm (52 mg/L TDS) from Page IV-32.07 of Basin Plan

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Table 11. Concentration of Mercury in the Delta-Mendota Canal and Sumps, grab samples

Sample Site:	DMC Farm bridge	DMC McCabe Rd	DMC Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	DMC Washoe Ave
DMC Milepost:	MP 67.15	MP 68.03	MP 100.85	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.12
Units:	ng/L (1)	ng/L (1)	ng/L (2)	ng/L (2)	ng/L (2)	ng/L (2)	ng/L (2)	ng/L (2)	ng/L (2)	ng/L (2)
January 7, 2015		2.4	2.4	Sumps disconnected from the canal						3.0
February 2, 2015		<2.0								
February 3, 2015			<2.0							3.0
March 2, 2015		<10.0								
March 3, 2015			2.4							<2.00
April 7, 2015			2.1					220	760	3.3
April 23, 2015		2.3						Sumps disconnected from the canal		
May 5, 2015		2.4								
May 6, 2015			2.9							3.3
June 3, 2015			2.68							3.93
June 4, 2015		<2.00								
July 8, 2015		<2.00								<2.00
August 4, 2015			<2.00							<2.00
August 5, 2015	<2.00									
September 1, 2015	<2.00		2.53							
September 2, 2015										<2.00
October 6, 2015	<2.00									
October 7, 2015			<2.00							2.27
November 3, 2015			2.30							<2.00
November 4, 2015	2.27									
November 30, 2015	2.51									
December 1, 2015			<2.00							2.26

Data Source: Concentration of mercury in monthly grab samples collected by Reclamation

Notes: (1) Nanograms per liter of Dissolved Mercury (2) Nanograms per liter of Total Mercury After August 2015 samples are collected at farm bridge upstream of McCabe Road bridge

Summary of USBR data: October 2002 - Present

Sample Site:	Farm bridge	McCabe Rd	Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Washoe Ave
DMC Milepost:	MP 67.15	MP-68.03	MP-100.85	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.12
Units:	ng/L (1)	ng/L	ng/L (1)	ng/L (2)	ng/L (2)	ng/L (2)	ng/L (2)	ng/L (2)	ng/L (2)	ng/L (2)
Maximum	2.5	7.1	15.0	1,400	510	580	1,300	1,200	3,000	14.0
Minimum	2.0	0.7	1.4	200	190	200	300	220	480	1.1
Median	2.0	2.0	3.0	500	325	360	1,000	860	850	4.3
Average	2.2	2.5	3.8	545	331	365	986	803	1,100	5.1
Number of samples	5	174	165	33	31	28	31	32	32	169

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Table 12. Concentration of Boron in the Delta-Mendota Canal and Sumps, grab samples

Sample Site:	DMC Farm bridge	DMC McCabe Rd	DMC Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	DMC Washoe Ave
DMC Milepost:	MP 67.15	MP 68.03	MP 100.85	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.120
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
January 7, 2015		753 U	808 U	Sumps disconnected from the canal						690
February 2, 2015		315								
February 3, 2015			344							483
March 2, 2015		311								
March 3, 2015			345							330
April 7, 2015			605					7,360	16,000	504
April 23, 2015		241						Sumps disconnected from the canal		
May 5, 2015		278								
May 6, 2015			323							336
June 3, 2015			275							254
June 4, 2015		279								
July 8, 2015		242								244
August 4, 2015			282							266
August 5, 2015	240									
September 1, 2015	148									
September 2, 2015			680							484
October 6, 2015	167									
October 7, 2015			222							214
November 3, 2015			280							247
November 4, 2015	233									
November 30, 2015	189									
December 1, 2015			307							307

Data Source:

Boron concentration in monthly grab samples collected by Reclamation

Notes:

After August 2015 samples are collected at farm bridge upstream of McCabe Road bridge.

