PECOS RIVER COMPACT

Report of the River Master

Water Year 2022

Accounting Year 2023

Final Report

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River Master of the Pecos River
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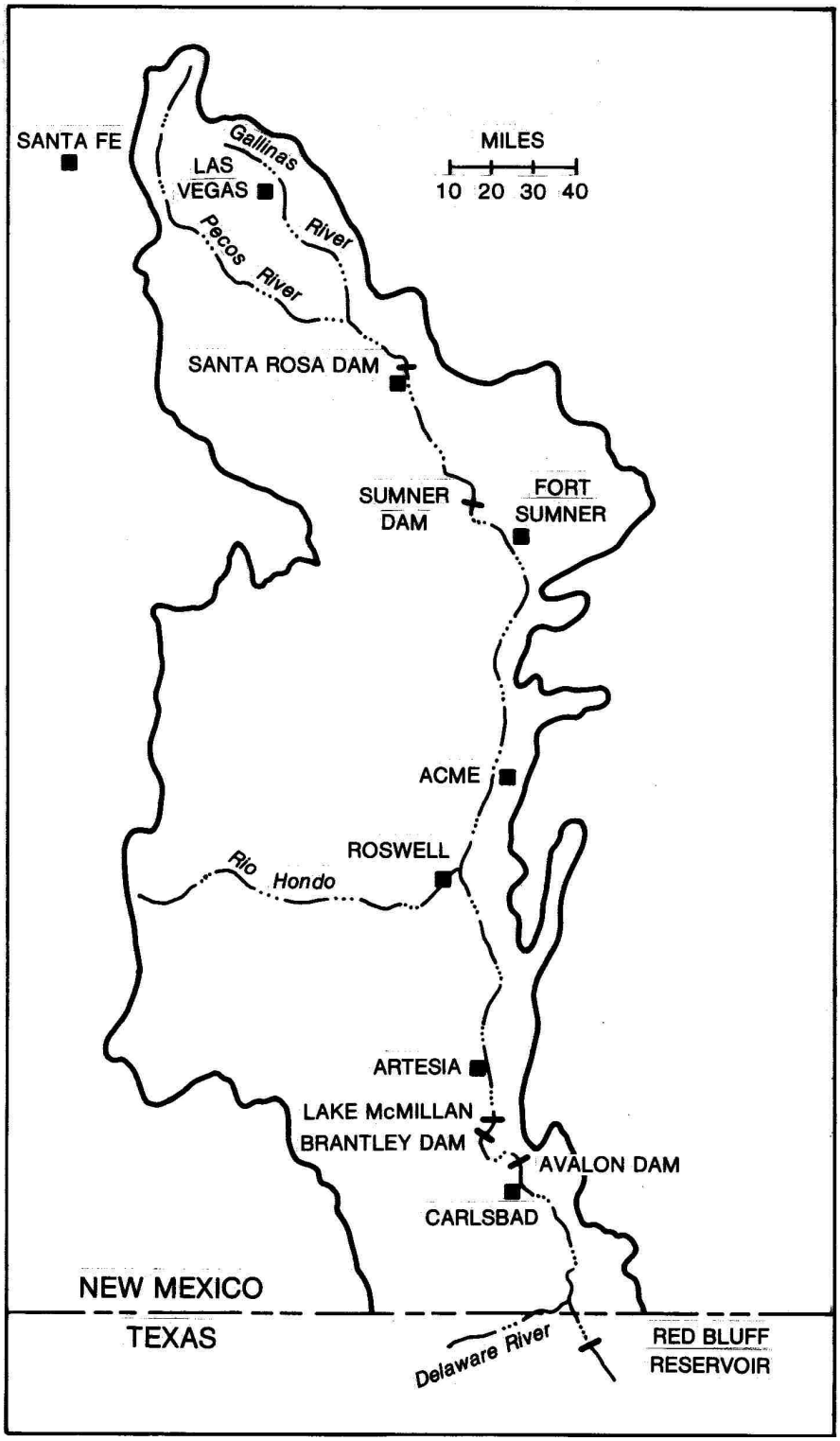

