

No. 65, Original

In the Supreme Court of the United States

STATE OF TEXAS, PLAINTIFF

v.

STATE OF NEW MEXICO

*ON REVIEW OF THE RIVER MASTER'S 2019 FINAL
DETERMINATION*

**APPENDIX TO UNOPPOSED CONDITIONAL
MOTION FOR REVIEW OF RIVER
MASTER'S 2019 FINAL DETERMINATION**

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PECOS RIVER COMPACT
Report of the River Master
Water Year 2018
Accounting Year 2019
Preliminary Report

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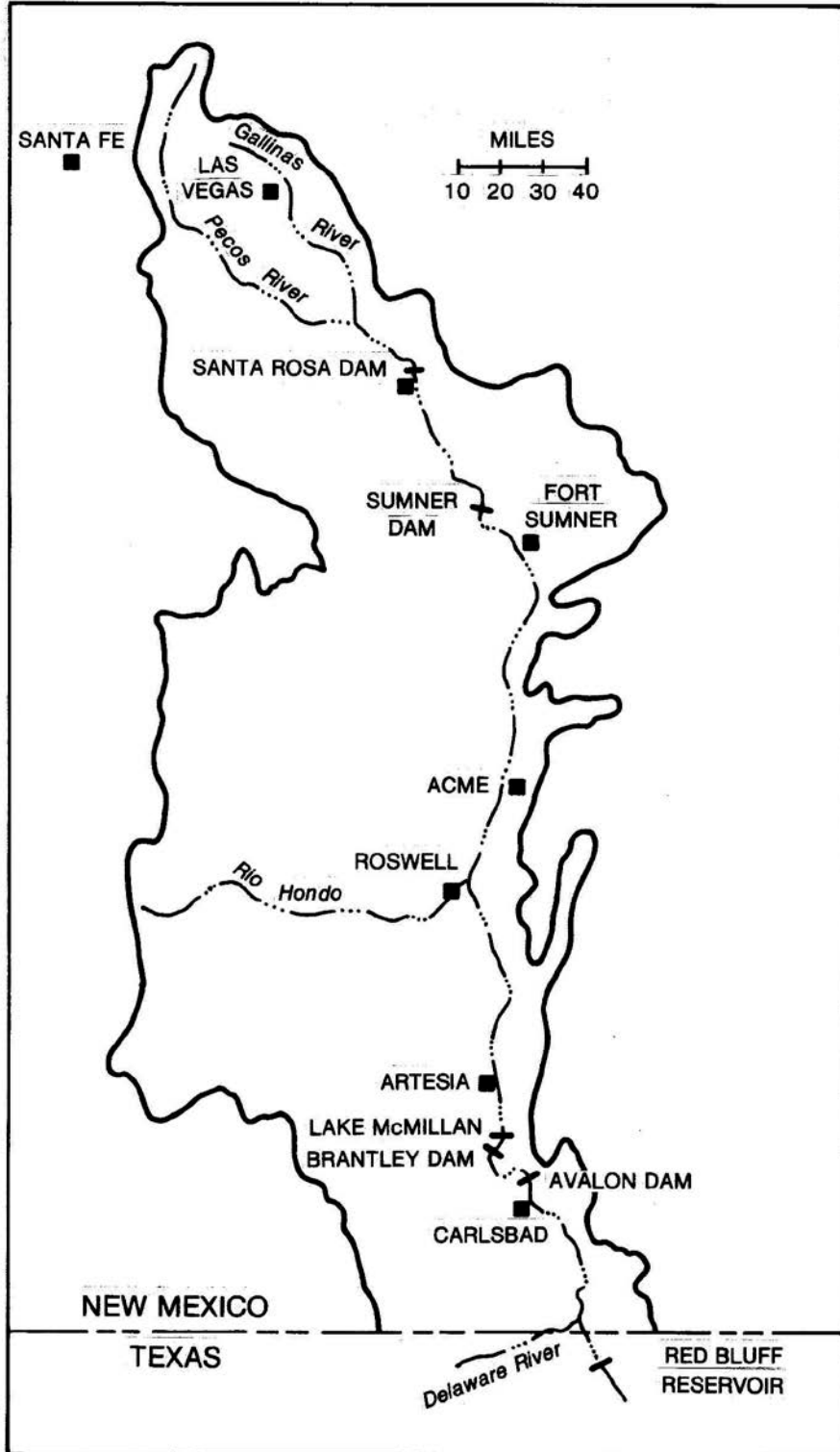
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Map of Pecos River Basin Showing Accounting Reaches

PECOS RIVER COMPACT

Supreme Court of the United States

No. 65, Original

Amended Decree

Preliminary Report of the River Master

Water Year 2018 - Accounting Year 2019

May 7, 2019

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 Preliminary 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 Preliminary Report show that New Mexico’s delivery in Water Year 2017 was an overage of 5,700 acre-feet. The accumulated overage since the beginning of Water Year 1987 is 176,500 acre-feet.

