

Sacramento River Pre-1914 Consumptive Water Rights

1) Right Bank of Sacramento River at Wheel Ditch in Redding:

Shasta County Water Rights Book 2, p. 391, notice dated 11/21/1914
 Deeded by McCoy Fitzgerald to Anderson-Cottonwood Irrigation District, 12/30/1914

Notice Date	Priority Date	Miners' Inches	Cubic Feet Per Second	Acre-feet	Source
11/21/1914	11/21/1914	20,000	400	289,785	Wheel Ditch - Sacramento River

2) Glenn-Colusa Irrigation District

Notice Date	Priority Date	Miners' Inches	Cubic Feet Per Second	Acre-feet	Source
4/16/1903	4/15/1903	500,000	10,000	7,244,628	Sacramento River
2/26/1903	2/25/1903	150,000	3,000	2,173,388	Sacramento River
2/26/1903	2/25/1903	150,000	3,000	2,173,388	Sacramento River
12/7/1901	11/30/1901		5,000	3,622,314	Sacramento River
12/7/1901	11/30/1901		5,000	3,622,314	Sacramento River
12/21/1883	12/18/1883		5,000	3,622,314	Sacramento River
11/19/1903	11/13/1903		5,000	3,622,314	Sacramento River
				26,080,661	Sacramento River Total
8/1/1907	8/1/1907		5,000	3,622,314	Stony Creek
			5,000	3,622,314	Stony Creek
5/4/1905	4/26/1905		5,000	3,622,314	Stony Creek
				10,866,942	Stony Creek Total
11/23/1904	11/21/1904		2,000	1,448,926	Willow Creek
				1,448,926	Willow Creek Total
				38,396,529	Grand Total

3) City of Sacramento

Source: State Water Board Notice of Petitions for Extensions of Time to Complete Construction Under Permits 11358, 11359, 11360, and 11361, November 3, 1988

Notice Date	Priority Date	Miners' Inches	Cubic Feet Per Second	Acre-feet	Source
	1854		75	54,335	Sacramento River

Turlock and Modesto Irrigation Districts' Pre-1914 Consumptive Water Rights

Holder Name	Date	Point of Diversion	Facility Name	Comment	Diversion	Diversion Units	Storage	Storage Units	Irrigation Season Face Amount, AF (246 days)
Turlock and Modesto Irrigation Districts and La Grange	5/18/1871	La Grange Dam	La Grange Dam	Acquired from F. Green and A.D. Allen	66	cubic feet per second			66 cfs max
Modesto Irrigation District	2/27/1913	La Grange Dam	La Grange Dam	Acquired from J.M. Finley	13,000	miner's inches			Not to exceed 250 cfs, among these first three water rights claims for a total of: 121,983.47
Modesto Irrigation District	11/13/1913	La Grange Dam	La Grange Dam	Acquired from Waterford Irrigation District	16,000	miner's inches			
Turlock and Modesto Irrigation Districts	1/16/1855	La Grange Dam	La Grange Dam	Acquired from Franklin Water Company					
Turlock and Modesto Irrigation Districts	1/18/1862	La Grange Dam	La Grange Dam	Acquired from Elam Dye					The sum of these water rights may not exceed 4,500 cfs diversion; Franklin Water Co and Elam Dye have no diversion amounts; all rights associated with this limit are converted to acre-feet:
Turlock and Modesto Irrigation Districts	5/18/1872	La Grange Dam	La Grange Dam	Acquired from John Burcham, M.A. Wheaton, and Charles Elliott	500,000	miner's inches			
Turlock Irrigation District	1/5/1889	La Grange Dam	La Grange Dam	Posted by TID	225,000	miner's inches			
Modesto Irrigation District	6/21/1890	La Grange Dam	La Grange Dam	Posted by MID	250,000	miner's inches			
Modesto Irrigation District	10/1/1908	La Grange Dam, Modesto Reservoir	La Grange Dam, Modesto Reservoir	Posted by MID	50,000	miner's inches	40,000	acre-feet	
Turlock Irrigation District	8/31/1911	La Grange Dam, Turlock Lake	La Grange Dam, Turlock Lake	Posted by TID	200,000	miner's inches	100,000	acre-feet	3,260,082.64
Estimated Total Face Amount =									3,382,066.12
Source: Letter from Kenneth Petruzzelli, O'Laughlin and Paris LLP, attorneys for the Modesto Irrigation District, "Public Records Act Request for Pre-1914 Water Rights," dated January 14, 2011; California Water Impact Network. There are 50 miner's inches to 1 cubic foot per second.									

Pre-1914 Appropriative Water Rights Claims of the City and County of San Francisco

Appropriation ID	Date	Point of Diversion	Facility Name	Face Amt (cfs)	Source
151(6)	7/22/1902	Stanislaus National Forest, Cherry Valley Reservoir Site, NE 1/4 Section 5, T1N R19E MDB&M	Cherry Valley Reservoir Site	1,000.00	Cherry Creek
151(4)	7/20/1902	Junction Eleanor & Cherry Creek, Section 16, T1N R19E MDB&M	Cherry Valley Reservoir Site	240.00	Eleanor & Cherry Creek
158	2/27/1911	Stanislaus National Forest, just north of S 1/4 corner of Section 32, T2N R19E	Cherry Valley Reservoir Site	500.00	Cherry Creek
153(1)	10/24/1909	Stanislaus National Forest, just west of E 1/4 corner of Section 8, T2N R19E MDB&M	Cherry Valley Reservoir Site	1,000.00	Cherry Creek
151(21)	10/11/1909	Junction Eleanor & Cherry Creek, Section 16, T1N R19E MDB&M	Cherry Valley Reservoir Site	240.00	Eleanor & Cherry Creek
			Cherry Valley Reservoir Site Total	2,980.00	
160	2/18/1911	Yosemite National Park, NW 1/4 of Section 16, T1N R20E MDB&M	Hetch Hetchy Reservoir Site	500.00	Tuolumne River
155(2)	10/4/1908	Stanislaus National Forest near mouth of Jawbone Creek	Hetch Hetchy Reservoir Site	200.00	Tuolumne River
156(3)	9/29/1908	Yosemite National Park, NE 1/4 Section 17, T1N R20E MDB&M	Hetch Hetchy Reservoir Site	200.00	Tuolumne River
			Hetch Hetchy Reservoir Site Total	700.00	
154(6)	7/29/1901	Yosemite National Park, Lake Eleanor Reservoir Site (1/4 mile below Lake Eleanor) SE 1/4 Section 34, T2N R19E MDB&M NW 1/4 within SE 1/4.	Lake Eleanor Reservoir Site	1,000.00	Eleanor Creek
155(1)	7/29/1901	Yosemite National Park NW 1/4 Section 3, T1N R19E MDB&M	Lake Eleanor Reservoir Site	100.00	Eleanor Creek
159	2/27/1911	Yosemite National Park, NW 1/4 Section 3, T1N R19E MDB&M	Lake Eleanor Reservoir Site	All the waters of Eleanor Creek	Eleanor Creek
154(14)	11/17/1909	Stanislaus National Park, West Bank NE 1/4 of NE 1/4 Section 9 T1N R19E, MDB&M	Lake Eleanor Reservoir Site	100.00	Eleanor Creek
156(1)	10/1/1908	Yosemite National Park, NW 1/4 Section 3, T1N R19E	Lake Eleanor Reservoir Site	100.00	Eleanor Creek
			Lake Eleanor Reservoir Site Total	1,100.00	
163	2/28/1911	Stanislaus National Forest near mouth of Jawbone Creek	Tuolumne River at and Near Early Intake	500.00	Tuolumne River
161	2/21/1911	Stanislaus National Forest 1 1/4 miles upstream from Range Line between R18E and R19E	Tuolumne River at and Near Early Intake	500.00	Tuolumne River
162	2/20/1911	Stanislaus Forest near west line of new park boundary	Tuolumne River at and Near Early Intake	500.00	Tuolumne River
153(5)	10/15/1909	Stanislaus National Forest 1 1/4 miles upstream from Range Line between R18E and R19E	Tuolumne River at and Near Early Intake	1,000.00	Tuolumne River
151(22)	10/12/1909	Stanislaus National Forest, above junction with Cherry River	Tuolumne River at and Near Early Intake	240.00	Tuolumne River
156(2)	10/4/1908	Near mouth of Jawbone Creek	Tuolumne River at and Near Early Intake	300.00	Jawbone Creek Tuolumne River
			Tuolumne River at and Near Early Intake Total	3,040.00	
			Grand Total	7,820.00	
			Tuolumne River at and Near Early Intake Total in Acre-feet originally claimed	2,202,366.94	

Source: R.B. Hansen, *San Francisco's Water Rights on the Tuolumne River Watershed*, prepared under the direction of A.O. Olson, Manager and Chief Engineer, Hetch Hetchy Water Supply, Power and Utilities Engineering Bureau, City and County of San Francisco Public Utilities Commission, July 1951. Available from the UC Riverside Water Resources Collections and Archives, Call No. G4794 H1.

Merced River Riparian Pre-1914 Consumptive Water Rights

Water Right Type	Status	Holder Name	Date	Point of Diversion	Comment	Face Amount, AF
Appropriative	Pre-1914	Farmer's Canal Company	1876	Originally that of the Robla Ditch	2500 cfs, with no apparent seasonal limitations.	1,811,157
Appropriative	Pre-1914	Crocker-Huffman Land & Water Company	1883	Crocker-Huffman Dam	2500 cfs; this right was originally filed by C.H. Huffman personally, acquired by Huffman and Crocker's Merced Canal & Irrigation Company, later taken over by Crocker Huffman Land & Water Company in late 1880s. This water right was acquired by Merced Irrigation District in 1919 after the District was formed.	1,811,157
Riparian		Upton et al	1895	Various - along Merced River below Crocker-Huffman Dam	Maximum diversion of 225 cfs pursuant to the Upton Decree of 1895	163,004
Riparian		Dale & Cook Ranch owners	1876	Various individuals associated with ownership of the Dale and Cook Ranch	24 cfs amount to a total diversion of 1,900 AF during diversion season	1,900
Riparian		J.J. Stevinson	1930	Merced ID's boundary intersecting with McCoy Spillway, Arena Spillway, or Bear Creek	Diversion season is from April 1 through September 30 with varying flow rates each month therein, according to the Stevinson Decree. Merced ID agreed with Stevinson to exchange delivery of water from Lake McClure up to 24,000 acre-feet annually, in exchange for an easement for the District to incorporate Stevinson's riparian water into District operations at Lake McClure."The rights hereby conveyed by the Company to the District shall be an easement in all the right title, interest, estate, and claims of the Company in and to the lands...in which it has an interest, and as against any right which the Company may now have in and to the waters of said Merced River."	24,000
Riparian		Parties to the Cowell Agreement	1926	Crocker-Huffman Dam	Merced Irrigation District is required to provide releases from New Exchequer Dam to meet riparian right holders requirements.	93,793
Pre-1914 and Riparian Water Rights, Merced River						3,905,012

San Joaquin River Riparian and Pre-1914 Consumptive Water Rights Claims

San Joaquin River Irrigation Uses	Estimated Face Amount	Point of Diversion	Other Description
USBR Purchase Rights from Miller & Lux Inc.	624,200	Friant Dam, rediverted at Madera and Friant-Kern Canals	Subject of a water rights purchase contract with US Bureau of Reclamation, and appraised at this quantity of water (Etcheverry, 1936; California Water Project Authority, 1936). Originally grassland and "uncontrolled" riparian flood flows. Grassland flows were pre-1914 appropriative rights of the Miller & Lux canal company; "uncontrolled" flows were riparian rights associated with lands adjacent to the San Joaquin River owned by Miller & Lux cattle business for grazing.
San Joaquin River Exchange Contractors Rights - exchange/easement on cropland water rights	840,000	USBR diverts these flows from the San Joaquin River into Madera and Friant-Kern Canals	Subject of a water rights exchange contract with US Bureau of Reclamation (Engle, Part Two, 1957). Originally "cropland" rights owned by Miller & Lux Inc. on which permanent and other crops were cultivated with highly reliable senior appropriative and riparian water rights. The Exchange Contractors having provided USBR with an easement for these rights receives in their place flows from Shasta Reservoir via Delta Mendota Canal.
Chowchilla Farms/Water District	49,300	Chowchilla Canal diversion from San Joaquin River upstream of Mendota Pool, east side of the river.	Subject of a water rights purchase contract with US Bureau of Reclamation for appropriative rights via Chowchilla Canal and under appropriative and riparian rights through the Blythe Canal, acquisition of which would be used in storage at Friant Dam and diversion into Madera Canal (California Water Project Authority, No. 6, 1937). The lands from which these rights were purchased lie between Fresno and Chowchilla rivers along the east bank of the San Joaquin River.
Lands Between Chowchilla Farms and Stevinson Colony	40,281	Between Chowchilla River and Merced River along east side of San Joaquin River.	Subject to water rights purchase contracts with US Bureau of Reclamation (including lands of Bloss, Hatfield, Crane, Turner, Erreca and Hansen) (California Water Project Authority, No. 7, 1937). Includes lands formerly owned by Miller & Lux, Inc., conveyed with reservations of easements in and to use of water and upstream storage rights reserved to Miller & Lux. Estimate of water rights shown are for uncontrolled flood and riparian rights as described in 1936, subordinate only to prior appropriative, prescriptive and contractual rights held by Miller & Lux and associated companies.
Stevinson/East Side Canal	20,168	Pre-1914 appropriative and riparian diversions upstream on San Joaquin River from Merced River confluence.	Unclear whether US Bureau of Reclamation entered into a water rights purchase contract with Stevinson. Stevinson's diversion rights were considered subordinated to Edison Securities and Miller & Lux (California Water Project Authority, No. 8, 1939, 18), and Stevinson instead was able to arrange a supply of water for its lands via the Merced River from Merced Irrigation District under the Stevinson Contract. East Side Canal appropriation from the San Joaquin River was found to average 14,268 AF, while residual riparian rights to the San Joaquin averaged 5,900 AF.
Tranquillity & James Irrigation Districts - Fresno Slough	29,300	Riparian diversions along Fresno Slough upstream of Mendota Pool.	Diversions were subordinated to Miller & Lux rights and allowed only when San Joaquin River reached 1,360 cfs and then the districts could take just 12 percent up to a maximum of 140 cfs. Estimated face amount for these districts obtained from Table 5 of California Water Project Authority, 1936.
Edison Securities	33,127	Riparian diversions just upstream of Mendota Pool and Fresno Slough along left (south) bank of San Joaquin River	Subject of a water rights purchase contract with US Bureau of Reclamation for uncontrolled overflow riparian rights from the San Joaquin River and associated sloughs upstream of Mendota Pool, along south bank (California Water Project Authority, No. 8, 1938). Edison Securities purchased these riparian lands from the Herminghaus Estate in January 1928.
Friant to Gravelly Ford right holders	116,741	As many as 198 diversions and/or pumps of water from lands adjacent to the San Joaquin River	Rights of most of these landowners were acquired by USBR, but some of those not immediately acquired by 1939 became plaintiffs in Rank v. Krug, a suit by water right holders and groundwater pumpers in this area against Friant Dam. Case decided by U.S. Supreme Court in 1957. The court determined that these water right holders collectively used about 200,000 acre-feet per year in this area of the San Joaquin River. This was the section of the river that received releases from Friant under D-990, and below Gravelly Ford, the river dried up through to the confluence with the Merced River. San Joaquin River Restoration Program Settlement Agreement states that riparian releases are now 117,000 to 126,000 acre-feet per year, consistent with "Steiner declaration."
Total Pre-1914 and Riparian Water Rights, Upper San Joaquin River	1,753,117		

Sources: State of California Water Project Authority, 1936-1939; Rank v. Krug; San Joaquin River Settlement Agreement, 2006.

San Joaquin River Riparian and Pre-1914 Consumptive Water Rights Claims

Lands east of San Joaquin River, Between Chowchilla Farms and Stevinson Colony Assumed Riparian to that Stream or its Branch Channels	Area in Acres	Estimated Average Uncontrolled Diversions, based on 1.65 acre-feet per acre
A.J. Turner	158	261
George J. Hatfield	1,293	2,133
Charles S. Howard	5,514	9,098
Charles A. Crane	2,400	3,960
Ed P. Waltz	2,640	4,356
Fred A Solari and J.A. Turner	861	1,421
Dan L McNamara	1,236	2,039
Dan L McNamara	957	1,579
Martin Erreca	520	858
Nell E Hanson	527	870
Jessie S Potter(1)	2,270	3,746
Jessie S Potter(2)	6,037	9,961
Totals	24,413	40,281

Source: California Water Project Authority, 1937b, 1937c.

Appendix D

Section D.6 Post-1914 Consumptive Water Rights Claims

Trinity River Watershed - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A029129	20341		BLUE JAY WATER ASSOCIATION BLUE JAY WATER ASSOCIATION Total	10/19/1987	20.80 20.80	Trinity	TRINITY RIVER UNDERFLOW
A027206	18568	12081	BRUCE G HANEY BRUCE G HANEY Total	2/5/1982	0.60 0.60	Trinity	TRINITY RIVER
A021330	14347	10037	Chad Blevins Chad Blevins Total	6/10/1963	5.20 5.20	Trinity	TRINITY RIVER
A017749	11255	6749	CHARLES HIGGS CHARLES HIGGS Total	7/31/1957	16.80 16.80	Trinity	TRINITY RIVER
A027969	19275	12725	CHRISTOPHER T CROSS CHRISTOPHER T CROSS Total	2/3/1984	0.20 0.20	Trinity	TRINITY RIVER
A010791	6398	4625	COVINGTON MUTUAL WATER COMPANY COVINGTON MUTUAL WATER COMPANY Total	3/24/1944	2,171.90 2,171.90	Trinity	EAST FORK STUART FORK TRINITY RIVER
A017743	11178	6988	DAVID COVINGTON DAVID COVINGTON Total	1/28/1964	33.30 33.30	Trinity	TRINITY RIVER
A026530	18389	12111	DAVID L SULLIVAN DAVID L SULLIVAN Total	9/24/1980	1.10 1.10	Trinity	TRINITY RIVER UNDERFLOW
A026529A	18429	12935	GARTH R SUNDBERG GARTH R SUNDBERG Total	1/22/1982	0.50 0.50	Trinity	TRINITY RIVER UNDERFLOW
A021142	14094	8656	GEORGE PAINTER GEORGE PAINTER Total	1/28/1963	0.30 0.30	Trinity	TRINITY RIVER
A029111	20233	13386	GERARD A KAZ GERARD A KAZ Total	9/16/1987	1.20 1.20	Trinity	TRINITY RIVER UNDERFLOW
A029183	20269	13322	HAZEL J SCHOTT HAZEL J SCHOTT Total	2/3/1988	2.30 2.30	Trinity	TRINITY RIVER
A029336	20343	13616	James Lee and Billie Jo Bonk Revocable Trust James Lee and Billie Jo Bonk Revocable Trust Total	11/9/2005	0.30 0.30	Trinity	TRINITY RIVER
A026660	18369	12082	JEFFREY J BUTLER JEFFREY J BUTLER Total	12/10/1980	0.60 0.60	Trinity	TRINITY RIVER
A029302	20344	13485	KATHERINE L RIDENOUR KATHERINE L RIDENOUR Total	7/18/1988	1.80 1.80	Trinity	TRINITY RIVER UNDERFLOW
A024059	16579	10904	KATHY WATSON KATHY WATSON Total	5/3/1972	1.40 1.40	Trinity	TRINITY RIVER UNDERFLOW
A027867	19134	12721	Ken Tamplen Ken Tamplen Total	9/14/1983	1.10 1.10	Trinity	TRINITY RIVER UNDERFLOW
A017669	11106	6566	Lewiston Community Service District Lewiston Community Service District Total	6/21/1957	543.00 543.00	Trinity	TRINITY RIVER
A018177	11654	6612	LEWISTON PARK MUTUAL WATER COMPANY, INC LEWISTON PARK MUTUAL WATER COMPANY, INC Total	6/11/1958	311.30 311.30	Trinity	ALDER GULCH, TRINITY RIVER
A027639	18898	12674	MADIELINA CORONA MADIELINA CORONA Total	1/24/1983	0.30 0.30	Trinity	TRINITY RIVER

Trinity River Watershed - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A020923	13998	8410	MARCIA OSA COATES MARCIA OSA COATES Total	9/4/1962	0.30 0.30	Humboldt	TRINITY RIVER
A023097	15783	10384	MARK GIBERSON MARK GIBERSON Total	7/25/1968	5.60 5.60	Trinity	TRINITY RIVER
A028907	20081	13096	NOELLE ROGET NOELLE ROGET Total	9/25/1986	2.00 2.00	Trinity	TRINITY RIVER
A015365	9527	5059	NORMAN EVANS	6/3/1953	0.80	Trinity	TRINITY RIVER
A015366	9528	5060	NORMAN EVANS NORMAN EVANS Total	6/3/1953	0.30 1.10	Trinity	TRINITY RIVER
A027855	19198	12716	RALPH M MCCOMB RALPH M MCCOMB Total	8/31/1983	0.50 0.50	Trinity	TRINITY RIVER UNDERFLOW
A020084	13120	7920	ROGER F KENDELL ROGER F KENDELL Total	4/13/1961	2.20 2.20	Trinity	TRINITY RIVER
A016087	10146	5302	RONALD JURIN RONALD JURIN Total	10/13/1954	1,642.50 1,642.50	Humboldt	TRINITY RIVER
A015227	9531	5145	RUSSELL H HAGEN JR RUSSELL H HAGEN JR Total	3/9/1953	2.30 2.30	Humboldt	TRINITY RIVER
A026531	18390	12060	STAN POFF STAN POFF Total	9/24/1980	0.40 0.40	Trinity	TRINITY RIVER UNDERFLOW
A022840	15541	10386	STEPHEN DUTTON STEPHEN DUTTON Total	6/30/1967	3.40 3.40	Trinity	TRINITY RIVER
A021166	14149	8631	STEVEN B PETERSON STEVEN B PETERSON Total	2/18/1963	7.60 7.60	Trinity	TRINITY RIVER
A024462	17650		TRINITY VILLAGE WATER COMPANY TRINITY VILLAGE WATER COMPANY Total	9/19/1973	360.00 360.00	Trinity	TRINITY RIVER
A011927	7140	3513	U S SHASTA-TRINITY NATL FOREST U S SHASTA-TRINITY NATL FOREST Total	6/9/1947	852.90 852.90	Trinity	EAST FORK STUART FORK TRINITY RIVER
A021019	14077	8386	U S SIX RIVERS NATL FOREST U S SIX RIVERS NATL FOREST Total	11/16/1962	29.00 29.00	Trinity	TRINITY RIVER
A005628	11967		U.S. BUREAU OF RECLAMATION	7/30/2027	3,349,943.80	Contra Costa, Trinity	OLD RIVER, TRINITY RIVER
A015374	11968		U.S. BUREAU OF RECLAMATION	7/29/2002	417,193.30	Contra Costa, Trinity	OLD RIVER, TRINITY RIVER
A015375	11969		U.S. BUREAU OF RECLAMATION	9/16/1959	3,030,761.80	Contra Costa, Trinity	Old River, TRINITY RIVER
A016767	11971		U.S. BUREAU OF RECLAMATION	7/29/2002	700,000.00	Contra Costa, Trinity	TRINITY RIVER
A017374	11973		U.S. BUREAU OF RECLAMATION U.S. BUREAU OF RECLAMATION Total	7/29/2002	1,085,966.30 8,583,865.20	Contra Costa, Trinity	TRINITY RIVER
A023882	16413	10503	WADE AMMON SR WADE AMMON SR Total	10/1/1971	4.00 4.00	Trinity	SOUTH FORK TRINITY RIVER

Trinity River Watershed - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A029410	20757		WEAVERVILLE COMMUNITY SERVICES DISTRICT	2/14/1989	870.00	Trinity	TRINITY RIVER
			WEAVERVILLE COMMUNITY SERVICES DISTRICT Total		870.00		
A028537	19864	12946	WILLIAM E HOYER	8/14/1985	0.10	Trinity	TRINITY RIVER UNDERFLOW
			WILLIAM E HOYER Total		0.10		
			Grand Total		8,590,763.10		

Pit River - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A001300	1360	2302	1994 ORAL BABCOCK LIVING TRUST	05/29/19	3,600.00	Lassen	EAST FORK JUNIPER CREEK
A001696	1361	2595	1994 ORAL BABCOCK LIVING TRUST	03/01/20	892.60	Lassen	DARK CANYON CREEK
			1994 ORAL BABCOCK LIVING TRUST Total		4,492.60		
A005549	2891	1366	AGENCY 5	06/28/27	282.40	Siskiyou	SOUTH FORK BEAR CREEK
			AGENCY 5 Total		282.40		
A004554	2316	1602	Alan K. Nelson	11/14/35	185.00	Modoc	DUTCH FLAT CREEK
			Alan K. Nelson Total		185.00		
A002383	1170	2169	ALTURAS RANCHES LLC	06/07/21	900.00	Modoc	JUNIPER GULCH
A010079	8453	4291	ALTURAS RANCHES LLC	12/05/40	745.00	Modoc	CROOKS CANYON
A013339	7970	6443	ALTURAS RANCHES LLC	09/07/49	470.00	Modoc	BIG JUNIPER CREEK
A013526	8456	4294	ALTURAS RANCHES LLC	12/29/49	113.80	Modoc	CROOKS CANYON
A014759	9219	6071	ALTURAS RANCHES LLC	04/17/52	93.50	Modoc	CROOKS CANYON
A016047	10304	6951	ALTURAS RANCHES LLC	09/15/54	204.00	Modoc	CROOKS CANYON
A016048	10305	6952	ALTURAS RANCHES LLC	09/15/54	204.00	Modoc	CROOKS CANYON
A021557	14924	9579	ALTURAS RANCHES LLC	11/27/63	1,370.00	Modoc	UNST, UNXX
			ALTURAS RANCHES LLC Total		4,100.30		
A020606	13624	8511	ANTHONY BOKARES	02/13/62	15.00	Lassen	UNST
A022408	15210	9918	ANTHONY BOKARES	02/28/66	14.00	Lassen	UNST, UNST (2)
			ANTHONY BOKARES Total		29.00		
A027640	18903	12948	AUGUSTINO DE MARIA	01/27/83	4.20	Modoc	UNST
			AUGUSTINO DE MARIA Total		4.20		
A021194	14258	9878	BECKETT TRUST	03/14/63	0.10	Siskiyou	LAVA CRACK SPRINGS
			BECKETT TRUST Total		0.10		
A011646	8075	4939	BETTY ANN CARROLL	12/04/46	750.00	Lassen	HOLBROOK CANYON STREAM
A015526	9636	4938	BETTY ANN CARROLL	09/03/53	215.00	Lassen	HOLBROOK CANYON STREAM
			BETTY ANN CARROLL Total		965.00		
A002093	872	4360	BIG VALLEY MUTUAL WATER COMPANY	11/22/20	2,635.00	Modoc	ANTELOPE FLAT DRAINAGE AREA
A010109	6084	4361	BIG VALLEY MUTUAL WATER COMPANY	02/05/41	100.00	Modoc	ANTELOPE FLAT DRAINAGE
A010407	6083	4362	BIG VALLEY MUTUAL WATER COMPANY	03/17/42	2,865.00	Modoc	LAST CHANCE CREEK, WHALEN CREEK
			BIG VALLEY MUTUAL WATER COMPANY Total		5,600.00		
A010866	6319	4442	Black Ranch, LLC	08/22/44	184.50	Shasta	BURNEY CREEK
			Black Ranch, LLC Total		184.50		
A014605	9028	4968	BO THORENFELT	12/18/51	200.00	Lassen	UNST
			BO THORENFELT Total		200.00		
A026030	17951	11911	BRIAN J VANVORIS	06/20/79	1.90	Shasta	UNST
			BRIAN J VANVORIS Total		1.90		
A014689	9035	5250	BRYON E GIBBONS	02/27/52	30.00	Modoc	NORTH FORK GLEASON CREEK
			BRYON E GIBBONS Total		30.00		
A012845	7485	4429	CALIF DEPT OF FORESTRY & FIRE PROTECTION	12/03/48	72.40	Shasta	HATCHET CREEK
			CALIF DEPT OF FORESTRY & FIRE PROTECTION Total		72.40		
A022921	15644	9980	CALIFORNIA PINES PROPERTY OWNERS' ASSOCIATION	10/09/67	16.00	Modoc	SOUTH FORK FITZHUGH CREEK
A022922	15645	9979	CALIFORNIA PINES PROPERTY OWNERS' ASSOCIATION	10/09/67	11.00	Modoc	MIDDLE FORK FITZHUGH CREEK
			CALIFORNIA PINES PROPERTY OWNERS' ASSOCIATION Total		27.00		
A015331	9762	7286	CHARLENE E STONE	05/04/53	353.50	Shasta	HALL CREEK

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A029440	20654		CHARLENE E STONE Total		353.50		
			CHARLES A ORWICK	03/17/89	49.00	Lassen	UNST
			CHARLES A ORWICK Total		49.00		
A011102	6482	3952	CLARK FRONTIN	07/09/45	325.80	Shasta	LITTLE ROARING CREEK
			CLARK FRONTIN Total		325.80		
A026068	18571		CLEO V HUNT	08/21/79	49.00	Lassen	WILLOW CREEK
			CLEO V HUNT Total		49.00		
A025835	18599	12335	CLIFFORD DE WITT	09/27/78	38.00	Modoc	UNST
			CLIFFORD DE WITT Total		38.00		
A020320	13198	8334	CORY BOSCHEE	07/24/61	5.00	Lassen	UNST
A025713	17569	12905	CORY BOSCHEE	04/07/78	9.00	Lassen	UNST
			CORY BOSCHEE Total		14.00		
A029694	20696		CRAIG HERMSMEYER	06/03/02	27.00	Lassen	UNSP
			CRAIG HERMSMEYER Total		27.00		
A014927	9196	5036	DANIEL TANKERSLEY	07/28/52	190.00	Lassen	UNST
			DANIEL TANKERSLEY Total		190.00		
A021750	14649	9048	DANIEL K DAVIS	04/21/64	25.00	Shasta	UNST
			DANIEL K DAVIS Total		25.00		
A016506	10376	9234	DARAN V MYERS	08/08/55	279.00	Lassen	UNST, WILLOW CREEK
			DARAN V MYERS Total		279.00		
A020366	13402	9254	DAVID CRAWFORD	08/22/61	49.00	Lassen	UNST
			DAVID CRAWFORD Total		49.00		
A021064	14089	8630	David Hunt	12/06/62	24.00	Lassen	UNST
			David Hunt Total		24.00		
A022637	15852	10320	David King	11/14/66	10.00	Lassen	UNST
			David King Total		10.00		
A022762	15472	9137	DAVID E LLOYD	04/06/67	3.00	Modoc	UNST
			DAVID E LLOYD Total		3.00		
A022887	15562	10015	DELBERT GOULD	08/22/67	12.00	Modoc	UNST
			DELBERT GOULD Total		12.00		
A028571	20220		DENNIS DAUGHERTY	10/02/85	1,237.50	Lassen	CEDAR CREEK
			DENNIS DAUGHERTY Total		1,237.50		
A025231	18834	13011	DIXIE VALLEY RANCH	01/04/77	49.90	Lassen	RUSSELL DAIRY CREEK, UNST
			DIXIE VALLEY RANCH Total		49.90		
A025522	17921	11827	DON A GORDON	10/11/77	6.60	Shasta	UNST
A026108	17978	11826	DON A GORDON	10/09/79	8.00	Shasta	UNST
			DON A GORDON Total		14.60		
A021059	14056	8335	DONALD B MCKERN	12/03/62	49.00	Lassen	UNST
			DONALD B MCKERN Total		49.00		
A001503	660	531	DONALD J MARTIN	04/29/26	158.80	Shasta	FALL RIVER
			DONALD J MARTIN Total		158.80		
A013095	8315	4236	EDWARD MOHR	05/16/49	22.10	Modoc	PIT RIVER
			EDWARD MOHR Total		22.10		
A018923	12202	6637	EDWARD F BRUCE	08/19/59	4.00	Shasta	UNST
			EDWARD F BRUCE Total		4.00		

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A022804	15612	9565	ELLEN E TAYLOR	06/06/67	228.00	Shasta	UNST
			ELLEN E TAYLOR Total		228.00		
A026243	18595	13611	ELWOOD FORD	09/13/05	3.80	Shasta	UNST
			ELWOOD FORD Total		3.80		
A017857	11414	6589	ERNEST W BRUCE	10/23/57	135.00	Shasta	PIT RIVER
			ERNEST W BRUCE Total		135.00		
A020025	13599	10798	EUGENE M BREZNOCK	03/09/61	198.00	Lassen	UNST
A020085	13600	8348	EUGENE M BREZNOCK	04/13/61	3.50	Lassen	UNST
			EUGENE M BREZNOCK Total		201.50		
A025806A	018103 A	13107	FRED A COLLINS	07/29/91	3.80	Shasta	UNST
			FRED A COLLINS Total		3.80		
A013659	8943	6444	FREDRICK ANKLIN	03/29/50	840.00	Modoc	HILTON DAIRY CREEK
A014070	8975	9266	FREDRICK ANKLIN	11/22/50	22.50	Modoc	HILTON CREEK
			FREDRICK ANKLIN Total		862.50		
A011557	7210	6446	FROSTY ACRES INCORPORATED	09/18/46	200.00	Lassen	UNST
A011736	7052	4435	FROSTY ACRES INCORPORATED	02/18/47	40.00	Lassen	UNST, WILLOW CREEK
A011737	7053	4436	FROSTY ACRES INCORPORATED	02/18/47	3.00	Lassen	UNST
A019491	13360	8102	FROSTY ACRES INCORPORATED	06/16/60	50.00	Lassen	UNST
A021478	14999	10108	FROSTY ACRES INCORPORATED	09/26/63	230.00	Lassen	WILLOW CREEK
			FROSTY ACRES INCORPORATED Total		523.00		
A025856	20266		GENELLE VOORHEES	10/16/78	14.40	Shasta	UNST, WILLOW CREEK
			GENELLE VOORHEES Total		14.40		
A022399	15231	9037	GEORGE SHEPHERD	02/21/66	15.00	Modoc	UNST
			GEORGE SHEPHERD Total		15.00		
A023826	16662	10945	GEORGE R WRIGHT	07/27/71	17.00	Modoc	CROOKS CANYON, UNST
			GEORGE R WRIGHT Total		17.00		
A000930	428	330	GERALDINE SILVA	02/18/18	142.00	Modoc	UNST
			GERALDINE SILVA Total		142.00		
A025073	17557		GL JOHNS 2002 LIVING TRUST	05/24/76	49.00	Lassen	UNST
			GL JOHNS 2002 LIVING TRUST Total		49.00		
A019145	12799	8943	GOOSE VALLEY RANCH	04/04/07	4,000.00	Shasta	GOOSE CREEK
			GOOSE VALLEY RANCH Total		4,000.00		
A013524	8454	4292	GREEN VALLEY ENTERPRISES	12/29/49	227.50	Modoc	CROOKS CANYON
A014757	9217	4295	GREEN VALLEY ENTERPRISES	04/17/52	187.00	Modoc	CROOKS CANYON
A016046	10303	6950	GREEN VALLEY ENTERPRISES	07/18/63	408.00	Modoc	CROOKS CANYON
			GREEN VALLEY ENTERPRISES Total		822.50		
A026116	17974	13640	GREGORY R CALDWELL	04/11/06	20.00	Shasta	UNST
			GREGORY R CALDWELL Total		20.00		
A015339	9569	7237	HALCUMB CEMETERY DISTRICT	05/12/53	21.30	Shasta	MONTGOMERY CREEK
A021917	15596	10655	HALCUMB CEMETERY DISTRICT	09/25/64	22.00	Shasta	MONTGOMERY CREEK
			HALCUMB CEMETERY DISTRICT Total		43.30		
A019724	12980	9231	HAROLD W SIEMER	09/01/60	49.00	Lassen	UNCR
			HAROLD W SIEMER Total		49.00		
A029085	20238	13367	HARRY C BRAFF	08/10/87	1.10	Modoc	UNST

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			HARRY C BRAFF Total		1.10		
A017256	10861	6858	HARRY J & MILI TURIELLO TRUST	08/27/56	13.50	Shasta	PEACOCK CREEK
A022452	15675	10435	HARRY J & MILI TURIELLO TRUST	04/25/66	36.00	Shasta	PEACOCK CREEK
			HARRY J & MILI TURIELLO TRUST Total		49.50		
A025783	17641	12731	Henrich 2002 Trust	07/13/78	14.90	Shasta	UNSP
A028219	19379	12733	Henrich 2002 Trust	08/15/84	3.60	Shasta	UNSP
A025784A	017642 A	12732	Henrich 2002 Trust	09/16/86	5.00	Shasta	UNST
			Henrich 2002 Trust Total		23.50		
A018783	12140	8414	HOMER J ROBERTS	06/11/59	85.00	Modoc	UNST
A021280	14409	8415	HOMER J ROBERTS	05/13/63	85.00	Modoc	UNST
			HOMER J ROBERTS Total		170.00		
A003353	1768	9722	HOT SPRINGS VALLEY IRRIGATION DISTRICT	04/12/23	48,400.00	Modoc	RATTLESNAKE CREEK
A022427	15227	9723	HOT SPRINGS VALLEY IRRIGATION DISTRICT	03/17/66	20,000.00	Modoc	RATTLESNAKE CREEK
			HOT SPRINGS VALLEY IRRIGATION DISTRICT Total		68,400.00		
A021252	14278	8912	J A CONNER LIVING TRUST	04/23/63	49.00	Lassen	UNST
			J A CONNER LIVING TRUST Total		49.00		
A008627	4736	2378	J SCOTT & ELEANOR J VERMILYEA REVOCABLE TRUST 2000	04/03/36	457.00	Shasta	SHOTGUN CREEK
A021240	14262	9047	J SCOTT & ELEANOR J VERMILYEA REVOCABLE TRUST 2000	04/15/63	42.30	Shasta	UNSP, UNST
			J SCOTT & ELEANOR J VERMILYEA REVOCABLE TRUST 2000 Total		499.30		
A025000	17278	11664	JAMES H BICKFORD	02/23/76	200.00	Lassen	BEAVER CREEK, UNST
			JAMES H BICKFORD Total		200.00		
A002878	2026	1196	JANET PERRY	04/27/32	232.70	Shasta	HAT CREEK
			JANET PERRY Total		232.70		
A009609	5445	4437	JOE RUSS	06/06/39	100.00	Modoc	FRANKLIN CREEK
A009610	5446	4438	JOE RUSS	06/06/39	400.00	Siskiyou	FRANKLIN CREEK
A012005	7349	5491	JOE RUSS	07/24/47	120.00	Modoc	DRY CREEK
A020109	13413	8895	JOE RUSS	05/04/61	110.00	Modoc	UNST
A020936	14192	8896	JOE RUSS	09/11/62	20.00	Modoc	UNST
A021454	14575	8985	JOE RUSS	09/06/63	619.00	Modoc	LINNVILLE CREEK
A024016	16809	12904	JOE RUSS	04/03/72	568.00	Modoc	LINNVILLE CREEK
			JOE RUSS Total		1,937.00		
A022761	15471	9136	JOHN KAHL	04/06/67	2.00	Modoc	UNST
			JOHN KAHL Total		2.00		
A023950	16457	10697	JOHN A YOUNGER	12/16/71	680.00	Modoc	UNDR
			JOHN A YOUNGER Total		680.00		
A016857	10677	5720	JOHN ASKEW	01/27/56	2.00	Lassen	UNST
A026194	18410	13346	JOHN ASKEW	02/01/80	0.80	Lassen	UNST
			JOHN ASKEW Total		2.80		
A002227	1893	4940	JOHN B CROOK	02/23/21	5,250.00	Lassen	COYOTE FLAT DRAINAGE AREA
			JOHN B CROOK Total		5,250.00		
A004700	2608	2083	JOHN F PARRISH	09/04/40	381.80	Shasta	HAT CREEK
			JOHN F PARRISH Total		381.80		
A029321	20792		JOHN W CAPIK	08/19/88	45.00	Modoc	LINNVILLE CREEK, UNST

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A030251	21250		JOHN W CAPIK Total		45.00		
			JOHNSON CREEK DITCH USER'S ASSOCIATION	10/19/09	181.00	Shasta	UNST
			JOHNSON CREEK DITCH USER'S ASSOCIATION Total		181.00		
A025931	18350	13252	JOSEPH LOUIS OSA	02/28/79	27.00	Shasta	UNST
			JOSEPH LOUIS OSA Total		27.00		
A009761	5494	3318	JUANITA C GARDNER TRUST	11/04/39	492.50	Modoc	UNST
			JUANITA C GARDNER TRUST Total		492.50		
A021664	14735	10181	JUNIPER ACRES WATER ASSOCIATION	03/02/64	2.80	Modoc	UNSP
			JUNIPER ACRES WATER ASSOCIATION Total		2.80		
A026244	18418	12315	KEITH MACDONALD	03/03/80	1.10	Shasta	UNST
			KEITH MACDONALD Total		1.10		
A005812	3592	2179	KRAMER RANCH LLC	01/28/28	2,563.40	Lassen, Modoc	WIDOW VALLEY CREEK
A017267	10726	5192	KRAMER RANCH LLC	09/07/56	27.80	Modoc	WIDOW VALLEY CREEK
			KRAMER RANCH LLC Total		2,591.20		
A000245	190	250	LARRY R WILLMORE	02/03/16	181.00	Shasta	CLARK CREEK
			LARRY R WILLMORE Total		181.00		
A026038	18018	11918	LASSEN GOLD MINING INC	06/29/79	55.00	Lassen	UNST
A027034	18637	11923	LASSEN GOLD MINING INC	10/05/81	20.00	Lassen	UNST
			LASSEN GOLD MINING INC Total		75.00		
A024977	17063	11560	LEON URRUTIA	01/20/76	49.00	Modoc	UNST
			LEON URRUTIA Total		49.00		
A013207	8000	5072	LOOKOUT RANCH & LODGE LP	07/05/49	1,500.00	Modoc	TAYLOR CREEK
			LOOKOUT RANCH & LODGE LP Total		1,500.00		
A028610	20217		LOWELL L NOVY	10/31/85	2,790.00	Lassen	CEDAR CREEK
			LOWELL L NOVY Total		2,790.00		
A010820	6290	4188	M D & N L MYERS FAMILY 1986 REVOCABLE TR	05/18/44	90.00	Lassen	CHACE VALLEY CREEK
A013504	8430	6063	M D & N L MYERS FAMILY 1986 REVOCABLE TR	12/09/49	50.00	Lassen	UNST
			M D & N L MYERS FAMILY 1986 REVOCABLE TR Total		140.00		
A022750	15460	9138	MANUEL SOUZA	04/06/67	3.00	Modoc	UNST
A022751	15461	9169	MANUEL SOUZA	04/06/67	3.00	Modoc	UNST
A022752	15462	9172	MANUEL SOUZA	04/06/67	2.50	Modoc	UNST
A022753	15463	9212	MANUEL SOUZA	04/06/67	2.00	Modoc	UNST
A022754	15464	9131	MANUEL SOUZA	04/06/67	1.50	Modoc	UNST
A022755	15465	9139	MANUEL SOUZA	04/06/67	1.70	Modoc	UNST
A022756	15466	9128	MANUEL SOUZA	04/06/67	0.60	Modoc	UNST
A022757	15467	9168	MANUEL SOUZA	04/06/67	2.40	Modoc	UNST
A022758	15468	9175	MANUEL SOUZA	04/06/67	1.00	Modoc	UNST
A022759	15469	9135	MANUEL SOUZA	04/06/67	1.40	Modoc	UNST
A022760	15470	9134	MANUEL SOUZA	04/06/67	1.60	Modoc	UNST
			MANUEL SOUZA Total		20.70		
A020398	13622	9332	MANUEL A MORRIS	09/14/61	38.00	Modoc	KRESGE CANYON
			MANUEL A MORRIS Total		38.00		
A006398	3672	1554	MAPES RANCH, INC	08/07/29	4.30	Lassen	UNST
A019286	12548	7836	MAPES RANCH, INC	03/07/60	1.00	Lassen	UNST
			MAPES RANCH, INC Total		5.30		

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A013525	8455	4293	MCGARVA RANCH	12/29/49	113.80	Modoc	CROOKS CANYON
A014758	9218	6070	MCGARVA RANCH	04/17/52	93.50	Modoc	CROOKS CANYON
			MCGARVA RANCH Total		207.30		
A019743	13039	10035	MELVIN D MYERS	09/19/60	142.00	Lassen	BUTTE CREEK
			MELVIN D MYERS Total		142.00		
A028518	20218		MERRILL DAUGHERTY	04/14/88	315.00	Lassen	CEDAR CREEK
			MERRILL DAUGHERTY Total		315.00		
A000772	384	67	MICHAEL L SPAETH	10/09/19	22.30	Shasta	BY GONNY CREEK
			MICHAEL L SPAETH Total		22.30		
A026520	18999	13439	MILANO LAND AND CATTLE CO LLC	09/13/99	49.00	Modoc	BLACKS CANYON
A026521	19000	13440	MILANO LAND AND CATTLE CO LLC	09/13/99	142.00	Modoc	BLACKS CANYON
			MILANO LAND AND CATTLE CO LLC Total		191.00		
A021448	14429	10822	MONTGOMERY CREEK COMMUNITY CHURCH	09/03/63	0.20	Shasta	MONTGOMERY CREEK
			MONTGOMERY CREEK COMMUNITY CHURCH Total		0.20		
A016216	10191	5073	MORGAN RANCH COMPANY INC	01/24/55	200.00	Modoc	UNST
			MORGAN RANCH COMPANY INC Total		200.00		
A026197	18187	12069	NELLIE M DUNBAR	02/11/80	1.00	Shasta	UNST
			NELLIE M DUNBAR Total		1.00		
A015902	9988	5233	NELSON RANCHES	06/10/54	515.00	Modoc	JIM CREEK
A021318	14730	9346	NELSON RANCHES	05/31/63	215.00	Modoc	JIM CREEK
			NELSON RANCHES Total		730.00		
A016855	10715	5989	NOR CAL LAND & CATTLE CO	01/26/56	2.00	Lassen	UNST
			NOR CAL LAND & CATTLE CO Total		2.00		
A030720	20995		OAK RUN LUMBER CO LLC	06/23/98	3.00	Shasta	UNST
			OAK RUN LUMBER CO LLC Total		3.00		
A003566	1567	627	PARKS FAMILY 1995 REVOCABLE TRUST	08/04/23	3.00	Lassen	UNXX
			PARKS FAMILY 1995 REVOCABLE TRUST Total		3.00		
A008649	4793	2440	Patricia H Bushey	04/27/36	0.60	Modoc	UNSP
			Patricia H Bushey Total		0.60		
A027005	19072	12821	PAUL R JOLLY	09/15/81	3.90	Shasta	UNST
			PAUL R JOLLY Total		3.90		
A028892	20279		Peter D Stent	06/11/91	25.00	Shasta	BEAR CREEK
			Peter D Stent Total		25.00		
A026239	18761		PHILIP R GUNSAULS	02/28/80	35.00	Modoc	HALLS CANYON
			PHILIP R GUNSAULS Total		35.00		
A008194	4668	2076	PHYLLIS A HARRIS	12/22/34	200.00	Modoc	CLEAR LAKE
			PHYLLIS A HARRIS Total		200.00		
A001538	697	353	Pickering Family Trust	05/12/24	456.20	Shasta	FALL RIVER
			Pickering Family Trust Total		456.20		
A028570	20219		Pine Creek Cattle Company	10/02/85	157.50	Lassen	CEDAR CREEK
			Pine Creek Cattle Company Total		157.50		
A024696	18118	11874	R A STANFORD	10/17/74	23.00	Modoc	THOMAS & BAYNES DITCH, UNST
			R A STANFORD Total		23.00		
A014474	8866	6313	RAMIRO CHAVEZ	09/11/51	14.00	Lassen, Modoc	KELLY DRAW, UNKNOWN
			RAMIRO CHAVEZ Total		14.00		

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A000992	2307	1711	RAY BREINER	05/29/18	837.00	Modoc	FITZHUGH CREEK
A000993	2308	1712	RAY BREINER	05/29/18	457.00	Modoc	FITZHUGH CREEK
A000994	2309	1713	RAY BREINER	05/29/18	157.00	Modoc	FITZHUGH CREEK
A001252	2310	1714	RAY BREINER	04/21/19	400.00	Modoc	UNST
A007458	4506	4879	RAY BREINER	12/08/32	706.00	Modoc	FITZHUGH CREEK
			RAY BREINER Total		2,557.00		
A027787	19030	11857	REDWOOD ROD & GUN CLUB	06/30/83	3.30	Modoc	BOWMAN SPRINGS
			REDWOOD ROD & GUN CLUB Total		3.30		
A025806B	018103 B	13132	RICHARD D WILLARD	08/11/78	2.50	Shasta	UNST
			RICHARD D WILLARD Total		2.50		
A019517	13969	9567	RICHARD E SHOEMAKER	07/06/60	44.00	Lassen	FRAZIER CREEK
			RICHARD E SHOEMAKER Total		44.00		
A000135	69	284	RICHARD L JENNINGS	09/16/15	1,428.00	Modoc	PORTUGE FLAT DRAINAGE
A000486	202	53	RICHARD L JENNINGS	09/27/16	146.00	Modoc	RALSTON CREEK
A010835	6340	3101	RICHARD L JENNINGS	07/07/44	149.00	Modoc	RALSTON GULCH
			RICHARD L JENNINGS Total		1,723.00		
A019209	13968	8686	RICHARD W CALLISON	02/02/60	126.30	Lassen	FRAZIER CREEK
			RICHARD W CALLISON Total		126.30		
A014321	8871	5241	ROBERT HEATON	07/01/58	47.10	Shasta	ROARING CREEK
			ROBERT HEATON Total		47.10		
A022203	15185	9750	ROBERT C MCDONALD	06/23/65	20.00	Lassen	UNST
			ROBERT C MCDONALD Total		20.00		
A013466	8323	6293	ROBERT C PEDOTTI	11/16/49	565.00	Modoc	RYE GRASS SWALE
A018851	12597	9869	ROBERT C PEDOTTI	07/10/59	669.00	Modoc	RYE GRASS SWALE
			ROBERT C PEDOTTI Total		1,234.00		
A002237	987	444	Robert C. Mann	01/11/26	153.30	Modoc	PIT RIVER
			Robert C. Mann Total		153.30		
A021090	14039	8599	ROBERT H MACKEY & SONS INC	12/21/62	3.50	Modoc	UNST
A021091	14040	8600	ROBERT H MACKEY & SONS INC	12/21/62	11.00	Modoc	UNST
			ROBERT H MACKEY & SONS INC Total		14.50		
A026159	18367	12239	ROGER ERICKSON	12/28/79	0.50	Modoc	CANTRELL CREEK
			ROGER ERICKSON Total		0.50		
A001164	573	318	ROLLIE L GILLIAM	02/03/19	400.00	Modoc	RYE GRASS SWALE
A003398	1769	1813	ROLLIE L GILLIAM	05/04/23	130.00	Modoc	RYE GRASS SWALE
			ROLLIE L GILLIAM Total		530.00		
A021444	14410	10692	Ronald M LaGrande	08/27/63	93.00	Modoc	COOLEY GULCH
			Ronald M LaGrande Total		93.00		
A025784B	017642 B	12412	RONALD STICE	09/16/86	3.40	Shasta	UNST
			RONALD STICE Total		3.40		
A022562	15288	9753	RONALD VIERRA	08/29/66	24.00	Lassen	UNST
			RONALD VIERRA Total		24.00		
A000596	346	252	RONALD L SCHLUTER	02/24/17	563.00	Modoc	EMIGRANT CREEK
A003050	1396	1039	RONALD L SCHLUTER	09/22/22	295.00	Modoc	UNST

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			RONALD L SCHLUTER Total		858.00		
A020754	14061	9326	RONALD WESLEY KETLER	04/24/62	180.60	Modoc	UNST
A021405	14789	9325	RONALD WESLEY KETLER	07/23/63	55.00	Modoc	UNST, UNXX
A021908	15045	9336	RONALD WESLEY KETLER	09/17/64	45.00	Modoc	UNST
			RONALD WESLEY KETLER Total		280.60		
A000065	630	1146	SARAH WADE	03/15/32	30.70	Lassen	WILLOW CREEK
			SARAH WADE Total		30.70		
A021346	14382	8764	SHIRLEY A HUGHES TRUSTOR	06/18/63	18.00	Modoc	UNST
			SHIRLEY A HUGHES TRUSTOR Total		18.00		
A003220	1453	411	SIERRA PACIFIC INDUSTRIES	01/12/23	135.80	Shasta	NELSON CREEK
			SIERRA PACIFIC INDUSTRIES Total		135.80		
A014477	9129	4385	SL RANCH	05/21/56	200.00	Modoc	CROOKS CANYON
			SL RANCH Total		200.00		
A007860	4477	2474	SOUTH FORK IRRIGATION DISTRICT	03/05/34	17,000.00	Modoc	SOUTH FORK PIT RIVER, WEST VALLEY CREEK
A019309	12963	10603	SOUTH FORK IRRIGATION DISTRICT	03/14/60	2,240.00	Modoc	SOUTH FORK PIT RIVER, WEST VALLEY CREEK
			SOUTH FORK IRRIGATION DISTRICT Total		19,240.00		
A026955	18635	13409	Stephen Lyon	08/11/81	0.40	Shasta	UNSP
			Stephen Lyon Total		0.40		
A026795	18852	12922	STEPHEN C NELSON	04/20/81	49.00	Modoc	UNST
			STEPHEN C NELSON Total		49.00		
A016526	10828	8665	Steven Barber	08/15/55	5.40	Modoc	UNSP
A021923	14862	9173	Steven Barber	10/06/64	20.00	Modoc	UNSP
			Steven Barber Total		25.40		
A000338	137	54	SX Lowry Ranch	05/15/16	550.00	Modoc	GOVERNMENT CORRALS FLAT
A000421	885	1401	SX Lowry Ranch	08/03/16	1,550.00	Modoc	ANTELOPE PLAINS
A001108	568	4410	SX Lowry Ranch	10/05/18	380.00	Modoc	UNST
A023280	16046	10913	SX Lowry Ranch	05/15/79	2,000.00	Modoc	DOBE SWALE
A020904	14743	12437	SX Lowry Ranch	04/24/89	970.00	Modoc	UNST
			SX Lowry Ranch Total		5,450.00		
A006291	3873		TERRAL C YORK	05/17/29	500.00	Modoc	PARKER CREEK
			TERRAL C YORK Total		500.00		
A006290	3872		TERRY YORK	05/17/29	180.00	Modoc	PARKER CREEK
			TERRY YORK Total		180.00		
A021455	14781	11127	THE DENIS M ROUSE 1993 TRUST	09/10/63	34.00	Lassen	UNST (AKA HOMER JACK DITCH)
			THE DENIS M ROUSE 1993 TRUST Total		34.00		
A030197	20842	13614	THE HUNT FAMILY TRUST	11/08/05	4.50	Modoc	UNST
			THE HUNT FAMILY TRUST Total		4.50		
A020916	14574	10783	THE MCARTHUR 1989 TRUST	08/29/62	1,800.00	Lassen	EAST FORK JUNIPER CREEK, UNST
			THE MCARTHUR 1989 TRUST Total		1,800.00		
A025081	16924	11432	THOMAS M ORIGER	06/08/76	0.90	Modoc	UNST
			THOMAS M ORIGER Total		0.90		
A022935	15594	9632	TIM D BABCOCK	10/23/67	10.50	Lassen	UNST
			TIM D BABCOCK Total		10.50		
A028656	20237	13590	TIMOTHY W SKALLAND	03/19/04	6.00	Shasta	UNST (AKA INDIAN CREEK)
			TIMOTHY W SKALLAND Total		6.00		

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A020062	13147	8361	TOM GIFFORD	03/31/61	30.00	Modoc	UNST
A020063	13148	9260	TOM GIFFORD	03/31/61	42.00	Modoc	TURNER CREEK
			TOM GIFFORD Total		72.00		
A019862	13061	9279	TOMMY B. ESPERANCE	04/09/70	30.00	Lassen	UNST
			TOMMY B. ESPERANCE Total		30.00		
A000420	188	298	TRINITY MEADOWS LP	11/13/23	553.40	Shasta	HATCHET CREEK
			TRINITY MEADOWS LP Total		553.40		
A000760	852	465	U S FISH & WILDLIFE SERVICE	12/29/03	2,709.00	Modoc	PINE CREEK
A001042	853	466	U S FISH & WILDLIFE SERVICE	12/29/03	1,191.00	Modoc	PINE CREEK, STOCKDILL SLOUGH
A001321	854	13528	U S FISH & WILDLIFE SERVICE	12/29/03	6,100.00	Modoc	PARKER CREEK, STOCKDILL SLOUGH
A012263	7291	4822	U S FISH & WILDLIFE SERVICE	12/29/03	1,100.00	Modoc	PINE CREEK
			U S FISH & WILDLIFE SERVICE Total		11,100.00		
A012068	7103	3978	U S LASSEN NATL FOREST	09/04/47	1.10	Lassen	BOARD CABIN SPRING
A012069	7104	4001	U S LASSEN NATL FOREST	09/04/47	0.50	Lassen	FIVE TROUGHS SPRING
A014978	9234	4535	U S LASSEN NATL FOREST	08/19/52	0.80	Lassen	PAT MORRIS SPRING
A018840	12883	9191	U S LASSEN NATL FOREST	07/01/59	650.00	Lassen	LITTLE DAVIS CREEK, UNST
A019698	12777	7758	U S LASSEN NATL FOREST	08/22/60	0.40	Shasta	COBBLE SPRING
A019699	12778	7759	U S LASSEN NATL FOREST	08/22/60	0.40	Lassen	CONE CACHE SPRING
A019700	12779	7760	U S LASSEN NATL FOREST	08/22/60	1.10	Shasta	COYOTE SPRING
A021662	14493	8914	U S LASSEN NATL FOREST	03/02/64	1.90	Lassen	WILLOW SPRING
A021663	14494	8915	U S LASSEN NATL FOREST	03/02/64	1.30	Siskiyou	WILEY RANCH SPRINGS
A025248	17964	12076	U S LASSEN NATL FOREST	01/19/77	650.00	Lassen	BIG JACK LAKE
A025660	17965	12077	U S LASSEN NATL FOREST	01/27/78	50.00	Lassen	BIG JACK LAKE
A018105A01	14822	11220	U S LASSEN NATL FOREST	04/30/82	190.00	Shasta	PROCTOR CREEK, UNST
A018105A02	14822	11220	U S LASSEN NATL FOREST	04/30/82	40.00	Shasta	PROCTOR CREEK, UNST
A027411	20039	12932	U S LASSEN NATL FOREST	07/13/82	0.10	Shasta	SOLDIER CREEK
A027412	20040	12933	U S LASSEN NATL FOREST	07/13/82	0.20	Shasta	SOLDIER CREEK
A029987	20731		U S LASSEN NATL FOREST	08/09/91	2.80	Siskiyou	MAYFIELD SPRING
A030254	20752		U S LASSEN NATL FOREST	05/07/93	73.50	Shasta	UNST
			U S LASSEN NATL FOREST Total		1,664.10		
A009132	5320	3945	U S MODOC NATL FOREST	09/29/37	0.70	Siskiyou	HEMLOCK SPRING
A009202	5239	4577	U S MODOC NATL FOREST	12/10/37	0.70	Siskiyou	SCHONCHIN SPRING
A010841	6296	5038	U S MODOC NATL FOREST	07/18/44	0.80	Modoc	HARRIS SPRING
A012708	7536	3580	U S MODOC NATL FOREST	09/23/48	0.30	Modoc	BOTTLE CREEK, BOTTLE SPRING
A013190	7748	3581	U S MODOC NATL FOREST	06/30/49	0.40	Modoc	LAYTON SPRING
A013194	7751	4023	U S MODOC NATL FOREST	06/30/49	0.40	Modoc	COTTONWOOD FLAT SPRING
A013213	7752	4401	U S MODOC NATL FOREST	07/08/49	0.20	Lassen	UNSP
A013214	7753	4402	U S MODOC NATL FOREST	07/08/49	0.20	Modoc	UNSP
A013215	7754	4396	U S MODOC NATL FOREST	07/08/49	0.70	Lassen	UNSP
A013821	8359	3894	U S MODOC NATL FOREST	06/28/50	0.20	Modoc	HOWARDS GULCH CAMPGROUND SPRING
A014088	8664	4277	U S MODOC NATL FOREST	12/04/50	0.10	Modoc	WEST VALLEY SPRING
A014089	8665	4986	U S MODOC NATL FOREST	12/04/50	0.10	Modoc	FITZHUGH SPRING
A014090	8666	4484	U S MODOC NATL FOREST	12/04/50	0.30	Modoc	GROUSE SPRING
A014091	8742	4281	U S MODOC NATL FOREST	12/04/50	0.20	Modoc	COWHEAD SPRING
A018091	11574	6605	U S MODOC NATL FOREST	04/09/58	8.50	Modoc	UNST

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A018203	11655	6376 U S	MODOC NATL FOREST	06/30/58	0.10	Modoc	UNSP
A018204	11656	6377 U S	MODOC NATL FOREST	06/30/58	0.10	Modoc	UNSP
A018636	12026	6619 U S	MODOC NATL FOREST	04/10/59	0.30	Lassen	RICHMAN SPRING
A019163	12503	7311 U S	MODOC NATL FOREST	01/04/60	0.50	Lassen	SUMMIT SPRING
A019164	12504	6712 U S	MODOC NATL FOREST	01/04/60	0.10	Modoc	HUNTER SPRING
A019165	12467	7467 U S	MODOC NATL FOREST	01/04/60	0.10	Modoc	HIDDEN SPRING
A019166	12468	6713 U S	MODOC NATL FOREST	01/04/60	0.20	Modoc	QUAIL SPRING
A019189	12469	7312 U S	MODOC NATL FOREST	01/25/60	0.20	Lassen	CHICKEN SPRING
A019283	12505	7532 U S	MODOC NATL FOREST	03/07/60	0.40	Modoc	RONEY SPRING
A019284	12506	6714 U S	MODOC NATL FOREST	03/07/60	0.40	Modoc	STUDLEY SPRING
A019285	12507	7533 U S	MODOC NATL FOREST	03/07/60	0.20	Modoc	HORSEHEAD SPRING
A019340	12470	6715 U S	MODOC NATL FOREST	04/04/60	0.30	Modoc	HARPER SPRING
A019365	12508	7534 U S	MODOC NATL FOREST	04/20/60	0.20	Modoc	FERN SPRING
A019367	12510	7314 U S	MODOC NATL FOREST	04/20/60	0.20	Lassen	MUD SPRING
A019368	12511	6716 U S	MODOC NATL FOREST	04/20/60	0.20	Lassen	WATER CANYON SPRING
A019369	12512	7535 U S	MODOC NATL FOREST	04/20/60	0.20	Modoc	HOG GULCH SPRING
A019370	12557	6717 U S	MODOC NATL FOREST	04/20/60	0.20	Lassen	DAGO SPRINGS
A019970	13069	8052 U S	MODOC NATL FOREST	02/07/61	0.30	Modoc	FOX MOUNTAIN SPRING
A019971	13070	8053 U S	MODOC NATL FOREST	02/07/61	0.40	Modoc	PLUM SPRING
A019972	13071	8333 U S	MODOC NATL FOREST	02/07/61	7.50	Lassen	UNSP
A019973	13072	8054 U S	MODOC NATL FOREST	02/07/61	0.20	Lassen	SCHOTT SPRING
A020112	13484	8055 U S	MODOC NATL FOREST	05/08/61	0.10	Lassen	DEER SPRING
A020113	13485	8056 U S	MODOC NATL FOREST	05/08/61	0.10	Lassen	STUMP SPRING
A020716	13706	8558 U S	MODOC NATL FOREST	04/10/62	0.20	Lassen	WALKER FLAT DRAW SPRING
A020717	13707	8559 U S	MODOC NATL FOREST	04/10/62	0.30	Lassen	INDIAN SPRING
A021095	14181	8841 U S	MODOC NATL FOREST	01/02/63	0.20	Lassen	UNSP
A021097	14183	8842 U S	MODOC NATL FOREST	01/02/63	0.20	Modoc	UNSP
A021099	14185	8843 U S	MODOC NATL FOREST	01/02/63	0.20	Lassen	UNSP
A021100	14095	8653 U S	MODOC NATL FOREST	01/02/63	0.20	Modoc	UNSP
A021101	14096	8592 U S	MODOC NATL FOREST	01/02/63	0.30	Modoc	MUD SPRING
A021102	14097	8643 U S	MODOC NATL FOREST	01/02/63	0.30	Modoc	PINE SPRING
A021103	14098	8622 U S	MODOC NATL FOREST	01/02/63	0.60	Modoc	HOSKINS SPRING
A021104	14099	8623 U S	MODOC NATL FOREST	01/02/63	0.80	Modoc	HEAD OF RUSH CREEK SPRING
A021105	14100	8654 U S	MODOC NATL FOREST	01/02/63	0.50	Modoc	CHALK SPRING
A021165	14101	8659 U S	MODOC NATL FOREST	02/18/63	0.70	Modoc	RONEY FLAT SPRING
A021491	14341	8773 U S	MODOC NATL FOREST	10/07/63	0.50	Lassen	DEER SPRING
A021492	14342	8838 U S	MODOC NATL FOREST	10/07/63	0.50	Lassen	BUNSELMEIER SPRING
A021501	14422	8840 U S	MODOC NATL FOREST	10/15/63	0.50	Lassen	JIMMY PACKWOOD SPRING
A021502	14489	8906 U S	MODOC NATL FOREST	10/15/63	0.50	Lassen	GERIG SPRING
A021503	14536	8907 U S	MODOC NATL FOREST	10/15/63	0.40	Modoc	DEEP CUT SPRING
A026211	17982	12567 U S	MODOC NATL FOREST	02/20/80	0.20	Lassen	UNST
A026216	17985	12091 U S	MODOC NATL FOREST	02/20/80	0.20	Lassen	UNST
A026217	17986	12092 U S	MODOC NATL FOREST	02/20/80	0.20	Lassen	UNST
A026218	17987	12093 U S	MODOC NATL FOREST	02/20/80	0.20	Lassen	UNST
A026220	17989	12094 U S	MODOC NATL FOREST	02/20/80	0.20	Lassen	UNST

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A026221	17990	12095	U S MODOC NATL FOREST	02/20/80	0.20	Lassen	WINDMILL FLAT
A026222	17991	12096	U S MODOC NATL FOREST	02/20/80	0.10	Lassen	UNSP
A026288	18180	12097	U S MODOC NATL FOREST	04/10/80	0.20	Lassen	UNST
A026290	18182	12098	U S MODOC NATL FOREST	04/10/80	0.20	Lassen	UNST
A026348	18251	12090	U S MODOC NATL FOREST	05/14/80	0.20	Modoc	UNST
A026405	18265	12099	U S MODOC NATL FOREST	06/06/80	0.10	Modoc	SHAKE CANYON
A026477	18381	12100	U S MODOC NATL FOREST	07/29/80	0.20	Lassen	UNST
A026897	19797	13446	U S MODOC NATL FOREST	06/30/81	0.10	Modoc	UNST
A026893	19794		U S MODOC NATL FOREST	06/30/81	0.20	Modoc	UNST
A026894	19795		U S MODOC NATL FOREST	06/30/81	0.20	Modoc	UNST
A026898	19798		U S MODOC NATL FOREST	06/30/81	0.20	Lassen	UNST
A027231	18659	12568	U S MODOC NATL FOREST	03/09/82	0.20	Lassen	UNST
A027233	18661	12568	U S MODOC NATL FOREST	03/09/82	0.20	Lassen	UNST
A027234	18662	12570	U S MODOC NATL FOREST	03/09/82	0.20	Lassen	UNST
A027235	18663	12571	U S MODOC NATL FOREST	03/09/82	0.20	Lassen	COYOTE FLAT DRAW
A027236	18664	12572	U S MODOC NATL FOREST	03/09/82	0.20	Lassen	UNST
A027237	18665	12573	U S MODOC NATL FOREST	03/09/82	0.20	Lassen	UNST
A027238	18666	12574	U S MODOC NATL FOREST	03/09/82	0.20	Lassen	UNST
A027431	18853	13495	U S MODOC NATL FOREST	07/15/82	0.10	Modoc	UNST
A027647	19599		U S MODOC NATL FOREST	02/01/83	102.00	Lassen	UNST
A027648	19600		U S MODOC NATL FOREST	02/01/83	96.50	Lassen	UNST
A027732	19288	12746	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027733	19289	12747	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027734	19290	12748	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027735	19291	12749	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027737	19293	12750	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027738	19294	12738	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027739	19295	12752	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027740	19296	12753	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027741	19297	12754	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027742	19298	12755	U S MODOC NATL FOREST	04/27/83	0.20	Lassen	UNST
A027999	19750	13062	U S MODOC NATL FOREST	03/15/84	0.10	Modoc	UNST
A028001	19752	13359	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028002	19753	13360	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028004	19755	13015	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028006	19757	13016	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028007	19758	13017	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028008	19759	13018	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028009	19760	13019	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028011	19762	13361	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028012	19763	13362	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028014	19765	13020	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028019	19770	13021	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028021	19772	13493	U S MODOC NATL FOREST	03/15/84	0.20	Lassen	UNST
A028022	19773	13022	U S MODOC NATL FOREST	03/15/84	0.20	Lassen	COYOTE FLAT DRAW

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A028024	19775	13023	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	STONE COAL CREEK
A028027	19778	13466	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	STONE COAL CREEK
A028028	19779	13024	U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028030	19781	13025	U S MODOC NATL FOREST	03/15/84	0.20	Lassen	WALKER DRAW
A028031	19782	13397	U S MODOC NATL FOREST	03/15/84	0.20	Lassen	UNST
A028000	19751		U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028005	19756		U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028015	19766		U S MODOC NATL FOREST	03/15/84	0.20	Lassen	UNST
A028016	19767		U S MODOC NATL FOREST	03/15/84	0.20	Lassen	UNST
A028017	19768		U S MODOC NATL FOREST	03/15/84	0.20	Lassen	CARY SPRING
A028018	19769		U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028026	19777		U S MODOC NATL FOREST	03/15/84	0.20	Modoc	MUD SPRING
A028029	19780		U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028032	19783		U S MODOC NATL FOREST	03/15/84	0.20	Modoc	UNST
A028033	19784		U S MODOC NATL FOREST	03/15/84	0.20	Modoc	DEEP CUT SPRINGS
A028398	19671	13366	U S MODOC NATL FOREST	02/26/85	0.10	Lassen	UNST
A028400	19673	13374	U S MODOC NATL FOREST	02/26/85	0.10	Modoc	UNST
A028838	20023	13496	U S MODOC NATL FOREST	05/20/86	0.20	Lassen	UNST
A028841	20026	13453	U S MODOC NATL FOREST	05/20/86	0.20	Lassen	AMBROSE CANYON
A028845	20030	13365	U S MODOC NATL FOREST	05/20/86	0.20	Lassen	UNST
A028846	20031	13392	U S MODOC NATL FOREST	05/20/86	0.20	Lassen	UNST
A028837	20022		U S MODOC NATL FOREST	05/20/86	0.20	Modoc	UNST
A028839	20024		U S MODOC NATL FOREST	05/20/86	0.20	Modoc	UNST
A028840	20025		U S MODOC NATL FOREST	05/20/86	0.20	Modoc	UNST
A028842	20027		U S MODOC NATL FOREST	05/20/86	0.20	Lassen	UNST
A028843	20028		U S MODOC NATL FOREST	05/20/86	0.20	Lassen	SOUTH FORK JUNIPER CREEK
A028844	20029		U S MODOC NATL FOREST	05/20/86	0.20	Lassen	UNST
A028847	20032	13545	U S MODOC NATL FOREST	07/11/03	0.20	Lassen	UNST
A026899	19799	13550	U S MODOC NATL FOREST	07/22/03	0.20	Lassen	UNST
A026895	19796	13556	U S MODOC NATL FOREST	09/10/03	0.20	Modoc	ROCK SPRINGS
A028399	19672	13567	U S MODOC NATL FOREST	09/24/03	0.10	Lassen	UNST
A027432	18854	13574	U S MODOC NATL FOREST	11/24/03	0.10	Modoc	YELLOWJACKET SPRING
A028836	20021	13573	U S MODOC NATL FOREST	11/24/03	0.20	Lassen	UNST
U S MODOC NATL FOREST Total					247.00		
A013019	7741	3782	U S SHASTA-TRINITY NATL FOREST	04/05/49	0.20	Shasta	DEEP CREEK
A013186	8047	3783	U S SHASTA-TRINITY NATL FOREST	06/30/49	1.60	Siskiyou	SLAGGER CAMP SPRING
A013187	8048	3784	U S SHASTA-TRINITY NATL FOREST	06/30/49	1.60	Siskiyou	LOST SPRINGS
A013189	8050	3786	U S SHASTA-TRINITY NATL FOREST	06/30/49	1.40	Siskiyou	BEAR SPRINGS
A020670	13640	8641	U S SHASTA-TRINITY NATL FOREST	03/21/62	1.00	Siskiyou	BELNAP SPRING
A020671	13641	8674	U S SHASTA-TRINITY NATL FOREST	03/21/62	0.90	Siskiyou	HARRIS SPRING
U S SHASTA-TRINITY NATL FOREST Total					6.70		
A016866	10676	6381	US BUREAU OF LAND MANAGEMENT	01/31/56	1.50	Lassen	UNST
A016868	10689	6382	US BUREAU OF LAND MANAGEMENT	01/31/56	10.80	Lassen	UNST
A016869	10639	6078	US BUREAU OF LAND MANAGEMENT	01/31/56	2.90	Lassen	BALD MOUNTAIN LAKE, UNST
A016870	10640	6079	US BUREAU OF LAND MANAGEMENT	01/31/56	0.20	Lassen	UNDR

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A016871	10641	6080	US BUREAU OF LAND MANAGEMENT	01/31/56	4.00	Lassen	UNST
A016873	10643	6081	US BUREAU OF LAND MANAGEMENT	01/31/56	4.40	Lassen	NORTH GULCH, SPRING GULCH, UNST
A016899	10719	6540	US BUREAU OF LAND MANAGEMENT	02/20/56	10.00	Shasta	UNST
A018105B	14823	11219	US BUREAU OF LAND MANAGEMENT	04/24/58	180.00	Shasta	PROCTER CREEK, UNST
A020527	13928	8530	US BUREAU OF LAND MANAGEMENT	12/15/61	54.70	Shasta	UNST
A020528	13601	8140	US BUREAU OF LAND MANAGEMENT	12/15/61	6.00	Shasta	UNST
A020933	13992	8568	US BUREAU OF LAND MANAGEMENT	09/06/62	6.70	Shasta	UNST
A020998	14034	8590	US BUREAU OF LAND MANAGEMENT	10/29/62	4.70	Shasta	UNST
A021060	14078	8581	US BUREAU OF LAND MANAGEMENT	12/03/62	0.10	Shasta	UNST
A021774	14725	9233	US BUREAU OF LAND MANAGEMENT	05/18/64	6.40	Shasta	UNST
A027616	19354	12775	US BUREAU OF LAND MANAGEMENT	12/23/82	1,533.00	Lassen	DRY CREEK
A028088	19503	13261	US BUREAU OF LAND MANAGEMENT	03/29/84	0.80	Modoc	UNST
A028091	19506	13085	US BUREAU OF LAND MANAGEMENT	03/29/84	0.60	Modoc	UNST
A028093	19508	13371	US BUREAU OF LAND MANAGEMENT	03/29/84	0.90	Lassen	UNST
A028095	19510	13086	US BUREAU OF LAND MANAGEMENT	03/29/84	1.00	Modoc	UNST
A028096	19511	13087	US BUREAU OF LAND MANAGEMENT	03/29/84	0.40	Modoc	UNST
A028098	19512	13303	US BUREAU OF LAND MANAGEMENT	03/29/84	0.80	Lassen	UNST
A028099	19513	13262	US BUREAU OF LAND MANAGEMENT	03/29/84	1.20	Lassen	UNST
A028089	19504		US BUREAU OF LAND MANAGEMENT	03/29/84	3.00	Modoc	UNST
A028090	19505		US BUREAU OF LAND MANAGEMENT	03/29/84	1.00	Modoc	UNST
A028094	19509		US BUREAU OF LAND MANAGEMENT	03/29/84	1.10	Lassen	UNST
A028261	19536	13349	US BUREAU OF LAND MANAGEMENT	10/01/84	1.20	Modoc	UNST
A028264	19539	13370	US BUREAU OF LAND MANAGEMENT	10/01/84	0.90	Lassen	UNST
A028265	19540	13373	US BUREAU OF LAND MANAGEMENT	10/01/84	0.30	Lassen	UNST
A028270	19545	13364	US BUREAU OF LAND MANAGEMENT	10/01/84	0.50	Modoc	UNST
A028271	19546	13391	US BUREAU OF LAND MANAGEMENT	10/01/84	1.20	Modoc	UNST
A028272	19547	13358	US BUREAU OF LAND MANAGEMENT	10/01/84	0.20	Modoc	UNST
A028273	19548	13338	US BUREAU OF LAND MANAGEMENT	10/01/84	0.50	Lassen	UNST
A028274	19549	13335	US BUREAU OF LAND MANAGEMENT	10/01/84	0.40	Lassen	UNST
A028275	19550	13376	US BUREAU OF LAND MANAGEMENT	10/01/84	0.80	Lassen	UNST
A028276	19551	13334	US BUREAU OF LAND MANAGEMENT	10/01/84	0.40	Lassen	UNST
A028262	19537		US BUREAU OF LAND MANAGEMENT	10/01/84	1.10	Lassen	UNST
A028701	19953	13464	US BUREAU OF LAND MANAGEMENT	01/03/86	1.00	Modoc	UNST
A028702	19954	13327	US BUREAU OF LAND MANAGEMENT	01/03/86	1.20	Lassen	UNST
A028703	19955	13330	US BUREAU OF LAND MANAGEMENT	01/03/86	0.70	Lassen	UNST
A028704	19956	13336	US BUREAU OF LAND MANAGEMENT	01/03/86	0.40	Modoc	UNST
A028709	19961	13319	US BUREAU OF LAND MANAGEMENT	01/03/86	0.60	Lassen	UNST
A028706	19958		US BUREAU OF LAND MANAGEMENT	01/03/86	5.20	Lassen	UNST
A028717	19946	13341	US BUREAU OF LAND MANAGEMENT	01/14/86	0.50	Lassen	UNST
A028718	19947	13084	US BUREAU OF LAND MANAGEMENT	01/14/86	0.80	Lassen	UNST
A028721	19950	13343	US BUREAU OF LAND MANAGEMENT	01/14/86	1.10	Modoc	UNST
A028893	20111	13372	US BUREAU OF LAND MANAGEMENT	09/08/86	0.40	Modoc	UNST
A028894	20112	13297	US BUREAU OF LAND MANAGEMENT	09/08/86	1.10	Modoc	UNST
A029230	20724		US BUREAU OF LAND MANAGEMENT	04/19/88	1.30	Lassen	UNST
A029232	20725		US BUREAU OF LAND MANAGEMENT	04/19/88	1.30	Lassen	UNST

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A029589	20649	13333	US BUREAU OF LAND MANAGEMENT	10/16/89	0.40	Lassen	UNST
A031051	21129		US BUREAU OF LAND MANAGEMENT	05/12/00	6.00	Modoc	UNST
A031052	21130		US BUREAU OF LAND MANAGEMENT	05/12/00	9.00	Modoc	UNST
A031053	21131		US BUREAU OF LAND MANAGEMENT	05/12/00	15.00	Modoc	UNST
A028258	19533	13555	US BUREAU OF LAND MANAGEMENT	09/10/03	0.40	Lassen	UNST
A028257	19532	13572	US BUREAU OF LAND MANAGEMENT	11/24/03	0.60	Lassen	UNST
A028259	19534	13652	US BUREAU OF LAND MANAGEMENT	06/30/06	0.80	Lassen	UNST
A028256	19531	13673	US BUREAU OF LAND MANAGEMENT	10/23/06	0.60	Lassen	UNST
			US BUREAU OF LAND MANAGEMENT Total		1,892.10		
A005804	3240	1087	WARREN L WEBER	01/13/28	136.20	Modoc	DRY CREEK
			WARREN L WEBER Total		136.20		
A025140	17110	11557	WILLIAM PAPEZ	09/01/76	8.50	Modoc	UNST
A027961	19258	12760	WILLIAM PAPEZ	01/26/84	3.50	Modoc	UNST
			WILLIAM PAPEZ Total		12.00		
A027438	19320		WILLIAM C PROCK	07/16/82	229.00	Modoc	UNST
			WILLIAM C PROCK Total		229.00		
			Grand Total		166,380.90		

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A013398	8208	5317	AMY POWELL-REILLY AMY POWELL-REILLY Total	10/13/49	0.30	Plumas	UNSP
A028202	19382	12743	APRIL L KEENAN APRIL L KEENAN Total	08/01/84	0.30 0.30	Plumas	UNST
A010025	5864	4105	ASSOCIATION OF THOMPSON LAKE	10/02/40	5.10	Plumas	THOMPSON LAKE
A029432	20487		ASSOCIATION OF THOMPSON LAKE ASSOCIATION OF THOMPSON LAKE Total	03/08/89	20.00 25.10	Plumas	THOMPSON LAKE
A009275	5190	2732	BERNICE C TERRY BERNICE C TERRY Total	04/15/38	4.50 4.50	Plumas	CROMBERG SPRING
A012394	7599	3752	BIG MEADOWS INC BIG MEADOWS INC Total	03/09/48	41.30 41.30	Plumas	UNSP
A015111	9442	6153	BOB CARTER BOB CARTER Total	12/10/52	1.70 1.70	Plumas	UNSP
A010349	5964	2936	BRYAN P PITCAVAGE BRYAN P PITCAVAGE Total	12/31/41	21.30 21.30	Plumas	CLEAR CREEK
A020786	14328	8802	BUCKS LAKE LODGE BUCKS LAKE LODGE Total	05/22/62	0.10 0.10	Plumas	UNSP, UNST
A014583	9845	8347	BUCKS LAKE LODGES INCORPORATED BUCKS LAKE LODGES INCORPORATED Total	11/20/51	4.20 4.20	Plumas	UNST
A011477	6689	3505	BUCKS LAKE SUMMER WATER ASSOCIATION	07/22/46	0.60	Plumas	UNST
A021842	14893	9171	BUCKS LAKE SUMMER WATER ASSOCIATION BUCKS LAKE SUMMER WATER ASSOCIATION Total	07/09/64	0.40 1.00	Plumas	UNST
A007370	4083	2235	CALIF DEPT OF TRANSPORTATION	09/08/32	2.20	Plumas	UNSP
A016380	10367	5872	CALIF DEPT OF TRANSPORTATION CALIF DEPT OF TRANSPORTATION Total	05/17/55	3.40 5.60	Sierra	UNSP
A005630	16478		CALIF DEPT OF WATER RESOURCES	07/30/27	1,393,568.50	Butte, Contra Costa, Sacramento	FEATHER RIVER, ITALIAN SLOUGH, SACRAMENTO RIVER DELTA CHANNELS
A014443	16479		CALIF DEPT OF WATER RESOURCES	08/24/51	9,004,510.20	Butte, Contra Costa	FEATHER RIVER, SACRAMENTO SAN JOAQUIN DELTA CHANNELS

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A016951	14587	9389	CALIF DEPT OF WATER RESOURCES	03/20/56	18,200.00	Plumas	INDIAN CREEK
A016952	12945	9182	CALIF DEPT OF WATER RESOURCES	03/20/56	30,000.00	Plumas	LITTLE LAST CHANCE CREEK
A018844	12946	9928	CALIF DEPT OF WATER RESOURCES	07/06/59	4,962.00	Plumas	LITTLE LAST CHANCE CREEK
A020117	14588	10975	CALIF DEPT OF WATER RESOURCES	05/09/61	3,400.00	Plumas	INDIAN CREEK
A016950	15254		CALIF DEPT OF WATER RESOURCES	01/05/67	49,000.00	Plumas	BIG GRIZZLY CREEK
A021443	15255		CALIF DEPT OF WATER RESOURCES	01/05/67	34,000.00	Plumas	BIG GRIZZLY CREEK
			CALIF DEPT OF WATER RESOURCES Total		10,537,640.70		
A012548	7491	3530	CAMP TIMBERWOLF IMPROVEMENT COMMITTEE	06/16/48	0.40	Plumas	UNSP
			CAMP TIMBERWOLF IMPROVEMENT COMMITTEE Total		0.40		
A007003	3866	1575	CAROL A RHODEHOUSE	07/10/31	3,330.30	Plumas	BLACKHAWK CREEK
			CAROL A RHODEHOUSE Total		3,330.30		
A019730	12871	10458	CASIMIR JATCZAK	09/07/60	0.20	Plumas	UNST
			CASIMIR JATCZAK Total		0.20		
A010011	5685	2581	CITY OF PORTOLA	04/08/43	875.90	Plumas	WILLOW CREEK
A017069	12282	10013	CITY OF PORTOLA	05/03/56	600.00	Plumas	UNSP (5), UNSP (7)
			CITY OF PORTOLA Total		1,475.90		
A012900	7594	4841	Collin Harris	01/17/49	126.00	Sierra	ANTELOPE CREEK
			Collin Harris Total		126.00		
A029127	20591		COZETTE E GRAHAM	10/19/87	18.70	Plumas	TWELVE MILE RAVINE, UNST
			COZETTE E GRAHAM Total		18.70		
A007978	4430	2682	DANIEL WILSON	06/15/34	2.20	Plumas	INDIAN CREEK
			DANIEL WILSON Total		2.20		
A019121	13930	8392	DANIEL H CLIFTON	12/04/59	0.40	Sierra	TREASURE SPRING, TREASURE SPRING CREEK
			DANIEL H CLIFTON Total		0.40		
A015567	10328	7268	DANNY WILSON	10/05/53	0.20	Butte	BALSAM CREEK
			DANNY WILSON Total		0.20		
A017314	11155	8371	DARLA J WOJCIK FAMILY TRUST	10/08/56	1.90	Butte	OREGON GULCH

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			DARLA J WOJCIK FAMILY TRUST Total		1.90		
A009972	5640	3476	DAVID C NORTON	08/09/40	16.20	Plumas	UNSP
A014016	8784	9609	DAVID C NORTON	10/25/50	3.50	Plumas	UNSP
			DAVID C NORTON Total		19.70		
A004122	2107	2023	DAVID K LEE	05/15/40	135.80	Plumas	COLD SPRING, KINGS CREEK
A005171	2866	2024	DAVID K LEE	05/15/40	91.70	Plumas	SUNFLOWER FLAT CREEK
			DAVID K LEE Total		227.50		
A017739	11215	6958	DAVID ROBERT OSTLER	07/24/57	1.10	Sierra	UNSP
			DAVID ROBERT OSTLER Total		1.10		
A006728	3882	2143	DAWN INSTITUTE OF SCIENCE & ART	07/11/30	8.40	Plumas	UNSP
A009968	5684		DAWN INSTITUTE OF SCIENCE & ART	07/22/93	1.30	Plumas	UNSP
			DAWN INSTITUTE OF SCIENCE & ART Total		9.70		
A017195	11014	5884	DAWN M JONES	07/20/56	0.20	Plumas	UNST
			DAWN M JONES Total		0.20		
A016436	10623	6036	DEAN PANFILI	06/23/55	630.80	Plumas	LONG VALLEY CREEK
			DEAN PANFILI Total		630.80		
A001024	497	217	DELBERT H LEHR	07/17/18	108.60	Plumas	UNXX
A011786	6906	3421	DELBERT H LEHR	03/19/47	312.00	Plumas	EAST BRANCH OF NORTH FORK FEATHER RIVER
			DELBERT H LEHR Total		420.60		
A016583	10536	7291	Derek C Anderson	06/07/65	3.50	Plumas	UNST
			Derek C Anderson Total		3.50		
A021361	14791	9026	DEWEY S RAVENSCROFT	06/25/63	5.00	Plumas	FERN CANYON
			DEWEY S RAVENSCROFT Total		5.00		
A029537	20577	13827	DIANE MONTGOMERY	01/10/11	35.00	Sierra	UNST
			DIANE MONTGOMERY Total		35.00		
A026571	18470	13246	Donald A Wallace	10/07/80	89.00	Sierra	SIERRA VALLEY CHANNELS
			Donald A Wallace Total		89.00		
A017963	11625	6601	DUSTIN F DOYLE	01/28/58	0.10	Plumas	UNST
			DUSTIN F DOYLE Total		0.10		
A011271	6536	3737	ELLIOT P SMART	01/31/46	1.60	Plumas	WATERING TROUGH SPRING
			ELLIOT P SMART Total		1.60		
A008964	4958	2564	EST OF WILLIAM JAMES DAWSON JR	05/06/37	5.60	Plumas	UNST
			EST OF WILLIAM JAMES DAWSON JR Total		5.60		
A017132	10832	5918	Est. of Martin A. Poss	06/14/56	0.20	Plumas	UNST
			Est. of Martin A. Poss Total		0.20		
A008460	4682	2223	Feather River Land Trust, a Cal Nonprofit	10/03/35	200.00	Plumas	TAYLOR LAKE
A012844	7617	9165	Feather River Land Trust, a Cal Nonprofit	12/03/48	100.00	Plumas	TAYLOR LAKE
			Feather River Land Trust, a Cal Nonprofit Total		300.00		