Map of Pecos River Basin Showing Accounting Reaches

PECOS RIVER COMPACT
Supreme Court of the United States
No. 65, Original
Amended Decree

Final Report of the River Master
Water Year 2022 - Accounting Year 2023
June 16, 2023

Purpose of the Report. In its Amended Decree issued March 28, 1988 the Supreme Court of the United States appointed a River Master of the Pecos River and directed him to "... Deliver to the parties a Preliminary Report setting forth the tentative results of the calculations required by Section III.B.1 of this Decree by May 15 of the accounting year..." and to consider "... any written objections to the Preliminary Report submitted by the parties prior to June 15 of the accounting year..." and to deliver "... to the parties a Final Report setting forth the final results of the calculations required by Section III.B.1 of this Decree by July 1 of the accounting year." This is the required Final Report with the determination of:

a. The Article III(a) obligation;

b. Any shortfall or overage, which calculation shall disregard deliveries of water pursuant to an Approved Plan;

c. The net shortfall, if any, after subtracting any overages accumulated in previous years, beginning with water year 1987.

Result of Calculations and Statement of Shortfall or Overage. The results of the calculations in this Final Report show that New Mexico's delivery in Water Year 2022 was a shortfall of 600 acre-feet. The accumulated overage since the beginning of Water Year 1987 is 156,600 acre-feet.

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River Master of the Pecos River

Pecos River Compact		
Accumulated Shortfall or Overage		
	June 16, 2023	
Water Year	Annual Overage or Shortfall, AF	Accumulated Overage or Shortfall, AF
1987	15,400	15,400
1988	23,600	39,000
1989	2,700	41,700
1990	-14,100	27,600
1991	-16,500	11,100
1992	10,900	22,000
1993	6,600	28,600
1994	5,900	34,500
1995	-14,100	20,400
1996	-6,700	13,700
1997	6,100	19,800
1998	1,700	21,500
1999	1,400	22,900
2000	-12,300	10,600
2001	-700	9,900
2002	-3,000	6,900
2003	2,000	8,900
2004	8,300	17,200
2005	24,000	41,200
2006	26,100	67,300
2007	25,200	92,500
2008	6,000	98,500
2009	1,600	100,100
2010	-500	99,600
2011	500	100,100
2012	1,900	102,000
2013	-6,300	95,700
2014	700	96,400
2015	27,300	123,700
2016	27,200	150,900
2017	19,900	170,800
2018	5,300	176,100
2019	-9,800	166,300
2020	-4,700	161,600
2021	-4,400	157,200
2022	-600	156,600

Table 1. General Calculation of Annual Departures in TAF (B.1)			
Water Year	2022		
6/17/2023			
	WY 2020	WY 2021	WY 2022
B.1.a. Index Inflows			
(1) Annual flood inflow			
(a) Gaged flow Pecos R bel Alamogordo Dam	91.3	53.1	78.5
(b) Flood Inflow Alamogordo - Artesia (Table 2)	-7.8	45.7	22.1
(c) Flood Inflow Artesia - Carlsbad (Table 3)	7.6	45.0	15.4
(d) Flood Inflow Carlsbad - State Line (Table 4)	1.2	29.7	3.2
Total (annual flood inflow)	92.3	173.5	119.2
(2) Index Inflow (3-year avg)			128.3
B.1.b. 1947 Condition Delivery Obligation			49.1
(Index Outflow)			
B.1.c. Average Historical (Gaged) Outflow			
(1) Annual historical outflow			
(a) Gaged Flow Pecos River at Red Bluff NM	36.8	65.2	33.2
(b) Gaged Flow Delaware River nr Red Bluff NM	0.3	10.8	1.6
(c) Metered diversions Permit 3254 into C-2713	0.4	0.4	0.5
Total Annual Historical Outflow	37.4	76.4	35.3
(2) Average Historical Outflow (3-yr average)			49.7
B.1.d. Annual Departure			0.6
C. Adjustments to Computed Departure			
1. Adjustments for Depletions above Alam Dam			
a. Depletions Due to Irrigation (Table 5)	2.6	-0.4	1.3
b. Depl fr Operation of Santa Rosa Reservoir (Table 6)	3.7	1.9	2.8
c. Transfer of Water Use to Upstream of AD	0	0	0
Recomputed Index Inflows			
(1) Annual flood inflow			
(a) Gaged flow Pecos R bel Alamogordo Dam	97.6	54.6	82.6
(b) Flood Inflow Alamogordo - Artesia	-7.8	45.7	22.1
(c) Flood Inflow Artesia - Carlsbad	7.6	45.0	15.4
(d) Flood Inflow Carlsbad - State Line	1.2	29.7	3.2
Total (annual flood inflow)	98.6	175.0	123.3
Recomputed Index Inflow (3-year avg)			132.3
Recomputed 1947 Condition Del Outflow			51.2
(Index Outflow)			
Recomputed Annual Departures			-1.5
Credits to New Mexico			
C.2 Depletions Due to McMillan Dike			0.9
C.3 Salvage Water Analysis			0
C.4 Unappropriated Flood Waters			0
C.5 Texas Water Stored in NM Reservoirs			0
C.6 Beneficial C.U. Delaware River Water			0
Final Calculated Departure, TAF			-0.6