Summary of USBR data: July 2002 - Present

Sample Site:	Farm bridge	McCabe Rd	Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Washoe Ave
DMC Milepost:	MP 67.15	MP-68.03	MP-100.850	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.120
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Maximum	240	753	808	29,000	23,000	16,000	16,000	14,000	25,000	730
Minimum	148	56	74	10,000	12,000	9,000	11,000	7,170	11,000	93
Median	189	180	240	14,000	17,000	11,000	14,000	12,000	16,000	250
Average	195	212	260	16,354	17,484	11,391	13,556	11,265	16,258	280
Number of samples	5	173	161	25	26	23	26	26	27	164

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Table 13. Concentration of Chromium in the Delta-Mendota Canal and Sumps, grab samples

Sample Site:	DMC Farm bridge	DMC McCabe Rd	DMC Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	DMC Washoe Ave
DMC Milepost:	MP 67.15	MP 68.03	MP 100.85	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.120
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
January 7, 2015		0.6		Sumps disconnected from the canal						
February 2, 2015		0.5								
March 2, 2015		1.2								
April 7, 2015		1.5								
April 23, 2015			0.6					6.1	4.3	0.6
May 5, 2015		1.3						Sumps disconnected from the canal		
June 4, 2015		0.53								
July 8, 2015		<0.5								
August 5, 2015	0.51									
September 1, 2015	0.55									
October 6, 2015	0.52									
October 7, 2015			<0.5							0.78
November 4, 2015	1.0									
November 30, 2015	0.60									

Data Source: Chromium concentration in grab samples collected by Reclamation L = Result may have low bias.

Notes: After August 2015 samples are collected at farm bridge upstream of McCabe Road bridge.

Summary of USBR data: July 2002 - Present

Sample Site:	Farm bridge	McCabe Rd	Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Washoe Ave
DMC Milepost:	MP 67.15	MP-68.03	MP-100.850	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.120
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Maximum	1.0	13.0	3.6	50	29	16	18	45	14	8.0
Minimum	0.5	<0.5	<0.5	12	10	7	8	6	3	<0.5
Median	0.6	2.0	2.0	30	18	12	14	25	9	2.0
Average	0.6	1.8	1.8	30	19	12	13	23	9	2.2
Number of samples	5	171	28	26	25	23	26	26	27	27

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Table 14. Concentration of Molybdenum in the Delta-Mendota Canal and Sumps, grab samples

Sample Site:	DMC Farm bridge	DMC McCabe Rd	DMC Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	DMC Washoe Ave
DMC Milepost:	MP 67.15	MP 68.03	MP 100.85	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.120
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
January 7, 2015		3.1		Sumps disconnected from the canal						
February 2, 2015		2.1								
March 2, 2015		2.4								
April 7, 2015			4.8					134	156	4.0
April 23, 2015		2.4						Sumps disconnected from the canal		
May 5, 2015		2.5								
June 4, 2015		2.2								
July 8, 2015		1.9								
August 5, 2015	1.9									
September 1, 2015	1.7									
October 6, 2015	1.3									
October 7, 2015			1.8							1.8
November 4, 2015	2.1									
November 30, 2015	1.3									

Data Source: Molybdenum concentration in grab samples collected by Reclamation

Notes: After August 2015 samples are collected at farm bridge upstream of McCabe Road bridge.

Summary of USBR data: July 2002 - Present

Sample Site:	Telles Ranch	McCabe Rd	Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Washoe Ave
DMC Milepost:	MP-100.850	MP-68.03	MP-100.850	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.120
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Maximum	2.1	6.7	4.8	290	370	160	200	170	290	5.0
Minimum	1.3	<1.0	<1.0	110	120	84	100	120	66	1.1
Median	1.7	1.7	2.1	140	167	124	160	150	156	2.2
Average	1.7	1.9	2.2	165	172	123	159	149	157	2.5
Number of samples	5	129	23	29	29	26	29	28	29	26

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Table 15. Concentration of Nickel in the Delta-Mendota Canal and Sumps, grab samples

Sample Site:	DMC Farm bridge	DMC McCabe Rd	DMC Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	DMC Washoe Ave
DMC Milepost:	MP 67.15	MP 68.03	MP 100.85	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.120
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
January 7, 2015		2.2		Sumps disconnected from the canal						
February 2, 2015		1.9								
March 2, 2015		3.3								
April 7, 2015			1.5					1.8	3.7	1.7
April 23, 2015		2.2						Sumps disconnected from the canal		
May 5, 2015		2.3								
June 4, 2015		1.5								
July 8, 2015		1.3								
August 5, 2015	1.2									
September 1, 2015	1.3									
October 6, 2015	1.0									
October 7, 2015			1.2							1.7
November 4, 2015	2.4									
November 30, 2015	0.8									

Data Source: Boron concentration in monthly grab samples collected by Reclamation L = Result may have low bias.
Notes: After August 2015 samples are collected at farm bridge upstream of McCabe Road bridge.