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A026942	20121		FIVE BEARS HYDRO, INC	08/06/81	1,448.00	Plumas	SOUTH BRANCH WARD CREEK
A027349	20122		FIVE BEARS HYDRO, INC	06/03/82	5,791.80	Plumas	SOUTH BRANCH WARD CREEK
			FIVE BEARS HYDRO, INC Total		7,239.80		
A009616	5470	2570	FRAZIER CREEK WATER ASSOCIATION	06/14/39	112.20	Butte	EAST BRANCH FRAZIER CREEK, WEST BRANCH FRAZIER CREEK
			FRAZIER CREEK WATER ASSOCIATION Total		112.20		
A008996	5022	4494	FREELANDER TRUST	06/14/37	412.70	Plumas	CLEAR CREEK, OWL CREEK
A017303	12796	7821	FREELANDER TRUST	08/03/66	467.50	Plumas	CLEAR CREEK, OWL CREEK
			FREELANDER TRUST Total		880.20		
A015571	10136	7056	GARY L BROWN	10/07/53	607.00	Plumas	INDIAN CREEK
			GARY L BROWN Total		607.00		
A018968	13221	7798	GENE ALEXANDER	09/04/59	0.10	Plumas	UNST
			GENE ALEXANDER Total		0.10		
A010963	6386	3323	GENE H FISHER	01/26/45	27.40	Butte	ROMA CREEK
			GENE H FISHER Total		27.40		
A008495	4785	2340	GRAEAGLE LAND & WATER COMPANY	11/14/35	11,454.70	Plumas	GRAY EAGLE CREEK, LONG LAKE
A008496	4786	2341	GRAEAGLE LAND & WATER COMPANY	11/14/35	2,895.50	Plumas	GRAY EAGLE CREEK
A025030	17676	12546	GRAEAGLE LAND & WATER COMPANY	03/26/76	196.00	Plumas	FRAZIER CREEK
			GRAEAGLE LAND & WATER COMPANY Total		14,546.20		
A004022	1978	2010	GRAY EAGLE LODGE	06/11/24	5.40	Plumas	UNSP
A004023	1979	1042	GRAY EAGLE LODGE	05/14/31	610.90	Plumas	GRAY EAGLE CREEK
			GRAY EAGLE LODGE Total		616.30		
A021216	14766	9215	GRIZZLY LAKE RESORT IMPROVEMENT DISTRICT	04/01/63	42.00	Plumas	HUMBUG CREEK
			GRIZZLY LAKE RESORT IMPROVEMENT DISTRICT Total		42.00		
A017171	11030	6181	HAROLD D FRANCIS	07/11/56	0.20	Plumas	UNST
			HAROLD D FRANCIS Total		0.20		
A017471	11399	7881	HYDE FAMILY 1990 TRUST	02/20/57	5.40	Plumas	UNST
			HYDE FAMILY 1990 TRUST Total		5.40		
A023364	16585		JAMES D BAKER	10/07/69	0.40	Sierra	TREASURE SPRING, TREASURE SPRING CREEK
			JAMES D BAKER Total		0.40		
A017160	10997	5889	JAMES F RUTHERFORD	12/02/04	0.20	Plumas	UNST
			JAMES F RUTHERFORD Total		0.20		
A027754	19252	12757	JAMES P ROBBINS	05/12/83	3.40	Plumas	UNSP
			JAMES P ROBBINS Total		3.40		

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A012122	7659	3486	JEANNETTE S SASSER	10/08/47	0.50	Plumas	CROMBERG SPRING
			JEANNETTE S SASSER Total		0.50		
A017231	10894	6053	JEFFERY L WILSON	08/10/56	22.40	Plumas	JACKASS CREEK
			JEFFERY L WILSON Total		22.40		
A001712	730	1128	JOAN ESCALANTE	03/06/20	1.10	Butte	UNST
			JOAN ESCALANTE Total		1.10		
A015071	9532	5288	JOHN J GILLAM	11/03/52	144.80	Plumas	HARVEY RAVINE
			JOHN J GILLAM Total		144.80		
A020468	13751	8748	JOHN P SCHMIDT	11/06/61	0.20	Plumas	UNST
			JOHN P SCHMIDT Total		0.20		
A024048	16589	11004	Kathy L. McDonell	05/05/80	0.30	Plumas	CROMBERG SPRING
A025089	17679	11695	Kathy L. McDonell	02/26/85	1.00	Plumas	CROMBERG SPRING
			Kathy L. McDonell Total		1.30		
A006723	3634	2560	Kovach Trust	07/08/30	1,809.00	Butte	EMPIRE CREEK
			Kovach Trust Total		1,809.00		
A011753	7180	5086	LAKE MADRONE WATER DISTRICT	03/04/47	1.70	Butte	FERN DELL CREEK
A030657	21027		LAKE MADRONE WATER DISTRICT	10/07/97	200.00	Butte	BERRY CREEK
			LAKE MADRONE WATER DISTRICT Total		201.70		
A023580	16107	10828	LAKE OROVILLE INVESTMENT GROUP LLC	08/14/70	9.50	Butte	UNST
			LAKE OROVILLE INVESTMENT GROUP LLC Total		9.50		
A018149	11610	7646	LARRY MCMULLAN	05/22/58	0.20	Plumas	UNSP
			LARRY MCMULLAN Total		0.20		
A012117	7658	3484	Laura Rowan Peake	10/02/47	0.30	Plumas	CROMBERG SPRING
			Laura Rowan Peake Total		0.30		
A023924	16402	10760	LDS Recreation Properties LLC	11/18/71	57.70	Sierra	BONTA CREEK, UNST
			LDS Recreation Properties LLC Total		57.70		
A029501	20707		Lewis Van Vleck	06/12/89	44.50	Sierra	SIERRA VALLEY CHANNELS
			Lewis Van Vleck Total		44.50		
A005996	3203	1067	LOREN PERKINS	07/27/28	217.20	Plumas	UNCR
A009886	5589	2625	LOREN PERKINS	04/29/40	202.70	Plumas	UNCR
			LOREN PERKINS Total		419.90		
A016529A	10428	007026A	LOREN V PERKINS LIVING TRUST	08/17/55	5.10	Butte	CARTER RAVINE
A016530	10429	7027	LOREN V PERKINS LIVING TRUST	08/17/55	0.70	Butte	CARTER RAVINE
			LOREN V PERKINS LIVING TRUST Total		5.80		
A005015	2623	2118	LOTTS LAKE ASSOCIATION	05/13/26	0.20	Plumas	UNSP
			LOTTS LAKE ASSOCIATION Total		0.20		
A023564	16180	10365	LOUIS A PAYEN	07/22/70	403.00	Sierra	BIG SPRING, SMALL SPRING

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A011713	6995	3586	LOUIS A PAYEN Total MARGUERITE A MOHIUDDIN MARGUERITE A MOHIUDDIN Total	02/03/47	403.00 7.70 7.70	Plumas	UNSP
A016529B	10428	007026B	MARK PHILLIPS MARK PHILLIPS Total	08/17/55	6.50 6.50	Butte	UNSP
A022485	15693	10425	MARK A GLOISTEIN MARK A GLOISTEIN Total	06/06/66	20.00 20.00	Sierra	UNST
A014807	9846	4942	MARK D EVANS MARK D EVANS Total	05/15/52	0.20 0.20	Plumas	UNST
A023260A	15932	11069	MARK L SCOTT MARK L SCOTT Total	11/26/80	17.00 17.00	Butte	UNST
A008422	4644	2423	Mary Ann Nash Mary Ann Nash Total	08/21/35	9.00 9.00	Butte	OGDEN CREEK
A000685	312	166	MASSACK WATER USERS ASSOCIATION	05/18/17	5.60	Plumas	UNSP
A029544	20513		MASSACK WATER USERS ASSOCIATION MASSACK WATER USERS ASSOCIATION Total	08/18/89	1.70 7.30	Plumas	UNSP
A015570	10135	7055	MC INTYRE RANCHING INC MC INTYRE RANCHING INC Total	10/07/53	758.70 758.70	Plumas	INDIAN CREEK
A019090	13222	7708	MICHAEL MONAHAN MICHAEL MONAHAN Total	11/20/59	0.20 0.20	Plumas	UNST
A011243	6594	4540	MICHAEL NEWSOM MICHAEL NEWSOM Total	12/26/45	0.10 0.10	Plumas	UNSP
A006469	3446	1600	MICHAEL D GRANT	10/28/29	0.70	Plumas	UNSP
A011201	6472	3482	MICHAEL D GRANT MICHAEL D GRANT Total	11/01/45	17.90 18.60	Plumas	UNSP
A024815	18294	12167	MIGUEL AUBAN MIGUEL AUBAN Total	12/01/08	1.40 1.40	Plumas	UNSP
A024421	17166	11470	MIGUEL AUBEN MIGUEL AUBEN Total	07/26/73	2.00 2.00	Plumas	UNST
A031433	21285		MINERAL RESOURCES LLC MINERAL RESOURCES LLC Total	06/06/11	46.00 46.00	Butte	UNST
A004281	2443	1232	MIRIAM C BARKER MIRIAM C BARKER Total	10/28/24	5.10 5.10	Plumas	LITTLE GRAY EAGLE CREEK
A030596	20954	13840	NADINE M BASS NADINE M BASS Total	11/08/11	19.00 19.00	Sierra	UNST
A010917	6403	3113	NORMAN F ROBERTS NORMAN F ROBERTS Total	11/21/44	1.10 1.10	Plumas	UNSP
A020303	13390	8417	NORMAN R COTE NORMAN R COTE Total	07/14/61	0.40 0.40	Plumas	UNST

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A014113	11518		North Yuba Water District	08/18/58	624,084.30	Butte, Plumas	LOST CREEK, SOUTH FORK FEATHER RIVER
			North Yuba Water District Total		624,084.30		
A026904	18878		OKIZU FOUNDATION	07/03/81	49.00	Butte	BERRY CREEK, UNST
A031379			OKIZU FOUNDATION	12/17/02	40.00	Butte	BERRY CREEK, UNST
			OKIZU FOUNDATION Total		89.00		
A019233	13931	8393	PAUL CUETO	02/15/60	0.40	Sierra	TREASURE SPRING, TREASURE SPRING CREEK
			PAUL CUETO Total		0.40		
A011397	6637	3381	PERRY GREENE	05/14/46	2.40	Plumas	UNSP
			PERRY GREENE Total		2.40		
A012279	7286	3603	PETER SENTER	01/30/48	0.10	Plumas	UNSP
			PETER SENTER Total		0.10		
A014653	9216	4183	PG&E	01/22/52	0.60	Plumas	UNST
			PG&E Total		0.60		
A011585	6666	3638	R C K RANCH LLC	10/09/46	464.10	Plumas	MORRIS SLOUGH
			R C K RANCH LLC Total		464.10		
A017776	11243	6014	RALPH F BECKER	08/16/57	2.20	Plumas	UNSP
			RALPH F BECKER Total		2.20		
A019265	13932	8394	RANDY JENSEN	02/28/60	0.40	Sierra	TREASURE SPRING, TREASURE SPRING CREEK
			RANDY JENSEN Total		0.40		
A007526	4213	2065	REGENTS OF THE UNIVERSITY OF CALIFORNIA	03/29/33	1.50	Plumas	SCHNEIDER CREEK
			REGENTS OF THE UNIVERSITY OF CALIFORNIA Total		1.50		
A019750	13241	8020	RICHARD GREIN	09/23/60	0.10	Plumas	UNSP
			RICHARD GREIN Total		0.10		
A004234	2125	631	RICHARD L SCHIWENDINGER	09/24/24	1.70	Plumas	RUSSEL SPRING, UNSP (3)
			RICHARD L SCHIWENDINGER Total		1.70		
A009207	5218	2284	ROBERT RITTER	12/22/37	0.30	Plumas	CROMBERG SPRING
			ROBERT RITTER Total		0.30		
A023260C	15932	11071	ROBERT TEICHMAN	11/26/80	0.20	Butte	UNST
			ROBERT TEICHMAN Total		0.20		
A011976	7075	6880	ROBERT A JONES	06/10/63	18.80	Plumas	UNSP
			ROBERT A JONES Total		18.80		
A004261	2148	732	ROBERT B BECKWITH	10/16/24	0.70	Plumas	UNSP
A020432	13824	9217	ROBERT B BECKWITH	01/18/91	0.50	Plumas	UNSP

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			ROBERT B BECKWITH Total		1.20		
A027688	19665	13174	ROBERT J PALOWODA	03/11/83	0.10	Plumas	UNST
			ROBERT J PALOWODA Total		0.10		
A025500	17476	11505	ROBERT S CONOVER	09/02/77	0.50	Plumas	UNST
			ROBERT S CONOVER Total		0.50		
A009274	5189	2193	ROBERT W ELFEN	04/15/38	0.60	Plumas	CROMBERG SPRING
A009392	5316	2572	ROBERT W ELFEN	08/18/38	0.60	Plumas	CROMBERG SPRING
			ROBERT W ELFEN Total		1.20		
A016910	10730	5905	ROBERT W STEIN	02/28/56	140.00	Plumas	BIG GRIZZLY CREEK
			ROBERT W STEIN Total		140.00		
A019653	12990	9223	RON CARPENTER	08/09/60	166.50	Plumas	HAUNS CREEK
			RON CARPENTER Total		166.50		
A020911	14297	8961	RONALD DREISBACH	08/27/62	76.00	Butte	GRIZZLY CREEK
			RONALD DREISBACH Total		76.00		
A014760	9210	5515	RUSSELL C WESTOVER JR	04/17/52	0.60	Plumas	UNSP
			RUSSELL C WESTOVER JR Total		0.60		
A022855	15751	10561	SEAN CUNNINGHAM	12/31/75	452.40	Plumas	MILL CREEK
			SEAN CUNNINGHAM Total		452.40		
A017870	11564	9566	SHIRLEY ISHAM	11/01/57	33.00	Plumas	MOSQUITO SPRINGS
			SHIRLEY ISHAM Total		33.00		
A016520	10670	9872	SIERRA BIBLE CAMP INC	08/12/55	19.20	Plumas	UNSP
			SIERRA BIBLE CAMP INC Total		19.20		
A009690	5443	3114	SIERRA PACIFIC HOLDING COMPAMY	08/08/39	150.00	Butte	GRUBBS CREEK, LITTLE FREY CREEK
			SIERRA PACIFIC HOLDING COMPAMY Total		150.00		
A006412	3643	1485	SOPER COMPANY	08/17/29	17.00	Yuba	STICKNER SPRING
A014218	8611	4300	SOPER COMPANY	03/29/51	3.40	Plumas	UNSP
A014219	8612	4301	SOPER COMPANY	03/29/51	48.00	Plumas	MOSES CREEK
			SOPER COMPANY Total		68.40		
A021440	14485	10038	SOPER COMPANY, A DELAWARE CORPORATION	08/22/63	2.20	Plumas	UNSP
			SOPER COMPANY, A DELAWARE CORPORATION Total		2.20		
A002142	1268		SOUTH FEATHER WATER & POWER AGENCY	12/17/20	5,000.00	Butte	LOST CREEK
A002778	2492		SOUTH FEATHER WATER & POWER AGENCY	03/06/22	31,148.90	Butte	LOST CREEK
A002979	1271		SOUTH FEATHER WATER & POWER AGENCY	08/12/22	133,935.80	Butte	LOST CREEK
A001651	1267		SOUTH FEATHER WATER & POWER AGENCY	01/05/23	145,508.40	Plumas	SOUTH FORK FEATHER RIVER
			SOUTH FEATHER WATER & POWER AGENCY Total		315,593.10		
A029060	20656		Squirrel Creek, LLC	07/07/87	9.00	Plumas	BEAR CREEK
			Squirrel Creek, LLC Total		9.00		

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A014864	9192	6512	THE CAMP TIMBERWOLF IMPROVMENT COMM, INC	06/18/52	1.50	Plumas	UNSP
			THE CAMP TIMBERWOLF IMPROVMENT COMM, INC Total		1.50		
A001739	1911	845	THERMALITO WATER AND SEWER DISTRICT	03/25/20	8,200.00	Butte	CONCOW CREEK
A003040	1912	737	THERMALITO WATER AND SEWER DISTRICT	09/16/22	8,200.00	Butte	CONCOW CREEK
			THERMALITO WATER AND SEWER DISTRICT Total		16,400.00		
A011205	6989	3483	THOMAS E NOLTE	11/07/45	1.10	Plumas	CROMBERG SPRING
			THOMAS E NOLTE Total		1.10		
A014810	9849	5616	TIME EADE	05/15/52	0.10	Plumas	UNST
			TIME EADE Total		0.10		
A016582	10535	6631	TOMMIE D MASSSENGILL	09/06/55	2.30	Plumas	UNST
			TOMMIE D MASSSENGILL Total		2.30		
A006171	3243	1089	TRAVIS O MCWILLIAMS	01/28/29	36.70	Butte	BRANCH OF BUSHMAN CREEK
			TRAVIS O MCWILLIAMS Total		36.70		
A009293	5181	2548	U S FOREST SERVICE	05/16/38	17.90	Sierra	UNSP
A014228	8709	3968	U S FOREST SERVICE	04/04/51	0.30	Sierra	UNSP
A014281	8800	4915	U S FOREST SERVICE	05/02/51	0.30	Sierra	UNSP
A014282	8801	4947	U S FOREST SERVICE	05/02/51	1.50	Sierra	LEWIS MILL GUARD STATION SPRING
A014283	8802	5334	U S FOREST SERVICE	05/02/51	0.50	Sierra	SARDINE LOOKOUT SPRING
A014284	8803	4701	U S FOREST SERVICE	05/02/51	0.30	Sierra	UNSP
A014285	8804	4186	U S FOREST SERVICE	05/02/51	0.70	Plumas	UNSP
A014286	8805	5013	U S FOREST SERVICE	05/02/51	1.30	Sierra	UNSP
A014287	8806	4922	U S FOREST SERVICE	05/02/51	0.60	Sierra	UNSP
A023225	16015	10230	U S FOREST SERVICE	01/30/69	0.60	Plumas	HORSETROUGH SPRING
A023226	16014	10274	U S FOREST SERVICE	01/30/69	0.80	Plumas	BECKWOURTH SPRING
A027284	18875		U S FOREST SERVICE	04/07/82	32.00	Sierra	CARMAN CREEK, UNST
			U S FOREST SERVICE Total		56.80		

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A019416	12655	8021	U S LASSEN NATL FOREST	05/05/60	120.00	Plumas	MORRIS LAKE
A019417	12656	8022	U S LASSEN NATL FOREST	05/05/60	27.00	Plumas	GRASSY LAKE
A019418	12657	8023	U S LASSEN NATL FOREST	05/05/60	27.00	Plumas	SADDLE LAKE
A019419	12658	8024	U S LASSEN NATL FOREST	05/05/60	8.00	Plumas	LONG LAKE
A020429	13430	8025	U S LASSEN NATL FOREST	10/06/61	3.40	Butte	UNSP
A021083	14154	8026	U S LASSEN NATL FOREST	12/14/62	34.00	Plumas	SPRING VALLEY LAKE
U S LASSEN NATL FOREST Total					219.40		
A008990	5028	2332	U S PLUMAS NATL FOREST	06/05/37	3.10	Plumas	UNCR
A008991	5029	2930	U S PLUMAS NATL FOREST	06/05/37	0.70	Plumas	UNSP
A009514	5369	3736	U S PLUMAS NATL FOREST	03/01/39	33.60	Butte	FOLEY GULCH, MOUNTAIN HOUSE CREEK
A003918	2625	861	U S PLUMAS NATL FOREST	05/24/39	23.40	Plumas	TOLLGATE CREEK
A009734	5826	3747	U S PLUMAS NATL FOREST	09/22/39	4.50	Plumas	UNST
A009770	5559	4894	U S PLUMAS NATL FOREST	11/21/39	4.70	Plumas	UNSP
A010726	6216	2968	U S PLUMAS NATL FOREST	11/05/43	0.90	Plumas	UNSP
A011146	6509	3339	U S PLUMAS NATL FOREST	09/06/45	3.00	Plumas	UNSP
A011907	7171	6503	U S PLUMAS NATL FOREST	05/27/47	1.70	Plumas	UNST
A012038	7092	5500	U S PLUMAS NATL FOREST	08/13/47	2.80	Plumas	KLING RAVINE
A012535	7401	3605	U S PLUMAS NATL FOREST	06/04/48	6.10	Plumas	UNSP
A013625	8291	5325	U S PLUMAS NATL FOREST	03/10/50	4.70	Plumas	COLD SPRINGS
A014761	9211	5070	U S PLUMAS NATL FOREST	04/17/52	0.30	Plumas	UNST
A014815	10916	6076	U S PLUMAS NATL FOREST	05/20/52	540.00	Plumas	SNAKE LAKE
A015676	9796	5371	U S PLUMAS NATL FOREST	01/08/54	0.30	Plumas	FANT SPRING
A016200	10940	8222	U S PLUMAS NATL FOREST	01/12/55	12.30	Plumas	CUB CREEK

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A017074	10784	6101	U S PLUMAS NATL FOREST	05/04/56	0.70	Plumas	UNSP
A017832	11562	6924	U S PLUMAS NATL FOREST	09/23/57	0.20	Plumas	UNSP
A018185	11617	6281	U S PLUMAS NATL FOREST	07/17/58	0.20	Plumas	UNST
A018413	11822	6885	U S PLUMAS NATL FOREST	11/14/58	0.70	Butte	UNSP
A019239	12414	10956	U S PLUMAS NATL FOREST	02/16/60	0.90	Plumas	WEST BRANCH WHITEHORSE CREEK
A019586	12604	7673	U S PLUMAS NATL FOREST	07/28/60	0.70	Butte	BEAR RANCH L O SPRING
A019587	12605	7674	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	RIDGE SPRING
A019588	12606	7675	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	STONY CREEK SPRING
A019589	12607	7676	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	CHIPMUNK SPRING
A019590	12608	7677	U S PLUMAS NATL FOREST	07/28/60	0.20	Plumas	POISON CREEK SPRING
A019591	12609	8061	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	BEAR SPRING
A019592	12610	7678	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	CROCKER CUT-OFF SPRING
A019593	12611	7679	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	LITTLE DIXIE SPRING
A019594	12612	7680	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	DOYLE SPRING
A019596	12614	7682	U S PLUMAS NATL FOREST	07/28/60	0.20	Plumas	JENKINS #3 SPRING
A019597	12615	7683	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	GRANITE SPRING
A019598	12616	7684	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	PLINCO SPRING
A019599	12617	7685	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	CHASE SPRING
A019600	12618	8062	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	COYOTE SPRING
A019601	12619	7686	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	SQUAW CAMP SPRING
A019602	12620	7687	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	HORSE SHOE SPRING
A019603	12621	7688	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	HORTON CANYON SPRING
A019604	12622	8063	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	JUNIPER SPRING

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A019605	12623	7689	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	FITCH CANYON SPRING
A019606	12624	7690	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	MAHOGANY SPRING
A019607	12625	7691	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	JENKINS #2 SPRING
A019608	12626	8064	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	MIDWAY HOUSE SPRING
A019609	12627	7692	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	DOWNING CABIN SPRING
A019610	12628	7693	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	JUNIPER SPRING
A019611	12629	8065	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	HOG SPRING
A019612	12630	7694	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	JOHNSON MILL SPRING
A019613	12631	7695	U S PLUMAS NATL FOREST	07/28/60	0.70	Butte	SPOON RAVINE SPRING
A019614	12632	7696	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	LONE SPRING
A019615	12633	7697	U S PLUMAS NATL FOREST	07/28/60	0.40	Plumas	SECTION 15 SPRING
A019617	12635	7699	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	SQUAW SUPPRESSION CAMP SPRING
A019619	12637	8066	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	RATTLESNAKE SPRING
A019620	12638	8067	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	CEDAR SPRING
A019621	12639	8068	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	PINE TREE SPRING
A019622	12640	7700	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	GALEPPI SPRING
A019623	12641	7701	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	MURDOCK CROSSING SPRING
A019624	12642	7702	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	SQUAW VALLEY SPRING
A019625	12643	7703	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	BASS #1 SPRING
A019626	12644	7704	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	SOUTH TROUGH SPRING
A019627	12645	7710	U S PLUMAS NATL FOREST	07/28/60	0.70	Plumas	DAVIDSON MINE SPRING
A019628	12646	8305	U S PLUMAS NATL FOREST	07/28/60	0.30	Plumas	SQUAW CANYON SPRING
A020852	13951	8617	U S PLUMAS NATL FOREST	07/12/62	1.60	Plumas	UNSP

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A021295	14364	8995	U S PLUMAS NATL FOREST	05/29/63	0.20	Plumas	BLAKELESS SPRING #2
A021296	14365	8982	U S PLUMAS NATL FOREST	05/29/63	0.80	Plumas	CHASE ENCLOSURE SPRING #2
A021297	14366	8996	U S PLUMAS NATL FOREST	05/29/63	0.80	Plumas	CHASE ENCLOSURE SPRING #1
A021304	14367	8968	U S PLUMAS NATL FOREST	05/29/63	0.80	Plumas	BULSON SPRING NO 3
A021305	14368	8969	U S PLUMAS NATL FOREST	05/29/63	0.80	Plumas	BULSON SPRING NO 2
A021306	14369	8970	U S PLUMAS NATL FOREST	05/29/63	0.80	Plumas	BULSON SPRING NO 1
A021307	14370	8971	U S PLUMAS NATL FOREST	05/29/63	0.60	Plumas	BLAKELESS SPRING NO 4
A021308	14371	8972	U S PLUMAS NATL FOREST	05/29/63	0.30	Plumas	BLAKELESS SPRING NO 1
A021312	14372	8984	U S PLUMAS NATL FOREST	05/29/63	0.50	Plumas	BIG BUCK SPRING
A021313	14373	9004	U S PLUMAS NATL FOREST	05/29/63	1.70	Plumas	HEADQUARTERS SPRING #1, HEADQUARTERS SPRINGS #2&3
A021314	14244	8997	U S PLUMAS NATL FOREST	05/29/63	0.80	Plumas	TROSI CANYON SPRING
A021316	14374	8998	U S PLUMAS NATL FOREST	05/29/63	1.50	Plumas	BIG PINE SPRING
A021317	14375	8999	U S PLUMAS NATL FOREST	05/29/63	0.40	Plumas	CEDAR CANYON SPRING
A022187	15225	8986	U S PLUMAS NATL FOREST	06/10/65	0.10	Plumas	UNST
A024263	16728	10955	U S PLUMAS NATL FOREST	12/19/72	9.00	Plumas	UNSP
A026877	18796		U S PLUMAS NATL FOREST	06/17/81	42.00	Plumas	DOTTA CANYON
			U S PLUMAS NATL FOREST Total		720.60		
A019565	12818	9877	USA-USDA FOREST SERVICE	01/02/09	0.80	Plumas	UNNAMED SPRING
			USA-USDA FOREST SERVICE Total		0.80		
A020529	13891	9187	VERDA F LEE FAMILY DATED 4/11/2001	12/18/61	54.00	Plumas	UNSP
			VERDA F LEE FAMILY DATED 4/11/2001 Total		54.00		
A028992	20339		WALLACE FAMILY TRUST	03/20/87	184.00	Sierra	SIERRA VALLEY CHANNELS
			WALLACE FAMILY TRUST Total		184.00		
A011316	7110	3738	WAYNE RANKIN	05/20/53	108.60	Plumas	BERRY CREEK
			WAYNE RANKIN Total		108.60		
A014113	11518		Yuba County Water District	12/28/50	330,861.98	Butte, Sutter, Plumas	SOUTH FORK FEATHER RIVER, LOST CREEK, FEATHER RIVER

Feather River - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
			Yuba County Water District Total		330,861.98		
			Grand Total		11,862,602.48		

Yuba River - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A003126	1371	1140	Appropriative	Licensed	ALBERT P STIEFEL ALBERT P STIEFEL Total	11/08/22	87.10 87.10	Butte	UNST, WYMAN RAVINE
A016725	10685	6660	Appropriative	Licensed	ALLEGHANY COUNTY WATER DISTRICT ALLEGHANY COUNTY WATER DISTRICT Total	04/18/02	12.00 12.00	Sierra	UNSP
A016724	10441	7079	Appropriative	Licensed	ALLEN C UPTON ALLEN C UPTON Total	11/08/55	1.00 1.00	Butte	WYANDOTTE CREEK
A028395	20887		Appropriative	Permitted	ALLEN F MOORE ALLEN F MOORE Total	02/22/85	3.00 3.00	Yuba	DRY CREEK, UNSP
A025086	17517	11958	Appropriative	Licensed	ANANDA CHURCH OF SELF REALIZATION	06/16/76	43.20	Nevada	UNST
A028680	20373		Appropriative	Permitted	ANANDA CHURCH OF SELF REALIZATION ANANDA CHURCH OF SELF REALIZATION Total	12/24/85	29.30 72.50	Nevada	UNST
A024824	17031	13124	Appropriative	Licensed	ANDERSON AND ANDERSON INC	06/25/75	25.00	Nevada	UNST
A027748	19166	13125	Appropriative	Licensed	ANDERSON AND ANDERSON INC ANDERSON AND ANDERSON INC Total	05/05/83	1.00 26.00	Nevada	UNST
A028403	20927		Appropriative	Permitted	ANNA MAY ROSE ANNA MAY ROSE Total	03/07/85	2.00 2.00	Yuba	DRY CREEK, UNST
A030234	21008		Appropriative	Permitted	AUBURN SKI CLUB INC AUBURN SKI CLUB INC Total	03/15/93	122.00 122.00	Nevada	UPPER CASTLE CREEK
A025584	17400	11440	Appropriative	Licensed	Bank of America Bank of America Total	11/29/77	9.60 9.60	Yuba	UNST
A006099	3220	1080	Appropriative	Licensed	BENJAMIN N BORSOFF BENJAMIN N BORSOFF Total	10/19/28	17.90 17.90	Yuba	EAST BRANCH RICH GULCH
A018175	11802	6611	Appropriative	Licensed	BERNICE ROSENLOF BERNICE ROSENLOF Total	06/10/58	12.50 12.50	Nevada	UNST
A019562	12917	7493	Appropriative	Licensed	BILL AABERG BILL AABERG Total	07/20/60	0.30 0.30	Sierra	UNST
A024530	17274	11238	Appropriative	Licensed	BILLY G CAROTHERS BILLY G CAROTHERS Total	01/21/74	10.00 10.00	Nevada	SWEETLAND CREEK
A020521	13657	8703	Appropriative	Licensed	BITNEY SPRINGS LLC BITNEY SPRINGS LLC Total	12/11/61	14.00 14.00	Nevada	UNST
A026408	18310	12153	Appropriative	Licensed	BOB LATTA BOB LATTA Total	06/06/80	0.80 0.80	Sierra	HOWARD CREEK, NORTH YUBA RIVER

Yuba River - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A005590	2913	814	Appropriative	Licensed	BRADLEY T SHARPE	07/01/27	2.20	Yuba	WEST BRANCH RICH GULCH
A005677	2914	815	Appropriative	Licensed	BRADLEY T SHARPE	09/07/27	18.10	Yuba	WEST BRANCH RICH GULCH
A006096	3218	1084	Appropriative	Licensed	BRADLEY T SHARPE	10/19/28	1.00	Yuba	WEST BRANCH RICH GULCH
A006097	3219	1085	Appropriative	Licensed	BRADLEY T SHARPE	10/19/28	17.90	Yuba	WEST BRANCH RICH GULCH
					BRADLEY T SHARPE Total		39.20		
A020485	13927	8368	Appropriative	Licensed	Brian Brackbill	11/08/61	0.60	Sierra	Unnamed Stream
					Brian Brackbill Total		0.60		
A019560	12915	7492	Appropriative	Licensed	BRIAN G JACOBS	07/20/60	0.20	Sierra	UNST
					BRIAN G JACOBS Total		0.20		
A008986	5083	2182	Appropriative	Licensed	BROWNS VALLEY IRRIGATION DISTRICT	03/01/41	2,171.90	Yuba	TENNESSEE CREEK
A013130	8649	13608	Appropriative	Licensed	BROWNS VALLEY IRRIGATION DISTRICT	08/31/05	20,000.00	Yuba	DRY CREEK
A013873	9703	13609	Appropriative	Licensed	BROWNS VALLEY IRRIGATION DISTRICT	08/31/05	31,900.00	Yuba	DRY CREEK
A023757	16792	13610	Appropriative	Licensed	BROWNS VALLEY IRRIGATION DISTRICT	08/31/05	11,000.00	Yuba	DRY CREEK
					BROWNS VALLEY IRRIGATION DISTRICT Total		65,071.90		
A023135	15964	10995	Appropriative	Licensed	BRUCE K JORDAN	09/18/68	0.90	Nevada	UNSP
					BRUCE K JORDAN Total		0.90		
A024293	16636	10700	Appropriative	Licensed	BRUCE L RAYNER	01/30/73	1.80	Nevada	MOSQUITO CREEK
					BRUCE L RAYNER Total		1.80		
A029103	20530	13712	Appropriative	Licensed	CAL-WESTERN RECONVEYANCE CORPORATION	05/09/07	6.70	Butte	ROBINSON RAVINE
					CAL-WESTERN RECONVEYANCE CORPORATION Total		6.70		
A013870	8369	4804	Appropriative	Licensed	CALIF DEPT OF FORESTRY AND FIRE PROTECTION	07/27/50	2.40	Nevada	UNSP
					CALIF DEPT OF FORESTRY AND FIRE PROTECTION Total		2.40		
A020427	13564	7019	Appropriative	Licensed	CAROL BROOKS	10/05/61	0.60	Sierra	UNSP
					CAROL BROOKS Total		0.60		
A016874	10804	9323	Appropriative	Licensed	CAROL B DARDICK	01/31/56	21.40	Nevada	UNST
					CAROL B DARDICK Total		21.40		
A019282	12436	7169	Appropriative	Licensed	CATHOLIC YOUTH ORGANIZATION	03/04/60	3.40	Yuba	UNSP
					CATHOLIC YOUTH ORGANIZATION Total		3.40		
A024183	16604	10883	Appropriative	Licensed	CHARLES FOWLER	09/15/72	0.10	Nevada	LEFT OVER SPRING
					CHARLES FOWLER Total		0.10		
A024559	16997	13267	Appropriative	Licensed	CHARLES A JOHNSON	02/21/74	2.20	Nevada	UNSP

Yuba River - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A028191	20013		Appropriative	Permitted	CHARLES A JOHNSON Total		2.20		
					CHEROKEE NEVADA CORPORATION	11/21/94	1,445.00	Sierra	UNST
					CHEROKEE NEVADA CORPORATION Total		1,445.00		
A019561	12916	7540	Appropriative	Licensed	CHRISTIAN HUNTINGTON	07/20/60	0.20	Sierra	UNST
					CHRISTIAN HUNTINGTON Total		0.20		
A014960	9302	7082	Appropriative	Licensed	Christopher W Miller	08/12/52	0.40	Placer	UNSP
					Christopher W Miller Total		0.40		
A026117	18434	12293	Appropriative	Licensed	CITY OF NEVADA CITY	10/17/79	53.70	Nevada	LITTLE DEER CREEK, UNST
					CITY OF NEVADA CITY Total		53.70		
A021158	14239	9010	Appropriative	Licensed	CONSTANCE C CLOVER	02/13/63	1.00	Sierra	UNSP
					CONSTANCE C CLOVER Total		1.00		
A005880	3102	2172	Appropriative	Licensed	COUGHLAN FAMILY RANCH	04/16/28	1,013.60	Nevada	BONNIE RAVINE, GLENNON RAVINE, ROBERTS CREEK
					COUGHLAN FAMILY RANCH Total		1,013.60		
A023111	15803	10206	Appropriative	Licensed	CRAIG LABADIE	08/13/68	0.80	Sierra	UNST
					CRAIG LABADIE Total		0.80		
A004731	2393	735	Appropriative	Licensed	CYRUS M ROLLINS	08/12/25	2.40	Sierra	UNSP
A006120	3232	1309	Appropriative	Licensed	CYRUS M ROLLINS	11/13/28	1.70	Sierra	UNST
					CYRUS M ROLLINS Total		4.10		
A023082	15977	10901	Appropriative	Licensed	DAN T THOMPSON	07/10/68	10.20	Nevada	KENTUCKY RAVINE
					DAN T THOMPSON Total		10.20		
A021554	14793	9832	Appropriative	Licensed	DANIEL MASON	11/27/63	18.00	Nevada	FRENCH CORRAL CREEK
					DANIEL MASON Total		18.00		
A021672	14830	9700	Appropriative	Licensed	DANIEL J GUYER	03/05/64	140.00	Sierra	UNST
					DANIEL J GUYER Total		140.00		
A017285	11045	7214	Appropriative	Licensed	DAVE KING	09/20/56	37.00	Nevada	KENTUCKY RAVINE
					DAVE KING Total		37.00		
A019710	12873	10129	Appropriative	Licensed	David Grenell	08/24/60	1.10	Sierra	THOMAS ELLIS SPRING #3, THOMAS ELLIS SPRING #4
					David Grenell Total		1.10		
A023514	16108	10245	Appropriative	Licensed	DAVID HERSHBERGER	05/20/70	0.30	Nevada	UNSP
A026065	17908	12157	Appropriative	Licensed	DAVID HERSHBERGER	08/14/79	0.60	Nevada	UNSP
					DAVID HERSHBERGER Total		0.90		
A019025	12515	7832	Appropriative	Licensed	DAVID RUMSEY	10/09/59	0.20	Sierra	UNSP
					DAVID RUMSEY Total		0.20		
A020313	13946	8660	Appropriative	Licensed	DAVID WALSH	07/21/61	0.20	Sierra	UNST
					DAVID WALSH Total		0.20		
A022928	15954	10996	Appropriative	Licensed	DAVID B JORDON	10/13/67	0.90	Nevada	UNSP
					DAVID B JORDON Total		0.90		
A027876	19125	12696	Appropriative	Licensed	DAVID B PEDERSON	09/15/83	1.40	Yuba	UNST
					DAVID B PEDERSON Total		1.40		
A016558	11367	8127	Appropriative	Licensed	DAVID C BREWER	08/29/55	4.20	Nevada	LITTLE ROCK CREEK
					DAVID C BREWER Total		4.20		

Yuba River - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A022898	15669	11110	Appropriative	Licensed	DAVID K DAVISON DAVID K DAVISON Total	08/28/67	4.70	Sierra	HUNGRY MOUTH CANYON
A025105	17076	11251	Appropriative	Licensed	DAVID W MARKS DAVID W MARKS Total	07/19/76	11.00	Nevada	KENTUCKY RAVINE
A021598	14416	8825	Appropriative	Licensed	DAWN B VINJE DAWN B VINJE Total	01/15/64	18.00	Yuba	UNST
A019390	12911	8810	Appropriative	Licensed	DENISE STEBLER DENISE STEBLER Total	04/26/60	1.60	Sierra	ROCK CREEK
A022566	15575	9896	Appropriative	Licensed	DIANE W ROLLINS DIANE W ROLLINS Total	04/14/72	20.00	Sierra	DRURY RAVINE
A010009	5687	4866	Appropriative	Licensed	DICKEY EXPLORATION COMPANY DICKEY EXPLORATION COMPANY Total	09/23/40	97.00	Sierra	WET RAVINE
A023535	16409	11027	Appropriative	Licensed	DIRK C REED DIRK C REED Total	06/24/70	15.70	Nevada	UNST, WILLOW VALLEY CREEK
A030332	21118		Appropriative	Permitted	DONNER SUMMIT PUBLIC UTILITY DISTRICT DONNER SUMMIT PUBLIC UTILITY DISTRICT Total	02/08/94	664.00	Nevada	LAKE ANGELA
A025719	17610	12075	Appropriative	Licensed	DOROTHEA SELBY DOROTHEA SELBY Total	04/17/78	13.50	Yuba	UNST
A028988	20947		Appropriative	Permitted	Dorothy Pencik Dorothy Pencik Total	03/16/87	24.00	Sierra	OAK VALLEY CREEK
A020808	13929	8700	Appropriative	Licensed	DOROTHY L VENDLEY DOROTHY L VENDLEY Total	07/19/68	9.20	Nevada	SPRING CREEK
A009827	5663	2650	Appropriative	Licensed	DOWNIEVILLE PUBLIC UTILITY DISTRICT DOWNIEVILLE PUBLIC UTILITY DISTRICT Total	05/15/01	114.00	Sierra	PAULEY CREEK
A026227	17973	11822	Appropriative	Licensed	DUANE FRED LEE DUANE FRED LEE Total	02/21/80	2.60	Nevada	UNST
A022735	15630	10005	Appropriative	Licensed	DUANE T NICHOLSON DUANE T NICHOLSON Total	03/05/73	4.50	Yuba	UNST
A020146	13371	8148	Appropriative	Licensed	DWAYNE M DOBBINS DWAYNE M DOBBINS Total	05/24/61	0.20	Nevada	UNSP
A024876	17136	11423	Appropriative	Licensed	EDWARD CARTER EDWARD CARTER Total	09/10/75	2.20	Yuba	UNST
A020291	13386	9922	Appropriative	Licensed	ELLEN DAVIS ELLEN DAVIS Total	05/12/72	102.00	Yuba	LITTLE DRY CREEK
A015415	9591	5978	Appropriative	Licensed	Eric Christopher Dunisch Eric Christopher Dunisch Total	07/16/53	0.40	Placer	UNSP
A013594	7966	4185	Appropriative	Licensed	ERMA B BELLETT	02/20/50	61.00	Nevada	UNST

Yuba River - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A013772	8313	4184	Appropriative	Licensed	ERMA B BELLETT	06/05/50	19.00	Nevada	UNST
					ERMA B BELLETT Total		80.00		
A019723	13031	9257	Appropriative	Licensed	ERNEST LOCATELLI	08/31/60	6.50	Sierra	MINE TUNNEL
					ERNEST LOCATELLI Total		6.50		
A020340	13854	8677	Appropriative	Licensed	Estate of Luella Debruin	08/02/61	4.90	Nevada	FRENCH CORRAL CREEK, UNST
A022900	15557	10027	Appropriative	Licensed	Estate of Luella Debruin	09/01/67	5.30	Nevada	UNST
					Estate of Luella Debruin Total		10.20		
A003332	1725	3267	Appropriative	Licensed	FAR VIEW ENTERPRISES INC	03/27/23	191.90	Butte	KINGS CREEK, LINCOLN HOUSE RAVINE
A016151	10611	7713	Appropriative	Licensed	FAR VIEW ENTERPRISES INC	11/23/54	50.00	Butte	LINCOLN HOUSE RAVINE
					FAR VIEW ENTERPRISES INC Total		241.90		
A017887	11400	6918	Appropriative	Licensed	FELLOWSHIP OF FRIENDS, INC	11/20/57	2.40	Yuba	UNST
A022518	15590	9584	Appropriative	Licensed	FELLOWSHIP OF FRIENDS, INC	07/06/66	3.20	Yuba	UNST
A025865	17749	13546	Appropriative	Licensed	FELLOWSHIP OF FRIENDS, INC	07/17/03	40.00	Yuba	WOODS CREEK
A027042	19277	13547	Appropriative	Licensed	FELLOWSHIP OF FRIENDS, INC	07/17/03	16.00	Yuba	UNST
A027043	19278	13548	Appropriative	Licensed	FELLOWSHIP OF FRIENDS, INC	07/17/03	42.00	Yuba	WOODS CREEK
					FELLOWSHIP OF FRIENDS, INC Total		103.60		
A007217	4420	2197	Appropriative	Licensed	FLORENCE B VON PLATEN	03/28/32	9.50	Nevada	UNXX
					FLORENCE B VON PLATEN Total		9.50		
A020310	13945	8349	Appropriative	Licensed	FORREST THOMAS	07/19/61	0.60	Sierra	UNSP
					FORREST THOMAS Total		0.60		
A010186	5823	2957	Appropriative	Licensed	FORSYTHE FAMILY TRUST	04/18/41	3.40	Sierra	UNSP
					FORSYTHE FAMILY TRUST Total		3.40		
A019007	12872	10128	Appropriative	Licensed	FRANCIS B PLANT	09/29/59	1.80	Sierra	SPRING #3, THOMAS ELLIS SPRING #1, THOMAS ELLIS SPRING #2, UNSP
					FRANCIS B PLANT Total		1.80		
A028922	20946		Appropriative	Permitted	Frank Pencik	10/20/86	6.00	Sierra	OAK VALLEY CREEK
					Frank Pencik Total		6.00		
A016792B	10815	008072B	Appropriative	Licensed	FRANK A MACHI	12/06/85	4.70	Nevada	UNST
					FRANK A MACHI Total		4.70		
A023956	16404	12058	Appropriative	Licensed	FRANKLIN JONES	12/30/71	0.60	Nevada	UNST

Yuba River - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A012154	7067	7040	Appropriative	Licensed	FRANKLIN JONES Total Gary J. Howsley	11/14/47	0.60 120.10	Yuba	LITTLE DRY CREEK
A019827	14390	9729	Appropriative	Licensed	Gary J. Howsley Total GARY POOR	04/08/71	120.10 5.30	Sierra	UNST
A009765	5532	4921	Appropriative	Licensed	GARY POOR Total GARY ZOLLDAN	11/09/39	5.30 1.50	Sierra	HARDY SPRING
A014371	9978	5645	Appropriative	Licensed	GARY ZOLLDAN Total GARY D SMITH	06/27/51	1.50 2,903.80	Yuba	FRENCH DRY CREEK
A017407	11040	6917	Appropriative	Licensed	GARY D SMITH Total GARY W DE MAR	12/26/56	2,903.80 72.50	Sierra	ARIZONA TUNNEL SPRING
A022567	15585	9649	Appropriative	Licensed	GARY W DE MAR Total GEORGE KOOLERY	09/02/66	72.50 1.90	Sierra	UNSP
A022341	15153	9652	Appropriative	Licensed	GEORGE KOOLERY Total GEORGINE TOMASI	11/23/65	1.90 0.80	Nevada	UNST
A023893	16447	10718	Appropriative	Licensed	GEORGINE TOMASI Total GERALD BROOKS	10/07/71	0.80 16.00	Nevada	OWL CREEK
A002696	1200	511	Appropriative	Licensed	GERALD BROOKS Total GOLD LAKE HOLDINGS LLC	12/21/21	16.00 3.00	Sierra	UNCR
A028147	19447		Appropriative	Permitted	GOLD LAKE HOLDINGS LLC Total GREENE ACRES PROPERTY OWNERS ASSOCIATION	06/04/84	3.00 14.00	Sierra	UNSP
A026763	18953	12672	Appropriative	Licensed	GREENE ACRES PROPERTY OWNERS ASSOCIATION Total GREGORY G KSANDER	03/25/81	14.00 0.20	Sierra	UNSP
A023470	16259	10568	Appropriative	Licensed	GREGORY G KSANDER Total GREGORY L COMBS	03/19/70	0.20 5.40	Nevada	UNST
A015100	9828	5683	Appropriative	Licensed	GREGORY L COMBS Total GUS NORTON	12/01/52	5.40 0.80	Sierra	UNST
A026703	18532	12361	Appropriative	Licensed	GUS NORTON Total Heidi Biber	02/03/81	0.80 1.20	Nevada	UNST
A014962	9304	5295	Appropriative	Licensed	Heidi Biber Total HELENE M WULBERN REVOCABLE TRUST	08/12/52	1.20 0.20	Placer	UNSP
A014390A	008798A	007078A	Appropriative	Licensed	HELENE M WULBERN REVOCABLE TRUST 11/21/02 Total HENRY C LITTLE	07/31/92	0.20 20.00	Butte	WYANDOTTE CREEK
A020243	13943	8370	Appropriative	Licensed	HENRY C LITTLE Total Hilary Winslow	06/01/61	20.00 0.60	Sierra	UNSP
A030265	20863		Appropriative	Permitted	Hilary Winslow Total HOLT FAMILY TRUST	07/07/93	0.60 7.00	Sierra	UNST
A026949	18911	12397	Appropriative	Licensed	HOLT FAMILY TRUST Total HUEY JOHNSON	08/10/81	7.00 0.20	Nevada	UNST
					HUEY JOHNSON Total		0.20		

Yuba River - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A028682	20102		Appropriative	Permitted	HUTCH H HUTCHISON	12/26/85	0.50	Nevada	UNSP
					HUTCH H HUTCHISON Total		0.50		
A010716	6336	3002	Appropriative	Licensed	IRVING N CHRISTENSEN	10/05/43	7.80	Sierra	UNSP
A019279	12546	7168	Appropriative	Licensed	IRVING N CHRISTENSEN	03/04/60	4.50	Sierra	UNSP
					IRVING N CHRISTENSEN Total		12.30		
A011257	6539	3342	Appropriative	Licensed	JACK E BERNDT	01/10/46	4.30	Sierra	UNSP, UNST
					JACK E BERNDT Total		4.30		
A014991	9201	5305	Appropriative	Licensed	JAMES NEWMAN	08/22/52	2.20	Nevada	UNST
					JAMES NEWMAN Total		2.20		
A012118	7160	3884	Appropriative	Licensed	James & Aileen Stevens Revocable Trust	10/03/47	15.00	Yuba	LITTLE DRY CREEK
A014946	9652	5084	Appropriative	Licensed	James & Aileen Stevens Revocable Trust	07/31/52	11.00	Yuba	LITTLE DRY CREEK
					James & Aileen Stevens Revocable Trust Total		26.00		
A019647	12870	8606	Appropriative	Licensed	JAMES K CHRISTENSEN	08/04/60	27.80	Sierra	EMPIRE SPRING
					JAMES K CHRISTENSEN Total		27.80		
A018804	12160	8625	Appropriative	Licensed	JAMES L MOHAN	06/17/59	1.00	Yuba	MOONSHINE CREEK
					JAMES L MOHAN Total		1.00		
A010181	6026	2944	Appropriative	Licensed	James M & Aileen Stevens Rev Tr	04/09/41	98.70	Yuba	LITTLE DRY CREEK
					James M & Aileen Stevens Rev Tr Total		98.70		
A026522	18513	12362	Appropriative	Licensed	JAMES NELSON DEGLANDON	09/11/80	24.00	Nevada	UNST
					JAMES NELSON DEGLANDON Total		24.00		
A026282	18202	12016	Appropriative	Licensed	JAMES R CUMMINS	04/09/80	6.10	Yuba	UNST
					JAMES R CUMMINS Total		6.10		
A021865	14988	8879	Appropriative	Licensed	JAMES S AVILLA	08/05/64	0.30	Placer	UNSP
					JAMES S AVILLA Total		0.30		
A010839	6383	3431	Appropriative	Licensed	Jana Burgess-Henry	07/15/44	29.00	Yuba	WAGNER CREEK
					Jana Burgess-Henry Total		29.00		
A013342	8218	4055	Appropriative	Licensed	Janie Kouch	09/08/49	1.20	Yuba	SOUTH HONCUT CREEK
					Janie Kouch Total		1.20		
A024799	17750	12294	Appropriative	Licensed	JAY CORY	04/14/75	0.20	Sierra	UNSP
					JAY CORY Total		0.20		
A021644	14628	9333	Appropriative	Licensed	JENISE J WARDEN	02/13/64	0.40	Nevada	UNSP
					JENISE J WARDEN Total		0.40		
A010856	6542	3299	Appropriative	Licensed	JERRY DON ELLSWORTH	03/14/01	57.00	Sierra	FIDDLE CREEK
					JERRY DON ELLSWORTH Total		57.00		
A025403	17354	11466	Appropriative	Licensed	JESSIE C TROST	06/23/77	0.10	Yuba	UNST
					JESSIE C TROST Total		0.10		
A020770	14744	9239	Appropriative	Licensed	JO HAMILTON	05/10/62	2.00	Nevada	UNSP (2)
					JO HAMILTON Total		2.00		
A021970	14989	8881	Appropriative	Licensed	JOAN M HANSON	11/23/64	1.00	Placer	UNSP
					JOAN M HANSON Total		1.00		
A025503	18013	13383	Appropriative	Licensed	JOE W ALEXANDER	09/12/77	49.90	Yuba	UNST
A026515A	018442A	13384	Appropriative	Licensed	JOE W ALEXANDER	02/05/92	5.20	Yuba	UNST

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A026515B	018422B	13385	Appropriative	Licensed	JOE W ALEXANDER	02/05/92	6.00	Yuba	UNST
					JOE W ALEXANDER Total		61.10		
A006057	3283	2041	Appropriative	Licensed	JOHN BARKER	09/17/28	5.10	Sierra	UNSP
					JOHN BARKER Total		5.10		
A025542	17408	11250	Appropriative	Licensed	JOHN FARACE	10/27/77	1.80	Yuba	KEYSTONE CREEK
					JOHN FARACE Total		1.80		
A018696	12090	7389	Appropriative	Licensed	JOHN A PARKER	05/07/59	0.20	Sierra	UNST
					JOHN A PARKER Total		0.20		
A013656	8167	5234	Appropriative	Licensed	JOHN H LUNDIN	03/28/50	1.60	Yuba	UNST
					JOHN H LUNDIN Total		1.60		
A026073	18076	12085	Appropriative	Licensed	JOHN R POWERS III & JANEY H POWERS REVOC TRUST DATED 9/6/00	08/24/79	4.20	Nevada	UNST
					JOHN R POWERS III & JANEY H POWERS REVOC TRUST DATED 9/6/00 Total		4.20		
A017288	10935	6019	Appropriative	Licensed	JOHN T SMEE	09/21/56	0.10	Sierra	UNST
					JOHN T SMEE Total		0.10		
A010173	5777	4026	Appropriative	Licensed	JOSEPH E MARCANTONIO	03/29/41	36.50	Sierra	SLATE CASTLE RAVINE
A018484	11894	6979	Appropriative	Licensed	JOSEPH E MARCANTONIO	01/21/59	0.50	Sierra	SLATE CASTLE CREEK
					JOSEPH E MARCANTONIO Total		37.00		
A012700	7530	3719	Appropriative	Licensed	JULI SHAPIRO-ABDEEN	09/15/48	25.00	Nevada	UNST
					JULI SHAPIRO-ABDEEN Total		25.00		
A016732	11900	6537	Appropriative	Licensed	JUNE BURCHAM WILHELM	11/10/55	0.50	Nevada	UNXX
					JUNE BURCHAM WILHELM Total		0.50		
A019448	13768	8041	Appropriative	Licensed	KATHARINE SPIERS	05/24/60	42.00	Yuba	UNST
					KATHARINE SPIERS Total		42.00		
A018914	12417	7415	Appropriative	Licensed	Katherine Greene	08/14/59	17.00	Yuba	GARDEN RAVINE
					Katherine Greene Total		17.00		
A020792	14164	8897	Appropriative	Licensed	KATHLEEN H GOLDEN	05/25/62	0.20	Sierra	UNSP
					KATHLEEN H GOLDEN Total		0.20		
A014740	9017	5273	Appropriative	Licensed	KEITH L DOLAR	04/04/52	85.30	Butte	UNST
					KEITH L DOLAR Total		85.30		
A026245	18702	12528	Appropriative	Licensed	KEN BURKINDINE	03/04/80	0.40	Sierra	UNST
					KEN BURKINDINE Total		0.40		
A027819	19238	12680	Appropriative	Licensed	KEVIN HOMAN	08/04/83	2.00	Nevada	UNST
					KEVIN HOMAN Total		2.00		
A008330	4661	1928	Appropriative	Licensed	KIM HEMSTALK	05/04/35	5.00	Sierra	COYOTE RAVINE
					KIM HEMSTALK Total		5.00		
A023315	16073		Appropriative	Permitted	KINGVALE PROPERTY OWNERS & WATER USERS INC	07/18/69	20.00	Nevada	FOCHETTI SPRING, LOLA MONTEZ SPRING, S P SPRING
					KINGVALE PROPERTY OWNERS & WATER USERS INC Total		20.00		
A026074	18088		Appropriative	Permitted	LA PORTE PINES COUNTRY CLUB	08/24/79	55.00	Plumas	UNSP, UNSP(2), UNST

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A027273	18597		Appropriative	Permitted	LA PORTE PINES COUNTRY CLUB	09/17/02	54.80	Plumas	UNSP
					LA PORTE PINES COUNTRY CLUB Total		109.80		
A004494	2081	781	Appropriative	Licensed	LAKE VERA MUTUAL WATER COMPANY	03/06/25	70.00	Nevada	ROCK CREEK
A005719	2979	782	Appropriative	Licensed	LAKE VERA MUTUAL WATER COMPANY	10/13/27	729.90	Nevada	ROCK CREEK
					LAKE VERA MUTUAL WATER COMPANY Total		799.90		
A023047	15779	10779	Appropriative	Licensed	LAKE WILDWOOD ASSOCIATION	05/17/68	3,840.00	Nevada	DEER CREEK
					LAKE WILDWOOD ASSOCIATION Total		3,840.00		
A007657	4239	6379	Appropriative	Licensed	LANCE BARLEAN	08/28/33	3.40	Yuba	UNSP
					LANCE BARLEAN Total		3.40		
A028134	20886	13842	Appropriative	Licensed	LEAH M STOCKER	11/08/11	5.00	Yuba	UNST
					LEAH M STOCKER Total		5.00		
A018396	11929	7012	Appropriative	Licensed	LEONARD C FUQUA	11/05/58	0.20	Sierra	COLD SPRING
					LEONARD C FUQUA Total		0.20		
A029180	20522		Appropriative	Permitted	LINDA BATES	03/19/02	5.00	Sierra	GRIZZLY GULCH
					LINDA BATES Total		5.00		
A026605	18765	13817	Appropriative	Licensed	LINDA BIRGE	01/05/11	45.00	Nevada	UNST
					LINDA BIRGE Total		45.00		
A024857	17681	12173	Appropriative	Licensed	LOUIS CLIFFORD LESTER SR	08/14/75	14.50	Nevada	UNST
					LOUIS CLIFFORD LESTER SR Total		14.50		
A012025	7313	6960	Appropriative	Licensed	LOWELL G ROBINSON	08/05/47	0.30	Sierra	UNSP
					LOWELL G ROBINSON Total		0.30		
A022801	15654	10430	Appropriative	Licensed	MAPLE GROVE MUTUAL WATER COMPANY	06/05/67	1.10	Sierra	CEDAR SPRING
A023795	16373		Appropriative	Permitted	MAPLE GROVE MUTUAL WATER COMPANY	06/02/71	10.00	Sierra	UNSP, WIXON SPRING
					MAPLE GROVE MUTUAL WATER COMPANY Total		11.10		
A006834	3665	1878	Appropriative	Licensed	MARIE BERTILLION COLLINS	11/19/30	0.70	Sierra	UNSP
A024808	16940	11499	Appropriative	Licensed	MARIE BERTILLION COLLINS	05/07/75	0.70	Sierra	UNSP
A026189	18266		Appropriative	Permitted	MARIE BERTILLION COLLINS	01/08/99	2.00	Sierra	UNSP
					MARIE BERTILLION COLLINS Total		3.40		
A018779	12139	8117	Appropriative	Licensed	MARIE M LANDERS	06/09/59	0.30	Sierra	UNSP
					MARIE M LANDERS Total		0.30		
A013399	8022	3796	Appropriative	Licensed	MARIN COUNCIL BOY SCOUT TRUST FUND #2	10/13/49	42.50	Nevada	CHUBB LAKE
					MARIN COUNCIL BOY SCOUT TRUST FUND #2 Total		42.50		
A014959	9301	5983	Appropriative	Licensed	MARK MOORE	08/12/52	0.40	Placer	UNSP
					MARK MOORE Total		0.40		
A015345	9575	5185	Appropriative	Licensed	MARK ROTH	06/09/58	0.10	Placer	UNSP

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A018079	11547	6800	Appropriative	Licensed	MARK ROTH Total		0.10		
					MARTIN FAMILY TRUST	04/02/58	3.70	Nevada	UNST
					MARTIN FAMILY TRUST Total		3.70		
A027000	18773	13792	Appropriative	Licensed	MAURICE ALTSHULER	05/28/09	20.00	Nevada	UNST
A030728	21195	13793	Appropriative	Licensed	MAURICE ALTSHULER	05/28/09	6.00	Nevada	UNST
					MAURICE ALTSHULER Total		26.00		
A021251	14195	9944	Appropriative	Licensed	MICHAEL CIAFARDONI	04/22/63	17.00	Nevada	UNST
					MICHAEL CIAFARDONI Total		17.00		
A025891	17758	11770	Appropriative	Licensed	MICHAEL K SCHARF	12/26/78	1.70	Nevada	UNST
					MICHAEL K SCHARF Total		1.70		
A009750	5462	3069	Appropriative	Licensed	MILTON R HOLSTROM	10/13/39	726.00	Sierra	EMPIRE CREEK, UNSP
					MILTON R HOLSTROM Total		726.00		
A024730	17134	11755	Appropriative	Licensed	Modern Building Inc.	12/20/74	25.00	Butte	UNST
					Modern Building Inc. Total		25.00		
A001270	2082	12795	Appropriative	Licensed	NEVADA IRRIGATION DISTRICT	07/10/91	130,701.50	Nevada	CANYON CREEK, FALL CREEK, JACKSON CREEK, TEXAS CREEK, TRAP CREEK
A001614	1481		Appropriative	Permitted	NEVADA IRRIGATION DISTRICT	01/08/20	60,000.00	Nevada	DEER CREEK
A001615	5801	8808	Appropriative	Licensed	NEVADA IRRIGATION DISTRICT	01/08/20	36,496.40	Nevada	DEER CREEK, SOUTH FORK DEER CREEK
A002276	2085	12797	Appropriative	Licensed	NEVADA IRRIGATION DISTRICT	03/25/21	60,000.00	Nevada, Sierra	MIDDLE YUBA RIVER
A005193	13770		Appropriative	Permitted	NEVADA IRRIGATION DISTRICT	09/08/26	50,000.00	Nevada, Sierra	MIDDLE YUBA RIVER (@ MILTON DAM), MIDDLE YUBA RIVER (@JACKSON MEADOWS DAM)
A006702	5807	12800	Appropriative	Licensed	NEVADA IRRIGATION DISTRICT	06/16/30	4,889.30	Nevada	CLEAR CREEK, FALL CREEK, TRAP CREEK
A008180	5815		Appropriative	Permitted	NEVADA IRRIGATION DISTRICT	11/27/34	207,894.90	Nevada	CLEAR CREEK, FALL CREEK, RUCKER CREEK, TEXAS CREEK, TRAP CREEK
A020017	13772		Appropriative	Permitted	NEVADA IRRIGATION DISTRICT	03/06/61	101,160.00	Nevada	SOUTH YUBA RIVER
					NEVADA IRRIGATION DISTRICT Total		651,142.10		
A014961	9303	6158	Appropriative	Licensed	NORMAN R PICKLES	08/12/52	0.40	Placer	UNSP
					NORMAN R PICKLES Total		0.40		
A013957	11516		Appropriative	Permitted	North Yuba Water District	08/18/58	145,084.30	Plumas, Yuba	SLATE CREEK
					North Yuba Water District Total		145,084.30		

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A013959	8944	4700	Appropriative	Licensed	O'Brien Ranch LLC	09/21/50	983.80	Butte, Yuba	SOUTH HONCUT CREEK
					O'Brien Ranch LLC Total		983.80		
A018565	12005	6754	Appropriative	Licensed	OLIVER G MILHOUS	03/03/59	20.00	Nevada	UNST
					OLIVER G MILHOUS Total		20.00		
A000481	203	368	Appropriative	Licensed	ORIGINAL SIXTEEN TO ONE MINE, INC	07/31/24	724.00	Sierra	BUCKEYE RAVINE
A001193	562	121	Appropriative	Licensed	ORIGINAL SIXTEEN TO ONE MINE, INC	02/25/19	362.00	Sierra	UNSP
					ORIGINAL SIXTEEN TO ONE MINE, INC Total		1,086.00		
A013689	8312	3836	Appropriative	Licensed	OSHA B READER	04/14/50	49.60	Sierra	UNST
A018928	12203	6983	Appropriative	Licensed	OSHA B READER	08/20/59	1.70	Sierra	UNSP
					OSHA B READER Total		51.30		
A011120	6599	3392	Appropriative	Licensed	OSTROM FAMILY TRUST	07/27/45	12.00	Sierra	UNSP
A011501	6713	3393	Appropriative	Licensed	OSTROM FAMILY TRUST	08/07/46	38.20	Sierra	UNSP
A017135	10850	6922	Appropriative	Licensed	OSTROM FAMILY TRUST	06/14/56	0.20	Sierra	UNSP
A017137	10852	5981	Appropriative	Licensed	OSTROM FAMILY TRUST	06/14/56	0.10	Sierra	UNSP
A018782	12221		Appropriative	Permitted	OSTROM FAMILY TRUST	10/02/01	40.10	Sierra	ANDERSON SPRING
A023778	16372		Appropriative	Permitted	OSTROM FAMILY TRUST	05/04/71	24.10	Sierra	UNSP, WIXON SPRING
					OSTROM FAMILY TRUST Total		114.70		
A024165	16758	11081	Appropriative	Licensed	PACIFIC EDGE INC	08/30/72	9.00	Yuba	UNST
					PACIFIC EDGE INC Total		9.00		
A015542	9622	5189	Appropriative	Licensed	PAUL F BUKENHOFER	09/17/53	72.50	Yuba	UNST
					PAUL F BUKENHOFER Total		72.50		
A020823	13820	8729	Appropriative	Licensed	PAULA M SCHROEDER	06/20/62	0.60	Sierra	UNSP
					PAULA M SCHROEDER Total		0.60		
A018176	11803	8201	Appropriative	Licensed	PHILIP PERSONENI	06/10/58	91.70	Nevada	SHADY CREEK
					PHILIP PERSONENI Total		91.70		
A024842	17048	11439	Appropriative	Licensed	PHILIP J SIMMONS	07/22/75	1.00	Sierra	UNST
					PHILIP J SIMMONS Total		1.00		
A009617	5497	2705	Appropriative	Licensed	PONTA, MELVIN J & MARCELLA M 1984 REVOCABLE TRUST	09/26/44	39.80	Sierra	WOODRUFF CREEK
A011994	7054	3526	Appropriative	Licensed	PONTA, MELVIN J & MARCELLA M 1984 REVOCABLE TRUST	07/16/47	1.60	Sierra	UNSP
					PONTA, MELVIN J & MARCELLA M 1984 REVOCABLE TRUST Total		41.40		
A027638	18933	12446	Appropriative	Licensed	R MARILYN WILSON	01/24/83	2.00	Nevada	KENTUCKY RAVINE
					R MARILYN WILSON Total		2.00		
A018368	11988	8848	Appropriative	Licensed	RAENNE A KALFSBEEK	10/10/58	3.70	Yuba	GOLDEN GATE RAVINE
					RAENNE A KALFSBEEK Total		3.70		
A008343	4680	1903	Appropriative	Licensed	RAINBOW HOLDING COMPANY, LTD	05/25/35	112.90	Placer	UNSP
					RAINBOW HOLDING COMPANY, LTD Total		112.90		
A025997	18129	12158	Appropriative	Licensed	RAMON HERNANDEZ	05/16/79	15.00	Yuba	UNST
					RAMON HERNANDEZ Total		15.00		
A017934	11550	6977	Appropriative	Licensed	RAY COLAIZZI	01/06/58	0.80	Sierra	INDEPENDENCE CREEK

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RAY COLAIZZI Total							0.80		
A022395	15508	10302	Appropriative	Licensed	REGULAR BAPTIST CAMP INCORPORATED	02/18/66	87.00	Sierra	PILOT LAKE (AKA DELAHUNTY LAKE)
A022396	15220	11011	Appropriative	Licensed	REGULAR BAPTIST CAMP INCORPORATED	09/19/02	3.20	Sierra	UNSP (3)
REGULAR BAPTIST CAMP INCORPORATED Total							90.20		
A018212	11725	9140	Appropriative	Licensed	RENTIER INCORPORATED	07/09/58	0.70	Sierra	UNST
RENTIER INCORPORATED Total							0.70		
A018279	11926	7127	Appropriative	Licensed	RICHARD L MILLER	08/21/58	0.20	Sierra	UNSP
RICHARD L MILLER Total							0.20		
A017797	11267	7196	Appropriative	Licensed	RICHARD W WALKER	08/22/57	1.70	Placer	UNST
RICHARD W WALKER Total							1.70		
A027542	18885	12513	Appropriative	Licensed	RICHARDS LAND & CATTLE CO	09/30/82	12.00	Yuba	WOODS CREEK
A027603	18884	13380	Appropriative	Licensed	RICHARDS LAND & CATTLE CO	12/03/82	49.00	Yuba	WOODS CREEK
RICHARDS LAND & CATTLE CO Total							61.00		
A019559	12914	7539	Appropriative	Licensed	ROBERT CARLSTROEM	07/20/60	0.20	Sierra	UNST
ROBERT CARLSTROEM Total							0.20		
A021496	14525	9634	Appropriative	Licensed	ROBERT A HELLER	10/09/63	1.10	Sierra	UNXX
ROBERT A HELLER Total							1.10		
A026640	18874		Appropriative	Permitted	ROBERT A ROWE	12/02/80	3.20	Nevada	KENTUCKY RAVINE
ROBERT A ROWE Total							3.20		
A016792A	10815	008072A	Appropriative	Licensed	ROBERT L RYAN	12/06/85	9.40	Nevada	UNST
ROBERT L RYAN Total							9.40		
A014951	10084	5848	Appropriative	Licensed	ROBERTA D'ARCY	08/06/52	113.10	Yuba	DRY CREEK
ROBERTA D'ARCY Total							113.10		
A018674	12824	8179	Appropriative	Licensed	ROCHELLE A FLEMING	04/28/59	0.30	Sierra	UNST
ROCHELLE A FLEMING Total							0.30		
A021562	14484	8801	Appropriative	Licensed	ROGER P VAN CRAEYNES	12/04/63	2.70	Sierra	UNSP
ROGER P VAN CRAEYNES Total							2.70		
A026809	18475	12287	Appropriative	Licensed	RONALD GUILD	04/29/81	4.00	Yuba	PRAIRIE CREEK
RONALD GUILD Total							4.00		
A027976	19244	12656	Appropriative	Licensed	RONALD L GOODSPEED	02/08/84	0.30	Nevada	UNST
RONALD L GOODSPEED Total							0.30		
A018286	11774	7006	Appropriative	Licensed	ROSS JACOBS	08/26/58	0.20	Sierra	UNST
ROSS JACOBS Total							0.20		

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A026365	18355	12070	Appropriative	Licensed	ROY BRAATZ ROY BRAATZ Total	05/19/80	3.30 3.30	Nevada	UNST
A020263	13977	10086	Appropriative	Licensed	ROY RAMEY ROY RAMEY Total	06/13/61	24.20 24.20	Nevada	WEST BRANCH GOLD RUN CREEK
A008984	5142	2367	Appropriative	Licensed	RUBY DEVELOPMENT COMPANY RUBY DEVELOPMENT COMPANY Total	06/02/37	241.10 241.10	Sierra	ROCK CREEK
A024904	17224	11479	Appropriative	Licensed	RUBY J RICKARD RUBY J RICKARD Total	10/17/75	2.00 2.00	Nevada	UNSP
A018252	11757	7003	Appropriative	Licensed	SEGHEZZI INC SEGHEZZI INC Total	03/20/64	51.70 51.70	Nevada	UNST
A020309	13944	8350	Appropriative	Licensed	SHAWN BEACHAMP SHAWN BEACHAMP Total	07/19/61	0.60 0.60	Sierra	UNSP
A021727	14700	9328	Appropriative	Licensed	SHERMAN D WINSHIP SHERMAN D WINSHIP Total	04/07/64	15.00 15.00	Nevada	UNST
A021417	14529	9226	Appropriative	Licensed	SIBLEY HANSEN SIBLEY HANSEN Total	08/02/63	0.10 0.10	Sierra	SMALL SPRING
A006286	3316	2427	Appropriative	Licensed	SIERRA CLUB SIERRA CLUB Total	05/13/29	2.80 8.40	Nevada	ZERO SPRING
A008465	4945	2628	Appropriative	Licensed	SIERRA CLUB SIERRA CLUB Total	10/05/35	5.60 8.40	Nevada	UNSP
A020890	14177	9068	Appropriative	Licensed	SIERRA PACIFIC INDUSTRIES SIERRA PACIFIC INDUSTRIES Total	08/06/62	5.60 5.60	Sierra	UNSP, UNST
A026028	18161	12301	Appropriative	Licensed	SOPER COMPANY SOPER COMPANY Total	06/18/79	2.50 2.50	Nevada	UNST
A026067	18454	11796	Appropriative	Licensed	STARDUSTER LAKE ASSOCIATION STARDUSTER LAKE ASSOCIATION Total	08/17/79	27.00 27.00	Nevada	UNST
A023591	16215	10645	Appropriative	Licensed	STEPHEN MAKI STEPHEN MAKI Total	08/24/70	2.30 2.30	Nevada	UNST
A028615	20873		Appropriative	Permitted	STEVE MEHALAKIS	11/08/85	20.00	Yuba	UNST
A028616	20874		Appropriative	Permitted	STEVE MEHALAKIS STEVE MEHALAKIS Total	11/08/85	656.00 676.00	Yuba	UNST
A016659	10458	6570	Appropriative	Licensed	Steven A Beckwitt Steven A Beckwitt Total	10/10/55	7.00 7.00	Nevada	UNCR
A028564	20071	13055	Appropriative	Licensed	STEVEN NIGHTINGALE STEVEN NIGHTINGALE Total	09/26/85	0.40 0.40	Sierra	UNST
A030074	20797		Appropriative	Permitted	SUGAR BOWL CORPORATION	06/15/95	136.00	Placer	LAKE MARY

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A030359	20798		Appropriative	Permitted	SUGAR BOWL CORPORATION	06/15/95	136.00	Placer	LAKE MARY
					SUGAR BOWL CORPORATION Total		272.00		
A017808	11602	6617	Appropriative	Licensed	SUSAN TRIMBLE SILVEY	08/30/57	0.30	Nevada	UNSP, UNST
					SUSAN TRIMBLE SILVEY Total		0.30		
A022135	15294	9724	Appropriative	Licensed	SUSAN M FORD	04/30/65	6.00	Sierra	UNSP
					SUSAN M FORD Total		6.00		
A028187	20186		Appropriative	Permitted	SUSAN T TOWNSEND	07/10/84	35.00	Nevada	OWL CREEK
					SUSAN T TOWNSEND Total		35.00		
A017798	11268	6932	Appropriative	Licensed	SUSANNAH SCHROLL	08/22/57	0.90	Placer	UNST
					SUSANNAH SCHROLL Total		0.90		
A010980	6391	3171	Appropriative	Licensed	Terry Mitchell Riley	02/13/45	17.00	Yuba	MOONSHINE CREEK
					Terry Mitchell Riley Total		17.00		
A021079	14144	9865	Appropriative	Licensed	THE KRUMP LIMITED PARTNERSHIP	12/11/62	29.00	Nevada	NORTH CREEK
					THE KRUMP LIMITED PARTNERSHIP Total		29.00		
A011106	6583	4849	Appropriative	Licensed	THOMAS DE JONGHE	07/13/45	19.70	Sierra	UNSP, VAN JOAN CREEK
A018663	12077	6842	Appropriative	Licensed	THOMAS DE JONGHE	04/24/59	796.40	Sierra	SAN JUAN CANYON
					THOMAS DE JONGHE Total		816.10		
A009651	5425	2777	Appropriative	Licensed	THOMAS A JEKYLL	06/30/39	5.60	Yuba	MOONSHINE CREEK
					THOMAS A JEKYLL Total		5.60		
A028126	20885		Appropriative	Permitted	THOMAS R POPE	04/30/84	7.00	Yuba	UNST
					THOMAS R POPE Total		7.00		
A018395	11928	7011	Appropriative	Licensed	TIMOTHY WALKER	11/05/58	0.20	Sierra	COLD SPRING
					TIMOTHY WALKER Total		0.20		
A017142	10833	6907	Appropriative	Licensed	TREVOR D ROBBINS	06/20/56	2.60	Nevada	UNST
					TREVOR D ROBBINS Total		2.60		
A014930	9266	5083	Appropriative	Licensed	TRI-LODGE ASSOCIATION	07/28/52	16.80	Nevada	LYTTON CREEK
					TRI-LODGE ASSOCIATION Total		16.80		
A015246	9585	4864	Appropriative	Licensed	TROY L JONES	03/19/53	2.30	Nevada	UNSP
					TROY L JONES Total		2.30		
A022265	15651	13721	Appropriative	Licensed	TSCHOPP MUTUAL WATER COMPANY	05/30/07	8.40	Sierra	UNSP, WIXON SPRING
					TSCHOPP MUTUAL WATER COMPANY Total		8.40		
A018581	11987	7507	Appropriative	Licensed	TYE ROMMEL	03/10/59	0.10	Sierra	UNST
					TYE ROMMEL Total		0.10		
A006563	3462	4000	Appropriative	Licensed	U S FOREST SERVICE	02/13/30	0.40	Sierra	UNSP
A007608	4266	1863	Appropriative	Licensed	U S FOREST SERVICE	07/05/33	1.80	Sierra	UNSP

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Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A007691	4232	1864	Appropriative	Licensed	U S FOREST SERVICE	09/28/33	0.40	Sierra	GENTLE ANNIE SPRING
A007767	4269	1865	Appropriative	Licensed	U S FOREST SERVICE	11/27/33	0.30	Sierra	UNSP
A008493	4684	2139	Appropriative	Licensed	U S FOREST SERVICE	11/13/35	6.20	Sierra	JERRETT SPRING
A009561	5364	2480	Appropriative	Licensed	U S FOREST SERVICE	04/19/39	8.40	Sierra	BAKER SPRING
A010038	5700	4893	Appropriative	Licensed	U S FOREST SERVICE	10/17/40	5.60	Placer	SUMMIT SPRING NO 1
A010153	5788	2659	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	1.10	Nevada	LOGAN SPRING
A010154	5789	2660	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	1.40	Nevada	BIG LICK SPRINGS
A010155	5790	2661	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	1.00	Nevada	DEMPSEY SPRINGS
A010156	5791	4888	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	9.20	Nevada	WHITE CLOUD SPRINGS
A010158	5793	2662	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	1.40	Nevada	COLEMAN SPRINGS
A010159	5794	4175	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	0.60	Nevada	SKILLMAN FLAT SPRING
A010160	5795	2663	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	0.60	Nevada	DEMORY SPRING
A010161	5796	2664	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	1.40	Nevada	UPPER DERBEC SPRING
A010162	5797	2665	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	9.80	Nevada	SNOWTENT SPRING
A010163	5798	2666	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	2.90	Nevada	DERBEC SPRINGS
A010164	5799	2667	Appropriative	Licensed	U S FOREST SERVICE	03/22/41	4.40	Nevada	WILLOW SPRINGS
A010446	6018	2891	Appropriative	Licensed	U S FOREST SERVICE	05/06/42	3.10	Nevada	THIMBLEBERRY CREEK
A010447	6019	2892	Appropriative	Licensed	U S FOREST SERVICE	05/06/42	3.70	Nevada	JUNCTION HOUSE SPRING
A010448	6020	4895	Appropriative	Licensed	U S FOREST SERVICE	05/06/42	1.10	Nevada	GROUSE RIDGE SPRING NO 3
A010449	6021	3057	Appropriative	Licensed	U S FOREST SERVICE	05/06/42	0.20	Nevada	MOGONIGAL SPRING
A010451	6023	2894	Appropriative	Licensed	U S FOREST SERVICE	05/06/42	3.40	Nevada	BEAR TRAP CREEK
A010452	6024	3058	Appropriative	Licensed	U S FOREST SERVICE	05/06/42	0.20	Nevada	GROUSE RIDGE SPRING NO 1
A010453	6025	3921	Appropriative	Licensed	U S FOREST SERVICE	05/06/42	0.60	Nevada	GROUSE RIDGE SPRING NO 2

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Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A010496	6091	2895	Appropriative	Licensed	U S FOREST SERVICE	07/15/42	0.90	Nevada	MOBLEY HOMESTEAD SPRING NO 1
A010497	6092	2896	Appropriative	Licensed	U S FOREST SERVICE	07/15/42	4.70	Nevada	HOLDEN SPRING
A010500	6095	2898	Appropriative	Licensed	U S FOREST SERVICE	07/15/42	1.80	Nevada	UNSP
A010502	6099	2899	Appropriative	Licensed	U S FOREST SERVICE	07/15/42	3.20	Nevada	MOBLEY HOMESTEAD SPRING NO 2
A010503	6100	2900	Appropriative	Licensed	U S FOREST SERVICE	07/15/42	4.10	Nevada	INDIAN SPRING
A010506	6103	2902	Appropriative	Licensed	U S FOREST SERVICE	07/15/42	0.90	Nevada	UPPER WOOLSEY SPRING
A010634	6150	2903	Appropriative	Licensed	U S FOREST SERVICE	05/01/43	2.20	Sierra	HALLS RANCH SPRING
A010637	6153	2905	Appropriative	Licensed	U S FOREST SERVICE	05/01/43	2.20	Sierra	WILD PLUM SPRING
A010639	6155	2907	Appropriative	Licensed	U S FOREST SERVICE	05/01/43	1.60	Sierra	DEADWOOD SPRING
A010640	6156	2908	Appropriative	Licensed	U S FOREST SERVICE	05/01/43	2.20	Sierra	GOLD LAKE SPRING
A010642	6158	2910	Appropriative	Licensed	U S FOREST SERVICE	05/01/43	1.50	Sierra	SADDLEBACK SPRING
A011382	6627	7752	Appropriative	Licensed	U S FOREST SERVICE	04/23/46	0.60	Nevada	RED MOUNTAIN SPRING NO 1
A012054	7080	3979	Appropriative	Licensed	U S FOREST SERVICE	08/21/47	210.30	Sierra	BEAR CREEK
A012104	7107	5532	Appropriative	Licensed	U S FOREST SERVICE	09/24/47	5.00	Sierra	HASKELL CREEK
A012105	7197	4210	Appropriative	Licensed	U S FOREST SERVICE	09/24/47	0.10	Sierra	GLEASON SPRING
A012108	7198	8987	Appropriative	Licensed	U S FOREST SERVICE	09/24/47	6.10	Sierra	CARVIN CREEK, UNSP
A012734	7577	4944	Appropriative	Licensed	U S FOREST SERVICE	10/07/48	17.90	Placer	UNSP
A013626	8115	5514	Appropriative	Licensed	U S FOREST SERVICE	03/10/50	8.20	Sierra	GRASSY LAKE CREEK
A013627	8116	4873	Appropriative	Licensed	U S FOREST SERVICE	03/10/50	12.20	Sierra	ORGAN CREEK
A014368	9086	4981	Appropriative	Licensed	U S FOREST SERVICE	06/27/51	0.10	Sierra	INDEPENDENCE RAVINE
A014369	8833	5423	Appropriative	Licensed	U S FOREST SERVICE	06/27/51	1.60	Sierra	FIDDLE CREEK
A014399	8880	5114	Appropriative	Licensed	U S FOREST SERVICE	07/19/51	2.00	Nevada	RATTLESNAKE CREEK
A014400	8830	6972	Appropriative	Licensed	U S FOREST SERVICE	07/19/51	0.60	Nevada	JACKSON CREEK

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Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
A016642	10775	6162	Appropriative	Licensed	U S FOREST SERVICE	09/30/55	0.90	Sierra	CARVIN CREEK
A017236	14333	9873	Appropriative	Licensed	U S FOREST SERVICE	08/13/56	4,320.00	Nevada	WEAVER LAKE
A017827	11555	6959	Appropriative	Licensed	U S FOREST SERVICE	09/19/57	0.90	Sierra	UNSP (2)
A017867	11386	8642	Appropriative	Licensed	U S FOREST SERVICE	10/31/57	4.00	Nevada	UNSP
A018294	11777	7651	Appropriative	Licensed	U S FOREST SERVICE	08/28/58	0.20	Nevada	MARSH TRACT SPRING
A018744	13212	8632	Appropriative	Licensed	U S FOREST SERVICE	05/28/59	130.00	Sierra	UNST
A018745	13213	8633	Appropriative	Licensed	U S FOREST SERVICE	05/28/59	90.00	Sierra	PACKER CREEK
A018746	13214	8634	Appropriative	Licensed	U S FOREST SERVICE	05/28/59	380.00	Sierra	SALMON CREEK
A018747	13215	8635	Appropriative	Licensed	U S FOREST SERVICE	05/28/59	282.20	Sierra	SARDINE CREEK
A018748	13216	8983	Appropriative	Licensed	U S FOREST SERVICE	05/28/59	350.00	Sierra	SAWMILL CREEK
A018749	13217	8636	Appropriative	Licensed	U S FOREST SERVICE	05/28/59	250.00	Sierra	SALMON CREEK
A021130	14147	8582	Appropriative	Licensed	U S FOREST SERVICE	01/22/63	2.20	Sierra	UNSP
A021420	14530	8940	Appropriative	Licensed	U S FOREST SERVICE	08/06/63	0.20	Sierra	UNSP
A023124	15805	9651	Appropriative	Licensed	U S FOREST SERVICE	09/05/68	0.30	Sierra	UNSP
A028413	19713	13031	Appropriative	Licensed	U S FOREST SERVICE	03/29/85	0.80	Sierra	UNSP
					U S FOREST SERVICE Total		6,170.90		
A024067	16490	11008	Appropriative	Licensed	WALTER BALDAIN	05/12/72	8.00	Yuba	UNST
					WALTER BALDAIN Total		8.00		
A022419	15278	9703	Appropriative	Licensed	WASHINGTON COUNTY WATER DISTRICT	03/11/66	48.00	Nevada	HENDERSON RAVINE
					WASHINGTON COUNTY WATER DISTRICT Total		48.00		
A016823	10823	7089	Appropriative	Licensed	WAYNE L HARSHBARGER	01/09/56	35.00	Nevada	UNST
					WAYNE L HARSHBARGER Total		35.00		
A018170	11648	7666	Appropriative	Licensed	WILLIAM C DOUB II	06/05/58	1.10	Yuba	LITTLE WILLOW CREEK
					WILLIAM C DOUB II Total		1.10		
A026642	18723		Appropriative	Permitted	WILLIAM H CLEMENS	12/03/80	3.00	Nevada	RAPP RAVINE
					WILLIAM H CLEMENS Total		3.00		
A011355	6661	3358	Appropriative	Licensed	WILLIAM R SMITH	03/28/46	0.60	Sierra	JIM CROW CANYON

