APPENDIX A:

SUMMARY TABLES

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Table A-1. Disaggregation of CALSIM II Accretion

DSM2-SJR			Westside drainage variable			CALSIM II variable	
Node	Description	River mile	Tile drainage (TD)	Ground-water base flow (BF)	Local creek inflow (CI)	Accretion (I)	Comment in WRESL
17	Current DSM2 Boundary	74.5	x				
600		74.7					
601	Stanislaus River, MID #6, Modesto Main Canal	75		x	x	I637	Stanislaus blw Ripon
602	RM 76	76		x			
603	El Soyo Main Canal, Sub-ELS, Hwy132 Bridge	77+	x	x			
604	Maze Rd. Gage Station	78.5		x	x	I636	Accretions above Maze
605	Hospital/Ingram Creek, Sub-H/I	80	x				
606	MID #4, RM 81	81		x			
607	Finnegan Cut	83-		x			
608	Tuolumne River, MID #5	84-					
609	W. Stanislaus Main Canal	84					
610	Reclamation Dist. 2092 Drain #2	85+					
611	Reclamation Dist. 2092 Drain #3	86+		x			
612	Old Grayson Channel	87					
613	Laird Slough	88		x			
614	Westley Wasteway	89		x			
615	TID #2	90+					
616	Richie Slough, Sub-RSL	91.5	x	x			
617	Del Puerto Creek	93-					
618	TID #3 (Westport) & Loquat Ave. Drains	93+					
619	Magnolia Ave. Drain	94+		x			
620	Modesto Sewage Outfall	95					
621	Eucalyptus & Lemon Ave. Drains	96		x			
622	Patterson Sewage Outfall & Olive Ave. Drains, Sub-PAT	97-					
623	Patterson Pumphouse/Main Canal	98-	x				
624	Lake Ramona, Sub-RLK	99+	x	x			
625	Reclamation Dist. 1602 Overflow Drain	101+		x			
626	Paradise Ave. Slough & Gomes Lake Discharge Pumps	102+		x			
627	TID Lateral #5 Drain	103+					
628		105	x	x			
629		106+		x			
630	Crows Landing Bridge	107.5					
631	Orestimba Creek	109+		x			
632		110+		x			
633	TID #6&7, Alhem Tile & Reclamation Dist. 2063 Drains	112-					
634	Gonsalves Tailwater Drain	112.5		x			
635	Villa Manucha & Freitas Rd. Drains	113+					
636		114+		x			
637	Allen Serpa Pumps and Drain	116-		x			
638	RM 117	117	x	x			
639	Merced River, TID Lower Stevinson	118+			x	I620POS	Positive SJR Accretions SJR Upstream from Merced Accr.
640	Newman Slough	119					
641	Newman Wasteway& Orestimba Rancho Drain	119.5	x	x			
642	Mud Slough	121+			x	I614A	Mud and Salt Slu Base flow
643	RM 123	123		x			
644	Mud Slough	124+		x			
645	Fremont Ford Bridge	125					
646	Stevinson Op. Spills #1 & #2	126-		x			
647	Stevinson Op. Spill #3	127-		x			
648	Salt Slough	129.5					
649		130+					
650		132-		x			
651	Tail Water Drain	133-					
652	Field Drain	134-					
653	Bear Creek (CURRENT BOUNDARY)	136-					

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Table A-2. Disaggregation of CALSIM II Westside Return Flow