Summary of USBR data: July 2002 - Present

Sample Site:	Farm bridge	McCabe Rd	Telles Ranch	Sump A & B	Sump C	Sump D & E	Sump F & G	Sump H & J	Sump K	Washoe Ave
DMC Milepost:	MP 67.15	MP-68.03	MP-100.850	MP 100.86	MP 102.86	MP 104.19	MP 105.60	MP 107.24	MP 109.50	MP-110.120
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Maximum	2.4	40	5	13	170	16	14	31	15	12
Minimum	0.8	1	1	1	2	2	2	2	2	1
Median	1.2	40	2	5	6	6	6	6	6	2
Average	1.3	28	2	5	12	7	6	7	7	3
Number of samples	5	169	28	26	26	23	26	25	26	28

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Table 16a. Non-Project Water Pumped into the Upper Delta-Mendota Canal

DMC Mile Post	Bank	Feature	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	2015 Total
			Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet
2.53		Jones Pumping Plant	76,955	55,580	104,410	56,115	19,626	21,589	18,807	32,274	81,548	64,241	89,319	68,273	688,737
3.32	R1	River water, Byron-Bethany ID	0	0	0	0	0	0	0	0	0	0	0	0	0
3.32	R2	River water, Byron-Bethany ID	0	0	0	0	0	0	0	0	0	0	0	0	0
3.32	R3	River water, Byron-Bethany ID	0	0	0	0	210	0	0	37	124	0	0	0	371
12.69	L	Well, Del Puerto WD	0	0	0	0	0	0	0	0	0	0	0	0	0
12.75	R	Well, Banta Carbona ID	0	0	0	0	0	0	0	0	0	0	0	0	0
13.31	L	Well, Byron-Bethany ID	0	0	218	237	255	228	18	0	0	0	0	0	956
14.26	R	Well, Byron-Bethany ID	0	0	234	379	408	328	43	0	0	0	0	0	1,392
15.11	R	Well, Banta Carbona ID	0	0	633	202	0	0	0	0	0	0	381	374	1,590
15.95	R	CITY OF TRACY TURNOUT & BUILDING													
20.42	L	River water, Banta Carbona ID	498	2,790	3,622	3,336	3,012	0	0	0	0	0	1,014	0	14,272
21.12	L	Well, Del Puerto WD (2 wells)	0	0	0	0	0	0	0	0	0	0	0	0	0
21.25	L	Well, Del Puerto WD	0	0	0	0	0	0	0	0	0	0	0	0	0
21.86	L	Well, Del Puerto WD	0	0	0	0	0	0	0	0	0	0	0	0	0
23.41	L	Well, Del Puerto WD	0	0	0	0	0	49	19	196	0	0	0	0	264
24.38	L	Well, Del Puerto WD	0	0	167	133	46	67	40	0	26	54	152	110	795
29.95	L	Well, Del Puerto WD	0	35	27	44	14	14	15	28	30	39	50	55	351
30.43	L	Well, Del Puerto WD	0	12	0	0	0	29	7	149	0	0	0	0	197
30.43	R	Well, Del Puerto WD	0	54	41	54	47	45	34	46	63	62	99	101	646
30.95	L	Well, Del Puerto WD	0	45	82	41	24	0	0	98	125	150	138	44	747
31.31	L1-4	River water, West Stanislaus ID	1,674	1,619	5,380	6,298	1,026	0	0	0	0	0	1,202	1,591	18,790
31.60	L	Well, Del Puerto WD	0	29	4	29	8	0	0	15	30	25	52	55	247
32.35	L	Well, Del Puerto WD	0	9	3	26	8	0	0	12	23	21	39	46	187
33.71	L	Well, Del Puerto WD	0	0	89	92	50	73	92	85	118	80	120	75	874
35.73	R	Well, Del Puerto WD	0	0	0	0	0	12	5	108	0	0	0	0	125
36.01	L	Well, Del Puerto WD	0	82	86	65	104	0	1	77	157	158	180	50	960
36.45	R	Well, Del Puerto WD	0	96	0	1	0	45	45	72	99	110	150	181	799
36.68	L	Well, Del Puerto WD													0
36.80	L	Well, Del Puerto WD	0	0	1	1	0	1	0	1	0	0	0	0	4
37.10	L	Well, Del Puerto WD	0	15	79	39	22	21	34	63	68	61	103	111	616
37.32	L	Well, Del Puerto WD	0	0	0	0	0	0	0	0	0	0	153	135	288
42.50	R	Well, Del Puerto WD	0	46	79	83	95	65	0	0	58	0	65	77	568
42.53	L	River water, Patterson ID	2,258	1,816	2,185	1,803	1,140	0	0	0	217	2,160	2,234	2,198	16,011
43.22	L	Well, Del Puerto WD	0	0	0	0	0	0	0	0	0	0	0	0	0
48.97	L	Well, San Luis WD (2 wells)	119	18	286	264	272	235	230	210	229	122	257	302	2,544
49.54	R	Well, Del Puerto WD													0
50.46	L	Well, Del Puerto WD (2 wells)	105	98	118	93	82	76	77	50	35	68	158	165	1,125
51.00	R	Well, Del Puerto WD								18	12	18	9	12	69
51.66	L	Well, Del Puerto WD	13	0	0	0	0	0	0	15	32	40	34	50	184
52.40	L	Well, Del Puerto WD	0	0	73	59	51	6	0	1	0	0	0	0	190
58.28	L	Well, San Luis WD	39	8	83	64	95	67	79	75	68	68	40	37	723
58.60	L	Well, Del Puerto WD	0	12	26	27	24	25	22	23	2	0	6	13	180
58.73	R	Well, Del Puerto WD	11	13	3	3	4	3	4	5	4	5	6	6	67
59.50	R	Well, Del Puerto WD (3 wells)	0	0	0	0	0	13	11	74	0	0	0	0	98
64.85	L	Well, Del Puerto WD				87	96	53	63	49	66	49	99	107	669
68.03		McCabe Road													
69.30	R	O'Neill Forebay Intake Channel													
70.01		Check 13	12,893	49,617	42,001	33,422	55,984	97,439	85,489	23,088	40,116	61,092	46,761	34,612	582,514
Net flow of river water, acre-feet			4,430	6,225	11,187	11,437	5,388	0	0	37	341	2,160	4,450	3,789	49,444
Net flow from active wells, acre-feet (*)			287	572	2,332	2,023	1,705	1,455	839	1,470	1,245	1,130	2,291	2,106	17,455