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Application ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source
WILLIAM R SMITH Total							0.60		
A002197	1154	435	Appropriative	Licensed	YUBA COUNTY WATER AGENCY	02/11/21	511,784.30	Yuba	NORTH YUBA RIVER
A003026	1354	436	Appropriative	Licensed	YUBA COUNTY WATER AGENCY	09/07/22	10,000.00	Yuba	NORTH YUBA RIVER
A005004	2604	777	Appropriative	Licensed	YUBA COUNTY WATER AGENCY	04/30/26	15,000.00	Yuba	NORTH YUBA RIVER
A005632	15026		Appropriative	Permitted	YUBA COUNTY WATER AGENCY	07/30/27	1,159,000.00	Yuba	NORTH YUBA RIVER, YUBA RIVER
A009516	6106	3050	Appropriative	Licensed	YUBA COUNTY WATER AGENCY	03/01/39	72,397.80	Yuba	NORTH YUBA RIVER
A010282	8330	5544	Appropriative	Licensed	YUBA COUNTY WATER AGENCY	09/12/41	5,335.00	Yuba	NORTH YUBA RIVER
A015204	15027		Appropriative	Permitted	YUBA COUNTY WATER AGENCY	03/28/66	246,000.00	Yuba	NORTH YUBA RIVER, YUBA RIVER
A015574	15030		Appropriative	Permitted	YUBA COUNTY WATER AGENCY	03/28/66	514,000.00	Nevada, Yuba	MIDDLE YUBA RIVER, NORTH YUBA RIVER, OREGON CREEK, YUBA RIVER
A029837	20595		Appropriative	Permitted	YUBA COUNTY WATER AGENCY	10/11/90	21,719.30	Yuba	DEADWOOD CREEK, OWL GULCH
YUBA COUNTY WATER AGENCY Total							2,555,236.40		
A002978	1270	12984	Appropriative	Licensed	YUBA COUNTY WATER DISTRICT	08/12/22	6,060.00	Yuba	DRY CREEK
A013957	11516		Appropriative	Licensed	YUBA COUNTY WATER DISTRICT	09/20/50	145,082.64	Plumas, Yuba	NORTH YUBA RIVER, YUBA RIVER
A011596	7086	4699	Appropriative	Licensed	YUBA INVESTMENT COMPANY	10/28/46	2,558.70	Yuba	DRY CREEK
YUBA INVESTMENT COMPANY Total							2,558.70		
A026914	18489	12619	Appropriative	Licensed	YUBA RIVER RECREATION GROUP INC	07/13/81	2.60	Nevada	HUMBUG CREEK
YUBA RIVER RECREATION GROUP INC Total							2.60		
Grand Total							3,595,920.74		

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A029052	20786	13687	ANNE K SOUSA	12/13/06	5.80	Nevada	UNST
			ANNE K SOUSA Total		5.80		
A029455	20562		ARTHUR W ARMSTRONG	3/28/89	7.00	Nevada	IRON CROSS CREEK, ROCK CREEK
			ARTHUR W ARMSTRONG Total		7.00		
A025897	18040	11864	BEN R RAWE	1/5/79	0.30	Nevada	WOLF CREEK
			BEN R RAWE Total		0.30		
A026042	17969	11895	Bethel Church Nevada County	7/5/79	1.50	Nevada	UNST
			Bethel Church Nevada County Total		1.50		
A019535	12763	7754	BETTY THOMAS	7/11/60	20.00	Nevada	UNST
			BETTY THOMAS Total		20.00		
A015964	10090	7264	BLEAU 1989 REVOCABLE TRUST DATED 12/22/89	5/5/65	14.80	Nevada	UNST
			BLEAU 1989 REVOCABLE TRUST DATED 12/22/89 Total		14.80		
A027768	19029	12402	BOB J BALDWIN	6/7/83	2.40	Nevada	UNST
			BOB J BALDWIN Total		2.40		
A000959	743	385	CAMP FAR WEST IRRIGATION DISTRICT	4/1/18	4,832.10	Yuba	BEAR RIVER
A002881	2089	2266	CAMP FAR WEST IRRIGATION DISTRICT	6/13/22	5,000.00	Yuba	BEAR RIVER
A003843	2090	2267	CAMP FAR WEST IRRIGATION DISTRICT	2/11/24	3,592.20	Yuba	BEAR RIVER
A010190	5852	2740	CAMP FAR WEST IRRIGATION DISTRICT	4/28/41	5,000.00	Yuba	BEAR RIVER
			CAMP FAR WEST IRRIGATION DISTRICT Total		18,424.30		
A021821	14841	9992	CITY OF GRASS VALLEY	6/18/64	4.00	Nevada	RHODE ISLAND RAVINE
A025601	17893		CITY OF GRASS VALLEY	12/16/77	2,200.00	Nevada	UNXX
			CITY OF GRASS VALLEY Total		2,204.00		
A029097	20492	13344	COX-HARTLEY FAMILY 1993 TRUST	8/17/87	17.00	Nevada	LONG RAVINE
			COX-HARTLEY FAMILY 1993 TRUST Total		17.00		
A026932	18555	12337	CRAIG FERRARI	7/27/81	1.30	Nevada	LONG RAVINE
A029177	20384	13514	CRAIG FERRARI	1/26/88	3.30	Nevada	LONG RAVINE
			CRAIG FERRARI Total		4.60		
A020794	14711	10153	DANIEL HALE	5/28/62	8.30	Nevada	UNSP, UNST
			DANIEL HALE Total		8.30		
A017495	11042	5812	DARKHORSE GOLF CLUB LLC	3/5/57	9.00	Nevada	UNST
A027767	19028	12401	DARKHORSE GOLF CLUB LLC	6/7/83	1.90	Nevada	UNST
			DARKHORSE GOLF CLUB LLC Total		10.90		
A026161	18143	12136	DAVID MCFARLANE	1/3/80	0.10	Nevada	UNSP
			DAVID MCFARLANE Total		0.10		
A015282	9761	4714	DAVID L FERGUSON	4/7/53	15.00	Nevada	INDIAN RAVINE
			DAVID L FERGUSON Total		15.00		
A025099	16957	11240	DENNIS ACMOODY	7/14/76	0.70	Placer	CAMPBELL CREEK
			DENNIS ACMOODY Total		0.70		
A023012	15728	10361	Dept of Fish and Game	3/27/68	44.00	Yuba	UNST
A023013	15729	10387	Dept of Fish and Game	3/27/68	9.60	Nevada	UNST
A023014	15730	10388	Dept of Fish and Game	3/27/68	21.00	Yuba	UNST

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A024601	16798	11216	Dept of Fish and Game	5/2/74	3.00	Yuba	UNST
A024641	16797	11212	Dept of Fish and Game	4/22/82	5.10	Yuba	UNST
			Dept of Fish and Game Total		82.70		
A021495	14411	9027	DONALD L DAY	10/9/63	9.20	Nevada	UNST
			DONALD L DAY Total		9.20		
A027513	18935	12432	DORIS L MINARD	9/13/82	3.10	Nevada	UNST
			DORIS L MINARD Total		3.10		
A021843	14973	9263	ELIZABETH STREATER	7/10/64	0.10	Nevada	UNSP
			ELIZABETH STREATER Total		0.10		
A017858	11509	6590	GARY M LAUGHLIN	10/23/57	0.80	Nevada	UNSP (2)
			GARY M LAUGHLIN Total		0.80		
A027958	19299	12783	GLADYS MARTINES	1/25/84	3.00	Nevada	UNST
A029895	20705		GLADYS MARTINES	1/25/91	27.00	Nevada	UNST
			GLADYS MARTINES Total		30.00		
A023070	16276	11076	GREGORY W BOCK	6/18/68	52.30	Nevada	UNST
			GREGORY W BOCK Total		52.30		
A014179	8713	4076	HERRMANN GOTTFIELD	3/7/51	21.30	Nevada	UNST
			HERRMANN GOTTFIELD Total		21.30		
A017539	11052	6926	HIDDEN MEADOW RANCH	4/3/57	91.80	Nevada	UNCR
			HIDDEN MEADOW RANCH Total		91.80		
A015879	10532	5520	IKE GOMEZ	5/19/54	18.30	Nevada	LONG HOLLOW
			IKE GOMEZ Total		18.30		
A028605	20716		JACK F ANDERSEN	10/28/85	6.50	Nevada	SOUTH WOLF CREEK, UNST
			JACK F ANDERSEN Total		6.50		
A018371	11846	8036	JAMES C PAGE	10/14/58	90.80	Placer	UNST
A025408	18090	11807	JAMES C PAGE	6/28/77	29.00	Placer	UNST
			JAMES C PAGE Total		119.80		
A030915	21141		JAMES M SILLER	1/2/03	89.00	Yuba	VINEYARD CREEK
			JAMES M SILLER Total		89.00		
A025582	17443	11469	Jape Holley Taylor	11/29/77	15.00	Nevada	UNST
			Jape Holley Taylor Total		15.00		
A030508	20929		JAY BETZ	11/21/95	56.00	Nevada	ROCK CREEK, UNST
			JAY BETZ Total		56.00		
A025502	17606	12279	JAY VICE	9/7/77	9.40	Nevada	MEYER RAVINE
			JAY VICE Total		9.40		
A017437	11015	7742	JEFFREY L FINK	1/28/57	3.50	Nevada	UNST
			JEFFREY L FINK Total		3.50		
A029100	20553	13829	Jim A Nevins	1/11/11	8.40	Placer	UNST
			Jim A Nevins Total		8.40		
A024814	17265	11749	JOHN C HUSMANN	5/23/75	0.50	Nevada	UNST
			JOHN C HUSMANN Total		0.50		
A014896	9165	4969	JOSEPH D LITCHFIELD	7/8/52	10.00	Nevada	UNST
			JOSEPH D LITCHFIELD Total		10.00		
A025493	17730	12042	JOSHUA L WITTLER	8/29/77	21.00	Nevada	INDIAN SPRINGS CREEK, UNST

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Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
			JOSHUA L WITTLER Total		21.00		
A028102	19386	12709	Judy Bauer	4/4/84	4.00	Nevada	UNST
			Judy Bauer Total		4.00		
A017942B	11413	008536B	LADSON I GEDDINGS	10/14/81	9.80	Nevada	LONG HOLLOW RAVINE
			LADSON I GEDDINGS Total		9.80		
A019830	13852	8657	LAKE MANAGEMENT COMMITTEE	10/27/60	35.00	Nevada	BUTLER CREEK
			LAKE MANAGEMENT COMMITTEE Total		35.00		
A017258	11462	6296	LAKE OF THE PINES ASSN INC	8/27/56	17.00	Nevada	RAGSDALE CREEK
A022535	15355	9675	LAKE OF THE PINES ASSN INC	7/27/66	4,150.00	Nevada	MAGNOLIA CREEK
			LAKE OF THE PINES ASSN INC Total		4,167.00		
A018214	11635	6752	LCB PROPERTIES LLC	7/11/58	55.80	Nevada	LONG HOLLOW RAVINE
			LCB PROPERTIES LLC Total		55.80		
A022821A		009610A	Louis BARTOLUCCI	5/6/02	21.00	Nevada	UNST
A023549A		010658A	Louis BARTOLUCCI	12/14/98	14.00	Nevada	UNST
			Louis BARTOLUCCI Total		35.00		
A025375	17757	11924	LUELLA BURTON	6/1/77	23.00	Placer	UNST
A028660	19898	13032	LUELLA BURTON	12/13/85	10.00	Placer	UNST
			LUELLA BURTON Total		33.00		
A017863	11331	9020	MARTIN P & BARBARA C BRUMM JOINT LIVING TRUST	10/25/57	26.80	Nevada	UNST
			MARTIN P & BARBARA C BRUMM JOINT LIVING TRUST Total		26.80		
A017918	11685	10988	MELBA C SMITH	12/17/57	53.00	Nevada	WOLF CREEK
			MELBA C SMITH Total		53.00		
A027040	18782	12458	MICHAEL J BONELLI	10/13/81	14.50	Nevada	UNST
			MICHAEL J BONELLI Total		14.50		
A028348	19601	12817	MICHAEL K SCHARF	12/4/84	3.90	Placer	UNST
			MICHAEL K SCHARF Total		3.90		
A031298	21148		MICHAEL S DICKEY	5/15/03	49.00	Nevada	UNST
			MICHAEL S DICKEY Total		49.00		
A028630	20005	13060	MIKE BASICH	12/2/85	0.10	Placer	CAMPBELL CREEK
			MIKE BASICH Total		0.10		
A019749C		008012C	MOREHEAD LAND LLC	10/13/00	402.40	Nevada, Sutter	EAST BORROW PIT OF SUTTER BYPASS, POODLE CREEK, UNST
			MOREHEAD LAND LLC Total		402.40		
A002652A	5803	10350	NEVADA IRRIGATION DISTRICT	11/22/21	12,500.00	Nevada, Placer	BEAR RIVER
A006229	5804	8809	NEVADA IRRIGATION DISTRICT	3/26/29	50,936.30	Placer	BEAR RIVER
A002652B	11626		NEVADA IRRIGATION DISTRICT	11/22/21	65,000.00	Placer	BEAR RIVER
			NEVADA IRRIGATION DISTRICT Total		128,436.30		
A023107	16058	10594	PATRICK D BRYAN	8/7/68	9.20	Nevada	UNST
			PATRICK D BRYAN Total		9.20		
A028561	19808	12977	PAUL R SEIDER	9/20/85	1.50	Nevada	SOUTH WOLF CREEK
			PAUL R SEIDER Total		1.50		

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A026684	18972	12398	PINE LAKE ASSOCIATION	1/13/81	45.00	Nevada	UNST
			PINE LAKE ASSOCIATION Total		45.00		
A025922A	17889	11925	PITTS FAMILY TRUST	3/11/86	18.00	Nevada	UNST
			PITTS FAMILY TRUST Total		18.00		
A017912	11641	7101	RICHARD L BARBER	12/11/57	5.60	Placer	UNSP (2)
A021867	15251	9546	RICHARD L BARBER	8/10/64	358.30	Placer	LITTLE BEAR CREEK, UNST
			RICHARD L BARBER Total		363.90		
A020105	13690	7762	RICHARD P O'NEIL	5/1/61	2.50	Nevada	WOLF CREEK
			RICHARD P O'NEIL Total		2.50		
A021473	14619	8876	ROBERT FORD	9/23/63	0.90	Nevada	UNST
			ROBERT FORD Total		0.90		
A025962	17954	12055	ROBERT C ERDMANN	4/3/79	5.00	Nevada	UNST
			ROBERT C ERDMANN Total		5.00		
A025922B	17889	11926	Robert M Rourke	3/11/86	5.30	Nevada	UNST
			Robert M Rourke Total		5.30		
A003995	1847	1612	ROBERT N CAIN	5/20/24	40.00	Nevada	MAGNOLIA CREEK
A015607	9697	5685	ROBERT N CAIN	11/10/53	91.10	Nevada	MAGNOLIA CREEK
			ROBERT N CAIN Total		131.10		
A017942A	11413	008536A	ROBERT P WADMAN	10/14/81	48.30	Nevada	LONG HOLLOW RAVINE
			ROBERT P WADMAN Total		48.30		
A024624	18166	12199	ROBIN BURKE	4/27/87	8.80	Placer	UNST
			ROBIN BURKE Total		8.80		
A023550	16229	12355	RODRIC ANDERSON	7/10/70	8.00	Nevada	UNST
			RODRIC ANDERSON Total		8.00		
A025226	17450	12339	ROGER C PATTERSON	1/3/77	92.00	Placer	UNST
			ROGER C PATTERSON Total		92.00		
A031859			RON BINGAMAN	10/20/10	2,172.00	Nevada	
A030973	21073		RON BINGAMAN	10/14/99	2,172.00	Nevada	UNST (AKA WOLF HANNAMAN RANDOM DITCH)
			RON BINGAMAN Total		4,344.00		
A026072	18034	11907	RONALD F BURKHARDT	8/24/79	18.00	Nevada	UNST
			RONALD F BURKHARDT Total		18.00		
A017767	11458	8624	Ryan R Say	8/12/57	4.80	Nevada	UNST
			Ryan R Say Total		4.80		
A025492	17729	11941	SARAH JOELSON	8/29/77	15.00	Nevada	INDIAN SPRINGS CREEK
			SARAH JOELSON Total		15.00		
A026100	18035	11880	SCOTT C JASPAR	9/28/79	2.40	Nevada	UNST
			SCOTT C JASPAR Total		2.40		
A019003	12858	7437	SETH NOTO	9/25/59	1.10	Nevada	UNST
			SETH NOTO Total		1.10		
A023549B		010658B	SHARON EARHART	12/14/98	8.00	Nevada	UNST
			SHARON EARHART Total		8.00		
A026876	19442	12618	SHEILA ST GERMAIN	6/17/81	5,166.00	Nevada	UNST
			SHEILA ST GERMAIN Total		5,166.00		

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A024984	16847	11190	SMITH & SMITH RANCH, A PARTNERSHIP	1/29/76	3.00	Nevada	UNST
A027152	18851	12679	SMITH & SMITH RANCH, A PARTNERSHIP	12/17/81	2.40	Nevada	UNST
			SMITH & SMITH RANCH, A PARTNERSHIP Total		5.40		
A010221	14871	11120	SOUTH SUTTER WATER DISTRICT	5/15/81	130,745.10	Yuba	BEAR RIVER
A014804	11297	11118	SOUTH SUTTER WATER DISTRICT	5/12/52	139,534.80	Yuba	BEAR RIVER
			SOUTH SUTTER WATER DISTRICT Total		270,279.90		
A014773B	9106	006560B	SPRING VALLEY HOMEOWNERS ASSOCIATION	12/10/82	24.00	Placer	UNST
A020632	13760	8381	SPRING VALLEY HOMEOWNERS ASSOCIATION	3/1/62	52.00	Placer	UNST
A025139	17584	13120	SPRING VALLEY HOMEOWNERS ASSOCIATION	8/31/76	4.70	Placer	UNST
			SPRING VALLEY HOMEOWNERS ASSOCIATION Total		80.70		
A017430	11047	6954	STEVE KOTHE	1/23/57	84.90	Nevada	RAGSDALE CREEK
			STEVE KOTHE Total		84.90		
A022382	15366	10099	THE LAKEWOOD ASSOCIATION INC	2/4/66	486.00	Nevada	DRY CREEK
			THE LAKEWOOD ASSOCIATION INC Total		486.00		
A026160	18323	12118	THOMAS S VAN HORNE	12/31/79	3.10	Nevada	UNSP
A027695	19793	12934	THOMAS S VAN HORNE	3/23/83	11.90	Nevada	UNST
			THOMAS S VAN HORNE Total		15.00		
A010150	5785	2656	U S FOREST SERVICE	3/22/41	0.50	Nevada	KING WOOLFORD SPRING
A010439	6011	2888	U S FOREST SERVICE	5/6/42	0.70	Nevada	FOWLER SPRING
A010504	6101	4977	U S FOREST SERVICE	7/15/42	10.50	Nevada	MULE SPRING
			U S FOREST SERVICE Total		11.70		
A025211	17449	12756	UNITED AUBURN INDIAN DEVELOPMENT CORP	12/13/76	49.90	Placer	UNST
			UNITED AUBURN INDIAN DEVELOPMENT CORP Total		49.90		
A028170	19598	13007	William Scott	6/25/84	0.10	Nevada	UNST
			William Scott Total		0.10		
A028138	19417		WILLIAM M DONNELLY JR	5/23/84	2.00	Nevada	UNST
			WILLIAM M DONNELLY JR Total		2.00		
			Grand Total		436,025.40		

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A010397	5958	3042	AL RENKER	3/11/1942	0.10	El Dorado	SOUTH FORK AMERICAN RIVER
			AL RENKER Total		0.10		
A007905	4344	1801	ALBERT E CASH	4/12/1934	0.20	El Dorado	BULL CREEK
			ALBERT E CASH Total		0.20		
A027366	19846		ALBERT R DAVIDSON	6/21/1982	30.00	El Dorado	UNST
			ALBERT R DAVIDSON Total		30.00		
A016894	11321	7150	ALLEN E NEWTON	2/14/1956	18.20	Placer	UNST
			ALLEN E NEWTON Total		18.20		
A013849	8397	5518	ALLEN FAMILY TRUST	7/17/1950	53.30	Placer	UNST
			ALLEN FAMILY TRUST Total		53.30		
A026457	18473	12786	American River Conservancy	7/15/1980	49.00	El Dorado	GRANITE CREEK
			American River Conservancy Total		49.00		
A013296	8191	6304	ANN BATEY	8/15/1949	137.00	El Dorado	INDIAN CREEK
			ANN BATEY Total		137.00		
A029219	20482		ANTHONY J FREITAS	4/7/1988	21.20	El Dorado	JOHNTOWN CREEK
			ANTHONY J FREITAS Total		21.20		
A027928	19263	12703	APPLE MOUNTAIN LP	12/7/1983	11.80	El Dorado	SOUTH CANYON, UNST
			APPLE MOUNTAIN LP Total		11.80		
A011184	6479	3390	ARDEN HALL	10/16/1945	0.10	El Dorado	SOUTH FORK AMERICAN RIVER
			ARDEN HALL Total		0.10		
A011516	6699	3383	ARTHUR S DEAN	8/15/1946	36.20	El Dorado	UNSP
			ARTHUR S DEAN Total		36.20		
A021648	14938	11111	AUBURN LAKE TRAILS PROPERTY OWNERS ASSOC	2/21/1964	34.00	El Dorado	MAINE BAR CANYON
A023556	16296	11112	AUBURN LAKE TRAILS PROPERTY OWNERS ASSOC	7/14/1970	20.00	El Dorado	MAINE BAR CANYON
A026410	18279	12013	AUBURN LAKE TRAILS PROPERTY OWNERS ASSOC	6/10/1980	14.00	El Dorado	MAINE BAR CANYON
			AUBURN LAKE TRAILS PROPERTY OWNERS ASSOC Total		68.00		
A011817	6920	6045	BAKER FAMILY TRUST 1999	4/8/1947	13.70	El Dorado	HANGTOWN CREEK
A011850	6959	3357	BAKER FAMILY TRUST 1999	5/1/1947	3.40	El Dorado	HANGTOWN CREEK
			BAKER FAMILY TRUST 1999 Total		17.10		
A019125	12391	7458	BARBARA ELLEN HOLLAND	12/8/1959	5.30	El Dorado	UNSP, UNST
			BARBARA ELLEN HOLLAND Total		5.30		
A020256B	13189	9778	BARBAREE JERNIGAN	5/5/1971	2.20	El Dorado	WHITE ROCK CREEK
			BARBAREE JERNIGAN Total		2.20		
A017420	11173	6289	BEADLE LIVING TRUST DATED SEPTEMBER 12,1995	1/11/1957	5.90	Placer	UNST
			BEADLE LIVING TRUST DATED SEPTEMBER 12,1995 Total		5.90		
A027752	19827		BEAR STATE WATER WORKS	5/10/1983	37.00	El Dorado	UNSP
			BEAR STATE WATER WORKS Total		37.00		
A021855	14852	9503	BENJAMIN KEH	7/20/1964	4.00	Placer	MINERS RAVINE
			BENJAMIN KEH Total		4.00		
A022037	15105	9621	Berry Patty LLC	2/4/1965	2.20	El Dorado	UNSP (2)
			Berry Patty LLC Total		2.20		
A018182	11853	6484	BERTABELLE STEAD	6/13/1958	0.50	El Dorado	NEW WORLD TUNNEL
			BERTABELLE STEAD Total		0.50		
A014263	8672	4696	BISHOP FAMILY TRUST	4/20/1951	0.30	El Dorado	UNSP

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A015346	9640	7253	BISHOP FAMILY TRUST	5/18/1953	0.40	El Dorado	UNSP
A016123	10244	10898	BISHOP FAMILY TRUST	11/4/1954	2.20	El Dorado	UNSP
A018515	13834	10899	BISHOP FAMILY TRUST	2/3/1959	1.20	El Dorado	UNSP
			BISHOP FAMILY TRUST Total		4.10		
A010731	6307	5449	BLACK ROCK RANCH	11/17/1943	715.10	El Dorado	HASTINGS CREEK (AKA BLACK ROCK CREEK)
A013123	7488	5450	BLACK ROCK RANCH	5/31/1949	52.00	El Dorado	HASTING CREEK (AKA BLACK ROCK CREEK)
A019943	13983	9915	BLACK ROCK RANCH	1/31/1961	104.60	El Dorado	BLACK ROCK CREEK
			BLACK ROCK RANCH Total		871.70		
A023438	16059	10241	BLUE CANYON PROPERTIES INC	1/16/1970	15.00	Placer	UNST
			BLUE CANYON PROPERTIES INC Total		15.00		
A004365	2048	1112	BORIS T YEN	12/15/1924	2.80	El Dorado	EVANS CREEK
			BORIS T YEN Total		2.80		
A025841	17711	12427	BRETTE MARK GREEN	10/3/1978	1.30	El Dorado	UNST
			BRETTE MARK GREEN Total		1.30		
A016974	10644	5862	Brian P Tucker	3/28/1956	9.60	Placer	UNDR
			Brian P Tucker Total		9.60		
A006999	2797	1419	BRIAN K BRAY	7/7/1931	0.30	El Dorado	UNST
			BRIAN K BRAY Total		0.30		
A014138	8583	4878	BURNS LIVING TRUST	1/22/1951	0.20	El Dorado	BULL CREEK
A020543	13567	9133	BURNS LIVING TRUST	12/29/1961	0.40	El Dorado	UNSP (3)
			BURNS LIVING TRUST Total		0.60		
A013971	8391	6961	BYRON D SHER	9/29/1950	76.00	El Dorado	UNXX
			BYRON D SHER Total		76.00		
A004868	2458	945	BYRON W BACCHI IRREVOCABLE TRUST, THE	12/19/1925	36.20	El Dorado	NORTH INDIAN CREEK
			BYRON W BACCHI IRREVOCABLE TRUST, THE Total		36.20		
A013766	8755	5825	C A JONES	5/31/1950	12.00	El Dorado	NORTON RAVINE
			C A JONES Total		12.00		
A021806	15127	9611	CARDWELL R CURREN	6/8/1964	4.70	El Dorado	WEST FORK SAWMILL CREEK
			CARDWELL R CURREN Total		4.70		
A022052	15107	9622	CAROL BERCIER	2/24/1965	1.00	El Dorado	UNSP (2)
			CAROL BERCIER Total		1.00		
A005806	3036	1071	CAROL WARD	1/16/1928	79.60	Placer	ANTELOPE CREEK
A009500	5335	3137	CAROL WARD	1/31/1939	90.30	Placer	ANTELOPE CREEK
			CAROL WARD Total		169.90		
A007586	4189	3154	CECIL L WESTEL JR	6/14/1933	5.00	El Dorado	LONG CANYON
			CECIL L WESTEL JR Total		5.00		
A026475	18404	12899	CHARLES DAVIS	7/28/1980	0.30	Placer	UNST
			CHARLES DAVIS Total		0.30		
A023990	16722	10947	CHARLES D BRADARIC	3/7/1972	4.50	Placer	UNST
			CHARLES D BRADARIC Total		4.50		
A018053	11628	10069	CHARLES K MCCLATCHY	3/17/1958	6.00	El Dorado	UNST
			CHARLES K MCCLATCHY Total		6.00		
A026380	19259		CHI WEST INC	5/22/1980	72,397.80	El Dorado	ROCK CREEK
A027353	19260		CHI WEST INC	6/4/1982	67,478.70	El Dorado	ROCK CREEK
			CHI WEST INC Total		139,876.50		
A023939	16492	11032	CHRIS BEAUCHAMP	12/6/1971	3.90	El Dorado	UNST
			CHRIS BEAUCHAMP Total		3.90		

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A018929	12275	10064	CHRISTIAN CHURCHES OF N CALIF-W NEVADA	8/20/1959	12.30	Placer	UNSP
			CHRISTIAN CHURCHES OF N CALIF-W NEVADA Total		12.30		
A025097	17594	11694	CINDY WHITE	7/9/1976	0.60	El Dorado	UNST
			CINDY WHITE Total		0.60		
A012149	7201	4847	CITY OF PLACERVILLE	11/4/1947	10.00	El Dorado	UNST
A014708	9209	6282	CITY OF PLACERVILLE	3/11/1952	6.60	El Dorado	BIG CANYON CREEK
			CITY OF PLACERVILLE Total		16.60		
A001853	859	1070	CITY OF SACRAMENTO	5/29/1920	2.10	El Dorado	SAYLES CANYON
A012140	11358		CITY OF SACRAMENTO	10/29/1947	271,739.50	Sacramento	AMERICAN RIVER
A012321	11359		CITY OF SACRAMENTO	2/13/1948	443,478.50	El Dorado	BRUSH CREEK, SILVER CREEK, SOUTH FORK SILVER CREEK
A016060	11361		CITY OF SACRAMENTO	5/7/1958	95,108.80	Sacramento	AMERICAN RIVER
							BRUSH CREEK, GERLE CREEK, LOON LAKE, ROCKBOUND LAKE, RUBICON RIVER, SILVER CREEK, SOUTH FORK RUBICON RIVER
A012622	11360		CITY OF SACRAMENTO	10/30/2000	966,174.80	El Dorado	
			CITY OF SACRAMENTO Total		1,776,503.70		
A004062	1853	1434	CITY OF STOCKTON	9/21/1939	12.20	Amador	UNCR
A007952	4514	2248	CITY OF STOCKTON	5/25/1934	0.40	Amador	UNCR
			CITY OF STOCKTON Total		12.60		
A025809	17623	12579	CLARENCE DILTS	8/21/1978	2.40	El Dorado	UNSP
			CLARENCE DILTS Total		2.40		
A019791	12964	8081	CLARIS GOULART	10/4/1960	62.40	Placer	UNST
			CLARIS GOULART Total		62.40		
A029657			COUNTY OF SAN JOAQUIN	2/9/1990	147,000.00		
			COUNTY OF SAN JOAQUIN Total		147,000.00		
A017398	10943	6893	Dale Capper	12/17/1956	31.00	El Dorado	UNST
			Dale Capper Total		31.00		
A019975	13230	10022	DALE B COOK	3/16/1973	14.70	El Dorado	UNST
			DALE B COOK Total		14.70		
A024427	16890	11259	DANIEL E LITTLE	8/3/1973	2.80	El Dorado	UNST
			DANIEL E LITTLE Total		2.80		
A013521	8424	4467	Daniel J Peterson	12/27/1949	145.00	El Dorado	UNST
			Daniel J Peterson Total		145.00		
A024575	16850	11161	DARREL PEARSON	3/21/1974	2.90	El Dorado	KELLEY CREEK
			DARREL PEARSON Total		2.90		
A017571B	11120	9732	DAVE TOGNETTI	4/25/1957	4.10	Placer	ANTELOPE CREEK
			DAVE TOGNETTI Total		4.10		
A005704	3038	1884	DAVID B BARTHOLOMEW	9/30/1927	0.30	El Dorado	UNSP (2)
			DAVID B BARTHOLOMEW Total		0.30		
A017571A	11120	9731	DAVID C MOORE	4/25/1957	3.90	Placer	ANTELOPE CREEK
			DAVID C MOORE Total		3.90		
A005024	2663	857	DAVID HAYNES MERING	5/18/1926	0.30	El Dorado	UNSP
			DAVID HAYNES MERING Total		0.30		
A012462	7434	3529	DAVID W GIRARD	4/6/1948	4.00	El Dorado	CHUNK RAVINE
			DAVID W GIRARD Total		4.00		
A016289	10247	5507	David William Barton	3/18/1955	14.60	Placer	UNSP
			David William Barton Total		14.60		
A026778	19076	12620	DE ANZA PLACER GOLD MINING COMPANY	4/6/1981	9.80	Placer	PAGGE CREEK

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A027566	19829	13841	DE ANZA PLACER GOLD MINING COMPANY	11/8/2011	215.20	Placer	NORTH FORK FORBES CREEK
A029364	20777	13844	DE ANZA PLACER GOLD MINING COMPANY	12/9/2011	11.20	Placer	PAGGE CREEK
			DE ANZA PLACER GOLD MINING COMPANY Total		236.20		
A021763	15075	8882	DEAN P A ELBERT	5/6/1964	9.00	El Dorado	THIRD OTTER CREEK
			DEAN P A ELBERT Total		9.00		
A011689	6706	5205	DEER HILLS PROPERTY OWNERS ASSN	1/9/1947	45.00	El Dorado	UNST
			DEER HILLS PROPERTY OWNERS ASSN Total		45.00		
A016995	11491	7992	DENNIS R DALTON	4/9/1956	3.00	Placer	UNST
			DENNIS R DALTON Total		3.00		
A018211B	11657	9367	DIAMANTE DEVELOPMENT LLC	7/9/1958	0.50	El Dorado	UNSP
A022791	15500	10062	DIAMANTE DEVELOPMENT LLC	5/18/1967	0.30	El Dorado	UNST
			DIAMANTE DEVELOPMENT LLC Total		0.80		
A009134	5059	3790	DIANE COSGROVE	10/2/1937	0.10	El Dorado	COLD STREAM
			DIANE COSGROVE Total		0.10		
A021857	15201	10018	DIANE W BUCHHOLZ	7/20/1964	16.00	El Dorado	BEAR CREEK
			DIANE W BUCHHOLZ Total		16.00		
A028208A	019433A	13035	DIANNA NEWBORN	3/8/1991	5.50	El Dorado	UNST
A029958	20856	13724	DIANNA NEWBORN	6/6/2007	14.50	El Dorado	UNST
			DIANNA NEWBORN Total		20.00		
A004357	2047	1348	DINO E ANDREOTTI	12/9/1924	1.80	El Dorado	UNCR
A022596	15410	9637	DINO E ANDREOTTI	9/30/1966	0.20	El Dorado	UNST
			DINO E ANDREOTTI Total		2.00		
A026436	18729	12676	DOBBAS RANCH	6/30/1980	0.50	El Dorado	UNSP
A026438	18731	12677	DOBBAS RANCH	6/30/1980	0.40	El Dorado	UNSP
			DOBBAS RANCH Total		0.90		
A005413	2955	3008	DON K AND J A TAYLOR, TRUSTEES	4/11/1927	137.60	Placer	RED RAVINE (AKA BUCKEYE RAVINE)
			DON K AND J A TAYLOR, TRUSTEES Total		137.60		
A023032	15758	10314	Donald Ray Neal	4/19/1968	12.60	Placer	UNST
			Donald Ray Neal Total		12.60		
A014328	9289	5017	DONALD DEAN HUTCHISON	5/29/1951	43.90	Placer	ANTELOPE CREEK
			DONALD DEAN HUTCHISON Total		43.90		
A012598	7431	4049	DONALD G RHODES	7/19/1948	2.50	El Dorado	UNSP
A018559	12063	8421	DONALD G RHODES	2/26/1959	2.50	El Dorado	UNST
			DONALD G RHODES Total		5.00		
A013752	8200	4756	DONALD W FIELDS	5/23/1950	4.10	El Dorado	WEBER CREEK
			DONALD W FIELDS Total		4.10		
A009952	5622	2563	DONNA MCTAGGART	7/12/1940	0.20	El Dorado	PYRAMID CREEK
			DONNA MCTAGGART Total		0.20		
A024705	17798	12232	DOROTHY A MARTIN	11/6/1974	1.80	El Dorado	WHITE ROCK CREEK
			DOROTHY A MARTIN Total		1.80		
A028159	20087	13231	DOUGLAS A NICKELL	6/12/1984	0.10	Placer	UNSP
			DOUGLAS A NICKELL Total		0.10		
A030352	20882		DOUGLAS B VEERKAMP	4/14/1994	88.00	El Dorado	UNST
			DOUGLAS B VEERKAMP Total		88.00		
A021696	14623	9202	Douglas R. Gingerich	3/17/1964	20.00	Placer	UNST
			Douglas R. Gingerich Total		20.00		
A018590	13585	8107	DRONE GRANT INVESTMENT GROUP	3/12/1959	61.30	El Dorado, Placer	DEVILS CANYON CREEK
			DRONE GRANT INVESTMENT GROUP Total		61.30		

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A024514C	16976	11411	DWIGHT R DENTON	1/25/1984	6.00	El Dorado	SWEETWATER CREEK
A024514D	16976	11412	DWIGHT R DENTON	1/25/1984	20.00	El Dorado	SWEETWATER CREEK
A027630	18901	12613	DWIGHT R DENTON	1/13/1983	9.00	El Dorado	SWEETWATER CREEK
A027703	19034	12615	DWIGHT R DENTON	4/4/1983	5.00	El Dorado	SWEETWATER CREEK
			DWIGHT R DENTON Total		40.00		
A025711	17843	12515	ECHO LANE INVESTORS	4/6/1978	110.00	El Dorado	INDIAN CREEK
			ECHO LANE INVESTORS Total		110.00		
A013369	8403	5210	EDWARD MACKAY	9/28/1949	9.50	El Dorado	UNCR
			EDWARD MACKAY Total		9.50		
A026573	19066	12660	EDWARD L PURKEY	10/8/1980	1.40	El Dorado	UNST
			EDWARD L PURKEY Total		1.40		
A012475	7386	3889	EDWARD P AKIN	4/14/1948	40.00	El Dorado	UNST
			EDWARD P AKIN Total		40.00		
A001692	1053	2184	EL DORADO IRRIGATION DISTRICT	3/25/2008	1,125.00	El Dorado	NORTH FORK WEBER CREEK
			EL DORADO IRRIGATION DISTRICT Total		1,125.00		
A019532	13536	8231	ELAINE BARKER	7/8/1960	1.20	Placer	UNST
			ELAINE BARKER Total		1.20		
A012875	7654	4021	ELISABETH MILLER	12/23/1948	25.00	El Dorado	COLD SPRINGS CREEK
A014603	8953	5587	ELISABETH MILLER	12/14/1951	15.00	El Dorado	UNST
			ELISABETH MILLER Total		40.00		
A022364	15320	9022	ELIZABETH CRONIN	1/13/1966	0.10	El Dorado	UNST
			ELIZABETH CRONIN Total		0.10		
A011628	6789	3206	ELIZABETH A NILES	11/18/1946	0.80	El Dorado	UNSP
			ELIZABETH A NILES Total		0.80		
A018541	12027	9676	EMIGRANT GAP MUTUAL WATER CO	2/19/1959	73.00	Placer	BLUE CANYON CREEK, UNST
			EMIGRANT GAP MUTUAL WATER CO Total		73.00		
A024535	17217	11424	ERLINE M MELLO	1/25/1974	16.00	El Dorado	COLOMA CANYON CREEK
			ERLINE M MELLO Total		16.00		
A011523B	6700	005447B	Estate of Rudolf K. Sachau	8/21/1946	36.40	Placer	UNSP
A025016	17647	11750	Estate of Rudolf K. Sachau	3/5/1976	1.00	Placer	UNSP
			Estate of Rudolf K. Sachau Total		37.40		
A026825	18611	12395	ESTHER E TOWNZEN	5/11/1981	2.10	El Dorado	UNST
			ESTHER E TOWNZEN Total		2.10		
A019826	12972	9337	EUGENE FILEV	10/24/1960	2.00	El Dorado	UNSP (3)
			EUGENE FILEV Total		2.00		
A006431	3395	1287	EUGENE LANGENBACH	9/10/1929	0.10	El Dorado	UNST
			EUGENE LANGENBACH Total		0.10		
A016037	10068	5822	EUGENE A WILSON	9/8/1954	1.40	El Dorado	UNST
			EUGENE A WILSON Total		1.40		
A025631	17347	11246	EUGENE H MEYER	1/3/1978	0.20	El Dorado	BURNT SHANTY CREEK
			EUGENE H MEYER Total		0.20		
A000548	258	176	EVELYN T WICKS	12/28/1916	53.70	Placer	SECRET RAVINE
			EVELYN T WICKS Total		53.70		
A012318	7162	4341	EVERETT B DYER III	2/11/1948	2.00	El Dorado	SOUTH FORK TENNESSEE CREEK
			EVERETT B DYER III Total		2.00		
A019553	12930	7751	FARHAD MORTAZAVI	7/18/1960	1.70	Placer	UNST
			FARHAD MORTAZAVI Total		1.70		
A016544	10554	6167	FAY F CARVER	8/23/1955	1.60	Placer	UNST
			FAY F CARVER Total		1.60		
A018211A	11657	9366	FAY LOUIE LIVING REVOCABLE TRUST OF 5/11/01	7/9/1958	10.00	El Dorado	GREEN SPRING CREEK

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A022226	15448	9324	FAY LOUIE LIVING REVOCABLE TRUST OF 5/11/01	7/16/1965	17.00	El Dorado	GREEN SPRINGS CREEK
			FAY LOUIE LIVING REVOCABLE TRUST OF 5/11/01 Total		27.00		
A031074	21172		FLA Roseville LP	8/5/2005	49.00	Placer	UNST
			FLA Roseville LP Total		49.00		
A018551	13584	9959	FORESTHILL PUBLIC UTILITY DISTRICT	2/24/1959	81.00	Placer	MILL CREEK
A021945	15375		FORESTHILL PUBLIC UTILITY DISTRICT	10/22/1964	24,075.80	Placer	NORTH SHIRTTAIL CANYON
A024596	16644	13038	FORESTHILL PUBLIC UTILITY DISTRICT	4/22/1974	166.80	Placer	MILL CREEK
			FORESTHILL PUBLIC UTILITY DISTRICT Total		24,323.60		
A012131	7200	5976	FOUR CORNERS LANDOWNERS ASSOC	10/16/1947	587.00	El Dorado	JACOBS CREEK
			FOUR CORNERS LANDOWNERS ASSOC Total		587.00		
A007776	4364	2233	FRANCINE MARQUIS	12/5/1933	0.40	El Dorado	UNST
			FRANCINE MARQUIS Total		0.40		
A029955	20661		FRANCIS P ALLEN TRUST	5/15/1991	2.50	El Dorado	PEACOCK RAVINE
			FRANCIS P ALLEN TRUST Total		2.50		
A006540	3509	1119	FRANK D MORILLAS	1/20/1930	61.10	Placer	SECRET RAVINE
			FRANK D MORILLAS Total		61.10		
A020339	13427	8239	FRANK P ROMANO	8/2/1961	3.40	El Dorado	UNSP
			FRANK P ROMANO Total		3.40		
A024683	17146	11477	FRED H RUSSELL III	8/30/1974	6.00	El Dorado	UNST
			FRED H RUSSELL III Total		6.00		
A011588A	6729	003374A	FREDERICK R MCLAREN	9/20/1982	8.80	El Dorado	INDIAN CREEK
A011588B	6729	003374B	FREDERICK R MCLAREN	9/20/1982	8.80	El Dorado	INDIAN CREEK
A011588C02	6729	003374C02	FREDERICK R MCLAREN	12/13/1985	75.70	El Dorado	INDIAN CREEK
A016368A	10290	008701A	FREDERICK R MCLAREN	9/20/1982	3.80	El Dorado	INDIAN CREEK
A016368B	10290	008701B	FREDERICK R MCLAREN	9/20/1982	3.80	El Dorado	INDIAN CREEK
A016368C02	10290	008701C02	FREDERICK R MCLAREN	12/13/1985	43.60	El Dorado	INDIAN CREEK
			FREDERICK R MCLAREN Total		144.50		
A003405	2329	2053	GAEL M BARSOTTI	5/18/1923	188.40	El Dorado	BRUSH CANYON
A020305	14796	9696	GAEL M BARSOTTI	7/18/1961	70.20	El Dorado	BRUSH CANYON
A020306	14797	9679	GAEL M BARSOTTI	7/18/1961	70.20	El Dorado	BRUSH CANYON
A020307	14798	9680	GAEL M BARSOTTI	7/18/1961	70.20	El Dorado	BRUSH CANYON
			GAEL M BARSOTTI Total		399.00		
A026060	18050	11935	GAIL IRENE WHITE	8/8/1979	0.40	Placer	UNST
			GAIL IRENE WHITE Total		0.40		
A007013	3806	1699	GALE A MCGUIRE	7/20/1931	0.30	El Dorado	BULL CREEK
			GALE A MCGUIRE Total		0.30		
A018657	12072	6495	GARY T MATSON	4/21/1959	9.00	El Dorado	UNST
			GARY T MATSON Total		9.00		
A018158	11644	8402	GEOFF H JOHNSON	5/26/1958	72.20	El Dorado	UNSP, UNST
			GEOFF H JOHNSON Total		72.20		
A015252	9538	7761	George Popescu	3/24/1953	15.00	El Dorado	KELLEY CREEK
			George Popescu Total		15.00		
A015522	10016	7542	George & Geri Grant LP	9/2/1953	36.20	Placer	OWL CREEK, UNST
			George & Geri Grant LP Total		36.20		
A002458	1632	486	GEORGE A FARIS	7/27/1921	0.40	El Dorado	UNSP (2)
			GEORGE A FARIS Total		0.40		
A016763	10509	5508	GEORGE A LAY	12/5/1955	11.00	Placer	UNDR
			GEORGE A LAY Total		11.00		

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A022996	15659	10207	GEORGE ANGELO TSAKOPOULOS	2/28/1968	15.00	Sacramento	ALDER CREEK
			GEORGE ANGELO TSAKOPOULOS Total		15.00		
A018004	11546	8163	GEORGE L COX	2/18/1958	36.70	Placer	UNST
A021211	14210	8855	GEORGE L COX	3/29/1963	8.60	Placer	UNST
			GEORGE L COX Total		45.30		
A013131	7830	3813	GEORGE W SHRIVER	6/2/1949	0.20	El Dorado	SOUTH FORK AMERICAN RIVER
			GEORGE W SHRIVER Total		0.20		
A005644A	12827		GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT	3/24/2000	74,347.90	El Dorado	PILOT CREEK
							BACON CANYON, BRANCH OF FIRST CANYON OTTER CREEK, BRANCH OF SECOND CANYON OTTER CREEK, BRANCH OF THIRD CANYON OTTER CREEK, DEEP CANYON, PILOT CREEK, UNXX, UNXX (2)
A016212	11304		GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT	3/24/2000	20,000.00	El Dorado	
A016688	11306		GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT	10/24/1955	20,363.90	El Dorado	ONION CREEK
			GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT Total		114,711.80		
A018487	11895	7157	GERALD E HAWKINS	1/23/1959	8.10	El Dorado	UNSP
			GERALD E HAWKINS Total		8.10		
A002944	1193	296	Gerald R Decamp	7/26/1922	0.30	El Dorado	COLD STREAM
			Gerald R Decamp Total		0.30		
A007305	3982	1701	GILBERT A ALBIANI	6/27/1932	0.20	El Dorado	UNSP
			GILBERT A ALBIANI Total		0.20		
A018566	11912	6634	GLEN EASTMAN	3/4/1959	0.90	El Dorado	UNSP, UNST
			GLEN EASTMAN Total		0.90		
A015804	9984	8171	GORDON J VICINI	3/30/1954	98.80	El Dorado	BURNT SHANTY CREEK, UNST
			GORDON J VICINI Total		98.80		
A011588C01	6729	003374C01	GREENSTONE COUNTRY OWNER'S ASSOC	12/13/1985	101.80	El Dorado	INDIAN CREEK
A016368C01	10290	008701C01	GREENSTONE COUNTRY OWNER'S ASSOC	12/13/1985	210.90	El Dorado	INDIAN CREEK
A026722	18583	12463	GREENSTONE COUNTRY OWNER'S ASSOC	2/20/1981	30.00	El Dorado	UNST
A026815	18584	12461	GREENSTONE COUNTRY OWNER'S ASSOC	5/1/1981	1.70	El Dorado	UNST
A026816	18585	12599	GREENSTONE COUNTRY OWNER'S ASSOC	5/1/1981	3.80	El Dorado	UNST
A026817	18586	12600	GREENSTONE COUNTRY OWNER'S ASSOC	5/1/1981	39.00	El Dorado	UNST
A026818	18587	12462	GREENSTONE COUNTRY OWNER'S ASSOC	5/1/1981	4.10	El Dorado	UNST
			GREENSTONE COUNTRY OWNER'S ASSOC Total		391.30		
A003793	1743	590	GREGORY D HAWES	1/10/1924	0.60	El Dorado	COLD STREAM
			GREGORY D HAWES Total		0.60		
A015043	9282	6572	GREGORY M WATSON	10/7/1952	5.00	Placer	UNST
			GREGORY M WATSON Total		5.00		
A016508	10555	5837	GREGORY W PAINTER	10/22/1959	0.10	El Dorado	UNSP (2)
			GREGORY W PAINTER Total		0.10		
A027615	18865	12406	HARLEY DELANO	12/20/1982	0.90	El Dorado	UNST
			HARLEY DELANO Total		0.90		
A026099	18080	11266	HENRIETTA DENNIS	9/27/1979	1.30	El Dorado	UNSP
			HENRIETTA DENNIS Total		1.30		
A006797	3653	1400	HENRIK KAM	9/17/1930	0.20	El Dorado	FORNI CREEK
			HENRIK KAM Total		0.20		
A014439	8850	4857	HENRY TEICHERT	8/23/1951	3.00	Placer	UNXX

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A015338	9553	5071	HENRY TEICHERT	5/12/1953	20.00	Placer	GRAPEVINE RAVINE
			HENRY TEICHERT Total		23.00		
A013839	8361	5452	HENRY WALTHER	7/6/1950	38.00	Placer	UNST
A015077	9273	5687	HENRY WALTHER	11/5/1952	16.00	Placer	UNST
			HENRY WALTHER Total		54.00		
A013419	7692	5430	HIDDEN VALLEY COMMUNITY ASSOC	10/26/1949	165.50	Placer	MINERS RAVINE
A014525	8892	5431	HIDDEN VALLEY COMMUNITY ASSOC	10/16/1951	57.30	Placer	MINERS RAVINE, UNST
			HIDDEN VALLEY COMMUNITY ASSOC Total		222.80		
A012364	8127	4118	JACALYN GAY WINJE	2/27/1948	12.30	El Dorado	UNST
			JACALYN GAY WINJE Total		12.30		
A024351A	017135A	12736	JACK E DEL CONTE	4/27/1990	1.40	Sacramento	LINDA CREEK
			JACK E DEL CONTE Total		1.40		
A008756	4822	2431	JACK R WEAVER	8/8/1936	0.20	El Dorado	UNSP
			JACK R WEAVER Total		0.20		
A025930	17740	11751	JAMES HART	2/28/1979	15.00	El Dorado	UNST
			JAMES HART Total		15.00		
A014370	8994	5229	JAMES PETRIKIN	6/27/1951	50.70	Placer	DIRTY FACE RAVINE
			JAMES PETRIKIN Total		50.70		
A025854	17735	12594	JAMES A CROFF	10/13/1978	6.80	El Dorado	UNST
			JAMES A CROFF Total		6.80		
A007294	3973	1684	JAMES A WATT	6/16/1932	0.20	Alpine	UNSP
			JAMES A WATT Total		0.20		
A009643	5394	2489	JAMES D & JANIS L ALDEA REVOKABLE TRUST	6/26/1939	0.10	El Dorado	UNST
A010477	6004	2967	JAMES D & JANIS L ALDEA REVOKABLE TRUST	6/12/1942	0.30	El Dorado	UNST
			JAMES D & JANIS L ALDEA REVOKABLE TRUST Total		0.40		
A028184	19584	12693	JAMES D MCLAIN	7/6/1984	0.30	El Dorado	UNST
			JAMES D MCLAIN Total		0.30		
A028474	19727	13389	JAMES G CLARK	6/12/1985	0.50	El Dorado	UNST
			JAMES G CLARK Total		0.50		
A012124	7129	6648	JAMES W ARNOLD	10/8/1947	14.00	El Dorado	NORTON RAVINE
			JAMES W ARNOLD Total		14.00		
A019052A	12310	10056	JAMI MANDEL	10/29/1959	7.10	Placer	UNST
			JAMI MANDEL Total		7.10		
A023041	15939	11075	JANICE M SUTHERLAND	5/10/1968	45.00	El Dorado, Placer	CLIPPER CREEK, UNST
			JANICE M SUTHERLAND Total		45.00		
A004597B		000948B	JASON CARDINET	8/20/2004	16.30	Placer	AUBURN RAVINE
			JASON CARDINET Total		16.30		
A004781	2403	943	JEFF LITTLE	9/24/1925	0.40	El Dorado	SOUTH FORK AMERICAN RIVER
			JEFF LITTLE Total		0.40		
A020490	13614	8160	JEFF WEAVER	11/10/1961	1.40	El Dorado	MOSQUITO CREEK
			JEFF WEAVER Total		1.40		
A010751	6237	3966	JEFFREY TILFORD	1/18/1944	149.30	Placer	UNST
A014545	9004	5160	JEFFREY TILFORD	11/1/1951	21.20	Placer	UNXX
			JEFFREY TILFORD Total		170.50		
A022817	15561	11707	JEFFREY C OLSON	6/14/1967	23.00	El Dorado	MARTEL CREEK, UNST
			JEFFREY C OLSON Total		23.00		
A013542	8041	4134	JEFFREY R LEONG	1/18/1950	85.30	Placer	UNCR
			JEFFREY R LEONG Total		85.30		
A014884	9127	8123	JEFFREY S HUBER	7/1/1952	12.00	Placer	CAPS RAVINE

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			JEFFREY S HUBER Total		12.00		
A005601	2905	1003	JEREMIAH FLYNN	7/11/1927	0.30	El Dorado	UNSP
			JEREMIAH FLYNN Total		0.30		
A013502	8031	4853	Jerome Vickrey	12/7/1949	0.80	El Dorado	UNST
			Jerome Vickrey Total		0.80		
A024109	16523	10713	JERRY DUNCAN	7/6/1972	9.00	Placer	UNST
			JERRY DUNCAN Total		9.00		
A019185	12425	7817	JERRY JOHNSON	1/18/1960	35.00	Placer	UNST
			JERRY JOHNSON Total		35.00		
A019392	13781	8664	JERRY W BALLEW	4/26/1960	2.80	El Dorado	UNSP
			JERRY W BALLEW Total		2.80		
A025855	17736	11800	JOANNE K BATEMAN	10/13/1978	15.00	El Dorado	UNST
			JOANNE K BATEMAN Total		15.00		
A012156	7142	3777	JOHN BRIGGS	11/17/1947	10.00	El Dorado	UNST
			JOHN BRIGGS Total		10.00		
A015662	9733	6523	JOHN METROPULOS III	12/28/1953	5.30	El Dorado	SOUTH FORK AMERICAN RIVER
			JOHN METROPULOS III Total		5.30		
A009199	5174	2571	John A. Cunningham	12/3/1937	0.10	El Dorado	COLD STREAM
			John A. Cunningham Total		0.10		
A011813	6852	4317	JOHN C SUNDIN	4/4/1947	1.10	El Dorado	CHUNK CREEK
			JOHN C SUNDIN Total		1.10		
A020259	13374	8114	JOHN E MARLOW	6/12/1961	16.20	El Dorado	UNST
A020514	13836	10791	JOHN E MARLOW	12/5/1961	15.60	El Dorado	UNST
			JOHN E MARLOW Total		31.80		
A007662	4251	1980	JOHN H PETERSON	9/6/1933	0.20	El Dorado	UNSP
			JOHN H PETERSON Total		0.20		
A021802	14569	9251	JOHN P HENDERSON	5/29/1964	28.00	El Dorado	IRISH CREEK
			JOHN P HENDERSON Total		28.00		
A018157	11643	8687	John Ryan Neil	5/26/1958	185.30	El Dorado	UNST
			John Ryan Neil Total		185.30		
A017223	11314	6248	JOHN T LUKKONEN	8/9/1956	266.50	Placer	SAILORS RAVINE
			JOHN T LUKKONEN Total		266.50		
A002190	1003	510	JON KNUDSEN	11/16/1948	87.00	Placer	CAPS RAVINE
			JON KNUDSEN Total		87.00		
A023302	15955	11159	JOSEPH MALONEY	7/2/1969	14.70	El Dorado	UNST
			JOSEPH MALONEY Total		14.70		
A030402	20968	13804	JOSEPH M KEATING	4/6/2010	14.00	El Dorado	UNST
			JOSEPH M KEATING Total		14.00		
A012999	7757	4363	JOSEPH S LANZA	3/24/1949	173.80	El Dorado	FISH CREEK
			JOSEPH S LANZA Total		173.80		
A018684	12034	7387	JOSH L WILSON JR	4/30/1959	3.40	Placer	UNSP
			JOSH L WILSON JR Total		3.40		
A025560	17345	12476	KARL HEMPFLING	11/10/1977	4.00	El Dorado	UNST
A025567	17346	11420	KARL HEMPFLING	11/15/1977	2.40	El Dorado	UNST
			KARL HEMPFLING Total		6.40		
A012240	7239	6374	KATHERINE A TUTTLE	1/13/1948	70.00	El Dorado	WHITE ROCK CANYON
			KATHERINE A TUTTLE Total		70.00		
A025728	17560	12394	KEN JOSEPH	3/17/1989	1.10	El Dorado	UNST
			KEN JOSEPH Total		1.10		
A024875	16908	13688	KENNETH PIMENTEL	12/13/2006	2.50	El Dorado	BRUSHY CANYON

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			KENNETH PIMENTEL Total		2.50		
A013616	8147	3839	KENNETH SAYLOR	3/6/1950	0.20	El Dorado	UNST
			KENNETH SAYLOR Total		0.20		
A027651	19312		KENNETH WILSON	2/10/1983	8,398.10	El Dorado	CANYON CREEK
			KENNETH WILSON Total		8,398.10		
A006685	3565	1290	KENNETH J MAGRI	5/21/1930	0.30	El Dorado	UNCR
			KENNETH J MAGRI Total		0.30		
A018579	11931	7229	KENNETH J TURTON	3/30/1965	15.00	Placer	MORMON RAVINE
			KENNETH J TURTON Total		15.00		
A012885	7656	4479	KENNETH S HILL	12/29/1948	36.00	El Dorado	UNST
			KENNETH S HILL Total		36.00		
A013146	7822	3824	KEVIN CAIRNS	6/9/1949	0.20	El Dorado	EVANS CREEK
			KEVIN CAIRNS Total		0.20		
A010212	5851	3524	KIRKWOOD MOUNTAIN RESORT LLC	5/28/1941	0.20	Alpine	UNSP
A030062	20851		KIRKWOOD MOUNTAIN RESORT LLC	2/7/1992	250.00	Alpine	CAPLES LAKE
A030453	20852		KIRKWOOD MOUNTAIN RESORT LLC	6/8/1995	250.00	Alpine	CAPLES LAKE
			KIRKWOOD MOUNTAIN RESORT LLC Total		500.20		
A010484	6044	3289	KRISTAN OTTO	6/26/1942	0.10	El Dorado	SOUTH FORK AMERICAN RIVER
			KRISTAN OTTO Total		0.10		
A008623	4765	3541	KYBURZ MUTUAL WATER COMPANY	3/30/1936	1.10	El Dorado	SOUTH FORK AMERICAN RIVER
A026486	18511		KYBURZ MUTUAL WATER COMPANY	8/7/1980	146.00	El Dorado	UNST, UNST (2)
			KYBURZ MUTUAL WATER COMPANY Total		147.10		
A013718	8159	4471	LAGUNA HOMEOWNERS ASSOCIATION	5/3/1950	10.00	Placer	UNST
			LAGUNA HOMEOWNERS ASSOCIATION Total		10.00		
A016650	10445	7204	LAKEVIEW HILLS COMMUNITY ASSOCIATION	3/10/1965	113.60	Placer	CARROLL CREEK, MINERS RAVINE
			LAKEVIEW HILLS COMMUNITY ASSOCIATION Total		113.60		
A012040	7093	4445	LARANE INVESTMENTS	8/13/1947	18.00	Placer	GRAPEVINE RAVINE
			LARANE INVESTMENTS Total		18.00		
A025667	17805	11717	LARISA LYSAK	2/2/1978	0.90	Placer	UNST
			LARISA LYSAK Total		0.90		
A021888	15625	10773	Larry Bowser	8/31/1964	2.10	Placer	UNST
			Larry Bowser Total		2.10		
A018617	12314	7997	LARRY JONES	3/31/1959	7.80	Placer	UNST
			LARRY JONES Total		7.80		
A024514A	16976	11409	LARRY R GOULDEN	1/25/1984	12.00	El Dorado	UNST
			LARRY R GOULDEN Total		12.00		
A007316	4014	1942	LAWRENCE E SWENSON	7/8/1932	0.10	El Dorado	UNST
			LAWRENCE E SWENSON Total		0.10		
A021225	14566	10002	LAWRENCE L CABODI	4/8/1963	2.20	El Dorado	UNSP
			LAWRENCE L CABODI Total		2.20		
A008356	4626	1933	LAWRENCE T WELDEN	6/11/1935	0.10	El Dorado	UNSP
			LAWRENCE T WELDEN Total		0.10		
A028467	19739		LEE A CHIUSANO	6/4/1985	2.80	El Dorado	UNST
			LEE A CHIUSANO Total		2.80		
A025315	17212	11457	LEE F SMITH	3/31/1977	7.00	El Dorado	TENNESSEE CREEK
			LEE F SMITH Total		7.00		
A020840	13791	8411	LEO E FINNERAN	7/3/1962	4.00	El Dorado	UNCR
			LEO E FINNERAN Total		4.00		
A013519	8104	5414	LEON M GASTALDI	12/27/1949	83.00	El Dorado	UNST

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A013292	7867	3787	LEON M GASTALDI Total		83.00		
			LEV V RIKOFF	8/11/1949	0.30	El Dorado	UNSP
A002011	937	152	LEV V RIKOFF Total		0.30		
			LEZLIE ELAINE DORSETT	9/18/1920	0.20	El Dorado	UNSP
A026523	18777	12447	LEZLIE ELAINE DORSETT Total		0.20		
			LINDA D WALDECK	9/11/1980	0.30	Placer	UNST
A019325	12555	8113	LINDA D WALDECK Total		0.30		
			LINDA R MURRAY	3/24/1960	9.00	Placer	UNST
A021407	14357	8866	LINDA R MURRAY Total		9.00		
			LINZY L COTHAM JR	7/24/1963	26.60	El Dorado	UNST
A019825	12971	8225	LINZY L COTHAM JR Total		26.60		
			Lionell Williams Trust	10/24/1960	4.50	El Dorado	UNSP
A013318	7868	3788	Lionell Williams Trust Total		4.50		
			LOIS PENMAN	8/29/1949	0.30	El Dorado	UNSP
A018512	12002	7506	LOIS PENMAN Total		0.30		
A030239	20915		LORI JANOWSKI	1/29/1959	25.00	El Dorado	UNCR
			LORI JANOWSKI	3/23/1993	6.00	El Dorado	UNST
A029223	20717	13677	LORI JANOWSKI Total		31.00		
			LOUIS W HEBERT	11/27/2006	1.20	Placer	UNST
A013612	8402	3842	LOUIS W HEBERT Total		1.20		
			LUCILLE HONIG	3/1/1950	10.00	El Dorado	DUTCH MARY RAVINE
A003910	1970	586	LUCILLE HONIG Total		10.00		
			LYDIA BACA	3/18/1924	0.10	El Dorado	UNSP
A026406	18219	12068	LYDIA BACA Total		0.10		
			MARC ALLISON	6/6/1980	0.20	Placer	UNST
A019764	12790	7667	MARC ALLISON Total		0.20		
			MARCIA C TAFFY WARNER	9/30/1960	19.00	El Dorado	MOSQUITO CREEK
A014410	9394	5598	MARCIA C TAFFY WARNER Total		19.00		
			MARK FOSTER	7/30/1951	29.20	Placer	SECRET RAVINE
A011258B	6528	9363	MARK FOSTER Total		29.20		
			MARK HANNUM	1/10/1946	11.80	Placer	UNST
A026934	18880	12449	MARK HANNUM Total		11.80		
			MARTHA J CROWL	7/30/1981	0.60	Placer	UNST
A010344	5940	3071	MARTHA J CROWL Total		0.60		
			Mary Hillabrand	12/12/1941	0.10	El Dorado	UNSP
A008163	4500	3553	Mary Hillabrand Total		0.10		
			MARY WOOD	11/20/1934	3.40	El Dorado	UNSP
A007070	3919	1555	MARY WOOD Total		3.40		
			Mary Leslie Rev. Trust	9/1/1931	0.10	El Dorado	UNST
A020796	13838	8489	Mary Leslie Rev. Trust Total		0.10		
			MELINDA S LAU	5/29/1962	149.50	El Dorado	SHENOGLA CREEK
A019880	13228	10465	MELINDA S LAU Total		149.50		
A021480	14567	10466	MHC TT, INC.	12/16/1960	152.00	Placer	KELLY CREEK
			MHC TT, INC.	10/1/1963	44.00	Placer	KELLY CREEK
A009026	5162	2557	MHC TT, INC. Total		196.00		
			MICHAEL HICKOX	6/28/1937	0.20	El Dorado	UNST
A027979	19335	12741	MICHAEL HICKOX Total		0.20		
			Michael K Baughman	2/17/1984	6.00	Placer	UNST
A014244	9003	4648	Michael K Baughman Total		6.00		
			Michael K Baughman	4/10/1951	161.30	Placer	UNXX

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			Michael K Baughman Total		161.30		
A026057	17953	12833	MICHAEL KIM	7/30/1979	30.00	El Dorado	UNST
			MICHAEL KIM Total		30.00		
A018653	12245	7914	MICHAEL MCCARTY	4/20/1959	3.80	Placer	UNST
			MICHAEL MCCARTY Total		3.80		
A009463	5323	2485	MICHAEL CARL VISMAN	8/4/1942	543.00	El Dorado	COON GULCH
			MICHAEL CARL VISMAN Total		543.00		
A014620	9007	5860	MICHAEL R POSEHN	1/15/1952	1.00	Placer	UNST
			MICHAEL R POSEHN Total		1.00		
A030430	20999		Michael W Dennis	11/22/1994	10.00	Placer	UNST
			Michael W Dennis Total		10.00		
A017382	10898	7668	Michelle D. Menard	12/7/1956	19.00	El Dorado	UNST
			Michelle D. Menard Total		19.00		
A020086	13353	9954	MICHIGAN BLUFF MUTUAL WATER COMPANY	4/13/1961	2.50	Placer	UNXX
A020653	13784	9955	MICHIGAN BLUFF MUTUAL WATER COMPANY	3/14/1962	8.10	Placer	UNSP
A024997	17213	11598	MICHIGAN BLUFF MUTUAL WATER COMPANY	2/18/1976	8.10	Placer	UNSP
A027642	19719	13254	MICHIGAN BLUFF MUTUAL WATER COMPANY	1/31/1983	3.40	Placer	UNSP (AKA BOHEA MINE TUNNEL)
			MICHIGAN BLUFF MUTUAL WATER COMPANY Total		22.10		
A024514B	16976	11410	MIKE LEMIRE	1/25/1984	10.00	El Dorado	SWEETWATER CREEK
A027602	18877	12443	MIKE LEMIRE	4/25/1989	7.00	El Dorado	SWEETWATER CREEK
			MIKE LEMIRE Total		17.00		
A026427	18499	13619	MINERS COVE HOMEOWNERS ASSOCIATION	11/21/2005	15.00	Placer	MINERS RAVINE
			MINERS COVE HOMEOWNERS ASSOCIATION Total		15.00		
A021616	14965	9252	MINERS RAVINE ESTATES HOMEOWNERS ASSOCIATION	1/24/1964	21.00	Placer	MINERS RAVINE
			MINERS RAVINE ESTATES HOMEOWNERS ASSOCIATION Total		21.00		
A017414	12359	7015	MITCHELL D HOPE	3/20/1964	25.50	Placer	MINERS RAVINE
			MITCHELL D HOPE Total		25.50		
A011264	6934	10829	MT RALSTON PROPERTIES ASSN INC	8/2/2005	13.20	El Dorado	TAMARACK CREEK
A015623	10214	10830	MT RALSTON PROPERTIES ASSN INC	8/2/2005	6.00	El Dorado	TAMARACK CREEK
A026577	18519	12457	MT RALSTON PROPERTIES ASSN INC	8/2/2005	23.60	El Dorado	UNSP
			MT RALSTON PROPERTIES ASSN INC Total		42.80		
A018485	12089	9025	N JON NELSON	1/21/1959	3.10	El Dorado	CHINA CREEK
			N JON NELSON Total		3.10		
A009358	5288	2246	NANCY BAUER	7/29/1938	0.10	El Dorado	UNST
			NANCY BAUER Total		0.10		
A011097	6445	3024	NANCY BALCH-PRICE FISCHER	7/5/1945	0.10	Alpine	UNSP
			NANCY BALCH-PRICE FISCHER Total		0.10		
A004027	1878	893	NANCY E DOLCINI	6/14/1924	0.70	El Dorado	UNSP
			NANCY E DOLCINI Total		0.70		
A006529	5805	4403	NEVADA IRRIGATION DISTRICT	1/9/1930	3,411.60	Placer	AUBURN RAVINE
A008177	5812	12801	NEVADA IRRIGATION DISTRICT	11/27/1934	1,580.00	Placer	UNST (AKA WILSON CRK)
			NEVADA IRRIGATION DISTRICT Total		4,991.60		
A019872	13025	8108	New Forestry, LLC	12/9/1960	3.70	Placer	UNSP
			New Forestry, LLC Total		3.70		
A017207	10885	8289	NIKOLAI BARADIN	8/3/1956	35.00	El Dorado	UNST
			NIKOLAI BARADIN Total		35.00		

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A025424	17385	12027	NORMA JEAN SCHNEIDER	7/11/1977	2.10	El Dorado	UNST
A025425	17386	11497	NORMA JEAN SCHNEIDER	7/11/1977	2.00	El Dorado	UNST
			NORMA JEAN SCHNEIDER Total		4.10		
A025144	19837	13175	NORTH CANYON LAKE ASSOCIATION	9/10/1976	35.00	El Dorado	NORTH CANYON CREEK
			NORTH CANYON LAKE ASSOCIATION Total		35.00		
A014794	9291	9738	NORTH FORK ASSOCIATION	5/5/1952	22.00	Placer	FREEMAN CREEK
			NORTH FORK ASSOCIATION Total		22.00		
A011836	6927	4243	NORTHERN CALIFORNIA CONFERENCE ASSOC OF 7TH DAY ADVENTISTS	4/22/1947	13.00	El Dorado	MOUND SPRINGS CREEK
A013592	8214	4244	NORTHERN CALIFORNIA CONFERENCE ASSOC OF 7TH DAY ADVENTISTS	2/20/1950	20.00	El Dorado	MOUND SPRINGS CREEK
			NORTHERN CALIFORNIA CONFERENCE ASSOC OF 7TH DAY ADVENTISTS Total		33.00		
A004219	2598	941	ORENO J TONARELLI	9/17/1924	0.20	El Dorado	COLD STREAM
			ORENO J TONARELLI Total		0.20		
A026078	17930	11863	ORVILLE F SLINGSBY	8/28/1979	0.30	Placer	UNST
			ORVILLE F SLINGSBY Total		0.30		
A026633	18492	12411	OSCAR R CAMPBELL JR	11/25/1980	0.20	El Dorado	UNST
			OSCAR R CAMPBELL JR Total		0.20		
A014229	8620	6653	OUR LADY OF THE OAKS, A CALIF CORP	4/5/1951	63.00	Placer	UNST
			OUR LADY OF THE OAKS, A CALIF CORP Total		63.00		
A004597A	000948A		PATRIC JAMES HILLENBRAND LIVING TRUST	8/20/2004	21.00	Placer	AUBURN RAVINE
			PATRIC JAMES HILLENBRAND LIVING TRUST Total		21.00		
A021423	14598	8781	PATRICIA MCCORMICK	8/8/1963	0.20	El Dorado	STATION CREEK
			PATRICIA MCCORMICK Total		0.20		
A016326	11492	7303	Patty A Hooper	6/9/1965	318.60	Placer	UNST (2)
			Patty A Hooper Total		318.60		
A013994	8520	5323	PATTY BERRY	10/13/1950	2.50	El Dorado	UNSP
A022051	15106	9620	PATTY BERRY	2/24/1965	0.60	El Dorado	UNSP (2)
A022053	15108	9625	PATTY BERRY	2/24/1965	0.10	El Dorado	UNSP (2)
			PATTY BERRY Total		3.20		
A020326	13199	9365	Paul Perron	7/26/1961	23.00	Placer	UNST
			Paul Perron Total		23.00		
A006842	3735	1467	PAUL HEWES	12/6/1930	0.90	El Dorado	FORNI CREEK
			PAUL HEWES Total		0.90		
A017571C	11120	9733	PAUL NIPPERT	4/25/1957	4.10	Placer	ANTELOPE CREEK
			PAUL NIPPERT Total		4.10		
A024146	16670	10954	PAUL THOMASSON	8/17/1972	2.00	El Dorado	OTTER CREEK
			PAUL THOMASSON Total		2.00		
A004344	2305	1423	Paul A Zanetta	4/10/1934	18.10	El Dorado	MILL CREEK
			Paul A Zanetta Total		18.10		
A025973	17940	11867	PAUL S BURNS	4/16/1979	0.10	Placer	UNST
			PAUL S BURNS Total		0.10		
A013160	8316	4332	PAULA S DWELLY	6/17/1949	11.60	Placer	LIVE OAK RAVINE (AKA LIVE OAK CREEK)
			PAULA S DWELLY Total		11.60		
A007018	3808	1837	PAULINE RODGERS	7/25/1931	0.30	El Dorado	UNSP
			PAULINE RODGERS Total		0.30		
A016327	11493	7912	PETE JENSON	4/7/1967	32.00	Placer	UNST

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A018858	12718	7828	PETE JENSON Total PETER M LA TONA	7/15/1959	32.00 2.30	Placer	MINERS RAVINE
A001923	843	352	PETER M LA TONA Total PETER N BERBOHM	5/12/1924	2.30 30.30	Placer	SAILORS RAVINE
A003982	1791	1111	PETER N BERBOHM Total PETER R BOHLEY	5/8/1924	30.30 2.70	El Dorado	EVANS CREEK
A022299	15076	10250	PETER R BOHLEY	10/1/1965	0.20	El Dorado	EVANS CREEK
A013576	8457	4797	PETER R BOHLEY Total PILOT HILL ESTATES HOMEOWNERS ASSOC	2/9/1950	2.90 57.00	El Dorado	UNST
A018085	13856		PILOT HILL ESTATES HOMEOWNERS ASSOC Total PLACER COUNTY WATER AGENCY	4/7/1958	57.00 839,438.40	Placer, Sacramento	DUNCAN CANYON, MIDDLE FORK AMERICAN RIVER, NORTH FORK AMERICAN RIVER, RUBICON RIVER, MIDDLE FORK AMERICAN RIVER, NORTH FORK AMERICAN RIVER, NORTH FORK LONG CANYON, RUBICON RIVER, SOUTH FORK LONG CANYON
A018087	13858		PLACER COUNTY WATER AGENCY	4/8/1958	451,592.40	Placer, Sacramento	
A003887A	001093A		PLACER COUNTY WATER AGENCY Total PLASSE HOMESTEAD WATER ASSOCIATION	1/29/2003	1,291,030.80 1.10	Amador	UNSP, UNST
A003887B	001093B		PLASSE HOMESTEAD WATER ASSOCIATION Total PLASSE'S MEADOW GROUP LLC	1/29/2003	1.10 1.90	Amador	UNSP, UNST
A018095	11572	10371	PLASSE'S MEADOW GROUP LLC Total QUINTETTE SERVICE	4/17/1958	1.90 9.30	El Dorado	CRYSTAL SPRING
A019052B	12310	10057	QUINTETTE SERVICE Total R W VELON	7/20/2004	9.30 7.10		
A013520	8423	3833	R W VELON Total RALPH MILLER	12/27/1949	7.10 40.00	El Dorado	UNST
A026940	18496	12409	RALPH MILLER Total Randolph G Wilson	8/4/1981	40.00 1.00	El Dorado	UNST
A006801	3746	1802	Randolph G Wilson Total RAYMOND BENDER	9/20/1930	1.00 0.30	El Dorado	UNSP
A018189	11652	6789	RAYMOND BENDER Total RAYMOND KRINGEL	6/10/1963	0.30 1.70	El Dorado	UNST
A006414	3366	1803	RAYMOND KRINGEL Total RAYMOND A YOUNG	8/19/1929	1.70 0.10	El Dorado	UNSP
A013644	8219	5979	RAYMOND A YOUNG Total RAYMOND BEST PATCHEN	3/22/1950	0.10 110.00	El Dorado	MANHATTAN CREEK
A006410	3669	1904	RAYMOND BEST PATCHEN Total RAYMOND W LARSEN	8/16/1929	110.00 362.00	El Dorado	SOUTH FORK BRUSH CANYON
A019633	12835	7725	RAYMOND W LARSEN Total RICHARD E. FREY	8/1/1960	362.00 42.50	Placer	UNST
A007647	4207	1652	RICHARD E. FREY Total RICHARD FIELLEN	8/14/1933	42.50 1.10	El Dorado	ROCKY CANYON
A013829	8347	4092	RICHARD FIELLEN Total RICHARD C PAYNE & RUTH L PAYNE FAMILY TRUST	7/5/1950	1.10 0.10	El Dorado	UNSP

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			RICHARD C PAYNE & RUTH L PAYNE FAMILY TRUST Total		0.10		
A012184	7096	3602	RICHARD E AKIN	12/3/1947	29.20	El Dorado	UNST
			RICHARD E AKIN Total		29.20		
A008698	4803	2471	RICHARD K JONES	6/8/1936	0.10	El Dorado	UNST
			RICHARD K JONES Total		0.10		
A002262	938	491	RICHARD L GALLAGHER	3/15/1921	1.20	El Dorado	COLD STREAM
			RICHARD L GALLAGHER Total		1.20		
A028122	19361	12714	RICHARD SCOTT HEER	4/26/1984	3.00	El Dorado	UNST
			RICHARD SCOTT HEER Total		3.00		
A019328	12673	7810	RICK MANICA	3/28/1960	21.00	El Dorado	OTTER CREEK
			RICK MANICA Total		21.00		
A001778	819	789	RICK MASSIE	4/17/1975	27.00	Placer	CLOVER VALLEY CREEK
			RICK MASSIE Total		27.00		
A014377	8812	4865	Robert Aichele	6/28/1951	0.10	El Dorado	ROCKY CANYON
			Robert Aichele Total		0.10		
A009728	5617	2573	ROBERT BRUCIA	9/18/1939	0.10	El Dorado	STATION CREEK
			ROBERT BRUCIA Total		0.10		
A020627A	13629	008487A	ROBERT DEITZ II	8/13/1992	4.50	El Dorado	UNST
			ROBERT DEITZ II Total		4.50		
A024672	16897	11435	ROBERT B JORDAN	8/16/1974	14.90	El Dorado	JOHNTOWN CREEK
			ROBERT B JORDAN Total		14.90		
A024888	17819	12469	ROBERT D BERGTHOLD	9/29/1975	1.00	Placer	MINERS RAVINE
			ROBERT D BERGTHOLD Total		1.00		
A011142	6453	3354	ROBERT E JONES	5/24/1963	0.10	El Dorado	SOUTH FORK AMERICAN RIVER
			ROBERT E JONES Total		0.10		
A013740	8740	5312	Robert E Woodward, Jr	5/15/1950	33.00	Placer	UNST
			Robert E Woodward, Jr Total		33.00		
A024948	16889	11244	ROBERT H AND ERIKA L ANDERSON REVOCABLE TRUST	12/3/1975	4.30	El Dorado	UNST
			ROBERT H AND ERIKA L ANDERSON REVOCABLE TRUST Total		4.30		
A012181	7152	4478	ROBERT H POWELL	12/1/1947	7.00	El Dorado	UNST
			ROBERT H POWELL Total		7.00		
A025495	17339	13232	ROBERT I RIDGWAY	9/2/1977	1.40	El Dorado	UNST
			ROBERT I RIDGWAY Total		1.40		
A025453	17375	12048	ROBERT N DUPRIEST	8/10/1977	0.40	Placer	UNST
			ROBERT N DUPRIEST Total		0.40		
A006263	3318	1122	ROBERT P STANLEY	4/20/1929	0.10	El Dorado	UNSP
			ROBERT P STANLEY Total		0.10		
A020018	13096	7970	Roberta Kanter	3/6/1961	1.00	Placer	UNST
			Roberta Kanter Total		1.00		
A020827	13966	9648	RODNEY PIMENTAL	6/22/1962	5.00	El Dorado	UNST
			RODNEY PIMENTAL Total		5.00		
A028821	19942	13743	ROGER E TURNER	10/31/2007	1.30	Placer	DRY CREEK
			ROGER E TURNER Total		1.30		
A008951	4960	2152	ROLF W MORROW	4/22/1937	0.10	El Dorado	UNSP
			ROLF W MORROW Total		0.10		
A003934	1848	2369	RONALD JAVOR	3/31/1924	0.40	El Dorado	UNSP
			RONALD JAVOR Total		0.40		

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A007387	4140	1820	RONALD E MINER	9/23/1932	0.20	El Dorado	UNSP
			RONALD E MINER Total		0.20		
A003496	1509	488	RONALD J BELL	7/2/1923	0.30	El Dorado	UNSP
			RONALD J BELL Total		0.30		
A017173	11536	6987	RONALD J COLEMAN	7/12/1956	25.50	Placer	UNST
			RONALD J COLEMAN Total		25.50		
A012463	7383	3771	RONALD N HUSTON	4/7/1948	24.00	El Dorado	INDIAN CREEK, UNST
			RONALD N HUSTON Total		24.00		
A021171	14326	9258	RONALD ROSS CLOVER	2/27/1963	1.70	Placer	SECRET RAVINE
			RONALD ROSS CLOVER Total		1.70		
A013233	7831	10052	ROSE ANN GUTIERREZ	7/13/1949	121.00	El Dorado	PILOT CREEK
A023937	16494	11030	ROSE ANN GUTIERREZ	12/6/1971	19.00	El Dorado	PILOT CREEK
A023938	16493	11031	ROSE ANN GUTIERREZ	12/6/1971	16.00	El Dorado	UNST
			ROSE ANN GUTIERREZ Total		156.00		
A021876	14859	9227	RSC DEVELOPMENT CORPORATION	8/24/1964	57.10	Placer	DUTCH RAVINE
			RSC DEVELOPMENT CORPORATION Total		57.10		
A023903	16642	10803	RYAN ENNIS	10/22/1971	0.90	El Dorado	UNSP
			RYAN ENNIS Total		0.90		
A025122	16986	11267	S360 Granite Lakes LLC	8/2/1976	10.00	Placer	UNST
			S360 Granite Lakes LLC Total		10.00		
A008011	4474	2509	SACRAMENTO MOUNTAINEERS	7/5/1934	1.00	El Dorado	UNSP
			SACRAMENTO MOUNTAINEERS Total		1.00		
A025316	17145	11453	SACRAMENTO VALLEY TEEN CHALLENGE INC	3/31/1976	6.00	Placer	UNST
			SACRAMENTO VALLEY TEEN CHALLENGE INC Total		6.00		
A026969	18764	13757	Saeed Zarakani	3/20/2008	3.00	Placer	UNST
			Saeed Zarakani Total		3.00		
A026137	18210	12245	SALLY MARKSTEIN	11/19/1979	1.40	Placer	UNST
			SALLY MARKSTEIN Total		1.40		
A005830	4009	6324	San Juan Water District	2/11/1928	4,581.90	Placer	NORTH FORK AMERICAN RIVER
			San Juan Water District Total		4,581.90		
A022515	15318	9950	SCHOENNAUER FAMILY PARTNERSHIP	6/30/1966	12.00	El Dorado	RINGOLD CREEK
			SCHOENNAUER FAMILY PARTNERSHIP Total		12.00		
A011917	7176	10135	SCHUBIN RANCH LP	6/5/1947	83.00	El Dorado	UNST
A013663	8222	10134	SCHUBIN RANCH LP	3/30/1950	150.00	El Dorado	UNST
A014778	9141	10136	SCHUBIN RANCH LP	4/25/1952	90.00	El Dorado	UNST
			SCHUBIN RANCH LP Total		323.00		
A003321	1554	5488	SCIOTS TRACT CABIN OWNERS ASSN	3/23/1923	15.60	El Dorado	CODY CREEK
			SCIOTS TRACT CABIN OWNERS ASSN Total		15.60		
A005683	3035	1201	SCOTT E ADAMS	9/7/1927	0.10	El Dorado	UNSP
			SCOTT E ADAMS Total		0.10		
A018320	11778	6978	SCOTT KRIGER	9/16/1958	1.30	El Dorado	CHINA CREEK
			SCOTT KRIGER Total		1.30		
A007340	4026	2295	Sharon Warden	8/6/1932	0.10	El Dorado	UNSP
A007341	4027	1584	Sharon Warden	8/6/1932	0.10	El Dorado	UNSP
			Sharon Warden Total		0.20		
A010325	5939	3291	SHARON L CAMERON	11/21/1941	0.10	El Dorado	UNSP
A020256A	13189	9779	SHARON L CAMERON	5/5/1971	2.60	El Dorado	WHITE ROCK CREEK
			SHARON L CAMERON Total		2.70		

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A028993	20394	13325	SHIRLAND LAKEVIEW ESTATES HOMEOWNERS ASSOC	3/24/1987	6.60	Placer	UNST
			SHIRLAND LAKEVIEW ESTATES HOMEOWNERS ASSOC Total		6.60		
A018955	12217	8621	SHIRLIE ROBERTS	9/1/1959	9.70	El Dorado	JOHNTOWN CREEK
			SHIRLIE ROBERTS Total		9.70		
A020601	14248		SIERRA LAKES COUNTY WATER DISTRICT	1/3/1964	1,177.00	Placer	ICE LAKES
			SIERRA LAKES COUNTY WATER DISTRICT Total		1,177.00		
A019114	12541	9031	SIERRA PACIFIC INDUSTRIES	12/2/1959	1.10	El Dorado	ONION CREEK
			SIERRA PACIFIC INDUSTRIES Total		1.10		
A028208B	019433B	13036	SILVER SPRINGS LLC	3/8/1991	0.50	El Dorado	UNST
			SILVER SPRINGS LLC Total		0.50		
A019119	12388	9032	SLEEPY HOLLOW OWNERS ASSOCIATION	12/3/1959	47.50	El Dorado	UNST
			SLEEPY HOLLOW OWNERS ASSOCIATION Total		47.50		
A010012	5671	7195	SOUTHFORK PARTNERSHIP	9/24/1940	23.00	Placer	BADGER RAVINE, UNST
			SOUTHFORK PARTNERSHIP Total		23.00		
A012180	7151	4477	STAR-CREST LUMBER, INC	12/1/1947	49.00	El Dorado	UNST
A013257	8373	4480	STAR-CREST LUMBER, INC	7/25/1949	7.70	El Dorado	UNST
			STAR-CREST LUMBER, INC Total		56.70		
A025310	17844	11713	STEPHEN HOFFMAN	3/29/1977	4.50	El Dorado	UNST
			STEPHEN HOFFMAN Total		4.50		
A006080	3181	2038	STEPHEN RULAND	10/3/1928	0.10	El Dorado	UNSP
			STEPHEN RULAND Total		0.10		
A021185	14483	10075	STEPHEN C MARIANOS	3/8/1963	6.00	El Dorado	WEBER CREEK
			STEPHEN C MARIANOS Total		6.00		
A025380	17876	12386	STEPHEN W BEAM	6/2/1977	0.60	El Dorado	UNST
			STEPHEN W BEAM Total		0.60		
A006549	3477	1888	STEVEN BENNETTS	2/4/1930	20.40	El Dorado	EMIGRANT RAVINE CREEK
			STEVEN BENNETTS Total		20.40		
A019922	13052	9923	STEVEN FORD	1/17/1961	3.20	El Dorado	UNST
			STEVEN FORD Total		3.20		
A015298	9533	5660	STONEWORTH INC	4/17/1953	73.30	Placer	SOUTH FORK DRY CREEK
A018752	12366	7519	STONEWORTH INC	5/29/1959	152.00	Placer	SOUTH FORK DRY CREEK
			STONEWORTH INC Total		225.30		
A020144	13369	8089	Susan McElhone	5/23/1961	0.10	Placer	UNST
			Susan McElhone Total		0.10		
A016885	10910	7612	SUSAN A FREDERICKS	2/8/1956	15.00	El Dorado	UNST
A021232	14404	10098	SUSAN A FREDERICKS	4/10/1963	7.20	El Dorado	UNST
			SUSAN A FREDERICKS Total		22.20		
A025340	17257	11601	Susan D Hobbs	4/22/1977	8.00	El Dorado	UNST
			Susan D Hobbs Total		8.00		
A026023	18081	11847	SWANSBORO COUNTRY PROPERTY OWNERS ASSOCIATION INC	6/13/1979	23.00	El Dorado	UNST
A026024	18082	11928	SWANSBORO COUNTRY PROPERTY OWNERS ASSOCIATION INC	6/13/1979	40.50	El Dorado	UNST
A026025	18083	11848	SWANSBORO COUNTRY PROPERTY OWNERS ASSOCIATION INC	6/13/1979	17.00	El Dorado	REDBIRD CREEK