/s/ Neil S. Grigg_____

Neil S. Grigg
River Master of the Pecos River

Pecos River Compact		
Accumulated Shortfall or Overage		
	May 7, 2019	
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	5,700	176,500

Table 1. General Calculation of Annual Departures in TAF (B.1)			
Water Year	2018		
5/5/2019			
	WY 2016	WY 2017	WY 2018
B.1.a. Index Inflows			
(1) Annual flood inflow			
(a) Gaged flow Pecos R bel Alamogordo Dam	128.6	89.7	97.7
(b) Flood Inflow Alamogordo - Artesia (Table 2)	-2.6	33.0	5.3
(c) Flood Inflow Artesia - Carlsbad (Table 3)	15.3	13.1	8.0
(d) Flood Inflow Carlsbad - State Line (Table 4)	9.5	6.2	5.2
Total (annual flood inflow)	150.8	142.0	116.2
(2) Index Inflow (3-year avg)			136.3
B.1.b. 1947 Condition Delivery Obligation (Index Outflow)			
			53.5
B.1.c. Average Historical (Gaged) Outflow			
(1) Annual historical outflow			
(a) Gaged Flow Pecos River at Red Bluff NM	75.4	46.9	42.6
(b) Gaged Flow Delaware River nr Red Bluff NM	6.2	3.3	1.8
(c) Metered diversions Permit 3254 into C-2713	0.2	0.4	0.4
Total Annual Historical Outflow	81.8	50.6	44.8
(2) Average Historical Outflow (3-yr average)			59.1
B.1.d. Annual Departure			
			5.6
C. Adjustments to Computed Departure			
1. Adjustments for Depletions above Alam Dam			
a. Depletions Due to Irrigation (Table 5)	1.3	-1.0	0.6
b. Depl fr Operation of Santa Rosa Reservoir (Table 6)	-6.3	9.2	0.6
c. Transfer of Water Use to Upstream of AD	0	0	
Recomputed Index Inflows			
(1) Annual flood inflow			
(a) Gaged flow Pecos R bel Alamogordo Dam	123.6	97.9	98.9
(b) Flood Inflow Alamogordo - Artesia	-2.6	33.0	5.3
(c) Flood Inflow Artesia - Carlsbad	15.3	13.1	8.0
(d) Flood Inflow Carlsbad - State Line	9.5	6.2	5.2
Total (annual flood inflow)	145.8	150.2	117.4
Recomputed Index Inflow (3-year avg)			137.8
Recomputed 1947 Condition Del Outflow (Index Outflow)			
			54.3
Recomputed Annual Departures			
			4.8
Credits to New Mexico			
C.2 Depletions Due to McMillan Dike			1.0
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			
			5.7

Table 3. Determination of Flood Inflows, Artesia to Carlsbad (B.4)														
Water Year		2018												
5/4/2019		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	0.0	0.0	0.0	0.0	0.0	0.0
Rocky Arroyo at Hwy Br		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Flood Inflow, Art-DS3		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Pecos R at Dam Site 3		0.0	0.5	10.1	12.7	9.7	15.2	12.0	10.2	6.4	3.1	0.0	0.1	80.1
CB Sprgs New Water (from Table 7)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
Total Inflow, DS3 - CB		0.0	0.5	10.1	12.7	9.7	15.2	12.0	10.2	6.4	3.1	0.0	0.1	80.1
Evap Loss, Lake Avalon (from Table 10)		0.0	0.0	0.5	0.6	0.8	0.7	0.7	0.5	0.2	0.1	0.0	0.0	4.1
Storage Chg, Lake Avalon (from Table 11)		0.0	0.0	2.2	0.4	-0.5	0.3	0.2	-0.5	-0.4	-0.4	-1.3	0.0	0.0
Carls ID diversions		0.0	0.0	5.6	8.7	10.1	11.5	10.9	7.1	8.9	6.9	0.5	0.0	70.2
93% CID diver		0.0	0.0	5.2	8.1	9.4	10.7	10.1	6.6	8.3	6.4	0.5	0.0	65.3
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 Csbad		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		1.3	1.5	1.4	1.3	1.3	1.3	1.4	1.6	1.5	1.7	1.5	1.3	17.1
Pecos R at Carlsbad		1.3	1.5	1.4	1.3	1.3	1.3	1.4	1.6	1.5	1.7	1.5	1.3	17.1
Total Outflow		1.4	1.6	9.4	10.5	11.1	13.2	12.6	8.5	9.6	7.9	0.7	1.4	87.9
Flood Inflow, DS3-CB		1.4	1.1	-0.6	-2.2	1.4	-2.1	0.6	-1.8	3.2	4.8	0.7	1.4	7.8
Flood Inflow, Art-CB		1.4	1.1	-0.6	-2.2	1.4	-2.1	0.7	-1.8	3.2	4.8	0.7	1.4	8.0

Table 4. Summary Table for Computations, Carlsbad to State Line (B.5)						
Water Year	2018					
5/5/2019						
		BCB - RB		Del R	DC	
		RM				
Jan		0.0		0.0	0.0	
Feb		0.0		0.0	0.0	
Mar		0.0		0.0	0.0	
Apr		0.0		0.0	0.0	
May		0.0		0.0	0.0	
Jun		0.1		0.0	0.0	
Jul		0.3		0.0	0.0	
Aug		0.3		0.0	0.0	
Sep		1.4		0.3	0.0	
Oct		2.2		0.4	0.0	
Nov		0.0		0.0	0.0	
Dec		0.1		0.0	0.0	
Total		4.5		0.7	0.0	
Summary of flood inflows, Carlsbad to State Line, TAF						
Red Bluff - Carlsbad + Dark C RM calcs)						4.5
Delaware River						0.7
Total Flood Inflow, Carlsbad to State Line						5.2