Table 2. Determination of Flood Inflows, Alamogordo Dam to Artesia (B.3)													
Water Year	2022												
5/13/2023													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
Flow bel Sumner Dam	0.9	1.8	4.2	4.8	6.2	16.2	11.5	21.8	5.9	4.8	0.0	0.2	78.5
FtSumner Irrig Div	0.0	1.1	4.2	4.6	4.6	3.9	5.4	5.2	5.2	4.1	0.0	0.0	38.2
Ft Sumner ID Return	0.8	0.6	1.4	1.6	2.4	2.4	2.4	2.4	2.2	2.0	1.0	0.8	20.2
Flow past FS IDist	1.8	1.3	1.4	1.8	4.1	14.7	8.6	19.1	2.9	2.7	1.1	1.0	60.5
Channel loss	0.2	0.2	0.5	1.3	1.6	3.2	1.8	3.0	0.9	0.8	0.6	0.2	14.2
Residual Flow	1.6	1.2	1.0	0.5	2.5	11.5	6.8	16.1	2.1	1.9	0.5	0.9	46.3
Base Inflow	2.5	2.3	2.3	1.4	0.7	0.4	0.6	0.4	0.5	1.3	2.4	2.3	17.0
River Pump Divers	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3
Residual, Artesia	4.1	3.4	3.2	1.8	3.2	11.9	7.4	16.4	2.6	3.0	2.8	3.2	63.1
Pecos Flow Artesia	3.7	3.4	3.6	2.3	1.0	1.8	12.5	23.8	14.3	8.9	5.4	4.5	85.2
Flood Inflow, AD-Art	-0.4	0.0	0.4	0.5	-2.2	-10.1	5.1	7.4	11.7	5.8	2.5	1.4	22.1

Note: Whenever the computed flow past the District is less than the return flow, set the flow past the District equal to the return flow (Manual, B.3.d).