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A026026	18084	11984	SWANSBORO COUNTRY PROPERTY OWNERS ASSOCIATION INC	6/13/1979	7.10	El Dorado	UNST
A026027	18085	11849	SWANSBORO COUNTRY PROPERTY OWNERS ASSOCIATION INC	6/13/1979	40.00	El Dorado	UNST
A028792	20056	13240	SWANSBORO COUNTRY PROPERTY OWNERS ASSOCIATION INC	2/3/1986	9.00	El Dorado	UNST
			SWANSBORO COUNTRY PROPERTY OWNERS ASSOCIATION INC Total		136.60		
A009269	5187	2694	SWORD & SANDALS INC	4/13/1938	0.60	El Dorado	UNCR
			SWORD & SANDALS INC Total		0.60		
A024351B	017135B	13157	TANYA M BOYD	4/27/1990	0.80	Sacramento	LINDA CREEK
			TANYA M BOYD Total		0.80		
A008791	4877	3191	TAYLOR T WHEELER	9/14/1936	0.10	El Dorado	UNSP
			TAYLOR T WHEELER Total		0.10		
A022478	15551	10769	TERENCE A HALL	5/27/1966	15.00	El Dorado	EMPIRE CREEK
			TERENCE A HALL Total		15.00		
A029233	20340		TERRIL R LUKENS EXEMPTION TRUST & LUKEN SURVIVOR'S TRUST UDT	4/19/1988	181.00	Placer	UNSP
			TERRIL R LUKENS EXEMPTION TRUST & LUKEN SURVIVOR'S TRUST UDT Total		181.00		
A007036	3799	1416	Terry D. Herringshaw	8/10/1931	0.20	El Dorado	UNSP
			Terry D. Herringshaw Total		0.20		
A011055	6442	3324	THE BRUCE & PAT BLAIKIE FAMILY TRUST DATED 5/20/1993	5/22/1945	0.20	El Dorado	SOUTH FORK AMERICAN RIVER
			THE BRUCE & PAT BLAIKIE FAMILY TRUST DATED 5/20/1993 Total		0.20		
A022465	15447	9913	The Pepper Family Trust	5/13/1966	1.50	El Dorado	BURNT SHANTY CREEK
			The Pepper Family Trust Total		1.50		
A006440	3396	1549	THE RITO S CASTANON FAMILY TRUST	9/18/1929	0.10	El Dorado	UNST
			THE RITO S CASTANON FAMILY TRUST Total		0.10		
A020627D	13629	008487D	THOMAS WALTERS	8/13/1992	25.20	El Dorado	UNST
			THOMAS WALTERS Total		25.20		
A020627B	13629	008487B	THOMAS E WALTERS	8/13/1992	1.30	El Dorado	UNST
			THOMAS E WALTERS Total		1.30		
A026981	19271	12888	THOMAS L PIATANESI	9/2/1981	7.00	El Dorado	UNST
			THOMAS L PIATANESI Total		7.00		
A017411	11024	6810	THOMAS S VAN HORNE	12/27/1956	17.00	Placer	UNST
			THOMAS S VAN HORNE Total		17.00		
A004510	2315	776	TIFFANY HOLBROOK	3/19/1925	6.50	El Dorado	UNSP
			TIFFANY HOLBROOK Total		6.50		
A017108	11013	7716	TIMBERLAKE ESTATES HOMEOWNERS ASSOC	5/29/1956	12.00	Placer	UNST
			TIMBERLAKE ESTATES HOMEOWNERS ASSOC Total		12.00		
A007788	4294	1674	TIMOTHY B COLLINS	12/26/1933	0.20	El Dorado	UNSP
			TIMOTHY B COLLINS Total		0.20		
A022062	15099	9129	TIMOTHY J MANDELLA	3/1/1965	0.40	El Dorado	UNSP (2)
			TIMOTHY J MANDELLA Total		0.40		
A006817	3718	1906	TONY PLANCHON	10/8/1930	0.20	El Dorado	UNST
			TONY PLANCHON Total		0.20		
A006988	3836	1343	TRACY ANN BRENNAN-MULLIGAN	6/29/1931	0.10	El Dorado	ROCK CREEK

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A018807	12161	6790	TRACY ANN BRENNAN-MULLIGAN	6/17/1959	0.10	El Dorado	SOUTH FORK AMERICAN RIVER
			TRACY ANN BRENNAN-MULLIGAN Total		0.20		
A016402	10552	6008	TROOP #1 B S A	6/2/1955	0.50	El Dorado	CODY LAKE, UNSP
			TROOP #1 B S A Total		0.50		
A004597C	000948C		Trudy Reed, et al	8/20/2004	8.20	Placer	AUBURN RAVINE
			Trudy Reed, et al Total		8.20		
A022914	15682	13080	TRUST OF WILLIAM & MARY ROTH AUS	9/29/1967	3.00	El Dorado	JOHNTOWN CREEK
A025406	17863	13081	TRUST OF WILLIAM & MARY ROTH AUS	6/24/1977	15.00	El Dorado	JOHNTOWN CREEK
			TRUST OF WILLIAM & MARY ROTH AUS Total		18.00		
A018106	11630	6767	TRUSTEN B WADSWORTH	4/28/1958	2.00	El Dorado	UNST
			TRUSTEN B WADSWORTH Total		2.00		
A021880	14767	9277	TWILIGHT RIDE LLC	8/26/1964	0.80	Placer	UNST
			TWILIGHT RIDE LLC Total		0.80		
A012046	7203	6975	Tyson Muncher	1/28/1964	31.10	El Dorado	EAST FORK SAWMILL CREEK, SAWMILL CREEK
			Tyson Muncher Total		31.10		
A002141	936	245	U S ELDORADO NATL FOREST	12/17/1920	1.20	El Dorado	COLD STREAM
A003879	1719	534	U S ELDORADO NATL FOREST	2/28/1924	0.10	El Dorado	ATWOOD SPRING
A004722	2382	1420	U S ELDORADO NATL FOREST	8/6/1925	0.30	El Dorado	UNSP
A004740	2383	2102	U S ELDORADO NATL FOREST	8/19/1925	2.30	El Dorado	UNST
A005142	2644	1001	U S ELDORADO NATL FOREST	8/4/1926	0.50	El Dorado	UNST
A006730	3585	2405	U S ELDORADO NATL FOREST	4/14/1930	0.50	El Dorado	UNSP
A007196	3959	1679	U S ELDORADO NATL FOREST	2/27/1932	3.00	Amador	UNST
A007304	4010	2441	U S ELDORADO NATL FOREST	6/27/1932	0.10	El Dorado	UNSP
A007498	4170	4543	U S ELDORADO NATL FOREST	2/7/1933	0.80	El Dorado	UNST
A007522	4163	4099	U S ELDORADO NATL FOREST	3/24/1933	0.60	Alpine	UNST
A008271	4576	1856	U S ELDORADO NATL FOREST	3/4/1935	0.40	El Dorado	UNSP
A008582	4761	3767	U S ELDORADO NATL FOREST	3/11/1936	0.50	El Dorado	ASPEN CREEK
A008929	4944	2159	U S ELDORADO NATL FOREST	3/30/1937	3.30	El Dorado	COX CREEK
A008936	4984	3972	U S ELDORADO NATL FOREST	4/3/1937	3.40	Amador	UNSP
A009058	5052	2161	U S ELDORADO NATL FOREST	7/29/1937	0.40	El Dorado	UNSP
A009086	5020	2164	U S ELDORADO NATL FOREST	8/21/1937	2.60	El Dorado	FRY CREEK
A009087	5021	2165	U S ELDORADO NATL FOREST	8/21/1937	1.30	El Dorado	UNST
A009120	5050	3254	U S ELDORADO NATL FOREST	9/18/1937	1.00	El Dorado	ROCKY CANYON
A009122	5051	2336	U S ELDORADO NATL FOREST	9/21/1937	0.60	El Dorado	ROCKY CANYON
A009128	5100	2166	U S ELDORADO NATL FOREST	9/27/1937	0.20	El Dorado	PYRAMID CREEK
A009129	5101	2167	U S ELDORADO NATL FOREST	9/27/1937	0.20	El Dorado	PYRAMID CREEK
A009189	5104	2168	U S ELDORADO NATL FOREST	11/27/1937	0.70	El Dorado	UNSP
A009251	5195	3922	U S ELDORADO NATL FOREST	3/4/1938	5.20	Amador	BLACK ROCK SPRING
A009289	5177	4059	U S ELDORADO NATL FOREST	5/6/1938	1.10	El Dorado	OATES SPRING
A009298	5178	3129	U S ELDORADO NATL FOREST	5/19/1938	0.70	El Dorado	OLANIE SPRING
A009310	5191	3256	U S ELDORADO NATL FOREST	6/6/1938	0.50	El Dorado	SNOW SLIDE CREEK
A009399	5261	3388	U S ELDORADO NATL FOREST	8/26/1938	0.90	El Dorado	UNSP
A009408	5251	4016	U S ELDORADO NATL FOREST	9/10/1938	0.30	El Dorado	UNST
A009425	5273	2337	U S ELDORADO NATL FOREST	9/24/1938	0.30	El Dorado	UNSP
A009655	5407	2864	U S ELDORADO NATL FOREST	7/5/1939	1.80	Placer	BUCKEYE SPRING
A009843	5566	3273	U S ELDORADO NATL FOREST	2/28/1940	1.00	El Dorado	UNSP
A009869	5580	2865	U S ELDORADO NATL FOREST	4/9/1940	0.50	El Dorado	UNST
A009884	5581	2866	U S ELDORADO NATL FOREST	4/26/1940	1.30	El Dorado	UNCR
A009890	5588	2867	U S ELDORADO NATL FOREST	5/8/1940	1.10	El Dorado	ASPEN CREEK

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A009955	5646	3502 U S	ELDORADO NATL FOREST	7/20/1940	1.90	El Dorado	BRYANT FORK CREEK
A010110	5844	5870 U S	ELDORADO NATL FOREST	2/5/1941	5.30	Amador	SHEEP CORRAL CREEK
A010192	5858	3161 U S	ELDORADO NATL FOREST	4/29/1941	0.20	Alpine	ROSS SPRING
A010289	5907	2921 U S	ELDORADO NATL FOREST	9/24/1941	0.20	El Dorado	UNST
A010360	5977	4095 U S	ELDORADO NATL FOREST	1/13/1942	0.20	El Dorado	UNST
A010385	5979	2948 U S	ELDORADO NATL FOREST	2/6/1942	0.30	El Dorado	STATION CREEK
A010405	5980	3288 U S	ELDORADO NATL FOREST	3/16/1942	2.00	El Dorado	UNSP
A010463	5975	2933 U S	ELDORADO NATL FOREST	5/16/1942	2.00	El Dorado	UNST
A010593	6143	4548 U S	ELDORADO NATL FOREST	1/25/1943	1.80	El Dorado	CHAMPAGNE CANYON, UNST
A010604	6178	3643 U S	ELDORADO NATL FOREST	2/24/1943	0.20	El Dorado	ASPEN CREEK
A010608	6179	4044 U S	ELDORADO NATL FOREST	3/4/1943	0.70	El Dorado	UNSP
A010614	6144	3297 U S	ELDORADO NATL FOREST	3/16/1943	6.90	El Dorado	ALDER CREEK
A010773	6281	2940 U S	ELDORADO NATL FOREST	2/23/1944	0.10	El Dorado	UNST
A010821	6282	4870 U S	ELDORADO NATL FOREST	5/19/1944	12.70	El Dorado	CODY CREEK
A010823	6283	3084 U S	ELDORADO NATL FOREST	5/26/1944	1.00	El Dorado	UNSP, UNST
A010827	6284	5654 U S	ELDORADO NATL FOREST	6/5/1944	5.20	El Dorado	UNSP
A011256	6733	7767 U S	ELDORADO NATL FOREST	1/10/1946	44.90	El Dorado	TAMARACK FLAT CREEK
A011370	6734	3497 U S	ELDORADO NATL FOREST	4/12/1946	0.20	El Dorado	UNST
A011464	6682	3573 U S	ELDORADO NATL FOREST	7/10/1946	0.10	El Dorado	FORN CREEK
A011608	6759	3330 U S	ELDORADO NATL FOREST	11/6/1946	0.20	El Dorado	FRY CREEK
A011742	6881	3419 U S	ELDORADO NATL FOREST	2/25/1947	0.20	El Dorado	ROCKY CANYON
A011867	7003	3395 U S	ELDORADO NATL FOREST	5/9/1947	0.10	El Dorado	UNSP
A011893	6976	4861 U S	ELDORADO NATL FOREST	5/26/1947	0.70	El Dorado	ASPEN CREEK
A011971	7009	4744 U S	ELDORADO NATL FOREST	7/3/1947	0.50	El Dorado	SAYLES CANYON
A012000	7051	3346 U S	ELDORADO NATL FOREST	7/21/1947	0.70	El Dorado	UNST
A012057	7081	3399 U S	ELDORADO NATL FOREST	8/26/1947	0.20	El Dorado	UNSP
A012397	7324	3721 U S	ELDORADO NATL FOREST	3/12/1948	0.20	El Dorado	PYRAMID CREEK
A012552	7449	5535 U S	ELDORADO NATL FOREST	6/22/1948	1.20	El Dorado	BULL CREEK
A013383	7911	3834 U S	ELDORADO NATL FOREST	10/5/1949	0.50	El Dorado	UNSP
A013410	8004	3797 U S	ELDORADO NATL FOREST	10/24/1949	0.10	Alpine	JONES SPRING
A013653	8136	6630 U S	ELDORADO NATL FOREST	3/27/1950	1.70	El Dorado	BRYAN CREEK
A014409	9031	4382 U S	ELDORADO NATL FOREST	7/27/1951	0.10	El Dorado	UNSP
A014452	9026	4713 U S	ELDORADO NATL FOREST	8/29/1951	0.40	El Dorado	UNSP
A014902	9262	4533 U S	ELDORADO NATL FOREST	7/10/1952	483.70	El Dorado	ASPEN CREEK
A015490	10028	4996 U S	ELDORADO NATL FOREST	8/31/1953	55.00	El Dorado	SMITH LAKE
A015492	10029	4997 U S	ELDORADO NATL FOREST	8/31/1953	54.00	El Dorado	CLYDE LAKE
A015493	10030	4998 U S	ELDORADO NATL FOREST	8/31/1953	30.00	El Dorado	TOEM LAKE
A015494	10031	4999 U S	ELDORADO NATL FOREST	8/31/1953	160.00	El Dorado	WRIGHTS LAKE
A015495	10032	5000 U S	ELDORADO NATL FOREST	8/31/1953	80.00	El Dorado	ROPI LAKE
A015496	10033	5001 U S	ELDORADO NATL FOREST	8/31/1953	85.40	El Dorado	LOIS LAKE
A015497	10034	5002 U S	ELDORADO NATL FOREST	8/31/1953	203.60	El Dorado	LAKE SCHMIDELL
A015498	10035	5003 U S	ELDORADO NATL FOREST	8/31/1953	40.00	El Dorado	LYONS LAKE
A015499	10036	6199 U S	ELDORADO NATL FOREST	8/31/1953	110.00	El Dorado	BUCK ISLAND LAKE
A015500	10037	5004 U S	ELDORADO NATL FOREST	8/31/1953	38.00	El Dorado	LAWRENCE LAKE
A015501	10038	6058 U S	ELDORADO NATL FOREST	8/31/1953	190.00	El Dorado	SPIDER LAKE
A015503	10040	5005 U S	ELDORADO NATL FOREST	8/31/1953	30.00	El Dorado	BARRETT LAKE
A015506	10043	5006 U S	ELDORADO NATL FOREST	8/31/1953	148.40	El Dorado	MIDDLE VELMA LAKE
A015509	10046	6025 U S	ELDORADO NATL FOREST	8/31/1953	160.00	Alpine	WINNEMUCCA LAKE
A015512	10049	5011 U S	ELDORADO NATL FOREST	8/31/1953	60.00	El Dorado	ISLAND LAKE
A015513	10050	4985 U S	ELDORADO NATL FOREST	8/31/1953	21.00	El Dorado	UPPER TWIN LAKE

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A015514	10051	5164	U S ELDORADO NATL FOREST	8/31/1953	26.00	El Dorado	LOWER TWIN LAKE
A015616	10052	6200	U S ELDORADO NATL FOREST	11/23/1953	440.00	El Dorado	ROCKBOUND LAKE
A016564	10564	5531	U S ELDORADO NATL FOREST	8/31/1955	0.20	El Dorado	UNST
A017521	11280	8645	U S ELDORADO NATL FOREST	3/22/1957	2.80	El Dorado	GERLE CREEK
A017846	11577	6935	U S ELDORADO NATL FOREST	10/11/1957	0.20	El Dorado	ROCKY CANYON
A018022	11627	7172	U S ELDORADO NATL FOREST	3/3/1958	2.90	Amador	UNSP
A019541	12806	7807	U S ELDORADO NATL FOREST	7/13/1960	3.50	El Dorado	PILLIKEN SPRING
A019544	12808	7971	U S ELDORADO NATL FOREST	7/13/1960	0.40	Placer	JERRYS CANYON SPRING
A019546	12810	7972	U S ELDORADO NATL FOREST	7/13/1960	0.40	Placer	CHIPMUNK RIDGE SPRING
A019547	12811	7973	U S ELDORADO NATL FOREST	7/13/1960	0.40	Placer	LYNCHBURG SPRING
A019548	12812	7974	U S ELDORADO NATL FOREST	7/13/1960	0.40	Placer	BEAR SPRINGS
A019549	12813	7975	U S ELDORADO NATL FOREST	7/13/1960	0.40	Placer	DESERT COLD SPRING
A020659	13789	8325	U S ELDORADO NATL FOREST	3/19/1962	0.40	El Dorado	UNST
A020675	13795	8324	U S ELDORADO NATL FOREST	3/26/1962	0.20	El Dorado	OWENS CAMP SPRING
A023420	16189	10597	U S ELDORADO NATL FOREST	12/23/1969	4.50	Placer	SOUTH FORK LONG CANYON
A028204	19518	12944	U S ELDORADO NATL FOREST	8/3/1984	2.20	El Dorado	UNSP
U S ELDORADO NATL FOREST Total					2,565.40		
A007629	4209	1702	U S FOREST SERVICE	7/26/1933	0.10	El Dorado	UNST
A007848	4350	2138	U S FOREST SERVICE	2/14/1934	0.40	Placer	GREEK STORE SPRING
A009114	5095	2611	U S FOREST SERVICE	9/14/1937	13.40	Placer	BLUE CANYON RANGER STATION SP
A009816	5536	2599	U S FOREST SERVICE	1/29/1940	4.30	Placer	UNSP
A010126	5779	2886	U S FOREST SERVICE	2/20/1941	4.70	Placer	TEXAS HILL SPRING
A010129	5782	2655	U S FOREST SERVICE	2/20/1941	0.60	Placer	DAWSON SPRING
A010442	6014	4181	U S FOREST SERVICE	5/6/1942	0.10	Placer	NORTH FORK SPRING
A010443	6015	3037	U S FOREST SERVICE	5/6/1942	5.50	Placer	ONION VALLEY SPRING NO 3
A010445	6017	2890	U S FOREST SERVICE	5/6/1942	0.60	Placer	LONG VALLEY SPRING
A011157	6589	3207	U S FOREST SERVICE	9/19/1945	1.00	Placer	TADPOLE SPRING
A011787	6897	4862	U S FOREST SERVICE	3/19/1947	0.30	Placer	UNSP
A012036	7055	3250	U S FOREST SERVICE	8/12/1947	1.10	Placer	PAGGE CREEK
A014193	8704	4112	U S FOREST SERVICE	3/14/1951	11.00	Placer	ELLIOTT MEADOW SPRING
A014194	8705	4113	U S FOREST SERVICE	6/28/1955	34.10	Placer	ELLIOTT RANCH SPRING
A014195	9308	4964	U S FOREST SERVICE	3/14/1951	1.40	Placer	BEAR SPRING
A014196	8706	4126	U S FOREST SERVICE	3/14/1951	0.40	Placer	CHICKEN HAWK SPRING
A014197	8707	4127	U S FOREST SERVICE	3/14/1951	0.30	Placer	ORCHARD SPRING
A014198	8708	4876	U S FOREST SERVICE	3/14/1951	0.20	Placer	SECRET HOUSE SPRING
A016517	10278	7335	U S FOREST SERVICE	8/11/1955	96.80	Placer	CODY CREEK
A016691	10621	7367	U S FOREST SERVICE	10/26/1955	6.10	Placer	FULDA SPRING
A017304	11837	7098	U S FOREST SERVICE	1/14/1965	84.90	Placer	POWDERHORN CREEK
A021489	14495	8892	U S FOREST SERVICE	10/7/1963	5.20	Placer	BEARTRAP SPRING
A023221	16016	10309	U S FOREST SERVICE	1/30/1969	0.40	Placer	DELLER SPRING
A023222	16177	10620	U S FOREST SERVICE	1/30/1969	1.10	Placer	MT MILDRED CREEK
A023223	16178	10611	U S FOREST SERVICE	1/30/1969	4.20	Placer	DOLLY CREEK
A023224	16179	10618	U S FOREST SERVICE	1/30/1969	3.90	Placer	FRENCH MEADOW CREEK
A023227	16013	10543	U S FOREST SERVICE	1/30/1969	0.80	Placer	WILLMONT SPRING
A023228	16012	10310	U S FOREST SERVICE	1/30/1969	0.50	Placer	GIANT GAP SPRING #1
A023229	16011	10311	U S FOREST SERVICE	1/30/1969	0.50	Placer	GIANT GAP SPRING #2
U S FOREST SERVICE Total					283.90		
A013103	7803	4220	U.S. BUREAU OF RECLAMATION	3/21/1956	4.00	El Dorado	KNICKERBOCKER CREEK
A013370	11315		U.S. BUREAU OF RECLAMATION	4/22/1958	5,347,832.00	Contra Costa, Sacramento	AMERICAN RIVER, OLD RIVER, SACRAMENTO RIVER

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A013371	11316		U.S. BUREAU OF RECLAMATION	7/29/2002	680,435.30	Contra Costa, Sacramento	AMERICAN RIVER, Sacramento River
A013629	8151	6654	U.S. BUREAU OF RECLAMATION	3/1/1963	30.00	El Dorado	UNST
A014165	8572	4221	U.S. BUREAU OF RECLAMATION	3/21/1956	22.00	El Dorado	KNICKERBOCKER CREEK
A014515	8887	4798	U.S. BUREAU OF RECLAMATION	10/24/1957	14.30	El Dorado	UNST
A015028	9246	5878	U.S. BUREAU OF RECLAMATION	11/17/1959	15.00	El Dorado	UNST
A017371	10923	5824	U.S. BUREAU OF RECLAMATION	10/22/1959	19.60	El Dorado	MIDDLE FORK AMERICAN RIVER
A018196	12706	7596	U.S. BUREAU OF RECLAMATION	3/9/1966	0.10	Placer	UNSP (2)
A019977	13093	8229	U.S. BUREAU OF RECLAMATION	2/8/1961	21.70	Placer	CARLTON SPRING, NORTH FORK AMERICAN RIVER
A020011	13161		U.S. BUREAU OF RECLAMATION	2/28/1961	22.00	El Dorado	KNICKERBOCKER CREEK
A020478	13934	8588	U.S. BUREAU OF RECLAMATION	11/7/1961	0.10	Placer	NORTH FORK AMERICAN RIVER
A021189	14220	8871	U.S. BUREAU OF RECLAMATION	3/13/1963	18.00	El Dorado	UNST
U.S. BUREAU OF RECLAMATION Total					6,028,434.10		
A005214	2776	1075	ULF ASPENLIND	9/17/1926	231.70	Placer	CANYON CREEK
ULF ASPENLIND Total					231.70		
A023318	15937	11043	UNION PACIFIC RAILROAD COMPANY	6/4/1980	4.00	Placer	UNXX
UNION PACIFIC RAILROAD COMPANY Total					4.00		
A027266	18612		US BUREAU OF LAND MANAGEMENT	11/4/1982	2,533.90	Placer	DARDANELLES CREEK, POND CREEK
US BUREAU OF LAND MANAGEMENT Total					2,533.90		
A005981	3152	5560	USDA-FOREST SERVICE, LAKE TAHOE BASIN MANAGEMENT UNIT	7/16/1928	4.30	El Dorado	HAWLEY SPRING
A010290	5988	6099	USDA-FOREST SERVICE, LAKE TAHOE BASIN MANAGEMENT UNIT	9/24/1941	0.70	El Dorado	BENWOOD CREEK
A015510	10047	5009	USDA-FOREST SERVICE, LAKE TAHOE BASIN MANAGEMENT UNIT	8/31/1953	141.80	El Dorado	HEATHER LAKE
A027518	19091	12562	USDA-FOREST SERVICE, LAKE TAHOE BASIN MANAGEMENT UNIT	9/15/1982	0.30	El Dorado	HAWLEY SPRING
USDA-FOREST SERVICE, LAKE TAHOE BASIN MANAGEMENT UNIT Total					147.10		
A004026	1899	738	VERYL T KUCHAR	10/5/1928	113.10	Placer	BIG CHIEF CREEK, BOULDER CREEK
A011258A	6528	9362	VERYL T KUCHAR	1/10/1946	61.00	Placer	UNST
VERYL T KUCHAR Total					174.10		
A015953	9902	5786	VICKIE L LONGO	7/26/1954	3.80	El Dorado	SOUTH FORK AMERICAN RIVER
VICKIE L LONGO Total					3.80		
A005535	3114	1098	VICTOR HERRERO	6/17/1927	0.10	El Dorado	UNSP
VICTOR HERRERO Total					0.10		
A017916	11348	7619	VINCENT J GRAVES	12/16/1957	2.20	Placer	BABIE CREEK
VINCENT J GRAVES Total					2.20		
A028603	20086	13242	WAYNE BRUMMOND	10/28/1985	2.50	Placer	UNXX
WAYNE BRUMMOND Total					2.50		
A011162	6477	3032	WAYNE HILLARD	9/27/1945	0.20	El Dorado	SOUTH FORK AMERICAN RIVER
WAYNE HILLARD Total					0.20		
A024241	16911	12453	WILLIAM FAWX	11/8/1972	0.10	Placer	DUTCH RAVINE
WILLIAM FAWX Total					0.10		
A027705	19112	12678	WILLIAM OZAWA	4/5/1983	1.30	El Dorado	UNST
WILLIAM OZAWA Total					1.30		
A027173	18747	13544	WILLIAM SMITH	7/11/2003	19.00	El Dorado	ACORN CREEK

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A016891	10691	7265	WILLIAM SMITH Total WILLIAM WHITAKER	2/14/1956	19.00 0.40	El Dorado	UNST
			WILLIAM WHITAKER Total		0.40		
A019850	13243		WILLIAM B ASHTON	11/21/1960	37.00	El Dorado	SILVER FORK OF SOUTH FORK AMERICAN RIVER, SUGAR LOAF CREEK
A001963	935	428	WILLIAM B ASHTON Total WILLIAM B TIMBERLAKE	8/11/1920	37.00 2.90	El Dorado	NILSSON SPRING
			WILLIAM B TIMBERLAKE Total		2.90		
A005989	3394	1436	WILLIAM C SAWTELL	7/19/1928	0.20	El Dorado	UNST
			WILLIAM C SAWTELL Total		0.20		
A027491	19229	13413	WILLIAM P KLEIN JR	8/31/1982	0.80	Placer	UNST
A028034	20068	13411	WILLIAM P KLEIN JR	3/15/1984	12.00	Placer	UNST
A028035	20069	13412	WILLIAM P KLEIN JR	3/15/1984	11.00	Placer	UNST
			WILLIAM P KLEIN JR Total		23.80		
A027520	19118	13269	WILLIAM V DALLAS	9/16/1982	0.20	Placer	UNST
			WILLIAM V DALLAS Total		0.20		
A010121	5976	3045	WILLIS H LAMBERT	2/20/1941	0.70	El Dorado	UNST
			WILLIS H LAMBERT Total		0.70		
A014086	8441	4369	WILLOMAE DOBBS	12/1/1950	0.40	El Dorado	UNSP
A015918	9886	5630	WILLOMAE DOBBS	6/18/1954	0.70	El Dorado	UNSP
			WILLOMAE DOBBS Total		1.10		
A022029	15275	10683	WILSON GRANAT	1/15/1965	3.30	Placer	UNST
			WILSON GRANAT Total		3.30		
A013893	8603	4079	WOODBIDGE RANCH HOMEOWNERS ASSOCIATION	8/14/1950	33.00	Sacramento	UNCR
			WOODBIDGE RANCH HOMEOWNERS ASSOCIATION Total		33.00		
A008015	4390	2604	YANKEE HILL ESTATES OWNERS ASSOCIATION	7/9/1934	287.90	Placer	ANTELOPE CREEK
A013394	8207	4781	YANKEE HILL ESTATES OWNERS ASSOCIATION	10/11/1949	25.00	Placer	ANTELOPE CREEK
A016437	10551	5511	YANKEE HILL ESTATES OWNERS ASSOCIATION	6/23/1955	142.70	Placer	ANTELOPE CREEK
			YANKEE HILL ESTATES OWNERS ASSOCIATION Total		455.60		
			Grand Total		9,560,977.90		

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A009802	5719	2809	BIRD HAVEN RANCH LLC	1/11/1940	852.90	Glenn	BUTTE CREEK
			BIRD HAVEN RANCH LLC Total		852.90		
A002234	1114	5236	BUTTE VALLEY IRRIGATION DISTRICT	2/28/1921	17,163.80	Siskiyou	BUTTE CREEK
A023025	16330	10776	BUTTE VALLEY IRRIGATION DISTRICT	4/10/1968	10,000.00	Siskiyou	BUTTE CREEK
			BUTTE VALLEY IRRIGATION DISTRICT Total		27,163.80		
A013794	8624	8176	CAMERON PARK COMMUNITY SERVICES DISTRICT	6/14/1950	240.00	El Dorado	DEER CREEK
			CAMERON PARK COMMUNITY SERVICES DISTRICT Total		240.00		
A009216	5153	6113	CITY OF CHICO	12/30/1937	258.90	Butte	BIG CHICO CREEK
			CITY OF CHICO Total		258.90		
A013675	8194	7075	COLUSA SHOOTING CLUB	4/7/1950	853.90	Colusa	BUTTE CREEK
A013728	8195	7076	COLUSA SHOOTING CLUB	5/10/1950	1,386.90	Colusa	BUTTE CREEK
			COLUSA SHOOTING CLUB Total		2,240.80		
A009625	5717	2984	Dept of Fish and Game	6/19/1939	5,474.50	Butte, Glenn	BUTTE CREEK
A013008	7747	8712	Dept of Fish and Game	7/24/1968	5,182.50	Butte, Glenn	BUTTE CREEK
A013323	7885	4793	Dept of Fish and Game	10/24/1957	2,554.80	Glenn	BUTTE CREEK DRAINAGE DISTRICT DITCH
A014354	9663	4794	Dept of Fish and Game	10/24/1957	2,700.70	Butte	BUTTE CREEK
A015467	14438	9973	Dept of Fish and Game	12/21/1972	5,463.00	Glenn	BUTTE CREEK DRAINAGE DISTRICT DITCH
A015468	14439	9974	Dept of Fish and Game	12/21/1972	5,463.00	Butte	BUTTE CREEK
A024590	17233		Dept of Fish and Game	4/10/1974	7,428.00	Butte	BUTTE CREEK
			Dept of Fish and Game Total		34,266.50		
A022564	16029	10433	GAIL BROWN	8/29/1966	493.00	Butte	BUTTE CREEK
			GAIL BROWN Total		493.00		
A002777	1779	2389	GORRILL LAND COMPANY	3/6/1922	4,581.90	Butte	BUTTE CREEK, HAMLIN SLOUGH
A004664	2448	2390	GORRILL LAND COMPANY	6/30/1925	4,523.50	Butte	HAMLIN SLOUGH
A004665	2449	2391	GORRILL LAND COMPANY	3/13/1942	3,930.10	Butte	BUTTE CREEK
A022321	16018	11044	GORRILL LAND COMPANY	10/25/1965	2,500.00	Butte	BUTTE CREEK
A025717	17845	11996	GORRILL LAND COMPANY	4/12/1978	4,400.00	Butte	HAMLIN SLOUGH
			GORRILL LAND COMPANY Total		19,935.50		
A022799	15502	9911	LOUIS A PAYEN	5/31/1967	45.00	Sacramento	LITTLE DEER CREEK
			LOUIS A PAYEN Total		45.00		
A023298	15950	10194	LUCIAN B VANDEGRIFT TRUST	6/17/1969	45.00	Butte	LITTLE BUTTE CREEK
			LUCIAN B VANDEGRIFT TRUST Total		45.00		
A005109	3210	2614	M & T INCORPORATED	7/17/1926	5,060.00	Butte	BUTTE CREEK
A008188	4700	2617	M & T INCORPORATED	12/1/1934	5,060.00	Butte	BUTTE CREEK
A008565	4744		M & T INCORPORATED	2/27/1936	3,074.40	Butte	BIG BUTTE CREEK

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A009735	5847		M & T INCORPORATED	9/22/1939	13,587.00	Butte	BIG BUTTE CREEK
A015866	10390	9267	M & T INCORPORATED	5/10/1954	500.00	Butte	BUTTE CREEK
			M & T INCORPORATED Total		27,281.40		
A014546	9664	5394	MCPHERRIN LAND CO	11/2/1951	6,396.80	Butte	BUTTE CREEK
A015710	14021	8676	MCPHERRIN LAND CO	6/25/1968	2,122.40	Butte	BUTTE CREEK
			MCPHERRIN LAND CO Total		8,519.20		
A019743	13039	10035	MELVIN D MYERS	9/19/1960	142.00	Lassen	BUTTE CREEK
			MELVIN D MYERS Total		142.00		
A023084	15727	10197	MICHAEL HARRIS	7/15/1968	32	Butte	LITTLE CHICO CREEK
			MICHAEL HARRIS Total		32		
A000476	271		Paradise Irrigation District	5/3/1917	9,500.00	Butte	LITTLE BUTTE CREEK
A022061	16040		Paradise Irrigation District	6/17/1970	8,800.00	Butte	LITTLE BUTTE CREEK
			Paradise Irrigation District Total		18,300.00		
A005110	3211	2615	PARROTT INVESTMENT COMPANY	7/17/1926	5,060.00	Butte	BUTTE CREEK
A008187	4699	2616	PARROTT INVESTMENT COMPANY	12/1/1934	5,060.00	Butte	BUTTE CREEK
A008559	4743		PARROTT INVESTMENT COMPANY	2/19/1936	3,074.40	Butte	BIG BUTTE CREEK
A009736	5848		PARROTT INVESTMENT COMPANY	9/22/1939	13,587.00	Butte	BIG BUTTE CREEK
A015867	10391	9268	PARROTT INVESTMENT COMPANY	5/10/1954	500.00	Butte	BUTTE CREEK
			PARROTT INVESTMENT COMPANY Total		27,281.40		
A001656	794	880	RANCHO ESQUON INC	2/5/1920	3,665.45	Butte	HAMLIN SLOUGH
A002576	1722	1027	RANCHO ESQUON INC	10/6/1921	1,832.80	Butte	BUTTE CREEK
A002805	1872	1028	RANCHO ESQUON INC	3/24/1922	3,832.10	Butte	BUTTE CREEK
A002909	2027	1029	RANCHO ESQUON INC	6/27/1922	3,014.90	Butte	BUTTE CREEK
A004663	2447	1030	RANCHO ESQUON INC	6/30/1925	4,598.48	Butte	HAMLIN SLOUGH
A022039	16039	11046	RANCHO ESQUON INC	2/5/1965	5,540.00	Butte	BUTTE CREEK
			RANCHO ESQUON INC Total		22,483.73		
A023201	16771		RECLAMATION DISTRICT #1004	12/1/1978	36,000.00	Colusa, Sutter	BUTTE CREEK, BUTTE SLOUGH
			RECLAMATION DISTRICT #1004 Total		36,000.00		
A007925	4365	1797	RECLAMATION DISTRICT #833	5/1/1934	2,217.20	Colusa	BUTTE CREEK
			RECLAMATION DISTRICT #833 Total		2,217.20		
A004989	2706	837	SIERRA PACIFIC INDUSTRIES	1/8/1965	1,831.70	Butte	WEST BRANCH BUTTE CREEK
			SIERRA PACIFIC INDUSTRIES Total		1,831.70		
A001041	542	485	STANFORD VINA RANCH IRRIGATION CO	8/5/1918	4,581.90	Tehama	DEER CREEK
			STANFORD VINA RANCH IRRIGATION CO Total		4,581.90		
A020531			STATE WATER RESOURCES CONTROL BOARD	12/19/1961	0.00	Lassen, Modoc	ASH CREEK, BUTTE CREEK, UNST, WILLOW CREEK
			STATE WATER RESOURCES CONTROL BOARD Total		0.00		
A022534	16022	10432	Stephen Meline IV	7/27/1966	1,695.00	Butte	BUTTE CREEK

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			Stephen Meline IV Total		1,695.00		
A012437	7368	3458	U S FISH & WILDLIFE SERVICE	3/25/1948	1,097.00	Colusa	BUTTE CREEK
A013540	8838	4472	U S FISH & WILDLIFE SERVICE	1/12/1950	44,162.60	Shasta, Tehama	BATTLE CREEK
A014316	9662	7053	U S FISH & WILDLIFE SERVICE	5/21/1951	590.30	Colusa	BUTTE CREEK
A017862	11615	6591	U S FISH & WILDLIFE SERVICE	10/25/1957	7,963.80	Shasta	BATTLE CREEK
A020288	13384	7993	U S FISH & WILDLIFE SERVICE	7/3/1961	21,719.30	Shasta	BATTLE CREEK, Battle Creek
A022227	15046	9561	U S FISH & WILDLIFE SERVICE	7/19/1965	14,479.60	Shasta	BATTLE CREEK, Battle Creek
			U S FISH & WILDLIFE SERVICE Total		90,012.60		
A031071	21277		U S KLAMATH NATIONAL FOREST - GOOSENEST RECLAMATION DISTRICT	6/6/2011	185.00	Siskiyou	BUTTE CREEK
			U S KLAMATH NATIONAL FOREST - GOOSENEST RECLAMATION DISTRICT Total		185.00		
			Grand Total		326,104.54		

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Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A017927	11586	9898	ANTHONY D CRUYSEN	12/26/1957	23.00	Shasta	CLEAR CREEK
			ANTHONY D CRUYSEN Total		23.00		
A023232	16007	10906	BENNETT FAMILY TRUST	2/6/1969	74.00	Shasta	SOUTH FORK CLEAR CREEK
			BENNETT FAMILY TRUST Total		74.00		
A016145	10125	9563	BILL GIBSON	11/18/1954	627.00	Shasta, Tehama	COTTONWOOD CREEK
			BILL GIBSON Total		627.00		
A013972	8537	4100	CALIF DEPT OF TRANSPORTATION	9/29/1950	5.80	Shasta	MIDDLE FORK COTTONWOOD CREEK
			CALIF DEPT OF TRANSPORTATION Total		5.80		
A016373D		006033D	CARPENTER FAMILY REVOCABLE TRUST	6/3/1991	167.20	Tehama	COTTONWOOD CREEK
			CARPENTER FAMILY REVOCABLE TRUST Total		167.20		
A016373C		006033C	CEVASCO ROBT CEVASCO REVOC TRUST 2/18/9	6/3/1991	45.70	Tehama	COTTONWOOD CREEK
			CEVASCO ROBT CEVASCO REVOC TRUST 2/18/9 Total		45.70		
A012074	7559	6320	CONAWAY PRESERVATION GROUP LLC	9/8/1947	3,728.93	Yolo	WILLOW SLOUGH
A026695	19372		CONAWAY PRESERVATION GROUP LLC	1/27/1981	10,000.00	Yolo	CACHE CREEK, YOLO BYPASS
			CONAWAY PRESERVATION GROUP LLC Total		13,728.93		
A027382	20308		COUNTY OF COLUSA	7/8/1982	10.00	Colusa	STONY CREEK UNDERFLOW
			COUNTY OF COLUSA Total		10.00		
A016373A		006033A	DENNIS C DIERKSEN	6/3/1991	64.10	Shasta	COTTONWOOD CREEK
			DENNIS C DIERKSEN Total		64.10		
A013764	8578	4460	DONALD KRENN	5/29/1950	18.30	Tehama	SOUTH FORK COTTONWOOD CREEK
			DONALD KRENN Total		18.30		
A024723	16873	11283	FRENCH GULCH-WHISKEYTOWN SCHOOL DISTRICT	12/11/1974	10.20	Shasta	CLEAR CREEK
			FRENCH GULCH-WHISKEYTOWN SCHOOL DISTRICT Total		10.20		
A007284	4198	2006	HAMMER FAMILY TRUST	6/8/1932	1,463.80	Tehama	SOUTH FORK COTTONWOOD CREEK
			HAMMER FAMILY TRUST Total		1,463.80		
A021223	14272	8831	HARRY A BAKER REVOCABLE TRUST	4/8/1963	2.70	Tehama	SOUTH FORK COTTONWOOD CREEK
			HARRY A BAKER REVOCABLE TRUST Total		2.70		
A030232	20993		Heart Consciousness Church, Inc.	3/8/1993	245.00	Lake	CRAZY CREEK, PUTAH CREEK, UNST
			Heart Consciousness Church, Inc. Total		245.00		
A013976	8588	6976	IGO ONO COMMUNITY SERVICE DISTRICT	10/3/1950	341.20	Shasta	COTTONWOOD CREEK
			IGO ONO COMMUNITY SERVICE DISTRICT Total		341.20		
A000334	157	153	JOSHUA L SOSKE JR	5/11/1916	24.60	Glenn, Sonoma	NORTH FORK STONY CREEK
			JOSHUA L SOSKE JR Total		24.60		
A013701	8225	4312	KENT W PFRIMMER	4/24/1950	122.20	Tehama	COTTONWOOD CREEK
			KENT W PFRIMMER Total		122.20		
A016373B		006033B	KEVIN J DEVINE	6/3/1991	41.30	Tehama	COTTONWOOD CREEK
			KEVIN J DEVINE Total		41.30		
A013110	7843	4736	LEMA 1992 TRUST	5/24/1949	219.90	Tehama	COTTONWOOD CREEK
			LEMA 1992 TRUST Total		219.90		
A023234	16005	10921	MARY ANN SMITH	2/6/1969	1.20	Shasta	SOUTH FORK CLEAR CREEK
			MARY ANN SMITH Total		1.20		
A031558			MIDDLETOWN FARM & CATTLE COMPANY	3/30/2007	434.00	Lake	HARBIN CREEK, PUTAH CREEK, UNST
			MIDDLETOWN FARM & CATTLE COMPANY Total		434.00		
A023233	16000	10540	ROBERT W ANDERSON	2/6/1969	69.00	Shasta	SOUTH FORK CLEAR CREEK

West Creeks of Sacramento River Basin - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A024785	16939	11368	ROBERT W ANDERSON	3/24/1975	2.20	Shasta	SOUTH FORK CLEAR CREEK, UNST
			ROBERT W ANDERSON Total		71.20		
A025261	17823		STONY CREEK WATER DISTRICT	2/14/1977	3,000.00	Colusa, Glenn	LITTLE STONY CREEK, STONY CREEK
			STONY CREEK WATER DISTRICT Total		3,000.00		
A020104	13490	8028	THE REVOCABLE TRUST OF ROBERT F RETZLOFF	4/27/1961	271.70	Glenn	STONY CREEK UNDERFLOW
			THE REVOCABLE TRUST OF ROBERT F RETZLOFF Total		271.70		
A019104	12653	7454	U S NATIONAL PARK SERVICE	11/24/1959	3.20	Shasta	CLEAR CREEK
			U S NATIONAL PARK SERVICE Total		3.20		
A002212	2339	2652	U.S. BUREAU OF RECLAMATION	2/17/1921	50,200.00	Glenn	STONY CREEK
A018115	13776		U.S. BUREAU OF RECLAMATION	4/30/1958	160,000.00	Contra Costa, Tehama	STONY CREEK
A017376	12364		U.S. BUREAU OF RECLAMATION	7/28/1960	1,335,371.20	Contra Costa, Shasta	CLEAR CREEK
A015424	12363	9957	U.S. BUREAU OF RECLAMATION	4/15/2002	1,230,761.80	Shasta	CLEAR CREEK
			U.S. BUREAU OF RECLAMATION Total		2,776,333.00		
A016373E		006033E	WAYNE ROCHLITZ	6/3/1991	85.00	Tehama	COTTONWOOD CREEK
			WAYNE ROCHLITZ Total		85.00		
A012994	7469	3822	WILLIAM T GRAY	3/23/1949	114.60	Shasta	COTTONWOOD CREEK
			WILLIAM T GRAY Total		114.60		
A011389	12848		YOLO COUNTY F C & W C DISTRICT	5/3/1946	431,000.00	Lake, Yolo	CACHE CREEK, NORTH FORK CACH
			YOLO COUNTY F C & W C DISTRICT Total		431,000.00		
			Grand Total		3,228,548.83		

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A011384	6629	3641	A & L AG RENTAL & LEASING INC	4/25/1946	1,094.90	Colusa	SACRAMENTO RIVER
			A & L AG RENTAL & LEASING INC Total		1,094.90		
A000657	338	237	ALICE K MARKS	4/27/1917	136.50	Sutter	SACRAMENTO RIVER
			ALICE K MARKS Total		136.50		
A001976	1243	1206	ALLEN A EHRKE	5/31/1932	158.80	Colusa	SACRAMENTO RIVER
			ALLEN A EHRKE Total		158.80		
A012469A	7267	003722A	Anna C. Byrd 1997 Trust	4/13/1948	1,598.50	Sutter	SACRAMENTO RIVER
			Anna C. Byrd 1997 Trust Total		1,598.50		
A008931	4985	3169	ARNOLD ANDREOTTI	4/1/1937	1,094.90	Colusa	SACRAMENTO RIVER
A011618	6793	3170	ARNOLD ANDREOTTI	11/14/1946	2,007.30	Colusa	SACRAMENTO RIVER
			ARNOLD ANDREOTTI Total		3,102.20		
A013454	8010	7251	ARTHUR ANDREOTTI	11/9/1949	4,927.00	Colusa	SACRAMENTO RIVER
			ARTHUR ANDREOTTI Total		4,927.00		
A012482	7399	3655	BARRY A MCCLAIN	4/23/1948	182.50	Sacramento	SACRAMENTO RIVER
			BARRY A MCCLAIN Total		182.50		
A005100	2609	989	BURTIS RANCH	7/13/1926	140.50	Sutter	SACRAMENTO RIVER
			BURTIS RANCH Total		140.50		
A010900	6375	3569	BURTON H LAUPPE	10/9/1944	1,069.10	Sutter	SACRAMENTO RIVER
			BURTON H LAUPPE Total		1,069.10		
A000186	72	1753	CACHIL DEHE BAND OF WINTUN INDIANS OF	11/22/1915	3,198.40	Colusa	SACRAMENTO RIVER
			CACHIL DEHE BAND OF WINTUN INDIANS OF Total		3,198.40		
A014445A	16481		CALIF DEPT OF WATER RESOURCES	8/25/1951	1,575,212.40	Contra Costa, Sacramento	ITALIAN SLOUGH, SACRAMENTO RIVER DELTA CHANNELS
A017512	16482		CALIF DEPT OF WATER RESOURCES	3/15/1957	1,100,000.00	Madera, Merced, Sacramento	ITALIAN SLOUGH, SACRAMENTO RIVER DELTA CHANNELS, SAN LUIS CREEK
			CALIF DEPT OF WATER RESOURCES Total		2,675,212.40		
A014682	9061	6380	CARTER FAMILY TRUST & CARTER FAMILY MARTIAL TRUST	2/15/1952	2,498.20	Colusa	SACRAMENTO RIVER
			CARTER FAMILY TRUST & CARTER FAMILY MARTIAL TRUST Total		2,498.20		
A000230B	204	001788B	CHARLES W SEAVER	1/10/1916	1,568.10	Colusa	SACRAMENTO RIVER
			CHARLES W SEAVER Total		1,568.10		
A001179	609	1478	CHARLES W TUTTLE JR	2/15/1919	4,169.50	Colusa	SACRAMENTO RIVER
			CHARLES W TUTTLE JR Total		4,169.50		
A006716	3630	1849	CITY OF REDDING	6/30/1930	53.70	Shasta	SACRAMENTO RIVER
A008884	5163	2640	CITY OF REDDING	1/26/1937	3,619.90	Shasta	SACRAMENTO RIVER
A010320	5921	2736	CITY OF REDDING	11/18/1941	325.80	Shasta	SACRAMENTO RIVER

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A015197	9821	5677	CITY OF REDDING	2/16/1953	211.70	Shasta	SACRAMENTO RIVER
			CITY OF REDDING Total		4,211.10		
A001743	992		CITY OF SACRAMENTO	10/30/2000	81,800.00	Sacramento	SACRAMENTO RIVER
			CITY OF SACRAMENTO Total		81,800.00		
A025616	18150		CITY OF WEST SACRAMENTO	12/22/1977	18,350.00	Yolo	SACRAMENTO RIVER
			CITY OF WEST SACRAMENTO Total		18,350.00		
A010363	5952	3585	COLUSA DRAIN MUTUAL WATER COMPANY	1/16/1942	5,668.10	Glenn	SACRAMENTO RIVER
A016305	14595	12087	COLUSA DRAIN MUTUAL WATER COMPANY	4/7/1955	3,660.00	Yolo	SACRAMENTO RIVER
			COLUSA DRAIN MUTUAL WATER COMPANY Total		9,328.10		
A015452	9647	7332	COLUSA PROPERTIES INC	8/6/1953	2,032.70	Colusa	SACRAMENTO RIVER
			COLUSA PROPERTIES INC Total		2,032.70		
A001199	614	904	CONAWAY PRESERVATION GROUP LLC	3/1/1919	43,557.70	Yolo	SACRAMENTO RIVER
A001588	792	905	CONAWAY PRESERVATION GROUP LLC	4/18/1930	5,354.00	Yolo	SACRAMENTO RIVER
A012073	7234	5487	CONAWAY PRESERVATION GROUP LLC	9/8/1947	70,143.50	Yolo	SACRAMENTO RIVER
			CONAWAY PRESERVATION GROUP LLC Total		119,055.20		
A001061	513	1062	COUNTY OF SACRAMENTO	6/6/1931	2,715.30	Sacramento	SACRAMENTO RIVER
A014494	8921	4060	COUNTY OF SACRAMENTO	8/19/1982	479.60	Sacramento	SACRAMENTO RIVER
			COUNTY OF SACRAMENTO Total		3,194.90		
A017210	13872	9926	Cranmore Farms LLC	8/6/1956	100.00	Sutter	SACRAMENTO RIVER
			Cranmore Farms LLC Total		100.00		
A004376	2021	1241	DANIEL A SERPA REV TRUST	12/15/1932	116.10	Sacramento	SACRAMENTO RIVER
			DANIEL A SERPA REV TRUST Total		116.10		
A017134	10734	6192	DIAMOND LANDS CORPORATION	6/14/1956	650.00	Tehama	SACRAMENTO RIVER
			DIAMOND LANDS CORPORATION Total		650.00		
A016199	13860	8205	DIANNE E BUTLER	9/7/1967	721.60	Colusa, Sutter	SACRAMENTO RIVER
			DIANNE E BUTLER Total		721.60		
A012469B	7267	003722B	DOLORES AZEVEDO	4/13/1948	91.20	Sutter	SACRAMENTO RIVER
			DOLORES AZEVEDO Total		91.20		
A005993	3112	2393	DONNA L REED	3/19/1942	857.70	Yolo	SACRAMENTO RIVER
			DONNA L REED Total		857.70		
A014314	8782	5080	DRISCOLL STRAWBERRY ASSOCIATES	5/21/1951	240.90	Tehama	SACRAMENTO RIVER
			DRISCOLL STRAWBERRY ASSOCIATES Total		240.90		
A007641A	4215	006389A	E D WILLEY & SON INC	8/4/1933	9,582.70	Sutter	SACRAMENTO RIVER

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A011274	6725	3527	E D WILLEY & SON INC Total EASTSIDE MUTUAL WATER COMPANY	2/4/1946	9,582.70 5,474.50	Colusa	SACRAMENTO RIVER
A013796	8337	4758	EASTSIDE MUTUAL WATER COMPANY Total ELLIS FAMILY TRUST	6/16/1950	580.40	Sutter	SACRAMENTO RIVER
A005916	3066	1994	ELLIS FAMILY TRUST Total EMERY BURKE POUNDSTONE	5/16/1928	580.40 2,717.70	Colusa	SACRAMENTO RIVER
A009987	5664	2763	EMERY BURKE POUNDSTONE	8/22/1940	2,788.40	Colusa	SACRAMENTO RIVER
A006672	3588	10019	EMERY BURKE POUNDSTONE Total Erdman Family Trust	5/8/1930	5,506.10 1,400.00	Colusa	SACRAMENTO RIVER
A017150	13871	10221	Erdman Family Trust Total Faraz A Saeed	6/25/1956	1,400.00 997.00	Yolo	SACRAMENTO RIVER
A009032	5004	3674	Faraz A Saeed Total FEDORA FARMS INC	7/8/1937	997.00 547.50	Colusa, Sutter	SACRAMENTO RIVER
A013511	8061	3675	FEDORA FARMS INC	12/15/1949	328.50	Colusa, Sutter	SACRAMENTO RIVER
A013512	8062	3676	FEDORA FARMS INC	12/15/1949	587.60	Colusa, Sutter	SACRAMENTO RIVER
A006670	3654	1516	FEDORA FARMS INC Total Frank J. O'Brien Family Trust	5/6/1930	1,463.60 1,681.40	Sutter	SACRAMENTO RIVER
A014584	9188	5432	Frank J. O'Brien Family Trust Total FRANK LAMB TRUST	11/20/1951	1,681.40 1,527.30	Sutter	SACRAMENTO RIVER
A013487	7835	7216	FRANK LAMB TRUST Total GARY J RUMIANO	11/29/1949	1,527.30 726.00	Tehama	SACRAMENTO RIVER
A000018	29	2871	GARY J RUMIANO Total GLENN-COLUSA IRRIGATION DISTRICT	5/3/2006	726.00 53,673.00	Yuba	SACRAMENTO RIVER
A001554	796	7208	GLENN-COLUSA IRRIGATION DISTRICT	12/3/1919	28,078.20	Glenn	SACRAMENTO RIVER
A001624	797	7209	GLENN-COLUSA IRRIGATION DISTRICT	1/14/1920	10,793.60	Glenn	SACRAMENTO RIVER
A008688	4795	5387	GLENN-COLUSA IRRIGATION DISTRICT	5/28/1936	674.38	Colusa	HUNTERS CREEK
A012125	8272	4340	GLENN-COLUSA IRRIGATION DISTRICT	10/8/1947	3,360.00	Colusa	STONE CORRAL CREEK
A023005	15687	10635	GLENN-COLUSA IRRIGATION DISTRICT	3/12/1968	415.00	Colusa	UNST
A030838	21101		GLENN-COLUSA IRRIGATION DISTRICT	2/18/1999	182,900.00	Glenn	SACRAMENTO RIVER
A001653	1248	439	GLENN-COLUSA IRRIGATION DISTRICT Total GREEN VALLEY CORPORATION A CA CORP	2/5/1920	279,894.18 2,106.70	Colusa	SACRAMENTO RIVER
A011281	7288	5261	GREEN VALLEY CORPORATION A CA CORP Total HAMMOND RESERVOIR IRRIGATION ASSN	2/11/1946	2,106.70 5,742.20	Siskiyou	NORTH FORK SACRAMENTO RIVER
A016219	10679	6531	HAMMOND RESERVOIR IRRIGATION ASSN	1/26/1955	348.00	Siskiyou	NORTH FORK SACRAMENTO RIVER
A006696	3589	3566	HAMMOND RESERVOIR IRRIGATION ASSN Total HAROLD ARMSTRONG	6/12/1930	6,090.20 1,885.10	Colusa	SACRAMENTO RIVER
A003466	1552	646	HAROLD ARMSTRONG Total Heidrick & Heidrick Properties LP	6/5/1923	1,885.10 345.20	Sutter	SACRAMENTO RIVER
			Heidrick & Heidrick Properties LP Total		345.20		

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A018154	14510	8798	HEIDRICK & MCGINNIS PROP LP HEIDRICK & MCGINNIS PROP LP Total	1/2/1969	484.00 484.00	Sutter	SACRAMENTO RIVER
A006146	3234	1484	HENLE FAMILY LIMITED PARTNERSHIP HENLE FAMILY LIMITED PARTNERSHIP Total	12/27/1928	3,503.70 3,503.70	Sutter	SACRAMENTO RIVER
A006418A		001799A	HENRY D RICHTER JR	6/20/1991	3,178.80	Sutter	SACRAMENTO RIVER
A013646	8156	7218	HENRY D RICHTER JR HENRY D RICHTER JR Total	3/22/1950	239.80 3,418.60	Yolo	SACRAMENTO RIVER
A016361A	013861A		HERSHEY LAND COMPANY ROW CROP LLC HERSHEY LAND COMPANY ROW CROP LLC Total	6/10/2002	4,195.00 4,195.00	Sutter, Yolo	COLUSA BASIN DRAINAGE CANAL, SACRAMENTO RIVER
A001765B	1111	000613B	HIATT DOWNER RANCH LLC	4/9/1920	1,697.90	Sutter	SACRAMENTO RIVER
A003290B		002627B	HIATT DOWNER RANCH LLC HIATT DOWNER RANCH LLC Total	7/27/1990	1,184.30 2,882.20	Sutter	SACRAMENTO RIVER
A001617	1888	1407	JACK W BABER JACK W BABER Total	3/20/1934	1,959.90 1,959.90	Colusa	SACRAMENTO RIVER
A002317A	1259	001130A	JAMES T MUNSON JAMES T MUNSON Total	2/4/1980	82.50 82.50	Sutter	SACRAMENTO RIVER
A012899	7681	3766	JOHN ZUPPAN	1/13/1949	275.20	Butte, Tehama	SACRAMENTO RIVER
A014447	8840	8011	JOHN ZUPPAN JOHN ZUPPAN Total	8/27/1951	575.70 850.90	Tehama	SACRAMENTO RIVER
A017537	11071	5955	JOHN AND JANE FITZGERALD FAMILY REVOCABLE TRUST JOHN AND JANE FITZGERALD FAMILY REVOCABLE TRUST Total	4/2/1957	109.50 109.50	Sutter	OLD CHANNEL SACRAMENTO RIVER
A003994	1850	651	Johnathan Tucker Johnathan Tucker Total	1/13/1928	76.40 76.40	Glenn	SACRAMENTO RIVER
A007308	3980	1949	Joseph Alamo Joseph Alamo Total	6/29/1932	2,622.70 2,622.70	Colusa	SACRAMENTO RIVER
A006418B		001799B	KENNETH L WALLACE	6/20/1991	1,127.70	Sutter	SACRAMENTO RIVER
A014728	9002	4951	KENNETH L WALLACE KENNETH L WALLACE Total	3/24/1952	160.60 1,288.30	Sutter	SACRAMENTO RIVER
A014520	8928	5112	KENNETH R PYLMAN KENNETH R PYLMAN Total	10/15/1951	146.00 146.00	Yolo	SACRAMENTO RIVER
A004364	2227	981	Knights Landing Investors LLC Knights Landing Investors LLC Total	12/13/1924	3,537.60 3,537.60	Sutter, Yolo	SACRAMENTO RIVER
A006454	3388	1469	KRAMER RANCH KRAMER RANCH Total	10/8/1929	474.50 474.50	Yolo	SACRAMENTO RIVER
A013667B	8303	11188	LAKE CALIFORNIA PROPERTY OWNERS ASSN INC	3/26/1982	1,220.00	Tehama	SACRAMENTO RIVER
A023140	16056	11186	LAKE CALIFORNIA PROPERTY OWNERS ASSN INC LAKE CALIFORNIA PROPERTY OWNERS ASSN INC Total	9/23/1968	985.00 2,205.00	Tehama	SACRAMENTO RIVER
A004501	2285	1728	LAWRENCE SCHNEIDER AND RUTH SCHNEIDER FAMILY REV TRUST	4/19/1937	73.40	Yolo	SACRAMENTO RIVER
A012803	7563	4098	LAWRENCE SCHNEIDER AND RUTH SCHNEIDER FAMILY REV TRUST LAWRENCE SCHNEIDER AND RUTH SCHNEIDER FAMILY REV TRUST Total	11/17/1948	110.90 184.30	Yolo	SACRAMENTO RIVER

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A000882A	429	001205A	LEE W RICHTER LEE W RICHTER Total	12/30/1982	336.90 336.90	Sutter	SACRAMENTO RIVER
A001074A	591	004676A	LOMO COLD STORAGE A CAL GEN PARTNERSHIP	9/10/1918	1,951.80	Sutter	SACRAMENTO RIVER
A004613	2347	940	LOMO COLD STORAGE A CAL GEN PARTNERSHIP	11/28/1955	212.20	Sutter	SACRAMENTO RIVER
A004699	2364	1154	LOMO COLD STORAGE A CAL GEN PARTNERSHIP	3/21/1932	670.40	Sutter	SACRAMENTO RIVER
A006486	3615	4168	LOMO COLD STORAGE A CAL GEN PARTNERSHIP LOMO COLD STORAGE A CAL GEN PARTNERSHIP Total	11/14/1929	20,255.50 23,089.90	Sutter	SACRAMENTO RIVER
A007232	3903	1651	LORNA KELSO LORNA KELSO Total	4/7/1932	64.10 64.10	Yolo	SACRAMENTO RIVER
A003700	1633	1458	LOUISE A MARTIN-KOBELLAS LOUISE A MARTIN-KOBELLAS Total	10/31/1923	558.70 558.70	Sutter	SACRAMENTO RIVER
A002707	1162	1729	M & H REALTY PARTNERS VI L P M & H REALTY PARTNERS VI L P Total	12/29/1921	305.50 305.50	Sacramento	SACRAMENTO RIVER
A008213	4516	2618	M & T INCORPORATED M & T INCORPORATED Total	1/15/1935	1,450.00 1,450.00	Butte	SACRAMENTO RIVER
A007641D2		006389D 2	MARIA JOHN NICHOLAS KELLY RANCH LLC MARIA JOHN NICHOLAS KELLY RANCH LLC Total	1/5/2001	761.00 761.00	Sutter	SACRAMENTO RIVER
A012120	7127	4666	MARIETTE B HOLLINS MARIETTE B HOLLINS Total	10/7/1947	387.80 387.80	Colusa	SACRAMENTO RIVER
A008631	5128	7210	MAXWELL IRRIGATION DISTRICT	4/8/1936	28,990.80	Colusa	SACRAMENTO RIVER
A030445	21004		MAXWELL IRRIGATION DISTRICT	2/17/1995	13,630.00	Colusa	COLUSA BASIN DRAIN, LURLINE CREEK, SACRAMENTO RIVER, STONE CORRAL CREEK
A011956	8266	4586	MAXWELL IRRIGATION DISTRICT	6/24/1947	2,596.36	Colusa	RECLAMATION DISTRICT 2047 MAIN DRAIN
A014378	8808	4523	MAXWELL IRRIGATION DISTRICT	6/28/1951	1,636.36	Colusa	LATERAL DRAIN OF RECLAMATION DISTRICT 2047
A011955	8265	4643	MAXWELL IRRIGATION DISTRICT	6/24/1957	4,720.66	Colusa	RECLAMATION DISTRICT 2047 MAIN DRAIN
A011597	8267	4644	MAXWELL IRRIGATION DISTRICT	6/24/1957	22,085.95	Colusa	LOGAN AND HUNTER CREEK, AND RECLAMATION DISTRICT 2047 MAIN DRAIN CANAL
A011958	8268	4694	MAXWELL IRRIGATION DISTRICT	6/24/1957	5,226.45	Colusa	STONE CORRAL CREEK
A013919	9042	5692	MAXWELL IRRIGATION DISTRICT	8/25/1950	4,946.78	Colusa	LURLINE CREEK
A030445	21004		MAXWELL IRRIGATION DISTRICT MAXWELL IRRIGATION DISTRICT Total	5/30/1995	13,630.00 97,463.36	Colusa	SACRAMENTO RIVER, COLUSA BASIN DRAIN, STONE CORRAL CREEK, LURLINE CREEK
A015150	9391	4775	MCM PROPERTIES, A CALIF CORP	1/12/1953	1,094.90	Sutter	SACRAMENTO RIVER
A015152	9393	4776	MCM PROPERTIES, A CALIF CORP MCM PROPERTIES, A CALIF CORP Total	1/12/1953	474.50 1,569.40	Sutter	SACRAMENTO RIVER

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A001074B	591	004676B	MERIDIAN FARMS WATER CO MERIDIAN FARMS WATER CO Total	9/10/1918	67,335.90 67,335.90	Sutter	SACRAMENTO RIVER
A007641B	4215	006389B	MERILYN C SCHEIDEL MERILYN C SCHEIDEL Total	8/4/1933	3,484.60 3,484.60	Sutter	SACRAMENTO RIVER
A004355A		002881A	MICHAEL E LONON MICHAEL E LONON Total	6/9/2000	822.00 822.00	Sutter	SACRAMENTO RIVER
A007598	4220	1693	MILDRED HEIDRICK MILDRED HEIDRICK Total	6/23/1933	447.70 447.70	Yolo	SACRAMENTO RIVER
A015811	9814	5407	Moore Bros. Moore Bros. Total	3/31/1954	794.20 794.20	Colusa	SACRAMENTO RIVER
A004367	2012	1394	Narusuke Monguchi Narusuke Monguchi Total	12/15/1924	161.50 161.50	Yolo	SACRAMENTO RIVER UNDERFLOW
A000534	247	1050	NATOMAS CENTRAL MUTUAL WATER CO	5/28/1931	15,394.20	Sacramento, Sutter	NATOMAS CROSS CANAL, SACRAMENTO RIVER
A001056	511	2814	NATOMAS CENTRAL MUTUAL WATER CO	8/22/1918	16,205.20	Sacramento, Sutter	NATOMAS CROSS CANAL, SACRAMENTO RIVER
A001203	580	3109	NATOMAS CENTRAL MUTUAL WATER CO	3/5/1919	58,394.20	Sacramento, Sutter	NATOMAS CROSS CANAL, SACRAMENTO RIVER
A001413	1129	3110	NATOMAS CENTRAL MUTUAL WATER CO	8/27/1919	36,655.10	Sacramento, Sutter	NATOMAS CROSS CANAL, SACRAMENTO RIVER
A015572	15150	9794	NATOMAS CENTRAL MUTUAL WATER CO	10/8/1953	11,846.00	Sacramento, Sutter	NATOMAS CROSS CANAL, SACRAMENTO RIVER
A022309	15314	9989	NATOMAS CENTRAL MUTUAL WATER CO	10/8/1965	2,627.00	Sacramento, Sutter	RECLAMATION DISTRICT 1000 EAST DRAIN, RECLAMATION DISTRICT 1000 WEST DRAIN, RECLAMATION DISTRICT 1000 MAIN DRAIN
A025727	19400		NATOMAS CENTRAL MUTUAL WATER CO NATOMAS CENTRAL MUTUAL WATER CO Total	2/7/1985	10,000.00 151,121.70	Sacramento, Sutter	NATOMAS CROSS CANAL, RD 1000 EAST DRAIN, RD 1000 MAIN DRAIN, RD 1000 WEST DRAIN, SACRAMENTO RIVER
A007641D1		006389D1	NICOLI G NICHOLAS NICOLI G NICHOLAS Total	1/5/2001	761.00 761.00	Sutter	SACRAMENTO RIVER
A000880B	418	002820B	OJI BROTHERS, A CO-PARTNERSHIP	3/6/1946	636.60	Sutter	SACRAMENTO RIVER
A000880C	418	002820C	OJI BROTHERS, A CO-PARTNERSHIP	1/3/1918	1,880.70	Sutter	SACRAMENTO RIVER
A003290A		002627A	OJI BROTHERS, A CO-PARTNERSHIP	7/27/1990	3,985.80	Sutter	SACRAMENTO RIVER
A010951	6377	3242	OJI BROTHERS, A CO-PARTNERSHIP	1/11/1945	2,854.00	Sutter	SACRAMENTO RIVER
A013590	8137	3835	OJI BROTHERS, A CO-PARTNERSHIP OJI BROTHERS, A CO-PARTNERSHIP Total	2/20/1950	1,047.50 10,404.60	Sutter	SACRAMENTO RIVER
A001765A	1111	000613A	PELGER MUTUAL WATER COMPANY	3/13/1972	1,697.90	Sutter	SACRAMENTO RIVER
A012470B	007268B	008547B	PELGER MUTUAL WATER COMPANY	4/13/1948	22,815.20	Sutter	SACRAMENTO RIVER

Sacramento River - Post-1914 Appropriative Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A030410	20933		PELGER MUTUAL WATER COMPANY	9/16/1994	5,000.00	Sutter	SACRAMENTO RIVER
			PELGER MUTUAL WATER COMPANY Total		29,513.10		
A000882B	429	001205B	PHIL KNOX LEISER TRUST	12/30/1982	307.10	Sutter	SACRAMENTO RIVER
			PHIL KNOX LEISER TRUST Total		307.10		
A000244	463	2646	PRINCETON-CODORA-GLENN IRRIGATION DISTRICT	12/17/2001	50,936.30	Glenn	SACRAMENTO RIVER
A000770	464	4161	PRINCETON-CODORA-GLENN IRRIGATION DISTRICT	12/17/2001	20,936.30	Glenn	SACRAMENTO RIVER
A017066	13869	8989	PRINCETON-CODORA-GLENN IRRIGATION DISTRICT	5/2/1956	15,074.38	Colusa, Glenn	COLUSA BASIN DRAIN
A030812	21132		PRINCETON-CODORA-GLENN IRRIGATION DISTRICT	11/19/1998	24,370.00	Colusa, Glenn	COLUSA BASIN DRAIN, SACRAMENTO RIVER
			PRINCETON-CODORA-GLENN IRRIGATION DISTRICT Total		111,316.98		
A000462	303	7205	PROVIDENT IRRIGATION DISTRICT	2/27/2001	88,000.00	Glenn	COLUSA DRAIN, DRAIN NO 13, DRAIN NO 55, SACRAMENTO RIVER, UNDR, WILLOW CREEK
A000640	304	7206	PROVIDENT IRRIGATION DISTRICT	2/27/2001	36,496.00	Glenn	COLUSA DRAIN, DRAIN NO 13, DRAIN NO 55, SACRAMENTO RIVER, UNDR, WILLOW CREEK
A000892	416	7207	PROVIDENT IRRIGATION DISTRICT	1/18/1918	40,146.00	Glenn	COLUSA DRAIN, DRAIN 13, DRAIN NO 55, SACRAMENTO RIVER, UNDR, WILLOW CREEK
A001422	847	1109	PROVIDENT IRRIGATION DISTRICT	9/2/1919	3,371.90	Glenn	COLUSA DRAIN
A030813	21133		PROVIDENT IRRIGATION DISTRICT	11/19/1998	26,747.00	Glenn	COLUSA BASIN DRAIN, DRAIN NO 13, DRAIN NO 55, SACRAMENTO RIVER, UNDR, WILLOWS CREEK
			PROVIDENT IRRIGATION DISTRICT Total		194,760.90		
A004226	2024	2790	PURHIRAN FARMS LLC	6/28/1945	525.40	Yolo	SACRAMENTO RIVER
			PURHIRAN FARMS LLC Total		525.40		
A018062	14507	8795	QUAD H RANCHES, INC	1/2/1969	307.70	Sutter	SACRAMENTO RIVER
			QUAD H RANCHES, INC Total		307.70		
A004372	2017	1393	R W ROSE	12/15/1924	80.70	Yolo	SACRAMENTO RIVER
			R W ROSE Total		80.70		
A010408	6118	2966	RALPH BECKLEY	3/18/1942	549.30	Colusa	SACRAMENTO RIVER
			RALPH BECKLEY Total		549.30		
A004355B		002881B	RAY E AND JANICE R ANDERSON FAMILY TRUST	6/9/2000	286.40	Sutter	SACRAMENTO RIVER
			RAY E AND JANICE R ANDERSON FAMILY TRUST Total		286.40		
A015151	9392	5596	Rebekah Leiser	1/12/1953	36.70	Sutter	SACRAMENTO RIVER
			Rebekah Leiser Total		36.70		
A000027	31	3165	RECLAMATION DISTRICT #1004	4/2/1915	56,000.00	Colusa, Glenn	SACRAMENTO RIVER
A023201	16771		RECLAMATION DISTRICT #1004	12/26/1968	21,000.00	Colusa	

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RECLAMATION DISTRICT #1004 Total					77,000.00		
A000576	315	3065	RECLAMATION DISTRICT #108	1/25/1917	97,469.20	Colusa, Yolo	SACRAMENTO RIVER
A000763	388	3066	RECLAMATION DISTRICT #108	8/27/1917	270,747.80	Colusa, Yolo	SACRAMENTO RIVER
A001589	1885	3067	RECLAMATION DISTRICT #108	2/24/1950	77,968.40	Colusa, Yolo	SACRAMENTO RIVER
A011899	8251	7060	RECLAMATION DISTRICT #108	5/26/1947	27,371.90	Colusa	BACK LEVEE BORROW PIT OF RECLAMATION DISTRICT NO. 108 (COLUSA BASIN DRAIN)
A031436	21274		RECLAMATION DISTRICT #108 RECLAMATION DISTRICT #108 Total	10/18/2010	36,000.00 509,557.30	Colusa	SACRAMENTO RIVER
A001666	884	1301	RECLAMATION DISTRICT #999	2/11/1920	58,394.20	Solano, Yolo	ELK SLOUGH, MINER SLOUGH, SACRAMENTO RIVER, SACRAMENTO RIVER DEEP WATER SHIP CHANNEL, SUTTER SLOUGH
A004099	1890	1302	RECLAMATION DISTRICT #999	4/1/1966	1,472.30	Yolo	SACRAMENTO RIVER DEEP WATER SHIP CHANNEL
A004100	1891	1303	RECLAMATION DISTRICT #999	4/1/1966	34,174.80	Solano, Yolo	ELK SLOUGH, MINER SLOUGH, SACRAMENTO RIVER, SACRAMENTO RIVER DEEP WATER SHIP CHANNEL, SUTTER SLOUGH
A004101	1892	1304	RECLAMATION DISTRICT #999	7/18/1924	3,909.90	Yolo	SACRAMENTO RIVER, SACRAMENTO RIVER DEEP WATER SHIP CHANNEL
RECLAMATION DISTRICT #999 Total					97,951.20		
A020087	13942	9643	RICHARD SWIERSTRA	4/17/1961	45.10	Tehama	SACRAMENTO RIVER
RICHARD SWIERSTRA Total					45.10		
A018061	14506	8794	RICHARD & SANDRA GIUSTI FAMILY TRUST DATED 8/13/90	1/2/1969	307.70	Sutter	SACRAMENTO RIVER
RICHARD & SANDRA GIUSTI FAMILY TRUST DATED 8/13/90 Total					307.70		
A000575	314	1718	RIVER GARDEN FARMS COMPANY	1/25/1917	15,550.60	Yolo	SACRAMENTO RIVER
A000577	316	3123	RIVER GARDEN FARMS COMPANY	1/25/1917	13,745.70	Yolo	SACRAMENTO RIVER
A011910	8258	4636	RIVER GARDEN FARMS COMPANY	5/29/1947	6,331.24	Yolo	KNIGHTS LANDING RIDGE CUT, SACRAMENTO RIVER
RIVER GARDEN FARMS COMPANY Total					35,627.54		
A013239	7849	5140	RIVER MAID LAND LTD	7/19/1949	63.40	Sacramento	SACRAMENTO RIVER
RIVER MAID LAND LTD Total					63.40		
A007641C	4215	006389C	RIVER RANCH PARTNERSHIP	8/4/1933	2,795.00	Sutter	SACRAMENTO RIVER
RIVER RANCH PARTNERSHIP Total					2,795.00		
A002317C	1259	001130C	ROBERTA SCHREINER	2/4/1980	36.70	Sutter	SACRAMENTO RIVER
ROBERTA SCHREINER Total					36.70		
A003201	2172	1060	ROGER L MATTEOLI	12/27/1922	131.40	Yolo	SACRAMENTO RIVER

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A014836	9153	5437	ROGER L MATTEOLI Total SACRAMENTO & SAN JOAQUIN DRAINAGE DISTRICT	6/2/1952	131.40 277.70	Sutter	SACRAMENTO RIVER
			SACRAMENTO & SAN JOAQUIN DRAINAGE DISTRICT Total		277.70		
A030454	21209		SACRAMENTO COUNTY WATER AGENCY	2/15/2008	71,000.00	Sacramento	SACRAMENTO RIVER
			SACRAMENTO COUNTY WATER AGENCY Total		71,000.00		
A003423	1646	9994	SACRAMENTO RIVER RANCH II LLC	5/17/1923	2,646.00	Yolo	KNIGHTS LANDING RIDGE CUT, SACRAMENTO RIVER
A004901	2514	9995	SACRAMENTO RIVER RANCH II LLC	3/1/1973	9,338.30	Yolo	KNIGHTS LANDING RIDGE CUT, SACRAMENTO RIVER
A004902	2515	9996	SACRAMENTO RIVER RANCH II LLC	3/1/1973	3,446.70	Yolo	KNIGHTS LANDING RIDGE CUT, SACRAMENTO RIVER
A005359	2811	9997	SACRAMENTO RIVER RANCH II LLC	2/17/1927	1,808.20	Yolo	KNIGHTS LANDING RIDGE CUT, SACRAMENTO RIVER
			SACRAMENTO RIVER RANCH II LLC Total		17,239.20		
A004351	2098	1200	SACRAMENTO RIVER RANCH LLC	12/4/1924	113.00	Sutter, Yolo	SACRAMENTO RIVER
			SACRAMENTO RIVER RANCH LLC Total		113.00		
A001060	512	1187	SIDDIQUI FAMILY PARTNERSHIP	8/28/1918	98.50	Sacramento	SACRAMENTO RIVER
A001094	518	570	SIDDIQUI FAMILY PARTNERSHIP	9/26/1918	1,198.70	Sacramento	SACRAMENTO RIVER
			SIDDIQUI FAMILY PARTNERSHIP Total		1,297.20		
A003200	2171	1653	SIOUX CREEK PROPERTY LLC	12/27/1922	351.30	Sutter	SACRAMENTO RIVER
A005696	2931	1157	SIOUX CREEK PROPERTY LLC	9/16/1927	311.60	Sutter	SACRAMENTO RIVER
			SIOUX CREEK PROPERTY LLC Total		662.90		
A022503	15151	9726	SISKIYOU COUNTY F C & W C D	6/22/1966	26,000.00	Siskiyou	SACRAMENTO RIVER
A023016	15992		SISKIYOU COUNTY F C & W C D	4/3/1968	14.00	Siskiyou	SCOTT CAMP CREEK
A024354	18371	12062	SISKIYOU COUNTY F C & W C D	6/20/1986	25.00	Siskiyou	LITTLE CASTLE CREEK
			SISKIYOU COUNTY F C & W C D Total		26,039.00		
A013658	8302	6169	SMITH RANCHES AND WOOD ORCHARD	3/29/1950	478.10	Tehama	SACRAMENTO RIVER
			SMITH RANCHES AND WOOD ORCHARD Total		478.10		
A006726	3621	4541	STEVE TARKE	7/10/1930	1,824.80	Sutter	SACRAMENTO RIVER
A011450	6726	4542	STEVE TARKE	6/27/1946	2,919.70	Sutter	SACRAMENTO RIVER
			STEVE TARKE Total		4,744.50		
A000230A	204	001788A	STEVEN J RUDEK	1/10/1916	484.00	Colusa	SACRAMENTO RIVER
A014205	8767	4390	STEVEN J RUDEK	3/20/1951	1,277.40	Colusa	SACRAMENTO RIVER
			STEVEN J RUDEK Total		1,761.40		
A005160B	002649B	001183B	SUTTER BASIN GROWERS COOPERATIVE	8/18/1926	182.50	Sutter	SACRAMENTO RIVER
			SUTTER BASIN GROWERS COOPERATIVE Total		182.50		
A000581	287	2817	SUTTER MUTUAL WATER COMPANY	2/1/1917	21,868.10	Sutter	SACRAMENTO RIVER
A000878	419	2818	SUTTER MUTUAL WATER COMPANY	1/3/1918	56,721.00	Sutter	SACRAMENTO RIVER
A000879	420	2819	SUTTER MUTUAL WATER COMPANY	1/3/1918	12,270.40	Sutter	SACRAMENTO RIVER
A000880A	418	002820A	SUTTER MUTUAL WATER COMPANY	1/3/1918	196,725.30	Sutter	SACRAMENTO RIVER
A001160	569	2822	SUTTER MUTUAL WATER COMPANY	1/24/1919	19,681.30	Sutter	SACRAMENTO RIVER
A001758	1103	552	SUTTER MUTUAL WATER COMPANY	4/9/1920	636.70	Sutter	SACRAMENTO RIVER

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A001763	1108	1110	SUTTER MUTUAL WATER COMPANY	4/9/1920	916.40	Sutter	SACRAMENTO RIVER
A001769	1117	547	SUTTER MUTUAL WATER COMPANY	6/22/1926	3,255.10	Sutter	SACRAMENTO RIVER
A001772	1120	657	SUTTER MUTUAL WATER COMPANY	1/31/1928	94.70	Sutter	SACRAMENTO RIVER
A003195	2169	882	SUTTER MUTUAL WATER COMPANY	11/30/1929	585.80	Sutter	SACRAMENTO RIVER
A007886	4354	2240	SUTTER MUTUAL WATER COMPANY	3/29/1934	3,121.60	Sutter	SACRAMENTO RIVER
A009760	5510	2821	SUTTER MUTUAL WATER COMPANY	11/3/1939	180,994.40	Sutter	SACRAMENTO RIVER
A010658	6189	2823	SUTTER MUTUAL WATER COMPANY	6/16/1943	3,654.40	Sutter	SACRAMENTO RIVER
A011953	7194	4562	SUTTER MUTUAL WATER COMPANY	6/23/1947	2,737.20	Sutter	SACRAMENTO RIVER, WEST BORROW PIT SUTTER BYPASS
A012470A	007268A	008547A	SUTTER MUTUAL WATER COMPANY	4/13/1948	15,309.70	Sutter	SACRAMENTO RIVER
A016677	13867	8220	SUTTER MUTUAL WATER COMPANY	9/7/1967	2,038.10	Sutter	SACRAMENTO RIVER
SUTTER MUTUAL WATER COMPANY Total					520,610.20		
A013667A	8303	11187	SUZANNE GOELET	3/26/1982	410.00	Tehama	SACRAMENTO RIVER
SUZANNE GOELET Total					410.00		
A001659	1981	8129	Sycamore Mutual Water Company	2/9/1920	42,521.20	Colusa	SACRAMENTO RIVER
A012412	8277	4056	Sycamore Mutual Water Company	3/17/1948	2,189.75	Colusa	R D 2047 MAIN CANAL
A013000	8285	5796	Sycamore Mutual Water Company	3/25/1949	1,824.79	Colusa	R D 2047 MAIN CANAL
A013001	8285	7062	Sycamore Mutual Water Company	3/25/1949	98.54	Colusa	R D 2047 MAIN CANAL
A013002	8285	4057	Sycamore Mutual Water Company	3/25/1949	364.96	Colusa	R D 2047 MAIN CANAL
A018372	14514	9977	Sycamore Mutual Water Company	12/22/1972	1,013.00	Colusa	SACRAMENTO RIVER
Sycamore Mutual Water Company Total					48,012.24		
A014789	9069	7219	THOMAS L NELSON & HAZEL M NELSON TRUST	5/1/1952	656.70	Sutter	SACRAMENTO RIVER
THOMAS L NELSON & HAZEL M NELSON TRUST Total					656.70		
A007641D3		006389D 3	THOMAS S ATKINSON II	1/5/2001	761.00	Sutter	SACRAMENTO RIVER
THOMAS S ATKINSON II Total					761.00		
A000742	382	1211	TISDALE IRRIGATION & DRAINAGE CO	7/26/1917	12,473.70	Sutter	SACRAMENTO RIVER
A016985	13868	9335	TISDALE IRRIGATION & DRAINAGE CO	4/3/1956	1,350.00	Sutter	SACRAMENTO RIVER
TISDALE IRRIGATION & DRAINAGE CO Total					13,823.70		
A009169	5099	2695	TOWNE ENTERPRISES	11/3/1937	386.90	Sacramento	SACRAMENTO RIVER
TOWNE ENTERPRISES Total					386.90		
A016168	14505	10001	TRILOGY HOMES INC	12/6/1954	1,450.00	Sacramento	SACRAMENTO RIVER
TRILOGY HOMES INC Total					1,450.00		
A005625	12720		U.S. BUREAU OF RECLAMATION	7/30/1927	11,153,752.50	Shasta	SACRAMENTO RIVER
A005626	12721		U.S. BUREAU OF RECLAMATION	4/12/1961	7,998,004.00	Contra Costa, Glenn, Sacramento, Shasta, Tehama	OLD RIVER, SACRAMENTO RIVER

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A009363	12722		U.S. BUREAU OF RECLAMATION	4/12/1961	1,033,977.50	Contra Costa, Sacramento, San Joaquin, Shasta, Tehama	OLD RIVER, SACRAMENTO RIVER, Victoria Canal
A009364	12723		U.S. BUREAU OF RECLAMATION	8/2/1938	7,818,797.50	Contra Costa, Sacramento, San Joaquin, Shasta, Tehama	OLD RIVER, SACRAMENTO RIVER, Victoria Canal
			U.S. BUREAU OF RECLAMATION Total		28,004,531.50		
A006527	3597	2145	VAN RUITEN BROS	1/8/1930	1,094.90	Sutter, Yolo	SACRAMENTO RIVER
			VAN RUITEN BROS Total		1,094.90		
A000771	389	4160	W.A. YERXA	9/5/1917	9,084.40	Colusa	SACRAMENTO RIVER
			W.A. YERXA Total		9,084.40		
A015711	9751	5593	WALLACE L EDSON	2/2/1954	142.70	Sutter	OLD RIVER, SACRAMENTO RIVER
			WALLACE L EDSON Total		142.70		
A002317B	1259	001130B	WAYMON LYNCH	2/4/1980	30.60	Sutter	SACRAMENTO RIVER
			WAYMON LYNCH Total		30.60		
A004369	2014	1331	WILLIAM J CORREA	12/15/1924	44.00	Sacramento	SACRAMENTO RIVER
			WILLIAM J CORREA Total		44.00		
A002884	1347	968	WILLIAM P LOCKETT	6/17/1922	116.10	Sutter	SACRAMENTO RIVER
A005160A	2649	001183A	WILLIAM P LOCKETT	8/18/1926	365.00	Sutter	SACRAMENTO RIVER
			WILLIAM P LOCKETT Total		481.10		
A028238	20073	13351	WILLOW CREEK MUTUAL WATER CO	9/7/1984	5,000.00	Glenn	SACRAMENTO RIVER
			WILLOW CREEK MUTUAL WATER CO Total		5,000.00		
A008141	4459	2631	WILSON RANCH PARTNERSHIP	10/24/1934	2,717.40	Yolo	SACRAMENTO RIVER
			WILSON RANCH PARTNERSHIP Total		2,717.40		
A003247	1695	4255	WINDSWEPT LAND AND CATTLE COMPANY	3/21/1956	3,209.00	Sutter, Yolo	SACRAMENTO RIVER
			WINDSWEPT LAND AND CATTLE COMPANY Total		3,209.00		
A004257	2066	1939	Woodland Development Company, LLC	4/6/1939	666.50	Yolo	SACRAMENTO RIVER
			Woodland Development Company, LLC Total		666.50		
A030358	20281		Woodland-Davis Clean Water Agency	4/14/2011	45,000.00	Yolo	SACRAMENTO RIVER
			Woodland-Davis Clean Water Agency Total		45,000.00		
A013031	7461	4721	Yolo Land Trust	4/18/1949	1,011.60	Yolo	SACRAMENTO RIVER
			Yolo Land Trust Total		1,011.60		
A014619	8957	11038	ZUMWALT MUTUAL WATER COMPANY	1/14/1952	63.00	Colusa	SACRAMENTO RIVER
			ZUMWALT MUTUAL WATER COMPANY Total		63.00		
			Grand Total		33,492,590.01		