DSM2-SJR			Westside drainage variable		CALSIM II variable	
Node	Description	River mile	Westside groundwater return (GWR)	Westside surface water return (SWR)	Westside return (R)	Comment in WRESL
17	Current DSM2 Boundary	74.5		x	R639West	Hospital WD
600		74.7				
601	Stanislaus River, MID #6, Modesto Main Canal	75				
602	RM 76	76				
603	El Soyo Main Canal, Sub-ELS, Hwy132 Bridge	77+	x			
604	Maze Rd. Gage Station	78.5	x			
605	Hospital/Ingram Creek, Sub-H/I	80	x			
606	MID #4, RM 81	81				
607	Finnegan Cut	83-		x	R630f	West Stanislaus WD
608	Tuolumne River, MID #5	84-				
609	W. Stanislaus Main Canal	84				
610	Reclamation Dist. 2092 Drain #2	85+				
611	Reclamation Dist. 2092 Drain #3	86+				
612	Old Grayson Channel	87	x			
613	Laird Slough	88		x	R630c	Kern Canon WD
614	Westley Wasteway	89				
615	TID #2	90+				
616	Richie Slough, Sub-RSL	91.5	x			
617	Del Puerto Creek	93-	x			
618	TID #3 (Westport) & Loquat Ave. Drains	93+				
619	Magnolia Ave. Drain	94+	x			
620	Modesto Sewage Outfall	95				
621	Eucalyptus & Lemon Ave. Drains	96				
622	Patterson Sewage Outfall & Olive Ave. Drains, Sub-PAT	97-	x	x	R630a R630d	Del Puerto and Salado WD
623	Patterson Pumphouse/Main Canal	98-	x			
624	Lake Ramona, Sub-RLK	99+	x	x	R630h R630I	Patterson water rights & WD
625	Reclamation Dist. 1602 Overflow Drain	101+				
626	Paradise Ave. Slough & Gomes Lake Discharge Pumps	102+				
627	TID Lateral #5 Drain	103+				
628		105	x	x	R630e	Sunflower WD
629		106+				
630	Crows Landing Bridge	107.5				
631	Orestimba Creek	109+	x	x	C619	To Orestimba Cr
632		110+				
633	TID #6&7, Alhem Tile & Reclamation Dist. 2063 Drains	112-				
634	Gonsalves Tailwater Drain	112.5				
635	Villa Manucha & Freitas Rd. Drains	113+	x			
636		114+				
637	Allen Serpa Pumps and Drain	116-				
638	RM 117	117	x			
639	Merced River, TID Lower Stevinson	118+				
640	Newman Slough	119	x			
641	Newman Wasteway& Orestimba Rancho Drain	119.5				
642	Mud Slough	121+		x	R614West, excluding R614d	Exchange Contractors and Mendota Pool Refuge return flows to Mud and Salt Sloughs
643	RM 123	123				
644	Mud Slough	124+				
645	Fremont Ford Bridge	125				
646	Stevinson Op. Spills #1 & #2	126-				
647	Stevinson Op. Spill #3	127-				
648	Salt Slough	129.5		x	R614d	Laguna WD
649		130+				
650		132-				
651	Tail Water Drain	133-				
652	Field Drain	134-				
653	Bear Creek (CURRENT BOUNDARY)	136-				

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Table A-3. Disaggregation of CALSIM II Depletion

DSM2-SJR			Westside drainage variable	CALSIM II variable	
Node	Description	River mile	Groundwater seepage loss (SL)	Depletion (D)	Comment in WRESL
17	Current DSM2 Boundary	74.5			
600		74.7			
601	Stanislaus River, MID #6, Modesto Main Canal	75			
602	RM 76	76			
603	El Soyo Main Canal, Sub-ELS, Hwy132 Bridge	77+			
604	Maze Rd. Gage Station	78.5			
605	Hospital/Ingram Creek, Sub-H/I	80			
606	MID #4, RM 81	81			
607	Finnegan Cut	83-			
608	Tuolumne River, MID #5	84-			
609	W. Stanislaus Main Canal	84			
610	Reclamation Dist. 2092 Drain #2	85+			
611	Reclamation Dist. 2092 Drain #3	86+			
612	Old Grayson Channel	87			
613	Laird Slough	88			
614	Westley Wasteway	89			
615	TID #2	90+			
616	Richie Slough, Sub-RSL	91.5			
617	Del Puerto Creek	93-			
618	TID #3 (Westport) & Loquat Ave. Drains	93+			
619	Magnolia Ave. Drain	94+			
620	Modesto Sewage Outfall	95			
621	Eucalyptus & Lemon Ave. Drains	96			
622	Patterson Sewage Outfall & Olive Ave. Drains, Sub-PAT	97-			
623	Patterson Pumphouse/Main Canal	98-			
624	Lake Ramona, Sub-RLK	99+			
625	Reclamation Dist. 1602 Overflow Drain	101+			
626	Paradise Ave. Slough & Gomes Lake Discharge Pumps	102+			
627	TID Lateral #5 Drain	103+			
628		105			
629		106+			
630	Crows Landing Bridge	107.5			
631	Orestimba Creek	109+			
632		110+			
633	TID #6&7, Alhem Tile & Reclamation Dist. 2063 Drains	112-			
634	Gonsalves Tailwater Drain	112.5			
635	Villa Manucha & Freitas Rd. Drains	113+			
636		114+			
637	Allen Serpa Pumps and Drain	116-			
638	RM 117	117			
639	Merced River, TID Lower Stevinson	118+	x	D620ACCR	D620accr < I620neg Negative accretions at node 620 to prevent water pulled from Lake McClure
640	Newman Slough	119			
641	Newman Wasteway& Orestimba Rancho Drain	119.5			
642	Mud Slough	121+			
643	RM 123	123			
644	Mud Slough	124+			
645	Fremont Ford Bridge	125			
646	Stevinson Op. Spills #1 & #2	126-			
647	Stevinson Op. Spill #3	127-			
648	Salt Slough	129.5			
649		130+			
650		132-			
651	Tail Water Drain	133-			
652	Field Drain	134-			
653	Bear Creek (CURRENT BOUNDARY)	136-			