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Table 16b. Non-Project Water Pumped into the Lower Delta-Mendota Canal

DMC Mile Post	Bank	Feature	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	2015 Total
			Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet	Acre-feet
70.01		Check 13	12,893	49,617	42,001	33,422	55,984	97,439	85,489	23,286	40,116	61,092	46,761	34,612	582,712
76.45		CCID turnout													
78.31	L	Well, Panoche WD	0	0	0	0	0	0	52	0	0	0	0	0	52
79.12	R	Well, San Luis WD	34	0	77	86	68	72	37	0	0	0	52	52	478
79.13	L	Well, San Luis WD	34	0	60	58	56	48	0	0	0	56	66	39	417
79.13	R	Well, San Luis WD	24	0	46	26	17	0	8	0	0	0	0	0	121
79.60	L	Well, San Luis WD	133	1	282	284	283	190	0	0	1	1	0	0	1,175
80.03	L	Well, Panoche WD	35	0	28	0	0	0	0	0	0	0	0	0	63
80.03	R	Well, Panoche WD	11	0	12	0	0	0	0	0	0	0	0	0	23
81.08	R	Well, Panoche WD		0								0	0	0	0
84.38		Mercy Springs Rd bridge													
97.68		Russell Ave bridge													
98.60	R	Well, Panoche WD	206	0	491	460	462	383	380	296	362	346	516	305	4,207
98.74	L	Well, Panoche WD	98	1	636	642	429	332	293	441	435	464	530	553	4,854
99.24	L	Well, Panoche WD	204	0	880	835	769	648	690	737	721	742	775	806	7,807
100.80		Telles farm bridge													
100.86	R	Sump AB													0
102.86	R	Sump C													0
104.19	R	Sump DE													0
105.60	R	Sump FG													0
107.24	R	Sump HJ	20	17	19	20	12								88
109.50	R	Sump K	2	2	2	2	1								9
110.12		Washoe Ave bridge													
116.48		Check 21 Mendota Pool	8,182	42,011	39,923	30,843	48,100	85,588	69,323	15,878	37,389	50,480	33,220	24,744	485,681
Net flow from active wells, acre-feet			779	2	2,512	2,391	2,084	1,673	1,460	1,474	1,519	1,609	1,939	1,755	19,197
Net flow from Firebaugh sumps, acre-feet			22	19	21	22	13	0	0	0	0	0	0	0	97

Notes: Four of the Firebaugh sumps were disconnected from the DMC October 2014
Two remaining Firebaugh sumps disconnected from the DMC in late May 2015