Stanislaus River Watershed - Post-1914 Appropriative Water Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	Season	Purpose of Use	County	Source
A020496	13915	8274	ALEX NACCARATO	11/15/61	13.00			Tuolumne	OWL CREEK
A029917	20928		ALEX NACCARATO	3/14/91	20.00			Tuolumne	OWL CREEK
			ALEX NACCARATO Total		33.00				
A018809	12223	6502	ALMA A RYALS	6/18/59	1.10			Tuolumne	UNSP
			ALMA A RYALS Total		1.10				
A016295	10192	10158	BEAR VALLEY HOMEOWNERS ASSOCIATION	4/1/55	2.50			Alpine	UNSP
A022290	15190	10159	BEAR VALLEY HOMEOWNERS ASSOCIATION	9/17/65	1.30			Alpine	UNSP
A022291	15449	10160	BEAR VALLEY HOMEOWNERS ASSOCIATION	9/17/65	3.20			Alpine	UNSP
A029813	20542	13866	BEAR VALLEY HOMEOWNERS ASSOCIATION	8/20/12	7.80			Alpine	UNSP
			BEAR VALLEY HOMEOWNERS ASSOCIATION Total		14.80				
A018366	12170	7514	BERNICE JANE BOTTOMLEY	10/9/58	47.00			Calaveras	CARSON CREEK
			BERNICE JANE BOTTOMLEY Total		47.00				
A012550	7440	4929	BLUE LAKE SPRINGS HOMEOWNERS ASSOCIATION	6/16/48	45.00			Calaveras	MORAN CREEK
A014576	9049	4698	BLUE LAKE SPRINGS HOMEOWNERS ASSOCIATION	11/13/51	51.20			Calaveras	MORAN CREEK
			BLUE LAKE SPRINGS HOMEOWNERS ASSOCIATION Total		96.20				
A027131	18603	12280	BRETT D THOMSON	12/2/81	1.00			Calaveras	UNST
			BRETT D THOMSON Total		1.00				
A011792B	15013		CALAVERAS COUNTY WATER DISTRICT	3/24/47	78,500.00			Calaveras, Tuolumne	HIGHLAND CREEK, NORTH FORK STANISLAUS RIVER
A012911	15016		CALAVERAS COUNTY WATER DISTRICT	1/25/49	368,091.00			Calaveras, Tuolumne	HIGHLAND CREEK, NORTH FORK STANISLAUS RIVER
A012912	15017		CALAVERAS COUNTY WATER DISTRICT	1/25/49	3,373.90			Tuolumne	NORTH FORK STANISLAUS RIVER
A012912A	14769		CALAVERAS COUNTY WATER DISTRICT	1/25/49	1,446.00			Tuolumne	NORTH FORK STANISLAUS RIVER
A013091	15018		CALAVERAS COUNTY WATER DISTRICT	5/13/49	63,000.00			Tuolumne	HIGHLAND CREEK
A013092	15019		CALAVERAS COUNTY WATER DISTRICT	5/13/49	63,000.00			Tuolumne	HIGHLAND CREEK
A013093	15020		CALAVERAS COUNTY WATER DISTRICT	5/13/49	50,050.00			Alpine, Tuolumne	HIGHLAND CREEK, NORTH FORK STANISLAUS RIVER
A018727	15021		CALAVERAS COUNTY WATER DISTRICT	5/20/59	506,809.30			Tuolumne	BEAVER CREEK, NORTH FORK STANISLAUS RIVER
A019148	15023		CALAVERAS COUNTY WATER DISTRICT	12/23/59	732,538.90			Alpine, Tuolumne	BEAVER CREEK, HIGHLAND CREEK, NORTH FORK STANISLAUS RIVER
A019149	15024		CALAVERAS COUNTY WATER DISTRICT	12/23/59	50,050.00			Alpine, Tuolumne	HIGHLAND CREEK, NORTH FORK STANISLAUS RIVER
			CALAVERAS COUNTY WATER DISTRICT Total		1,916,859.10				
A018148	11642	6479	CASTLE & COOKE CALAVERAS INC	5/22/58	50.00			Calaveras	SAWMILL CREEK
			CASTLE & COOKE CALAVERAS INC Total		50.00				
A030100	20788		CASTLE & COOKE CALIFORNIA INC	4/8/92	98.00			Calaveras	SAW MILL CREEK
			CASTLE & COOKE CALIFORNIA INC Total		98.00				
A014898	9610	4993	CEDAR RIDGE IMPROVEMENT ASSOCIATION	7/9/52	27.50			Tuolumne	FIVEMILE CREEK
A018514	12003	9773	CEDAR RIDGE IMPROVEMENT ASSOCIATION	1/30/59	15.00			Tuolumne	UNSP (3)
			CEDAR RIDGE IMPROVEMENT ASSOCIATION Total		42.50				
A004895	2599	1308	CLIFFORD D CHENEY	1/26/26	3.40			Tuolumne	UNSP
			CLIFFORD D CHENEY Total		3.40				
A021647	14633	9120	COLD SPRINGS WATER COMPANY INC	2/20/64	106.00			Tuolumne	UNST
			COLD SPRINGS WATER COMPANY INC Total		106.00				
A019732	13038	8088	DANA KAUFFMANN	9/8/60	29.00			Tuolumne	KNIGHT CREEK
			DANA KAUFFMANN Total		29.00				
A018808	12222	6501	DAVE D FICKEL	6/18/59	0.80			Tuolumne	UNSP
			DAVE D FICKEL Total		0.80				
A020819	13802	10299	DAVIES PROPERTIES	6/14/62	6.40			Calaveras	LOVE CREEK
			DAVIES PROPERTIES Total		6.40				
A016982	10614	5887	Donald Paul Deshon	4/2/56	6.00			Tuolumne	UNST
			Donald Paul Deshon Total		6.00				
A019168	12437	7468	EARL D GARRISON	1/4/60	6.00			Calaveras	UNST
			EARL D GARRISON Total		6.00				
A012659	7486	4989	ESTATE OF E ALFORD	8/19/48	24.00			Calaveras	LOVE CREEK
			ESTATE OF E ALFORD Total		24.00				
A021338	14498	10248	Eureka Valley LLC	5/9/74	15.00			Tuolumne	UNST
			Eureka Valley LLC Total		15.00				
A025335	17026	11288	GEORGE A ATHERTON	4/21/77	32.00			Tuolumne	SOUTH FORK WILDCAT CREEK

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A017554	11689	8666	GEORGE A ATHERTON Total		32.00				
			GERALD B ENGLER	4/18/57	25.00			Tuolumne	MORMON CREEK
			GERALD B ENGLER Total		25.00				
A015583	9715	6899	GREENHORN CREEK ASSOCIATES L P	10/23/53	45.00			Calaveras	UNXX
			GREENHORN CREEK ASSOCIATES L P Total		45.00				
A029013	21114		GUADALUPE RAMIREZ	4/23/87	18.00			Calaveras	LOVE CREEK
			GUADALUPE RAMIREZ Total		18.00				
A009620	5396	5298	IRVING M TERZICH	6/15/39	426.50			Tuolumne	EAGLE CREEK
			IRVING M TERZICH Total		426.50				
A022343	15266	9934	JANICE M ZUKAL	11/24/65	7.00			Tuolumne	MINE TUNNEL
			JANICE M ZUKAL Total		7.00				
A019307	12552	7663	JEFF R WILSON	3/14/60	14.10			Tuolumne	UNST
			JEFF R WILSON Total		14.10				
A021779	15162	10782	JEROME P SOLARI	5/19/64	22.50			Tuolumne	DEADMAN GULCH
			JEROME P SOLARI Total		22.50				
A018573	11984	6635	JOANNA VIDITO	3/9/59	4.00			Tuolumne	UNST
			JOANNA VIDITO Total		4.00				
A025626	17480	11277	JOHN WILLMS RANCH INC	12/30/77	11.00			Stanislaus	UNST
			JOHN WILLMS RANCH INC Total		11.00				
A020041	13786	9752	JON H JANOFSKY	3/17/61	20.00			Calaveras	PENNY CREEK
			JON H JANOFSKY Total		20.00				
A013517	8095	4279	JON V ELLIS	12/27/49	35.00			Calaveras	UNST
			JON V ELLIS Total		35.00				
A019469	16009	10448	JOSEPH W MARTIN JR	6/2/60	9.60			Tuolumne	ANDREWS CREEK
			JOSEPH W MARTIN JR Total		9.60				
A018574	11985	7360	KAREN REESE	3/9/59	48.00			Tuolumne	GREEN SPRING RUN
			KAREN REESE Total		48.00				
A021149	14736	8849	KATHARINE K STEVENS	2/4/63	2.00			Tuolumne	UNSP
			KATHARINE K STEVENS Total		2.00				
A011661	6863	4230	KATHERINE R REID	12/16/46	36.90			Tuolumne	EAGLE CREEK
			KATHERINE R REID Total		36.90				
A020312	13903	10840	LAKE ALPINE WATER COMPANY	7/21/61	42.00			Alpine	UNSP
A021485	14541	11007	LAKE ALPINE WATER COMPANY	10/7/63	261.00			Alpine	BEAR CREEK
A005648G	21237		LAKE ALPINE WATER COMPANY	6/10/09	395.00			Alpine	BEAR CREEK
			LAKE ALPINE WATER COMPANY Total		698.00				
A020450	13818	12186	LELAND MEADOW WATER DISTRICT	10/24/61	2.30			Tuolumne	UNSP
A023195	16065	11345	LELAND MEADOW WATER DISTRICT	12/17/68	68.00			Tuolumne	LELAND CREEK
A026373	18277	12187	LELAND MEADOW WATER DISTRICT	5/21/80	2.70			Tuolumne	UNSP
			LELAND MEADOW WATER DISTRICT Total		73.00				
A008919	4961	2482	LENORA HOLMES	3/13/37	0.20			Alpine	UNSP
A009217	5129	2483	LENORA HOLMES	12/30/37	0.20			Alpine	UNSP
A009851	5546	3153	LENORA HOLMES	3/14/40	0.70			Alpine	UNSP
			LENORA HOLMES Total		1.10				
A003602	1849	895	MATTHEW T BLOOM	4/17/03	0.30			Tuolumne	UNST
			MATTHEW T BLOOM Total		0.30				
A015841	10169	6882	MICHAEL P TRACY	4/23/07	18.00			Tuolumne	MORMON CREEK
			MICHAEL P TRACY Total		18.00				
A026084	18024	12790	MIKEL C WILLIAMS	9/6/79	0.50			Tuolumne	MORMON CREEK, UNST
			MIKEL C WILLIAMS Total		0.50				
A000077A	1303	9966	Northern California Power Agency	8/4/15	4,062.00			Tuolumne	HIGHLAND CREEK
			Northern California Power Agency Total		4,062.00				
A001081	2104	2012	OAKDALE IRRIGATION DISTRICT	9/20/18	96,195.00			Calaveras	STANISLAUS RIVER
A003091	2106	2013	OAKDALE IRRIGATION DISTRICT	10/19/22	10,754.00			Calaveras	STANISLAUS RIVER
A005648A	13692	12385	OAKDALE IRRIGATION DISTRICT	7/30/27	60,000.00			Tuolumne	MIDDLE FORK STANISLAUS RIVER
A010872	9360	7856	OAKDALE IRRIGATION DISTRICT	8/31/01	80,000.00			Tuolumne	STANISLAUS RIVER
A010978	6448	3986	OAKDALE IRRIGATION DISTRICT	8/31/01	25,000.00			Calaveras	STANISLAUS RIVER
A011105	9361	7857	OAKDALE IRRIGATION DISTRICT	8/31/01	98,000.00			Tuolumne	MIDDLE FORK STANISLAUS RIVER
A012490	9362	10166	OAKDALE IRRIGATION DISTRICT	8/31/01	64,500.00			Tuolumne	MIDDLE FORK STANISLAUS RIVER
A012614	9363	7858	OAKDALE IRRIGATION DISTRICT	7/23/48	496,187.60			Tuolumne	MIDDLE FORK STANISLAUS RIVER
A012873	9364	10167	OAKDALE IRRIGATION DISTRICT	12/22/48	354,091.00			Tuolumne	MIDDLE FORK STANISLAUS RIVER
A013309	9365	7859	OAKDALE IRRIGATION DISTRICT	8/22/49	144,795.50			Tuolumne	MIDDLE FORK STANISLAUS RIVER
A013310	9366	7860	OAKDALE IRRIGATION DISTRICT	8/22/49	1,165,966.30			Tuolumne	STANISLAUS RIVER
A026791	19046		OAKDALE IRRIGATION DISTRICT	4/15/81	1,303,159.50			Calaveras	STANISLAUS RIVER

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A031502	21188		OAKDALE IRRIGATION DISTRICT	8/30/07	50,000.00			Tuolumne	MIDDLE FORK STANISLAUS RIVER
A031770	21299		OAKDALE IRRIGATION DISTRICT	4/25/12	506,000.00			Tuolumne	
			OAKDALE IRRIGATION DISTRICT Total		4,454,648.90				
A001339	668	1391	PACIFIC GAS AND ELECTRIC COMPANY	1/3/34	40,904.70			Tuolumne	SOUTH FORK STANISLAUS RIVER
A006129	3507	1541	PACIFIC GAS AND ELECTRIC COMPANY	12/4/28	3,919.00			Tuolumne	SOUTH FORK STANISLAUS RIVER
A006130	3508	1542	PACIFIC GAS AND ELECTRIC COMPANY	12/4/28	5,360.00			Tuolumne	SOUTH FORK STANISLAUS RIVER
A010122	6107	2862	PACIFIC GAS AND ELECTRIC COMPANY	2/19/41	115,836.40			Tuolumne	MIDDLE FORK STANISLAUS RIVER
A031405	21170		PACIFIC GAS AND ELECTRIC COMPANY	4/5/05	4,706.00			Tuolumne	SOUTH FORK STANISLAUS RIVER
			PACIFIC GAS AND ELECTRIC COMPANY Total		170,726.10				
A022245	15262	9709	PATRICIA D DAVEY	3/31/71	12.00			Tuolumne	UNST
			PATRICIA D DAVEY Total		12.00				
A023320	16216	12444	PETER G VON DER LINDE	7/29/69	11.10			Tuolumne	UNNAMED MINE TUNNEL
			PETER G VON DER LINDE Total		11.10				
A025177	17033	13451	RICHARD M GONZALES	10/20/76	10.00			Calaveras	YORK CREEK
			RICHARD M GONZALES Total		10.00				
A020416	13653	8499	RNE INVESTMENTS LLC	10/2/61	46.00			Calaveras	SAWMILL CREEK
			RNE INVESTMENTS LLC Total		46.00				
A024335	16788	11194	ROSS A CARKEET JR	4/3/73	0.20			Tuolumne	UNSP
			ROSS A CARKEET JR Total		0.20				
A013353	8073	10902	SHERMAN ACRES MUTUAL WATER ASSN	9/14/49	1.50			Calaveras	UNSP
			SHERMAN ACRES MUTUAL WATER ASSN Total		1.50				
A024930	17704	11731	Sierra Golf Management, Inc.	11/17/75	108.00			Calaveras	ANGELS CREEK
			Sierra Golf Management, Inc. Total		108.00				
A012739	7567	5256	SIERRA PACIFIC INDUSTRIES	10/8/48	8.10			Tuolumne	UNSP
			SIERRA PACIFIC INDUSTRIES Total		8.10				
A005648X01			SIX MILE LAND COMPANY	5/9/01	81.00			Calaveras	SIX MILE CREEK
A031182			SIX MILE LAND COMPANY	5/9/01	41.00			Calaveras	SIX MILE CREEK
			SIX MILE LAND COMPANY Total		122.00				
A002524	1147	604	SOUTH SAN JOAQUIN IRRIGATION DISTRICT	8/29/21	36,000.00			Calaveras	STANISLAUS RIVER
			SOUTH SAN JOAQUIN IRRIGATION DISTRICT Total		36,000.00				
A030603A			STOCKTON EAST WATER DISTRICT	9/10/04	111,900.00			Calaveras	STANISLAUS RIVER
A030603B			STOCKTON EAST WATER DISTRICT	9/10/04	407,000.00			Calaveras, Tuolumne	STANISLAUS RIVER
			STOCKTON EAST WATER DISTRICT Total		518,900.00				
A010168	5974	3560	TAMARACK CABIN OWNERS ASSN	3/25/41	7.30			Calaveras	UNSP
			TAMARACK CABIN OWNERS ASSN Total		7.30				
A016563	10518		TAMARACK SPRINGS MUTUAL WATER CO	8/31/55	4.60			Calaveras	UNSP (2), UNXX
			TAMARACK SPRINGS MUTUAL WATER CO Total		4.60				
A019990	13140	8194	The Donald A. Bottomley 1992 Trust	2/16/61	4.00			Calaveras	UNST
			The Donald A. Bottomley 1992 Trust Total		4.00				
A018815	12329	7401	THOMAS P KLEIN	6/22/59	2.20			Tuolumne	UNST
			THOMAS P KLEIN Total		2.20				
A005648X02			THOMSON FAMILY TRUST	10/26/00	28.10			Calaveras	SIXMILE CREEK, UNST
A031364			THOMSON FAMILY TRUST	10/2/02	28.10			Calaveras	SIXMILE CREEK, UNST
			THOMSON FAMILY TRUST Total		56.20				
A003912	1781	1182	U S STANISLAUS NATL FOREST	4/18/32	32.80			Tuolumne	GOOSEBERRY SPRING
A010384	5982	3941	U S STANISLAUS NATL FOREST	2/6/42	6.60			Tuolumne	COW CREEK
A010386	5983	3917	U S STANISLAUS NATL FOREST	2/6/42	4.50			Tuolumne	LELAND CREEK
A010421	5986	3561	U S STANISLAUS NATL FOREST	4/1/42	1.10			Calaveras	BIG MEADOW CREEK
A010437	5987	3931	U S STANISLAUS NATL FOREST	4/25/42	0.70			Alpine	BEE CREEK
A010490	6038	3282	U S STANISLAUS NATL FOREST	7/8/42	1.10			Tuolumne	UNSP
A010491	6039	3012	U S STANISLAUS NATL FOREST	7/8/42	1.00			Tuolumne	UNST
A010492	6040	3013	U S STANISLAUS NATL FOREST	7/9/42	0.90			Tuolumne	UNST
A010495	6041	2977	U S STANISLAUS NATL FOREST	7/15/42	3.10			Tuolumne	UNST
A010556	6104	5015	U S STANISLAUS NATL FOREST	11/12/42	3.00			Tuolumne	BUMBLEBEE CREEK
A010557	6105	2974	U S STANISLAUS NATL FOREST	11/12/42	1.60			Tuolumne	CASCADE CREEK
A010575	6159	2975	U S STANISLAUS NATL FOREST	12/28/42	0.80			Tuolumne	UNST
A010576	6160	3903	U S STANISLAUS NATL FOREST	12/28/42	0.90			Tuolumne	UNST
A010584	6161	3283	U S STANISLAUS NATL FOREST	1/2/43	2.10			Tuolumne	UNST
A013833	8360	3860	U S STANISLAUS NATL FOREST	7/5/50	3.10			Tuolumne	UNST
A014167	8618	4660	U S STANISLAUS NATL FOREST	2/20/51	1.90			Tuolumne	UNSP
A016980	10760	7337	U S STANISLAUS NATL FOREST	3/30/56	0.70			Tuolumne	UNST

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A017484	11017	7115	U S STANISLAUS NATL FOREST	2/27/57	11.40			Alpine	UNST
A018680	12115	7497	U S STANISLAUS NATL FOREST	4/30/59	0.90			Alpine	INSPIRATION SPRING
A018882	12197	7863	U S STANISLAUS NATL FOREST	8/3/59	1.20			Tuolumne	CRANDALL SPRING
A018883	12198	7255	U S STANISLAUS NATL FOREST	8/3/59	1.20			Tuolumne	SCHAFER SPRING
A018893	12199	7260	U S STANISLAUS NATL FOREST	8/3/59	1.20			Tuolumne	FRASER SPRING
A019702	13033	8003	U S STANISLAUS NATL FOREST	8/22/60	2.30			Tuolumne	UNST
A019703	13034	7977	U S STANISLAUS NATL FOREST	8/22/60	0.70			Tuolumne	UNSP
A019704	13035	8232	U S STANISLAUS NATL FOREST	8/22/60	1.90			Alpine	UNST
A019706	13037	8142	U S STANISLAUS NATL FOREST	8/22/60	1.40			Tuolumne	UNST
A020426	13565	8080	U S STANISLAUS NATL FOREST	10/5/61	0.90			Calaveras	UNSP
A021918	14918	9098	U S STANISLAUS NATL FOREST	9/29/64	0.50			Tuolumne	UNSP
A022030	14969	9097	U S STANISLAUS NATL FOREST	1/18/65	0.20			Tuolumne	UNSP
U S STANISLAUS NATL FOREST Total					89.70				
A014858A	16597		U.S. BUREAU OF RECLAMATION	4/4/73	980,000.00			Calaveras	STANISLAUS RIVER
A014858B	20245		U.S. BUREAU OF RECLAMATION	7/18/88	1,000,000.00			Calaveras, San Joaquin	STANISLAUS RIVER
A014859	16598		U.S. BUREAU OF RECLAMATION	6/16/52	5,323,865.00			Calaveras	STANISLAUS RIVER
A019303	16599		U.S. BUREAU OF RECLAMATION	7/19/73	1,420,000.00			Calaveras	STANISLAUS RIVER
A019304	16600		U.S. BUREAU OF RECLAMATION	3/11/60	1,420,000.00			Calaveras, Contra Costa	STANISLAUS RIVER
A027319	20246		U.S. BUREAU OF RECLAMATION	7/18/88	2,895,910.00			Calaveras	STANISLAUS RIVER
U.S. BUREAU OF RECLAMATION Total					13,039,775.00				
A028182	20144		VENTURE 4 MINING, A PARTNERSHIP	7/3/84	2.50			Tuolumne	UNST (AKA GREENHORN GULCH)
VENTURE 4 MINING, A PARTNERSHIP Total					2.50				
A025369	17409	11514	WILLIAM MICHAEL ROBISON	5/27/77	28.00			Tuolumne	OWL CREEK, UNST
A025370	17410	12006	WILLIAM MICHAEL ROBISON	5/27/77	48.00			Tuolumne	OWL CREEK
A025371	17411	12007	WILLIAM MICHAEL ROBISON	5/27/77	20.00			Tuolumne	NORTH FORK WILDCAT CREEK
A025386	17412	11515	WILLIAM MICHAEL ROBISON	6/9/77	0.70			Tuolumne	NORTH FORK WILDCAT CREEK
WILLIAM MICHAEL ROBISON Total					96.70				
A028278	19471	12939	YOUNG BERTRAND TRUSTEE ETAL	10/2/84	0.10			Calaveras	LOVE CREEK
YOUNG BERTRAND TRUSTEE ETAL Total					0.10				
Grand Total					20,143,681.00				

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A014162	9583	5049	Appropriative	Licensed	Aaron Lentz	2/15/51	3.7	Tuolumne	CURTIS CREEK
					Aaron Lentz Total		3.7		
A022486	15299	9177	Appropriative	Licensed	BANK OF AMERICA NT & SA	6/8/66	15	Tuolumne	UNST
A022487	15300	9161	Appropriative	Licensed	BANK OF AMERICA NT & SA	6/8/66	20	Stanislaus	UNST
					BANK OF AMERICA NT & SA Total		35		
A018644	12028	7382	Appropriative	Licensed	BARBARA THORNTON	4/14/59	9	Tuolumne	GARROTTE CREEK
					BARBARA THORNTON Total		9		
A020279	13976	10278	Appropriative	Licensed	BERNHARD KISSINGER	6/26/61	1.5	Tuolumne	UNST
					BERNHARD KISSINGER Total		1.5		
A020324	13395	8154	Appropriative	Licensed	BIG CREEK ASSOCIATES	7/25/61	24.5	Tuolumne	BIG CREEK DRAINAGE, UNST
					BIG CREEK ASSOCIATES Total		24.5		
A018738B	12118	008164B	Appropriative	Licensed	BOBBY E MADEWELL	5/25/59	1	Tuolumne	UNST
					BOBBY E MADEWELL Total		1		
A012961	7549	4032	Appropriative	Licensed	BOY SCOUT MEMORIAL FOUNDATION	3/4/49	6	Tuolumne	UNST
A016137	10124	6866	Appropriative	Licensed	BOY SCOUT MEMORIAL FOUNDATION	11/15/54	7.9	Tuolumne	UNST
					BOY SCOUT MEMORIAL FOUNDATION Total		13.9		
A012962	7550	4033	Appropriative	Licensed	BOY SCOUT OF AMERICA MEMORIAL FOUNDATION	3/4/49	2.7	Tuolumne	NORTH FORK TUOLUMNE RIVER
					BOY SCOUT OF AMERICA MEMORIAL FOUNDATION Total		2.7		
A019217	12502	7478	Appropriative	Licensed	BRENT LOOP	2/4/60	3.6	Tuolumne	UNST
					BRENT LOOP Total		3.6		
A021372	14266	9116	Appropriative	Licensed	BRENTWOOD LAKE CLUB INC	6/28/63	100	Tuolumne	UNST
					BRENTWOOD LAKE CLUB INC Total		100		
A010902	6346	3579	Appropriative	Licensed	CAMP TAWONGA-TAWONGA JEWISH COMMUNITY CORP	10/16/44	21.7	Tuolumne	MIDDLE FORK TUOLUMNE RIVER
A011108	6525	3743	Appropriative	Licensed	CAMP TAWONGA-TAWONGA JEWISH COMMUNITY CORP	7/17/45	11	Tuolumne	UNST
A013365	7958	4251	Appropriative	Licensed	CAMP TAWONGA-TAWONGA JEWISH COMMUNITY CORP	9/27/49	21.7	Tuolumne	UNST
A015078	9901	5326	Appropriative	Licensed	CAMP TAWONGA-TAWONGA JEWISH COMMUNITY CORP	11/6/52	12.3	Tuolumne	UNST
					CAMP TAWONGA-TAWONGA JEWISH COMMUNITY CORP Total		66.7		
A020332	13421	9601	Appropriative	Licensed	CAROLE CANEPA	7/28/61	22	Tuolumne	UNST
					CAROLE CANEPA Total		22		
A020841	14114	8616	Appropriative	Licensed	CAROLYN SUE MOSLEY	7/3/62	0.3	Tuolumne	CURTIS CREEK
					CAROLYN SUE MOSLEY Total		0.3		
A018757B	12099	006636B	Appropriative	Licensed	CHARLES G YONEDA	10/28/88	0.7	Tuolumne	UNST
					CHARLES G YONEDA Total		0.7		
A013101	7796	5279	Appropriative	Licensed	CHARLES J HURST	5/19/49	4	Tuolumne	WOODS CREEK
A023560	16134	10546	Appropriative	Licensed	CHARLES J HURST	7/17/70	8	Tuolumne	UNST
					CHARLES J HURST Total		12		
A016104	10108	9181	Appropriative	Licensed	CHRISTOPHER R ROSS	2/6/03	8	Tuolumne	UNST (AKA LITTLE SUGAR PINE CREEK)
					CHRISTOPHER R ROSS Total		8		
A020574	13616	8190	Appropriative	Licensed	CLIFTON E J HODGE	1/29/62	6	Tuolumne	UNST
					CLIFTON E J HODGE Total		6		
A020617	13658	8259	Appropriative	Licensed	COUNTY OF TUOLUMNE	2/15/62	10	Tuolumne	UNST
A028689	20146	13073	Appropriative	Licensed	COUNTY OF TUOLUMNE	1/3/86	2	Tuolumne	UNST
					COUNTY OF TUOLUMNE Total		12		
A018604	12335	7329	Appropriative	Licensed	CRAIG AND PATRICIA DAMBACHER 1993 FAMILY TRUST	3/20/59	16	Tuolumne	UNST (2)
					CRAIG AND PATRICIA DAMBACHER 1993 FAMILY TRUST Total		16		
A000862	516	283	Appropriative	Licensed	CROOK REVOCABLE 1992 TRUST	12/15/17	196.4	Tuolumne	JAWBONE CREEK
A021329	14878	10317	Appropriative	Licensed	CROOK REVOCABLE 1992 TRUST	6/10/63	28	Tuolumne	UNST
					CROOK REVOCABLE 1992 TRUST Total		224.4		
A021227	14243	9178	Appropriative	Licensed	DANIEL A SCHULTZ	4/9/63	8	Tuolumne	UNST
					DANIEL A SCHULTZ Total		8		
A020883	13885	8492	Appropriative	Licensed	DAVID C HARDEN	8/1/62	8.4	Tuolumne	UNST
					DAVID C HARDEN Total		8.4		
A019299	12441	7485	Appropriative	Licensed	DAVID ERNEST HERBERT	3/9/60	1.5	Tuolumne	UNST
					DAVID ERNEST HERBERT Total		1.5		
A020381	13434	7885	Appropriative	Licensed	DENNIS S DAOUST	9/6/61	1	Tuolumne	UNST
					DENNIS S DAOUST Total		1		
A027785	19155		Appropriative	Permitted	DONALD F MC CLURE	6/30/83	8.1	Tuolumne	MOSS SPRING
					DONALD F MC CLURE Total		8.1		

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A020497	13654	8293	Appropriative	Licensed	EDWARD J FILIBERTI	11/15/61	5.8	Tuolumne	UNST
					EDWARD J FILIBERTI Total		5.8		
A020784	13766	8593	Appropriative	Licensed	Eric J Coffill	5/21/62	17	Tuolumne	UNST
					Eric J Coffill Total		17		
A020575	13569	9158	Appropriative	Licensed	ESTATE OF LAVERNE LITTERAL	1/29/62	5.5	Tuolumne	UNST
A020587	13696	10008	Appropriative	Licensed	ESTATE OF LAVERNE LITTERAL	2/5/62	5.4	Tuolumne	BLUE GULCH
					ESTATE OF LAVERNE LITTERAL Total		10.9		
A022468	15546	10097	Appropriative	Licensed	ESTATES OF ELDON E & ANNA V AMOS	5/11/73	4	Tuolumne	UNSP
					ESTATES OF ELDON E & ANNA V AMOS Total		4		
A029977	20784		Appropriative	Permitted	G SCOTT FAHEY	3/6/02	44.8	Tuolumne	DEADWOOD SPRING, UNSP (AKA SUGAR PINE SPRING)
A031491	21289		Appropriative	Permitted	G SCOTT FAHEY	8/1/11	64.5	Tuolumne	UNSP
					G SCOTT FAHEY Total		109.3		
A018757A03	12099	006636A03	Appropriative	Licensed	GRAY A CLOSSMAN	5/9/90	1	Tuolumne	UNST
					GRAY A CLOSSMAN Total		1		
A019214	12433	7555	Appropriative	Licensed	Gregory C. Henley	2/3/60	30	Tuolumne	UNST
					Gregory C. Henley Total		30		
A018757C	12099	006636C	Appropriative	Licensed	GREGORY L CARR	10/28/88	0.7	Tuolumne	UNST
					GREGORY L CARR Total		0.7		
A019253	12662	7705	Appropriative	Licensed	HELGA ANKER TRUST	2/26/60	8.6	Tuolumne	RATTLESNAKE CREEK
					HELGA ANKER TRUST Total		8.6		
A019192	12410	7502	Appropriative	Licensed	HOLLY HAYDEN-FITZSIMMONS	1/26/60	1.1	Tuolumne	SONORA CREEK
					HOLLY HAYDEN-FITZSIMMONS Total		1.1		
A015987	10073	5215	Appropriative	Licensed	INGALLS FAMILY TRUST	8/9/54	213.2	Tuolumne	DUCKWALL CREEK
					INGALLS FAMILY TRUST Total		213.2		
A013343	7890	5344	Appropriative	Licensed	JACK G MILES	9/8/49	6.8	Tuolumne	UNST
					JACK G MILES Total		6.8		
A016932	10632	5991	Appropriative	Licensed	JACK J GARDELLA JR	3/13/56	24.1	Tuolumne	UNST
A016935	10635	5994	Appropriative	Licensed	JACK J GARDELLA JR	3/13/56	24.6	Tuolumne	UNST
A019043	12594	6946	Appropriative	Licensed	JACK J GARDELLA JR	10/21/59	60	Tuolumne	UNST
A025898	18041	11845	Appropriative	Licensed	JACK J GARDELLA JR	1/5/79	75	Tuolumne	UNST
					JACK J GARDELLA JR Total		183.7		
A020272	13381	8125	Appropriative	Licensed	JAMES CURTONI	6/20/61	30	Tuolumne	UNST
A022472	15391	9206	Appropriative	Licensed	JAMES CURTONI	5/19/66	18	Tuolumne	UNST
					JAMES CURTONI Total		48		
A020943	14166	9170	Appropriative	Licensed	JAY HALE	9/13/62	4	Tuolumne	UNSP
					JAY HALE Total		4		
A020459B	13513	008111B	Appropriative	Licensed	JELITO LIVING TRUST DATED 7/29/89	7/8/85	2.3	Tuolumne	UNST
					JELITO LIVING TRUST DATED 7/29/89 Total		2.3		
A020286	13436	8562	Appropriative	Licensed	JIM LUPO	7/3/61	11	Tuolumne	CURTIS CREEK
A020843	13986	9781	Appropriative	Licensed	JIM LUPO	7/5/62	24	Tuolumne	CURTIS CREEK
					JIM LUPO Total		35		
A020785	13767	8594	Appropriative	Licensed	JOANE SANTOS TRUST	5/21/62	3.6	Tuolumne	UNST
					JOANE SANTOS TRUST Total		3.6		
A018947	12204	6838	Appropriative	Licensed	JOHN B GROHL SR FAMILY RESIDUAL TRUST	8/27/59	49	Modoc, Tuolumne	QUIGLEY CREEK, UNST
A020598	13699	8746	Appropriative	Licensed	JOHN B GROHL SR FAMILY RESIDUAL TRUST	2/7/62	64	Tuolumne	NORTH FORK DRY CREEK, UNST
A021190	14209	9149	Appropriative	Licensed	JOHN B GROHL SR FAMILY RESIDUAL TRUST	2/27/70	26	Tuolumne	UNST
					JOHN B GROHL SR FAMILY RESIDUAL TRUST Total		139		
A018757A01A		006636A01A	Appropriative	Licensed	JOHN C BRUNK	8/17/92	1.4	Tuolumne	UNST
					JOHN C BRUNK Total		1.4		
A025191	17000	11404	Appropriative	Licensed	JOHN ROSS BAKER	10/28/76	24	Tuolumne	UNST
A027519	18792	12548	Appropriative	Licensed	JOHN ROSS BAKER	9/15/82	6	Tuolumne	UNST
A029743	20879		Appropriative	Permitted	JOHN ROSS BAKER	5/14/90	204	Tuolumne	TURNBACK CREEK, UNST
					JOHN ROSS BAKER Total		234		
A025627	17481	11284	Appropriative	Licensed	JOHN WILLMS RANCH INC	12/30/77	6.1	Stanislaus	UNST
					JOHN WILLMS RANCH INC Total		6.1		
A019662	12846	7789	Appropriative	Licensed	JOSEPH M MURRAY JR	8/16/60	19	Stanislaus	UNST
					JOSEPH M MURRAY JR Total		19		
A020407	13406	8086	Appropriative	Licensed	JUSTUS W HOUCK	9/26/61	1.2	Tuolumne	UNST
					JUSTUS W HOUCK Total		1.2		
A018575	11986	6776	Appropriative	Licensed	KAREN REESE	3/9/59	18	Tuolumne	UNST
					KAREN REESE Total		18		
A018602	13128	8018	Appropriative	Licensed	LAKEWOOD PARK ASSOCIATION	3/20/59	7	Tuolumne	SULLIVAN CREEK

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				LAKWOOD PARK ASSOCIATION Total		7		
A018911	12332	7420	Appropriative	Licensed	LEROY L BELT III	8/12/59	0.4	Tuolumne UNSP (2)
					LEROY L BELT III Total		0.4	
A014262	8759	5372	Appropriative	Licensed	LOUISE ROSASCO CUNNINGHAM	4/20/51	89	Tuolumne UNSP
					LOUISE ROSASCO CUNNINGHAM Total		89	
A017718	11083	5971	Appropriative	Licensed	LUCILLE MURPHY HATLER	7/15/57	6	Tuolumne UNST
A017719	11084	5972	Appropriative	Licensed	LUCILLE MURPHY HATLER	7/15/57	40	Tuolumne UNST
A017720	11085	6098	Appropriative	Licensed	LUCILLE MURPHY HATLER	7/15/57	26	Tuolumne UNST
A017721	11086	5974	Appropriative	Licensed	LUCILLE MURPHY HATLER	7/15/57	2.3	Stanislaus UNST
					LUCILLE MURPHY HATLER Total		74.3	
A025569	17507	11687	Appropriative	Licensed	MARILYN K RICE	11/15/77	16	Tuolumne UNSP
					MARILYN K RICE Total		16	
A020355	13179	9207	Appropriative	Licensed	MARK R VANN	8/16/61	1.1	Tuolumne ROUGH & READY CREEK
					MARK R VANN Total		1.1	
A021289	14265	9146	Appropriative	Licensed	MARY CURTIN	5/27/63	6.7	Tuolumne UNST
					MARY CURTIN Total		6.7	
A020488	13752	9943	Appropriative	Licensed	MATTHEW D BEAUCHAMP	11/10/61	51	Tuolumne CURTIS CREEK
					MATTHEW D BEAUCHAMP Total		51	
A005726	2973	1132	Appropriative	Licensed	MDL TRUST	10/18/27	10.1	Tuolumne UNSP (2)
					MDL TRUST Total		10.1	
A022326	15125	10764	Appropriative	Licensed	MICHAEL P SARDELLA	10/29/65	9.6	Tuolumne ROUGH & READY CREEK
					MICHAEL P SARDELLA Total		9.6	
A026084	18024	12790	Appropriative	Licensed	MIKEL C WILLIAMS	9/6/79	0.5	Tuolumne MORMON CREEK, UNST
					MIKEL C WILLIAMS Total		0.5	
A020590	13722	9244	Appropriative	Licensed	Mountain Springs Community LP	2/5/62	133	Tuolumne FLORAL CREEK, UNST, Unnamed Stream
					Mountain Springs Community LP Total		133	
A031384			Appropriative	Pending	MOUNTAIN SPRINGS GOLF LLC	1/21/03	99	Tuolumne SULLIVAN CREEK, UNST, UNST (AKA FLORES CREEK)
					MOUNTAIN SPRINGS GOLF LLC Total		99	
A018554	13137	8109	Appropriative	Licensed	O J SPARROW	2/26/59	10	Tuolumne SULLIVAN CREEK
					O J SPARROW Total		10	
A016170	10369	6249	Appropriative	Licensed	ODD FELLOWS SIERRA RECREATION ASSN	12/7/54	17.8	Tuolumne SUGARPINE CREEK
A016172	10370	9772	Appropriative	Licensed	ODD FELLOWS SIERRA RECREATION ASSN	12/7/54	15	Tuolumne UNSP
					ODD FELLOWS SIERRA RECREATION ASSN Total		32.8	
A018547	13125	8112	Appropriative	Licensed	Pamela Prime and David Kirkpatrick Trust	2/20/59	12	Tuolumne UNST
					Pamela Prime and David Kirkpatrick Trust Total		12	
A019946	13110	8032	Appropriative	Licensed	PATRICIA B BROOKS	1/31/61	30.2	Tuolumne UNST
					PATRICIA B BROOKS Total		30.2	
A020885C	14018	9963	Appropriative	Licensed	PINE MOUNTAIN LAKE ASSOCIATION	8/2/62	14	Tuolumne UNST
A022980	15823	10634	Appropriative	Licensed	PINE MOUNTAIN LAKE ASSOCIATION	2/7/68	7,650.00	Tuolumne BIG CREEK
					PINE MOUNTAIN LAKE ASSOCIATION Total		7,664.00	
A030367	21220		Appropriative	Permitted	PLGC Partners	8/27/08	36.8	Tuolumne UNST
A030699	21221		Appropriative	Permitted	PLGC Partners	8/29/08	28	Tuolumne UNST
					PLGC Partners Total		64.8	
A023262	15978	10774	Appropriative	Licensed	RACHEL M VUYOVICH	4/16/69	21	Tuolumne UNST
A025092	17006	11369	Appropriative	Licensed	RACHEL M VUYOVICH	7/6/76	10	Tuolumne UNST
					RACHEL M VUYOVICH Total		31	
A021028	14037	9698	Appropriative	Licensed	RICHARD J NORTON	11/23/62	8.5	Tuolumne UNST
					RICHARD J NORTON Total		8.5	
A021183	14150	8329	Appropriative	Licensed	Robert E Thomason	3/8/63	30	Tuolumne KANAKA CREEK
					Robert E Thomason Total		30	
A018614	12019	6496	Appropriative	Licensed	RON GROHL	3/31/59	3	Tuolumne UNST
					RON GROHL Total		3	
A015254	9645	6368	Appropriative	Licensed	RONALD E CARTER	3/26/53	51.1	Tuolumne WOODS CREEK
					RONALD E CARTER Total		51.1	
A019388	12687	7837	Appropriative	Licensed	ROYCE WHITNEY	8/4/66	160.6	Tuolumne UNST
A020328	13410	7838	Appropriative	Licensed	ROYCE WHITNEY	7/26/61	31	Tuolumne UNST
					ROYCE WHITNEY Total		191.6	
A012858	7618	4990	Appropriative	Licensed	SCOT PATTERSON	3/24/58	5	Tuolumne UNXX
					SCOT PATTERSON Total		5	
A018738A	12118	008164A	Appropriative	Licensed	SIERRA PACIFIC HOLDING COMPANY	5/25/59	2.5	Tuolumne UNST
					SIERRA PACIFIC HOLDING COMPANY Total		2.5	

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A014947	9197	5270	Appropriative	Licensed	SONORA RIDGE LLC	8/1/52	47.7	Tuolumne	SULLIVAN CREEK
					SONORA RIDGE LLC Total		47.7		
A022146	15250	9454	Appropriative	Licensed	SOREN E JENSEN JR RANCH TRUST	5/10/65	5	Tuolumne	UNST
					SOREN E JENSEN JR RANCH TRUST Total		5		
A019188	12426	7472	Appropriative	Licensed	STEPHEN A FINN	1/21/60	0.4	Tuolumne	UNST
					STEPHEN A FINN Total		0.4		
A020459A	13513	008111A	Appropriative	Licensed	SUSAN A MACDONALD	7/8/85	1.5	Tuolumne	UNST
					SUSAN A MACDONALD Total		1.5		
A020092	13193	9201	Appropriative	Licensed	TUOLUMNE BAND ME-WUK INDIANS	4/19/61	1	Tuolumne	UNST
					TUOLUMNE BAND ME-WUK INDIANS Total		1		
A008758	4830	2252	Appropriative	Licensed	TUOLUMNE PARK AND RECREATION DISTRICT	8/12/36	5	Tuolumne	UNSP
					TUOLUMNE PARK AND RECREATION DISTRICT Total		5		
A016173	10371	10989	Appropriative	Licensed	TUOLUMNE UTILITIES DISTRICT	12/7/54	9.1	Tuolumne	UNSP
A018549	13127	7936	Appropriative	Licensed	TUOLUMNE UTILITIES DISTRICT	2/24/59	2	Tuolumne	UNST
A020565	13606	9740	Appropriative	Licensed	TUOLUMNE UTILITIES DISTRICT	1/19/62	28	Tuolumne	UNST
A023813	16949	11576	Appropriative	Licensed	TUOLUMNE UTILITIES DISTRICT	6/22/71	3.9	Tuolumne	UNSP
					TUOLUMNE UTILITIES DISTRICT Total		43		
A001232	1164	5420	Appropriative	Licensed	TURLOCK I D & MODESTO I D	4/8/19	325,000.00	Tuolumne	TUOLUMNE RIVER
A001233	1165	5417	Appropriative	Licensed	TURLOCK I D & MODESTO I D	4/8/19	325,000.00	Stanislaus, Tuolumne	TUOLUMNE RIVER
A001532	1166	5421	Appropriative	Licensed	TURLOCK I D & MODESTO I D	11/21/19	1,851,934.50	Tuolumne	TUOLUMNE RIVER
A003648	3026	2424	Appropriative	Licensed	TURLOCK I D & MODESTO I D	9/24/23	48,595.80	Stanislaus	TUOLUMNE RIVER
A006711	4271	2425	Appropriative	Licensed	TURLOCK I D & MODESTO I D	6/25/30	480,800.40	Stanislaus	TUOLUMNE RIVER
A009996	5909	5418	Appropriative	Licensed	TURLOCK I D & MODESTO I D	9/6/40	868,773.00	Stanislaus, Tuolumne	TUOLUMNE RIVER
A009997	5910	5419	Appropriative	Licensed	TURLOCK I D & MODESTO I D	9/6/40	721,200.60	Stanislaus, Tuolumne	TUOLUMNE RIVER
A014126	9319	11057	Appropriative	Licensed	TURLOCK I D & MODESTO I D	1/16/51	1,046,800.00	Tuolumne	TUOLUMNE RIVER
A014127	9320	11058	Appropriative	Licensed	TURLOCK I D & MODESTO I D	1/16/51	1,046,800.00	Tuolumne	TUOLUMNE RIVER
					TURLOCK I D & MODESTO I D Total		6,714,904.30		
A003139	1699	2580	Appropriative	Licensed	TURLOCK IRRIGATION DISTRICT	4/2/43	436,558.40	Stanislaus	TUOLUMNE RIVER
					TURLOCK IRRIGATION DISTRICT Total		436,558.40		
A004946	2575	1086	Appropriative	Licensed	TWAIN HARTE LAKE ASSOCIATION	6/29/31	181	Tuolumne	CALDER CREEK
					TWAIN HARTE LAKE ASSOCIATION Total		181		
A007058	3825	2727	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/24/31	25.5	Tuolumne	NORTH FORK TUOLUMNE RIVER
A009759	5475	2728	Appropriative	Licensed	U S STANISLAUS NATL FOREST	10/31/39	25.5	Tuolumne	SHEERING CREEK
A010355	5937	2962	Appropriative	Licensed	U S STANISLAUS NATL FOREST	1/5/42	1.7	Tuolumne	UNST
A010420	5985	2955	Appropriative	Licensed	U S STANISLAUS NATL FOREST	4/1/42	22.4	Tuolumne	GRANITE SPRING
A010487	6035	3189	Appropriative	Licensed	U S STANISLAUS NATL FOREST	7/3/42	1	Tuolumne	UNSP
A010489	6037	2946	Appropriative	Licensed	U S STANISLAUS NATL FOREST	7/3/42	2.2	Tuolumne	UNCR
A010587	6163	4444	Appropriative	Licensed	U S STANISLAUS NATL FOREST	1/4/43	2.6	Tuolumne	UNSP
A015485	9781	5681	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/27/53	6.7	Tuolumne	MIDDLE FORK TUOLUMNE RIVER
A015828	10132	6319	Appropriative	Licensed	U S STANISLAUS NATL FOREST	4/9/54	3.3	Tuolumne	MIDDLE FORK TUOLUMNE RIVER
A016052	10113	5923	Appropriative	Licensed	U S STANISLAUS NATL FOREST	9/16/54	3.7	Tuolumne	UNSP (2)
A016979	10759	5510	Appropriative	Licensed	U S STANISLAUS NATL FOREST	3/30/56	13.4	Tuolumne	UNSP
A017259	10962	7582	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/28/56	46.2	Tuolumne	JORDAN CREEK
A018678	12082	7385	Appropriative	Licensed	U S STANISLAUS NATL FOREST	4/30/59	0.7	Tuolumne	UNSP
A018885	12443	7256	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/3/59	1.2	Tuolumne	CLAVEY ROAD SPRING
A018886	12444	7548	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/3/59	1.2	Tuolumne	WALTON SPRING
A018887	12445	7530	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/3/59	1.2	Tuolumne	FLEMING SPRING
A018888	12446	7257	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/3/59	1.2	Tuolumne	DODGE RIDGE SPRING
A018889	12447	7258	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/3/59	1.2	Tuolumne	MT LEWIS SPRING
A018891	12449	7865	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/3/59	1.2	Tuolumne	BROKENDOWN CABIN SPRING
A018892	12450	7259	Appropriative	Licensed	U S STANISLAUS NATL FOREST	8/3/59	1.2	Tuolumne	MARBLE SPRING
					U S STANISLAUS NATL FOREST Total		163.3		
A016931	10631	5990	Appropriative	Licensed	V A RODDEN INC	3/13/56	12.8	Tuolumne	UNST
A016933	10633	5992	Appropriative	Licensed	V A RODDEN INC	3/13/56	11.9	Stanislaus	UNST
A016937	10637	5996	Appropriative	Licensed	V A RODDEN INC	3/13/56	19.6	Stanislaus	JOHNSON CREEK
A016938	10638	5997	Appropriative	Licensed	V A RODDEN INC	3/13/56	6	Stanislaus	GOODWIN CREEK
					V A RODDEN INC Total		50.3		
A020693	13917	8364	Appropriative	Licensed	VERNAN P HATLER	4/2/62	19.2	Tuolumne	UNCR
					VERNAN P HATLER Total		19.2		

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A017054	10961	7338	Appropriative	Licensed	VIRGINIA S SATTLER	4/27/56	4.5	Tuolumne	BIG CREEK
					VIRGINIA S SATTLER Total		4.5		
A020636	13832	9176	Appropriative	Licensed	W D FAHEY TRUST	3/2/62	0.3	Tuolumne	UNSP
					W D FAHEY TRUST Total		0.3		
A018757A01B	006636A01B		Appropriative	Licensed	Wagner Family Trust	8/17/92	1.5	Tuolumne	UNST
A020885A	14018	9961	Appropriative	Licensed	Wagner Family Trust	8/2/62	15	Tuolumne	BIG HUMBUGH CREEK
A020885B	14018	9962	Appropriative	Licensed	Wagner Family Trust	8/2/62	12	Tuolumne	BIG HUMBUGH CREEK
A031545	21252		Appropriative	Permitted	Wagner Family Trust	4/14/10	47.6	Tuolumne	Big Humbugh Creek
					Wagner Family Trust Total		76.1		
A019663	12847	7779	Appropriative	Licensed	WILLIAM C RITTS	8/16/60	51.5	Tuolumne	UNST, WEST FORK BIG CREEK
					WILLIAM C RITTS Total		51.5		
A017965	11426	7771	Appropriative	Licensed	WILLIAM L GOOKIN JR	1/29/58	9	Tuolumne	UNST
					WILLIAM L GOOKIN JR Total		9		
					Grand Total		7162449.4		

Merced River Watershed - Post-1914 Appropriative Right Holders

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A022506	15290	9699	AMANDA VANCE AMANDA VANCE Total	6/23/66	8.40	Mariposa	UNSP
A017202	10895	8196	BRIAN T SCHUTT	7/27/56	8.40	Mariposa	DUTCH CREEK
A017822	12142	8197	BRIAN T SCHUTT BRIAN T SCHUTT Total	9/13/57	22.40	Mariposa	DUTCH CREEK
A015747	9795	5714	CALIF DEPT OF FORESTRY & FIRE PROTECTION CALIF DEPT OF FORESTRY & FIRE PROTECTION Total	5/1/59	34.40	Mariposa	UNSP
A016484	10389	6889	Carol M Menzel Carol M Menzel Total	7/25/55	33.30	Mariposa	MAXWELL CREEK
A020033	13202	10081	CEDAR LODGE LLC CEDAR LODGE LLC Total	3/14/61	520.00	Mariposa	UNSP
A018358	11785	7994	CHRISTINA CRAIG CHRISTINA CRAIG Total	10/3/58	4.50	Mariposa	UNST
A017147	10855	6585	COASTAL DEVELOPMENT COMPANY LLC, INDIAN FLAT	6/22/56	5.40	Mariposa	MERCED RIVER UNDERFLOW
A028726	19939	13089	COASTAL DEVELOPMENT COMPANY LLC, INDIAN FLAT COASTAL DEVELOPMENT COMPANY LLC, INDIAN FLAT Total	1/14/86	3.60	Mariposa	UNSP
A020935	14124	10181	CRANBERRY GULCH WATER SUPPLY LTD CRANBERRY GULCH WATER SUPPLY LTD Total	9/11/62	0.50	Mariposa	CRANBERRY SPRING
A017008	10768	6549	DALE HURLEY	4/16/56	3.00	Mariposa	UNST
A018267	11688	9205	DALE HURLEY DALE HURLEY Total	8/14/58	10.50	Mariposa	UNST
A028991	20429	13735	DAVID RICHARD WILKEY DAVID RICHARD WILKEY Total	8/23/07	14.50	Mariposa	UNST
A026054	18134	12034	DREAM RANCH WEST LLC	7/25/79	25.00	Mariposa	UNST
A028861	20148	13046	DREAM RANCH WEST LLC DREAM RANCH WEST LLC Total	6/19/86	1.80	Mariposa	UNST
A010696	6196	6528	Estate of Herbert F. Frey Estate of Herbert F. Frey Total	4/16/62	23.00	Mariposa	BEAN CREEK
A006762	3650	1847	FISKE TRUST FISKE TRUST Total	8/8/30	4.30	Mariposa	UNSP
A018695	12514	8655	FRANK R DOMINGUES III FRANK R DOMINGUES III Total	5/7/59	4.80	Mariposa	CRANBERRY SPRING
A027985	19338		GERALD P HARRISON GERALD P HARRISON Total	3/2/84	1.50	Mariposa	SMITH CREEK
A014982	9338	6134	GLEN PICKREN GLEN PICKREN Total	8/20/52	21.00	Mariposa	PLUMBAR CREEK
A017647	11272	6825	HORACE MEYER ESTATE	6/11/57	21.00	Mariposa	UNXX
A017648	11457	6826	HORACE MEYER ESTATE HORACE MEYER ESTATE Total	6/11/57	35.00	Mariposa	UNXX
A021014	14083	8491	JAMES DICKEY JAMES DICKEY Total	11/13/62	17.00	Mariposa	DUTCH CREEK
A016639	10434	5721	JAMES D LAW JAMES D LAW Total	9/29/55	16.00	Mariposa	UNSP
A022268	15006	10524	JAMES E EWERT JAMES E EWERT Total	8/20/65	4.50	Mariposa	UNST
A027761	19391	12814	JERRY INMAN JERRY INMAN Total	5/26/83	18.00	Mariposa	UNST
A019463	12765	8917	JOHN REYNOLDS JOHN REYNOLDS Total	5/31/60	1.20	Mariposa	CRANBERRY SPRING

Merced River Watershed - Post-1914 Appropriative Right Holders

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A023205	15972	10272	John C. Fox Revocable Trust	1/7/69	4.30	Mariposa	UNST
			John C. Fox Revocable Trust Total		4.30		
A017496	11036	7522	JOHN H WELCH	3/5/57	25.70	Mariposa	UNSP, UNST
			JOHN H WELCH Total		25.70		
A022076	14930	9082	JOSEPH C LODGE	3/18/65	19.00	Mariposa	LONG CANYON CREEK
			JOSEPH C LODGE Total		19.00		
A017011	10888	7626	KAO CHAO	4/17/56	1.60	Mariposa	UNST
			KAO CHAO Total		1.60		
A011814	7943	3955	Kelsey Ranch LP	4/4/47	1,002.80	Mariposa, Merced	SOUTH FORK DRY CREEK, UNST
			Kelsey Ranch LP Total		1,002.80		
A016348	10503	7813	KENNETH J PULVINO	4/27/55	50.00	Mariposa	BEAN CREEK
			KENNETH J PULVINO Total		50.00		
A016969	10678	5509	LAUREL L ANDERSON	3/26/56	2.70	Mariposa	CRANBERRY SPRING
			LAUREL L ANDERSON Total		2.70		
A013954	8963	4323	LAUREL MUNSON BOYERS	9/20/50	0.20	Mariposa	CRANE CREEK
			LAUREL MUNSON BOYERS Total		0.20		
A018444	12134	7529	LEONARD SYNKOWICZ	12/24/58	1.20	Mariposa	UNST
			LEONARD SYNKOWICZ Total		1.20		
A021760	14875	9687	LLOYD MYERS	5/1/64	16.00	Mariposa	SAXON CREEK
			LLOYD MYERS Total		16.00		
A016736	11046	9275	LYLE TURPIN	11/16/55	55.60	Mariposa	UNST, WILLOW CREEK
			LYLE TURPIN Total		55.60		
A023731	16551	10498	MARGERY M DE LA MARE	3/22/71	1.00	Mariposa	UNSP
			MARGERY M DE LA MARE Total		1.00		
A020422	13988	8553	MARK HAYNES	3/18/68	16.70	Mariposa	EAST FORK PINEY CREEK
			MARK HAYNES Total		16.70		
A024212	16807	11733	MELBA WRIGHT	10/18/72	22.00	Mariposa	UNST
A027198	19304	12739	MELBA WRIGHT	2/2/82	8.20	Mariposa	UNST
			MELBA WRIGHT Total		30.20		
A020524	13735	8385	MERCED COMMUNITY COLLEGE DISTRICT	12/13/61	3.40	Mariposa	UNSP
			MERCED COMMUNITY COLLEGE DISTRICT Total		3.40		
A001221	912	990	MERCED IRRIGATION DISTRICT	3/26/19	868,773.00	Mariposa	MERCED RIVER
A001222	913	2684	MERCED IRRIGATION DISTRICT	3/26/19	491,080.20	Mariposa	MERCED RIVER
A001224	914	2685	MERCED IRRIGATION DISTRICT	6/20/03	345,440.00	Mariposa, Merced	MERCED RIVER
A016186	12825	11395	MERCED IRRIGATION DISTRICT	6/20/03	605,000.00	Mariposa	MERCED RIVER
A016187	12826	11396	MERCED IRRIGATION DISTRICT	12/23/54	1,861,824.90	Mariposa	MERCED RIVER
			MERCED IRRIGATION DISTRICT Total		4,172,118.10		
A019859	13044	8192	MIGUEL FLORES JR	11/28/60	2.50	Mariposa	UNXX
			MIGUEL FLORES JR Total		2.50		
A017204	10846	5919	MJ OAKS LLC	7/31/56	0.80	Mariposa	UNST
			MJ OAKS LLC Total		0.80		
A016463	10443	7282	OLIVER HAYCRAFT	7/13/55	18.00	Mariposa	UNST
			OLIVER HAYCRAFT Total		18.00		
A025842	17639	11876	P ORD HATTON	10/5/78	34.00	Mariposa	UNST
			P ORD HATTON Total		34.00		
A009056	5056	2555	PacificUS Real Estate Group	7/29/37	47.10	Mariposa	UNSP
A016646	10487	10522	PacificUS Real Estate Group	10/4/55	21.00	Mariposa	UNSP
			PacificUS Real Estate Group Total		68.10		

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Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A016994	10556	6534	PHILIP M HOULIHAN	4/9/56	48.00	Mariposa	DUTCH CREEK
A017786	11217	6535	PHILIP M HOULIHAN	8/19/57	27.00	Mariposa	DUTCH CREEK
			PHILIP M HOULIHAN Total		75.00		
A016559	10845	7366	RICHARD FERRY	8/30/55	72.40	Mariposa	PORATH GULCH
			RICHARD FERRY Total		72.40		
A020476	13787	8658	ROBERT W KINGMAN	11/6/61	16.00	Mariposa	DUTCH CREEK
			ROBERT W KINGMAN Total		16.00		
A016431	10264	6363	ROBERTA G FLANAGAN	6/21/55	2.50	Mariposa	UNXX
			ROBERTA G FLANAGAN Total		2.50		
A012986	7809	3778	ROD KENNEC	3/17/49	17.90	Mariposa	LITTLE BEAR CREEK
			ROD KENNEC Total		17.90		
A016653	10486	6321	RODNEY A BAKER	10/10/55	17.10	Mariposa	SMITH CREEK
			RODNEY A BAKER Total		17.10		
A028536	19785	13775	RONALD B LUFFY	9/5/08	4.30	Mariposa	UNST
			RONALD B LUFFY Total		4.30		
A020969	14119	8707	ROSEMARY M GAMBLIN	10/5/62	31.50	Mariposa	DUTCH CREEK, UNST
			ROSEMARY M GAMBLIN Total		31.50		
A017012	10889	7627	RUSSELL BOCKHOP	4/17/56	8.00	Mariposa	UNST
			RUSSELL BOCKHOP Total		8.00		
A017523	11236	7138	THE BARRIER	3/22/57	9.30	Mariposa	UNST
			THE BARRIER Total		9.30		
A020765	13763	8358	The Estate of William Rottenkolber	5/3/62	10.00	Mariposa	UNST
			The Estate of William Rottenkolber Total		10.00		
A019306	12551	6891	THERAN L BALMAIN	3/14/60	0.60	Mariposa	UNXX
			THERAN L BALMAIN Total		0.60		
A018430	11877	9147	Tidall Virginia	12/9/58	46.00	Mariposa	BEAN CREEK
			Tidall Virginia Total		46.00		
A014979	9336	6392	TRAIAN MICU	8/19/52	180.00	Mariposa	SMITH CREEK
A031125	21122		TRAIAN MICU	1/10/01	60.00	Mariposa	SMITH CREEK
			TRAIAN MICU Total		240.00		
A018097	11726	7117	Transition Mountain Properties	4/21/58	4.20	Mariposa	MILLER GULCH
			Transition Mountain Properties Total		4.20		
A029559	20689	13768	U S BUREAU OF LAND MANAGEMENT	6/19/08	2.40	Mariposa	UNSP
			U S BUREAU OF LAND MANAGEMENT Total		2.40		
A006729	3549	6112	U S NATIONAL PARK SERVICE	7/11/30	170.60	Madera	UNSP (2)
A010488	6036	2973	U S NATIONAL PARK SERVICE	7/3/42	7.30	Mariposa	CRANE CREEK
A019116	12387	11233	U S NATIONAL PARK SERVICE	12/2/59	76.50	Mariposa	MOSS CREEK
			U S NATIONAL PARK SERVICE Total		254.40		
A019671	12991	8390	U S SIERRA NATL FOREST	8/18/60	0.30	Madera	UNSP
A027715	19740	13206	U S SIERRA NATL FOREST	4/12/83	0.10	Mariposa	UNST
A027717	19741	13207	U S SIERRA NATL FOREST	4/12/83	0.10	Mariposa	UNST
A027718	19742	13155	U S SIERRA NATL FOREST	4/12/83	0.10	Mariposa	UNST
			U S SIERRA NATL FOREST Total		0.60		
A011772	6842	3408	U S STANISLAUS NATL FOREST	3/12/47	0.90	Mariposa	UNSP
A017904	11347	6441	U S STANISLAUS NATL FOREST	12/4/57	1.00	Mariposa	PROUTY SPRING
A022229	15102	10349	U S STANISLAUS NATL FOREST	7/19/65	3.30	Mariposa	JORDAN CREEK
			U S STANISLAUS NATL FOREST Total		5.20		
A028321	19652	13486	US BUREAU OF LAND MANAGEMENT	11/9/84	0.40	Mariposa	UNST
A028322	19653		US BUREAU OF LAND MANAGEMENT	11/9/84	0.10	Mariposa	UNSP
			US BUREAU OF LAND MANAGEMENT Total		0.50		

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Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A023074	15746	10295	VERE GEARY	6/26/68	22.00	Mariposa	UNST
			VERE GEARY Total		22.00		
A014721	9768	6166	W B STURTEVANT	3/20/52	80.00	Mariposa	EAST FORK PINEY CREEK
			W B STURTEVANT Total		80.00		
A029615	20574		WALTER K BUNT & DOROTHY L BUNT TRUST ETAL	11/15/89	8.00	Mariposa	UNST
			WALTER K BUNT & DOROTHY L BUNT TRUST ETAL Total		8.00		
A029012	20543	13561	Wendy L Garrish	9/10/03	0.70	Mariposa	PINEY CREEK
			Wendy L Garrish Total		0.70		
A018244	11854	7131	YOSEMITE-MARIPOSA KOA	7/30/58	4.50	Mariposa	UNST
			YOSEMITE-MARIPOSA KOA Total		4.50		
			Grand Total		4,175,203.90		

San Joaquin River Watershed - Post-1914 Appropriative Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A015789	9819	5684	ALLISON S FAHEY	3/22/54	597	Stanislaus	DRY CREEK
			ALLISON S FAHEY Total		597		
A028622	20118	13057	ANITA SERRANO	11/19/85	200	Merced	DUTCHMAN CREEK
			ANITA SERRANO Total		200		
A017775	11410	7344	ANTHONY VALLELUNGA	8/16/57	44	Merced	DEADMAN CREEK
			ANTHONY VALLELUNGA Total		44		
A013018	7777	6132	ANTHONY J DUTRA	4/5/49	361.1	Stanislaus	STANISLAUS RIVER
			ANTHONY J DUTRA Total		361.1		
A028539	19943	13034	ARMELIM DE SOUSA	8/19/85	293	Stanislaus	UNST (AKA VIVIAN SLOUGH)
			ARMELIM DE SOUSA Total		293		
A013679	8224	4313	ARTHUR BRIGHT	4/7/50	1,592.80	Merced	DEADMAN CREEK
			ARTHUR BRIGHT Total		1,592.80		
A023257	16003	10359	AUGUST KNITTEL	4/10/69	4.00	Fresno	UNST
A023258	16002	10358	AUGUST KNITTEL	4/10/69	18.10	Fresno	UNST
A023313	16004	10360	AUGUST KNITTEL	7/15/69	1.70	Fresno	UNST
			AUGUST KNITTEL Total		23.80		
A024900	17060	13099	BASS LAKE SCHOOL DISTRICT	10/14/75	2.70	Madera	UNSP
			BASS LAKE SCHOOL DISTRICT Total		2.70		
A003736	1887	3927	BASS LAKE WATER COMPANY	5/20/54	217.20	Madera	North Fork Willow Creek
A011270	6514	3928	BASS LAKE WATER COMPANY	1/30/46	36.20	Madera	North Fork Willow Creek
A015566	11072	9993	BASS LAKE WATER COMPANY	10/5/53	355.00	Madera	North Fork Willow Creek
			BASS LAKE WATER COMPANY Total		608.40		
A020649	13814	8403	BIG CREEK COMMUNITY SERVICE DISTRICT	3/9/62	57.90	Fresno	BIG CREEK
			BIG CREEK COMMUNITY SERVICE DISTRICT Total		57.90		
A009573	5463	2847	BILL J LYONS JR	5/1/39	4,781.80	Stanislaus	TUOLUMNE RIVER
			BILL J LYONS JR Total		4,781.80		
A012634	8701	5875	BILLY D GRISSOM	8/6/48	1,467.80	Merced	DUCK SLOUGH
			BILLY D GRISSOM Total		1,467.80		
A001730	863	1661	BORBA FAMILY HOME & STEVINSON RANCH LP	3/22/20	955.1	Merced	MERCED RIVER
			BORBA FAMILY HOME & STEVINSON RANCH LP Total		955.1		
A015835	9925	7298	BRENDA KNUTSON	4/14/54	11.8	Stanislaus	DRY CREEK
			BRENDA KNUTSON Total		11.8		
A013697	8179	4470	BRICHETTO TRUST	4/19/50	1,463.80	Stanislaus	UNCR
			BRICHETTO TRUST Total		1,463.80		
A021823	14922	9360	BRIGHT'S NURSERY INCORPORATED	5/8/70	685	Merced	DEADMAN CREEK
			BRIGHT'S NURSERY INCORPORATED Total		685		
A006963	3885	5495	BROCCHINI FARMS INC	5/19/31	4,096.90	Stanislaus	STANISLAUS RIVER
			BROCCHINI FARMS INC Total		4,096.90		
A018526	14677	8400	BRUCE AVERY	2/10/59	333.8	San Joaquin	STANISLAUS RIVER
			BRUCE AVERY Total		333.8		
A011741	6924	4420	CALIF DEPARTMENT OF TRANSPORTATION	2/21/47	204.7	Stanislaus	STANISLAUS RIVER
			CALIF DEPARTMENT OF TRANSPORTATION Total		204.7		
A001935	848	349	Camp Sierra Improvement Association	3/31/24	29.40	Fresno	ALDER CREEK
			Camp Sierra Improvement Association Total		29.40		
A011047	7583	8706	CHOWCHILLA WATER DISTRICT	5/9/45	6,195.70	Madera	ASH CREEK, BERENDA SLOUGH
A013175	9136	8577	CHOWCHILLA WATER DISTRICT	6/27/49	77,312.80	Madera	CHOWCHILLA RIVER
			CHOWCHILLA WATER DISTRICT Total		83,508.50		
A018718	12939	8257	CHRISTOPHER H GALFO	11/30/67	47.00	Fresno	LITTLE SANDY CREEK
A019193	12940	7818	CHRISTOPHER H GALFO	1/26/60	28.00	Fresno	UNST
			CHRISTOPHER H GALFO Total		75.00		

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A004102	1816	2883	City of Modesto WQC Primary	10/22/47	1,219.90	Stanislaus	SAN JOAQUIN RIVER
			City of Modesto WQC Primary Total		1,219.90		
A013541	9076	4689	COSTA VIEW FARMS #2, A CA GEN PARTNERSHIP	9/20/57	21,689.60	Madera	FRESNO RIVER
A013541	9076	4689	COSTA VIEW FARMS #2, A CA GEN PARTNERSHIP	9/20/57	21,689.60	Madera	FRESNO RIVER
			COSTA VIEW FARMS #2, A CA GEN PARTNERSHIP Total		43,379.20		
A023231	16200	10592	COTTONWOOD CREEK VINEYARDS PARTNERSHIP	2/6/69	920	Madera	COTTONWOOD CREEK
			COTTONWOOD CREEK VINEYARDS PARTNERSHIP Total		920		
A012674	7675	7556	Couchman Brothers	9/2/48	1,622.70	Stanislaus	TUOLUMNE RIVER
			Couchman Brothers Total		1,622.70		
A024298	16638	11097	COUNTY OF MERCED	2/2/73	5	Merced	UNST
			COUNTY OF MERCED Total		5		
A027544	18910	12372	Cynthia A. Downing	9/30/82	0.30	Fresno	UNSP
			Cynthia A. Downing Total		0.30		
A028192	19732	12955	D & D LAND & WATER INC	7/16/84	907	Merced	SAN JOAQUIN RIVER
			D & D LAND & WATER INC Total		907		
A029966	20860		D.M. BRYANT FARMS INC	6/17/91	21.50	Madera	UNST
			D.M. BRYANT FARMS INC Total		21.50		
A023214	15869	10375	DAMAN PITTS	1/28/69	33.00	Fresno	UNST
			DAMAN PITTS Total		33.00		
A014104	8683	4081	DEER CREEK WATER ASSOCIATION	12/14/50	2.80	Fresno	DEER CREEK
			DEER CREEK WATER ASSOCIATION Total		2.80		
A026121	19395		DIRK J VLOT	10/22/79	2,534.00	Madera	EASTSIDE BYPASS
			DIRK J VLOT Total		2,534.00		
A027241	19140	12867	DM BRYANT FARMS INC	3/9/82	30.00	Madera	UNST
A027242	19141	12868	DM BRYANT FARMS INC	3/9/82	30.00	Madera	UNST
A027243	19142	12869	DM BRYANT FARMS INC	3/9/82	6.00	Madera	UNST
A027244	19143	12870	DM BRYANT FARMS INC	3/9/82	13.00	Madera	UNST
A027245	19144	12871	DM BRYANT FARMS INC	3/9/82	4.00	Madera	LITTLE FINE GOLD CREEK
			DM BRYANT FARMS INC Total		83.00		
A016465	10407	5578	DONALD HARCKSEN	7/14/55	19.6	Merced	MERCED RIVER
			DONALD HARCKSEN Total		19.6		
A014455	9568	4428	DONALD L SMITH	8/30/51	171.10	Madera	UNST
			DONALD L SMITH Total		171.10		
A013071	8703	4456	Donald L. Smith, Trustee	5/3/49	301.5	Merced	DUCK SLOUGH
			Donald L. Smith, Trustee Total		301.5		
A006467	3448	1295	DONALD M HEINY	10/26/29	190.2	Stanislaus	SAN JOAQUIN RIVER
			DONALD M HEINY Total		190.2		
A024520	19878	12836	DOROTHY R AYERS FAMILY TRUST	1/7/74	19.50	Madera	ARNOLD CREEK
			DOROTHY R AYERS FAMILY TRUST Total		19.50		
A025872	17656	11870	Double A Ranches	11/16/78	20	Stanislaus	UNST
			Double A Ranches Total		20		
A012396	7348	4949	EAST STANISLAUS RESOURCES CONSERVATION DISTRICT	3/11/48	487.9	Stanislaus	TUOLUMNE RIVER
			EAST STANISLAUS RESOURCES CONSERVATION DISTRICT Total		487.9		
A019738	12923	7494	EDWIN DANIELS	9/14/60	1.30	Madera	UNSP
			EDWIN DANIELS Total		1.30		
A017633	11484	6138	EL CAJON RETIREMENT RESIDENCE LP	5/31/57	77.4	Merced	UNST
A017812	11485	6139	EL CAJON RETIREMENT RESIDENCE LP	9/4/57	8.7	Merced	CANAL CREEK, UNST
A017813	11486	6140	EL CAJON RETIREMENT RESIDENCE LP	9/4/57	33.1	Merced	UNST

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A018329	11781	6141	EL CAJON RETIREMENT RESIDENCE LP	9/23/58	1.3	Merced	UNST
A018330	11782	6142	EL CAJON RETIREMENT RESIDENCE LP	9/23/58	2.2	Merced	UNST
A024071	16613	10681	EL CAJON RETIREMENT RESIDENCE LP	5/22/72	7	Merced	UNST
			EL CAJON RETIREMENT RESIDENCE LP Total		129.7		
A018993	12472	9790	ELSIE KING	9/18/59	590	Stanislaus	VIVIAN SLOUGH
			ELSIE KING Total		590		
A020244	13495	7998	EST OF D E JACKSON & DIXIE R JACKSON	6/2/61	4.50	Madera	UNSP
			EST OF D E JACKSON & DIXIE R JACKSON Total		4.50		
A016317	10209	7574	FORD RANCH INC	4/19/55	50.00	Fresno	UNST
A019577	12771	7631	FORD RANCH INC	7/26/60	26.00	Fresno	UNST
A019578	12772	7632	FORD RANCH INC	7/26/60	19.50	Fresno	UNST
A019581	12773	7635	FORD RANCH INC	7/26/60	13.10	Fresno	UNST
			FORD RANCH INC Total		108.60		
A011555	6742	3459	FRANK J GOMES DAIRY	9/17/46	941.2	Merced	MERCED RIVER
			FRANK J GOMES DAIRY Total		941.2		
A016329	11460	10393	GALLO CATTLE COMPANY, A PARTNERSHIP	4/21/55	9,020.00	Merced	LIVINGSTON DRAIN
A016604	11121	7220	GALLO CATTLE COMPANY, A PARTNERSHIP	9/15/55	7,239.80	Merced	UNSL
			GALLO CATTLE COMPANY, A PARTNERSHIP Total		16,259.80		
A012715	8354	4948	GALLO VINEYARDS, INC. (LIVINGSTON RANCH)	9/27/48	493.7	Merced	MERCED RIVER
			GALLO VINEYARDS, INC. (LIVINGSTON RANCH) Total		493.7		
A012987	7734	10045	GARY M BARTON	3/18/49	1,506.00	San Joaquin	STANISLAUS RIVER, UNSL
A013099	7768	9123	GARY M BARTON	5/17/49	83	San Joaquin, Stanislaus	STANISLAUS RIVER
A013100	7769	6130	GARY M BARTON	5/17/49	170.6	Stanislaus	STANISLAUS RIVER
A018715	12116	9960	GARY M BARTON	5/18/59	66	Stanislaus	STANISLAUS RIVER
			GARY M BARTON Total		1825.6		
A010255	5965	6445	GEORGE C JONES III	8/21/41	1,423.40	Merced	DRY CREEK
			GEORGE C JONES III Total		1,423.40		
A015680	9749	5653	GERTRUDE PELUCCA	1/11/54	273.7	Stanislaus	STANISLAUS RIVER
			GERTRUDE PELUCCA Total		273.7		
A020975	14129	9545	GIN FLATS LLC	10/9/62	2.20	Fresno	UNSP
			GIN FLATS LLC Total		2.20		
A010466	6064	3429	GIRARDI FARMS	5/25/42	1,279.40	San Joaquin	STANISLAUS RIVER
A014716	9011	4539	GIRARDI FARMS	3/17/52	474.5	San Joaquin	STANISLAUS RIVER
			GIRARDI FARMS Total		1753.9		
A023031	16060		GRAVELLY FORD WATER DISTRICT	4/18/68	5,000.00	Madera	COTTONWOOD CREEK
			GRAVELLY FORD WATER DISTRICT Total		5,000.00		
A003664	2360	1307	GRAVELSTONE RANCH LP	10/5/23	365	Merced	MERCED RIVER
A006603	3581	2429	GRAVELSTONE RANCH LP	3/17/30	660.6	Merced	MERCED RIVER
			GRAVELSTONE RANCH LP Total		1025.6		
A012262	7309	6985	Gregory B. Reed	1/26/48	2,171.90	Stanislaus	TUOLUMNE RIVER
			Gregory B. Reed Total		2,171.90		
A017208	12313	10673	HARRY H BAKER JR	8/3/56	580	Madera	FRESNO RIVER
			HARRY H BAKER JR Total		580		
A016662	10345	9816	HARRY H BAKER JR TRUST	10/10/55	230	Stanislaus	SAN JOAQUIN RIVER
			HARRY H BAKER JR TRUST Total		230		
A005702	3001	1880	HOOGENDAM FAMILY LIMITED PARTNERSHIP	9/29/27	426.5	Merced	NORTH SLOUGH MARIPOSA CREEK

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A005703	3002	1881	HOOGENDAM FAMILY LIMITED PARTNERSHIP	9/29/27	1,279.40	Merced	NORTH SLOUGH MARIPOSA CREEK
			HOOGENDAM FAMILY LIMITED PARTNERSHIP Total		1,705.90		
A016934	10634	5993	JACK J GARDELLA JR	3/13/56	15	Tuolumne	UNST
A019042	12593	6945	JACK J GARDELLA JR	10/21/59	55	Tuolumne	UNST
A020976	14123	8248	JACK J GARDELLA JR	10/9/62	19	Tuolumne	UNST
			JACK J GARDELLA JR Total		89		
A020271	13380	8124	JAMES CURTONI	6/20/61	9	Stanislaus	UNST
			JAMES CURTONI Total		9		
A020364B	13428	008351B	JAMES R CHANCE	3/18/88	8	Merced	UNST
A022977B	15637	009776A	JAMES R CHANCE	3/18/88	50.5	Merced	UNST
			JAMES R CHANCE Total		58.5		
A009301	5192	4576	JAMES R DEMARTINI	5/20/38	1,066.10	Stanislaus	TUOLUMNE RIVER
			JAMES R DEMARTINI Total		1,066.10		
A001195	588	4934	JAMES S CODDINGTON	2/26/19	15,897.80	Stanislaus	SAN JOAQUIN RIVER
			JAMES S CODDINGTON Total		15,897.80		
A027546	19615		JEFF A LION	8/5/96	15,700.00	Madera	EASTSIDE BYPASS (AKA CHOWCHILLA CANAL)
			JEFF A LION Total		15,700.00		
A026829	18359	12028	Jerry Hollingshead	5/21/81	0.20	Fresno	UNSP
			Jerry Hollingshead Total		0.20		
A028679	20259	13270	JIMMY W LIPE	12/23/85	2.40	Fresno	UNST
A028908	20258	13271	JIMMY W LIPE	9/25/86	3.60	Fresno	UNST
			JIMMY W LIPE Total		6.00		
A020364C	13428	008351C	JOHN SMALLEY	3/18/88	1	Merced	UNST
A022977C	15637	009776A	JOHN SMALLEY	3/18/88	11.3	Merced	UNST
			JOHN SMALLEY Total		12.3		
A006748	3880	2549	JOHN VANDERSCHAAF JR	7/24/30	729.9	San Joaquin	LONE TREE CREEK
			JOHN VANDERSCHAAF JR Total		729.9		
A011003A	007582A	9073	JOHN HANCOCK LIFE INS. CO.	3/9/45	5,727.40	Madera	FRESNO RIVER
			JOHN HANCOCK LIFE INS. CO. Total		5,727.40		
A001442F	940	000388F	JOHN J SHAW	9/10/19	40.6	Merced	MERCED RIVER
			JOHN J SHAW Total		40.6		
A025373	17078	11286	JOHN M LASGOITY	5/31/77	24	Madera	UNST
			JOHN M LASGOITY Total		24		
A006539	3403	2044	JOSE DA SILVA	1/20/30	27.1	San Joaquin	UNDR
			JOSE DA SILVA Total		27.1		
A001322	890	311	JOSEPH E GALLO	6/11/19	182.5	Merced	MERCED RIVER
			JOSEPH E GALLO Total		182.5		
A016895	10696	6421	JOSEPH J CARDOZA	2/15/56	45.8	Merced	MERCED RIVER
			JOSEPH J CARDOZA Total		45.8		
A013414	7929	5274	Karlene H Bert	10/24/49	799.3	Stanislaus	STANISLAUS RIVER
			Karlene H Bert Total		799.3		
A011814	7943	3955	Kelsey Ranch LP	4/4/47	1,002.80	Mariposa, Merced	SOUTH FORK DRY CREEK, UNST
A018344	11787	6738	Kelsey Ranch LP	9/29/58	8.8	Merced	UNCR
A018345	11788	6480	Kelsey Ranch LP	9/29/58	5.6	Merced	UNCR
A018346	11789	6481	Kelsey Ranch LP	9/29/58	4.2	Merced	UNCR
A018347	11790	6482	Kelsey Ranch LP	9/29/58	8.1	Merced	UNCR
A018348	11791	6739	Kelsey Ranch LP	9/29/58	9	Merced	UNCR
			Kelsey Ranch LP Total		1038.5		
A022294	15550	10429	L EUGENE MONDO	9/24/65	26	Stanislaus	STANISLAUS RIVER

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			L EUGENE MONDO Total		26		
A026088	18077	12047	LEWIS MATHIS	9/13/79	188	Merced	UNST
			LEWIS MATHIS Total		188		
A027759	19031	12557	LINDA OUIMETTE	5/26/83	0.10	Madera	UNSP
			LINDA OUIMETTE Total		0.10		
A019746	12982	8031	LIVE OAK TRUST	9/20/60	17.00	Fresno	UNST
			LIVE OAK TRUST Total		17.00		
A018540	12215	8522	LURINE S TOPHAM	2/19/59	37.50	Fresno	UNST
A019005	12999	8523	LURINE S TOPHAM	9/28/59	45.00	Fresno	UNST
A020869	13897	8524	LURINE S TOPHAM	7/25/62	20.00	Fresno	UNST
A021951	15093	8525	LURINE S TOPHAM	11/4/64	10.00	Fresno	UNST
A022269	15094	9153	LURINE S TOPHAM	8/20/65	20.00	Fresno	UNST
A027159	19743	13028	LURINE S TOPHAM	12/23/81	3.10	Fresno	UNST
A027160	19744	13029	LURINE S TOPHAM	12/23/81	3.20	Fresno	UNST
			LURINE S TOPHAM Total		138.80		
A010710	6241	5077	M & R ZOLEZZI A PARTNERSHIP	9/11/43	273.7	San Joaquin	STANISLAUS RIVER
			M & R ZOLEZZI A PARTNERSHIP Total		273.7		
A017311	11172	9229	MADERA IRRIGATION DISTRICT	10/4/56	4,700.00	Madera	FRESNO RIVER
			MADERA IRRIGATION DISTRICT Total		4,700.00		
A013344	8355	6418	MAGNESON REVOCABLE TRUST	9/8/49	1,122.30	Merced	MERCED RIVER
			MAGNESON REVOCABLE TRUST Total		1,122.30		
A005316	2937	4912	MCMULLIN RECL DISTRICT #2075	12/24/26	35,293.90	San Joaquin	STANISLAUS RIVER
A017966	14674	10403	MCMULLIN RECL DISTRICT #2075	1/29/58	490	San Joaquin	STANISLAUS RIVER
			MCMULLIN RECL DISTRICT #2075 Total		35783.9		
A016136	10115	7561	MENEFEE RIVER RANCH COMPANY	11/15/54	856.9	Merced	FRESNO RIVER
A026875	19669	13106	MENEFEE RIVER RANCH COMPANY	6/16/81	4,470.00	Merced	SAN JOAQUIN RIVER
			MENEFEE RIVER RANCH COMPANY Total		5,326.90		
A028626	20066	13378	MERCED COUNTY FIRE DEPARTMENT	11/25/85	0.4	Merced	MERCED RIVER
			MERCED COUNTY FIRE DEPARTMENT Total		0.4		
A001224	914	2685	MERCED IRRIGATION DISTRICT	6/20/03	345,440.00	Mariposa, Merced	MERCED RIVER
A006807	5732	5227	MERCED IRRIGATION DISTRICT	9/27/30	1,251.20	Merced	DEADMAN CREEK
A008238	4893	6032	MERCED IRRIGATION DISTRICT	2/11/35	5,066.00	Merced	DUCK SLOUGH
A010572	6808	6047	MERCED IRRIGATION DISTRICT	6/20/03	63,719.90	Merced	MERCED RIVER
A018774	13088	9429	MERCED IRRIGATION DISTRICT	6/8/59	5,000.00	Merced	DUCK SLOUGH
			MERCED IRRIGATION DISTRICT Total		420,477.10		
A005269	2727	1173	MICHAEL PASSALAQUA	11/15/26	635.4	Stanislaus	TUOLUMNE RIVER
			MICHAEL PASSALAQUA Total		635.4		
A004233	2261	1616	MICHAEL J KNAPP	2/28/36	255.5	Madera	CHOWCHILLA RIVER
A004233	2261	1616	MICHAEL J KNAPP	2/28/36	255.5		
			MICHAEL J KNAPP Total		511		
A025113	17303	11417	MICHELLE MIDBOE	7/27/76	0.30	Fresno	UNSP
			MICHELLE MIDBOE Total		0.30		
A006393	3386	3044	MOONSHINE DAIRY	8/3/29	868.8	Stanislaus	SAN JOAQUIN RIVER
			MOONSHINE DAIRY Total		868.8		
A017729	11214	6782	MUIR TRAIL RANCH, INC	7/19/57	271.70	Fresno	SENGER CREEK
			MUIR TRAIL RANCH, INC Total		271.70		
A013218	8130	5170	Myers Ranch, LLC	7/8/49	1,630.40	Merced	SNAKE SLOUGH
			Myers Ranch, LLC Total		1,630.40		
A011048	7584	5753	N & W Land Co. LLC	6/30/59	3,979.70	Madera	FRESNO RIVER
			N & W Land Co. LLC Total		3,979.70		