Table 3. Determination of Flood Inflows, Artesia to Carlsbad (B.4)													
Water Year	2022												
6/16/2023													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
Rio Penasco at Dayton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourmile Draw nr Lakew	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Seven Rivers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Rocky Arroyo at Hwy Br	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2
Flood Inflow, Art-DS3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3
Pecos R at Dam Site 3	1.2	1.1	1.4	9.7	8.6	7.8	5.9	6.3	7.6	6.2	0.1	0.0	55.9
CB Sprgs New Water (from Table 7)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.6
Total Inflow, DS3 - CB	1.3	1.2	1.5	9.8	8.8	7.9	6.0	6.4	7.7	6.3	0.2	0.2	57.5
Evap Loss, Lake Avalon (from Table 10)	0.2	0.3	0.4	0.5	0.7	0.5	0.5	0.2	0.2	0.1	0.0	0.0	3.7
Storage Chg, Lake Avalon (from Table 11)	0.4	0.3	-1.2	0.0	0.3	-0.2	-0.7	0.0	0.4	-1.0	-0.5	0.0	-2.2
Carls ID diversions	0.0	0.0	1.7	9.2	7.6	7.8	6.1	5.8	7.3	7.7	0.2	0.0	53.4
93% CID diver	0.0	0.0	1.6	8.6	7.0	7.3	5.6	5.4	6.8	7.2	0.2	0.0	49.7
Other depletions	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	1.4
Dark Canyon at Carlsbad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pecos b Dark Canyon	1.6	1.5	1.5	1.4	1.3	1.3	1.2	2.6	1.8	2.1	2.0	2.0	20.1
Pecos R at Carlsbad	1.6	1.5	1.5	1.4	1.3	1.3	1.2	2.6	1.8	2.1	2.0	2.0	20.1
Total Outflow	2.3	2.1	2.4	10.6	9.4	9.0	6.9	8.3	9.2	8.5	1.8	2.1	72.6
Flood Inflow, DS3-CB	0.9	0.9	0.9	0.8	0.6	1.1	0.9	1.9	1.5	2.2	1.6	1.9	15.1
Flood Inflow, Art-CB	0.9	0.9	0.9	0.8	0.6	1.1	0.9	2.2	1.5	2.2	1.6	1.9	15.4

Table 4. Summary Table for Computations, Carlsbad to State Line (B.5)						
Water Year		2022				
5/13/2023						
		BCB - RB	Del R	DC		
Jan		0.0	0.0	0.0		
Feb		0.0	0.0	0.0		
Mar		0.1	0.0	0.0		
Apr		0.0	0.0	0.0		
May		0.0	0.0	0.0		
Jun		0.3	0.0	0.0		
Jul		0.3	0.1	0.0		
Aug		0.9	0.4	0.0		
Sep		0.7	0.2	0.0		
Oct		0.1	0.0	0.0		
Nov		0.1	0.0	0.0		
Dec		0.0	0.0	0.0		
Total		2.5	0.6	0.0		
Summary of flood inflows, Carlsbad to State Line, TAF						
Red Bluff - Carlsbad + Dark C						2.6
Delaware River						0.6
Total Flood Inflow, Carlsbad to State Line						3.2

Table 5. Depletions Due to Irrigation Above Sumner Dam (C.1.a)								
Water Year	2022							
5/11/2023								
	APR	MAY	JUN	JUL	AUG	SEPT	OCT	TOTAL
Precip Las Vegas FAA AP	0.00	0.28	2.64	2.96	1.47	0.65	3.25	11.25
Eff prec Las Veg FAA AP	0.00	0.27	2.32	2.56	1.38	0.64	2.77	9.94
Precip Pecos Natl Monument	0.00	0.00	3.72	2.06	3.25	0.67	2.88	12.58
Eff Precip Pecos RS	0.00	0.00	3.11	1.88	2.77	0.65	2.50	10.91
Precip Santa Rosa	0.00	0.34	2.63	0.70	2.87	0.48	2.71	9.73
Eff Precip Santa Ro	0.00	0.33	2.31	0.68	2.50	0.47	2.38	8.67
Average eff precip, ft	0.00	0.02	0.22	0.14	0.18	0.05	0.21	0.82
Consumptive use, ft	0.19	0.36	0.36	0.30	0.27	0.18	0.11	1.77
Unit depletion rate (CU less eff precip), ft	0.19	0.34	0.15	0.16	0.09	0.13	0.00	1.05
Acres (most recent inventory)	11529							
Streamflow depletion (actual use), AF	12134							
1947 depletion, AF	10804							
Difference (actual use - 1947 depletion), TAF	1.3							
Adjustment to Gaged Flow, Pecos River below Sumner Dam, TAF =						1.3		