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Table A-4. Disaggregation of CALSIM II Non-project Diversion

DSM2-SJR			Westside drainage variable	CALSIM II variable	
Node	Description	River mile	Non-project diversion (D)	Non-project diversion (NPD)	Comment in WRESL
17	Current DSM2 Boundary	74.5	x	D639	SJR NON-PROJECT DIV/ VERNALIS
600		74.7			
601	Stanislaus River, MID #6, Modesto Main Canal	75	x	D637	Mainstem Delivery below Stanislaus
602	RM 76	76	x		
603	El Soyo Main Canal, Sub-ELS, Hwy132 Bridge	77+	x		
604	Maze Rd. Gage Station	78.5	x		
605	Hospital/Ingram Creek, Sub-H/I	80	x		
606	MID #4, RM 81	81			
607	Finnegan Cut	83-			
608	Tuolumne River, MID #5	84-		D630B	Mainstem Delivery Tuolomne to Stanislaus
609	W. Stanislaus Main Canal	84			
610	Reclamation Dist. 2092 Drain #2	85+			
611	Reclamation Dist. 2092 Drain #3	86+	x		
612	Old Grayson Channel	87	x		
613	Laird Slough	88	x		
614	Westley Wasteway	89	x		
615	TID #2	90+	x		
616	Richie Slough, Sub-RSL	91.5	x		
617	Del Puerto Creek	93-			
618	TID #3 (Westport) & Loquat Ave. Drains	93+			
619	Magnolia Ave. Drain	94+			
620	Modesto Sewage Outfall	95			
621	Eucalyptus & Lemon Ave. Drains	96			
622	Patterson Sewage Outfall & Olive Ave. Drains, Sub-PAT	97-			
623	Patterson Pumphouse/Main Canal	98-			
624	Lake Ramona, Sub-RLK	99+	x		
625	Reclamation Dist. 1602 Overflow Drain	101+			
626	Paradise Ave. Slough & Gomes Lake Discharge Pumps	102+			
627	TID Lateral #5 Drain	103+	x		
628		105	x		
629		106+	x		
630	Crows Landing Bridge	107.5	x		
631	Orestimba Creek	109+	x		
632		110+	x		
633	TID #6&7, Alhem Tile & Reclamation Dist. 2063 Drains	112-			
634	Gonsalves Tailwater Drain	112.5			
635	Villa Manucha & Freitas Rd. Drains	113+			
636		114+	x		
637	Allen Serpa Pumps and Drain	116-	x		
638	RM 117	117	x		
639	Merced River, TID Lower Stevinson	118+		D620B	Mainstem Delivery Merced to Tuolomne
640	Newman Slough	119			
641	Newman Wasteway& Orestimba Rancho Drain	119.5			
642	Mud Slough	121+			
643	RM 123	123			
644	Mud Slough	124+			
645	Fremont Ford Bridge	125	x		
646	Stevinson Op. Spills #1 & #2	126-			
647	Stevinson Op. Spill #3	127-			
648	Salt Slough	129.5			
649		130+	x		
650		132-			
651	Tail Water Drain	133-			
652	Field Drain	134-			
653	Bear Creek (CURRENT BOUNDARY)	136-			

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Table A-5. Disaggregation of CALSIM II Non-project Return

DSM2-SJR			Westside drainage variable	CALSIM II variable	
Node	Description	River mile	Non-project return (R)	Non-project return (NPR)	Comment in WRESL
17	Current DSM2 Boundary	74.5			
600		74.7			
601	Stanislaus River, MID #6, Modesto Main Canal	75	x	R639A	R639A=0.3*D637
602	RM 76	76	x	R637D	R637D=0.3*D630B
603	El Soyo Main Canal, Sub-ELS, Hwy132 Bridge	77+	x		
604	Maze Rd. Gage Station	78.5	x		
605	Hospital/Ingram Creek, Sub-H/I	80	x		
606	MID #4, RM 81	81			
607	Finnegan Cut	83-			
608	Tuolumne River, MID #5	84-			
609	W. Stanislaus Main Canal	84		R630M	R630M=0.3*D620B
610	Reclamation Dist. 2092 Drain #2	85+			
611	Reclamation Dist. 2092 Drain #3	86+			
612	Old Grayson Channel	87	x		
613	Laird Slough	88			
614	Westley Wasteway	89			
615	TID #2	90+			
616	Richie Slough, Sub-RSL	91.5	x		
617	Del Puerto Creek	93-	x		
618	TID #3 (Westport) & Loquat Ave. Drains	93+			
619	Magnolia Ave. Drain	94+			
620	Modesto Sewage Outfall	95			
621	Eucalyptus & Lemon Ave. Drains	96			
622	Patterson Sewage Outfall & Olive Ave. Drains, Sub-PAT	97-			
623	Patterson Pumphouse/Main Canal	98-	x		
624	Lake Ramona, Sub-RLK	99+			
625	Reclamation Dist. 1602 Overflow Drain	101+			
626	Paradise Ave. Slough & Gomes Lake Discharge Pumps	102+			
627	TID Lateral #5 Drain	103+			
628		105	x		
629		106+			
630	Crows Landing Bridge	107.5			
631	Orestimba Creek	109+	x		
632		110+			
633	TID #6&7, Alhem Tile & Reclamation Dist. 2063 Drains	112-			
634	Gonsalves Tailwater Drain	112.5			
635	Villa Manucha & Freitas Rd. Drains	113+	x		
636		114+			
637	Allen Serpa Pumps and Drain	116-			
638	RM 117	117	x		
639	Merced River, TID Lower Stevinson	118+			
640	Newman Slough	119			
641	Newman Wasteway& Orestimba Rancho Drain	119.5			
642	Mud Slough	121+			
643	RM 123	123			
644	Mud Slough	124+			
645	Fremont Ford Bridge	125	x		
646	Stevinson Op. Spills #1 & #2	126-			
647	Stevinson Op. Spill #3	127-			
648	Salt Slough	129.5			
649		130+	x		
650		132-			
651	Tail Water Drain	133-			
652	Field Drain	134-			
653	Bear Creek (CURRENT BOUNDARY)	136-			