4%

Delta-Mendota Canal Water Quality Monitoring Program

Table 17. Sampling locations, frequency, parameters, methods, calculations

DMC Milepost	Sample Location	Sample Frequency	Data Source	Method
3.50	DMC Headworks near Tracy (Table 1)	Daily	SLDMWA	1/
70.01	DMC Check 13 at O'Neill Forebay (Table 2)	Daily	SLDMWA	1/
111.22	Firebaugh Wasteway (Table 3)	Daily	SLDMWA	1/
116.48	DMC Check 21 at Bass Ave (Table 3)	Daily	SLDMWA	1/
	CCID Main Canal at Bass Ave (Table 4)	Daily	SJRECWA	1/
	Drain Sumps near Firebaugh (Tables 5a, 5b, 5c, 5d)			
100.86	Sumps A & B	Weekly	Reclamation	2/, 3/
102.86	Sump C	Weekly	Reclamation	2/, 3/
104.19	Sumps D & E	Weekly	Reclamation	2/, 3/
105.60	Sumps F & G	Weekly	Reclamation	2/, 3/
107.24	Sumps H & J	Weekly	Reclamation	2/, 3/
109.50	Sump K	Weekly	Reclamation	2/, 3/
	DMC and CCID Canals (Tables 6, 7, 8, 9, 10, 11, 12)			
69.03	DMC, McCabe Rd bridge, near Santa Nella	Monthly	Reclamation	4/
97.68	DMC, Russell Ave bridge, near Dos Palos	Monthly	Reclamation	4/
100.85	DMC, Telles Ranch farm bridge	Monthly	Reclamation	4/
110.12	DMC, Washoe Ave bridge, near Firebaugh	Monthly	Reclamation	4/
116.48	DMC Check 21 at Bass Ave	Monthly	Reclamation	4/
	CCID Main Canal, Bass Ave bridge	Monthly	Reclamation	4/
	CCID Outside Canal, Bass Ave bridge	Monthly	Reclamation	4/

Notes:

- 1/ Composite daily samples are collected with autosamplers for specific conductance and selenium
- 2/ Flow calculated from electricity used by each sump pump
- 3/ Weekly grab samples are collected from each sump
- 4/ Monthly grab samples are collected at each site

Abbreviations:

µg/L	micrograms per liter (parts per billion)
µS/cm	micro Siemens per centimeter
CCID	Central California Irrigation District
cfs	cubic feet per second
CVO	Central Valley Operations Office, Sacramento, California
DMC	Delta-Mendota Canal
mg/L	milligrams per liter (parts per million)
NA	sample not collected, results not available
ng/L	nanograms per liter (parts per trillion)
P	sample collected, results pending
Reclamation	U. S. Bureau of Reclamation, Mid-Pacific Region, Environmental Monitoring Branch, Sacramento, California
SC	Specific conductance (µS/cm)
SJRECWA	San Joaquin River Exchange Contractors Water Authority, Los Banos, California
SLDMWA	San Luis & Delta-Mendota Water Authority, Tracy, California
TDS	Total dissolved solids (Mg/L)

Calculations:

Flow-weighted selenium concentration (µg/L) =

$$\frac{\text{Sum of (daily flow * se concentration of daily sample)}}{\text{Sum of daily flows when samples collected}}$$

Selenium load (pounds) =

$$\text{Total flow (acre-feet) * flow-weighted selenium concentration (µg/L) * 0.00272}$$

Flow-weighted specific conductance (µS/cm) =

$$\frac{\text{Sum of (daily flow * specific conductance of daily sample)}}{\text{Sum of daily flows when samples collected}}$$

Salt load (tons) =

$$\text{Total Flow (acre-feet) * total dissolved solids (mg/L) * 0.00136}$$

Supply Water Allocation Salt Load (tons) =

$$\text{LADMC} = \text{QDMC} * 85 \text{ µS/cm} * 0.8293$$

$$\text{LADMC} = \text{DMC load allocation (1000 tons/month)}$$

$$\text{QDMC} = \text{Volume of water delivered from the DMC to the subarea (1000 acre-feet/month)}$$

$$85 \text{ µS/cm} = \text{Background specific conductance of water from the Sierra Nevada}$$
from Page IV-32.07 of the Basin Plan

Reference:

California Regional Water Quality Control Board, Central Valley Region. February 2007. The Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basin, Fourth Edition.

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