Table 5. Depletions Due to Irrigation Above Sumner Dam (C.1.a)											
	Water Year		2018		2019		2018		2019		TOTAL
	5/5/2019		APR	MAY	JUN	JUL	AUG	SEPT	OCT		
Precip Las Vegas FAA AP			0.29	0.11	0.27	6.51	3.26	2.69	3.33	16.46	
Eff prec Las Veg FAA AP			0.28	0.11	0.26	4.1	2.78	2.36	2.83	12.72	
Precip Pecos Natl Monument			0	0.50	0.46	4.18	1.49	1.28	3.07	10.98	
Eff Precip Pecos RS			0	0.49	0.45	3.42	1.40	1.21	2.64	9.61	
Precip Santa Rosa			0.04	0.63	1.40	2.13	1.23	2.52	5.57	13.52	
Eff Precip Santa Ro			0.04	0.62	1.32	1.93	1.17	2.23	3.99	11.30	
Average eff precip, ft			0.01	0.03	0.06	0.26	0.15	0.16	0.26	0.93	
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			0.18	0.33	0.30	0.04	0.12	0.02	0.00	0.99	
Acres (most recent inventory)			11529								
Streamflow depletion (actual use), AF			11398								
1947 depletion, AF			10804								
Difference (actual use - 1947 depletion), TAF			0.6								
Adjustment to Gaged Flow, Pecos River below Sumner Dam, TAF =								0.6			

Table 7. Carlsbad Springs New Water [B.4.c.(2)]					
Water Year	2018				
5/4/2019		TAF	AF/day	cfs	Totals
Pecos R bel DC		17.1	46.8	23.6	23.6
Dark Canyon		0.0	0.0	0.0	0.0
Pecos R bel Lake Avalon		0.0	0.0	0.0	0.0
Depletion, cfs					2.0
CID lag seep, cfs (from Table 8)					7.1
Return flow, cfs					1.0
Lake Av lagged seep, cfs (from Table 9)					14.6
PR seepage, cfs					3.0
Carls new water, cfs					-0.09
Carls new wat, TAF					-0.1
Carls new wat monthly, TAF					0.0

Table 8. Carlsbad Main Canal Seepage Lagged [B.4.c.(2)(e)]													
Water Year	2018												
5/4/2019	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
WY 2018													
CID, TAF	0	0	5.6	11.6	9.0	13.4	10.9	10.5	6.1	3.4	1.7	0.0	72.2
days/mo	31	28	31	30	31	30	31	31	30	31	30	31	365
cfs	0	0	90.9	195.1	147.0	225.2	177.5	170.8	101.9	54.9	27.9	0.0	99.3
cfs, qtr avg			31.3			188.7			150.6			27.6	
WY 2017		1Q	2Q	3Q	4Q								
FLows, cfs				147.0	40.5								
SEVEN %				10.3	2.8								
WY 2018 lagged		1Q	2Q	3Q	4Q								
FLows, cfs		31.3	188.7	150.6	27.6								
SEVEN %		2.2	13.2	10.5	1.9								
LAG		3.8	7.8	10.0	6.7	Avg =	7.1	cfs					

Table 9. Lake Avalon Leakage Lagged [B.4.c.(2)(g)]													
Water Year	2018												
5/4/2019													
WY 2018	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
Elev NM rept	60.0	60.0	75.3	74.1	74.4	74.1	75.0	74.4	74.8	74.1	65.3	60.0	
ga ht, avg*	3.0	3.0	18.3	17.1	17.4	17.1	18.0	17.4	17.8	17.1	8.3	3.0	
cfs	0.0	0.0	25.4	19.9	21.4	19.7	24.1	20.9	22.9	19.7	0.0	0.0	
days	31	28	31	30	31	30	31	31	30	31	30	31	365
cfs avg	8.7			20.3			22.7			6.6			14.6
WY 2017													
cfs													
WY 2018 lagged													
cfs		8.7	20.3	22.7	6.6								
lag cfs		10.3	14.2	19.6	14.3	Avg =	14.6	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													
2018													
5/4/2019													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOT
Av WS NM Rept	60.00	60.00	75.28	74.13	74.45	74.09	75.01	74.35	74.77	74.09	65.35	60.00	
Avalon ga ht, avg, ft*	3.00	3.00	18.28	17.13	17.45	17.09	18.01	17.35	17.77	17.09	8.35	3.00	
Avg area Avalon, ac**	0	0	808	699	732	699	797	732	775	699	1	0	.
Panevap Brantley, in.	4.65	5.60	9.97	12.94	16.93	17.51	15.48	12.30	7.83	6.24	4.80	4.34	118.59
Lakeevap Brantley, in.	3.58	4.31	7.68	9.96	13.04	13.48	11.92	9.47	6.03	4.80	3.70	3.34	91.31
Precip Brantley, in.	0.01	0.19	0.08	0.01	0.03	0.78	1.57	1.01	2.38	3.49	0.23	0.50	10.28
Netevap, inches	3.57	4.12	7.60	9.95	13.01	12.70	10.35	8.46	3.65	1.31	3.47	2.84	81.03
Evaploss Av, TAF	0.00	0.00	0.51	0.58	0.79	0.74	0.69	0.52	0.24	0.08	0.00	0.00	4.14
* 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														
2018														
3/24/2019														
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
2017														
WS NM Rept	60.0	60.0	60.0	74.7	75.2	74.6	75.0	75.2	74.6	74.0	73.4	60.0	60.0	
Gage EOM, ft*	3.0	3.0	3.0	17.7	18.2	17.6	18.0	18.2	17.6	17.0	16.4	3.0	3.0	
Storage, AF**	0	0	0	2223	2617	2147	2457	2617	2147	1715	1323	0	0	0
Change sto, TAF		0.0	0.0	2.2	0.4	-0.5	0.3	0.2	-0.5	-0.4	-0.4	-1.3	0.0	0.0
* Computed as WS elev by NM Report minus Gage datum at 3157.0 (USBR datum)														
** Based on 2006 USBR Area and Capacity Table														