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Table A-6. WESTSIM Subregions Return Flow Location

WESTSIM Subregion	WESTSIM Subregion Name	WESTSIM Return Flow Stream Node	Corresponding DSM2-SJR Node
1	Westside WD (TCC)	0	17*
2	City of Tracy	0	17*
3	Banta Carbona ID	0	17*
4	Plainview WD (West)	0	17*
5.1	SJQ/STAN Unic. (East North)	151	602
5.2	SJQ/STAN Unic. (East South)	141	616
6	Hospital WD	155	600
7	West Stanislaus ID (West)	147	607
8	El Solyo WD	151	602
9	Kern Canyon WD	143	613
10	Patterson WD	134	624
11	Del Puerto WD	136	622
12	Central California ID (Central	272	642
13	Sunflower WD	131	628
14	Central California ID (North)	120	642
15	Orestimba WD	240	631
16	City of Los Banos **	272	642
17	Foothill WD	235	631
18	Davis WD (DMC)	236	631
19	San Luis/Kesterson (North)	116	647
20	West Gallo	170	648
21	Grasslands WD (North)	174	642
22	Mustang WD	271	642
23	San Luis/Kesterson (South)	166	648
24	San Luis Canal Co	157	648
25	Salt Slough	163	648
26	Quinto WD	269	642
27	Lansdale WD	270	642
28	Los Banos WMA	163	648
29	Volta WMA	264	642
30	Centinella WD	269	642
31	Romero WD	269	642
32	Central California ID (South)	157	648
33	San Luis WD (DMC)	261	642
34	Grasslands WD (South)	174	642
35	Eagle Field WD (North)	174	642
36	San Luis WD (SLC)	157	648
37	Panoche WD (DMC/SLC)	184	642
38	Eagle Field WD (South)	184	642
39	Pacheco WD	184	642
40	Mercy Springs WD	184	642
41	Oro Loma WD	184	642
42	Firebaugh Canal Co (North)	184	642
43	Widren WD	184	642
44	Firebaugh Canal Co (South)	157	648
45	Broadview WD	184	642
46	Westlands WD (East)	46	
47	Mendota WMA	55	
48	Fresno Slough WD	52	
49	Westlands WD (West)	212	

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WESTSIM Subregion	WESTSIM Subregion Name	WESTSIM Return Flow Stream Node	Corresponding DSM2-SJR Node
50	Traction Ranch	49	
51	Tranquility ID	48	
52	James ID	40	
53	Stinson WD	33	
54	Mid Valley Water Authority (No	38	
55	Mid Valley Water Authority (So	16	
56	City of Coalinga (West)	216	
57	Pleasant Valley WD (South)	227	
58	Fresno County Unincorporated	228	
59	City of Avenal	233	
60	City of Coalinga (East)	226	
61	Pleasant Valley WD (North)	221	
62	Westlands WD (East)	46	
63	Westlands WD (East)	46	

* In WESTSIM, the return flows of these subregions are exported outside of the model. For DSM2-SJR, it is assumed that their return flows drain to node 17 (the downstream model boundary).