Table 6. Depletions Due to Santa Rosa Reservoir Operations (C.1.b)													
Water Year	2022												
5/11/2023													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
LS 2013 table (USBR), add 4,200 feet to value shown; LSR 1997 tables used (COE); Add 4,700 feet to value shown													
Lk Sumner ga ht, avg	48.16	50.38	50.25	49.59	47.11	44.52	37.67	41.92	45.61	43.31	45.37	48.93	
LS content, AF, avg	13289	16153	15972	15080	12092	9516	4813	7424	10535	8491	10303	14229	
LS area, acres, avg	1188	1398	1388	1321	1097	890	528	725	977	808	962	1255	
LS evap, inches	4.56	4.78	8.35	15.64	19.66	15.58	16.41	11.76	10.64	6.37	4.45	3.64	121.83
.77 LS Evap	3.51	3.68	6.43	12.04	15.14	12.00	12.64	9.06	8.19	4.90	3.42	2.80	93.81
LS Precip, inches	0.03	0.08	0.24	0.00	0.30	1.93	0.92	2.39	0.25	2.42	0.21	0.33	9.10
Net LS Evap, inches	3.48	3.60	6.19	12.04	14.84	10.07	11.72	6.67	7.94	2.48	3.21	2.47	84.71
LSum Evaploss, TAF	0.34	0.42	0.72	1.33	1.36	0.75	0.52	0.40	0.65	0.17	0.26	0.26	7.16
L S Rosa ga ht, avg	15.61	15.50	15.28	14.95	14.74	9.80	3.04	8.81	8.22	11.38	14.02	14.10	
LSR content, AF, avg	18329	18208	17956	17590	17360	12606	7859	11800	11337	13960	16585	16670	
LSR area, acres, avg	1136	1130	1119	1103	1092	834	572	797	774	907	1058	1062	
LSR evap, inches	3.72	4.98	8.58	11.19	13.82	11.59	12.64	9.19	9.75	4.97	4.80	3.76	98.99
.77 LSR Evap	2.86	3.83	6.61	8.62	10.64	8.92	9.73	7.08	7.51	3.83	3.70	2.90	76.22
LSR precip, inches	0.36	0.39	0.59	0.00	0.34	2.63	0.70	2.87	0.48	2.71	0.26	0.18	11.51
Net LSR Evap, inches	2.50	3.44	6.02	8.62	10.30	6.29	9.03	4.21	7.03	1.12	3.44	2.72	64.71
LSR Evaploss, TAF	0.24	0.32	0.56	0.79	0.94	0.44	0.43	0.28	0.45	0.08	0.30	0.24	5.08
Total evaploss, TAF	0.58	0.74	1.28	2.12	2.29	1.18	0.95	0.68	1.10	0.25	0.56	0.50	12.24
* Indicates below 4700 ft													
Sum contents, AF	31618	34361	33928	32670	29452	22122	12672	19224	21872	22451	26888	30899	
1947 area, acres	1597	1681	1668	1629	1527	1159	804	1036	1149	1173	1439	1574	
1947 evaploss, TAF	0.46	0.50	0.86	1.64	1.89	0.97	0.78	0.58	0.76	0.24	0.39	0.32	9.40
current-1947evaploss	0.12	0.24	0.42	0.48	0.41	0.21	0.16	0.11	0.34	0.01	0.18	0.17	2.84
						Annual adjustment for excess evaporation =							2.8
ADJUSTMENT FOR EXCESSIVE STORAGE IN SANTA ROSA RESERVOIR													
			2021	2021	2022	2022							
			Gage	Storage	Gage	Storage							
EndYear Sumner Sto			4246.73	11681	4250.34	16097							
EndYear S R Sto			4715.67	18397	4714.09	16659							
Sum				30078		32756							
Sto Adjustment, TAF						0.0							
Adjustm Ex Evap, TAF						2.8							
Total Adjustment,TAF						2.8							
	Storage adjustment												
	Both equal or less than 129.3 TAF, adjustment is zero												
	~~Both greater than 129.3 TAF, subtract previous from current year~~												
	Current year less than 129.3 TAF, previous greater than 129.3 TAF, subtract previous year from 129.3 TAF												
	Current year greater than 129.3 TAF, previous year less than 129.3 TAF, subtract 129.3 TAF from current year												