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APPENDIX

**FLOOD INFLOW
CARLSBAD TO RED BLUFF**

Hydrograph scalping to support Table 4

	2018 Water year									Scalped Totals		
	5/5/19	PR AT RED BLUFF				PR BELOW DC AT CBD			PRRB	PRBDC	FIF	
	Day	Yr Day	Q	Base	Diff	Q	Base	Diff				
JAN	1	1	63.2			21.5						
	2	2	59.2			22.3						
	3	3	61.9			21.8						
	4	4	65.2			22.1						
	5	5	64.2			21.5						
	6	6	64.4			21.5						
	7	7	64.8			21.6						
	8	8	65.4			20.5						
	9	9	65.2			21.3						
	10	10	59.8			22.2						
	11	11	60	60	0.0	20.9						
	12	12	67.2	60.1	7.1	21.1						
	13	13	69	60.2	8.8	20.4						
	14	14	63.3	60.3	3.0	20.6						
	15	15	61.8	60.4	1.4	22.1						
	16	16	60.6	60.6	0.0	18						
	17	17	57.9			20.3						
	18	18	60			21.5						
	19	19	62.6			22.1						
	20	20	64.4			22.3						
	21	21	65.4			21.9						
	22	22	63.5			21.5						
	23	23	60.9			21.3						
	24	24	58.8			21.1						
	25	25	57.7			21.5						
	26	26	58.4			22.8						
	27	27	60.2			21.4						
	28	28	62.7			22						
	29	29	64			21.5						
	30	30	62.7			22.4						
	31	31	61.5			23.3			20	0	20	
FEB	1	32	61.7			22.3						
	2	33	59.6			22.4						
	3	34	53.7			24						
	4	35	54.8			23.4						
	5	36	51.5			24.2						
	6	37	52.7			24.6						
	7	38	54.1			24.5						
	8	39	59.4			24.8						
	9	40	56.9			25.6						
	10	41	56.1			25.8						
	11	42	55.3			26						
	12	43	52.5			25.9						
	13	44	48.9			26.3						
	14	45	49.4			26.6						
	15	46	49.6			27						
	16	47	53.5	53.5	0.0	27.1						
	17	48	55.4	52.9	2.6	27.9						
	18	49	55.7	52.1	3.6	27.7						
	19	50	57.9	51.4	6.6	28						
	20	51	56.1	50.6	5.5	27.7						
	21	52	52.2	49.9	2.4	27						
	22	53	49.1	49.1	0.0	27.4						
	23	54	46.9			28.2						
	24	55	46.1			28.4						
	25	56	43.9			28						
	26	57	45.2			27.4						
	27	58	48.5			29.5						
	28	59	46			30.5			21	0	21	
MAR	1	60	42.6			29.4						
	2	61	39.9			30.6						
	3	62	43.5			31.6						
	4	63	41.7			29.1						
	5	64	41.3			24.8						
	6	65	40.4			21.9						
	7	66	39.1			21.2						
	8	67	39.6			22.7						
	9	68	39.1			23.4						