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Table A-7. DWR DSM2-SJR Documentation Table for Incorporating SJRIO Information

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SM2 - San Joaquin River Flow Inputs

Node	River Mile (RM)	Historical Data and Source partC partB(description) source priority (input-rim_sjr-rt.inp)	SJRIO Ag Flow Calculations: AgDiv# - Riparian and Approprative Pumping, AgSrfDrn# - Surface Return, AgSubDrn# - Sub-Surface Return (input-ag_sjr-rt.inp, formulas in VPlotter)*	SJRIO (GW) (input-gw_sjr-rt.inp)^
17			**AgDiv17**=taf2cfs((rm744+rm742)/1000.0) **AgSubDrn17**=taf2cfs(mcr/1000)	
601	75	**AgSpill** MID6-Stan(Modesto irrigation lateral 6,flows to STAN R. below BC.) RWQCB, **AgDrain** MIDMAIN(Modesto irrigation main drain,flows to STAN R. below BC.) RWQCB, **FLOW** STANISLAUS(Stanislaus River) DMS-PATE-12HRshift from DWR-CDEC	flow forward shift 12hrs(TP), **AgSrfDrn601**=taf2cfs((0.3*(RM754+RM744+RM742+TRB8+TRB9+TRB10))/1000.0) and not used AgDiv601=taf2cfs((trb8+trb9+trb10)/1000.0)	taf2cfs((STN) /1000.0)
602	76		**AgDiv602**=taf2cfs((rm773+rm760+rm754)/1000.0)	taf2cfs((RM76+ RM75)/1000.0)
603	77+	**AG-DIV** ESWD-SJR(El Soyo Main Canal) RWQCB	**AgSubDrn603**=taf2cfs(els/1000) **AgSrfDrn603**=taf2cfs((0.3*(RM773+RM760)+0.15*HOSP+0.1*DIVESWD+GW770)/1000.0)	taf2cfs((RM78+ RM77)/1000.0)
604	78.5		**AgSrfDrn604**=taf2cfs((0.3*RM791+0.05*DIVESWD+GW790)/1000.0)	taf2cfs((RM80+ RM79)/1000.0)
605	80	CalcChan-DWR(Pate)	**AgDiv605**=taf2cfs((rm802+rm791)/1000.0) **AgSubDrn605**=taf2cfs(hi/1000) **AgSrfDrn605**=taf2cfs((0.3*RM802+0.15*HOSP+0.108*WSID+0.108*DIVWSID+0.15*DIVESWD+GW800)/1000.0)	
606	81	**AG-SPILL** MID4-SJR(Modesto Irrigation Lateral 4) RWQCB		taf2cfs((RM82+ RM81)/1000.0)
607	83-			taf2cfs((RM84+ RM83)/1000.0)
608	84-	**FLOW** TUOLUMNE(Tuolumne River) DMS-PATE-12HRshift from DWR-CDEC **AG-SPILL** MID5-TUOL(Modesto irrigation lateral 5,flows to TUOL R. below BC.) RWQCB	flow forward shift 24hrs(TP), **AgSrfDrn608**=taf2cfs((0.3*(TRB3+TRB4+TRB5+TRB6+TRB7))/1000.0) not used: AgDiv608=taf2cfs((trb3+trb4+trb5+trb6+trb7)/1000.0)	taf2cfs((TUO)/1000.0)
609	84	**AG-DIV** WSID-SJR(W. Stanislaus Main Canal) RWQCB		
610	85+			
611	86+		**AgDiv611**=taf2cfs((rm861)/1000.0)	taf2cfs((RM86+ RM85)/1000.0)
612	87		**AgDiv612**=taf2cfs((rm875)/1000.0)	
613	88		**AgDiv613**=taf2cfs((rm896+rm891+rm890+rm887)/1000.0)	taf2cfs((RM88+ RM87)/1000.0)
614	89		**AgSrfDrn614**=taf2cfs((0.3*RM891+0.3*RM890+0.3*RM887+0.3*RM875+0.3*RM861+0.12*DPWD+0.3*KERN+0.036*WSID+0.036*DIVWSID+GW870)/1000.0)	taf2cfs((RM132+ RM131+ RM130+ RM129)/1000.0)
615	90+	**AG-SPILL** TID2-SJR(Turlock Irrigation Lateral 2) RWQCB		
616	91.5		**AgDiv616**=taf2cfs((rm922+rm921+rm909+rm905)/1000.0) **AgSubDrn616**=taf2cfs(rsl/1000) **AgSrfDrn616**=taf2cfs((0.3*RM909+0.3*RM905+0.3*RM896+0.15*WSID+0.15*DIVWSID+GW910)/1000.0)	taf2cfs((RM92+ RM91)/1000.0)
617	93-	**FLOW** DPC(Del Puerto Cr.) USGS-NQUINN priority1, FLOW DPC(Del Puerto Cr.) Fill USGS-PATE priority2	**AgSrfDrn617**=taf2cfs((0.3*RM921+0.006*WSID+0.006*DIVWSID+0.165*PWD+0.165*DIVPWD+0.18*DPWD+GW920)/1000.0)	