Table 7. Carlsbad Springs New Water [B.4.c.(2)]					
Water Year	2022				
4/20/2023					
		TAF	AF/day	cfs	Totals
Pecos R bel DC		20.1	55.1	27.8	27.8
Dark Canyon		0.0	0.1	0.1	0.1
Pecos R bel Lake Avalon		0.0	0.0	0.0	0.0
Depletion, cfs					2.0
CID lag seep, cfs (from Table 8)					5.4
Return flow, cfs					1.0
Lake Av lagged seep, cfs (from Table 9)					18.2
PR seepage, cfs					3.0
Carls new water, cfs					2.16
Carls new wat, TAF					1.6
Carls new wat monthly, TAF					0.1

Table 8. Carlsbad Main Canal Seepage Lagged [B.4.c.(2)(e)]													
Water Year	2022												
4/20/2023													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
WY 2022													
CID, TAF	0.0	0.0	1.7	9.2	7.6	7.8	6.1	5.8	7.3	7.7	0.2	0.0	53.4
days/mo	31	28	31	30	31	30	31	31	30	31	30	31	365
cfs	0	0	27.7	154.6	123.3	131.4	98.5	93.6	122.4	125.7	4.1	0.2	73.5
cfs, qtr avg			9.6			136.3			104.7			43.8	
WY 2021		1Q	2Q	3Q	4Q								
FLOWS, cfs				134.5	59.7								
SEVEN %				9.4	4.2								
WY 2022 lagged		1Q	2Q	3Q	4Q								
FLOWS, cfs		9.6	136.3	104.7	43.8								
SEVEN %		0.7	9.5	7.3	3.1								
LAG		3.3	5.7	7.0	5.6	Avg =	5.4	cfs					

Table 9. Lake Avalon Leakage Lagged [B.4.c.(2)(g)]													
Water Year	2022												
4/20/2023													
WY 2022	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
Elev NM rept	74.98	75.40	75.49	73.65	73.61	73.62	73.07	73.25	73.18	72.42	59.21	58.00	
ga ht, avg*	17.98	18.40	18.49	16.65	16.61	16.62	16.07	16.25	16.18	15.42	2.21	1.00	
cfs	23.9	26.0	26.4	17.6	17.4	17.4	14.8	15.7	15.3	11.7	0.0	0.0	
days	31	28	31	30	31	30	31	31	30	31	30	31	365
cfs avg	25.4			17.5			15.3			3.9			15.5
WY 2021		1Q	2Q	3Q	4Q								
cfs				31.7	20.0								
WY 2022 lagged		1Q	2Q	3Q	4Q								
cfs		25.4	17.5	15.3	3.9								
lag cfs		24.6	20.5	17.7	10.0	Avg =	18.2	cfs					
* Computed as WS elev by NM Report minus Gage datum at 3157.0 (USBR datum)													

Table 10. Evaporation Loss at Lake Avalon [B.4.d.(1)]														
Water Year	2022													
5/11/2023														
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOT	
Av WS NM Rept	74.98	75.40	75.49	73.65	73.61	73.62	73.07	73.25	73.18	72.42	59.21	58.00		
Avalon ga ht, avg, ft*	17.98	18.40	18.49	16.65	16.61	16.62	16.07	16.25	16.18	15.42	2.21	1.00		
Avg area Avalon, ac**	795	812	816	647	642	644	579	600	592	526	0	0		.
Panevap Brantley, in.	4.65	5.60	7.91	12.78	16.27	14.36	14.99	10.71	8.05	5.45	4.80	4.34	109.91	
Lakeevap Brantley, in.	3.58	4.31	6.09	9.84	12.53	11.06	11.54	8.25	6.20	4.20	3.70	3.34	84.63	
Precip Brantley, in.	0.03	0.00	0.09	0.00	0.00	1.26	0.17	5.10	1.95	1.61	1.06	0.06	11.33	
Netevap, inches	3.55	4.31	6.00	9.84	12.53	9.80	11.37	3.15	4.25	2.59	2.64	3.28	73.30	
Evaploss Av, TAF	0.24	0.29	0.41	0.53	0.67	0.53	0.55	0.16	0.21	0.11	0.00	0.00	3.69	
* Computed as WS elev by NM Report minus Gage datum at 3157.0 (USBR datum)														
** Based on 2006 USBR Area and Capacity Table														