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A020148	13372	7960	NANCY GASSETT NANCY GASSETT Total	5/25/61	5.90	Fresno	UNST
A010957	6373	3036	NORTH FORK COMMUNITY DEVELOPMENT COUNCIL NORTH FORK COMMUNITY DEVELOPMENT COUNCIL Total	1/15/45	44.20	Madera	SOUTH FORK WILLOW CREEK
A008892	4924	2634	OAKDALE IRRIGATION DISTRICT	2/3/37	1,665.90	Stanislaus	STANISLAUS RIVER
A009666	5421	2706	OAKDALE IRRIGATION DISTRICT OAKDALE IRRIGATION DISTRICT Total	7/17/39	616.5	Stanislaus	STANISLAUS RIVER
A025688	17834	11824	PATRICIA J MANNING PATRICIA J MANNING Total	3/3/78	2282.4	Madera	SAN JOAQUIN RIVER
A011324	6615	3051	PATRICK DAVID MARTIN PATRICK DAVID MARTIN Total	3/25/46	1,471.00	Fresno	UNSP
A027777	19139		PHIL MUELLER	6/23/83	4.50	Merced	DUTCHMAN CREEK
A027880	19591		PHIL MUELLER PHIL MUELLER Total	9/16/83	85	Merced	DUTCHMAN CREEK
A001633	784	2072	PHILIP DICKERSON	1/20/20	170	Stanislaus	TUOLUMNE RIVER
A004607	2357	2071	PHILIP DICKERSON PHILIP DICKERSON Total	5/26/25	1,518.30	Stanislaus	TUOLUMNE RIVER
A023561	16184	10646	PREMIERE AGRICULTURAL PROPERTIES LLC PREMIERE AGRICULTURAL PROPERTIES LLC Total	7/20/70	356.6	Madera	COTTONWOOD CREEK
A014484	9229	5249	RANCHERIA WATER & IMPROVEMENT ASSN RANCHERIA WATER & IMPROVEMENT ASSN Total	9/14/51	1874.9	Fresno	POTTER CREEK
A015919	10316	8498	RAY GENE VELDHIJS RAY GENE VELDHIJS Total	6/18/54	720	Merced	JONES DRAIN
A004945	2593	1336	RECLAMATION DISTRICT #2039 RECLAMATION DISTRICT #2039 Total	3/5/26	815.2	San Joaquin	MIDDLE RIVER, TRAPPER SLOUGH
A010365	5942	3035	REDEVELOPMENT AGENCY OF THE COUNTY OF MADERA REDEVELOPMENT AGENCY OF THE COUNTY OF MADERA Total	1/19/42	56,904.60	Fresno	SOUTH FORK WILLOW CREEK
A001442C	940	000388C	RICCI THORESON RICCI THORESON Total	9/10/19	36.20	Merced	MERCED RIVER
A026674	18416	12251	RICHARD LIAL	12/23/80	123.7	Stanislaus	UNST
A029133	20326	13324	RICHARD LIAL RICHARD LIAL Total	11/9/87	16.3	Stanislaus	UNST
A011390	6631	7451	RICHARD MARCHY RICHARD MARCHY Total	5/4/46	818.2	Stanislaus	TUOLUMNE RIVER
A004460	2277	8697	RIVER JUNCTION RECL DIST NO 2064 RIVER JUNCTION RECL DIST NO 2064 Total	2/14/25	818.2	San Joaquin	SAN JOAQUIN RIVER, STANISLAUS RIVER
A009834	5533	2827	Robert Albert Brocchini Trust	2/21/40	30,828.30	San Joaquin	STANISLAUS RIVER
A013628	8140	4918	Robert Albert Brocchini Trust Robert Albert Brocchini Trust Total	3/10/50	2,129.60	Stanislaus	STANISLAUS RIVER
A025168	17424	11416	ROBERT B FITZGERALD ROBERT B FITZGERALD Total	10/5/76	366	Fresno	UNSP
A020364A	13428	008351A	ROBINSON CATTLE COMPANY	3/18/88	0.40	Merced	UNST
A022976	15636	9777	ROBINSON CATTLE COMPANY	1/31/68	0.40	Merced	UNST
A022977A	15637	009776A	ROBINSON CATTLE COMPANY ROBINSON CATTLE COMPANY Total	3/18/88	37	Merced	UNST
A001628	692	289	Roger K Beeman	1/15/20	1.9	Stanislaus	STANISLAUS RIVER
A003516	1620	2009	Roger K Beeman Roger K Beeman Total	4/1/40	54.9	Stanislaus	STANISLAUS RIVER
A020135	13652	8479	ROY H RICHARDS	5/17/61	1153.3	Merced	UNST

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ROY H RICHARDS Total					48.9		
A017362	10979	6834	ROY N TALLMAN	11/19/56	10.00	Fresno	UNXX
A017363	10980	6835	ROY N TALLMAN	11/19/56	48.00	Fresno	UNXX
A017364	10981	6836	ROY N TALLMAN	11/19/56	8.00	Fresno	UNXX
ROY N TALLMAN Total					66.00		
A004061	1901	937	Sharon D. Naraghi	3/9/42	182	Stanislaus	DRY CREEK
A009225	5127	2374	Sharon D. Naraghi	1/12/38	477.6	Stanislaus	DRY CREEK
Sharon D. Naraghi Total					659.6		
A004709	2381	2131	SHEILA KLIEWER	7/21/25	0.70	Madera	UNSP
SHEILA KLIEWER Total					0.70		
A015924	10002	5636	SHIRLEY M WELDON	6/21/54	48.00	Fresno	LITTLE DRY CREEK, UNST
A015925	10003	5637	SHIRLEY M WELDON	6/21/54	48.00	Fresno	LITTLE DRY CREEK, UNST
SHIRLEY M WELDON Total					96.00		
A020138	13359	9235	SIERRA LINDA MUTUAL WATER COMPANY INC	5/19/61	16.80	Madera	UNSP
SIERRA LINDA MUTUAL WATER COMPANY INC Total					16.80		
A005271	2761	741	SIERRA PINES YOUTH CAMP, INC	11/16/26	14.50	Madera	UNSP (2)
SIERRA PINES YOUTH CAMP, INC Total					14.50		
A017751	11504	6280	SPRING CREEK IMPROVEMENT ASSN	8/1/57	2.80	Fresno	SPRING CREEK
SPRING CREEK IMPROVEMENT ASSN Total					2.80		
A018950			STATE WATER RESOURCES CONTROL BOARD	8/28/59	0	Madera	FRESNO RIVER
STATE WATER RESOURCES CONTROL BOARD Total					0		
A028166	19456	12734	STEVE FIELDS	6/21/84	10	Stanislaus	UNST
STEVE FIELDS Total					10		
A001885	893	5397	STEVINSON WATER DISTRICT	1/14/59	16,716.90	Merced	MERCED RIVER
A005724	5726	5940	STEVINSON WATER DISTRICT	10/17/27	79,534.40	Merced	BEAR CREEK, OWENS CREEK
A006111	5729	5941	STEVINSON WATER DISTRICT	11/5/28	58,552.90	Merced	ARENA SPILLWAY, BEAR CREEK, MCCOY SPILLWAY, OWENS CREEK
A007012	5733	6222	STEVINSON WATER DISTRICT	7/20/31	35,619.70	Merced	ARENA SPILLWAY, BEAR CREEK
STEVINSON WATER DISTRICT Total					190,423.90		
A027326B		12759	SUSIE MOODY	4/26/91	0.70	Fresno	UNST
A027469	19303	12763	SUSIE MOODY	8/10/82	29.00	Fresno	UNST
SUSIE MOODY Total					29.70		
A020049	13203	8939	TAMAR V ARMSTRONG	3/24/61	10.60	Madera	UNSP
TAMAR V ARMSTRONG Total					10.60		
A001925	838	366	The Irrevocable Flying M Ranch Trust	7/15/24	424.5	Merced	BURNS CREEK
The Irrevocable Flying M Ranch Trust Total					424.5		
A029279	20627		THE PROTESTANT EPISCOPAL BISHOP OF S J	6/24/88	11	Madera	LEWIS FORK FRESNO RIVER, UNST
THE PROTESTANT EPISCOPAL BISHOP OF S J Total					11		
A010797	6505	5402	THE VANDER WOUDE FAMILY REVOCABLE TRUST OF NOV 25 2003	4/11/44	223.1	Merced	NORTH SLOUGH MARIPOSA CREEK
A024973	17419	11605	THE VANDER WOUDE FAMILY REVOCABLE TRUST OF NOV 25 2003	1/13/76	394	Merced	NORTH SLOUGH MARIPOSA CREEK
THE VANDER WOUDE FAMILY REVOCABLE TRUST OF NOV 25 2003 Total					617.1		
A015628	11092	12268	U S FISH & WILDLIFE SERVICE	12/2/53	6,868.00	Merced	BRAVEL SLOUGH, DEEP SLOUGH
A020246	14323	10139	U S FISH & WILDLIFE SERVICE	8/5/61	360	Merced	DUCK SLOUGH
A027586	19473		U S FISH & WILDLIFE SERVICE	11/17/82	3,000.00	Merced	DEADMAN CREEK
U S FISH & WILDLIFE SERVICE Total					10,228.00		
A012416	7363	5342	U S SIERRA NATL FOREST	3/18/48	2.40	Fresno	BEAR CREEK, MONO CREEK
A013904	8656	4608	U S SIERRA NATL FOREST	8/18/50	96.00	Madera	MCCLURE LAKE CREEK
A013907	8659	4609	U S SIERRA NATL FOREST	8/18/50	155.00	Madera	LILLIAN LAKE CREEK
A014150	8681	4064	U S SIERRA NATL FOREST	2/6/51	0.30	Fresno	RANCHERIA CREEK

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A016424	10496	8203	U S SIERRA NATL FOREST	6/20/55	9.20	Madera	UNSP
A016426	10270	6263	U S SIERRA NATL FOREST	6/20/55	5.20	Fresno	COON CREEK
A017209	10992	6266	U S SIERRA NATL FOREST	8/3/56	100.00	Madera	RUTHERFORD LAKE CREEK
A017439	11009	7270	U S SIERRA NATL FOREST	1/28/57	29.00	Madera	UNST
A017594	11166	7587	U S SIERRA NATL FOREST	5/10/57	0.50	Madera	UNSP
A017595	11167	7588	U S SIERRA NATL FOREST	5/10/57	0.20	Madera	UNSP
A018245	12266	7274	U S SIERRA NATL FOREST	7/30/58	8.00	Fresno	BEAR CREEK
A018318	12267	8388	U S SIERRA NATL FOREST	9/15/58	16.10	Fresno	BIG CREEK
A019420	12420	7325	U S SIERRA NATL FOREST	5/6/60	103.00	Madera	MCCLURE LAKE
A019634	12729	7589	U S SIERRA NATL FOREST	8/1/60	0.10	Fresno	UNSP
A019635	12730	7590	U S SIERRA NATL FOREST	8/1/60	0.10	Fresno	UNSP
A019636	12731	6696	U S SIERRA NATL FOREST	8/1/60	0.40	Fresno	UNSP
A019637	12732	6697	U S SIERRA NATL FOREST	8/1/60	0.40	Fresno	UNSP
A019638	12733	6698	U S SIERRA NATL FOREST	8/1/60	0.10	Fresno	UNSP
A019639	12734	6699	U S SIERRA NATL FOREST	8/1/60	0.10	Fresno	UNSP
A019640	12735	6700	U S SIERRA NATL FOREST	8/1/60	0.40	Fresno	UNSP
A019641	12736	6914	U S SIERRA NATL FOREST	8/1/60	0.10	Fresno	UNSP
A019676	12738	7781	U S SIERRA NATL FOREST	8/18/60	0.40	Madera	UNSP
A019839	13175	8145	U S SIERRA NATL FOREST	11/3/60	8.80	Fresno	LINE CREEK
A019930	13146	9121	U S SIERRA NATL FOREST	1/24/61	11.20	Madera	UNSP
A021107	14247	9089	U S SIERRA NATL FOREST	1/2/63	0.70	Madera	MOUSE TRAP SPRING
A023979	16611	10878	U S SIERRA NATL FOREST	2/10/72	0.20	Fresno	UNSP
A027719	19882	13043	U S SIERRA NATL FOREST	4/12/83	0.20	Fresno	UNST
U S SIERRA NATL FOREST Total					548.10		
A000023	273	1986	U.S. BUREAU OF RECLAMATION	3/27/15	44,340.00	Madera	SAN JOAQUIN RIVER
A000234	11885		U.S. BUREAU OF RECLAMATION	6/29/59	2,124,486.50	Madera	SAN JOAQUIN RIVER
A001465	11886		U.S. BUREAU OF RECLAMATION	6/29/59	2,124,486.50	Madera	SAN JOAQUIN RIVER
A005638	11887		U.S. BUREAU OF RECLAMATION	6/29/59	3,917,477.50	Madera	SAN JOAQUIN RIVER
A014858B	20245		U.S. BUREAU OF RECLAMATION	7/18/88	1,000,000.00	Calaveras, San Joaquin	STANISLAUS RIVER
A018714	16301		U.S. BUREAU OF RECLAMATION	5/15/59	143,000.00	Madera	CHOWCHILLA RIVER
A018733	16584	13836	U.S. BUREAU OF RECLAMATION	8/25/11	71,600.00	Madera	FRESNO RIVER
U.S. BUREAU OF RECLAMATION Total					9,425,390.50		
A013345	8356	6419	UHRHAMMER PROPERTIES	9/8/49	405	Merced	MERCED RIVER
UHRHAMMER PROPERTIES Total					405		
A011438	6672	3314	V A RODDEN INC	6/17/46	1,273.40	Stanislaus	UNION SLOUGH
A030613	21156		V A RODDEN INC	7/10/03	3,769.50	Stanislaus	UNION SLOUGH
V A RODDEN INC Total					5,042.90		
A006160	5731	4638	VANDER WOUDE FARMS	1/14/29	138.7	Merced	NORTH SLOUGH MARIPOSA CREEK
VANDER WOUDE FARMS Total					138.7		
A005386	2847	1518	VANDER-WOUDE DAIRY	3/21/27	14,479.60	Merced	DUCK SLOUGH
VANDER-WOUDE DAIRY Total					14,479.60		
A013496	8037	4747	VERNA M MURRAY	12/2/49	83.9	Stanislaus	TUOLUMNE RIVER
VERNA M MURRAY Total					83.9		
A006479	3582	1443	VISTA LIVESTOCK COMPANY	11/6/29	36.6	Merced	DRY CREEK
VISTA LIVESTOCK COMPANY Total					36.6		
A006114	5730	2911	W P RODUNER CATTLE & FARMING COMPANY	11/9/28	2,945.50	Merced	DUCK CREEK
A011653	7585	4910	W P RODUNER CATTLE & FARMING COMPANY	12/10/46	14,519.20	Madera	ASH CREEK
A012635	8702	4909	W P RODUNER CATTLE & FARMING COMPANY	8/6/48	12,810.20	Merced	OWENS CREEK
W P RODUNER CATTLE & FARMING COMPANY Total					30,274.90		

San Joaquin River Watershed - Post-1914 Appropriative Rights

Application ID	Permit ID	License ID	Holder Name	Date	Face Amt	County	Source
A020268	13377	7963	WALTER D HARRIS TRUSTEE OF THE WALTER D HARRIS TRUST DATED SEPTEMBER 29 2005	6/20/61	23.80	Fresno	UNST
A020269	13378	7964	WALTER D HARRIS TRUSTEE OF THE WALTER D HARRIS TRUST DATED SEPTEMBER 29 2005	6/20/61	28.00	Fresno	UNST
A020270	13379	7965	WALTER D HARRIS TRUSTEE OF THE WALTER D HARRIS TRUST DATED SEPTEMBER 29 2005	6/20/61	45.00	Fresno	UNST
			WALTER D HARRIS TRUSTEE OF THE WALTER D HARRIS TRUST DATED SEPTEMBER 29 2005 Total		96.80		
A016936	10636	5995	WILLIAM J FOGARTY	3/13/56	22.7	Stanislaus	UNST
A019044	12595	6947	WILLIAM J FOGARTY	10/21/59	30	Stanislaus	UNST
A020928	14122	8247	WILLIAM J FOGARTY	9/5/62	20	Stanislaus	UNST
			WILLIAM J FOGARTY Total		72.7		
A015371	9578	5478	WILLIAM J HALL	6/8/53	91.2	Stanislaus	TUOLUMNE RIVER
			WILLIAM J HALL Total		91.2		
A023861	16610	10928	WILLIAM J JAWIEN	9/3/71	0.70	Fresno	UNSP
			WILLIAM J JAWIEN Total		0.70		
A019227	12707	7805	William O Jamison	2/9/60	61.50	Madera	UNST
A022724	15563	9796	William O Jamison	5/26/71	20.3	Madera	UNST
A022727	15566	9848	William O Jamison	3/13/67	11.60	Madera	UNST
			William O Jamison Total		93.40		
A001442B	940	000388B	WILMA R THOMPSON	9/10/19	119.1	Merced	MERCED RIVER
			WILMA R THOMPSON Total		119.1		
A026152	18151	12012	WILSHIRE ALEC	12/26/79	0.40	Fresno	UNSP
			WILSHIRE ALEC Total		0.40		
			Grand Total		10,484,617.10		

Appendix D

Section D.7

Priority Rankings for Sacramento River Water Rights Claimants

Sacramento + Trinity + East and West Creeks Above Feather River Confluence by Priority - Post-1914 Appropriative Water Rights

Post-1914 Water Right Holder Name	Priority Date	Face Amount
Reclamation District 1004	4/2/1915	56.0
Reclamation District 108	1/25/1917	97.5
River Garden Farms Company	1/25/1917	29.3
Sutter Mutual Water Company	2/1/1917	21.9
Tisdale Irrigation & Drainage Co	7/26/1917	12.5
Reclamation District 108	8/27/1917	270.7
Oji Brothers	1/3/1918	1.9
Sutter Mutual Water Company	1/3/1918	265.7
Provident Irrigation District	1/18/1918	40.1
Stanford Vina Ranch Irrigation Co	8/5/1918	4.6
Natomas Central Mutual Water Co	8/22/1918	16.2
Lomo Cold Storage	9/10/1918	2.0
Meridian Farms Water Company	9/10/1918	67.3
Sutter Mutual Water Company	1/24/1919	19.7
Conaway Preservation Group LLC	3/1/1919	43.6
Natomas Central Mutual Water Co	3/5/1919	58.4
Natomas Central Mutual Water Co	8/27/1919	36.7
Provident Irrigation District	9/2/1919	3.4
Glenn-Colusa Irrigation District	12/3/1919	28.1
Glenn-Colusa Irrigation District	1/14/1920	10.8
Rancho Esquon, Inc	2/5/1920	3.7
Sycamore Mutual Water Company	2/9/1920	42.5
Reclamation District 999	2/11/1920	58.4
Sutter Mutual Water Company	4/9/1920	1.5
US Bureau of Reclamation	2/17/1921	50.2
Butte Valley Irrigation District	2/28/1921	17.2
Rancho Esquon, Inc	10/9/1921	1.8
Rancho Esquon, Inc	3/4/1922	3.8
Gorrill Land Company	3/6/1922	4.6
Rancho Esquon, Inc	6/27/1922	3.0
Hot Springs Valley Irrigation District	4/12/1923	48.4
Sacramento River Ranch II	5/17/1923	2.6
Reclamation District 999	7/18/1924	3.9
Gorrill Land Company	6/30/1925	4.5
Rancho Esquon, Inc	6/30/1925	4.6
Sutter Mutual Water Company	6/22/1926	3.3
M & T Incorporated	7/17/1926	5.1
Parrott Investment Company	7/17/1926	5.1
Sacramento River Ranch II	2/17/1927	1.8
Subtotal Before Initial State Filings in 1927		1,352.4
US Bureau of Reclamation	7/30/1927	11,153.8
US Bureau of Reclamation	7/30/1927	3,349.9
Sutter Mutual Water Company	1/31/1928	0.1
Lomo Cold Storage	11/14/1929	20.3
Conaway Preservation Group LLC	4/18/1930	5.4
Natomas Central Mutual Water Co	5/28/1931	15.4
County of Sacramento	6/6/1931	2.7
Lomo Cold Storage	3/21/1932	0.7
South Fork Irrigation District	3/5/1934	17.0
Reclamation District 883	5/1/1934	2.2
M & T Incorporated	12/1/1934	5.1
Parrott Investment Company	12/1/1934	5.1
M & T Incorporated	2/27/1936	3.1
Parrott Investment Company	2/27/1936	3.1
Maxwell Irrigation District	4/8/1936	29.0
Glenn-Colusa Irrigation District	5/28/1936	0.7
Subtotal Before Second State Filings in 1938		14,613.5
US Bureau of Reclamation	8/2/1938	7,818.8

Sacramento + Trinity + East and West Creeks Above Feather River Confluence by Priority - Post-1914 Appropriative Water Rights

Post-1914 Water Right Holder Name	Priority Date	Face Amount
Calif Dept of Fish & Game	6/19/1939	5.5
M & T Incorporated	9/22/1939	13.6
Parrott Investment Company	9/22/1939	13.6
Sutter Mutual Water Company	11/3/1939	0.6
Gorrill Land Company	3/13/1942	3.9
Sutter Mutual Water Company	6/16/1943	3.7
Oji Brothers	1/11/1945	2.9
Oji Brothers	3/6/1946	0.6
Reclamation District 108	5/26/1947	27.4
River Garden Farms Company	5/29/1947	6.3
Sutter Mutual Water Company	6/23/1947	2.7
Conaway Preservation Group LLC	9/8/1947	70.1
Glenn-Colusa Irrigation District	10/8/1947	3.4
Sycamore Mutual Water Company	3/17/1948	2.2
Pelger Mutual Water Company	4/13/1948	22.8
Sutter Mutual Water Company	4/13/1948	15.3
Sycamore Mutual Water Company	3/25/1949	2.3
US Fish & Wildlife Service	1/12/1950	44.2
Oji Brothers	2/20/1950	1.0
Reclamation District 108	2/24/1950	78.0
Maxwell Irrigation District	8/25/1950	4.9
Maxwell Irrigation District	6/28/1951	1.6
Subtotal Before Feather River Project Rights Filed in 1951		8,145.4
CA DWR	8/25/1951	1,575.2
Natomas Central Mutual Water Co	10/8/1953	11.8
M & T Incorporated	5/10/1954	0.5
Parrott Investment Company	5/10/1954	0.5
Lomo Cold Storage	11/28/1955	0.2
Tisdale Irrigation & Drainage Co	4/3/1956	1.4
Princeton-Codora-Glenn Irrig Dist	5/2/1956	15.1
US Bureau of Reclamation	11/28/1956	1,335.4
US Bureau of Reclamation	11/28/1956	1,230.8
CA DWR	3/15/1957	1,100.0
Maxwell Irrigation District	6/24/1957	34.6
Calif Dept of Fish & Game	10/24/1957	5.3
US Fish & Wildlife Service	10/25/1957	8.0
US Bureau of Reclamation	4/30/1958	160.0
US Bureau of Reclamation	9/16/1959	3,030.8
South Fork Irrigation District	3/14/1960	2.2
US Bureau of Reclamation	7/28/1960	1,335.4
US Bureau of Reclamation	4/12/1961	9,032.0
US Fish & Wildlife Service	7/3/1961	21.7
Subtotal of Most Feather River and CVP Filings 1951-1961		18,901.0
Rancho Esquon, Inc	2/5/1965	5.5
US Fish & Wildlife Service	7/19/1965	14.5
Gorrill Land Company	10/25/1965	2.5
Hot Springs Valley Irrigation District	3/17/1966	20.0
Reclamation District 999	4/1/1966	35.6
Sutter Mutual Water Company	9/7/1967	2.0
Butte Valley Irrigation District	4/10/1968	10.0
Calif Dept of Fish & Game	7/24/1968	5.2
Reclamation District 1004	12/26/1968	21.0
Pelger Mutual Water Company	3/13/1972	1.7
Calif Dept of Fish & Game	12/21/1972	5.5
Sycamore Mutual Water Company	12/22/1972	1.0
Sacramento River Ranch II	3/1/1973	12.7
Calif Dept of Fish & Game	4/10/1974	7.4
Gorrill Land Company	4/12/1978	4.4

Sacramento + Trinity + East and West Creeks Above Feather River Confluence by Priority - Post-1914 Appropriative Water Rights

Post-1914 Water Right Holder Name	Priority Date	Face Amount
Reclamation District 1004	12/1/1978	36.0
County of Sacramento	8/19/1982	0.5
Pelger Mutual Water Company	9/16/1994	5.0
Maxwell Irrigation District	2/17/1995	13.6
Princeton-Codora-Glenn Irrig Dist	11/19/1998	24.4
Provident Irrigation District	11/19/1998	26.7
Glenn-Colusa Irrigation District	2/18/1999	182.9
City of Sacramento	10/30/2000	81.8
Provident Irrigation District	2/27/2001	124.5
Princeton-Codora-Glenn Irrig Dist	12/17/2001	71.8
US Bureau of Reclamation	7/29/2002	2,203.1
Glenn-Colusa Irrigation District	5/3/2006	53.7
Sacramento County Water Agency	2/15/2008	71.0
Reclamation District 108	10/18/2010	36.0
Woodland-Davis Clean Water Agency	4/14/2011	45.0
Subtotal Since 1963		3,125.0
Total		46,137.3

Source: State Water Resources Control Board; California Water Impact Network.

Appendix E

Appendix E Water Availability Analysis Model Assumptions and Methodology

Analysis of water supply availability must account for water rights claims in addition to the variability contained within watershed hydrology. C-WIN's method of water supply availability has three components: watershed hydrology, known water rights claims, and yield estimation from the interaction of hydrology and water claims. All analytic methods contain assumptions.

Hydrology and Instream Flow Assumptions:

- The State Water Resources Control Board adopts a Delta inflow criterion for the major tributaries of the San Joaquin River Basin of 60 percent of unimpaired flow. This implies a diversion cap not to exceed 40 percent of unimpaired flow in the San Joaquin River Basin.
- The State Water Resources Control Board adopts a Delta inflow criterion for the major tributaries of the Sacramento River Basin of 75 percent of unimpaired flow. This implies a diversion cap not to exceed 25 percent of unimpaired flow in the San Joaquin River Basin. As with the San Joaquin, C-WIN is well aware that this is an assumption, not a foregone conclusion.
- C-WIN's water supply availability analysis relies on the 82-year unimpaired flow hydrology prepared for water years 1922 through 2003 by the California Department of Water Resources (2007). These data are arrayed by major watershed of the Central Valley and Delta. C-WIN calculated monthly decile, quartile and median flows by month and year, and then calculated the subtotals for key regulation periods: November through June for the Sacramento River Basin, and February through June for the San Joaquin River Basin. The percent of regulated period to total flows in the unimpaired hydrology was also calculated for each year, from which deciles, quartiles, medians, averages, and minima and maxima were calculated.
- The annual total and regulated period subtotals were then employed in the water rights yield analysis component. Remaining flows in the non-regulation season (July to October in the Sacramento Basin, July to January in the San Joaquin Basin) are estimated by simply subtracting regulation season flows from annual totals.
- All non-regulated flows are assumed to be fully available for diversion by water right holders; no instream flow requirements are assumed for the unregulated flow period. This assumption inflates the amount of water that junior water right holders would be allocated during this period of the year, and may ignore temperature restrictions for fish protection.
- No monthly breakdown of flows and diversion allocations is attempted.
- Use of an 82-year unimpaired flow hydrology accounts for inter-annual flow variations in assessing the potential for paper water.

Water Rights Claims Assumptions:

- C-WIN sought to gather water rights information from a variety of sources. Using the Public Records Act, C-WIN requested from nearly 100 different public water districts and agencies information concerning any and all pre-1914 water rights they may have. Many had no pre-1914 water rights. Others provided copies of pre-1914 notices, copies of adjudication decrees, operation agreements, diagrams, statements of diversion and use, and other

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information that described their early water rights claims. C-WIN wishes to express our gratitude for their helpful responses, which are too numerous to mention here.

- C-WIN also gathered from the State Water Resources Control Board's web site copies of adjudication decrees from the Pit River watershed, the Stanislaus River, Butte Creek, and the Indian Creek and Middle Fork Feather River watersheds.
- State law requires that pre-1914 and riparian water right holders file Statements of diversion and use with the State Water Resources Control Board annually. The Board has made most, but not yet all SDUs available online. The Board's eWRIMS database search engine itemizes each SDU but does not provide usage quantities when query answers are returned in the vast majority of cases. Consequently, C-WIN staff downloaded as many as possible to study and record the highest usage claims, as well as year of first usage. C-WIN includes only SDUs with cumulative usage claims by the same claimant that exceed 1,000 acre-feet. This kept the research scope manageable, while also capturing statistically significant cumulations of water usage.
- C-WIN's reliance on SDUs assumes that each usage report they contain is accurately measured. The highest amount claimed is employed to represent the maximum claim that might be exerted by the water right holder on behalf the right under which the reported diversion was made. This is assumed to be the case regardless of whether the type or right claimed is riparian or pre-1914.
- Many SDUs do not provide adequate usage information, however, and were ignored. Therefore, it is quite possible that C-WIN's use of SDU data in this analysis understates the magnitude and location of riparian and pre-1914 water rights claims throughout the Sacramento and San Joaquin river basins.

Yield Analysis Assumptions:

- The water rights priority system would operate subordinate to the application of water quality instream flow objectives.
- The obverse of the Board's instream flow objectives is referred to in our method as a "diversion cap." a 75 percent of unimpaired flow criterion thus is converted to a 25 percent of unimpaired flow diversion cap for Sacramento River Basin rivers in this analysis. In other words, if 75 percent of unimpaired flow is available for fish and aquatic beneficial uses, the 25 percent of unimpaired flow is available for diversion to consumptive uses. For the San Joaquin River Basin, a 60 percent of unimpaired flow objective is reflected in the analysis as a 40 percent of unimpaired flow diversion cap.
- Under the diversion cap, paramount riparian water rights are given first diversion rights, followed by senior pre-1914 water right holders, based on highest usage claimed, the cumulative face amount of water rights claim notices, adjudications, or other water rights claim source. For some river models, riparian and pre-1914 water rights claims are bundled together to simplify the analysis when the pre-1914 rights are senior to all other succeeding rights. Only after major pre-1914 water rights claims are any post-1914 appropriative water rights granted by the State of California provided with any remaining flows. Post-1914 water rights that are not shown in a specific river model's results are left off because no flows are left for these rights to divert given the model's operation.
- SDU highest use claims, adjudication allocations, and pre-1914 water right notice claims by the same entities are summed. While this appears to be double-counting, we believe it is important to cumulate them on the assumption that when the Board or a court undertakes

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to adjust water rights, the Board or court must be aware of all claims (both in notices as well as in uses) made in order to remove clouds from their titles.

- As noted above, the unimpaired flow hydrology data is analyzed to determine an average percent of regulated period to total flow for each river. This average indicates that share of the hydrograph's overall flows that occur during the regulated period. We assume that water right claimants claim their supplies under the diversion in a manner that is directly proportional to the regulated period's share of the overall total flow for that river. (This is a water diverter's way of "mimicking the natural hydrograph.") For all riparian and many pre-1914 water right holders, this seemed a reasonable assumption; for post-1914 water right holders whose rights may have limited seasons of diversion or contributions to storage, this assumption may break down. However, but this assumption might only come into play during the wettest portions of each river's overall unimpaired flow hydrology, if at all. The factors used for each river system is shown in Table E-1:

Table E-1 Factors Used to Determine Water Right Claimants' Diversions During Regulated Period in Sacramento River and San Joaquin River Basins			
Sacramento River Basin		San Joaquin River Basin	
River	Regulated Period as Percent of Total Unimpaired Flow	River	Regulated Period as Percent of Total Unimpaired Flow
Trinity	94%	Stanislaus	85%
Sacramento River at Feather River Confluence	87%	Tuolumne	76%
Feather	90%	Merced	81%
Yuba	94%	San Joaquin	77%
Bear	97%		
American	95%		

Sources: California Department of Water Resources 2007; California Water Impact Network.

- Default calculation method for pre-1914 water rights notices are often expressed in cubic feet per second (cfs) without seasonal limitation are to multiply the cfs by 3600 (seconds per hour), then by 24 (hours in a day), then by 365.25 days per year. The result is then divided by 43,560 square feet to the acre to obtain the face amount expressed in acre-feet.
- Default calculation method for pre-1914 water rights notices expressed in miners inches is to divide the miners inches by 50 to convert the claim to cubic feet per second, then follow the calculation for converting cfs claims to acre-feet of face amount. We see this as a conservative conversion assumption. Some pre-1914 water right holders may have legal documents that suggest that the conversion should be 40 miners inches to 1 cubic feet per second. This would increase the face value of such pre-1914 water rights by 20 percent.

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- Default calculation method for water rights claims (particularly in SDUs) expressed in gallons per day was to divide the gallons by 325,851 gallons per acre-foot, then multiply by the number of days in the usage season disclosed in the SDU.
- These calculation methods are employed for estimating the quantity of rights administered under adjudication decrees as well. Diversion seasons mandated under the decrees were used as well.

Appendix F
California Water Code Article 1.3
Declaration of Fully Appropriated Streams

1205. (a) Following notice and hearing, the board may adopt a declaration that a stream system is fully appropriated. As used in this article, "stream system" includes stream, lake, or other body of **water**, and tributaries and contributory sources, but does not include an underground **water** supply other than a subterranean stream following through known and definite channels.

(b) A declaration that a stream system is fully appropriated shall contain a finding that the supply of **water** in the stream system is being fully applied to beneficial uses where the board finds that previous **water** rights decisions have determined that no **water** remains available for appropriation.

(c) Upon its own motion or upon petition of any interested person, and following notice and hearing, the board may revoke or revise a declaration that a stream system is fully appropriated.

1206. (a) From and after the date of adoption of a declaration that a stream system is fully appropriated, and subject to subdivision (b), the board shall not accept for filing any application for a permit to appropriate **water** from the stream system described in that declaration, and the board may cancel any application pending on that date.

(b) Notwithstanding subdivision (a), the board may provide, in any declaration that a stream system is fully appropriated, for acceptance for filing of applications to appropriate **water** under specified conditions. Any provision to that effect shall specify the conditions and may contain application limitations, including, but not limited to, limitations on the purpose of use, on the instantaneous rate of diversion, on the season of diversion, and on the amount of **water** which may be diverted annually. The board may make those limitations applicable to individual applications to appropriate **water**, or to the aggregate of the applications, or to both.

(c) Subdivision (a) shall not apply to applications for temporary permits made pursuant to Chapter 6.5 (commencing with Section 1425) or to any provision of this **code** respecting change in point of diversion, place of use, or purpose of use.

1207. Notice of hearing pursuant to this article shall be given as follows:

(a) The notice shall be published at least once a week for four consecutive weeks in one or more newspapers of general circulation published in each county in which any part of the stream system is situated, and publication shall be complete at least 60 days prior to the date of hearing.

(b) At least 60 days prior to the date of the hearing, the notice shall be mailed to all persons known to the board who own land that appears to be riparian to the stream system, who divert **water** from the stream system, or who have made written request to the board for special notice of hearing pursuant to this article.

Appendix G
Selected Fully-Appropriated Rivers and Creeks
of the Bay-Delta Estuary's Central Valley Watershed

River	Fully-Appropriated Season	Critical Reach
Trinity	1/1 to 12/31	North Fork from Salmon-Trinity Primitive Area to Helena at river mouth (W&S)
	1/1 to 12/31	South Fork Trinity from State Route 36 to river mouth at Salver (W&S)
	1/1 to 12/31	Main stem from 100 yards below Lewiston Dam to river mouth at Weitchpec (W&S)
Pit River	4/1 to 11/30	North and South Forks, Franklin Creek, and Pit River in Big Valley adjudications
	3/15 to 10/31	Ash Creek from confluence with Pit River upstream (adjudication)
McCloud	1/1 to 12/31	Mainstem from Algoma to Lake McCloud, mainstem from McCloud Dam to Shasta Lake (W&S)
Squaw Creek	1/1 to 12/31	Squaw Valley Creek from Section 14, T38N, R3W to confluence with McCloud River
Feather	1/1 to 12/31	Middle Fork from confluence of its tributary streams 1 KM south of Beckwourth, CA. (W&S)
	5/15 to 9/30	Middle Fork at Beckwourth, CA upstream (D-831)
	4/1 to 11/30	Indian Creek from North Fork Feather upstream (adjudication)
	3/1 to 10/31	South Fork Feather from confluence of Oroville Dam and Middle and South Forks of Feather River upstream (D-25)
	7/1 to 9/30	From confluence of Feather with Sacramento River upstream (D-1275)
	4/15 to 9/30	Sierra Valley channels from the confluence of Middle Fork Feather River at Beckwourth upstream (D-1391)
	7/1 to 11/30	West Branch of Feather River from upper Miocene Canal Head Dam located in Section 30, T23N R4E, upstream (D-844)
Yuba	8/1 to 10/31	From Englebright Dam upstream (D-934)
	4/1 to 11/30	From Shady Creek within Section 17, T17N R7E and upstream of South Fork Yuba River (adjudication)
Bear	5/1 to 11/30	From Camp Far West Reservoir upstream (D-1091)
	4/15 to 11/30	From Wolf Creek upstream (above Bear River, D-1059, D-1091)
American	1/1 to 12/31	North Fork of American River from source to Iowa Hill Bridge (W&S)
	1/1 to 12/31	North Fork of American River from point 0.3 miles above Heath Springs to 1,000 feet upstream of Colfax-Iowa Hill Bridge, including Gold Run Addition area. (W&S)
	7/1 to 10/31	From the Sacramento River upstream (D-1108)

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Selected Fully-Appropriated Rivers and Creeks of the Bay-Delta Estuary's Central Valley Watershed

River	Fully-Appropriated Season	Critical Reach
	5/1 to 10/31	White Rock Creek from the confluence with South Fork American upstream (D-1522, D-1211)
	7/1 to 12/31	Silver Creek from confluence with South Fork American upstream (D-163, D-1211)
	6/15 to 10/31	Sugar Loaf Creek from confluence with South Fork American upstream (D-776)
Butte Creek	4/1 to 11/30	Butte Creek from confluence with Butte Sink in T17N R1E (adjudication)
	6/1 to 9/30	Butte Creek from confluence of Butte Slough upstream (D-1329)
Stony Creek	4/1 to 11/30	Stony Creek from confluence with Sacramento River upstream (adjudication)
Cache Creek	4/15 to 10/31	Cache Creek from confluence with Yolo Bypass upstream (D-1506)
Putah Creek	1/1 to 12/31	Putah Creek from Monticello Dam upstream (D-869, WR Order 96-002)
Stanislaus River	4/1 to 11/30	From confluence with San Joaquin River upstream (adjudication)
	7/1 to 10/31	From confluence with San Joaquin River upstream (D-1422)
Tuolumne	1/1 to 12/31	From source on Mount Lyell and Mount Dana to Don Pedro Reservoir (W&S)
	7/1 to 12/31	From Don Pedro Reservoir upstream (D-995)
Merced	1/1 to 12/31	From south side of Mount Lyell in Yosemite National Park to 300 feet upstream of confluence with Bear Creek (W&S)
	1/1 to 12/31	South Fork Merced River from Triple Divide Peak to confluence with mainstem of Merced River (W&S)
Chowchilla	1/1 to 12/31	From confluence of Chowchilla River with San Joaquin River upstream (D-1365)
Fresno River	5/1 to 11/30	From Hidden Dam and Fresno River upstream (D-1407)
San Joaquin	1/1 to 12/31	From confluence with Mendota Pool upstream (D-935)
Fresno Slough	1/1 to 12/31	From confluence with San Joaquin River upstream to Kings River and including upstream watershed of Kings River (D-1290)
Sacramento-San Joaquin Delta	6/15 to 8/31	From the Delta upstream - allowing no diversions from the Delta less than 1 cubic foot per second or less than 100 acre-feet in storage. (D-1594)

Source: State Water Resources Control Board, 1998. Key: W&S = Wild & Scenic Designation; adjudication = decree issued adjudicating water rights in that critical reach; D-"[Some number]" refers to a Board Water Rights Decision.

clerk
L2622
J

California Senate Interim Committee
On Water Projects

(Senator Stephen P. Teale, Chairman)

OPINION OF ATTORNEY WALTER M. GLEASON
REGARDING VARIOUS LEGAL ASPECTS OF
BURNS-PORTER ACT (SB 1106)
(PROPOSITION ONE)

(In response to a request of Chairman Teale
by letter dated October 4, 1960)

WALTER M. GLEASON,
533 Montgomery Street,
San Francisco 4, California.
Dated: October 28, 1960.

WATER RESOURCES
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011

UNIVERSITY OF CALIFORNIA

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California Legislature
SENATE INTERIM COMMITTEE
on
PROPOSED WATER PROJECTS
(Senate Resolution No. 180)

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4 October 1960

Mr. Walter M. Gleason
Attorney at Law
333 Montgomery Street
San Francisco, California

Dear Mr. Gleason:

The People of California will soon be called upon to vote upon the Burns-Porter Act (Senate Bill 1106) (Proposition One on the November ballot). Unfortunately, there seems to be a rather widespread lack of understanding on the part of many people as to the real significance of this very important proposed Bond Act, especially its legal aspects and implications.

As you are aware, our Committee has been working diligently in an effort to study these various phases and to acquaint the People of California with them. However, we find ourselves seriously handicapped in having varied, and to some extent, conflicting legal analysis from various water lawyers as to the various legal facets of this proposed multi-billion dollar Bond Act and the Water Plan which it will finance.

Having in mind your long and distinguished record in the field of water law and water litigation, and also your past invaluable service to legislators in their effort to protect the interests of all California in connection with California's water planning, I desire to now take advantage of your kind offer some time ago to furnish our Committee with an analysis of the legal aspects of SB 1106, which is now Proposition One.

We would particularly like to have your views with respect to the following salient points which have given various members of our Committee serious concern, to wit:

1. DOES SB 1106 FULLY PROTECT NORTHERN CALIFORNIA'S VESTED WATER RIGHTS?
2. CAN THESE VESTED WATER RIGHTS BE IMPAIRED OR SERIOUSLY INVOLVED UNDER THE WATER PLAN ENVISAGED BY SB 1106 ?
3. DOES THIS WATER PLAN ADEQUATELY PRESERVE AND PROTECT THE SO-CALLED "AREA OF ORIGIN" RESERVATIONS OF NORTHERN CALIFORNIA (i. e. , "COUNTY OF ORIGIN" AND "WATERSHED OF ORIGIN") PROTECTION?
4. DOES S, B, 1106 AFFORD PROPER PROTECTION FOR THE SACRAMENTO - SAN JOAQUIN DELTA (SALINITY CONTROL, LEVEE PROTECTION, ETC.) ?
5. COULD SB 1106 BRING ABOUT THE "LEGAL FRANKENSTEIN" FEARED AND PREDICTED BY THE ENGLE COMMITTEE ?
6. DOES SB 1106 CONTAIN ADEQUATE LEGAL SAFEGUARDS TO PROTECT THE TAXPAYERS OF THIS STATE AGAINST THE POSSIBILITY OF DEFICITS IN CONNECTION WITH THIS PROPOSED MULTI-BILLION DOLLAR BOND ISSUE ?
7. WILL THE GOVERNOR AND HIS EXECUTIVE OFFICIALS HAVE THE AUTHORITY AND POWER (IF SB 1106 IS APPROVED) TO FIX AND DETERMINE, IN THEIR SOLE DISCRETION, THE TERMS AND CONDITIONS OF THE "WATER CONTRACTS" WHICH WILL BE THE SOLE SOURCE OF REVENUES (OTHER THAN THE GENERAL FUNDS OF THE STATE) TO PAY OFF THIS HUGE BOND ISSUE ? WILL THE LEGISLATURE HAVE ANY VOICE IN SUCH MATTERS ?

We would appreciate it if you will try to express your views on these several legal points in language which will be readily understandable to laymen. We fully appreciate that some of these phases are highly technical in nature but hope that you can cover them in as nontechnical a manner as possible.

I might add that we will desire to submit your opinion on these phases to other legal experts for their appraisal and comments. If you have any objection to such procedure please so advise us.

With kindest personal regards,

/s/ STEPHEN P. TEALE

Senator Stephen P. Teale

never been fixed or determined by any comprehensive adjudication. * For historical and other reasons it has generally been unnecessary, up to now, to adjudicate in any comprehensive way the quantitative extent of this vast maze of vested water rights. The "rate of flow" * * schedules governing these water rights have adequately served their purpose in Northern California. *** However, this new water planning

* The monograph submitted by Henry Holsinger, Esq., in his testimony before the Engle Congressional Committee in 1951 (entitled "Necessity for Comprehensive Adjudication of Water Rights on the Sacramento and San Joaquin Rivers in aid of the Central Valley Project") contains an excellent explanation (by this outstanding water expert) of this "un-adjudicated characteristic" of these Central Valley water rights. His testimony is contained in the voluminous report published by the Engle Committee (in 1956) (House Document No. 416 - Volume 1, pp. 765-784). This official publication will be cited herein by the designation "Engle _____".

Mr. Holsinger (long time chief attorney for the Division of Water Resources and, subsequently, Chairman of the State Water Rights Board) summed up this absence of any comprehensive adjudication in the Central Valley as follows:

"In substantial degree existing rights to the use of water on the San Joaquin River has been litigated but not in such manner that each might be enforced against the other. On the Sacramento and in the delta, however, comparatively few rights have been litigated at all, and only a small proportion of these rights on both rivers are of record anywhere." (Engle 772)

** For the benefit of persons not acquainted with "water measurement terminology" there are two distinct "dimensions" to a water right. The first is rate of flow. This means the rate at which a given diversion flows (ordinarily expressed in terms of "cubic feet per second"). Such a "rate of flow" does not denote any quantity of water (any more than "miles per hour" in automotive travel gives any indication of the distance traveled). To get quantity (in water measurement) another "dimension" must be known which is the length of time such flow has persisted. For example, a rate of flow of one cubic foot per second (1 cfs) past a given point for 24 hours will produce a total quantity of water of approximately 1.98 acre feet (commonly and roughly expressed as approximately two acre feet). An acre foot of water is the amount of water necessary to cover one acre a foot in depth.

*** The phrase "Northern California" as used in this "Opinion" is intended to include all of California north of the Tehachapi Mountains; and principally the great Central Valley and its adjacent watersheds.

completely changes this situation. If the Brown Water Plan (SB 1106) * is put into effect, a comprehensive determination of the quantitative scope of all these water rights will become necessary because of the peculiar nature of this plan and the failure of this legislation to adequately "insulate" these vested water rights against involvement under this water plan.

3. The Controlling Criterion
of "Beneficial Use".

All water rights in California are controlled and limited by the yardstick of "beneficial use". In other words, this criterion pervades all California water rights. It is embedded in our California Constitution (Art. XIV, Section 3) which makes it mandatory that the "water resources of the State be put to beneficial use to the fullest extent of which they are capable" and forbids "unreasonable use" and any "unreasonable method of use" of water.

This means, in so far as our Northern California irrigation water rights are concerned (which comprise the great bulk of the North's water rights), that they are limited to the amount of water reasonably needed, from time to time (i. e., month to month and year to year) for the proper irrigation of the lands in question (with reasonable allowances for conveyance losses).

This problem as to how much water a given area of land can beneficially use is not a simple one. To the contrary, it is a complex one. "Water duty" (which is an expression used to denote "beneficial use") varies from parcel to parcel. Soil conditions and many other technical facets of climatology and hydrology (e. g., ground water depths) must be considered. **

* SB 1106 has no precedent in our prior California water planning. It is a completely new piece of legislation, formulated entirely by the Brown Administration. Therefore, I will (for sake of identification) refer to the water project therein authorized (State Water Resources Development System) as the "Brown Water Plan."

** The complexity of "water duty litigation" can be illustrated by one such case (beginning in the late 20's) in which the writer was counsel for the defendants. Although it was only a localized controversy, its actual trial required in excess of two years.

One of the corollaries of this basic legal doctrine of "beneficial use" is that no matter how long (i. e., for how many years or decades) a given diversion of water has taken place and irrespective of how continuously this amount of water has been used on the land involved, the water right in question is restricted (under said controlling yardstick) to the actual amount of water which some court may determine (in a "water duty adjudication") to be necessary properly to irrigate such land. *

4. A "junior appropriator" can, in the absence of any binding adjudication of the quantitative extent of the senior water rights, freely litigate the quantitative scope of such prior "vested" rights.

Did P. S. ... discuss in his review of CA water law?

One of the necessary consequences of the aforementioned controlling criterion of beneficial use is that any person who desires to acquire the right to use allegedly "surplus" water in a given stream or water basin can (unless prevented by a prior adjudication binding upon him) throw into question the quantitative extent of any and all "vested water rights" on said stream (no matter how long established). In short, a covetous "water exporter" (a proposed junior appropriator) can thus litigate any and all "senior" rights by simply resorting to the expedient of questioning the water duty of the senior diversion rights.

I should also mention, in order to indicate that this is a "hard reality" (as distinguished from a purely theoretical aspect) in California water right administration that our water history is replete

* One of the many enunciations by the California Supreme Court of this settled legal principle is:

"In so far as the diversion exceeds the amount reasonably necessary for beneficial purposes, it is contrary to the policy of the law and is a taking without right and confers no title no matter for how long continued." (citing authorities) (Tulare Irrigation District v. Lindsay-Strathmore Irrigation District, 3 C 2d 489, 45 P 2d 972) The Court also stated therein: "In determining what is a reasonable quantity for beneficial uses, it is the policy of the State to require within reasonable limits the highest and greatest duty from the waters of the State."

with just such episodes. * I will cite but two thereof.

The first is the famous:

Lindsay-Strathmore Irrigation District
Litigation with the Kaweah Delta
"vested water rights" (Tulare County)

This involved the Kaweah River and the "vested" water rights of the Kaweah Delta in Tulare and Kings Counties, California. Over a period of many decades the water right owners (irrigation districts, mutual water companies, riparianists, etc.) along said Kaweah stream system settled their respective water rights by a multitude of local adjudications and agreements. The end result was a complex river schedule to govern the diversions from the two main branches of the Kaweah River (Kaweah and St. Johns). These scheduled water diversions covered all of the normal flows of the river. Naturally, these water right owners felt that at long last they had finally and completely settled their water rights. However, in 1916 along came Lindsay-Strathmore Irrigation District, a large irrigation district situated to the south of (and outside) the Kaweah Delta. It was desperate for water. Its supply of "residual" underground water was fast nearing exhaustion due to inordinate pumping brought on by extensive and excessive planting of citrus and other groves during the preceding decade of prosperity. The District was faced with either eliminating much of this planted acreage or of obtaining an "outside" source of water. It therefore "invaded" the Kaweah Delta and established a series of large pumping plants in the heart of this Delta. It then proceeded to pump and "export" large quantities of water to the South (i. e., to the District). Litigation ensued. It went to the California Supreme Court twice. **

* If the writer has learned anything from his several decades of exposure to California water right problems and practices it is that there is a fundamental difference between a purely theoretical approach to such matters and a realistic and pragmatic understanding of the "hard realities" of such water problems and practices. I might add that it is my impression that far too much of the current water planning at Sacramento (including some of the legal phases) has been by theoreticians rather than by pragmatic realists schooled by adequate experience with the "hard realities" of irrigation practices and problems.

Incidentally, Mr. Holsinger reviewed many of the "hard realities" of California water practices (from a legal viewpoint) in his aforementioned testimony before the Engle Committee.

**A glance at the voluminous decision of the Supreme Court on the second appeal (Tulare Irr. Dist. v. Lindsay-Strathmore Irrigation District, 3 C 2d 489, 45 P 2d 972) will indicate the complicated nature of this lawsuit. The main case also generated a number of collateral disputes and lawsuits (in some of which the writer participated as counsel for Kaweah Delta interests in the late 20's and early 30's.)

It lasted for about fifteen years and its cost (fees of attorneys, engineers, court costs, etc.) ran into millions of dollars. The defense of Lindsay-Strathmore consisted principally of a resort to the aforementioned relatively simple device of questioning the "water duty" of the Kaweah Delta water right owners and users. Lindsay claimed, for example, that these Delta farmers were using far too much water to irrigate their alfalfa and other crops, and that under an "optimum" method of irrigation (expounded at length over a period of many months of trial by various engineering and irrigation experts)* the actual amount of water reasonably needed by the Delta was far less than the amount claimed and diverted pursuant to the Kaweah River schedules. This litigation finally was settled after both sides were pretty much exhausted. The irony and tragedy of the whole affair was that the expenditure of these millions of dollars did not produce a single drop of "new" water.

A second and more recent example of this involves the:

City of Fresno and Kings River

The Kings River rises in the Sierra Nevada Mountains in Fresno County and flows through the County of Fresno into Kings County where it terminates in Tulare Lake. In a part of its course, it is quite near the City of Fresno. As is well known, a vast and highly developed agricultural area (orchards, vineyards, extensive cotton acreages, etc.) depends (almost entirely) for its irrigation upon the waters of Kings River. Many irrigation districts, mutual water companies, and other irrigation units own water rights in this stream. The writer represents some of these Kings River water right owners.

During a period of about seventy years these water right owners, by a long series of adjudications and agreements, finally settled their respective water rights and priorities. ** The end result was a complicated

* One of the principal features of such "water duty" litigation is the widely disparate and conflicting testimony of the opposing able hydraulic engineers and other irrigation experts concerning this subject of how much water is needed properly to irrigate the area of land in question. An examination of the lengthy testimony of these experts in any of these cases will confirm this. I mention this aspect not to reflect on the good faith of these eminent experts but simply to further point up one of the many facets of the complexity of such litigation.

** Our engineers estimate that upwards of eighty millions of dollars have been invested by these various irrigation units in developing their water rights and diversion systems.

river compact specifically setting forth these various and interrelated rights and priorities. All of the flows of the river (high and low) are thus scheduled and apportioned among and between these units. These river schedules occupy many printed pages in the current issue of this controlling water right compact. A few years ago a large dam (Pine Flat) was built in the upper reaches of Kings River to provide storage and a regulated river flow. This project was promoted over a period of years by these irrigation units with a considerable expenditure of time and money. All of the available irrigation storage space in Pine Flat Reservoir has been contracted for and allotted to these units. However, the final contract covering this aspect (as distinguished from the interim contract) has not been finally signed by the Federal government (Dept. of the Interior) at Washington.

Now, to turn to the City of Fresno. This city has been expanding in every direction and it is predicted by responsible authorities that during the next few decades it will experience another almost phenomenal growth. Consequently it needs an additional and dependable water supply (mainly for domestic use). However, instead of planning and building its own mountain project (such as San Francisco's Hetch Hetchy, or the Mokelumne project of EBMUD) the City of Fresno is now casting covetous eyes upon the waters of Kings River. Among other things, it has petitioned the Federal government to allocate to it a large block of storage space in the Pine Flat project notwithstanding that all thereof has been allocated to the irrigation interests who own or control these waters of Kings River. Furthermore, to obtain water to fill any such storage space which it hopes to thus secure, Fresno is now asserting that there is a "surplus" of water in Kings River and that, under its domestic priority, it is entitled to this "surplus". This means that unless Fresno abandons this attack on the water rights of the Kings River irrigationists, a lengthy and costly legal proceeding will ensue, the chief feature of which will probably be an extended examination into the subject of the proper "water duty" of the lands in the Kings River service areas. This comes as a dismal surprise, of course, to the farmers along Kings River who thought (up until this attack by the City of Fresno) that they had finally and at long last settled their water rights (after decades of litigation, etc.).

Incidentally, is it any exaggeration to apply the phrase "hard realities" to this earlier Lindsay-Strathmore episode or to this current Kings River problem?

5. Relevancy of foregoing legal considerations to Brown Water Plan (SB 1106).

This phase may be summed up very simply. Under the Brown Water Plan the South will acquire a completely novel and unprecedented "contract water right" out of the Central Valley water resources (i. e., at the Delta). In the absence of any safeguards, once the South acquires this "water right" it will be in an excellent position to question and litigate all of the vested water rights in the Central Valley (and its adjacent watersheds most of which are tributary in one way or another to the Delta). I will deal more fully with this phase in a subsequent section of this memorandum. At this juncture, I wish to answer the question:

Does SB 1106 contain any provisions or restrictions to prevent such an attack by the South on these Northern "vested" rights?

The clear and indisputable answer is that it does not. This is one of the basic defects in this illy-conceived legislation. I might also mention, in this connection, that some of us strongly urged Governor Brown to include in SB 1106 appropriate provisions so that the South could not thus question and litigate these "vested water rights" of the North. In short, we sought proper provisions to fully "insulate" these vital rights against such unfair attacks. For example, several of us met with the Governor at an evening conference on February 25, 1959, and endeavored to emphasize the importance (to the North) of thus "insulating" these water rights. This was followed the next day by a lengthy letter from me to the Governor in which various phases (necessary for the protection of the North) were explained at length, including such topics as:

1. Necessity for the "insulation" and full protection of Northern water rights.
2. Adequate protection for Northern "Areas of Origin".
3. Protection of the Delta.

As to the first point (i. e., the "insulation" of Northern water rights) this letter stated:

"This phase is of vital importance to us. It is fully reviewed in earlier memoranda prepared by the writer for the California Water Development Council and other organizations (with which you may already be familiar...) (giving dates thereof, etc.)

} Feb 26,
1959
letter by
Gleason

In any event, I will do no more herein than to sketchily review this phase and then repeat our suggestions made the other evening.

"If the CWP is authorized without full and adequate protection for Northern vested water rights these rights can be seriously affected and jeopardized by this water plan. Why? Because practically all of these rights are "open-ended". What does this mean? It means, among other things, that the quantitative extent of these rights has never been fixed or settled. Historically, and because of the flow regimens of our Northern streams and other practical considerations, it has not been necessary that these rights be quantitatively determined. The writer cited last evening, as one example of this, our complex water right schedule (Water Right Indenture, etc.) on Kings River. Not one of these many important water rights has ever been quantitatively determined or fixed.

"Presently, none of these valuable rights is subject to any question or attack by Southern California water interests. Why? Because geography and topography preclude this. In other words, the South might as well be in Mexico, from the standpoint of any present ability it may have to concern itself with, or attack these rights (or litigate the quantitative scope thereof).

"With the advent of the California Water Plan, however, this whole picture changes. From a water right standpoint, the effect will be the same as if Southern California were to be physically moved up to and placed next to the Delta. Unless proper safeguards are incorporated in the fundamental CWP legislation, the South will then be in a perfect position to question and litigate (in Lindsay-Strathmore type litigation) the quantitative extent of all these vested Northern water rights. We then would have the "Legal Frankenstein" which the Engle Committee worried so much about.

"Legal Frankenstein"

"It should be remembered, in this connection, that the South would enjoy various preponderant advantages in such litigation. One of these would be that to the South a given quantity of water would be many times more valuable than to the Central Valley farmer. Therefore, the South could spend much more 'to win the water' than the farmer could. In other words, this water to the farmers is worth X dollars (per acre foot). To the South it will be worth at least 10-X, and probably a great deal more. All the South would have to do (in such Lindsay-Strathmore type 'water duty' litigation) would be to spend 2-X (or more) and they would end up with most of the water. In short, the farmers could not sustain the expense of such a 'Legal Frankenstein.'"

Again, under date of May 1, 1959, the writer sent a lengthy memorandum to the Governor urging the inclusion (in SB 1106) of five different elements of protection for the North (including adequate protection for Northern "vested" water rights). The Governor's personal reply (dated May 8, 1959) stated, among other things, that:

How to
View
This
correspondence
?

"I think it is vital to California that we move ahead in this water program, and I agree with you in all five fundamentals in every particular.* We may disagree as to how we reach them, but not in objective.

"I would direct your attention to the fact that at this time we are only drawing the 'physical works'. We are not drawing conclusions or allotting water. When we come to that, which will be after the bond issue is passed, then you and I can sit down and discuss some of the other things mentioned in your letter."

Unfortunately (and in connection with the last suggestion of the Governor) there are two serious roadblocks in the way of any "post-election patching up" of SB 1106. The first is that if the People approve SB 1106 in its present form, it will be legally impossible (in the opinion of the writer as well as many other lawyers) for the Legislature to subsequently amend it in any substantial way. Secondly, the Governor and his water staff are now engaged in somewhat frenetic efforts to consummate a vital "water contract" with The Metropolitan Water District of Southern California (i. e., even before the People approve SB 1106.)** If this is consummated, it would likewise be impossible (in our opinion) to correct (by subsequent legislation) some of these basic defects in SB 1106. This phase is also dealt with in a subsequent portion of this Opinion.

In any event, we were unsuccessful in our efforts to have these protective provisions incorporated in SB 1106.***

* All emphasis in this Opinion, either by underlining or otherwise, is mine, unless otherwise noted.

** A contract with an initial term of seventy-five years, and renewable at the option of Metropolitan.

*** It is my personal opinion (from a rather close observation of the processing of this legislation through the Legislature; with its many drafts and counter-drafts) that the omission of these necessary and salutary protective provisions was not at all accidental. I might add that it is an "open secret" that various of the South's water lawyers and other experts closely collaborated with the Administration in the drafting and processing of this legislation.

This brings me to its so-called "exclusionary clause", viz:

6. Paragraph 12931 of SB 1106

This paragraph contains a provision that nothing contained in SB 1106 shall

"affect or be construed as affecting vested water rights"

The administration spokesmen have been pointing with pride to this simple statement as being "full protection" for our Northern vested water rights. This contention is, in my humble opinion, specious. In fact, it is little short of fatuous.

There are several reasons why this is so:

The first one is that this provision will not in any manner whatsoever prevent or preclude the South (or any other Delta water "exportee") from questioning, by litigation and otherwise, the quantitative extent of these Northern vested water rights. As shown above, these "junior appropriators" (once they are placed in a position, under SB 1106, to receive water out of the so-called Delta Pool) will have, because of the aforementioned principles of water law, the unfettered power to do exactly that (acting through the State). Nothing in SB 1106 precludes or prevents them from doing so.

In other words, the mere statement in SB 1106 that "nothing herein" shall affect "vested water rights" does not at all meet the issue or cure the evil. The South will not derive its right or power to thus "raid" Northern water rights by virtue of anything expressed in SB 1106. Rather, it will acquire that opportunity and power by virtue of being placed in an excellent position (physical and legal) to do so by this Brown Water Plan (SB 1106).

Stating this differently, the use of the phrase "vested water rights" still leaves open the all-important question as to the quantitative extent of these vested water rights, a vital dimension which (as shown above) has never been fixed by any comprehensive adjudication which would in any manner be binding upon the South (or any other Delta "exportee"). In short, the South will be in the same position as was Lindsay-Strathmore which (in invading the Kaweath Delta) somewhat piously proclaimed, in effect, to the Kaweath Delta vested water right owners:

"Gentlemen of the Kaweath Delta, we do not intend to impair your vested water rights, but we most assuredly desire and intend to dispute and, if necessary, to litigate the quantitative extent thereof."

In conclusion, the foregoing are the principal considerations, factual and legal, on which is based my aforesaid answer to your first question.

Incidentally, in leaving this phase I desire to note that some of these aspects (i. e. , as to the "open-ended" nature of these Northern water rights, etc.) are more fully covered in other opinions and memoranda previously prepared by the writer, including the following:

Opinion dated February 8, 1957, to Mr. Bert Phillips,
President of California Water Rights Protective Association.

Opinion dated March 13, 1957, to California Water Rights
Protective Association (re ACA #38).

Opinion dated April 13, 1957, to Senator Edwin J. Regan.

Opinion dated December 31, 1959, to Mr. Gordon Garland,
Executive Director of California Water Development Council.
("The California Water Plan - The Two Divergent Roads
Ahead and their Litigation Potential").

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QUESTION NO. 2. CAN THESE VESTED WATER RIGHTS BE IMPAIRED OR SERIOUSLY INVOLVED UNDER THE WATER PLAN ENVISAGED BY SB 1106 ?

I - OPINION: My answer is yes. My firm opinion is that this Brown Water Plan will not only expose these vested water rights to the danger of impairment but that it is inevitable, under the "hard realities" of the new hydrological situation which will be brought about by this Water Plan, that this involvement will occur.

II - SUPPORTING ANALYSIS AND ARGUMENT: The foregoing analysis in support of my answer to your Question No. 1 also applies herein. The essence of said discussion above is that because of the presently "open-ended" nature of these Northern "vested" rights, the South will be placed by this Water Plan in a perfect position to question and involve, by litigation and otherwise, these Northern "vested rights". However, and in order to demonstrate that this is not a fanciful and unrealistic appraisal of the new situation which will be brought about by this plan I will now touch upon some additional salient facts and considerations.

1. The New Central Valley "Water Picture"

Water-rightwise, the end result of this new Water Plan will be exactly the same as if all of Southern California were to be physically uprooted and set down at Tracy (i. e., next to Delta). In short, the length of the aqueduct between the Tracy Pumping Plants and Southern California is immaterial.

This end result will therefore mean that the South will, for all practical and legal purposes, be sitting next to the Delta with a right to receive water out of the Delta (through its "water contract" with the State). *

* As has been frequently pointed out by the writer (and many others) the name "Feather River Project" (which until recently was widely used in labelling this Water Plan) is a complete misnomer; and a deceptive and misleading one. This is and always has been a Delta Project. Under all this water planning the Feather River was to contribute but a relatively small fraction (approximately 1/4th) of the water to be exported from the Delta. (See Gleason letter of April 23, 1957 to Senator Edwin J. Regan). However, it is interesting to note, in this connection, another facet. Apparently, some of the State's own independent engineering consultants, (who are checking the feasibility of this Water Plan) have recently concluded that it is dubious as to whether even this "Feather River Phase" can be built (i. e., out of the funds to be provided by Proposition One).

A direct consequence of this new "hydrology" is that for the first time in history the South will become directly and legally interested in the water resources of the Central Valley and the water rights (existing and prospective) in connection therewith. Up to now the South has had, of course, no interest in or any ability to interfere with or involve any of these Northern rights. Why? Because geography and topography have taken care of this. In other words, Southern California might as well be in Mexico insofar as any present ability to take or interfere with any water or water rights in Northern California is concerned. For these reasons, it would seem that the South would be only too ready, in reciprocation of this very important privilege of thus being put into a position (by a State project) of receiving water from Northern California, to agree to any and all proper restrictions and provisions needed to prevent any involvement or impairment of these long standing "vested" water rights. Unfortunately, this has not proven so. The South has resisted (and I might add successfully resisted) all such efforts on our part to secure such protection.

The great practical importance and perilous nature to the North of this new "hydrological picture" can, I believe, be demonstrated by several "hard realities" implicit in this situation. The first is:

- a. The South's direct interest in establishing and preserving as much "surplus" water in the "Delta Pool" as possible.

Theoretically, the South (and the other Delta Pool "exportees") are only supposed to receive "surplus" waters in the so-called Delta Pool. What is "surplus"? How and when will it be determined? And by whom?

To properly determine what is "surplus" water one must first measure and determine "non-surplus". Over-simplifying the matter, the latter concept (i. e., "non-surplus") is the amount of water belonging to the vested water right owners. In short, these two things are correlatives. They are opposite sides of the same coin.*

* These "surplus" and "non-surplus" concepts are more fully treated in the writer's aforementioned "Letter Opinion" dated Feb. 8, 1957. As explained therein, this "water allocation" process can be likened to the slicing of a huge watermelon representing, in its totality, all of the capturable Northern California water (i. e., in the Central Valley and its adjacent watersheds). One slice thereof is the quantity which is now and will be needed (through the endless decades to come) to adequately service these presently existing vested water rights, including many "latent" riparian water rights. A second slice is the quantity which will be needed in the future for the "areas of origin". The third slice is the "surplus" available for export (i. e., to Delta "exportees").

b. Determination of "surplus"

Now, one naturally would assume and expect that before any "water export contracts" would be entered into between the State and the South for export of water from the Delta Pool, there would be a proper and comprehensive determination by appropriate legal procedure of the quantitative extent of any such "surplus" under this water planning. This would include, among other things, a proper determination of the quantitative needs and extent of this vast multitude of vested water rights in Northern California.

Incidentally, Mr. Holsinger emphasized (in his aforementioned testimony before the Engle Committee) the vital necessity for and importance of a comprehensive determination and adjudication of such vested rights before project construction or operation, viz:

"It has in fact long been widely recognized that full adjustment of water rights should precede not only project operation but also project construction". (Engle 776)

"In the absence of a comprehensive definition, interminable conflicts, disputes, and litigation will be necessarily ensue." (Engle 77-t)

"If this is not accomplished, the result will necessarily be uncertainty, doubt and conflict." (Engle 772)

This (and other) testimony of Mr. Holsinger was fully concurred in by then Governor Earl Warren and other State officials in their testimony before the Engle Committee. For example, Governor Warren testified:

"We have felt in State Government for many years that there should be a complete adjudication of the water rights on the Sacramento River, and we believed that it should be done before the Central Valley project was completed and in operation."

"As a matter of fact, on May 1, 1939, Walker R. Young, supervising engineer of the Bureau in Sacramento, recommended this adjudication of water rights of the two rivers. A copy of the letter also went to the then Commissioner of Reclamation, John C. Page. The letter said in part:

"I concur in the opinion of the State Engineer that a judicial determination of existing rights on the Sacramento and San Joaquin Rivers is necessary in order to operate the Central Valley project efficiently and successfully and such determination should be effected before the project is placed in operation." (Engle 710)

While the then Attorney General (Edmund G. Brown) apparently did not recommend such litigation, he did point out (in a memorandum submitted to the Engle Committee) the advantage of such proposed litigation:

"The advantage of such a suit appears to be that the judgment, when reached, would furnish an encyclopedic ranking of water rights in the Sacramento stream system according to quantity divertible and priority. Such ascertainment of rights would aid orderly administration of the Central Valley project and related projects. Whether such suit should extend to the ascertainment of water rights in the Sacramento-San Joaquin delta has not been made clear but such extension might be found logical. The ascertainment of rights in the delta to the flow of Sacramento River water would be complicated by the fact that some portion of the water enjoyed by the delta region is derived from the San Joaquin River as well as the Sacramento." (Engle 714)

The Brown Water Plan, however, makes no provision for any such comprehensive legal determination and adjudication of the existence and extent of surplus water. In other words, under this Water Plan no such prerequisite determinations of "surplus" and "non-surplus" will be made before project construction or operation. To the contrary, the Brown Administration proposes to proceed immediately with the consummation of "export water contracts" and the allocation thereby of huge amounts of water out of the Delta for export to the South. In fact, the Governor and his water advisers are now rather feverishly attempting to consummate such a contract with Metropolitan Water District.

No determination of surplus waters in Pap 1

Furthermore, not only has there not been any such requisite comprehensive judicial adjudication planned or provided for, but the truth is that there has not even been any accurate or proper administrative determination by the State (or any of its departments or officials) of the extent of the "surplus" water which is or will be available in the Central Valley for export. In fact, the Department of Water Resources does not even know the identity (let alone the quantitative scope) of many of these multiple thousands of vested water rights in the North. For example, in its recent publication: "Water Facts for Californians" (1958) this Department stressed one facet of this situation as follows:

"Since some water rights have existed from early mining days and some were acquired before the laws requiring the posting of notices and recordation of evidence of the rights were codified in 1872, and since riparian rights attach without any legal record being required, it is virtually impossible to determine the total water rights which exist without inventorying them by walking each stream in the State and noting all the diversions of stream flows which are in operation." (p. 7)

DWR quote

Mr. Holsinger's aforementioned testimony before the Engle Committee also confirms this absence of any accurate knowledge by the Department of many of these Northern "water rights," viz:

"Only a small proportion of these rights on both rivers are of record anywhere." (Engle 772)

The further truth is that the computations heretofore made by the State's water experts as to the probable extent of the "surplus" water which they hope will be available for export from the Delta Pool are, at best, rough estimates (i. e., little more than educated guesses). Furthermore, they are legally binding upon no one.

Incidentally, the Engle Committee had before it similar "estimates" by State officials (in connection with the planning of the Central Valley Project) and it was shocked to learn how erroneous they proved to be:

"Instead of an increased use of 300,000 acre-feet in the Sacramento Valley beyond that which existed when the project plan was first published the 'increased valley use' is 945,914 acre feet and the estimated amount of 'surplus water' for transfer to the San Joaquin Valley must be reduced accordingly.

"Such an error reduces the amount of available 'surplus water' by about 650,000 acre-feet if the Sacramento Valley uses are valid as was claimed by witnesses in the recent hearings at Sacramento. (Engle 690)

"Chairman Engle has received information indicating present uses are about 1,000,000 acre-feet greater than they were when project plans were made and the 300,000 acre-feet was originally allocated to meet probable increased uses in the Sacramento Valley." (Engle 694)

Now, what is the relevancy of all of this to the problem before us? It is that once the South enters into these "water export contracts" with the State the South:

- a. will become (and continue to be) directly and financially interested in the extent (from time to time through the decades to come) of the amount of "surplus" water in the Delta Pool; and

} relevancy
of the
"Legal
Frankenstein"
("unbreason
surplus")

- b. will take (or compel the State to take) all possible steps (including litigation) to preserve and increase the amount of "surplus" in the Delta Pool; and
- c. will inquire into and question the quantitative extent of every diversion right on the San Joaquin River System and the Sacramento River System (including all tributaries); and
- d. will insist upon continued deliveries out of the Delta Pool of these huge quantities of water thus allocated to the South under any "export water contracts" and
- e. will resist any attempt to reduce this "export pumping" out of the Delta.

When we add to the foregoing the indisputable consideration that the State will obligate itself (under the Brown Water Plan) to deliver these large quantities of water to the respective Delta Pool "exportees", the implications of this water plan become even more alarming to those of us who have spent years in the defense of Northern vested water rights, viz:

The completely unprecedented
role of the State

It is evident from the foregoing considerations that, water-rightwise, the State and the South will be "on the same side of the fence." They will be bedfellows. Their mutual interest, at all times through the endless decades to come, will be to build up "surplus" and to cut down "non-surplus." In fact, the very financial solvency of the State in future years may very well hinge upon the success of these efforts to thus secure enough water out of the Delta to fully service these vital water contracts which will be the only source (i. e., apart from general taxation) of the large sums which the State will have to pay, each year for many decades, to amortize the billions of dollars of bonded indebtedness which Proposition One proposes to create.

In brief, this new "water posture" of the State under the Brown Water Plan augurs no good for the Northern water right owners.

It should also be remembered, in all of this, that the State has already filed on practically all of the (surplus) water still remaining in Northern California. In short, it has thus put itself in a position (water-rightwise) directly adverse to and inconsistent with these vested water rights of Northern California (i. e., the "non-surplus").

It is interesting to note, in this connection, that Metropolitan inserted in its draft of proposed water contract (dated June 9, 1960) a paragraph (4-a) as follows:

"The State shall proceed with diligence in the acquisition and perfecting of water rights required for servicing all contracts, and shall protect with vigor the integrity of rights so obtained."
(p. 4/1)

This was slightly "toned down" in a subsequent draft submitted by the State (September 3, 1960) as follows:

"The State shall make all reasonable efforts to perfect and protect water rights necessary for the System and for the satisfaction of water supply commitments under this contract".
(Par. 16-b; page 16/1)

what does contract say in my copy?

Therefore, the complete mutuality of interest between the State and the South (in thus preserving, protecting and increasing these "export waters" in the Central Valley) is clear and indisputable.

Now, with this as a background we will next deal with another and to me one of the most ominous aspects of this novel water plan, viz:

- c. The Brown Water Plan provides absolutely no effective "controls" of any kind to so regulate or control this Delta "export pumping" that it will not invade or affect vested water rights of the Delta and the rest of the Central Valley.

Once these huge pumping plants start pumping water out of the Delta for export to the South, what will stop them? When and under what conditions will these pumping operations cease or be curtailed? Who will determine and control this? Under what criteria?

The Brown Water Plan is absolutely silent as to all of this'.

The answer to these several questions is, in my reasoned opinion, that these pumps will continue to operate unless and until they are stopped by litigation by the Valley farmers to protect their vested water rights.

The primary reason for this conclusion is that this Water Plan (SB 1106) contains absolutely no such "controls". *

* This "void" reminds one of the current international disarmament talks in which it is stressed that without effective controls agreements to disarm are meaningless.

Furthermore, in the absence of a comprehensive determination and a completely binding adjudication (i. e., binding upon the State and all other interested parties) there will be no effective and readily ascertainable demarcation (i. e., "boundary line") between "surplus" (on the one side) and "non-surplus" on the other. In the absence of such an obligatory definition of these two correlatives, there can be no effective (i. e., automatic) controls to delimit this "export" of water. When this "hard reality" is coupled with the indisputable fact that it will be directly to the mutual interest of both the State and the South to maintain this "export flow to the South" as continuously and on as large a scale as possible, the inevitability of direct and serious conflict between these vested water rights of the North and these "export allocations" is, I believe, patent.*

The serious import of all of this to Northern California is further indicated, I believe, when consideration is given to another "hard reality" of existing Central Valley hydrology:

- d. There is a grave doubt as to whether any dependable and sizeable "surplus" of water exists in the Central Valley. ✓

There are, of course, two major stream systems in the Central Valley, the San Joaquin River and the Sacramento.

It is indisputable that the San Joaquin River has no surplus. In fact, due to the huge inter-basin transfers of water under the Central Valley project, the San Joaquin River no longer exists (in large part) as a natural stream.** Under the CVP it is, in the main, an artificial stream supplied with supposedly "surplus" water from the Sacramento River (by the Delta-Mendota Canal, Mendota Pool, etc.).

* It should be stressed that the serious involvement and possible impairment of vested water rights which is being discussed in this Opinion will not be limited to the Delta Area or the other nearby "water areas". To the contrary, all vested water rights, including those in the various "water-rich sections" in the San Joaquin Valley (Merced River, Kings River, etc.) will be exposed to these same dangers.

** Its flows are impounded in its upper reaches by Friant Dam. Most of this water is sent southward to Tulare and Kern Counties by the Friant-Kern Canal. Some is sent to Madera County through the Madera Canal.

*Albert
now
thoroughly
complicated
by ESA, CWA,
Wild & Scenic
Rivers Acts,
among other
constraints
to Lewis.*

Furthermore, even the present existence of any substantial "surplus" water in the Sacramento River is questionable. In fact, the Engle Committee (after its exhaustive 1951 investigation of this very subject of "surplus" in the Central Valley) was surprised to learn that this alleged "surplus" was rapidly disappearing, if not actually non-existent, even then (i. e., as far back as 1951). In its formal "findings" that Committee concluded (inter alia):

"Only one answer can be obtained from the foregoing testimony That one logical answer is: If diversions continue at the rate they were being made in 1951, and there is no reason to believe they will be reduced, then the developed waters of the Sacramento River are overcommitted and oversubscribed.

"The obvious result is that much less water is available for transfer to the San Joaquin Valley than was originally contemplated." (Engle 692)

"Findings - (a) That for all practical purposes, the developed water supplies of the Sacramento River are overcommitted and oversubscribed;

(b) Increased uses of water from the Sacramento River from the beginning of project construction in 1935 to the present are about three times the expected increase of 300,000 acre feet which was estimated by the State of California and Bureau of Reclamation officials in their original plans for operation of the Central Valley project;

(c) Testimony indicated diversions from the Sacramento River would have caused the river to be dry for about 40 miles in July 1951 if stored water had not been available from Shasta Reservoir for Sacramento Valley use, and a large part of this water is destined for the San Joaquin Valley under the proposed Central Valley project operation;

(d) Applications for use of American River water to be developed by Folsom Dam, an additional storage unit of the project now under construction, exceed by 'several times' the probable supply that can be made available through this source."* (Engle 679)

1951

* It is interesting to note that Congressman Poulson (now Mayor of Los Angeles) participated in the hearing and thereby learned of this "paucity" of "surplus" water in the North. He also concurred in these Findings. Yet this same gentleman is a very vocal advocate of the Brown Water Plan, the basic predicate of which is the aforementioned unwarranted assumption that a large amount of "surplus" water exists in the Central Valley.

Another interesting statistic pertinent on this "surplus" phase is the explicit statement in the "Preview of the California Water Plan" (published by the State in 1956) that there is only enough water in the Central Valley to take care of the needs of this Valley (i. e., present and future), viz:

"As regards the Central Valley Area, it is coincidental that with 48 per cent of the State's run-off this area should ultimately require almost exactly 48 per cent of the developed water supplies." (Preview, p. 6)

What more cogent confirmation could there be of the fact that there is no "surplus" water in the Central Valley available for permanent export over the Tehachapi Mountains to Southern California!

Furthermore, the dangerous nature (to the North) of this new "hydrological picture" which the Brown Water Plan will create becomes even more manifest when another "hard reality" of our California hydrology is noted, viz:

e. California's frequent
"dry cycles"

drought

An unfortunate characteristic of California hydrology is, of course, the very irregular regimen of the flows in our stream systems, particularly those draining into the Central Valley from the Sierra watersheds. These flows vary radically, not only from month to month but from year to year. This aspect is summed up in the aforementioned "Preview of the California Water Plan" as follows:

"In addition to the characteristic variation in its natural water supply within the year, California is subject to extended wet and dry periods. In the late 20's and early 30's we suffered a severe drought--one of a great many in the past--during which runoff in the streams throughout the State for a 10-year period averaged only a little more than 50 percent of the long-time mean. In this connection, while the state-wide runoff has averaged some 71,000,000 acre-feet per season, the actual seasonal flows have varied from as little as 18,000,000 acre-feet to more than 135,000,000 acre-feet."

"The normal monthly variations in occurrence of the water supplies of California, as well as the periodic droughts, create a most basic problem relative to the development and use of water...." (Preview, pp 7-8)

Now, when these dry cycles recur in the future (as they undoubtedly will) what will stop (or even slow down) these Tracy pumping plants? What will be the governing or effective legal controls in such a situation? The simple answer is that under the Brown Water Plan there are and will be no such effective controls. Which means (among other things) that (as Henry Holsinger so aptly expressed it):

"interminable conflicts, disputes, and litigation will necessarily ensue."

f. Fair Play, Justice, etc.

Some persons may endeavor to minimize or explain away this basic defect in the Brown Water Plan by contending, in effect, that we must presume that the State (in its aforementioned novel and unprecedented role as financier, owner, operator and "export right protector") will be fair, just and honorable, and will so operate these Tracy Pumps (and the other facilities of this project) as to preclude any such involvement or impairment of vested water rights.

Any such attempted answer to this legal criticism is, in my humble opinion, patently unsound and specious for several distinct reasons:

The first is that in the absence of any comprehensive adjudication of the legal extent of "surplus" and "non-surplus", the State would not have any effective "control criteria" to apply to this "export pumping", even if it wanted to be fair and just to the vested water right owners.

Secondly, the State's aforementioned direct and vital financial interest in the continuation of this "export pumping" would, of course, be a strong and perhaps preponderant motivation in any such decision by it. As stated above, the very financial stability of the State will directly depend upon such "water exports" and the net revenues produced therefrom. Furthermore, the State must act (under the Brown Water Plan) as the South's "water protagonist" to protect and preserve any allegedly "surplus" water in the Delta Pool.

In other words, any hope or expectation that the State (or its "export ally" - the South) would thus worry about these "open-ended" vested water rights of the North bespeaks, I believe, a naivete and altruism wholly inconsistent with and unconfirmed by the "hard realities" of California water practices. * To borrow an apposite

* Mono County is but one of the many illustrations in California history of the inanity of hoping for or depending upon any such altruism.

phrase from Mr. Holsinger:

"However, attention to realities should convince any reasonable person that any such anticipation is Utopian and not reasonably possible of fulfillment". (Engle 766)

And, in concluding this chapter, there is a very rough analogy which occurs to me which may point up for laymen unacquainted with the intricacies of water law or water rights, the essence of this new "water picture" which SB 1106 will bring into being (with the so-called Delta Pool as its central feature).

Mr. Pigmy and Mr. Giant find themselves stranded in the Mojave Desert on an arid day. There is but one bottle of water between them (in the possession of Mr. Pigmy). He has "vested" rights therein, which Mr. Giant readily agrees to recognize. Mr. Pigmy therefore generously consents to share this water with Mr. Giant. Each inserts his "sucking straw". Naturally, Mr. Giant's thirst is gargantuan. Likewise, his straw is king-size. The avid draughts begin. Unfortunately, however, for Mr. Pigmy, the quantitative extent of his "vested right" has not been pre-determined, nor agreed upon, nor marked on the bottle. Does it require a water lawyer to envisage the dire results for Mr. Pigmy? Or the resulting impairment of his "vested right"?

And, to carry this homely analogy a step further: Mr. Pigmy, aghast at this impairment, complains to a passing policeman for protection but finds, to his chagrin, that this chap is a close associate (both financial and otherwise) of Mr. Giant!*

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* I trust that this Honorable Committee will pardon this digression into the Mojave Desert. Its sole justification is the "aridity" (if not "rigidity") of this "Opinion".

QUESTION NO. 3. DOES THIS WATER PLAN ADEQUATELY PRESERVE AND PROTECT THE SO-CALLED "AREA OF ORIGIN RESERVATIONS" OF NORTHERN CALIFORNIA (i. e., "COUNTY OF ORIGIN" AND "WATERSHED OF ORIGIN" PROTECTION)?

I - OPINION: SB 1106 does not properly preserve and protect these important "water reservations". To the contrary, the Brown Water Plan exposes them to a serious danger of severe diminishment, and to possible extinction.

II - SUPPORTING ANALYSIS AND ARGUMENT: Before reviewing the several salient legal reasons underlying my said conclusion, I will first briefly describe (for the benefit of any interested layman) the legal nature of these "preferential water rights" in favor of our Northern areas of origin" and their importance to Northern California.

1. Nature of these "preferential rights"

These important "preferential water reservations" are based on two distinct sets of statutory provisions. The first is the so-called:

a. County of Origin Statute
(Sections 10500-10505 of
Water Code)

These provisions of our law have the effect of reserving for every county all of the water originating in such county which will be needed at any time in the future for the development of any portion of such county (i. e., either by public or private agencies).

This "reservation" or "preferential right" of a county to recapture and use in the future its "surplus" water (i. e., over and above that needed for "vested" water rights in said county) is obviously one of great importance to all Northern California's counties. This affects all counties in the Central Valley, including those in the San Joaquin Valley. *

Incidentally, a more detailed explanation of this "County of Origin" phase is to be found in the writer's aforementioned Opinion of February 8, 1957 (to the CWPA).

* Certain water interests in Fresno County recently learned in a water right proceeding before the State Water Rights Board (Application Nos. 6733, etc.) of the vital importance to them of this "County of Origin" statute.

b. "Watershed of Origin" Provisions
(Sections 11460 to 11463 of Water
Code)

This is the second (and an entirely distinct) phase of our "area of origin protection." In essence, this "watershed of origin statute" gives our Northern "watersheds" (and the "areas immediately adjacent thereto which can conveniently be supplied with water therefrom") a "preferential right" (for their future water needs) in and to the waters naturally occurring in such "watersheds".

It should be noted that these statutory provisions form a part of the legislation in the Water Code dealing with the Central Valley Project. The "County of Origin Statute" is not a part of the Central Valley Project legislation. The legal significance of this difference will be explained hereinafter.

*Context
of area of
origin laws*

2. Vital Importance to the North of these
"Reservations"

These "reservations" are obviously of crucial importance to the North. They constitute the prime (if not only) source of water which will be needed for the future expansion and development of Northern California during the endless decades to come. It is apparent, therefore, that this question as to whether the Brown Water Plan (SB 1106) adequately preserves and protects these "area of origin reservations" is a most important one to the North.

3. Deficiencies in SB 1106 on this phase

With the foregoing as a brief background, I will now explain why I firmly believe that SB 1106 fails to adequately protect and preserve these important "preferential water rights" of the North.

Summarily stated, my principal criticisms of SB 1106 from the standpoint of this "area of origin phase", are:

- a. This "area of origin protection" should have been made a permanent feature of the Brown Water Plan, but this was not done. It is now purely statutory and if the South gets control of the Legislature at any time in the future such protection can be entirely wiped out.

objective of the South which was to acquire a perpetual and irrevocable quantitative allocation out of these already "over-drawn" water resources of the Great Central Valley.

Governor Brown repeatedly promised throughout Northern California that these important "water reservations" would be fully preserved and protected under his water plan. * We therefore submitted various proposed legislative provisions to accomplish this. Among other things, we tried to have these "area of origin reservations" expressly recognized and incorporated in SB 1106 so that they would thereby become a permanent feature and condition of this legislation. These provisions would also have made it mandatory for the State to expressly incorporate these "reservations" in every "export water contract" and thus make all "export" of waters from the Delta strictly subordinate thereto.