Hydrograph scalping to support Table 4

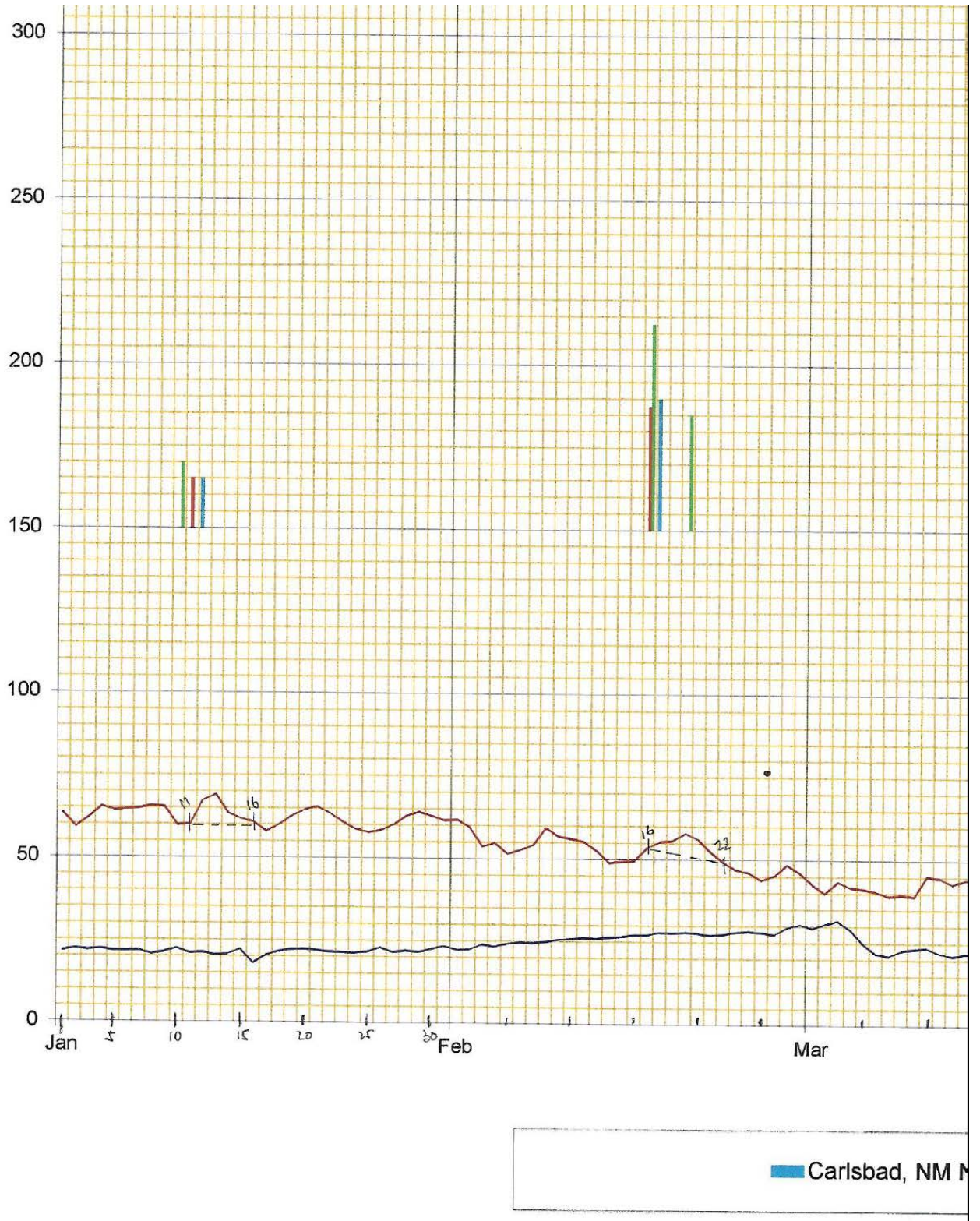
	10	69	45.2				23.6						
	11	70	44.7				22.1						
	12	71	42.9				21.1						
	13	72	44				21.9						
	14	73	45.3				21.9						
	15	74	44.7				23.4						
	16	75	44.9				21.8						
	17	76	44.5				21.9						
	18	77	38.9				22.4						
	19	78	34.1				20.3						
	20	79	34.7				21.1						
	21	80	39.1				21.7						
	22	81	39.1				21.9						
	23	82	48.5				22.2						
	24	83	40.2				22.6						
	25	84	29.2				21.7						
	26	85	32.9				22.2						
	27	86	41.1				23.3						
	28	87	37.4				21.5						
	29	88	33.6				22.1						
	30	89	32.4				22.1						
	31	90	35.7				23.1						
APR	1	91	52.5				23.2			0	0	0	
	2	92	50.5				23.4						
	3	93	45.8				22.1						
	4	94	53.9				20.7						
	5	95	49.5				23.9						
	6	96	39.8				25.1						
	7	97	47				22.3						
	8	98	54.4				24.9						
	9	99	54.9				23.9						
	10	100	64.2				21.5						
	11	101	63.9				20.8						
	12	102	62.8				21						
	13	103	52.4				20.4						
	14	104	49.9				18.5						
	15	105	53.4				20.1						
	16	106	51.9				20.7						
	17	107	46.9				20.4						
	18	108	48.6				19.4						
	19	109	44.3				19.2						
	20	110	40.8				20.4						
	21	111	41.5				20.1						
	22	112	48.6				19.7						
	23	113	53.7				20.4						
	24	114	55.7				22						
	25	115	50.4				18.2						
	26	116	45.7				21.6						
	27	117	44.8				18.6						
	28	118	48.4				20.8						
	29	119	53.4				20.8						
	30	120	44.6				21.4			0	0	0	
MAY	1	121	43.1				20.8						
	2	122	42.4				20.7						
	3	123	51.4				20						
	4	124	45				19.8						
	5	125	41.4				19.8						
	6	126	38.6				19.6						
	7	127	36.6				19.6						
	8	128	33.8				20.6						
	9	129	28.2				20.6						
	10	130	24.8				21.2						
	11	131	24.2				20.9						
	12	132	30.1				20.1						
	13	133	31.6				19.4						
	14	134	34.5				19.7						
	15	135	36.9				20						
	16	136	38.7				19.8						
	17	137	40.1				19.8						
	18	138	30				20.5						
	19	139	28.3				20.3						
	20	140	24.8				19.8						
	21	141	22	22	0.0		20.3						