SJR Diversion

irr_cvp_westside

agdiv_sjr

DSM2 - San Joaquin River Flow Inputs

Node	River Mile (RM)	Historical Data and Source partC partB(description) source priority (input-rim_sjr-rt.inp)	SJRIO Ag Flow Calculations: AgDiv# - Riparian and Appropriative Pumping, AgSrfDrn# - Surface Return, AgSubDrn# - Sub-Surface Return (input-ag_sjr-rt.inp, formulas in VPlotter)*	SJRIO (GW) (input-gw_sjr-rt.inp)^
618	93+	**AG-DRAIN** TID3-SJR(Turlock Irrigation Drain 3 (Westport Drain)) Fill RWQCB		
619	94+		**AgSrfDrn619**=taf2cfs((0.015*PWD+0.015*DIVPWD+0.03*SALA+0.015*SUN+GW940)/1000.0)	taf2cfs((RM94+ RM93)/1000.0)
620	95	**MUNI-DISCHARGE** MODWWTP-SJR(Modesto Sewage Outfall) RWQCB		
621	96		**AgSrfDrn621**=taf2cfs((0.06*PWD+0.06*DIVPWD+0.27*SALA+0.135*SUN+GW970)/1000.0)	taf2cfs((RM96+ RM95)/1000.0)
622	97-		**AgDiv622**=taf2cfs((rm987)/1000.0)	
623	98-	**AG-DIV** PWD-SJR(Patterson Main Canal) RWQCB	**AgSubDrn623**=taf2cfs(pat/1000) **AgSrfDrn623**=taf2cfs((0.3*RM989+0.3*988+0.03*PWD+0.03*DIVPWD+GW980)/1000.0)	
624	99+		**AgDiv624**=taf2cfs((rm989+rm988)/1000.0) **AgSubDrn624**=taf2cfs(rlk/1000) **AgSrfDrn624**=taf2cfs((0.03*PWD+0.03*DIVPWD+GW1000)/1000.0)	taf2cfs((RM98+ RM97)/1000.0)
625	101+			taf2cfs((RM100+ RM99)/1000.0)
626	102+			taf2cfs((RM102+ RM101)/1000.0)
627	103+	**AG-DRAIN** TID5-SJR(Turlock Irrigation Drain 5) Fill RWQCB		
628	105		**AgDiv628**=taf2cfs((rm1048+rm1042+rm1040+rm1034+rm1033)/1000.0) **AgSubDrn628**=taf2cfs(spg/1000) **AgSrfDrn628**=taf2cfs((0.3*RM1063+0.3*RM1048+0.3*RM1042+0.3*RM1040+0.3*RM1034+0.3*RM1033+0.018*CCID+GW1050)/1000.0)	taf2cfs((RM104+ RM103)/1000.0)
629	106+		**AgDiv629**=taf2cfs((rm1080+rm1072+rm1063)/1000.0)	taf2cfs((RM106+ RM105)/1000.0)
630	107.5			
631	109+	**Flow** ORE(Orestimba Cr.) USGS-NQUINN priority1, Flow ORE(Orestimba Cr.) Fill USGS-PATE priority2, Flow ORE33(Orestimba Cr.) DWR-SJD priority3	**AgSrfDrn631**=taf2cfs((0.3*(RM1105+RM1101+RM1100+RM1098+RM1092+RM1080+RM1072))/1000.0)	taf2cfs((RM108+RM107)/1000.0)
632	110+		**AgDiv632**=taf2cfs((rm1105+rm1101+rm1100+rm1098+rm1092)/1000.0)	taf2cfs((RM110+ RM109)/1000.0)
633	112-	**AG-SPILL** TID6_7-SJR(Turlock Irrigation Lateral 6+7) RWQCB		
634	112.5			taf2cfs((RM112+ RM111)/1000.0)
635	113+		**AgSrfDrn635**=taf2cfs((0.3*RM1146+0.011*CCID+GW1130)/1000.0)	
636	114+		**AgDiv636**=taf2cfs(rm1146/1000.0)	taf2cfs((RM114+ RM113)/1000.0)
637	116-		**AgDiv637**=taf2cfs(rm1155/1000.0)	taf2cfs((RM116+ RM115)/1000.0)
638	117		**AgDiv638**=taf2cfs(rm1170/1000.0) **AgSubDrn638**=taf2cfs(nwi/1000) **AgSrfDrn638**=taf2cfs((0.3*RM1170+0.3*RM1155+0.004*CCID+GW1170)/1000.0)	taf2cfs((RM118+ RM117)/1000.0)

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DSM2 - San Joaquin River Flow Inputs