Unfortunately, we failed to achieve these objectives. One of the reasons for our failure was, I believe, said close collaboration between the Governor's water advisers and legislative draftsmen and various legal and engineering experts of the South. I might add, however, that we at least managed to exact a promise from Mr. Harvey Banks (Director of the Department of Water Resources) that as long as he had anything to do with these "water contracts" (i. e., under SB 1106) he would insist that they contain appropriate provisions expressly recognizing these "area of origin reservations". He made this promise on various occasions. It is regrettable, however, that this is not the present "policy" of the Administration. The proposed contract with Metropolitan is completely silent on this important aspect.

Banks' promise
SW contracts silent

Justice and propriety of this request for permanent preservation and protection of these reservations.

It may be argued by some that inasmuch as this "area of origin protection" is now only statutory (and thus "impermanent"), it should not be made a permanent feature of the Brown Water Plan. I believe, however, that the legal and moral justification for "permanence" can be demonstrated by several considerations.

The first is that (as pointed out in another portion of this Opinion) the South presently has no physical or legal ability to become interested in (or intermeddle with) the water resources in or water rights of the North.

* This "area of origin protection" was one of the five points covered in my letter to Governor Brown of May 1, 1959, with which he agreed in every particular in his letter to me of May 8, 1959 (p. 11, supra)

One result of this is that these "area of origin reservations" are not now in jeopardy. Under this present state of affairs, they are virtually permanent because there is no reason nor incentive for attacking (or repealing) them. As between the water right owners of the North (i. e., in different sections of the Central Valley) they have worked quite satisfactorily to date and will in all probability continue to do so.

This whole picture will radically change, however, if and when the South is permitted to become physically and legally interested in these Northern waters (under the Brown Water Plan). These "water reservations" will then constitute a constant "thorn in the side" of the South and it no doubt will (unless precluded by appropriate and continuing legal restrictions) make every effort to obviate or vitiate these "water reservations."^{*}

It would seem only fair and just that if the South is to be given this desired and important privilege of participating in these water resources in the North it should be willing (as a fair price for its "ticket of admission" to such participation) to readily agree that these "area of origin reservations" for the North should be made a permanent feature of any new State Water Plan. It might also be mentioned, in this connection, that Northern California (which has always stood ready to allow the South to participate in these Northern waters under a fair and sound water plan) will, in effect, guarantee (by its large percentage of the assessed values in the State) the huge general indebtedness which the State proposes to assume in order to thus make it possible for the South (for the first time in history) to be put in a position to thus become directly interested in, and gain benefits from these water resources in the North.

Unfortunately, however, despite much importuning by Northern representatives, the Brown Administration did not see fit to make this present statutory protection for these Northern areas of origin a basic and permanent feature of this new water plan. In short, SB 1106 does not contain this vital protection which our group of Central Valley water lawyers deemed so necessary.

but why?

As a matter of actual fact, there are no direct references whatsoever (in SB 1106) to the aforementioned statutory provisions which presently embody this "area of origin protection". Furthermore, the aforementioned

* The detailed monograph prepared by Mr. Samuel B. Morris, one of the South's leading water "experts" and spokesmen (and formerly General Manager and Chief Engineer of the L.A. Dept. of Water & Power) under date of September 19, 1956 and entitled "The Feather River Project and the California Water Plan" shows how clearly and carefully the South's experts have studied these "area of origin reservations" and various means of solving (from the South's viewpoint) the problems created thereby for the South.



"County of Origin Statute" is not even indirectly referred to in SB 1106. It is not mentioned or incorporated in this legislation either directly or indirectly.

There is, however, a most indirect and quite "left-handed" reference (in SB 1106) to the "Watershed Protection Act." This is to be found in paragraph 12931 of SB 1106 which provides (inter alia) that:

"any facilities heretofore or hereafter authorized as a part of the Central Valley Project or facilities which are acquired or constructed as a part of the State Water Resources Development System with funds made available hereunder shall be acquired, constructed, operated, and maintained pursuant to the provisions of the code governing the Central Valley Project, as said provisions may now or hereafter be amended."

These are the only provisions of SB 1106 to which the Administration can point as incorporating any of this "area of origin protection" in SB 1106. These provisions make it manifest, of course, that if the Central Valley Project Act is subsequently amended so as to eliminate this "watershed reservation" this "protection" in the CVP legislation will vanish and no longer apply to any part of the Brown Water Project (SWRDS). Incidentally, we strenuously but unsuccessfully fought the inclusion (by the Administration's representatives) in this legislation of this short but significant phrase:

"as hereafter amended"

This brings us to my second principal criticism:

- b. The Brown Water Plan (SB 1106) will place both the South and the State in a position directly antagonistic to these important "preferential water rights" of the North. This will lead to future serious involvement and possible impairment thereof (as well as much trouble and confusion for the North.)

As shown in a previous portion of this Opinion, the end result of the Brown Water Plan will be that the South will be "sitting next to the Delta." It will, in effect, be a gigantic and powerful "water octopus" sitting astride of the Delta Pool with its potent tentacles reaching into

water octopus image

every nook and cranny of our Northern stream systems, even to the upper-most reaches thereof. Among other things, this will mean that the South (and the State) will be directly interested in and affected by every future water application filed in the North (under these "area of origin preferences"). Why? Because to the extent that any such appropriations of water are hereafter allowed (i. e., in connection with the future growth and development of the North), to that very same extent the "surplus" available in the Delta for export to the South is thereby diminished. This is one of the problems covered at length by Mr. Samuel Morris in his aforementioned 1956 analysis of the so-called Feather River Project.

It should also be stressed, in this connection, that these "water reservations" for the North are not self-executing or automatic. To the contrary, as and when portions of this "reserved water" are needed in the future, the people (public agencies, etc.) seeking to make an appropriation and use thereof will have to file (and duly process) in the Department of Water Resources (in accordance with established procedure) specific applications covering the appropriation and use of this water. They also will have to secure any necessary "assignment" or "release" from the State.

All of these applications will, of course, be subject to protest. Many issues could be raised by a vigorous protestant (including the "fuzzy phases" of this present legislation - some of which are touched upon hereinafter).

I will leave it to your judgment as to whether the South (and its new "water ally" - the State) will sit silent in the face of such future attempts to thus diminish the available "surplus" in the Delta Pool.

Next is my third criticism, viz:

- c. The various existing ambiguities and uncertainties in this "area of origin protection" should have been corrected and eliminated as a part of this new water legislation. This was not done.

Time limitations will not allow any extended analysis herein of the many shortcomings of and uncertainties in this existing "area of origin protection". They are serious and should have been clarified in this new legislation. We tried to accomplish this but failed, due to the

complete lack of cooperation by the "water spokesmen" and draftsmen of the Administration. I will, however, touch upon but a few highlights in this connection.

"County of Origin Statute"

There could be an extended dispute as to whether this important statute applies at all to this Brown Water Plan (i. e., the State Water Resources Development System). The reason is that this is, of course, a State project. There is a school of thought that this "County of Origin Statute" (and particularly its vital Section 10505) would not apply to the State in its new role as owner and operator of the water project contemplated by SB 1106. In fact, a committee of "water experts" (including eminent lawyers) concluded, in 1956, that this "County of Origin Statute" did not apply to the State. This was a special subcommittee of the State-wide Water Resources Committee of the California State Chamber of Commerce. This subcommittee was appointed for the particular purpose of studying and reporting upon this "area of origin" phase in connection with the California Water Plan. The chairman was Burnham Enersen, Esq. Among its other members were such distinguished water lawyers as Chas. C. Cooper, Jr., Esq. (counsel for Metropolitan); Gilmore Tillman, Esq., (counsel for the Los Angeles Department of Water & Power); Wallace Howland, Esq., (Assistant Attorney General of the State of California); Martin McDonough, Esq., of Sacramento, Mark C. Nosler, Esq. (principal attorney for the California Department of Water Resources). In fact, the entire committee consisted of lawyers except for two ranchers (one of them being Mr. Bert Phillips) and two engineers (one being Mr. Samuel B. Morris). This subcommittee made its report on November 30, 1956. Among other things, it concluded that Section 10505 does not apply to the State as such. This conclusion is expressed as follows in its formal report:

*COS
might not
apply to the
State*

"Although the section is brief and is expressed in simple terms it has been the subject of much controversy and its meaning and effect have been much misunderstood. The principal and significant features of the section appear to be these:

"(a) The section does not by its terms restrict or otherwise affect the use by the State itself of water appropriated by the State pursuant to the Feigenbaum Act. Rather, it appears to be focussed upon the assignment of State applications to other parties, such as, for example, municipal corporations, districts, private parties or the United States

Government. Stated very broadly, the section applies primarily to non-state water resource development. (* (p. 6 of Report)

The writer disagrees with this conclusion of said subcommittee. It is quoted, however, to show that (even before SB 1106 was formulated) this "County of Origin Protection" was a subject of conflicting views.

Two other things should be noted in this connection.

The first is that the aforementioned conclusion was reached by said Subcommittee notwithstanding the fact that Section 10504 (as it existed in 1956) contained an "assignee definition" similar to that contained in the present statute.

The second is that this "County of Origin Statute" is not a part of the Central Valley legislation and therefore has not been included (either by reference or otherwise) in SB 1106.

Therefore, the applicability of this important phase of the "Area of Origin Protection" to the Brown Water Plan is thus left in a somewhat "clouded condition". To say the least, the matter is not beyond the possibility of dispute.

"Watershed Protection Statute"

There are various substantial uncertainties in connection with this phase of the "Area of Origin Protection". In fact, some of these were pointed out by then Attorney General Edmund G. Brown in a formal Opinion (No. 53/298, under date of February 5, 1955 - issued in response to a request from Senator Edwin J. Regan). This Opinion covered the subject of "Area of Origin Protection". After discussing various uncertainties in these statutes, the Attorney General concluded:

"However, if litigation and the need for judicial construction is to be minimized, in all candor it must be stated that the certainty of this description leaves something to be desired."

* In all fairness, it should be added that this formal report was not signed by various "Northern" members of the Subcommittee. It did, however, receive the support of Mr. Samuel Morris and other "Southerners".

I might add that the Governor and his staff were reminded by us (on more than one occasion during the processing of SB 1106 through the Legislature) of this "fuzzy condition" of these statutes; and the need for correction thereof in connection with his new Water Plan. *

Another phase of the present "fuzziness" of this "Area of Origin Protection" should also be touched upon, viz:

General vs. Specific Reservations

There are two schools of thought on the question as to whether these "water reservations" for the areas of origin must be general or specific. There is a vast and important difference between these two concepts. **

A specific reservation means that a definite quantity of water must be fixed and reserved for the future needs of the "area of origin" (i. e., "county", etc.). On the other hand, a "general reservation" would entitle the area in question to all the water it might need in future decades, without any quantitative limit being fixed at the time the reservation is made (i. e., in connection with a proposed "assignment" or "release" of a state filing). This basic difference was pointed out by the Division of Water Resources in its testimony before the California Water Project Authority on August 31, 1954. It stated:

* This was discussed in our meeting on the evening of February 25, 1959 and also adverted to in my letter to the Governor's secretary on February 26, 1959:

"The deficiencies of our present statutory protection for these "areas of origin" are well known to the Governor (as a result of the report of his Attorney General's Water Lawyers Committee, etc.). As epitomized the other evening, this situation is in a 'fuzzy' condition (to say the least).

"It has been generally agreed in the various prior discussions and debates by both Northern and Southern water spokesmen that these 'areas of origin' deserve full and adequate protection under the California Water Plan (when authorized). } ←

"Therefore, there should be no great difficulty in working out in the Administration's 1959 CWP legislation a fair formula to cover this phase. We believe that this protection should be firmly embedded, as a basic policy, in such legislation."

** This subject is dealt with fully in my Memorandum Opinion of February 8, 1957, to the California Water Rights Protective Association.

"The principal advantage to the counties of origin to be gained by having a general reservation is that the general reservation would, in effect, reserve for those areas all the water that may ultimately be needed for reasonable beneficial use in the future. This general reservation would provide for various factors which are unknown at the present time while a specific reservation, being necessarily based on an estimate might provide for either too small or too great an amount. A specific reservation would limit the amount of water that would be available to the counties of origin under the State filings." (See "Answer to Question No. 4, Program For Financing and Constructing the Feather River Project". Appendix H, p. 117)

*general
vs. specific
reservation
of water*

The various water representatives of the South have been contending and urging for a number of years that these "reservations" should be specific, not general. In fact, the aforementioned "area of origin" subcommittee of the State Chamber of Commerce specifically recommended this in its report dated November 30, 1956. Speaking of the "reservations" to be made under the "County of Origin Statute" this report states:

"Assignments or releases containing such general reservations present the same difficulties as do the present provisions of Section 11460 to 11463 with respect to the operations of State water projects. They leave the rights of the county of origin undefined, and they leave the exported water subject to 'recapture' whenever needed locally. It is the recommendation of the subcommittee, therefore, that the agency which passes upon this question (i. e., the State Water Rights Board) should make a quantitative determination of the water which is to be reserved to the county of origin. The attached proposal contains provisions designed to accomplish this result." (p. 20)

recapture

The unfairness and impracticability of any such attempts to thus definitively forecast the future quantitative needs of these "areas of origin" (through the many decades to come) was well pointed out in our final report of Attorney General Brown's Water Lawyers Committee (dated January 3, 1957)(Assistant Attorney General Wallace Howland, Chairman). Speaking of the South's desire to thus (i. e., by specific reservations) put quantitative tags and limits upon Northern California's future water requirements, this report states:

"Hence, it is argued that the ultimate future needs of the areas of origin must be determined now, as a necessary mathematical step in placing a quantitative limit on the water reserved for use in such areas and that this, in turn, is a necessary step in the determination of the surplus available for export.

"On the other hand, from the viewpoint of the areas of origin it must be admitted that there is no crystal ball in which to foresee the future. What the future needs of the areas of origin will be, only time will tell. Present determinations of future needs can only be estimates of the minimum needs made in the light of present day knowledge. Moreover, the most "consistent thing" about California history of the past thirty years has been the extent to which the State has exceeded the best estimates of its rate of growth and the resulting need for expanding services of all types." (p. 15 of Report)*

Incidentally, ample evidence of this quite understandable inability (in public works), to foretell the future, abounds all around us. One good example is our many outmoded and inadequate highways (including some freeways) which were built but a relatively short time ago, presumably adequate to serve us for many decades, but already largely outmoded. And planned and built by able and conscientious engineering staffs!

It would seem evident from the foregoing that, for the proper protection of the North and in all fairness and justice, any and all uncertainties and "fuzzy phases" in connection with this important problem of "general v. specific" reservations for these "areas of origin" should have been definitely resolved and eliminated as a part of this new water planning. In brief, this legislation should have expressly provided for "general reservations" for these "areas of origin". However, despite our repeated efforts to accomplish this (and other proper protection for these areas), this was not done. The "water experts" of the Administration were deaf to such suggestions.

The foregoing comprise some of the reasons why the writer is of the firm opinion that SB 1106 falls far short of any adequate protection for these "area of origin reservations."

* The danger and impracticability of such specific reservations was also pointed out by me in my "Interim Report" as Chairman of the 1956 Water Lawyers Committee of the San Francisco Bar Association (dated December 28, 1956), viz: "In short, this proposed procedure would necessitate a high degree of 'crystal ball gazing' into the future in an effort to guess at many imponderables, a 'determination process' which appears to me to be quite dangerous and impracticable."

Before leaving this subject there is one other facet which I briefly wish to discuss, viz:

4. The Impossibility of Subsequently
"Correcting" these Deficiencies
by Future Legislation

Various Administration spokesmen are now attempting to allay the rather widespread fears arising as a result of the aforementioned and other shortcomings of SB 1106, by representing to the electorate that all such defects can and will be corrected by subsequent legislation. They are proclaiming, in effect, that: "It is better to have a water plan with problems and defects (which can and will be remedied later), than no water plan at all."

{ From a legal standpoint such "propaganda" is indefensible. The juridical truth is that if SB 1106 is approved by the People, it will be beyond the power of the Legislature to make any substantial changes in it (e. g., to implant therein, as a permanent feature of the Brown Water Plan, this important "area of origin protection"). As Hon. Dion Holm, Esq., stated, in his formal opinion to the City of San Francisco (No. 1426 - dated March 8, 1960) (re SB 1106), viz:

"My purpose in pointing out the foregoing to you is based on the fact that the Legislature will have no power to amend the act once it is approved by the people and no power to repeal it once general obligation bonds are sold."
(p. 5)

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QUESTION NO. 4. DOES SB 1106 AFFORD
PROPER PROTECTION FOR THE SACRAMENTO-
SAN JOAQUIN DELTA (SALINITY CONTROL,
LEVEE PROTECTION, ETC.)?

I - OPINION: It is my firm opinion (based on a close personal knowledge of the Delta and its multiple and complex hydrological aspects) that SB 1106 does not, from a legal standpoint, properly protect the Delta. On the contrary, this Brown Water Plan (SB 1106) will seriously aggravate and intensify the already existing and critical legal and hydraulic problems of the Delta.

As a legal minimum, this legislation should have required, as a basic and indispensable legal condition precedent to any "export" of water out of the Delta, that which we call in water law a "physical solution" fully to ensure complete and effective protection for the Delta in connection with its complicated and perplexing hydrological difficulties. This has not been done (or even hinted at) in SB 1106.

II - SUPPORTING ANALYSIS AND ARGUMENT: It would take a rather large volume (e. g. exceeding the size of the excellent Engle Committee report of almost two thousand pages) to discuss in detail these many serious hydrological and legal problems of the Delta (all of which are relevant to your question). As this Honorable Committee knows, various and voluminous reports have been published over the years by the State and others with respect to these problems of the Delta (e. g., salinity control, etc.). Therefore, and because of time limitations, I will do no more herein than sketchily touch upon some of them with the hope of demonstrating (at least by generalities) the soundness of my foregoing appraisal of SB 1106 (insofar as it relates to the Delta).

Summarily stated, my reasoned conclusions as to the legal inadequacy of SB 1106 on this phase are:

1. It neither requires nor provides for any mandatory and effective "physical" solution of the already critical salinity problem. In fact, the Brown Water Plan will substantially aggravate this serious Delta difficulty with possible huge losses to the Delta landowners and water users.
2. It fails to legally protect, in any way, the vested water rights of the Delta. Moreover, it actually exposes such rights to a very real and imminent danger and probability of infringement and impairment.

3. The Brown Water Plan (as now formulated) could seriously and adversely affect the intricate levee systems so vital to the Delta.
4. It will bring about serious drainage problems.
5. It does not adequately preserve and protect, from a legal standpoint, the important recreational features of the Delta.

Before briefly dealing with these phases, I will set forth (for the benefit of those interested persons who are not familiar with the Delta) a few "highlights" as to its location and physical characteristics.

The Sacramento-San Joaquin Delta

This area comprises several hundred thousand acres of excellent and highly developed agricultural lands. It is reputed to be one of the prime and richest farming areas in the world. It lies at the confluence of the Sacramento and San Joaquin River; and is situated mainly in San Joaquin, Sacramento and Contra Costa counties.

At the western extremity of the Delta is located a very extensive industrial complex with many large factories and other industrial units, most of which are directly dependent upon the continued availability of fresh water of good quality from these nearby stream systems.

One of the principal hydraulic features of this Delta area is the myriad of natural river channels, sloughs and other watercourses which meander in a highly irregular pattern throughout this entire area. One consequence is that a large part of the Delta consists of many islands entirely surrounded by these water channels.

Another physical feature is that much of the land in the Delta is considerably below the level of the adjacent water channels. Consequently, a vast and intricate system of earthen levees (with an aggregate length of many hundreds of miles) is used to prevent the inundation of these low-lying lands.

In some portions of the Delta (particularly in its westerly reaches) a serious and continuous problem of land subsidence exists, due to the nature and texture of the soils in such areas, etc.

All of these many disparate but interrelated hydraulic characteristics create for the Delta (as all competent experts concede) an extremely complex "hydrological picture", with numerous interlocking hydraulic and other physical facets, all in close and delicate physical balance. Naturally, this intricate hydrological situation makes the Delta's legal problems (water-right and otherwise) peculiarly difficult and complicated.

In the light of this short "physical background", I will now briefly discuss some of the legal criticisms of SB 1106 set forth above in summary fashion.

1. SB 1106 neither requires nor provides for any mandatory and effective solution of the already critical "salinity problem". In fact, the Brown Water Plan will substantially aggravate this problem, with possible huge losses to the Delta landowners and water users.

The critical nature of this "salinity problem" is, of course, well known. It suffices to state that, due to tidal and other hydraulic phenomena occurring in the San Francisco Bay (and its upper reaches - Suisun Bay, etc.) there is an ever present and extremely serious menace of "salt-water intrusion". In other words, the salt water from the bay (and ocean) thus moves upstream and (unless prevented from doing so) intrudes into these "fresh water channels" of the Delta, with consequent serious injury (if not complete ruin) of these Delta lands and the crops thereon.

From time immemorial, the outflow of "fresh water" (coming down the Sacramento and San Joaquin Rivers) has provided a natural barrier to repel this "salt water intrusion". However, during some periods of the past these river flows of "fresh water" down to and through the Delta have not been adequate. This has been particularly true in several past "dry cycles". The severity of this salinity problem, even in the "pre-project era" (i. e., before the advent of the Central Valley Project) can be illustrated by reference to the following official report:

"Gradually, as reclamation of the Delta and development of the use of water took place upstream, the amount of water available for natural salinity control decreased until in 1924, 1931, and other dry years, the encroachment of saline waters reached serious proportions."

During the late summers of those years irrigation in a large part of the Delta was made impossible by the degree of concentration of salinity in the waters of the channels. " (Report on 1956 Cooperative Study Program, Department of Water Resources, Vol. 1, p. 27)

Another official depiction of this hydrological problem is:

"The greater part of the water diverted for irrigation, from the Sacramento River above Knight's landing, is for rice culture. As a result of these diversions, combined with the natural lack of water following three consecutive years of very low precipitation, the amount of water reaching the city of Sacramento in the summer of 1920 fell to the minimum of 500 to 700 second-feet and in consequence salt water was able to work its way upstream in harmful quantities as far as Grand Island on the Sacramento River and Andrus Island on the San Joaquin and Mokelumne Rivers (see inclosure No. 12 and pp. 85-87 of the Report of Division of Water Rights, inclosure No. 17). The crops of the delta, valued at \$35,730,800 that year, were seriously endangered by the salinity of the river, and the land escaped permanent damage on a large scale only by reason of the heavy sustained rains of the following winter, which effectually flushed the salt out again." (Engle 165)

Central Valley Project
(CVP)

One of the primary objectives of this project was that of providing much better salinity control and protection for the Delta. This objective was supposed to be accomplished by the maintenance (by water "releases" from the upstream reservoirs of the CVP-Shasta Lake, etc.) of sufficient flows of "fresh water" to, through and from the Delta to effectively repel and control this ever threatening "salinity intrusion".

The voluminous official reports (both State and Federal) prepared in the planning of this CVP project make it manifest that this "salinity control" was one of the important phases of the Central Valley Project.

Surprisingly enough, however, the Federal government has in recent years (i. e., now that the CVP is operating and it appears that the amount of alleged "surplus water" in the Delta is far below the previous official estimates), been indicating that it disclaims any real responsibility (as operator of the CVP) for such salinity control (i. e., as a mandatory feature of the CVP). This is a situation which in my opinion can and probably will lead to extensive litigation (a subject treated in a subsequent section of this Memorandum).

I do wish to stress, however, in connection with this CVP project (which, of course, is already built and functioning) that it involves the storage and detention in its upstream reservoirs (on the Sacramento River, etc.) of large quantities of water which otherwise, in a state of nature, would normally flow down these streams and thereby serve to "repel salinity intrusion"; as well as to periodically "flush out" the saline consequences thereof in the lower reaches of the Delta. It is true that these "stored flows" are subsequently released from these reservoirs and then flow down stream. However, if the Federal government is successful in its aforementioned avowed purpose of not devoting these "delayed flows" primarily to "salinity control" and secondarily to "export" to the San Joaquin Valley, the gravity of the Delta's "salinity problems" (both physical and juridical) created or aggravated by the CVP is, I believe, patent.

The Brown Water Plan

One of the widely publicized purposes of the so-called Feather River Project (as officially proclaimed over a period of years) has been that of providing (among other things) full and effective "salinity control" for the Delta. It would be expected, therefore, that SB 1106 (i. e., this proposed permanent legislative implementation of the FRP) would contain clearcut and effective provisions making such full and effective "salinity control" a mandatory feature of this new water plan. More specifically, this legislation should have made effective "salinity control" a legal condition precedent to any export of water out of the Delta.

Has it done so? It patently has not. This phase will be dealt with further hereinbelow in connection with my discussion of the subject of a "physical solution". However, in leaving this "salinity phase" for a moment, I wish to stress that this Brown Water Plan will also involve (as does the CVP) the impounding and periodical detention, in various upstream reservoirs, of large portions of the flows of the Sacramento River, with a consequent substantial alteration of the regimen of seasonal flows of "fresh water" to and through the Delta; and a resultant aggravation of the Delta's "salt water intrusion" problem.

This brings me to the second criticism above, viz:

2. SB 1106 fails to legally protect, IN ANY WAY, the vested water rights of the Delta. Moreover, it actually exposes such rights to a very real danger and probability of infringement and impairment.

This subject has been covered in prior portions of this Opinion. It will also be dealt with in a subsequent "litigation section". It suffices to state at this juncture that, from a water-right standpoint, the serious involvement and possible impairment of water rights (which subjects are discussed in prior sections of this Memorandum) will be especially severe and critical for these Delta water right owners. They are, of course, in the immediate "zone of influence" of these huge pumping drafts of water out of the Delta (i. e., both under the existing CVP and the proposed Brown Water Project)

In view of the aforementioned entire absence in SB 1106 of any governing legal criteria or effective and mandatory legal controls to restrict this "export pumping" the inevitable result of this "legally uncontrolled water exportation" will, in my opinion, be acute "water-right problems" for these Delta water right owners.

My third criticism is:

3. The Brown Water Plan (as now formulated) will seriously and adversely imperil the intricate levee systems so vital to the Delta. SB 1106 contains no legal protection against this.

One of the hydrographic features of the Delta which operate in "delicate balance" is the aforementioned extensive system of earthen levees. (and the water diversion facilities incidental thereto)

The writer can testify as to this from long personal experience as a director of one of the large reclamation districts in the Delta. Although our district is supposed to have (according to our engineer) one of the (if not the) finest and strongest levee systems in the entire Delta, the writer and his co-directors have, during the past fifteen years, "sweated out" a number of critical flood crises. One of the physical features of most of these earthen levee systems is the relative shortness (or scarcity) of "freeboard" (i. e., the distance between the normal water

line and the top of said earthen levees). The hydraulic problems thereby created are quite serious. A couple of them might be noted in passing. The first is that, if, due to the proposed radical alterations in the hydrology of the Delta (under the Brown Water Plan) the water levels in these channels (i. e., thus "contained" by these levees) are held at a higher level in these channels for any substantial additional period (or periods) of the year, severe (if not disastrous) weakening of these earthen levees can and will occur. There is no legal protection against this in the Brown Water Plan.

Another of the important hydraulic features incident to this extensive system of levees is that the diversion facilities and devices (mainly pumps) used to extract and transport water from these channels (through or over these levees) for irrigation of the adjacent farmlands are, in the main, quite critically related to the existing water levels in these water channels. Here again, if any substantial and abnormal alterations in channel flows or channel characteristics occur, the results for these water diversions will be quite serious. There is, in SB 1106, no legal protection against this.

Now, the Brown Water Plan will presumably involve the construction of large new water channels (i. e., the so-called master "water channels", "wasteways" etc.) In short, as now theoretically and tentatively planned on paper, most (if not all) of these Delta levee systems will be radically altered.

In view of this huge proposed "plastic surgery" on the face of the Delta, one would naturally expect that this proposed permanent legislation (SB 1106) would spell out (in clear detail) specific legal requirements to adequately and fully protect these existing and critical levee systems (and the channel flows "corralled" thereby) against any substantial changes which would prove injurious to these reclamation districts, and their extensive acreages of rich farmlands which are so vitally and continuously dependent upon these protective levees.

However, SB 1106 completely fails to do this. ✓

The foregoing remarks also serve, I believe, to confirm the soundness of the other criticisms set forth above of this Brown Water Plan legislation (i. e., insofar as it relates to the Delta). I will therefore conclude this rather hurried discussion of some of the Delta's legal problems (under the Brown Water Plan) with a brief treatment of the subject of:

"A physical Solution"

Our "water jurisprudence" contains an important legal concept known as a "physical solution". Our modern California water practice is replete with such legal "solutions". In essence, they constitute a legally binding set of predetermined and instantly applicable "legal controls and criteria", which are utilized, among other things:

- a. to prevent any improper or excessive pumping of "export" water from a basin (such as the Delta).
- b. to prevent other improper or illegal hydrological activities (e. g. undue lowering of groundwater tables; inadequate or inordinate drainage of waste waters, etc.).
- c. to make mandatory any required "upstream" releases of stored water or stream flows in order to ensure adequate water supplies for lower diverters; to protect fish, etc.

If there ever was a legal and hydraulic situation requiring a rigid and detailed "physical solution" for the preservation and legal protection of vested water rights (as well as for the preservation of the other juridical aspects of the "water status quo") it is, (in my firm and studied opinion) this Delta situation, with its multiple hydrological and related legal problems. The principal feature of such a solution should be a carefully worked out set of definitive legal provisions (conditions, restrictions, etc.) to make certain (as far as physically and legally feasible) that, (by way of illustration):

1. No water will be "exported" out of the Delta at any time under the Brown Water Plan which is needed for irrigation or other uses by the vested water right owners.
2. No water will be "exported" out of the Delta (under said plan) which is needed, at any time, to fully and effectively control salinity.
3. Before any water is committed by contract for export out of the Delta (under SB 1106), the State must actually build and operate successfully in or near the Delta, for a sufficient number of years of trial operation, suitable physical works and facilities to fully accomplish the various solutions (i. e., salinity control, etc.) which the State's experts now hope they will be able to achieve under their present incomplete and largely theoretical "paper planning."

I stress, in the foregoing, the theoretical nature of the present planning of the State (in connection with these Delta problems) because although it may come as a surprise to many, the simple truth is that much (if not all) of this "water planning" for the Delta is still quite tentative, tenuous and incomplete. For example, one of the hoped for solutions to the salinity problem is a "bay barrier". Various schemes have been studied and rejected. One thereof (the so-called "Biomed Plan") is still under study. This is made clear by the aforementioned 1958 publication of the Department:

"One of the integral parts of The California Water Plan still under study is a proposed multi-purpose water barrier project for the Sacramento-San Joaquin River Delta known as the Biomed Plan." ("Water Facts for Californians", p. 11)

Now, what is the relevancy of all of this to the legal question before us? It can be epitomized, I believe, by a simple question:

What if all these now purely THEORETICAL "Delta schemes" prove to be unsound or inadequate?

In other words, the Brown Administration now proposes (as soon as Proposition One is approved) to immediately consummate obligatory and long-term "export water contracts" (i. e., for "export" of water out of the Delta), which contracts will impose onerous burdens on the State for many decades. These long-term and serious contractual obligations (for "export" of water, etc.) will be assumed long before the soundness and feasibility of these various theoretical schemes (now under study) (i. e., to solve the Delta's problems) are built and demonstrated by actual operation to be a success. If these proposed schemes are unsuccessful this "export project" will fail.

Furthermore, the bonds to be authorized by SB 1106 will be sold forthwith and the proceeds spent to construct (among other things) the enormously costly aqueduct to Southern California long before such a "physical solution" of the Delta's problems is first achieved and demonstrated to be feasible.

These and other equally cogent considerations which I have not time to review herein, demonstrate, I believe, the absolute necessity for incorporation in this legislation of a requirement of such a "physical solution" as a legal condition precedent to any of the other aforementioned steps in this water plan. The absence of any such a requirement in SB 1106 is, I believe, but another of the numerous deficiencies, from a legal standpoint, in this vital legislation.

One final point on this "Delta" phase:

Senate Bill No. 1327 (1959)
(Adding Part 4, 5 to Division
6 of the Water Code)

Delta Protection Act

Some may assert that this particular legislation answers the aforementioned need (from both a legal and practical standpoint) of a physical solution. It is my reasoned judgment that any such argument is clearly unsound for various reasons:

One is that this statute neither contains nor makes mandatory any such a "physical solution". Rather, it amounts simply to:

- a. A legal delineation of the boundaries of the Delta (by metes and bounds); and
- b. Legislative findings as to the severity and uniqueness of the "water problems" of the Delta; its importance as a "hub" of the proposed State Water Resource Development System, etc.; and
- c. A generally stated set of legal principles (i. e., "juridical policies" to govern the operation of the Delta as this "hub" of the SWRDS; etc.)

These generalized provisions in SB 1327 (commendable as they are) do not even remotely constitute the requisite "physical solution" which the writer (and others) feel is an absolutely indispensable legislative and legal sine qua non if the Delta is to receive the full legal protection to which it is entitled (either under the Brown Water Plan or any other water plan involving the use of the Delta for "export" operations).

Another significant aspect of SB 1327 is that it is purely statutory. Therefore, unlike SB 1106, it has no assurance of permanence. In short, any and all of its provisions can be repealed at any future session of the Legislature. It is quite significant, I respectfully submit, that these excellent "policy statements" in SB 1327 were carefully omitted from SB 1106. Had they been included in the latter we at least would have had in this Brown Water Plan legislation a permanent (though generalized) juridical statement of the necessity of protecting the Delta, and solving its "unique" problems.

For all of the foregoing reasons, therefore, SB 1106 is, in my opinion, basically and legally deficient insofar as the Delta is concerned.

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QUESTION NO. 5: COULD SB 1106 BRING
ABOUT THE "LEGAL FRANKENSTEIN"
FEARED BY THE ENGLE COMMITTEE?

I - OPINION: My firm opinion is that not only can SB 1106 (if adopted) bring about the almost interminable water litigation in the Central Valley which was so aptly described by the Engle Committee as a "Legal Frankenstein", but that (in all probability) it will have this result.

The absence of any comprehensive adjudication of the vested water rights of the Central Valley; the complete failure of SB 1106 to provide any effective legal controls to regulate this "export pumping"; and the extremely complex and confused hydrological situation in the Delta which the Brown Water Plan will bring about, constitute the principal considerations which impel me to this conclusion as to the probability of this scourge of litigation (i. e., if Proposition One is approved by the People).

II - SUPPORTING ANALYSIS AND ARGUMENT: Before briefly renewing my reasoning with respect to this phase, I desire to touch upon two preliminary aspects. The first is:

The Engle Committee's appraisal
of the "litigation potential" in the
Central Valley.

As indicated in a prior section of this Memorandum, this Engle Congressional Committee held extensive hearings (in 1951) in California, which were devoted almost entirely to this intricate "water right situation" in the Central Valley. One of the specific subjects receiving its attention was the aforementioned recommendation of Governor Earl Warren (and other state officials) that this very confused, unsettled and complex water right situation in the Central Valley should be completely clarified and definitively settled by a comprehensive adjudication of all of these inter-related water rights. The Engle Committee was aghast at the enormity of this proposed litigation, concluding, among other things:

"(b) The State of California and Bureau of Reclamation officials may create a 'legal Frankenstein' which would destroy all hope for State control of Central Valley water rights, especially if the adjudication is in the Federal Court with Department of Justice representation in behalf of the government ;

.....

(d) The cost of the proposed lawsuit would be enormous and the number of persons who would be involved is indefinite, having said to be 'astronomical' in number by one Federal witness;

(e) Further, it would embroil the Central Valley Project in litigation for decades. " (Engle 681)

Another aspect which caused this Engle Committee serious concern (and one which will make the Delta's problems under the Brown Water Plan even more severe, complex and difficult) is the basic legal conflict between the Federal Government (as operator of the CVP) and the State (as proposed operator of the FRP). * Both of these gigantic projects involve, of course, the pumping of huge quantities of "export water" from the Delta. The Committee also made a formal finding as to this:

"Findings - (a) The record clearly shows a conflict between the Bureau of Reclamation and the State of California over the water rights of the Feather River - the Bureau claiming those water rights under an assigned water-right application which is needed for the operation of the Central Valley project, and the State claiming the water is available for the State to construct and to operate the proposed billion and a quarter dollar Feather River Project;

(b) The proposal of the State engineer to utilize the Feather River water resources without proper coordination and consultation with the Bureau of Reclamation impinges on the assignment already made by the State engineer to the Federal Government which is necessary to operate the Central Valley Project." (Engle 684)

The Committee also concluded that: "This conflict is so basic to the operation of the project that it should be resolved as quickly as possible." (Engle 702)

It might also be mentioned that this basic conflict between the Federal government (CVP) and the State (FRP) over the waters of the Central Valley still persists. The recent State-Federal Agreement (May 16, 1960) for a "co-ordinated operation" of these projects (constructive though it may be) does not, in my opinion, eliminate this conflict nor obviate the severe effect these "competitive" "Delta Export Projects" will have upon the Delta, and aforementioned hydrological and

* This subject is dealt with in detail in the writer's Memorandum Opinion of December 31, 1958, to Mr. Gordon Garland, Executive Director of CWDC. (see pp 29 to 32)

legal problems. Rather, it underscores and emphasizes the magnitude of the hydrological impact of these huge pumping "drafts" out of the Delta; calling (as it does) for annual "diversion requirements" by the United States of up to 8,300,000 AF, and for the State of up to 5,260,000 AF.

It incidentally should also be noted, in this regard, that a vital and basic condition of this recent Federal-State agreement is that, for all practical purposes, it does not become effective until "after the construction of the major storage facilities of the Feather River and Delta Diversion Projects" (see par. 12, p. 6). When this is coupled with the fact that it now appears probable that the Oroville Dam (i. e., as a major reservoir) will not be built for many years to come, even this phase as to "starting point" of this recent "cooperative agreement" becomes considerably clouded.

The second consideration preliminary to my analysis of this "litigation potential" of the Brown Water Plan is:

The utter "water-right complexity" in the Central Valley which this plan will bring about.

This subject as to the complexity of the Central Valley "water-right situation" is reviewed at length in my aforementioned Memorandum Opinion of December 31, 1958 (to CWDC) I will, therefore, do no more herein than to give a summarization thereof (with cross references to my said earlier Memorandum).

The complexity of this Central Valley water-situation in the pre-project era (i. e., before the CVP), and the completely unsettled and unadjudicated status of this multitude of vested water rights, was excellently portrayed by Mr. Holsinger in his aforementioned testimony before the Engle Committee (Memo of 12/31/58, pp 16-19).

With the advent of the CVP this "water-right situation" became much more complicated (Memo, 12/31/58, pp 19-25). As Mr. Holsinger so succinctly summed up this CVP project (from a water-right standpoint):

"Never in the history of the State has there been an instance where a water conservation project was put in operation which involved such violent and extensive changes in the regimen of any stream". (Engle 765)

The Engle Committee also stressed the unprecedented nature of this mammoth project, viz:

"The integrated operation of the initial features of the Central Valley project commencing July 5, 1951, brings into being huge man-made transfers of water from one watershed to another. This huge transfer is unprecedented in our State..." (Engle 675)

The magnitude of this project is also aptly described in a recent opinion (1956) of the U. S. District Court (at Fresno) in Rank v. Krug, viz:

"As hereinbefore pointed out, the Central Valley Project of California is a colossal undertaking, or as stated by Justice Jackson - 'A big bundle of big projects'. The gigantic dams envisioned, some of which are built, the tremendous canals and diversions of waters of rivers, with the resulting change of diversion and of underground waters affects millions of acres of land, tens of thousands of farmers, and practically all, if not all, of the cities in the valley which secure their water mostly from wells." (142 F. Supp. 98)

The Brown Water Plan (SB 1106)

This enormous project (or series of projects), which has as its "hub" the so-called Delta Pool, with its pumping of huge quantities of water from the Delta, (i. e., in addition to the CVP "drafts") will obviously superimpose upon an already extremely complex water-right situation, tremendous additional hydrological changes and problems, some of which are indicated in earlier portions of this memorandum.

Truly, the hydrological and water-right situation which will then exist will be one of almost incredible complexity. It must be remembered, in all of this, that these huge amounts of so-called "project water" (i. e., the "surplus") will be completely commingled with "vested right" water (i. e., the "non-surplus"), both in transit along the Sacramento River and in the so-called Delta Pool. In other words, their individual identities will, of course, be completely lost. To again borrow a colorful phrase from Mr. Holsinger, none of these several sources of water thus to be commingled have "any distinctive coloring". (Engle 773)

{ One of the many adverse results of all of this complexity and this confusion, to the water right owners in the Central Valley (riparianists, etc.) (and especially to those in the Delta) will be that, unless a proper "physical solution" is worked out, they will never know or be able (as a practical matter) to quickly and inexpensively determine (i. e., without litigation) the extent to which their vested water rights are being invaded

from day to day by this mammoth man-made manipulation of water in the Central Valley. Stephen W. Downey, Esq., lucidly explained this phase in his statement submitted at the hearing before the Engle Committee. Speaking in behalf of Sacramento River water users and with respect to the five water right applications by the Bureau of Reclamation in connection with the CVP, he testified:

"My concern is to explain why every water user in this basin is affected by these applications...."

Such a massive appropriation of water naturally alarms the Sacramento River agriculturists. All normal ways for protecting a valuable water right and for acquiring a right to additional water as it is needed disappear. The river is controlled by a Federal agency through giant reservoirs and canals so that the individual water user cannot tell what has become of his water or how to get it back. There is little wonder that the Bureau's applications have created as much furor as they have." (Engle 787)

*enclosure
and
commodification
by the state*

The Nature of this Probable Litigation

The litigation which I believe will occur if the Brown Water Plan is put into operation could happen in several different ways. One thereof would be:

Litigation by the water right owners
in the Central Valley to protect their
vested rights against excessive
"export" pumping from the Delta.

It is inevitable, in my opinion, that these Central Valley water right owners (and particularly those in the Delta) will find themselves in a most difficult situation (under this new "hydrological picture") as future dry cycles occur. The Delta is, of course, "at the end of the ditch", in the sense that it lies at the lower end of the Sacramento and San Joaquin Rivers. The heavy burden this physical situation imposes upon these "lower users" is well described by Mr. Holsinger:

"The uppermost user, it is axiomatic in water-right litigation, is in possession of the source of supply and by physical law necessarily the water will become available to the lower users only to the extent he who has control upstream allows it to flow past his point

of diversion. The old adage therefore applies that 'possession is nine points of the law.' This position therefore casts a heavy burden upon the lower users." (Engle 768)

Also:

"In the existing condition of human nature, it may be confidently predicted that those intervening users, finding an abnormal increment in the stream, will each for himself define and exercise their rights in their own favor with substantial elasticity." (Engle 773).

The end result will be, in my opinion, that these water right owners in the Delta will find themselves in a gigantic "hydraulic squeeze", resulting from this "upstream" diminution in the flows (i. e. from the North) and the huge CVP and FRP Delta "exports" (i. e., to the South.) In short, they will be "caught in the middle".

It should also be noted (in connection with this "water squeeze") that it now appears that SB 1106 will not finance the Oroville Reservoir and that this unit will be delayed for many years. In other words, the large amount of "conserved water" which this reservoir was supposed to conserve and feed into the Delta will not be available to alleviate this water squeeze in the Delta. Ironically, this was to be the "key unit" of the Brown Water Plan:

financed by revenue bonds.
actually, it was completed by ~1975?

"The key unit of the project is a dam to be constructed on the Feather River, almost five miles above the City of Oroville. This structure will be 730 feet high, which is 20 feet higher than Hoover Dam. Behind the dam will be a reservoir with a storage capacity of 3, 500, 000 acre-feet of water, and a shoreline of 167 miles". (Water Facts For Californians, 1958, p. 10)

In short, this future "water squeeze" would thus be further aggravated by this important change in "project plans".

The foregoing are some of the "hard realities" which could, and in my opinion will, cause (in future dry cycles) the "legal Frankenstein" depicted by the Engle Committee.

Incidentally, it should be noted that similar (but far less severe) "hydrological pressures" gave rise to "a flood" of water litigation in the Central Valley during the "dry cycle" of the 20's. This was described by the Engle Committee as follows:

"Throughout 1928, the Joint Legislative Water Problems Committee continued to study the Bulletin No. 12 plan in an increasingly serious situation of ground-water depletion that was intensified by a 2-year drought. The Joint Committee reported to the 1929 Legislature that ground-water levels from the Kings River south were falling to such an alarming extent that Federal farm loans had been discontinued. At the same time, the Joint Committee reported that irrigation, power, and domestic uses had drawn so heavily on summer flows of the Sacramento and San Joaquin Rivers that salt water intrusions were causing damage in the delta, and a vast number of legal controversies had been instituted between cities and others, power companies and other appropriators, and between delta interests and all irrigators or appropriators in the Sacramento and San Joaquin Valleys." (Engle 7)

I might add that in one of these many lawsuits of the 1920's (Town of Antioch v. Williams Irrigation District, etc., Superior Court of Alameda County, No. 62328) there were over six thousand defendants (including those named by fictitious designations.)

This early litigation also confirms one other salient aspect which I wish to emphasize: The Central Valley water right litigation which the writer believes will occur as a result of this Brown Water Plan will not be a "piecemeal" or "localized" affair. To the contrary, it will, of necessity, have to be a comprehensive adjudication involving all water rights and water resources in the Central Valley. A partial adjudication would have no more efficacy nor utility than "half a bridge".

1995
WQCP
resulting
from
Recessed

A second "litigation potential" is:

Litigation by the State to protect the "surplus" water in the Delta Pool.

Most of the considerations expressed above apply to this situation. Time will not permit herein any review of the many ramifications of this phase of the "litigation potential" of this proposed new water picture. It suffices to state that it too would necessarily result in the "monstrous lawsuit" described by the Engle Committee.

Third Alternative

Another "Legal Frankenstein" which could (and the one which I believe will) occur would be a suit by Delta water-right owners (and other Delta water interests) to secure and compel a "physical solution" of the type which I have briefly described above. Burdensome as it may be, this, in my reasoned judgment, is the only logical course for these water interests to follow (if SB 1106 becomes law). In this way, these Central Valley water right owners instead of awaiting and suffering the various adverse and grave consequences above described, would be able to accomplish a sound and legal solution of these many problems before this project is built or operated. Among its advantages, this legal action would, in my opinion, bring about the following salutary results (among various others):

didn't occur?

1. A legally enforceable set of effective controls to fully and adequately protect these "vested water rights" (at all times) in connection with any "export pumping" out of the Delta.
2. None of these proposed "Delta water exports" (under the Brown Water Plan) could legally occur unless and until satisfactory and adequate "physical works" (e. g. such as a bay barrier, etc.) are first built and operated successfully (for a trial period of years), so as to solve the aforementioned hydrological problems of the Delta.

Among other things, such litigation would directly dispute the existence of the alleged "surplus" water which is the indispensable predicate of the Brown Water Plan. It is my opinion that one result of this will be that no bonds authorized by SB 1106 will be saleable until this litigation is finally resolved.

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Incidentally, I might add that the writer is already authorized by his clients to institute this type of litigation if Proposition One is passed. I hope it can be avoided. If not, it will ensue.

hmm what am I of this?

Please also let it be noted for the record that my clients have made every reasonable effort to avoid any such undesirable results by bringing about a sound water plan; one which (on the one hand) would fully "insulate" and protect these vital and indispensable water rights of the North, and, (on the other) would result in the South securing a perpetual and irreducible water right out of the North Coastal Basin, which, as the State's own water statistics show, is the only true source

and locale in Northern California of substantial amounts of "surplus" water. (see Memorandum of December 31, 1958). The aforementioned "Preview" states:

eg -
Trinity
Klamath
Smith
rivers

"The North Coastal Area with its large natural water supply, 41 per cent of the State's total" (i. e. 71,000,000 AF annual mean) "should ultimately require only about 4 per cent of the water consumptively used throughout California." (p. 6)

Incidentally, the "Statement of Policy" widely circulated in 1958 by the California Water Development Council (a client of the writer) (under the leadership of Gordon Garland, Executive Director) outlined the salient features of a sound water plan. This was submitted for the consideration of Governor Brown and various other interested parties (including the South). This "Statement of Policy" states (as its Point 16) as follows:

"THE ONLY AREA OF UNQUESTIONED SURPLUS IS THE NORTH COASTAL AREA. For this reason a new major water export project from this area should be committed and constructed concurrently with the Feather River Project"

And, in concluding this chapter as to the probability of a "legal Frankenstein", it should be stressed that this "litigation scourge" will also seriously militate against the South's best interests. Among other things, it will, in my opinion, "freeze" the South's (as well as the State's) water planning (at least in so far as "exports" from the Delta Pool are concerned) for a long time to come. This should be contrasted with the sound water plan which the CWDC advocated:

"PART TWO - THE NORTH COASTAL ROUTE"

"This is the solution which your Council has advocated for so long. It is a sound solution. It is a permanent solution. Its 'litigation potential' is practically nil.

"Furthermore, this solution will enable the South to acquire a perpetual right to a huge quantity of water, a right not at all dependent upon 'diligence,' and one which cannot be eroded away by future increased Northern water uses in the Central Valley. Moreover, this excellent and very desirable 'water right' can be assured to the South by a basic 'water compact', confirmed (if desired) by a constitutional amendment (see p. 9 infra)" (Memo, 12/31/58; p. 6)

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QUESTION NO. 6. DOES SB 1106 CONTAIN
ADEQUATE LEGAL SAFEGUARDS TO PRO-
TECT THE TAXPAYERS OF THIS STATE
AGAINST THE POSSIBILITY OF DEFICITS
IN CONNECTION WITH THIS PROPOSED
MULTI-BILLION DOLLAR BOND ISSUE?

I - OPINION: Various important legal safeguards which should have been incorporated in this legislation for the proper protection of the State and its taxpayers are absent therefrom.

These proposed bonds are general obligation bonds and therefore will have to be paid by the California taxpayers if the net revenues from this Water Project are not sufficient to meet the more than four billion dollars (principal and interest) which must be paid by the State in large annual installments over a period of many decades to come. These are not "revenue bonds" (as some people seem to think). To the contrary, if the revenues from this water project are not adequate, the general taxpayer will have "to foot the bill". Therefore, every proper legal safeguard for the protection of the State and its taxpayers should have been included in SB 1106. This was not done.

II - SUPPORTING ANALYSIS AND ARGUMENT: It is not within the purview of this opinion to deal with the many fiscal problems which will arise in connection with the vague and loosely drawn provisions of SB 1106 dealing with this proposed bonded indebtedness.* We will, however, mention two "fiscal facets" as a preliminary to a brief discussion of some of the legal defects in SB 1106 from the standpoint of its lack of proper protection for the California taxpayers.

The first is that this huge proposed bond issue will have a very serious and adverse impact on the bonding capacity of the State for a long time to come. It will make it more difficult and costly to market many other types of bonds which California (and its many local districts - such as school districts, local improvement districts, etc. etc.) will have to sell during the coming decades in order to finance many needed local developments (schools, etc.).

* The legal aspects of many of these doubtful "fiscal phases" are reviewed in the "Interim Report" of Chas. T. Main, Inc. (July, 1960.)

The second "fiscal fact of life" is that with its already huge bonded and other indebtedness, California must be most careful in incurring further general indebtedness lest the State reach the point of serious financial involvement. As State Treasurer Bert Betts recently (in September 1960) warned (in discussing the already existing saturation of the national bond market with California Veterans bonds), the credit of the State is being dried up and impaired. He flatly stated that "we must look out for the credit of the State now before we go into bankruptcy". *

This same admonition was voiced in a recent issue (July 11, 1960) of Barron's (the national financial journal), in an article entitled "Strained Finances May Jeopardize California's Investment Status".

Now, in the light of these indisputable fiscal considerations (upon which all financial experts seem to be in accord) I will briefly outline a few of the basic legal shortcomings in SB 1196 from the standpoint of its failure to protect the State and its taxpayers against possible huge deficits under the Brown Water Plan.

* "California has to pay higher interest than the national average, largely because of the great volume of bonds we market. I've been East promoting our bonds four or five times since I took office and everywhere I go bond people ask 'when is your veterans program going to end?' Eventually we're going to fill every bond portfolio in the country with Cal-Vet bonds. We are going to reach the point one day where the State of California will not get a bid on a bond sale.

"We must look out for the credit of the State now, before we go into bankruptcy. . . . And I happen to be a veteran of the State of California." (S. F. Chronicle, Sept. 25, 1960)

The Governor apparently participated in this same "veterans conference" at Sacramento. He is reported as saying: "Vet bonds glut the market and force higher interest rates on other types of bonds."

1. Absence of any legal safeguards to prevent expenditures of the bond proceeds fund before sufficient "water contracts" are first consummated.

Under the Brown Water Plan the State officials can proceed (as soon as SB 1106 is approved by the People) to expend these hundreds of millions of dollars on the aqueducts and other facilities comprising the project (State Water Resources Development System) irrespective of whether or not PROPER "water contracts" with financially sound water districts have FIRST been consummated. This is, in my opinion, a basic legal defect. There should be in SB 1106 a clear prohibition against the expenditure of these huge sums (of borrowed money) unless and until the State has first carefully formulated and consummated proper "water contracts" of such a nature (e. g., with a sound price formula, etc.) that the reasonable amortization of this huge debt will be absolutely assured. This, in my humble opinion, is a minimal requisite protection for the general taxpayers. Without such a provision the general taxpayer is entirely at the mercy of these State officials. Any serious mistakes on their part in this respect could prove disastrous to the State.

Metropolitan Water District caught this fundamental defect in SB 1106. In its draft of proposed water contract (Draft of 6/9/60) (which it submitted to the Governor on June 9, 1960) Metropolitan inserted a paragraph (9-f) requiring that no bonds be sold nor funds expended under the Bond Act (SB 1106) for the construction of any aqueduct or other water facilities of the SWRDS (with certain minor exceptions):

"until the State shall have entered into contracts which will provide for repayment of at least 75% of the construction costs thereof, allocated to water supply for reimbursement by the contractors, with contractors having an adequate tax base or other evidence of ability to perform their respective contractual obligations." (p. 9/6)

While this commendable effort to thus "plug" this deficient legislation is cogent confirmation of its basic inadequacy, such "patching by contract" is, in my opinion, an inadequate and dangerous substitute for proper legislation. ✓

2. Absence of any requirement of a proper determination of "surplus" before physical facilities are built.

The indispensable keystone of the entire Brown Water Plan is these "water and power contracts". Why? Because they are the sole source of revenue to pay off this huge bonded indebtedness (apart from general tax revenues).

Now, these vital "water contracts" are in turn based on the assumption that there will be sufficient "surplus" water available in the Delta Pool through these many decades to come, to properly service these contracts.

But what legal assurance is there that this will be so? Absolutely none. To the contrary, the record (including the State's own data) plainly shows (as above indicated) that there is a grave doubt as whether or not this alleged "surplus" exists or will hereafter exist in the Delta; particularly if the Central Valley is to continue to expand and develop its natural resources (including its invaluable and indispensable water resources).*

However, and entirely apart from the question as to whether or not there is any serious doubt as to the existence of this necessary "surplus", one thing seems crystal-clear to me. It would seem to be simple prudence and plain common sense to determine, in a proper and legal way, the existence or non-existence of adequate "surplus water" before these hundreds of millions of dollars are spent on physical works. Empty reservoirs or aqueducts will not pay off this enormous bond issue.

Covering the same matter from a little different approach, what will happen if these physical works are built and then a "Legal Frankenstein" occurs (as above indicated) and such litigation results in a legal demonstration of the non-existence of an adequate amount of "surplus water" to properly service these "Delta export water contracts"? It does not require a water lawyer to foresee the critical financial situation in which the State would then find itself.

* It should never be forgotten that this future expansion and development is directly dependent upon proper protection of the North's "area of origin" water preferences and reservations. " (p. 26 supra)

Furthermore, it is no answer to this to assert that the State would then be forced to "switch horses" and turn to the North Coastal Basin for a water supply. One fallacy in any such argument is that it overlooks the fact that SB 1106 does not include the funds which will be needed for this admittedly costly North Coast development. In fact, there is now a serious doubt, (in view of the findings of the State's independent consultants), as to whether SB 1106 will provide sufficient funds to complete the Oroville Dam project (on the Feather River), which up until recently has been the widely heralded hydraulic keystone of the Brown Water Plan.

3. Absence of any adequate provisions in SB 1106 to ensure that these vital water contracts will contain all necessary protective provisions (e. g., price formulas, etc.)

Governor Brown and his staff have already attempted to construe SB 1106 as conferring upon them the full and unfettered discretion to determine what "terms and provisions" should be incorporated in these vital "water contracts" (which bear so directly on the State's future solvency). As stated above, pursuant to this interpretation, the Governor and his staff have recently been engaged in rather frantic attempts to consummate the aforementioned important water contract with Metropolitan Water District.

This interpretation of SB 1106 is, in our opinion, an unsound one. It is now the subject of litigation recently instituted by us in the Kings County Superior Court, which is briefly discussed in a subsequent section of this Opinion.

However, we will assume in this portion of our Opinion that SB 1106 can be so interpreted. Assuming this, it obviously is a legally defective statute from the viewpoint of proper protection for the taxpayer. Why? Because the very least this law should have done (on this phase) was to provide basic and controlling criteria (including proper "pricing formula") to make certain that these vital water contracts will always yield sufficient revenues to fully pay off this bonded indebtedness.

Time exigencies will not permit any further analysis of this phase herein but I do wish to point out, in leaving it, that your Honorable Committee and other legislative committees have heretofore spent a considerable amount of time studying this very aspect of "water contracts" and

their basic terms and conditions. One interim result of these studies is the "Report" issued by the Senate Fact Finding Committee (in March 1960) containing many excellent suggestions (e. g., price formulas, conditions of power sales, etc.) for study in connection with these vital "water contracts". The tragedy, however, is that these important protective provisions are no part of this Brown Water Plan legislation. Furthermore, if the Administration's interpretation of SB 1106 is correct, (i. e., that the Department has a full and unfettered power to decide what provisions should go into these "water contracts"), there will be no real opportunity to adopt, by appropriate legislation, any of these necessary safeguards and protective provisions so essential to the future welfare of California and its taxpayers.

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QUESTION NO. 7. WILL THE GOVERNOR AND HIS EXECUTIVE OFFICIALS HAVE THE AUTHORITY AND POWER (IF SB 1106 IS APPROVED) TO FIX AND DETERMINE, IN THEIR SOLE DISCRETION, THE TERMS AND CONDITIONS OF THE "WATER CONTRACTS" WHICH WILL BE THE SOLE SOURCE OF REVENUES (OTHER THAN THE GENERAL FUNDS OF THE STATE) TO PAY OFF THIS HUGE BOND ISSUE? WILL THE LEGISLATURE HAVE ANY VOICE IN SUCH MATTERS?

I - OPINION: My opinion is that the Legislature and not the Executive Branch has the exclusive right and power (and responsibility) of fixing the basic criteria (i. e., the fundamental terms and conditions) of these vital "water contracts", to be executed pursuant to SB 1106.

II - SUPPORTING ANALYSIS AND ARGUMENT: This question goes to the very heart of the Brown Water Plan (SB 1106). Why is this true? Because unless all of the many important aspects of these vital water contracts are carefully and providently planned, the State can and will find itself in serious trouble. Your Honorable Committee is familiar, of course, as a result of your aforementioned detailed studies, with the many ramifications (both legal and fiscal) of this all-important "water contract phase". There is, therefore, no need to detail them herein.

Rather, I will merely summarize the salient aspects relevant to this question as to which branch of the State government has the power to formulate the basic terms and conditions of these "water contracts".

1. Pertinent Provisions of SB 1106

Paragraph 12937-(b)-(4) of the Act provides (in part) that:

"The department, subject to such terms and conditions as may be prescribed by the Legislature, shall enter into contracts for the sale, delivery or use of water or power, or for other services and facilities, made available by the State Water Resources Development System with public or private corporations, entities, or individuals."

2. Pending Litigation

This question as to what these provisions mean (in the sense of "contract power") is now being litigated in the case of "E. C. Salyer vs. Edmund G. Brown, Harvey O. Banks, Ralph M. Brody, et al." Action No. 14952 in the Superior Court of Kings County, California. A temporary restraining order was issued (and is now in force) enjoining the execution of the proposed contract with Metropolitan. The writer (and the legal firm of Rosson & Pearson of Hanford, California) represent the plaintiff. We have recently filed a brief in support of our position in that case (as outlined hereinafter). Therefore, instead of setting forth a detailed legal analysis herein, I will simply state our conclusions and will incorporate in the "Supplement" the relevant portions of our written argument in this Kings County case.

of Salyer & Bowell?

3. Our interpretation of these "contract provisions" of SB 1106.

Our conclusions, based on a careful study of these provisions (in the light of clearly established principles and "canons" of statutory construction) may be summarized as follows:

- First: No "water contracts" can be signed until SB 1106 first becomes a law (by approval of the People). This conclusion is based on elementary legal principles. These well settled principles of our jurisprudence clearly demonstrate, in our opinion, the illegality of the present efforts of Governor Brown and his staff to consummate the aforementioned vital water contract with Metropolitan.
- Second: If Proposition One is approved by the People, the power to formulate the basic terms and conditions of these "water contracts" is a legislative function which resides in the Legislature, and not in the Department of Water Resources.
- Third: If SB 1106 is to be construed as delegating this important legislative power to the Department, it is unconstitutional and void as an unlawful delegation of legislative power. It is further defective and vulnerable (constitutionally) because it is completely devoid of the requisite "controlling criteria" (i. e., "guidelines") to limit and control the discretion of the Executive officials.

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competent lawyers will concede, I believe, that such declarations do not and cannot change the controlling legislation (SB 1106). * In brief, such pronouncements have no legal efficacy whatsoever. They are binding upon no one. Legally speaking, they are worthless.

Furthermore, they are patently ephemeral. In other words, insofar as having any 'permanency' they might as well be "written on ice". In this connection, it is also interesting to observe that the authors of most of these "policy statements" are soon to leave the service of the State. Director Banks and Deputy Director Brody have already tendered their resignations to the Governor. Their successors obviously will not be bound by any of these many "policy pronouncements" heretofore made by these gentlemen.

Incidentally, these "personnel facts" (which are but another of the frequent reminders of the rather rapid turnover of administrative officials) constitute, I respectfully submit, cogent confirmation of the wisdom of our "founding fathers" in establishing a "government of laws" and not a "government of men". SB 1106 will be with us for a long while (if approved by the People) whereas these evanescent "policy statements" have no durability whatsoever. In brief, they are no adequate substitute for law.

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* This was ably demonstrated to the San Francisco Board of Supervisors by Hon. Dion Holm (long-time City Attorney of San Francisco and an outstanding water lawyer). In his excellent formal "Opinion" (No. 1426) (under date of March 8, 1960) (re SB 1106) he clearly shows (by extensive citation of California authorities) the inefficacy and worthlessness (from a legal standpoint) of any such "ex post facto declarations" by the Governor (or others).

Incidentally, after reviewing a number of perplexing legal ambiguities in SB 1106, Mr. Holm concluded: "The courts would indeed be called upon to exercise extraordinary mental dexterity in construing the quoted language. Examples (1) to (4) above are not a complete listing of doubtful points in the bill."

CONCLUSION

Most legal experts who have studied SB 1106 believe that it is a badly drafted statute and that it is replete with material ambiguities which will breed much future litigation. *

In addition to these many ambiguities, SB 1106 contains basic legal defects which could endanger the future fiscal fate of all of California; as well as seriously involve and impair the presently "vested water rights" of Northern California; and also imperil the "area of origin reservations" which are the only substantial source of Northern California's additional water needs in the future.

One of the numerous adverse results of this defective legislation will be, in my sincere and firm opinion, a scourge of almost interminable water controversies; a litigation legacy which could plague California for decades to come.

Respectfully,



WALTER M. GLEASON

* Our 1960 Water Lawyers Committee of the San Francisco Bar Association (Dan Hadsell, Esq., Chairman) (of which the writer is a member) so concluded after an exhaustive analysis of SB 1106. The report of this Committee to the Board of Governors of the San Francisco Bar Association (under date of October 27, 1960) states:

"With one thing members of the Committee are very much impressed. It is that SB 1106 is a badly drafted statute. If enacted it is bound to be productive of litigation which will very much impede administrative progress in implementation of the Act but which will be necessary to clarify meanings or effect of language or to settle many legal problems. True it is that any important new statute will generally provoke litigation over its meanings and effects; but such legal challenges are generally reduced to a minimum by good drafting. That is not so with this measure. Litigation under this Act will likely be excessive."

Bay-Delta Water

Economics of Choice



January 11, 2013

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ECONorthwest specializes in economics, planning, and finance. Founded in 1974, we're one of the oldest independent economic consulting firms in the Pacific Northwest. ECONorthwest has extensive experience applying rigorous analytical methods to examine the benefits, costs, and other economic effects of environmental and natural resource topics for a diverse array of public and private clients throughout the United States and across the globe.

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SECTION 1: CONTEXT AND ASSIGNMENT

Water flows from the Sierra Nevada into the Sacramento and San Joaquin Rivers, which in turn flow into the San Francisco Bay-Delta, and from the Delta Bay into the Pacific Ocean. In 2009, the California state legislature enacted the Delta Reform Act. As part of that legislation the California State Water Resources Control Board (State Water Board) was instructed to report to the Delta Stewardship Council (Council) the Board's view of what flows would be necessary to protect the Delta ecosystem. In its August 2010 report, *Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem (Flow Report)*¹, the State Water Board expressed its concerns about the Bay-Delta flows.² It concluded that the Bay-Delta flows are inadequate. They threaten native fish³, and thereby violate California's obligations under the public-trust doctrine.⁴ According to the *Flow Report*, changing flow conditions in ways that would support native fish species requires improving the Bay-Delta flows throughout the year.

If we understand the Council's role correctly, then to allocate the Bay-Delta flows well, the Council would seek to balance its obligations to protect public-trust use of the Bay-Delta flows with its obligations to support the dual coequal goals of i) habitat conservation and management, and ii) improving reliability of water supplies. This balancing task includes:

- a. Developing alternatives to increase the efficiency and equity of allocating the Bay-Delta flows among the competing instream and consumptive demands⁵
- b. Describing the economic, biophysical⁶ and other effects of the alternatives
- c. Selecting what it regards as the best of the alternatives and enforcing the efficient allocation of the imputed flow conditions.

Economics, at its core, is the science of choice⁷ or, as it is defined frequently in introductory textbooks, the study of the allocation of scarce⁸ resources among competing

³ These species include Chinook Salmon, Delta Smelt, and Bay Shrimp. *Flow Report*, p. 5 and 8.

⁴ *Flow Report*, p.1-7; *Flow Report*, p.12: "The purpose of the public trust is to protect commerce, navigation, fisheries, recreation, ecological values, and fish and wildlife habitat. Under the public trust doctrine, the State of California has sovereign authority to exercise continuous supervision and control over the navigable waters of the state and the lands underlying those waters. [citation omitted] A variant of the public trust doctrine also applies to activities that harm a fishery in non-navigable waters. [citation omitted]"

⁵ Instream demands are water uses that can be carried out without removing the water from its source, such as in navigation and recreation. Consumptive demands are water uses which lessen the amount of water available for other uses, such as in manufacturing, agriculture, and food preparation. [U.S. Bureau of Reclamation. *Glossary*. January 5, 2011. Retrieved June 24, 2011, from [http://www.usbr.gov/library/glossary/.](http://www.usbr.gov/library/glossary/)]

⁶ By 'biophysical,' we mean the biological effects (e.g., on plants and animals), ecological effects (e.g., on ecological systems), and physical effects, e.g., on water, land and air). We do not mean the interdisciplinary science of biophysics that, as Wikipedia tells us, 'uses the methods of physics and physical chemistry to study biological systems.' We apologize for any confusion, and plead only expedience for our lack of precision. [2011. *Biophysics*. May 16. Retrieved June 27, 2011, from en.wikipedia.org/wiki/Biophysical].

demands.⁹ The State's balancing decision, whether good or bad, would include such an allocation among competing demands. Michael Jackson, an attorney working with Bay-Delta stakeholders, asked ECONorthwest to describe economic issues relevant to the State's balancing of competing demands for Bay-Delta flows. We at ECONorthwest recognize the diverse group of people interested in the Bay-Delta Flows, and have sought to write an accessible yet technically sound report rooted in established economic practices and theory. To that end, we have prepared this report.

⁷ See, for example,

<<http://www.google.com/search?sclient=psy&hl=en&site=&source=hp&q=economics+science+choice&btnG=Search>>

⁸ By "scarcity," we mean situations in which the resources available for producing output are insufficient to satisfy wants. This is different to saying that they are insufficient to satisfy demand since demand relates to an expression of want backed by money. This concept of relative scarcity in relation to wants is widely held to define the central conflict of economics since, otherwise, there would be no need to think about the 'best' allocation of resources. [Pearce, D.W. 1992. *The MIT Dictionary of Economics*, 4th edition. Cambridge, MA: The MIT Press.]

⁹ See, for example,

<<http://www.google.com/search?sclient=psy&hl=en&site=&source=hp&q=economics+allocation+scarce+resources+competing+demands&btnG=Search>>; Field, B.C. 1997. *Environmental Economics*, Second Edition. San Francisco: McGraw-Hill Company, Inc.; Gramlich, E.M. 1990. *A Guide to Benefit-Cost Analysis*. Englewood Cliffs, New Jersey: Prentice Hall.; Harberger, A. and G. Jenkins, eds. 2002. *Cost-Benefit Analysis*. The International Library of Critical Writings in Economics: 152. Northampton, Massachusetts: Edward Elgar Publishers.; and U.S. Environmental Protection Agency. 2010. *Guidelines for Preparing Economic Analyses*. December.

SECTION 2: ECONOMICS AND THE CHOICES CALIFORNIA FACES

If the waters flowing from the Sierra Nevada to the San Francisco Bay-Delta had conditions of abundance, the State might not have felt compelled to prepare the *Flow Report*. But scarcity rules the waters and causes fierce competition. The consequences of the competition for these scarce waters lies at the heart of the State Water Board's *Flow Report*.¹⁰

Instream uses of the Bay-Delta flows compete with what the State Water Board describes as “other beneficial uses” of water.¹¹ These *other beneficial uses* include municipal, industrial, and agricultural uses.¹² If, once again, we understand the State role correctly, then in allocating the Bay-Delta flows the State would seek to balance its obligations to protect public-trust use of the Bay-Delta flows, with its obligations to support the “other uses” of the Bay-Delta flows.

To balance its obligations effectively, the State would, as we state in Section 1, seek to develop alternatives to improve the Bay-Delta flows, describe the economic, biophysical and other effects of these alternatives, and then select the best of the alternatives. To serve these ends, a necessary step for the State would be to describe how each alternative would affect economic well-being, power production, human health and welfare, the sustainability of natural resources, habitats and species, and possibly other factors.¹³ Economists have developed tools for describing such effects.

Among the tools economics offers for comparing competing alternatives, the most widely known and frequently used in environmental and natural resource matters is benefit-cost analysis (BCA).¹⁴ As applied in this case by the State, a properly conducted BCA would describe differences in net economic values – economic benefits minus economic costs – across the alternatives. In our experience, stakeholders and decision makers frequently care about other types of economic consequences besides changes in economic values. They want to know how policy alternatives will affect things like jobs and income, which economists describe as economic impacts, and the distribution of changes in economic values and impacts among stakeholders and households, which

¹⁰ For a description and explanation of the economic consequences of a shift from abundance to scarcity in an ecological system, e.g., a watershed, see Courant, P., E. Niemi, and E. Whitelaw. 1997. *The Ecosystem-Economy Relationship: Insights from Six Forested LTER Sites*. Grant No. DEB-9416809. National Science Foundation. November.; Hulse, D., G. Gordon, and E. Niemi. 2001. *Establishing Correlations Between Upland Forest Management Practices and the Economic Consequences of Stream Turbidity in Municipal Supply Watersheds*. EPA Grant No. R825822. Environmental Protection Agency. September.

¹¹ In the rest of the report, we will italicize the phrase “other beneficial uses” to signal that these are not all other uses but only those specified by the State Water Board.

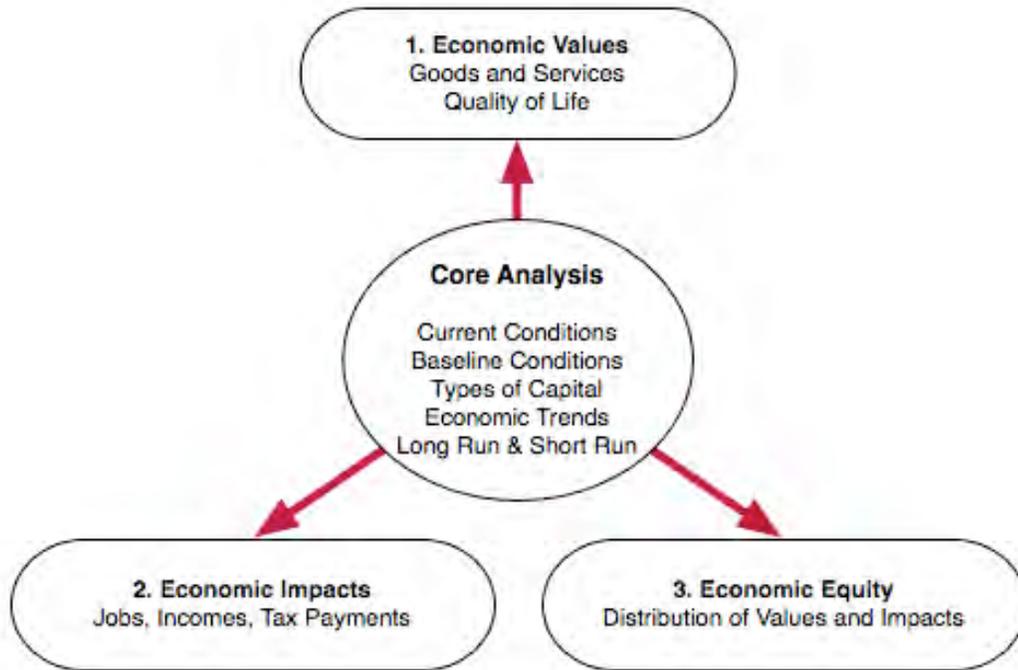
¹² *Flow Report*, p.1-7.

¹³ *Flow Report*, p.2-3.

¹⁴ Mishan, E.J. *Elements of Cost-Benefit Analysis*, 3rd Edition. 1972. p.11-13; Turner, R., D. Pearce, and I. Bateman. 1993. *Environmental Economics*, p.93-4; Teitenberg, T. and L. Lewis. *Environmental and Resource Economics*, 8th Edition. 2008. p.28.

economists generally address as economic equity. Thus, a comprehensive economic assessment from alternative Bay-Delta flows would describe economic consequences that include changes in economic values, changes in economic impacts, and the distributional outcomes for each alternative. Figure 1 shows the three categories of economic effects each alternative would cause.

Figure 1. Categories of Economic Effects



Source: ECONorthwest

The first category, Economic Values, represents *changes in the values of goods and services* available to Californians that result from the market and non-market activities associated with each alternative. Such effects include changes in economic benefits, costs or both, as well as changes in the quality of life. The second category, Economic Impacts, represents changes in jobs and incomes for workers, costs or revenues for private firms, and expenditures or tax revenues for governments. These impacts occur directly, as workers are employed on construction, deconstruction, and restoration, for example, and indirectly, as dollars are spent locally on goods and services, dollars which multiply through the local economy, supporting additional jobs and incomes. The third category, Economic Equity, represents the distribution of the other two categories of effects, Economic Values and Economic Impacts, across income brackets of households, across ethnicities, and across geographic areas. These changes are particularly challenging to describe and evaluate when, say, groups of households who enjoy the benefits, jobs, and incomes, differ from those who bear the costs.

The center of Figure 1 – the Core Analysis – shows the analyses common to characterizing or calculating all three categories of economic effects.

1. By describing the Current Conditions and Baseline Conditions for each alternative, the analyst can describe the gap between the two. The larger the gap, the larger the problem.
2. By describing the four basic forms of capital (physical capital, human capital, social capital and natural capital)¹⁵ under both Current and Baseline Conditions for each alternative, the analyst can, for example, measure the effects of the alternative on the stocks of economic assets and thereby on the flows of services from those assets.¹⁶
3. By taking economic trends into account, the analyst can apply a with-versus-without approach, which isolates the economic effects (values, impacts, equity) caused by the alternatives from changes that will likely occur unrelated to the alternatives.
4. By addressing both the short- and long-term effects, the analyst can avoid errors of omission and commission through confusing today and tomorrow. The literal differences in effects between today and tomorrow would be trivial. But since the relevant period of time may stretch to a century, the figurative differences would likely be huge.

In 1983, the California Supreme Court issued its opinion in the case of *National Audubon Society et al. v. The Superior Court of Alpine County, et al.*¹⁷ That ruling, commonly called the “Mono Lake decision,” (*Mono Lake*) clarified the extent of the State’s public-trust obligation to protect water resources. In general, the Court ruled that protecting water resources takes precedence over consumptive water use. The Court’s ruling relied in part on economic analyses of the competing demands for Mono Lake water.

The State’s analysis of the economic effects of its balancing decision can benefit from applying the widely accepted professional standards applicable to economic analyses in this type of matter, and the precedents set by the *Mono Lake* decision. In this report we examine the relevant professional standards and the *Mono Lake* decision and describe their implications for the State as it seeks a balance.

In the next section, Section 3, we present an economic perspective of the Supreme Court’s decision.

¹⁵ These four types of capital affect local economic productivity, which in turn is the source of economic growth in, say, California. Examples of physical capital are private and public machines, buildings, roads, and water and sewage systems. Examples of natural capital are rivers and streams, mountains and valleys, and grasslands and forests. Examples of human capital are workers of all types and their knowledge and skills. Examples of social capital are social networks and the norms, laws, and judicial and political systems.

¹⁶ O’Sullivan, A. 2008. *Urban Economics*, 7th Edition. p.90-91.

¹⁷ Broussard, J. 1983. *National Audubon Society et al., Petitioners, v. The Superior Court of Alpine County, Respondent; Department of Water and Power of the City of Los Angeles et al., Real Parties in Interest*. 33 Cal.3d 419. S.F. No. 24368. Supreme Court of California. February 17.

SECTION 3: ECONOMICS AND THE STATE WATER BOARD'S BALANCING DECISION IN *MONO LAKE*

In *Mono Lake*, the State Water Board faced a classic public-policy choice, a choice resembling the choice it faces with Bay-Delta flows: allocating a scarce and valuable natural resource – Mono Lake – among competing demands. The State can therefore look to its own history for guidance on balancing its public-trust obligation to protect Bay-Delta flows with the demands from other beneficial uses, and the role that economic information can play in the deliberations. As it balanced competing interests and reached its decision in *Mono Lake*, the State Water Board described the biological significance of the water at issue, developed economic measures of the relevant costs and benefits of alternative water allocations, and considered measures that could mitigate negative economic outcomes.¹⁸ It should take similar steps as it sets criteria for the Bay-Delta flows.

In *Mono Lake*, the State Water Board considered the consequences of the City of Los Angeles (City) – acting through the Los Angeles Department of Water and Power (LADWP) – exercising its right to draw water from Mono Lake for urban-consumption uses, and the resulting impacts on the lake's ecological habitats and affected species. The State Water Board began by considering the biophysical aspects of its decision. It first identified the ecological uses of trust resources at issue and their biological requirements, e.g., the species that depend on Mono Lake and their water requirements. Next, it studied the relationship between water flows out of Mono Lake and the impacts on ecological uses. It then compared the costs of the City acquiring water from sources other than Mono Lake with the economic benefits of protecting the ecological uses of the lake's affected public-trust resources.¹⁹

Dr. John Loomis, a natural-resource economist,²⁰ helped quantify the economic benefits in the State Water Board's analysis. Dr. Loomis surveyed California residents and calculated their willingness to pay to protect Mono Lake's habitats and affected species. Based on this information, Dr. Loomis calculated the economic benefits of protecting the ecological uses of the lake's water at \$1.5 billion to \$3.5 billion annually. This amount significantly exceeded the estimated cost, \$26.5 million per year, of finding alternative sources of water for the City.²¹

¹⁸ Koehler, C.J. 1995. "Water Rights and the Public Trust Doctrine: Resolution of the Mono Lake Controversy." *Ecology Law Quarterly* 22: 451.; Casey, E. 1984. "Water Law – Public Trust Doctrine," *Natural Resources Journal* 24: 809-825.

¹⁹ Koehler, 1995; Casey, 1984.

²⁰ Dr. Loomis conducted this research while at the Department of Agricultural Economics at the Davis campus of the University of California.

²¹ Loomis, J. 1987. "Balancing Public Trust Resources of Mono Lake and Los Angeles' Water Right: An Economic Approach." *Water Resources Research* 23: 1449-1456. August; Loomis, J. 1997. Use of Non-Market Valuation Studies in Water Resource Management Assessments. Colorado State University; Duffield, J. 2010. *Valuing Ecosystem Services in River and Lake Systems: Methods and Western U.S. Case Studies*. Presentation, Salt Lake City, April 28.

Dr. Loomis conducted his analysis as independent research that was not part of the State Water Board's balancing decision. The State Water Board, however, took notice of Dr. Loomis' work and directed the consultant performing the economic portion of the Environmental Impact Statement for the balancing analysis to adopt and implement Dr. Loomis' approach. The consultant's assessment reached the same conclusion: the economic benefits of protecting the ecological uses of trust resources in Mono Lake significantly exceeded the cost of supplying the City with water from alternative sources. The State Water Board considered other factors along with these economic results and ultimately reduced by half the amount of water that the LADWP could divert from Mono Lake.²²

The State Water Board's *Mono Lake* experience can help inform current deliberations on the relevant economic aspects of balancing competing uses of Bay-Delta flows. Analytical factors from the *Mono Lake* analysis that have relevance to the Delta Stewardship Council's planning decision include:

- *Conduct economic analyses in the context of the biophysical requirements of the ecological uses of public-trust resources.* The State Water Board identified the ecological uses of public-trust resources at issue in *Mono Lake* and the water requirements that support these uses *before* considering the costs and benefits of allocation scenarios. That is, the State Water Board acknowledged its obligation to protect the ecological uses of public-trust resources, and then considered reasonable methods of satisfying this obligation.²³
- *Account for all relevant economic, legal, and other forces and trends.* The LADWP proposed that the State Water Board make its decision based on a worst-case scenario of future water supplies for the City. Such an approach ignored current trends in water policy at the local, state and federal level. For example, the worst-case approach ignored the fact that trends in state and federal water law at the time encouraged water transfers between and among entities. Such transfers meant that LADWP could tap sources other than Mono Lake for future demands. On this point the State Water Board noted, "[T]he LADWP analysis assumes that insufficient replacement water will be available thereby causing high water shortage costs to be imposed on water users in Los Angeles. This assumption does not appear to be realistic in light of the evidence...." The State Water Board took the current trends in water transfers into account when making its decision.²⁴
- *Consider likely mitigating circumstances.* LADWP also asked that the State Water Board assume that the City would take no actions to mitigate the impacts of reduced flows from Mono Lake. That is, the LADWP asked that the State Water Board base its decision on a *static analysis* that assumed conditions would remain fixed over the foreseeable future. The State Water Board, instead, based its decision on a *dynamic analysis*, which assumed the City and others would take appropriate actions, such as

²² Loomis, 1997; Duffield, 2010.

²³ Koehler, 1995; Casey, 1984.

²⁴ Koehler, 1995; Casey, 1984.

doing more to conserve water, to mitigate the initial effects of a reduction in water supplied from Mono Lake. More broadly, this dynamic analysis took into account relevant economic and other forces and trends, as noted above.

- *Account fully for both values reflected in market prices and values that are not.* In reaching its *Mono Lake* decision, the State Water Board considered estimates of the City's potential costs to acquire water from another source. These estimates derived from data on the prices at which water was bought and sold in the region. No such prices and data existed for the economic value of protecting the ecological uses of public-trust resources. The State Water Board recognized, however, that the absence of prices did not mean that protecting these uses had little or no value, but, instead, that market prices are not an appropriate tool for measuring the value. Hence, the State Water Board looked to the results of research that employed non-market techniques for estimating the value.²⁵ We address this point in more detail in the next section.

²⁵ Loomis, 1987; Loomis, 1997; Duffield, 2010.

SECTION 4: THE EVOLUTION OF THE ECOLOGICAL USES OF PUBLIC-TRUST RESOURCES AND ECONOMIC METHODS

Stakeholders in the *Mono Lake* case litigated to clarify the relationship between the City's water rights and the State's public-trust obligation to protect water resources. The Supreme Court of California ultimately ruled that, in general, the State's public-trust obligations have precedence over the City's water rights. This ruling helped inform the State Water Board's balancing decision in that case. The Supreme Court's decision emphasized that stakeholders and decision makers should consider public-trust obligations as dynamic and evolving over time, rather than fixed and based exclusively on historical conditions. What constitutes a protected use of public-trust resources can evolve along with changes in understanding of the natural environment and its relationship to the well being of human society.

Methods of describing the economic effects of public policies on ecological uses of water resources have also evolved. Markets do not exist for many of these uses and so economists calculate their economic significance using non-market valuation methods. Years ago, economists and public-policy analysts could reasonably debate the analytical veracity of these methods. Not so today. Analytical methods continue evolving, and areas of legitimate disagreement still exist, however, detailed descriptions of these analytical methods appear in economic textbooks, articles in academic journals, undergraduate and graduate economics courses, and reports by federal and state natural-resource agencies in the U.S. Economists in Europe, Asia and elsewhere also regularly use these methods.

In this section we describe the evolution of thinking on ecological uses of California's public-trust resources. We then summarize methods of describing the economic significance of ecological uses of trust resources, especially those that provide society with ecosystem-services for which markets do not exist. The information in this section provides a context for the sections that follow, in which we describe in more detail the analytical principles relevant to describing the economic effects of the State's balancing decision regarding the Bay-Delta flows.

A. Ecological Uses of Public-Trust Resources

Implementing the public-trust doctrine in California has evolved over time. Early in the state's history, the doctrine protected the public's access to, and use of, tidelands for navigation, commerce and fisheries. More recent court decisions recognized the changing nature of the use of trust resources and expanded the list of protected uses to include recreational uses and ecological uses that support habitats and species. Litigation related to the State Water Board's *Mono Lake* decision help clarify the responsibilities of the State as administrator of the public-trust resources. The Supreme Court of California ruled that the State Water Board must take impacts of allocation decisions on uses of trust resources into account when administering water rights.²⁶

²⁶ Koehler, 1995; Casey, 1984.

The Court’s ruling also emphasized a flexible definition of use, one that responds to changing public needs. The Court also identified ecological resources as one of “the most important” uses of trust resources.²⁷

“[W]e stated that ‘[t]he public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs. In administering the trust the state is not burdened with an outmoded classification favoring one mode of utilization over another. [citation omitted] There is a growing public recognition that one of the most important public uses of the tidelands – a use encompassed within the tidelands trust – is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorable affect the scenery and climate of the area.’”²⁸

Preservation of water-based natural resources “in their natural state” can affect a wide range of ecosystem services that trust resources provide. An illustrative, though incomplete, list of these ecosystem services includes flood mitigation and groundwater recharge, water filtration, sediment capture, nutrient cycling, gas regulation, provision of habitat for economically important fish and wildlife, and scenic and amenity values. While the natural resources at issue exist independent of human society, ecosystem services only exist insofar as there is human demand for their supply, at a particular place and time, and their value reflects the specific context within which the demand exists. Ecological uses of trust resources are not traded in markets, however, and so we must look to non-market valuation methods for measures of their values. We describe these methods in the next subsection.

B. Evolution of Economic Methods

Methods of measuring the economic effects of water allocation decisions on what the California Supreme Court described as one of the most important uses of public-trust resources – uses by aquatic resources that provide ecosystem services – have evolved over time. In the remainder of this section, we illustrate the evolution of these economic methods using reports by federal and California state agencies. We picked these sources because they help guide federal and state public policies, and because they often incorporate analytical principles or methods only after they have been subject to peer review and debate in academic and professional forums. We begin with federal guidelines.

1. Federal Guidelines

a. Principles and Guidelines

In 1983, the U.S. Water Resources Council published, *The Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G)*.