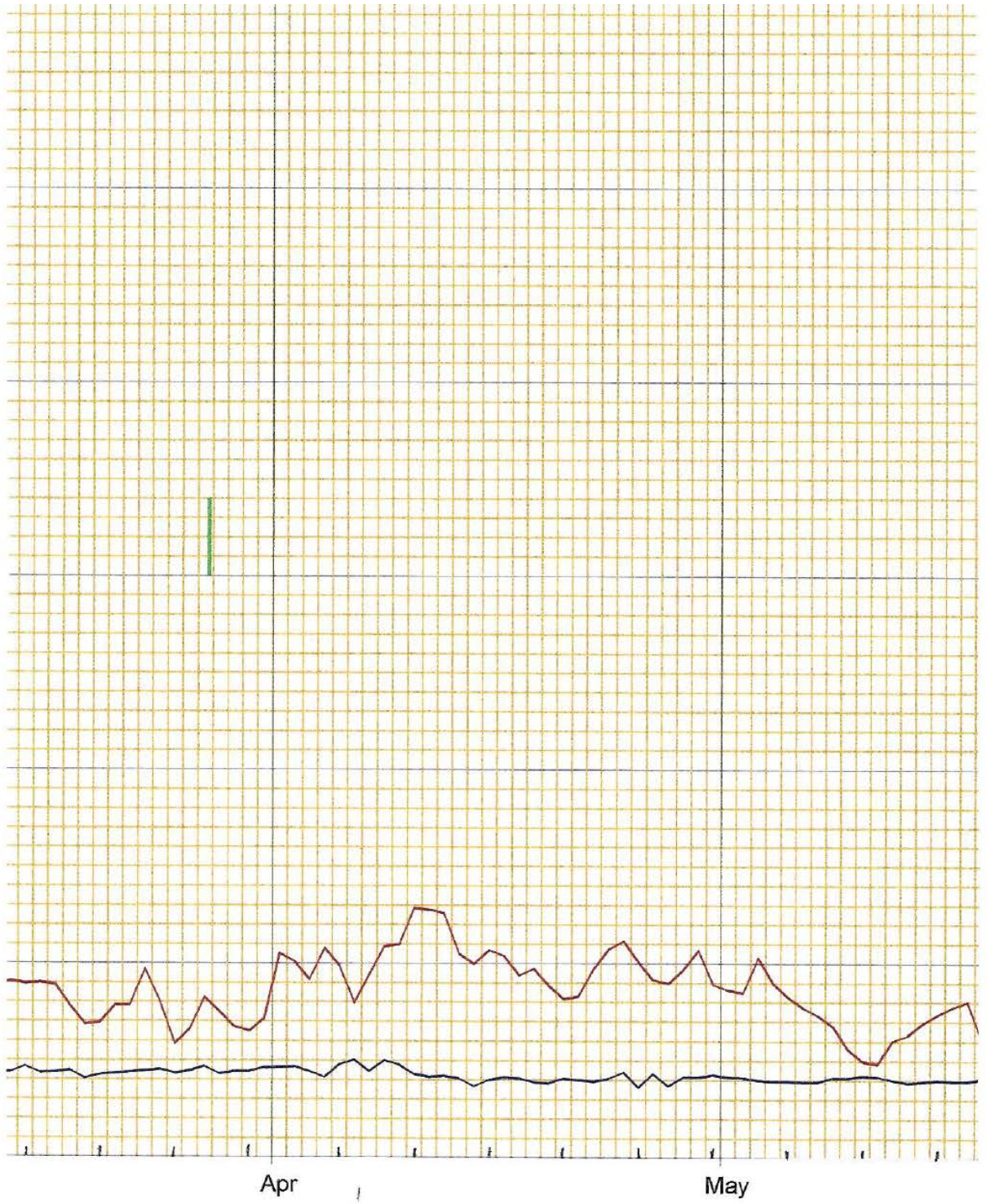
Hydrograph scalping to support Table 4

	22	142	29.2	26.9	2.3	21.6						
	23	143	36.7	31.9	4.9	21.6						
	24	144	38.2	36.8	1.4	21.1						
	25	145	41.7	41.7	0.0	21.1						
	26	146	53.5			22.7						
	27	147	59.8			24.6						
	28	148	48.9			21.3						
	29	149	42.4			19.3						
	30	150	40			19.5						
	31	151	34.7			19.3			9	0	9	
JUN	1	152	28.3			19.7						
	2	153	26.1			18.8						
	3	154	32.1	32.1	0.0	21.4						
	4	155	33.9	37.0	-3.1	21.6						
	5	156	60.9	41.9	19.0	21.2						
	6	157	55.1	46.8	8.3	20.9						
	7	158	51.7	51.7	0.0	20.1						
	8	159	54.5			19.5						
	9	160	46.5			20.3						
	10	161	35.7			20.1						
	11	162	31.8			21.5						
	12	163	27.3			20.6						
	13	164	30.7			19.8						
	14	165	27.5			20						
	15	166	25.1			19.5						
	16	167	28.8	28.8	0.0	25.9						
	17	168	34.6	30.9	3.7	21.9						
	18	169	44.4	33.0	11.4	22.2						
	19	170	47.9	35.0	12.9	21.9						
	20	171	44.6	37.1	7.5	22.5						
	21	172	39.2	39.2	0.0	21.5						
	22	173	39.8			21.2						
	23	174	48.6			22.7						
	24	175	44.6			22.9						
	25	176	42.2			21.7						
	26	177	45			22.6						
	27	178	44			22.8						
	28	179	39.1			22.2						
	29	180	35.3			22.2						
	30	181	31.7			22.4			60	0	60	
JUL	1	182	35.5			21						
	2	183	42.3			20.6						
	3	184	65.1			22.4						
	4	185	67.7			23.3						
	5	186	67			21.6						
	6	187	68.3			20.4						
	7	188	55			20.9						
	8	189	52	52	0.0	21.6						
	9	190	59.8	48.9	10.9	24.3						
	10	191	57.9	45.8	12.1	23.7						
	11	192	50.8	42.7	8.1	23.3						
	12	193	39.5	39.6	-0.1	22.3	22.3	0.0				
	13	194	36.2	36.5	-0.3	36.7	23.4	13.3				
xxx	14	195	33.4	33.4	0.0	24.6	24.6	0.0				
	15	196	52.4	41.1	11.3	24.5						
	16	197	81.3	48.8	32.5	23.6						
	17	198	56.5	56.5	0.0	23.8						
	18	199	59.7			23.9						
	19	200	50			23.4						
	20	201	46.6			22.8						
	21	202	43.4			22.5						
	22	203	39.2			22.2						
	23	204	37.1			22.4						
	24	205	36.2			21.4						
	25	206	34.2			21.9						
	26	207	29.5	29.5	0.0	25.4						
	27	208	35.4	30.7	4.7	23.2						
	28	209	41.2	31.9	9.3	23.2						
	29	210	46.1	33.1	13.0	23						
	30	211	51.9	34.3	17.6	25	25	0.0				
	31	212	79.5	35.5	44.0	30.5	25	5.5	163	19	144	
AUG	1	213	94.7	36.7	58.0	24.9	24.9	0.0				
	2	214	89.1	37.9	51.2	25.7						