Table 11. Change in Storage, Lake Avalon [B.4.d.(2)]														
(Gage heights are end of month)														
Water Year	2022													
6/16/2023														
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
	2021	2022												
WS NM Rept	74.71	75.20	75.52	73.90	73.88	74.36	74.02	72.98	73.06	73.64	71.86	58.00	58.00	
Gage EOM, ft*	17.71	18.20	18.52	16.90	16.88	17.36	17.02	15.98	16.06	16.64	14.86	1.00	1.00	
Storage, AF**	2231	2617	2877	1647	1633	1970	1729	1074	1120	1475	487	0	0	
Change sto, TAF		0.4	0.3	-1.2	0.0	0.3	-0.2	-0.7	0.0	0.4	-1.0	-0.5	0.0	-2.2
* Computed as WS elev by NM Report minus Gage datum at 3157.0 (USBR datum)														
** Based on 2006 USBR Area and Capacity Table														

Table 12. Data Required for River Master Manual Calculations													
Water Year 2022													
6/16/2023	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
.													
STREAMFLOW GAGING RECORDS, TAF													
Pecos R b Sumner Dam	0.9	1.8	4.2	4.8	6.2	16.2	11.5	21.8	5.9	4.8	0.0	0.2	78.5
Fort Sumner Main C	0.0	1.1	4.2	4.6	4.6	3.9	5.4	5.2	5.2	4.1	0.0	0.0	38.2
Pecos R nr Artesia	3.7	3.4	3.6	2.3	1.0	1.8	12.5	23.8	14.3	8.9	5.4	4.5	85.2
Rio Penasco at Dayton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourmile Draw nr Lakewood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Seven Rivers nr Lkwd	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Rocky Arroyo at Hwy Br nr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2
Pecos R at Dam Site 3	1.2	1.1	1.4	9.7	8.6	7.8	5.9	6.3	7.6	6.2	0.1	0.0	55.9
Pecos bel Avalon Dam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carlsbad Main Canal	0.0	0.0	1.7	9.2	7.6	7.8	6.1	5.8	7.3	7.7	0.2	0.0	53.4
Dark Canyon at Carlsbad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pecos below Dark Canyon	1.6	1.5	1.5	1.4	1.3	1.3	1.2	2.6	1.8	2.1	2.0	2.0	20.1
Pecos R at Red Bluff	3.3	2.7	2.7	2.6	1.9	1.9	1.9	3.0	2.9	3.3	3.6	3.5	33.2
Delaware R nr Red Bluff	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.3	0.1	0.0	0.1	1.6
GAGE HEIGHTS*													
Avalon gage ht, end mo	75.20	75.52	73.90	73.88	74.36	74.02	72.98	73.06	73.64	71.86	58.00	58.00	
Avalon gage ht, avg	74.98	75.40	75.49	73.65	73.61	73.62	73.07	73.25	73.18	72.42	59.21	58.00	
Sumner Lake ga ht, end mo	49.41	50.68	50.20	48.73	45.28	46.06	36.00	47.00	44.15	43.16	47.28	50.34	
Sumner Lake gage ht, avg	48.16	50.38	50.25	49.59	47.11	44.52	37.67	41.92	45.61	43.31	45.37	48.93	
Lake S Rosa ga ht, end mo	15.57	15.41	15.18	14.97	14.40	-8.12	11.35	5.79	8.78	13.65	14.11	14.09	
Lake S Rosa ga ht, avg	15.61	15.50	15.28	14.95	14.74	9.80	3.04	8.81	8.22	11.38	14.02	14.10	
	* Values for Sumner above 4200 feet; for Santa Rosa above 4700 feet (SR June EOM is 4691.88)												
PRECIPITATION, INCHES													
Brantley Lake	0.03	0.00	0.09	0.00	0.00	1.26	0.17	5.10	1.95	1.61	1.06	0.06	11.33
Las Vegas FAA AP	0.12	0	0.19	0	0.28	2.64	2.96	1.47	0.65	3.25	0.03	0.00	11.59
Pecos National Monument	0.54	0.42	1.19	0	0	3.72	2.06	3.25	0.67	2.88	0.46	0.25	15.44
Santa Rosa	0.36	0.39	0.59	0.00	0.34	2.63	0.70	2.87	0.48	2.71	0.26	0.18	11.51
Lake Santa Rosa	0.36	0.39	0.59	0.00	0.34	2.63	0.70	2.87	0.48	2.71	0.26	0.18	11.51
Sumner Lake	0.03	0.08	0.24	0.00	0.30	1.93	0.92	2.39	0.25	2.42	0.21	0.33	9.10
PAN EVAPORATION, INCHES													
Lake Santa Rosa	3.72	4.98	8.58	11.19	13.82	11.59	12.64	9.19	9.75	4.97	4.80	3.76	98.99
Lake Sumner	4.56	4.78	8.35	15.64	19.66	15.58	16.41	11.76	10.64	6.37	4.45	3.64	121.83
Brantley Lake	4.65	5.60	7.91	12.78	16.27	14.36	14.99	10.71	8.05	5.45	4.80	4.34	109.91
OTHER REPORTS													
Base Acme-Art, TAF (USGS)	2.5	2.3	2.3	1.4	0.7	0.4	0.6	0.4	0.5	1.3	2.4	2.3	17.0
Pump depl Ac-Artesia, TAF	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.01	0.00	0.10	0.00	0.00	0.27
Pumping, C-2713, Malaga B													0.45
NM irrig inv, acres (3/9/2000)													11529
NM Transfer water use, TAF													
NM salvaged water, TAF													0.0
Texas, water stored NM, TAF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Texas, use Del water, TAF													