Node	River Mile (RM)	Historical Data and Source partC partB(description) source priority (input-rim_sjr-rt.inp)	SJRIO Ag Flow Calculations: AgDiv# - Riparian and Appropriative Pumping, AgSrfDrn# - Surface Return, AgSubDrn# - Sub-Surface Return (input-ag_sjr-rt.inp, formulas in VPlotter)*	SJRIO (GW) (input-gw_sjr-rt.inp)^
639	118+	AG-DRAIN TID_LSTV-MER(Turlock Irrigation Lower Stevinson Lateral) RWQCB, FLOW MERCED(flows to Merced R. below MST station) DWR-CDEC priority1, FLOW MERCED(flows to Merced R. below MST station) Fill CDEC-PATE priority2	not used AgDiv639=taf2cfs((trb1+trb2)/1000.0) AgSrfDrn639=taf2cfs((0.3*(TRB1+TRB2))/1000.0)	taf2cfs((MER) /1000.0)
640	119			
641	119.5		AgSubDrn641=taf2cfs(nwa/1000) AgSrfDrn641=taf2cfs((0.018*CCID+0.3*FOOT+GW1190)/1000.0)	taf2cfs((RM120+ RM119)/1000.0)
642	121+	Flow MSL(Mud Sl.) USGS-NQUINN priority1, Flow MSL(Mud Sl.) Fill USGS-PATE priority2		
643	123			taf2cfs((RM122+ RM121)/1000.0)
644	124+			taf2cfs((RM124+ RM123)/1000.0)
645	125		AgDiv645=taf2cfs(rm1250/1000.0) AgSrfDrn645=taf2cfs((0.3*RM1250)/1000.0)	
646	126-			taf2cfs((RM126+ RM125)/1000.0)
647	127-			taf2cfs((RM128+ RM127)/1000.0)
648	129.5	FLOW SSL(Salt Sl.) USGS-NQUINN priority1, FLOW SSL(Salt Sl.) Fill USGS-PATE priority2		
649	130+		AgDiv649=taf2cfs(rm1305/1000.0) AgSrfDrn649=taf2cfs((0.3*RM1305)/1000.0)	
650	132-			taf2cfs((RM132+ RM131+ RM130+ RM129)/1000.0)
651	133-			
652	134-			
653	136-	FLOW STEVINSON(Bear Creek, SJR (use Stevinson flow for BC)) DWR-CDEC priority1, FLOW STEVINSON(Bear Creek, SJR (use Stevinson flow for BC)) CDEC-PATE priority2		

* RM data from SJRIO- Post and Pre-1914 p.C-92, Ch5-Pate p.9, trb data from SJRIO Post-1914, other values from USBR,SJRIO, RWQCB and/or Calc

** values calculated with a script file in Vplotter

^ Average distribution of gw. (RM#) based on SJRIO numbers in table 13 p.C-83 (Ch5-Pate p.12)

Table A-8. CALSIM II Westside Return Arcs: CVP Contractors and Their Westside Drainage Return Locations

CALSIM II Westside Return	Return of CALSIM II Delivery	CVP Contractor	Return Location in WESTSTIM	Return Location in DSM2-SJR	Return Location in River Miles
Components of R614West					
R614d	D706	Laguna Water District	Salt Slough	648	129.5
R614a	D706	Panoche Water District	Mud and/or Salt Slough[2]	642	121.0
R614b	D706	San Luis Water District			
R614c	D706	Broadview Water District			
R614e	D706	Eagle Field Water District			
R614f	D706	Mercy Springs Water District			
R614g	D706	Oro Loma Water District			
R614h	D706	Widren Water District			
R614i	D707	Exchange Contractors			
R614j	D607B	Exchange Contractors			
R614k	D708	CVP Lower DMC Volta Refuge Diversion[1]			
R614L	D607C	Mendota Pool Refuge Diversion[1]			
Components of R619West					
R619a	D701	Davis Water District	Orestimba Creek	632	109.0
R619b	D701	Mustang Water District			
R619c	D701	Foothill Water District			
R619d	D701	Quinto Water District			
R619e	D701	Romero Water District			
R619f	D701	Centinella Water District			
R619g	D701	Exchange Contractors			
R619h	D607B	Exchange Contractors			
R619i	D701	Orestimba Water District			
Components of R630West					
R630e	D701	Sunflower Water District	Upstream of TID Lateral #5 Drain	628	105.0
R630a	D701	Del Puerto Water District	Patterson Sewage Outfall	622	97.0
R630d	D701	Salado Water District			
R630h	D701	Patterson Water District Water Rights	Lake Ramona	624	99.0
R630i	D701	Patterson Water District			
R630c	D701	Kern Canon Water District	Laird Slough	613	88.0
R630f	D701	West Stanislaus Water District	Finnegan Cut	607	83.0
Components of R639West					
R639b	D701	Hospital Water District	Vernalis	17	73.0

Note:
[1] CVP Refuge contractors. The remaining are CVP agricultural contractors.
[2] Due to limited information, returns to Mud and Salt sloughs are assumed to occur at one location.
Source: \common\SanJoaquin\ReturnFlows\WestSide_RF_Defs.wresl