Hydrograph scalping to support Table 4

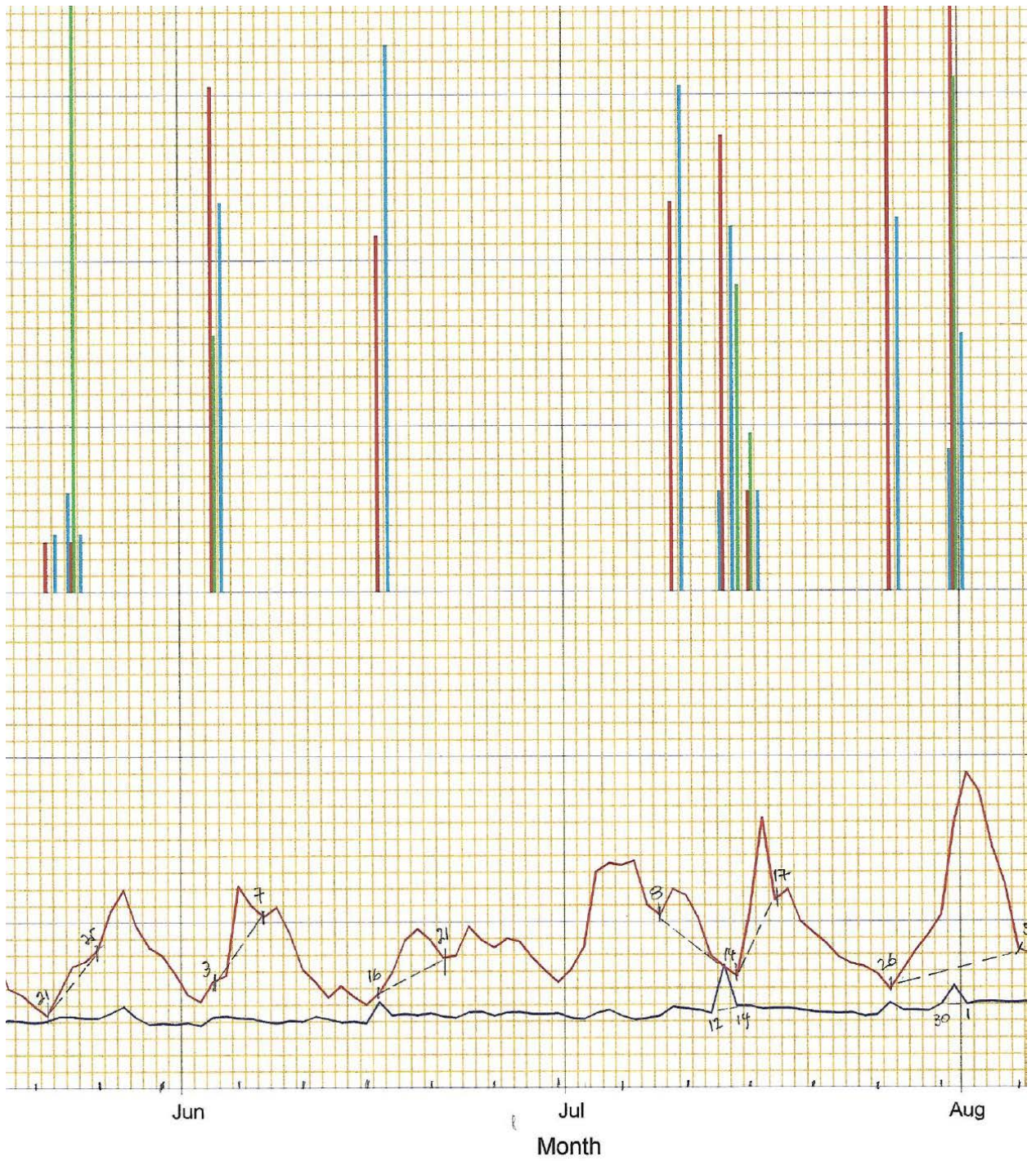
**	15	288	74	56.3	17.7	22.3	22.3	0.0	xxx			
	16	289	65.4	57.4	8.0	24.5	23.2	1.3				
	17	290	61.2	58.6	2.6	25.6	24.1	1.6				
	18	291	67	59.7	7.3	33.2	24.9	8.3				
	19	292	72.2	60.8	11.4	25.8	25.8	0.0				
	20	293	78.7	62.0	16.7	25.3						
	21	294	82.6	63.1	19.5	25.1						
	22	295	74.1	64.3	9.8	25.5	25.5	0.0				
	23	296	71.6	65.4	6.2	28.9	25.4	3.5				
	24	297	217	66.6	150.5	71	25.4	45.6				
	25	298	188	67.7	120.3	25.4	25.4	0.0				
	26	299	180	68.8	111.2	24.8						
	27	300	111	70.0	41.0	24.5						
	28	301	84.1	71.1	13.0	24.2						
	29	302	77.2	72.3	4.9	24.7						
	30	303	73.4	73.4	0.0	24.8	24.8	0.0				
	31	304	74.8			28.7	24.6	4.1	1172	85	1087	
NOV	1	305	77.3			24.4	24.4	0.0				
	2	306	73.7			24.7						
	3	307	74.6			25.7						
	4	308	71			25.1						
	5	309	69.5			26.1						
	6	310	70.2			26.1						
	7	311	99.2			26						
	8	312	116			24.6						
	9	313	111			23.8						
	10	314	101			23.9						
	11	315	101			25.8						
	12	316	99.8			22.9						
	13	317	104			22.7						
	14	318	111			24						
	15	319	113			24.5						
	16	320	86.9			24.5						
	17	321	70.7			24.3						
	18	322	67.1			23.9						
	19	323	66.6			24.4						
	20	324	64.6			23.7						
	21	325	65.6			24						
	22	326	65.7			24.3						
	23	327	69.3			24.3						
	24	328	70.4			24.5						
	25	329	69.3			23.3						
	26	330	63			23.3						
	27	331	58			24.2						
	28	332	61.7			24.6						
	29	333	63.3			24.3						
	30	334	60.3			25.7			0	0	0	
DEC	1	335	61.9			22.4						
	2	336	62.6			23.9						
	3	337	60.7			23.5						
	4	338	57			23.9						
	5	339	60.7			23.4						
	6	340	58.8			23.6						
	7	341	60.9	60.9	0.0	22.7						
	8	342	66.1	61.4	4.7	24.7						
	9	343	73.4	61.9	11.5	23.3						
	10	344	75.4	62.3	13.1	22.9						
	11	345	73	62.8	10.2	23.7						
	12	346	68.1	63.3	4.8	24.6						
	13	347	69.9	63.8	6.1	22						
	14	348	71.7	64.3	7.4	19.5						
	15	349	70.9	64.7	6.2	20.9						
	16	350	67.3	65.2	2.1	20.8						
	17	351	65.7	65.7	0.0	20.8						
	18	352	67.4			21.7						
	19	353	68.3			21.6						
	20	354	68.1			19.9						
	21	355	66.4			21.2						
	22	356	64.2			20.6						
	23	357	62.4			19.7						
	24	358	56			21.2						
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	26	360	63.8			23						