APPENDIX

RESPONSE TO STATES' OBJECTIONS

Response to states' objections for Accounting Year 2023

New Mexico's objections

Table 1. General Calculation of Annual Departures in TAF (B.1).
New Mexico found that the River Master had by error omitted the Total Annual Historical Outflow for WY2022. Texas reported the same error, and the objection is accepted.

Table 11 Change in Storage, Lake Avalon [B.4.d.(2)] and Table 3. Determination of Flood Inflows, Artesia to Carlsbad (B.4)
New Mexico reported that by error the River Master had used surface area rather than reservoir volume in computing monthly changes in storage. Texas reported the same error, and the objection is accepted. There were small differences in the monthly volume values shown by the states, and these might have stemmed from using the 0.1 or 0.01 elevation increments in the reservoir table. I used the 0.01 increment table, and the values checked with NM's, so these are shown in the Final Report. Texas's monthly values varied slightly from these, but the annual totals were the same.

Table 12. Data Required for River Master Manual Calculations
New Mexico reported that the value for brine diversion at permit C-2713, Malaga B should be 455.36 AF rather than the 45.36 AF that was in the Preliminary Report. Texas reported the same error, and the objection is accepted. After joint consultation, the River Master, New Mexico, and Texas found that the problem stemmed from a typographical error in the data transmittal, and this has been corrected in the Final Report.

Results of New Mexico's objections
New Mexico provided a revised Table 1 that showed a delivery shortfall of 0.7 TAF for Water Year 2022.

Texas's objections

Table 1. General Calculation of Annual Departures in TAF (B.1).
Texas reported the same error as New Mexico, see the discussion above.

Table 11 Change in Storage, Lake Avalon [B.4.d.(2)] and Table 3. Determination of Flood Inflows, Artesia to Carlsbad (B.4)
Texas reported the same error as New Mexico, see the discussion above.

Table 3. Determination of Flood Inflows, Artesia to Carlsbad (B.4)
Texas reported the same error as New Mexico, see the discussion above.

Table 12. Data Required for River Master Manual Calculations

Texas reported the same error as New Mexico, see the discussion above.

Results of Texas's objections

Texas reported a final computation of a delivery shortfall of 0.6 TAF for Water Year 2022.

Results after considering states' objections

Table 1 was modified to include the corrections shown above. The final departure for WY 2022 was -0.6 TAF, which is the same as Texas's computation. New Mexico's Table 1 showed -0.7 TAF, but the difference is probably due to rounding.