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Table A-9. SJRIO Year Type: Water Year 1921 to 2000

Water Year	SJRIO Year Type	Water Year	SJRIO Year Type	Water Year	SJRIO Year Type	Water Year	SJRIO Year Type
1921	Normal	1941	Wet	1961	Critical	1981	Critical
1922	Wet	1942	Normal	1962	Normal	1982	Wet
1923	Normal	1943	Normal	1963	Normal	1983	Wet
1924	Critical	1944	Dry	1964	Critical	1984	Normal
1925	Normal	1945	Normal	1965	Wet	1985	Dry
1926	Dry	1946	Normal	1966	Dry	1986	Wet
1927	Normal	1947	Dry	1967	Wet	1987	Critical
1928	Normal	1948	Normal	1968	Critical	1988	Critical
1929	Critical	1949	Dry	1969	Wet	1989	Critical
1930	Critical	1950	Normal	1970	Normal	1990	Critical
1931	Critical	1951	Normal	1971	Normal	1991	Critical
1932	Normal	1952	Wet	1972	Dry	1992	Critical
1933	Critical	1953	Normal	1973	Normal	1993	Wet
1934	Critical	1954	Normal	1974	Normal	1994	Critical
1935	Normal	1955	Dry	1975	Normal	1995	Wet
1936	Normal	1956	Wet	1976	Critical	1996	Normal
1937	Normal	1957	Normal	1977	Critical	1997	Wet
1938	Wet	1958	Wet	1978	Wet	1998	Wet
1939	Critical	1959	Critical	1979	Normal	1999	Normal
1940	Normal	1960	Critical	1980	Wet	2000	Normal

SJRIO year type definitions are on page C-5 of SWRCB 1987.

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Table A-10. EC Assumptions: SJRIO TDS Inputs Applied to the Water Quality Module

DSM2		SJRIO TDS Inputs for Water Quality Module Components ("SJRIO Flow Type"-"River Mile")				
Node ID	River Mile	Tile Drainage	Groundwater Base Flow	Westside Groundwater Return	Westside Surface Water Return	Non-project Return
17	74.5	SUB-73			SRF-74.9	
600	74.7					
601	75		GW-73, GW-74			SRF-74.9
602	76		GW-75, GW-76			SRF-77.4
603	77+	SUB-77.4	GW-77, GW-78	SRF-77.4		SRF-77.4
604	78.5		GW-79, GW-80	SRF-79		SRF-79
605	80	SUB-80		SRF-80		SRF-80
606	81		GW-81, GW-82			
607	83-		GW-83, GW-84		SRF-83.7	
608	84-					
609	84					
610	85+					
611	86+		GW-85, GW-86			
612	87			SRF-87		SRF-87
613	88		GW-87, GW-88		SRF-87	
614	89		GW-89, GW-90			
615	90+					
616	91.5	SUB-91.4	GW-91, GW-92	SRF-91.4		SRF-91.4
617	93-			SRF-92.9		SRF-92.9
618	93+					
619	94+		GW-93, GW-94	SRF-94		
620	95					
621	96		GW-95, GW-96			
622	97-			SRF-97	SRF-97	
623	98-	SUB-98.6		SRF-98.6		SRF-98.6
624	99+	SUB-100	GW-97, GW-98	SRF-100	SRF-100	
625	101+		GW-99, GW-100			
626	102+		GW-101, GW-102			
627	103+					
628	105	SUB-105	GW-103, GW-104	SRF-105	SRF-105	SRF-105
629	106+		GW-105, GW-106			
630	107.5					
631	109+		GW-107, GW-108	SRF-109	SRF-109	SRF-109
632	110+		GW-109, GW-110			
633	112-					
634	112.5		GW-111, GW-112			
635	113+			SRF-113.4		SRF-113.4
636	114+		GW-113, GW-114			
637	116-		GW-115, GW-116			
638	117	SUB-117.6	GW-117, GW-118	SRF-117		SRF-117
639	118+					
640	119			SRF-119		
641	119.5	SUB-119.5	GW-119, GW-120			
642	121+				SRF-121.1	
643	123		GW-121, GW-122			
644	124+		GW-123, GW-124			
645	125					SRF-119
646	126-		GW-125, GW-126			
647	127-		GW-127, GW-128			
648	129.5				SRF-129.7	
649	130+					SRF-129.7
650	132-		GW-129, GW-130, GW-131, GW-132			

How to read this table:
For example, EC for tile drainage incurred at DSM2 node 17 is from TDS input of SJRIO for flow type "SUB" at river mile 73 (SUB-73).
Among the SJRIO flow types, "SUB" is for subsurface agricultural drainage, "GW" for groundwater accretion/depletion, and "SRF" for surface agricultural discharge.

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