²⁷ Broussard, J. 1983. *National Audubon Society et al., Petitioners, v. The Superior Court of Alpine County, Respondent; Department of Water and Power of the City of Los Angeles et al., Real Parties in Interest*. 33 Cal.3d 419. S.F. No. 24368. Supreme Court of California. February 17.

²⁸ Broussard, 1983.

This report helps federal agencies, including the Corps of Engineers and Bureau of Reclamation, plan water-related projects. The *P&G* have not been updated since they were introduced. Recently, the National Research Council (NRC) of the National Academies, reviewed proposed changes to the *P&G*. The NRC's review begins by describing some of the significant changes in water-resources planning since the publication of the *P&G* in 1983.

"Since the early 1980s there have been many changes in the national water resources planning landscape. For example, ... [s]cientific understanding and appreciation of the natural functions of aquatic ecosystems have increased, and environmental protection and ecosystem restoration have become primary planning objectives for some projects ... Many national water planning challenges involve balancing decisions and resources among a greater number of water resource users and interests."²⁹

"For the Corps of Engineers, new missions have been added ... especially aquatic ecosystem restoration."³⁰

"[Other water-planning issues] such as design of ecosystem restoration projects, reallocating water from traditional users to rapidly growing cities or ecosystem restoration purposes, and controlling nonpoint source pollution reflect more recent changes and needs. Many of today's key national water management issues lie largely outside the missions of the agencies for which the *P&G* was written."³¹

"In light of these developments, many groups – including committees of the National Research Council – have recommended that the *P&G* be reviewed and modernized."³²

The NRC concluded, however, that the proposed changes did not adequately address the many deficiencies in the outdated *P&G*. The proposed revisions "lacked clarity and consistency,"³³ which precluded the NRC from offering specific suggested changes. The NRC did comment on a few areas for improvement.

"...[T]he 2007 Water Resources Development Act requires that the *P&G* revision ensure the use of best available economic principles and analytical techniques. However, the proposed revisions contain concepts, advice, and language that are carryovers from historical practices and documents and are not fully consistent with contemporary best practices in decision science and economics. This relates

²⁹ National Research Council of the National Academies. 2010. *A Review of the Proposed Revisions to the Federal Principles and Guidelines Water Resources Planning Document*. Committee on Improving Principles and Guidelines for Federal Water Resources Project Planning, Water Science and Technology Board, Division on Earth and Life Studies. p.1.

³⁰ National Research Council, 2010, p.5.

³¹ National Research Council, 2010, p.6.

³² National Research Council, 2010, p.1.

³³ National Research Council, 2010, p.2.

to both how analysis is conducted and the role that it plays informing decisions.”³⁴

For example, the NRC noted that limiting an economic analysis of an environmental policy to costs and benefits would not satisfy current professional standards. An adequate analysis will look beyond costs and benefits to describe all relevant impacts and tradeoffs that affect jobs, income, competitiveness, etc. The *P&G* also separated the analysis of economic effects of environmental changes, which are described qualitatively, from the analysis of economic-development changes, which are described quantitatively. The NRC characterized this approach as a “residue” from the 1983 *P&G* that is inconsistent with current best practices.³⁵

The NRC described the *P&G* as outdated and not representative of current best economic practices. This is especially true for analyses of the economic effects of public policies on environmental resources and ecosystem services. Given the significance of public-trust resources that support ecological habitats and ecosystem services that the Bay-Delta flows support, and given the deficiencies in the *P&G*, this report can offer the State Water Board little useful guidance on economic aspects balancing Bay-Delta flows.

b. EPA Guidelines on Economic Analyses

In December of 2010, the Environmental Protection Agency (EPA) released *Guidelines for Preparing Economic Analyses (Guidelines)*. The 2010 edition of the *Guidelines* represents the third update since the first edition was released in 1983. Unlike the *P&G*, which remain unchanged since first introduced in 1983, EPA anticipated periodically revising the *Guidelines* to account for “new literature published since the last revision” and the “growth and development of economic tools and practices.”³⁶ These revisions and updates help keep the *Guidelines* more consistent with current best economic practices than do the *P&G*.

The 2010 edition includes a number of updates that help make the document a useful planning tool in general, and specifically for the State’s balancing decision in the Delta. These updates include:³⁷

- More detailed recommendations on identifying and describing baseline conditions that would exist without a proposed policy revision or regulation.
- An expanded description of methods of defining and valuing ecological benefits of projects and policies that protect natural resources.

³⁴ National Research Council, 2010, p.12.

³⁵ National Research Council, 2010, p.11-12.

³⁶ National Center for Environmental Economics. 2010. *Guidelines for Preparing Economic Analyses*. U.S. Environmental Protection Agency. EPA 240-R-10-001. December. p.1-1.

³⁷ National Center for Environmental Economics, 2010, p.1-1.

- A revised and updated description of methods of discounting costs and benefits that occur at different times in the future.
- Directions on presenting the results of benefit-cost studies, including effects that cannot be quantified or expressed in dollar amounts.

c. EPA Guidelines on Valuing Ecological Services

EPA's Science Advisory Board (SAB) released a report titled, *Valuing the Protection of Ecological Systems and Services* in May of 2009. As the name implies, the report describes methods of identifying and describing the economic significance of natural resources and associated ecosystem services affected by policies or projects. The SAB noted the importance of valuing ecosystem services using up-to-date economic methods, and promoting collaboration among social scientists and biophysical scientists.³⁸

"This report describes and illustrates how EPA can use an 'expanded and integrated approach' to ecological valuation. The proposed approach is 'expanded' in seeking to assess and quantify a broader range of values than EPA has historically addressed and through consideration of a larger suite of valuation methods. The proposed approach is 'integrated' in encouraging greater collaboration among a wide range of disciplines, including ecologists, economists, and other social and behavioral scientists, at each step of the valuation process."³⁹

The report describes a number of recommendations that facilitate the "expanded and integrated approach." Many of the recommendations have relevance to assessing the economic effects of water allocations in the Delta. These include:⁴⁰

- Identifying and describing the critical relationships between biophysical aspects of affected natural resources and ecosystem services, and analyses of the economic effects of policies that impact resources and services.
- Choosing appropriate valuation methods.
- Identifying and describing sources of uncertainty in analyses of the economic significance of ecosystem services.

2. Guidelines by the California Department of Water Resources

The California Department of Water Resources (Department) recently produced guidelines for economic analyses of public policies that affect water resources. We describe two of these works in this subsection. The first, a four-part study published in 2005, describes the importance of considering the full range of economic costs and

³⁸ Environmental Protection Agency (EPA) Science Advisory Board. 2009. *Valuing the Protection of Ecological Systems and Services*. EPA-SAB-09-012. May. p.2.

³⁹ EPA, 2009, p.2.

⁴⁰ EPA, 2009, p.1-7.

benefits of public policies that affect aquatic resources. The Department refers to this as a “multi-objective approach” to floodplain management because it takes into account objectives besides flood mitigation (a single objective) to consider consequences on habitats, water quality, society, etc. The second is a guidebook on conducting economic analysis published by the Department in 2008.

a. Multi-Objective Approach to Floodplain Management

1. Ecosystem Valuation Methods

The first of the four reports in the multi-objective approach, *Ecosystem Valuation Methods (Methods)*, describes a number of up-to-date methods of valuing aquatic-based ecosystem services.⁴¹ The report summarizes ten analytical methods and their advantages and disadvantages. The floodplain focus and the up-to-date descriptions of analytical methods in this and the other three reports, have relevance to, and can help inform, the State’s assessment of the economic significance of ecological uses of the Bay-Delta flows.

2. Natural Floodplain Functions and Societal Values

The second report, *Natural Floodplain Functions and Societal Values (Functions)*, describes biophysical aspects of floodplain habitats and examples of economic values of the ecosystem services that floodplains provide.⁴² The report provides background information on floodplain habitats and the biological and human services they provide, and the importance of considering this information when making decisions that affect floodplains. The report describes economic values of ecosystem services including managing flows, maintaining natural channel processes, water supply, water quality, soil quality, and plant and wildlife habitat. The staff conducting the study applied some of the analytical methods described in the *Methods* report.

3. Middle Creek Restoration Project Case Study: Benefit and Cost Analysis

The third report, *Middle Creek Flood Ecosystem Restoration Project Case Study: Benefit and Cost Analysis (Case Study)*, describes the results of a case study of applying analytical methods and data described in the *Methods* and *Functions* reports to a floodplain restoration project.⁴³ The Middle Creek Ecosystem Restoration Project restored damaged floodplain structure, habitats and functions in the Clear Lake watershed.

The analysis compared the benefits and costs of a no-action alternative and four restoration alternatives. The five alternatives described land use scenarios including maintaining current agricultural and rural-residential uses and flood protection,

⁴¹ California Department of Water. 2005A. *Ecosystem Valuation Methods. Revised Draft*. Multi-Objective Approaches to Floodplain Management on a Watershed Basis. May.

⁴² California Department of Water Resources. 2005B. *Natural Floodplain Functions and Societal Values Revised Draft*. Multi-Objective Approaches to Floodplain Management on a Watershed Basis. May.

⁴³ California Department of Water Resources. 2005C. *Middle Creek Flood Ecosystem Restoration Project Case Study: Benefit and Cost Analysis*. Multi-Objective Approaches to Floodplain Management on a Watershed Basis. May.

restoring portions of the floodplain, and providing increased flood protection for existing uses and enhanced agricultural production.

4. Floodplain Management Benefit and Cost Framework

The fourth report, *Floodplain Management Benefit and Cost Analysis Framework (Framework)*, describes a framework for analyses of ecological, social and economic consequences of policy decisions that affect aquatic resources.⁴⁴ It emphasizes the importance of including information on ecological consequences in decision-making. The report cites sources that are somewhat dated, though more current than those referenced in the 1983 *P&G*. In spite of this drawback, the document describes analytical concepts relevant to the State's balancing decision on the Bay-Delta flows. These concepts include the following.

- Incorporate environmental and social consequences into management decisions.⁴⁵
- Measure the economic effects of policies on ecosystem services that have value to humans using non-market valuation techniques. The report references the *Methods* report for information on valuation techniques.⁴⁶
- Not all economic effects of management decisions will occur over the same geography and time. Take these differences into account.⁴⁷
- Select the appropriate discount rate for economic effects that will occur in the future.⁴⁸
- Account for analytical uncertainty and risk. The report describes four methods of doing so.⁴⁹
- Consider ecological, social and economic effects of policy decisions on a broad watershed scale. Do not limit economic analyses to the geographic boundaries of an individual project.⁵⁰

State water projects that have a federal nexus must conduct economic analyses using the 1983 *P&G*. The *Framework* notes some of the limitations of the *P&G* and describes analytical principles that will produce more comprehensive assessments of ecological, social and economic effects of management decisions.

⁴⁴ California Department of Water Resources. 2005D. *Floodplain Management Benefits and Cost Analysis Framework. Revised Draft*. Multi-Objective Approaches to Floodplain Management on a Watershed Basis. June.

⁴⁵ California Department of Water, 2005D, p.2.

⁴⁶ California Department of Water, 2005D, p.11-12.

⁴⁷ California Department of Water, 2005D, p.12.

⁴⁸ California Department of Water, 2005D, p.14.

⁴⁹ California Department of Water, 2005D, p.15-17.

⁵⁰ California Department of Water, 2005D, p.22-24.

“Local agencies seeking federal cost-sharing assistance for multi-objective projects with the [Army] Corps [of Engineers] will still be subject to the [P&G] However, if the local agencies are able to perform an economic analysis following the framework presented [in this report], they will not only have generated the information necessary to do the Corp’s analysis, but more importantly, they will also have developed the information necessary to make a more informed decision about proposed floodplain management projects.”⁵¹

b. Economic Analysis Guidebook

Economic analyses conducted by the Department must conform to the Federal *P&G* because of the significant amount of interactions and partnerships between the Department and Federal agencies. The Department recognized, however, that the outdated *P&G* could not adequately address the complex nature of water-management challenges that the Department faces. Department staff, therefore, developed the *Economic Analysis Guidebook (Guidebook)* in 2008, to address deficiencies in the *P&G*, help Department economists conduct economic analyses using up-to-date methods, and describe economic concepts and analyses to non-economists Department staff.⁵²

“It is ... DWR [Department] policy to adopt, maintain, and periodically update its own *Economics Analysis Guidebook*, which is consistent with the *P&G* but can also incorporate innovative methods and tools when appropriate. This policy is necessary because (a) the *P&G* has not been updated for more than 20 years, (b) federal and State economic analyses sometimes have different regional analysis perspectives, and (c) water management projects and programs have become more complex.”⁵³

“Water resource projects are increasingly becoming more complex, requiring more difficult economic analyses. Projects now tend to have multiple purposes and affect many diverse stakeholders. ... [T]raditional methods of performing economic analysis often do not provide reliable means for quantifying important categories of benefits that these projects may provide (such as, ecosystem restoration).”⁵⁴

The *Guidebook* describes economics as “critical” to describing the environmental consequences, social effects, and costs and benefits of water-management alternatives. Environmental issues include the tradeoffs between “natural” and “human” demands on water resources and should take into account the economic effects of water uses that benefit the natural environment, even if this use adversely impacts agricultural and urban water users. Economics can also help describe effects on social equity or

⁵¹ California Department of Water, 2005D, p.35-36.

⁵² California Department of Water Resources (CDWR). 2008. *Economic Analysis Guidebook*. The State of California. January.

⁵³ CDWR (2008), p.vii.

⁵⁴ CDWR (2008), p.1.

environmental justice. Economic costs and benefits include monetary and non-monetary effects.⁵⁵

Methods of economic analysis described in the *Guidebook* include cost-effectiveness, benefit-cost, and socioeconomic-impact analysis. As the name implies, cost-effectiveness analyses identify the least-cost option of achieving a given goal. A benefit-cost analysis compares changes in costs to society with changes in benefit and calculates the net change, or net benefits of a proposal or proposals. A socioeconomic-impact analysis describes how a policy change affects factors such as population, employment, income, etc.

⁵⁵ CDWR (2008), p.viii.

SECTION 5: THE PRINCIPLES OF BENEFIT-COST ANALYSIS

In Section 1 of this report, we summarize our understanding of the State’s objective to find a balance between the public-trust use of the Bay-Delta flows and, namely, the other beneficial uses of the Bay-Delta flows. In Section 2, we identify benefit-cost analysis (BCA) as the most widely used tool for evaluating alternative approaches to such a balance. In this section, Section 5, we focus on the principles by which the State should calculate and report the benefits and costs of these alternative approaches.⁵⁶

A. Identify the Alternatives

At its most basic level, BCA is simply a tool for comparing alternatives. Whether one is already using one of the alternatives – in which case that alternative serves as the gauge or standard – or not, applying the principles remains the same. One begins by identifying all the alternatives and describing all the elements of each alternative.⁵⁷

Today, the State does not seem to suffer too few alternatives. Rather, its challenge lies in identifying and clarifying the elements of each alternative. That said, prudence dictates ensuring the list of alternatives avoids errors of omission, because the alternatives selected for the BCA could affect the outcome of the analysis. By the same token, elements omitted from the description of an alternative could affect its ranking among the alternatives State evaluates.

B. Identify the Relevant Scope

At the beginning of any BCA, the State should identify the relevant scope of the analysis. That is, the analyst should specify which benefits and costs matter, to whom, over what geography and over what period of time.

“Before you conduct an economic analysis, it is necessary to define its scope (i.e., identify who and what should be included in the analysis and who and what should be excluded).”⁵⁸

Once the State has identified the relevant scope, it then should maintain each of the scope’s dimensions throughout the BCA.

⁵⁶ For portions of this Section 5, we relied on material Ed Whitelaw and others at ECONorthwest prepared in a matter involving Methanex Corporation, Claimant/Investor, and the United States of America, Respondent/Party; *In the Arbitration Under Chapter 11 of the North American Free Trade Agreement and the UNCITRAL Arbitration Rules Between Methanex Corporation and United States of America*. The arbitration occurred in 2004.

⁵⁷ Field, B.C. 1997. *Environmental Economics*, 2nd Edition. San Francisco: McGraw-Hill Company, Inc. p.116-117; U.S. Environmental Protection Agency (EPA). 2010. *Guidelines for Preparing Economic Analyses*. Report No. EPA-240-R-10-001. December. p.A-8.

⁵⁸ U.S. Environmental Protection Agency (EPA). 1993. *Guide for Cost-Effectiveness and Cost-Benefit Analysis of State and Local Ground Water Protection Programs*. U.S. Environmental Protection Agency, Office of Water, and Office of Ground Water and Drinking Water. April. p.11.

C. Assemble Information and Account for Risk and Uncertainty

Given the relevant scope, the analyst should assemble information on the full range of costs and benefits. Even on topics for which extensive research exists, the published findings would still reflect different levels of understanding. Researchers have grouped these different levels into risk, uncertainty, and ignorance. Risk refers to conditions under which the range of possible outcomes and their probabilities are known. Uncertainty refers to conditions under which the range of possible outcomes is known, but their probabilities are not.⁵⁹ Ignorance applies when we do not know the possible outcomes.

The more that analysts differ on estimates or ranges of important categories of costs and benefits, the more the State should account for the uncertainty clearly and consistently.⁶⁰

“Estimates of costs, benefits and other economic impacts should be accompanied by indications of the most important sources of uncertainty embodied in the estimates, and, if possible, a quantitative assessment of their importance... Ideally, an economic analysis would present results in the form of probability distributions that reflect the cumulative impact of all underlying sources of uncertainty. When this is impossible, due to time or resource constraints, results should be qualified with descriptions of major sources of uncertainty.”⁶¹

In interpreting the benefits and costs associated with those elements of the various alternatives that affect environmental assets and ecosystem services, the State should not assume Californians would perceive numerically equal upside and downside risks neutrally. That is, when it comes to environmental matters, individuals tend to exhibit risk aversion.

“...it seems reasonable to advocate that environmental policymakers approach their decisions in a risk-averse manner.”⁶²

“If people are risk averse, then we should expect them to give extra weight to measures that avoid environmental disasters ... It seems sensible to many people to take measures today to avoid the possibility of catastrophe in the future, even if the worst-case scenario has a relatively low probability.”⁶³

⁵⁹ Knight, F.H. 1921. *Risk, Uncertainty and Profit*. New York, NY: Sentry Press.; Integrated Risk Information System. 2011. *IRIS Glossary*. U.S. Environmental Protection Agency. May 16. Retrieved July 27, 2011, from http://www.epa.gov/risk_assessment/glossary.htm#u; Camerer, C. and M. Weber. 1992. “Recent Developments in Modeling Preferences: Uncertainty and Ambiguity.” *Journal of Risk and Uncertainty* 5: 325-370.

⁶⁰ U.S. Environmental Protection Agency (EPA). 2000. *Guidelines for Preparing Economic Analyses*. September. p.27.

⁶¹ EPA, 2010, p.11-12.

⁶² Lesser, J.A., D.E. Dodds, and R.O. Zerbe, Jr.. 1997. *Environmental Economics and Policy*. p.406.

⁶³ Goodstein, 1999. *E.S. Economics and the Environment*. p.150.

“There are many cases in environmental pollution control where risk-aversion is undoubtedly the best policy ...”⁶⁴

For the State to consider such risk aversion makes economic sense. It should request that in the displays of the usual ranges and probability distributions of the elements of the alternatives, the analysts present not only the expected values or, in the jargon, the central tendencies, but also the downside and upside risks.

“[An evaluation of benefits and costs should] reflect the full probability distribution of potential consequences. Where possible, present probability distributions of benefits and costs and include the upper and lower bound estimates as complements to central tendency and other estimates.”⁶⁵

Often, sufficient data simply are not available for fully quantifying certain categories of the costs and benefits of the alternatives. Accepted principles of benefit-cost analysis also prescribe that analysts take into account non-monetized costs and benefits.⁶⁶ In such cases, the analyst should identify the likely sign and size of the effect. For natural assets for which the professional literature offers no direct calculations of value, economics offers the benefit-transfer technique.⁶⁷ With benefit-transfer, the analyst, with appropriate adjustments, imputes to the subject asset values calculable for other assets.

If the information on which the calculation of costs and benefits depends is faulty, then, of course, the calculation itself is faulty. In the best cases, the academic and professional communities reach consensus on the direction and magnitude of a policy’s impacts. In the worst cases, they do not, because the information available and the analyst’s interpretations of it are faulty or still evolving. Under these conditions, high uncertainty persists. In such cases, the value of BCA is limited, and the analyst has an obligation to report this limitation prominently and the uncertainty causing it.

“When important benefits and costs cannot be expressed in monetary units, BCA is less useful, and it can even be misleading, because the calculation of net benefits in such cases does not provide a full evaluation of all relevant benefits and costs. You should exercise professional judgment in identifying the importance of non-quantified factors and assess as best you can how they might change the ranking of the alternatives based on your estimated net benefits. If the non-quantified benefits and costs are likely to be important, you should recommend which of the non-quantified factors are of sufficient importance to justify consideration in the regulatory decision. This discussion should also include a clear explanation that support[s] designating these non-quantified factors as important. In this case, you should also consider conducting a threshold analysis to help decision makers and

⁶⁴ Field, B.C. 1994. *Environmental Economics*. p.129.

⁶⁵ Office of Management and Budget (OMB). 2003. *Regulatory Analysis*. Circular No. A-4. October. p.18.

⁶⁶ See, Moore, J.L. 1995. *Cost-Benefit Analysis: Issues in Its Use in Regulation*. CRS Report for Congress 95-760 ENR. June 28. Retrieved July 22, 2011, from <http://www.cnie.org/nle/crsreports/risk/rsk-4.cfm>.; EPA, 2010, p.7-57.

⁶⁷ EPA, 2010. p.7-51.

other users of the analysis to understand the potential significance of these factors to the overall analysis.”⁶⁸

D. Best Practices for BCA

In preparing this Section 5 on the principles of BCA, we found we had accumulated various techniques or practices that, while perhaps not qualifying as general principles, have proved useful over the years. We view this list as illustrative, not exhaustive.

1. Compare conditions with the alternative to conditions without the alternative: A good BCA avoids comparing conditions before the alternative to conditions after the alternative.

“Calculation of net present value should be based on incremental benefits and costs. Sunk costs and realized benefits should be ignored. Past experience is relevant only in helping to estimate what the value of future benefits and costs might be.”⁶⁹

By comparing the conditions with each of the State’s alternatives to the conditions without that alternative, the analyst can isolate the effects of the alternative alone and thereby increase the accuracy of the comparison among all the State Water Board’s alternatives.

2. Report and Document Methods, Information, and Assumptions: A good BCA should rely on transparent assumptions and allow for straightforward replication by a third-party analyst.⁷⁰
3. Apply Methods and Assumptions Consistently: the analyst should remain consistent throughout the analysis.⁷¹ For example, the analyst should not account for the possibility of uncertainty in underlying assumptions in one aspect of the BCA and ignore it in another.
4. Economic Impacts and Economic Equity Are Complements to BCA: In Section 2, regarding Figure 1, we describe the three categories of economic effects each of the State’s alternatives would cause, economic values (for which the primary tool of analysis is BCA), economic impacts and economic equity. The State should keep in mind that the second and third categories can serve as complements to BCA, but not as substitutes for it. Consider, for example, EPA’s guidance.

⁶⁸ Office of Management and Budget (OMB). 2003. *Informing Regulatory Decisions: 2003 Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities*. Office of Information and Regulatory Affairs. February. p127

⁶⁹ Office of Management and Budget (OMB). 1992. *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*. Circular A-94. October. p.6.

⁷⁰ OMB, *Informing Regulatory Decisions*, 2003, p.134.

⁷¹ Rossi, P. and H. Freeman. 1982. *Economics*, 13th Edition. New York: McGraw-Hill Book Company. p.275.

“Counting the number of jobs lost (or gained) as a result of a regulation generally has no meaning in the context of benefit-cost analysis.”⁷²

Each of the three categories of economic effects plays a distinct role in a comprehensive economic description and evaluation of the alternatives for improving the Bay-Delta flows. These roles should remain distinct.

5. Address externalities explicitly: In a market transaction, consider the buyer as the first party and the seller as the second party. A good BCA accounts the effects of the transaction on third parties, i.e., those who did not agree to experience the costs or benefits of the transaction.

“Identify the expected undesirable side-effects and ancillary benefits of the proposed regulatory action and the alternatives. These should be added to the direct benefits and costs as appropriate⁷³.”

⁷² EPA, 2010, p.8-8. See also, OMB, 1994, p.6-7.

⁷³ OMB, *Regulatory Analysis*, 2003, p.3.

SECTION 6: OBSERVATIONS ON THE BURGEONING LITERATURE ON BAY-DELTA FLOWS

In preparing this report, we reviewed roughly 100 studies that address the economic issues associated with managing Bay-Delta flows. There are plenty more studies out there and the number is increasing. In this Section 6, we have chosen to draw the State's attention to some of the salient points raised in or illustrated by 12 of the studies.

We do not claim that the studies we have not yet reviewed are any worse or better than the ones we managed to acquire and review. Furthermore, we do not claim that the 12 studies on which we have based our observations represent the entire 100 studies. We do claim, however, that our observations help illustrate, though not exhaust, the challenges the State will face as it seeks a balance between the public-trust uses and the *other beneficial uses* and must choose among the proffered alternative approaches to managing the Bay-Delta flows.

A. BCA without Adequate Data Would Suffer Fatal Flaws

A widespread lack of basic data on California's water resources constrains the extent to which scientists, stakeholders and decision makers can develop fact-based water plans. Specific to the Board's benefit-cost analysis, describing the economic consequences of changing Bay-Delta flows would be much more challenging without baseline data on the Bay-Delta flows. The less adequate the data, the greater the uncertainty of benefit-cost analyses of the management alternatives.

The Delta Stewardship Council staff (Council Staff) propose achieving the Delta Plan's coequal goals of improving the quantity and quality of the water resources using the best available science.

"Coequal goals means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem."⁷⁴

"The Council is required by law to use the best available science ... as the basis for the Delta Plan. The Delta Plan must include 'a science-based, transparent, and formal adaptive management strategy for ongoing ecosystem restoration and water management decisions.' [citation omitted]"⁷⁵

The Council Staff acknowledge, however, that the body of scientific information on the Bay Delta lacks adequate data on water resources. Council Staff, and others, also acknowledge that this lack hampers water-planning efforts for the Bay Delta Plan.

⁷⁴ Delta Stewardship Council Staff (Council Staff). 2011. *Fourth Staff Draft Delta Plan*. Delta Stewardship Council. June 13. p.3.

⁷⁵ Council Staff, 2011, p.19.

“The Delta plan requires the development and submission of water use data and other data that are currently unavailable or inaccessible.”⁷⁶

The Public Policy Institute of California (PPIC) recently concluded the same.

“Beyond an almost entirely non-technical California Water Plan Update developed by the Department of Water Resources every five years or so, there is little to no statewide organization, prioritization, and synthesis of technical and scientific activity applied to water problems.”⁷⁷

“The state’s fragmented water rights system has contributed to serious gaps in water measurement and accounting. Most groundwater users have not been required to report water use to the state. Although riparian and pre-1914 appropriative rights holders are required to report their diversions, there was no legal sanction for failure to file an annual statement of diversion and use until the legislature amended the Water Code in 2009 ... Many did not report, and those who did tended to substantially overstate their diversions and use. These gaps have led to difficulties in tracking water use trends, and they impede more effective management of water resources for economic and environmental purposes [citation omitted].”

“As water becomes increasingly scarce, it will become ever more important to measure and keep track of physical stocks and flows and their uses.”⁷⁸

“California is almost unique among western states in not collecting information on such diversions. California also lacks water quality information on many of its aquifers and waterways.”

“To aid analysis and enforcement, greater and more systematic state efforts are essential to assemble data from local, state, and federal agencies within a coherent framework.”⁷⁹

“[W]ithout better reporting, California’s water accounting and water rights enforcement will remain approximate at best – an increasingly difficult handicap for policy discussions and water management in a water-scarce state.”⁸⁰

Other stakeholders in the Bay Delta agree. For example, the California Roundtable on Water and Food Supply recently reported,

“A clear picture of the factors affecting water distribution and use in California is important to decision-making at the policy and farm levels, but is currently lacking.

⁷⁶ Council Staff, 2011, p.19.

⁷⁷ Hanak, E., et al. (PPIC). 2011. *Managing California’s Water from Conflict to Reconciliation*. Public Policy Institute of California. p.128.

⁷⁸ PPIC, 2011, p.330.

⁷⁹ PPIC, 2011, p.353-54.

⁸⁰ PPIC, 2011, p.87.

There is a need for better data collection and demonstration of water supply and distribution at basin scale, and better baseline data on water use to guide decision-making.”⁸¹

Developing science-based water-management plans in the Bay Delta without the missing data on water resources would be challenging. The recent review of the scientific support for the Draft Bay Delta Conservation Plan (BDCP) by the National Research Council of the National Academies (Research Council) illustrates this point. The Research Council criticized the Draft BDCP for lacking basic information on affected water volumes. The Research Council described this as a “major shortcoming” of the Draft BDCP.

“The lack of clarity concerning the volumes of water to be diverted is a major shortcoming of the BDCP. In addition, the BDCP provides little or no information about the reliability of supply for such a diversion or the different reliabilities associated with diversions of different volumes. There is no indication of how the amount of water to be diverted and its associated reliability are to be determined. It is nearly impossible to evaluate the BDCP without a clear specification of the volume(s) of water to be diverted, whose negative impacts the BDCP is intended to mitigate.”⁸²

The missing information impedes well-informed planning and management decisions, and scientists and policy makers would have difficulty developing a science-based Delta Plan without the missing data. This lack of fundamental data on water resources would also likely increase the uncertainty of analytical results from benefit-cost analyses of water-management alternatives.

B. Assessing the Analytical Veracity of Past Studies of Conveyance Structures

The literature on economic analyses of management alternatives for the Bay Delta includes a number of assessments of conveyance structures, such as a peripheral canal or tunnel. Among the most widely cited works in this literature are those by the PPIC. This literature, however, does not include a full benefit-cost analysis of conveyance structures or their alternatives. Most studies focus on certain costs and do not include many of the relevant benefits. In spite of these conditions, these studies illustrate the challenge the Board would face should they conduct a benefit-cost analysis of conveyance structures. We give two examples.

⁸¹ The California Roundtable on Water and Food Supply. 2011. *Agricultural Water Stewardship: Recommendations to Optimize Outcomes for Specialty Crop Growers and the Public in California*. June. p.3.

⁸² National Research Council of the National Academies (Research Council). 2011. *A Review of the Use of Science and Adaptive Management in California’s Draft Bay Delta Conservation Plan*. The National. In the PPIC report, *Comparing Futures*, the authors concluded that a peripheral canal would be the least-cost option for maintaining water exports out of the Delta, and that ending exports would have the highest probability of saving threatened or endangered fish in the Bay Delta.⁸² Academies Press: Washington, D.C. May 5, page 4.

In the PPIC report, *Comparing Futures*, the authors concluded that a peripheral canal would be the least-cost option for maintaining water exports from the Bay Delta, and that ending exports would have the highest probability of saving threatened and endangered fish.⁸³ They estimated that the peripheral canal had an average annual cost of between \$0.25 billion and \$0.85 billion. The three other alternatives – 1) continuing through-Delta exports; 2) dual conveyance of peripheral canal and through-Delta exports; or, 3) no exports – all had higher economic costs. The no-export option had the highest likelihood of achieving viable populations of delta smelt and fall-run Chinook.⁸⁴

Dr. Jeffrey Michael of the University of the Pacific, critiqued some of the major assumptions, data and conclusions described in *Comparing Futures*.⁸⁵

- Regarding the use of discount rates, PPIC did not “... utilize the conventional, scientifically accepted present discounted value approach ...”⁸⁶
- PPIC ignored the market and non-market values of affected fishery species. (In a later report, the PPIC described the importance of including non-market values – or as they describe, the values of ecosystem benefits – in benefit-cost analyses.⁸⁷)
- PPIC relied on out-dated and second-best estimates of population growth, which overestimated population growth and water demand over the time of the analysis (through 2050).
- PPIC also overestimated the costs of water recycling and ignored recent trends in water conservation.
- PPIC did not conduct their analysis in the context of water scarcity. They assumed no advances in water-conservation or desalination technology over the next 40 years. That is, the PPIC assumed a static analysis of an economy with fixed technology rather than a dynamic analysis of an economy that responds to price signals.
- The PPIC results are highly sensitive to analytical assumptions, and thus are not robust.

In another critique, the Research Council had harsh criticism for the quality of the biophysical information in the Draft BDCP in support of a peripheral canal. The Research Council concluded that the analysis underlying the Draft BDCP relied on incomplete or unsupported data, unrealistic assumptions, ignored relevant trends, and, like the PPIC’s analysis, the underlying analysis ignored the concept of water scarcity.

⁸³ Lund, Jay, et al. 2008 (PPIC 2008). *Comparing Futures for the Sacramento-San Joaquin Delta*. Public Policy Institute of California. Chapter 6 and p.ix.

⁸⁴ PPIC, 2008, Table S.1, p.ix.

⁸⁵ Michael, Jeffrey. 2011. *First Administrative Draft Economic Sustainability Plan for the Sacramento-San Joaquin Delta*. Submitted to the Delta Protection Commission. June 16; Michael, Jeffrey. 2008. *The Economics of Ending Delta Water Exports Versus the Peripheral Canal: Checking the Data of the PPIC*. University of the Pacific. December 15.

⁸⁶ Michael, 2011, p.65.

⁸⁷ Hanak, Ellen, et al. (PPIC). 2011. *Managing California’s Water From Conflict to Reconciliation*. Public Policy Institute of California. Pages 99 and 207.

“The BDCP cannot be properly evaluated if it does not clearly specify the volume of water deliveries whose negative impacts are to be mitigated. The draft BDCP suggests that the water requirements are based on the amount of acreage and crops that contractors have grown, or on the maximum deliveries specified by the SWP [State Water Project] contracts ... There is no mention that quantities diverted may be constrained by various provisions of California water law, by possible changes in the extent of irrigated agriculture south of the Delta, and by potential changes in cropping patterns fueled by globalizing forces of supply and demand for food. The draft BDCP also fails to identify and integrate demand management actions with other proposed mitigation actions. A conservation plan should address issues of water use efficiency and should account for future trends in other variables that drive the demand for agricultural and urban water supplied. ... The BDCP’s lack of attention to these issues constitutes a significant omission, given the intensifying scarcity of water in California.”⁸⁸

“The lack of an appropriate structure creates the impression that the entire effort is little more than a post-hoc rationalization of a previously selected group of facilities, including an isolated conveyance facility [peripheral canal] ...”⁸⁹

A peripheral canal or tunnel has proponents and detractors. Some of the critiques to date, however, raise serious concerns regarding the veracity of analyses that support a canal or tunnel as the preferred management alternative. Any new analyses of a conveyance structure’s benefit and costs would likely be considered incomplete if they do not address the analytical deficiencies raised by these analyses.

C. Addressing Environmental Justice Consequences of Water-Management Alternatives

Past planning efforts in the Bay Delta have not effectively dealt with environmental justice (EJ) aspects of water use and distribution in California’s Central Valley. The Delta Plan is an opportunity to change this. Informational resources exist that can help analysts address EJ issues in benefit-cost analyses in meaningful ways so that they go beyond the typically superficial treatment of EJ issues in past analyses.

The Bay Delta Conservation Plan describes EJ as,

“The fair treatment and meaningful involvement of all people regardless of race, color, national origin, educational level, or income with respect to the development, implementation, and enforcement of environmental laws. EJ seeks to ensure that minority and low-income communities have access to public information relating to human health and environmental planning, regulations, and enforcement. EJ ensures that no population, especially the elderly and children, are forced to shoulder a disproportionate burden of the negative human health and environmental impacts of pollution or other environmental hazard.”⁹⁰

⁸⁸ Research Council, 2011, p.31-32.

⁸⁹ Research Council, 2011, p.43.

⁹⁰ California Natural Resources Agency. 2010. *Highlights of the Bay Delta Conservation Plan*. December. p.84.

As described by the California Natural Resources Agency, EJ communities in the Central Valley share a number of characteristics and conditions including:⁹¹

- Mostly minority and low-income households
- Excluded from environmental policy setting
- Subject to disproportionate impacts from environmental hazards
- Residents experience disparate implementation of environmental regulations, requirements, practices and attributes.

A study published in July of 2008, by OxFam America and the Rockefeller Foundation, reported that the 20th U.S. Congressional District, which encompasses Westlands and the southwestern side of the San Joaquin Valley, was the poorest congressional district in U.S.⁹² EJ communities in the San Joaquin Valley face challenges including unsafe drinking water, poor air quality and high incidence of childhood asthma.⁹³ The *Fourth Staff Draft Delta Plan* reported that nitrates and other pollutants contaminate drinking water supplies from groundwater for many low-income communities in the San Joaquin Valley.

“The high cost of accessing water from alternative sources, coupled with the low earnings of these households, often makes safe drinking water in these communities unaffordable [citation omitted].”⁹⁴

A recent report by the Pacific Institute concluded the same.

“Despite the acute health effects of nitrate contamination, some communities in the state have been waiting for more than a decade for measures to restore the safety of their drinking water. ... These communities ... tend to be low-income and have a high percentage of Latino households. Although costs to community water systems and the households they serve are significant and directly tied to nitrate contamination of groundwater, public policy and regulatory programs have to-date failed to incorporate those costs in their policy and regulatory programs.”⁹⁵

As described in the Pacific Institute report, the high costs of addressing nitrate contamination and limited available funds means a significant backlog of unfunded

⁹¹ California Natural Resources Agency. 2003. *Environmental Justice Policy*. www.resources.ca.gov/environmental_justice_policy_20031030.pdf.

⁹² Burd-Sharps, S., K. Lewis, and E. Borgess Martins. 2008. *The Measure of America: American Human Development Report 2008-2009*. OxFam America and the Rockefeller Foundation.

⁹³ Pacific Institute. 2011. *The Human Costs of Nitrate-Contaminated Drinking Water in the San Joaquin Valley*; Carger, Lloyd. 2010. *Reaping Riches in a Wretched Region: Subsidized Industrial Farming and Its Link to Perpetual Poverty*, 3 Golden Gate U. Env'tl L.J., <http://digitalcommons.law.ggu.edu/cgi/viewcontent.cgi?article=1033&context=ggueli>.

⁹⁴ Delta Stewardship Council Staff. 2011. *Fourth Staff Draft Delta Plan*. June 13. p.111.

⁹⁵ Moore, E. and E. Matalon. 2011. *The Human Costs of Nitrate-contaminated Drinking Water in the San Joaquin Valley*. Pacific Institute. March. p.7.

projects. The California Department of Public Health currently has a waiting list of 100 community water projects, with a total cost of \$150 million.⁹⁶

A number of benefit-cost experts describe methods of combining EJ objectives including equity considerations with the economic-efficiency objectives of a benefit-cost analysis.⁹⁷ Such an approach in the Bay Delta could help avoid negative EJ impacts of water-management decisions and promote more equitable distribution of environmental benefits to communities that currently suffer from inequitable distribution of contaminated water resources.

D. Describing the Relevant Economies as Dynamic, Not Static

Economies are dynamic. They grow, develop, change and react over time in response to local, regional, national and international forces and trends. Consumers, workers and business owners make decisions based on how these forces and trends affect them. For example, as gas prices increase, consumers change their driving habits, purchases more fuel-efficient cars, or take mass transit. As the price of apples increases, some consumers will switch to other, less expensive fruits.

The dynamic nature of economies is important to the State Water Board's benefit-cost analysis of their balancing decision for two reasons. The first is because the affected economies will change for reasons unrelated to the new management alternatives. Attributing economic consequences from outside forces to the Bay Delta management alternatives would yield inaccurate results and mask the true consequences of the alternatives.

Recent reports on the Bay Delta describe some of the relevant outside forces likely to affect the region's economy. The PPIC report, *Managing California's Water*, lists what the authors describe as "drivers of change," which will affect future water supply and demand. These drivers include environmental, economic and demographic changes.⁹⁸

- Rising sea levels will cause seawater intrusions into coastal aquifers.
- Climate-change induced warming will reduce snowpacks, increase winter runoff, decrease spring and summer runoff, and increase stream temperatures.⁹⁹
- New urban developments will likely use less water per capita than existing homes.
- Urbanization will increase discharges of urban runoff.¹⁰⁰

⁹⁶ Moore and Matalon 2011, p.8.

⁹⁷ See for example, Banzhaf, H. S. 2010. *Regulatory Impact Analyses of Environmental Justice Effects*. National Center for Environmental Economics. Working Paper # 10-08. U.S. Environmental Protection Agency. August; Haveman, Robert. 1965. *Water Resources Investment and the Public Interest*. Nashville: Vanderbilt University Press; and Johansson-Stenman, Olof. 2005. "Distributional Weights in Cost-Benefit Analysis—Should we Forget About Them?," *Land Economics*, Vol. 81.

⁹⁸ PPIC, 2011, p.135-136.

⁹⁹ PPIC, 2011, p.135-136.

- Urbanization of agricultural lands will reduce agricultural water use.¹⁰¹
- Population growth has been, and is expected to continue as, the most important demographic driver of water demand.¹⁰²
- Continued reduction in agriculture’s share of the state’s economy.¹⁰³
- California’s agricultural producers will continue shifting to more permanent and higher-valued tree and vine crops in response to global market forces.¹⁰⁴

Anticipated changes in local and state regulations will also affect future water supply and demand. For example, a recent report by the California Department of Water Resources describes an upcoming change that will affect urban water use. Beginning in 2016, water suppliers must comply with water conservation requirements established by the Water Conservation Bill of 2009 to be eligible for State water grants or loans.¹⁰⁵

One of the challenges of conducting a benefit-cost analysis of Bay Delta management alternatives will be controlling for the economic consequences attributed to the types of biophysical, economic and other forces and trends described above that are unrelated to the management alternatives.

The second reason why the dynamic nature of economies is important to a benefit-cost analysis of Bay-Delta alternatives is that the affected economies will likely respond to the management alternatives. That is, the analysts should not assume a static economy, frozen in time and technology. The management alternatives will affect different sectors of the state’s economy differently. Some sectors may experience higher costs, others may have increased employment or revenues. Consumers, workers and business owners will respond to these first-round changes. For example, in response to an alternative that reduces irrigation flows, some growers may idle their land. Others, however, will likely continue producing by switching to less water-intensive crops, increasing irrigation efficiency, engaging in water trades, or all three.

Authors of a recent retrospective analysis of the economic impacts of reduced flows to the San Joaquin Valley describe such reactive behavior.¹⁰⁶ The analysis focused on the changes in agricultural production in response to reduced water supplies from the Bay Delta caused by drought and restrictions on pumping due to environmental concerns.

¹⁰⁰ PPIC, 2011, p.164.

¹⁰¹ PPIC, 2011, p.137.

¹⁰² PPIC, 2011, p.164.

¹⁰³ PPIC, 2011, p.137.

¹⁰⁴ PPIC, 2011, p.166.

¹⁰⁵ Pezzetti, Tonianne. 2011. *Guidebook to Assist Urban Water Suppliers to Prepare A 2010 Urban Water Management Plan*. State of California, Natural Resources Agency, Department of Water Resources. March. p.xiii.

¹⁰⁶ Michael, J., et al. 2010. *A Retrospective Estimate of the Economic Impacts of Reduced Water Supplies to the San Joaquin Valley in 2009*. September 28. p.1-3.

The authors report that growers reacted to the water reductions by engaging in water trades and changing their growing practices.

“[A] significant increase in the amount of water transfers was critically important to reducing the negative impacts of water scarcity. ... Building on these successful transfers will be important in minimizing the losses from future water shortages.”¹⁰⁷

“Across the entire San Joaquin Valley, virtually the entire decline in net harvested acreage was in lower-value field and seed crops as farmers rationally directed more of their scarce water resources to protecting high value fruit and nut orchards.”¹⁰⁸

Water scarcity in California is not a new phenomenon. Water users react to this scarcity by adjusting their use and adopting new technologies and practices. This trend is expected to continue. A benefit-cost analysis that assumes a static economy, frozen in time and fixed in technology would not reflect the reality of how local and regional economies in the Bay Delta function.

E. Describing the Complex Competition for Bay Delta Water Resources

Much of the debate over Bay-Delta water resources pits in-stream or habitat use against agricultural or municipal use. Some describe this as the “jobs vs. fish” argument. Implicit in this characterization is the assumption that consumptive use of water – water use that supports “jobs” – is more important or has greater economic value than in-stream use – water for “fish.” As the PPIC describe in their recent report, *Myths of California Water – Implications and Reality*, the competition for Bay-Delta water resources is much more complex.¹⁰⁹

“Healthy ecosystems provide significant value to California’s economy, partially and sometimes fully offsetting their costs to traditional economic sectors. Direct benefits include improvements in recreation, commercial fishing, and drinking and agricultural water quality, and indirect benefits include improvement in the quality of life in California.”¹¹⁰

In most times and places there are insufficient resources to satisfy all the demands for all of the goods and services provided by Bay-Delta water resources. Hence, there is competition for the water and, when it is used to produce one set of goods and services, the demands for others go unmet. The characteristics of this competition provide useful insights into the economic consequences of current and future decision-making for Bay-Delta water resources.

¹⁰⁷ Michael et al., 2010, p.1-2.

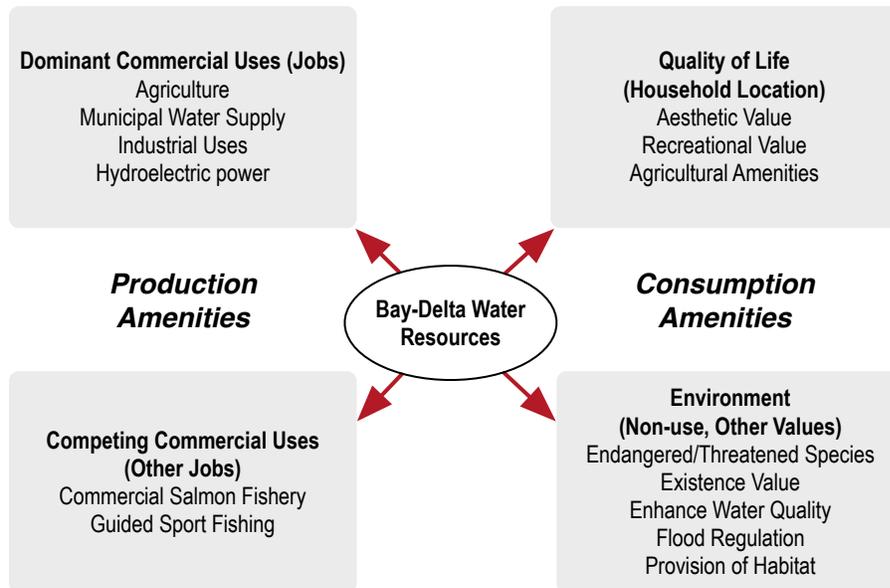
¹⁰⁸ Michael et al., 2010, p.3.

¹⁰⁹ Hanak, Ellen et al. 2010 (PPIC 2010). “Myths of California Water – Implications and Reality.” *West-Northwest*, Vol. 16, No. 1, Winter. p.20-22.

¹¹⁰ PPIC, 2010, p.21.

One could categorize the competition any number of ways, but we employ a taxonomy that distinguishes among four types of demand, as illustrated in Figure 2. Two of these are called demands for production amenities, i.e., those goods and services that are, or could be, inputs to processes that produce other goods and services. The other two represent demands for consumption amenities, i.e., those goods and services that directly enhance the well being of consumers.

Figure 2. The Competing Demands for Bay-Delta Water Resources



Source: ECONorthwest

Competition for Production Amenities. Demand for Bay-Delta agricultural, municipal, industrial, and hydroelectric production, represented on the left side of Figure 2, comes from private and public enterprises, as well as households, that rely on water resources to conduct commercial activities. We separate the demands for production amenities into two groups – dominant and competing demands – to show that, sometimes, negative effects on other commercial sectors, which are represented in the bottom left of Figure 2, can offset the positive consequences arising from others. Using water for commercial production of crops may, for example, prevent it from being used to support guided sport fishing.

Competition Directly from Consumers. On the left side of Figure 2, water resources are economically important because they are inputs in the production of other things, notably crops and livestock, that consumers want to have. On the right side, the connection to consumers is more direct. Here, consumers consider Bay-Delta water resources economically important for how they directly contribute to their well-being. In economic parlance, these are known as consumption amenities.

Some ecosystem goods and services, such as recreational opportunities and scenic vistas, contribute directly to the well-being of people who have access to them. Their

contribution to consumers' well-being makes them economically important in their own right, but they have additional economic importance when they also influence the location decisions of households and firms. We show the demands for consumption amenities that influence location decisions of households sensitive to spatial variation in the quality of life, in the upper right portion of Figure 2. In general, the nearer people live to amenities, the lower their cost of using them. Thus, consumers can increase their economic well-being by living in a place that offers recreational opportunities, pleasant scenery, wildlife viewing, and other amenities they consider important.

Quality-of-life values can be powerful. All else equal, if the Bay-Delta's consumption amenities improve, some people already here would tend to stay and additional people would tend to move in. Degradation would have the reverse impacts. One consequence is that the amenities lead to higher demand for housing and consumer-oriented commercial products. The higher demand raises land value for these uses higher than otherwise would exist.¹¹¹ Differences in quality of life also explain about half the interstate variation in job growth during periods of economic growth.¹¹² This relationship also has been found at sub-national perspectives.¹¹³ Some in the Bay-Delta undoubtedly could enjoy higher earnings living elsewhere, but choose not to do so because their overall economic welfare – the sum of their earnings plus quality of life – is higher here. Some aspects of this quality of life – the strength of communities, schools, and churches, for example – are not directly related to water resources, but others are: scenic views, ways of life, and opportunities for fishing and boating, to mention a few.

The lower right portion of Figure 2 represents demands associated with economic values that do not necessarily entail a conscious, explicit use of ecosystem goods and services. We call these environmental values. There are two general categories: non-use values and values of goods and services that generally go unrecognized. Non-use values arise whenever people place a value on maintaining some aspect of the environment, even though they do not use it and have no intention to do so. Research has documented non-use values for maintaining salmon populations, for example, whose survival in the Bay-Delta depends on adequate water flows. Studies have shown that regardless of direct interaction with salmon populations, many Californians hold a positive willingness to pay to ensure the long-term survival of salmon.¹¹⁴

Environmental values also can be important when water resources provide valuable services that people generally consume without being aware of them. Some of these are part of the so-called web of life. Others, such as the ability of wetlands to purify water

¹¹¹ Roback, J. 1982. "Wages, Rents, and the Quality of Life." *Journal of Political Economy* 90: 1257-1278; 1988. "Wages, Rents, and Amenities: Differences among Workers and Regions." *Economic Inquiry* 26: 23-41.

¹¹² Partridge, M. and D. Rickman. 2003. "The Waxing and Waning of Regional Economies: The Chicken-Egg Question of Jobs Versus People." *Journal of Urban Economics* 53: 76-97.

¹¹³ For a more thorough discussion of relevant research, see, for example, Power, T.M. and R.N. Barrett. 2001. *Post-Cowboy Economics: Pay and Prosperity in the New American West*. Island Press, and Kim, K.-K., D.W. Marcouiller, and S.C. Deller. 2005. "Natural Amenities and Rural Development: Understanding Spatial and Distributional Attributes." *Growth and Change* 36 (2): 273-297.

¹¹⁴ Loomis, J., T. Brown, and J. Bergstrom. 2007. "Defining, Valuing, and Providing Ecosystem Goods and Services," *Natural Resources Journal* 47: 329-376.

and mitigate flood damage, have a more direct link to the well-being of California's residents. For example, San Francisco, which receives its water from the pristine Hetch Hetchy watershed, saves tens of millions of dollars per year in avoided water treatment costs.¹¹⁵ Some scientists and economists believe many services have great economic value, even though people generally are unaware of their importance.¹¹⁶ Environmental values typically increase as people learn more about the environment, the services it provides, and environmental degradation.¹¹⁷ Many people today, for example, consciously consider the economic values associated with the services produced by the global climate in ways that were unknown, even to scientists, just a few years ago.

The demands associated with the consumer amenities represented on the right side of Figure 2 are typically harder to measure, or even to observe, than the commercial demands shown on the left side of the diagram. This difficulty does not diminish their value or impact on jobs and incomes, however. Instead, it merely reflects the lack of tools for measuring them.

As described in the PPIC Report, one of the goals and challenges of the Board's benefit-cost analysis of its balancing decision will be identifying and describing the full range of benefits and costs of the competing demands for Bay-Delta water resources.

“California must find ways to manage water jointly for environmental and commercial benefits. Better accounting of water use and its economic and environmental benefits and costs can help guide policies for watershed management.”¹¹⁸

¹¹⁵ Null, S. and J. R. Lund. 2006. “Re-assembling Hetch Hetchy: Water Supply Implications of Removing O’Shaughnessy Dam,” *Journal of the American Water Resources Association* 42 (4): 395-408.

¹¹⁶ Daily, G.C. (ed). 1997. *Nature's Services: Societal Dependence on Natural Ecosystems*. Washington, D.C.: Island Press.

¹¹⁷ Blomquist, G.C. and D.R. Johnson. 1998. “Resource Quality Information and Validity of Willingness to Pay in Contingent Valuation.” *Resource and Energy Economics* 20:179-196.

¹¹⁸ PPIC, 2010, p.21.

Dam Safety in California

General description about dam safety issue in California. Dam Safety Guideline Stakeholders, interests, and agencies Case Histories Problems and Promising Solutions Data and Sources

About Me



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SUNDAY, MAY 18, 2008

4.2.1 San Luis Dam

The San Luis Dam (now called the B.F. Sisk Dam) was completed in August 1967. It was built on the Los Banos Creek and is used primarily for agricultural storage for the South Valley farmers. In 1981, on September 4, workers noticed rocks sliding down the upstream face of the dam. The slide occurred in deep seated failure and the failure surface extended through the engineered zones and into the native slopewash material. Investigation of the slide led to the conclusion that the wrong strength parameters for the slopewash material were used for stability analyses.

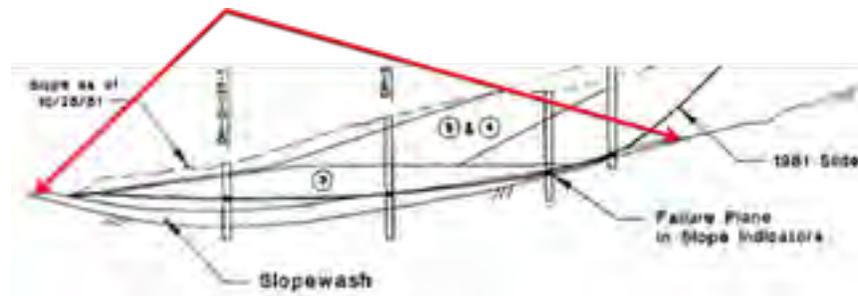
The slopewash material is deposited primarily by rain dragging small clay particles downslope from the surrounding hills. The construction specifications for excavation to the foundation were that the soil had to be stronger than the fill to be placed over it. In California's Central Valley, the temperatures easily reach over 100 degrees for days at a time, causing significant evaporation losses in surface soils. In its desiccated state, the slopewash material exhibited strength characteristics that would seem

desirable for a dam foundation. However, after extensive post failure laboratory testing on the slopewash material was performed, it was determined that the residual strength, and not the previously used “fully softened” strength should be used in stability analyses.

Fortunately, no one was hurt, and no water was lost the slide occurred. The engineering lesson to be learned from this event is that the engineer should have a good understanding of the behavior of the soil zones influenced by the dam under fully inundated conditions as well as the cyclic response of the soil mass due to drawdown.



Deep seated failure of San Luis Dam, Photo by Duncan



Slopewash: The action of water from rain or melted snow carrying (washing) soil down a slope.

Resource:

- Karl Schwartz, The 1981 Slide at the San Luis (Sisk) Dam, Dam Case History report, 2.06, 2008

- Boulanger, Ross, San Luis Dam Slide,

http://cee.ucdavis.edu/faculty/boulanger/geo_photo_album/

- Duncan, J.M., & Stark, T.D. (1989), The Causes of the 1981 Slide in San Luis Dam, Raleigh, North Carolina: Dept. of Civil Engineering, Virginia Polytechnic Institute.



United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825-1898

OCT 18 2007

IN REPLY
REFER TO:

MP-241
PRJ-14.00

All Central Valley Project Water Contractors

Subject: Actions to Address Dam Safety Issues at B.F. Sisk Dam, Central Valley Project (CVP), California

Dear Ladies and Gentlemen:

Part of the Bureau of Reclamation's role in providing water and power is to assure the safety of the public potentially at risk due to dam failure. To accomplish this objective, Reclamation carries out dam safety activities to identify and evaluate potential risks to the public. When it becomes necessary to reduce risk, the Reclamation Safety of Dams Act provides authority to take action to protect the integrity of Reclamation dams and preserve water project benefits.

Through the Dam Safety Program, Reclamation has identified several conditions at B.F. Sisk Dam that require action to reduce risks.

- The dam is located in a seismically active area, very close to the Ortigalita Fault
- Studies and deformation analyses conducted during 2005 indicate that, during a major earthquake, crest settlement greater than freeboard, or cracking associated with embankment deformation, could occur and lead to dam failure
- Failure of the dam could inundate hundreds of square miles including the town of Santa Nella, about 7 miles of Interstate 5, and numerous farms and houses along the San Joaquin River including some areas of Stockton
- An independent consultant review board agreed with Reclamation that the calculated crest settlement is possible for the estimated peak ground accelerations associated with the Ortigalita Fault
- Reclamation has concluded that there is a need to initiate a Corrective Action Study to identify and evaluate risk reduction alternatives

There are several provisions of the Reclamation Safety of Dams Act of which you should be aware:

- The Secretary of the Interior is responsible for determining the need for risk reduction actions and selection of the actions to be implemented
- Any modifications performed may not provide new or additional benefits to the project
- Modifications are not to address reasonable and normal maintenance
- The cost of the modifications must be reimbursed. If the need for modification is due to a change in hydrologic, seismic, or the state-of-the-art conditions, the Act currently limits reimbursement to 15 percent of the total cost
- Reclamation must notify the project water beneficiaries of the need for risk reduction and explain the administrative and legal requirements
- Reclamation must provide opportunities for project beneficiaries to participate in development of plans for risk reduction actions

The process for selecting and implementing risk reduction action is focused on the objective of determining the least total cost alternative for achieving the risk reduction. The process includes the following activities:

- Identifying alternatives for consideration
- Gathering necessary data to develop feasibility designs, cost estimates, and estimates of potential risk reduction
- Developing appraisal level designs for several proposed alternatives
- Evaluating risk reduction effectiveness of proposed alternatives
- Conducting an economic analysis to support repayment negotiations
- Conducting an environmental analysis and identifying mitigation activities associated with the proposed modification
- Preparing a modification report to Congress (where construction costs exceed the authority granted to the Secretary by the Reclamation Safety of Dams Act)
- Preparing final designs and estimates
- Awarding a contract to make the necessary modifications to the dam
- Completing design and construction documentation

Proposed risk reduction actions will be subject to a number of administrative/legal processes including but not limited to the National Environmental Policy Act (NEPA) compliance, Endangered Species Act (ESA) consultation, cultural resources surveys, and repayment of project costs. Section 3 of the Reclamation Safety of Dams Act specifically prohibits the use of Safety of Dams funds for new or additional benefits. This potentially could include ESA mitigation activities required to obtain the permits necessary for the project. Any mitigation required as a result of ESA consultation will require a determination of the extent to which the mitigation is a direct result of the proposed risk reduction actions. While the provision in the Act does not relieve Reclamation of the responsibility to consult on ESA issues, it does limit Reclamation's authority to address such issues with Safety of Dams funding.

The Reclamation Safety of Dams Act requires repayment of certain reimbursable costs associated with the risk reduction. Reclamation will develop cost estimates as part of the preparation of a modification report. We will seek to enter into repayment negotiations with our water contractors to establish terms for repayment of the reimbursable portion of the costs in accordance with Reclamation law. If we are unable to sign a contract for reimbursement of costs, we will proceed with sending a bill upon a determination of substantial completion or consideration will be given to other alternatives for reducing the risk to the public.

During the process of developing and implementing a preferred risk reduction action, we invite you to participate in the process and share your thoughts and ideas for cost-effective means of achieving the required risk reduction. A Corrective Action Alternative Scoping (CAAS) meeting, which is a brain storming session to identify and evaluate corrective action alternatives, is planned for late 2007 or early 2008. If you have specific risk reduction alternatives that you would like to have considered in determining a preferred alternative we encourage you to submit these alternatives in writing for evaluation prior to the start of the CAAS meeting. We also will be inviting water user representatives to the CAAS meeting. If you are interested in participating in the CAAS meeting or if you would like to submit an alternative for consideration, please contact the project manager, Doug McElhinney, Bureau of Reclamation, MP-241, 2800 Cottage Way, Sacramento, CA 95825 (E-mail: dmcElhinney@mp.usbr.gov). Alternatives submitted prior to the CAAS meeting will be formally evaluated and displayed as alternatives in the modification report. Even if you do not have specific alternatives to be submitted, Reclamation will be providing you with periodic updates at key decision points to keep you informed of progress. We will also be providing you with periodic cost reports with information on safety of dams modification costs.

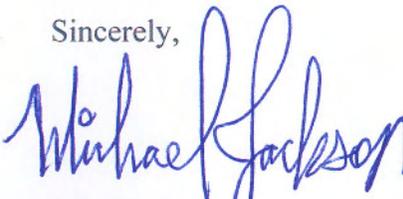
In an effort to better facilitate communication with the large number of CVP water contractors, Reclamation proposes that the following methods be used to disseminate information and receive feedback:

- Posting cost reports and project information at the Mid-Pacific Region Safety of Dams web page located at <http://www.usbr.gov/mp/sod/>. This web page should be functioning within the next month and would include technical information intended to be helpful in proposing alternatives

- Providing periodic briefings to the Central Valley Project Water Association Financial Affairs Committee meetings
- Establishing a small group of water user officials to review and receive documents, to participate in project briefings, and to represent and make available documents to other CVP water users. Interested water contractor officials should contact the Project Manager listed in the preceding paragraph

During the process of identifying and implementing preferred risk reduction actions, you may have access to information that is considered procurement sensitive. Inappropriate sharing of this information could have a significant adverse effect on the cost of contracts and the project. Sharing of procurement sensitive information may also disqualify certain individuals or organizations from participation in contracts to implement the risk reduction action. To assure the protection of this information, we may ask your staff or representatives to sign non-disclosure statements. B.F. Sisk Dam was designed and constructed, and is owned by Reclamation, and operated and maintained by the California Department of Water Resources. Assuring the safety of B.F. Sisk Dam is a key element of assuring that Reclamation continues to deliver the authorized benefits of the project. We look forward to your involvement in identifying and implementing action to reduce the identified risks at the dam. If you have any questions concerning the administrative/legal requirements or the current status of the project, please contact Doug McElhinney at 916-978-5225.

Sincerely,


for  John F. Davis
Acting Regional Director

cc: Central Valley Project Water Contractors

Robert Pyke, Consulting Engineer

July 12, 2012

The Honorable Edmund G. Brown Jr
Governor of California
State Capitol, First Floor
Sacramento CA 95814

The Truth About Delta Levees Or The Shaky Justification for the BDCP

Dear Governor Brown,

You must be aware that one of the principal reasons that is advanced for the need for an isolated conveyance as part of the Bay Delta Conservation Plan (BDCP) is that the Delta levees are in a pathetic condition and that there will be multiple failures in a major earthquake followed by saltwater intrusion that will curtail exports from the Delta by the State Water Project and the Central Valley Project for up to three years, forcing up to 25 million people to drink and bathe in whiskey for that period of time. While I think I understand your desire to announce a “preferred project” for the BDCP within the next month, you should not do this without understanding that this reason for constructing an isolated conveyance with intakes in the North Delta is based on a series of misrepresentations and falsehoods - in other words, that the supporters of the BDCP are lying. And they are deceiving themselves - the threat to reliable water supply, the Delta ecosystem and both recreational and commercial fishing posed by a six-year drought is much greater than any threat posed by earthquakes, yet the BDCP does not include storage and does little or nothing to address the drought issue.

The implication that 25 million people are solely dependent on water exported from the Delta is of course false, but that is a relatively minor issue. The two more important issues that I want to focus on in this letter are the repeated use of the doomsday scenario for Delta levees as a scare tactic and the contention that exports might be interrupted for as much as 3 years, both of which are false.

**1310 Alma Avenue, No. 201, Walnut Creek, CA 94596
Telephone 925.323.7338 E-mail bobbyke@attglobal.net**

Examples of Scare Tactics by BDCP Proponents

The July 8 editorial in the LA Times, “California's Way Forward on Water,” concludes with the following sentence: “Engineers warn that in the event of a major earthquake, Clifton Court could fail and the aqueduct could run dry, leaving much of the state without that water for three years or more.”

Another recent example reported by KMTS radio is from the Santa Clarita City Council meeting on June 26th: “The delta is in danger of collapse. If you’ve ever driven or flown over Northern California and looked at that thing. It’s a little terrifying,” said City Manager Ken Pulskamp. “It’s a 100 year old man-made agricultural levy system that could explode very easily, particularly in an area that’s prone to earthquakes, floods, and some of the rising sea levels that we’ve been seeing,” said Pulskamp.

Yet, another example was contained in the letter to John Laird, Ken Salazar and Mike O’Connor dated May 24, 2012, by eighteen members of the California State Legislature “as each day passes, the threat of a major earthquake in the Delta region and the impact of weather changes threaten the water supply ...”

While threats to the Delta levees from floods, earthquakes and possible more rapid sea-level rise are real, statements like this greatly exaggerate their importance. At least, that is my opinion as a registered civil and geotechnical engineer with over 40 years of experience and national and international standing in earthquake geotechnical engineering. As far as I know, neither the editors of the LA Times, the City Manager of Santa Clarita nor the eighteen members of the legislature have any qualifications in these fields, so where do they get their information from? Some clue is provided by the next two examples.

One is a blog posted on the Southern California Water Committee (SCWC) web site <http://socalwater.org/news/scwc-water-blog> which reads in part: “The U.S. Geological Survey says there’s a 63 percent chance of a magnitude 6.7 quake in the next 30 years in the Bay Area, home of the Delta—California’s water supply hub. Those are some pretty high odds. So what would a seismic event of that size mean for the Delta and those who depend on its water? A 6.7 quake could create a Katrina-like collapse of the 100-year-old levees that channel Delta water, causing saltwater to flood in and contaminate the supply for 25 million people. Water deliveries from the Delta could be interrupted for as long as 1 ½ years. Until we make the needed investments to protect our infrastructure against this scenario, we are simply not prepared for this very real possibility.”

The statement by USGS is correct but is being used inappropriately. The 63 percent chance of a magnitude 6.7 earthquake in the next 30 years in the Bay Area is in the right

ballpark but it includes possible events on three main sources, the Peninsula San Andreas fault, the Hayward fault and the Rogers Creek fault. Only the Hayward fault is of much interest to the Delta and even the Hayward fault is 45 km from the western tip of Sherman Island. The Bay Area is not normally said to be “the home of the Delta”. At least the SCWC is now talking about a supply interruption of only 1½ years, down from 3 years in some other articles, but the latest DWR studies suggest that even a very extreme 50 levee breaches, 20 flooded islands scenario would likely only disrupt water exports for several months and in the worst case for six months. And of course the impact is only on a relatively small fraction of the supply for 25 million people.

The second example of a possible source for these scary statements is a video entitled “Seismic Risk in the Sacramento San Joaquin Delta” that can be found on the website of the Metropolitan Water District of Southern California (MWD) <http://mwdh2o.com/mwdh2o/pages/yourwater/supply/Delta/index.html> the introduction to which says: “There are hundreds of miles of unengineered levees that are susceptible to major failures due to flood and seismic risk. This video demonstrates the catastrophic consequences to homes, businesses, farms and habitat in the Delta from a 6.7 magnitude earthquake and how Southern California’s water supply could be cut off for up to two years.” Note that the interruption is now back to two years in spite of the fact that MWD actually initiated the studies now being conducted by DWR and follows those studies closely.

A further example of exaggeration was given by Dr David Sunding in reporting his preliminary findings of the economic benefits of the BDCP at a public meeting on June 20th. Dr Sunding evaluated the economic impact of outages of six months, one year, two years and three years, even though the scope of work for his contract only specified that he would do this for outages of six months and one year. I will return later to the substance of his evaluation but where did these unrealistic durations of outage come from?

None of this is to say that the Delta levees are in perfect condition. They are not and they need more work, but let’s get realistic about their current and likely future condition.

An Independent Assessment of the Condition of Delta Levees

The basis for many of the pessimistic assessments of the condition of Delta levees and their probabilities of failure come from the Delta Risk Management Strategy (DRMS) conducted by outside consultants but tightly managed by DWR. Although led by very competent principal investigators, the DRMS effort was always hampered by being schedule-driven rather than quality driven. The DRMS Phase One report was

extensively reviewed, including a review by an independent review panel (IRP) assembled by the Cal-Fed Science Program. The reviews were generally critical of the study. After revisions had been made to the initial report, the IRP review concluded that "the revised DRMS Phase 1 report is now appropriate for use in DRMS Phase 2 and serves as a useful tool to inform policymakers and others concerning possible resource allocations and strategies for addressing risks in the Delta." But the IRP expressed concerns: *"This conclusion, however, is subject to some important caveats. First, the IRP cautions users of this revised DRMS Phase 1 report that future estimates of consequences must be viewed as projections that can provide relative indicators of directions of effects, not predictions to be interpreted literally ..."*

Although the DRMS developed a nice framework for assessing risks to the Delta levees, the effort had data gaps that were never filled, as acknowledged in the note on page 1-1 of the report. Gaps such of these in data and knowledge tend to drive the estimates of fragilities down, and the risks up. However, despite the warning from the IRP, the numerical results from the DRMS Phase 1 report are widely quoted and used in other studies, painting a more pessimistic picture of the Delta levee system than is warranted. In addition, there are on-going improvements to the levee system under the Delta levees subventions and special projects programs and these improvements are not reflected in the DRMS Phase 1 assessment which was based on 2005 conditions.

The first, and to date only, significant independent study of the condition of Delta levees is included in the Economic Sustainability Plan (ESP) of the Delta Protection Commission, completed in 2011. This study was conducted by the writer and Michael J. Conrad Jr., former commander of the Sacramento District of the Corps of Engineers. Col. Conrad and I had some familiarity with the Delta but our broad engineering experience had been largely accumulated outside the Delta. We conducted extensive interviews with DWR staff and consultants and with reclamation district engineers who work in the Delta. Because DWR at that time had no up-to-date maps of the Delta levee system, with the cooperation of DWR staff who made available various GIS data sets and the results of 2007 LiDAR surveys conducted for DWR, we developed our own map of the Delta levee system and made an assessment of the current condition of the Delta levees. Subsequent to the completion of the ESP, DWR has released the initial version of their own maps which are, not surprisingly because they are based on the same data, generally similar to the ESP map and assessment.

When we commenced our study, there were basically two schools of thought about Delta levees. One, that relied in part on DRMS, that said there were 1,100 miles of levees in poor condition that would fail in a large earthquake, and the other, advanced by engineers who work for reclamation districts, which said that since 1982 significant improvements had been made to many Delta levees and that they were now in

reasonably good shape. Col. Conrad and I found, amongst other things, that there are in fact only about 1,000 miles of permanently maintained Delta levees, but our principal finding was that both schools of thought had some merit. We found that the reclamation district engineers were correct in claiming that the Delta levee system was now in reasonable condition overall, but that the “doomsday school” was also correct in asserting that the levee system was still not adequately designed to cope with more extreme flood events, large earthquakes or possible more rapid sea-level rise. The reclamation district engineers had never disputed this second conclusion and it turned out that the difference between the two schools was mostly one of emphasis.

In order to provide at least some detail about the current condition of the Delta levees it is necessary to refer to three different levee standards, the HMP “standard”, the Delta-specific PL 84-99 standard, and a higher standard suggested in the ESP that has come to be referred to as the “fat levee” standard.

The HMP “standard” is not an engineering standard but is the minimum geometry specified in the “Short Term Mitigation Plan” as defined in “*State of California, FLOOD HAZARD MITIGATION PLAN, 180- Day Report Prepared in Accordance with Section 406 of Public Law 93-288, August 21, 1986*”. The same report includes a “Long Term Mitigation Plan” based on DWR Bulletin 192-82 and the U. S. Army Corps of Engineers (USACE) companion document, “*Sacramento-San Joaquin Delta, California, Draft Feasibility Report and Draft Environmental Impact Statement, October 1982*”. The Short Term HMP levee geometry was negotiated among FEMA, DWR, and the Delta reclamation districts following Delta disaster declarations resulting from the 1982-83 and 1986 floods. It was rationalized as an interim step with the objective of mitigating and rapidly improving Delta levees on islands (that were then in much worse shape than they are now) so they would be less likely to overtop, or be substantially damaged in the event of another federal disaster event. There was no pretention that the HMP geometry was an adequate long-term technical design standard. The HMP Criteria was solely for the purpose of meeting FEMA Public Assistance eligibility. Levees must protect against water flowing over the levee and water seeping through or below the levee. The HMP “standard” provides a measure of protection against water flowing over the levee but provides no safety requirements for seepage. While the State has been very slow in helping the local reclamation districts complete this interim step, thanks to funding authorized by Propositions 84 and 1E, this goal is now within reach. In fact DWR is currently in the process of administering a round of funding which is expected to bring all Delta levees up to this interim “standard”.

The Bulletin 192-82 Long-Term Mitigation Plan evolved into the USACE Delta-specific guideline for non-project levees to qualify for Public Law 84-99 post-flood rehabilitation assistance that was issued in 1987. The PL 84-99 design criteria, which do constitute an

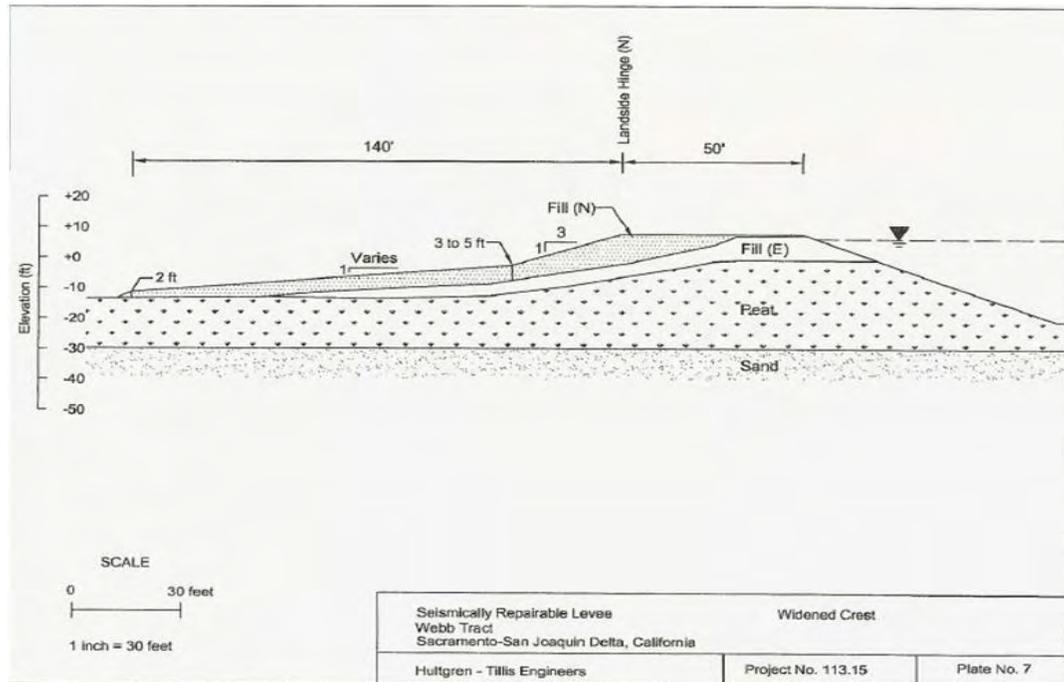
engineering standard, are very similar to those in Bulletin 192-82. Under the multi-agency CALFED Bay-Delta Accord (1995 to 2000), the integrity of Delta levees was addressed as a major program area. Part of the resulting Levee System Integrity Program was improvement of all Delta levees to a “base level of protection.” The final EIS/EIR stated this commitment as follows: “The CALFED Levee Program will institute a program that is cost-shared among the beneficial users, to reconstruct Delta levees to the Corps’ PL 84-99 Delta Specific Standard.” This commitment was then reflected in the Record of Decision (ROD) in August, 2000 and was to be implemented through a Memorandum of Understanding between the Corps and DWR executed in July, 2001. While CALFED fizzled out, funds that were generally adequate to cover the State share of improving all Delta levees were included in Propositions 84 and 1E, approved by the voters in 2006. Disbursement of that funding has been delayed for various reasons, including the State’s fiscal crisis, but much progress has been made. Details of the expenditures on Delta levees through 2011 are included in the ESP but total spending since 1982 is approaching \$700 million. After current projects are completed, only about 350 miles of levees will remain that need to be brought up to the PL 84-99 standard. The funds remaining from Propositions 84 and 1E, together with funds from the USACE Levee Stability Program, an outgrowth of CALFED, should be sufficient to upgrade most Delta levees to the PL 84-99 standard, finally achieving a goal that was first set by the State and federal governments thirty years ago.

However, the PL 84-99 standard does not explicitly address seismically-resistant design, or design for greater than 100-year water surface elevations and makes no accommodation for possible sea-level rise. The 1983 Delta Levees Investigation did suggest that Delta levees should be designed for 300-year water surface elevations but that suggestion has not been included in subsequent standards or revisions. Likely, adoption of the new requirement for urban levees of three feet of freeboard over the 100-year water surface elevation coupled with superior flood-fighting would effectively provide 500-year flood protection. Building to this standard and increasing the crown width to a minimum of 22 feet would increase the cost only marginally over the cost of complying with the Delta-specific PL 84-99 standard and this “PL 84-99 plus” standard may be sufficient for many Delta levees long-term. If the levee in question does not contain or is not underlain by loose sands that are susceptible to liquefaction, these “PL 84-99 plus” levees should be considered to be seismically robust. However, in order to more fully address earthquake loadings, possible sea-level rise and to provide the option for adding vegetation on the water side of levees, a higher Delta levees standard is required. This standard should particularly be applied to most of the lowland levees which face the biggest hazard due to possible sea-level rise and are also the most critical to salinity intrusion, but it might be selectively applied to other Delta levees.

As an example of a levee with increased seismic resistance that also meets other

objectives, the cross-section of a proposed seismically-resistant levee taken from a report by Hultgren-Tillis Engineers (HTE) for Reclamation District 2026 (Webb Tract) is shown in Figure 1.

Figure 1 - Example “Fat Levee” Cross Section



Even when assuming that some liquefaction might occur both in the embankment and the foundation, this study indicated that deformations would be limited by the addition of a landslide buttress, as shown in the figure. A key feature of the design shown in Figure 1 is the wide crest. Wider crests not only provide a more robust levee, but also allow for more efficient emergency levee patrol and response when it includes an all-weather traffic surface. The fact that the levee section is overbuilt also means that material could be borrowed from the toe as necessary to quickly rebuild the crests of any levees that actually deform during an earthquake. Levees with wider crests are also the most economical way to provide for possible sea-level rise. While it is the policy of the state to plan for 55 inches of sea-level rise by the year 2100, the probability of that magnitude of sea-level rise is actually very small. While it is not cost-effective or rational to construct levees to those elevations today, the provision of a wider crest with an all-weather traffic surface today has at least three benefits: providing a more robust levee immediately; allowing more room and accessibility for patrol, flood-fighting or emergency response following earthquakes; and allowing a choice of methods for raising the crest elevation in the event of need in flood events and in the long term case of actual sea-level rise. In addition, the provision of a wider crest also allows for retaining or

planting of appropriate vegetation on the waterside of the levee. Such planting, creating shaded riverine habitat, should be an essential component of any comprehensive plan to repair the Delta ecosystem.

HTE estimated that this design would cost approximately \$2 million per mile in 2009. HTE also looked at more elaborate designs which included either or both of a slurry trench wall or an internal drain. Those designs added up to \$5 million per mile to the incremental cost but I believe that the additional features are not generally required and that an average cost of \$2-3 million per mile is a reasonable estimate at this time. If it is assumed that anywhere from 300-600 miles of levees need to be upgraded to this standard, the basic engineering and construction cost would be in the order of \$1-2 billion although the overall program cost might well be higher and the ESP suggested an overall program budget of \$4 billion.

This higher Delta-specific levee standard might be referred to as a “seismically repairable levee” or a “seismically-robust levee” but because it also addresses other issues it has come to be known by the popular name of “fat levee”. The first “fat levees” addressing these multiple issues were constructed on Upper Jones Tract in 2011 as a result of outstanding cooperation between the local reclamation district, the East Bay Municipal Utility District, DWR and the Department of Fish and Game.

Figure 2 – “Fat Levee” on Upper Jones Tract



While the cost of further improving Delta levees to this “fat levee” standard is non-trivial, as explained in the ESP, that cost can easily be justified because of the value of the infrastructure that the levee system protects and because of the multiple benefits of improved levees. Not only would such a program generate jobs more quickly than the BDCP, but it would reduce the risk to life and property throughout the Delta, protect and enhance the Delta as a place, contribute to ecosystem restoration, and reduce the risk to many kinds of energy and transportation infrastructure in addition to water conveyance.

Are Delta Levees Really Vulnerable to Earthquakes?

The short answer is yes, but not very vulnerable. The two reasons that are normally given for questioning the performance of Delta levees under earthquake shaking are: (1) that they are founded on peat which is a poor foundation material; and (2) that they are founded on or composed of loose sands that are susceptible to the phenomenon of liquefaction.

The first of these assertions is completely wrong. Peat is very compressible under static loads but under cyclic loads peats generate even less excess pore pressures than clays and thus show little or no loss of strength and stiffness. In fact, to the extent that the Delta levees are largely composed of peat, they may be expected to perform better than levees in general under earthquake loadings. Not only is peat expected not to lose strength under earthquake loadings, but, because it is relatively soft, it also might be expected to attenuate ground motions with peak accelerations in the order of 0.2g or more. The relatively good performance of peat under even large amplitude cyclic loadings was demonstrated by a recent test carried out on Sherman Island by researchers from UCLA with funding from the National Science Foundation’s NEES program.

Liquefaction might be a problem if loose sands were pervasive in either the foundations or the constructed portion of the Delta levees, but they are not. There are three different situations where loose sands that may be susceptible to liquefaction are found in and under the Delta levees. One possible source of loose sands is the natural levees that underlie some of the present-day levees. The extent of this condition is believed to be limited because few of the present day levees overlie historic natural levees. The second possible source of sands that may be susceptible to liquefaction is hydraulically placed clean sand that has been dredged from the main river channels and placed in adjacent levees without compaction. The actual extent of these materials is unclear and it may be that these materials are sufficiently well drained that most of the excess pore pressures that are generated by earthquake shaking would quickly dissipate so that any deformations would be limited. The third source is the topmost sand layer that underlies the peat. From a geotechnical engineering point of view, the sands that underlie the

Delta can, with the possible exception of the top 10 feet, be characterized as dense to very dense, and actually constitute a good foundation. Meticulous work by Drexler and others at the USGS indicates that the oldest peat deposits are in the order of 7,000 years old so that the underlying sands are at least this old. That age, when combined with the penetration resistances cited by Hultgren-Tillis Engineers in their report on Webb Tract, suggest that even the surficial sands are not particularly susceptible to liquefaction. Even under the 500-year return period ground motions estimated in DRMS, which range from 0.2 to 0.4g in firm soils, significant or widespread deformations from any of these three kinds of sands should not be expected. The repeated citing of levee deformations that were sustained in the Kobe and Christchurch earthquakes, which had higher ground motions and where levees were founded on very loose and recent alluvial soils, is not particularly helpful. However, although these case histories are not directly applicable to the Delta, they do illustrate that levees do not necessarily breach and release water, even when they are quite badly deformed.

Thus, a fair summary would be that the risk of failure of Delta levees due to earthquake shaking cannot be completely dismissed, but that more detailed studies are required to determine whether it even rises to significant levels. What is clear, even without further study, is that the argument that a peripheral canal is needed because of the threat to Delta levees posed by earthquakes, rests on a very shaky foundation.

The Economic Impact of Conveyance Outages

The economic impact of possible conveyance outages caused by earthquakes has been discussed in a recent report by Dr. Jeffrey Micheal of the University of the Pacific and in the presentation by Dr David Sunding at the public meeting on the BDCP on June 20th.

It is unfortunate that Dr. Sunding's presentation had an alarmist focus on a worse than worst case scenario, and just talked about water supply and ignored the bigger picture that must be discussed in any Delta earthquake discussion. For example, Dr. Sunding was trying to sound reasonable in saying that an earthquake wouldn't result in a "refugee" situation due to water shortages. However, the low-probability catastrophic quake and flood he is discussing would result in widespread homelessness and loss of life in the Delta itself, not to mention interruptions of energy and transportation. There would, in fact, be refugees and the water conveyance tunnels would do nothing to prevent it. "Fat" levees are the only viable proposal that truly protects the lives and the economy from a major seismic catastrophe in the Delta.

However, as acknowledged by Dr. Sunding in his verbal comments, for the more realistic periods of outage there is little difference between his estimates and Dr.

Michael's estimates. Limiting the discussion to the more realistic but still conservative outages of 6 to 12 months, Dr. Sunding presented an expected present value of \$722 million to \$2,093 million for these outage durations. This can be converted to an expected annual value that can be compared to Dr. Michael's annual estimate of \$50 million. If the effect of discounting is eliminated, the expected values for 6 and 12 month outage increase to \$970 million and \$2,812 million. For an expected annual value, this would be multiplied by an annual probability of such a seismic event and failure occurring. According to DRMS Phase 1, the annual probability of 10+ islands failing from earthquake is about 3%, and the annual probability of 30 or more islands failing is about 1%. These failure probabilities are far too high, but I use them to make a point. The expected annual values if you apply a probability range of 1-3% to the expected costs of a 6-12 month outage are as follows:

Annual Probability	6 Month Outage	12 Month Outage
.03	\$29.1 million	\$84.4 million
.02	\$19.4 million	\$56.3 million
.01	\$9.7 million	\$28.1 million

These values are very comparable to the \$50 million annual earthquake risk reduction benefit Dr. Michael included in his June 14 report – in fact the median value in the table is only about \$30 million. So that even if you use conservative estimates of the likely length of any outage and very conservative estimates of the probability of those outages, the economic impact of an earthquake-induced outage is less than one-twentieth of the estimated annual financing and operating costs of the BDCP, which is over a billion dollars. This goes beyond shaky. It is ludicrous that it is put forth as a principal argument for the BDCP.

Conclusion

There is a real need for an improved system to convey any surplus water from the Sacramento River to users in the San Joaquin Valley and Southern California, but it is not the BDCP as presently planned. If the BDCP as presently planned was justified, it would not be necessary to resort to phony arguments such as there will be widespread failure of Delta levees in a major earthquake and supply will be interrupted for up to three years. Even using very conservative values for the expected duration of outages and the probability of those outages, the economic impact of those outages is trivial when compared with the cost of financing and operating the BDCP.

Furthermore, since the probability of these outages given the current and expected future condition of the Delta levee system is likely characterized by a return period of

something greater than 1000 years, why are the lobbyists and flacks for the San Joaquin /Southern California Water Lobby more concerned about earthquakes than they are about a six-year drought which has a return period in the order of 100 years. A six-year drought would decimate farmers and fishermen alike, and force very tight rationing for urban water users, but the BDCP includes no storage and makes no provision for a six-year drought.

I am a professional engineer rather than a politician, but even if I do not fully understand California politics, it seems to me that you are not getting the best possible advice on this important issue and I would urge you seek input from a wider circle of advisors so that you can make a decision about the BDCP based on facts rather than misinformation.

Let's get California working again!

Sincerely,

A handwritten signature in black ink that reads "Robert Pyke". The signature is written in a cursive, flowing style.

Robert Pyke Ph.D., G.E.