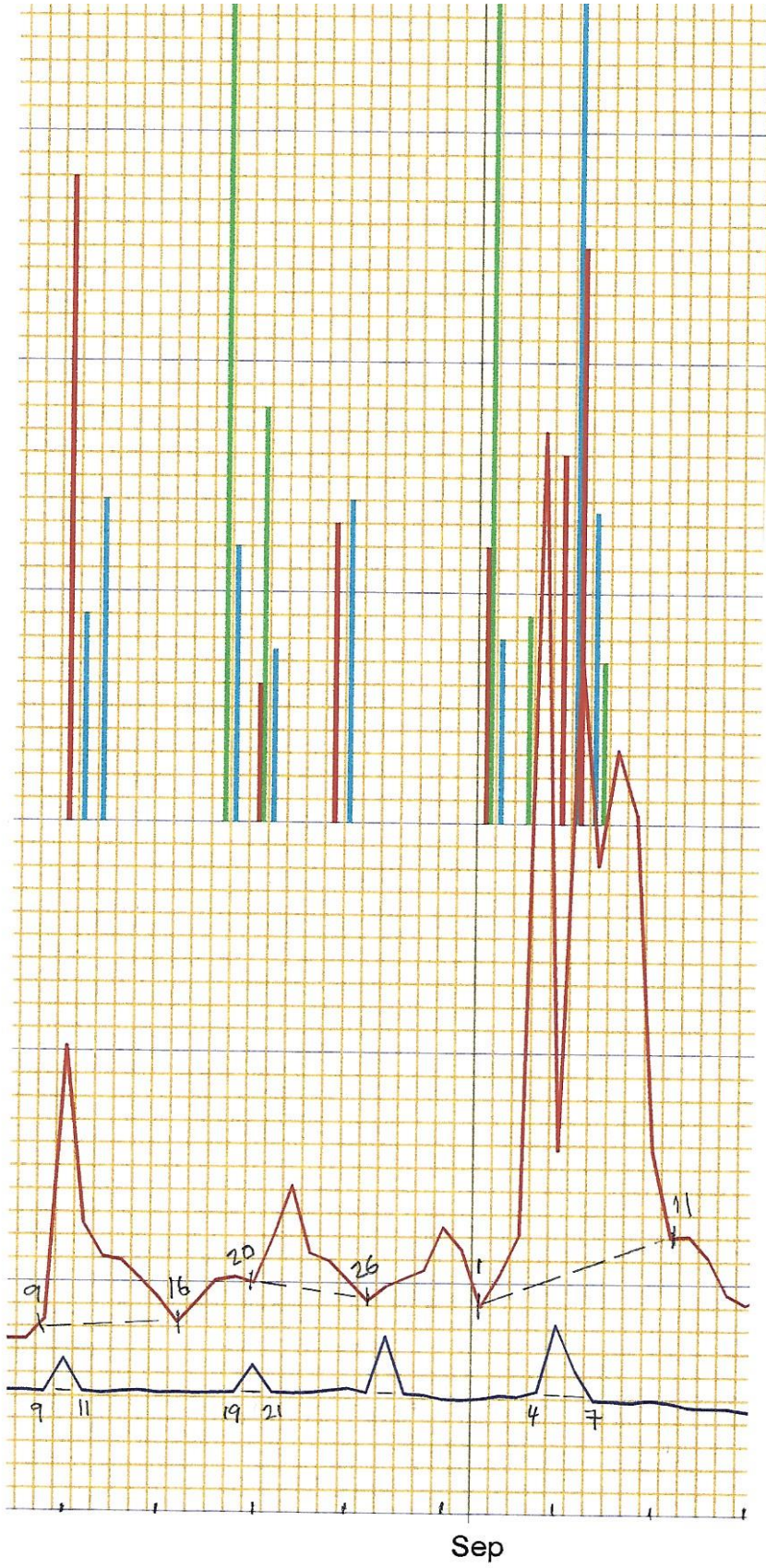
IOAA Station No. 291469

Carlsbad Cavern City Airp

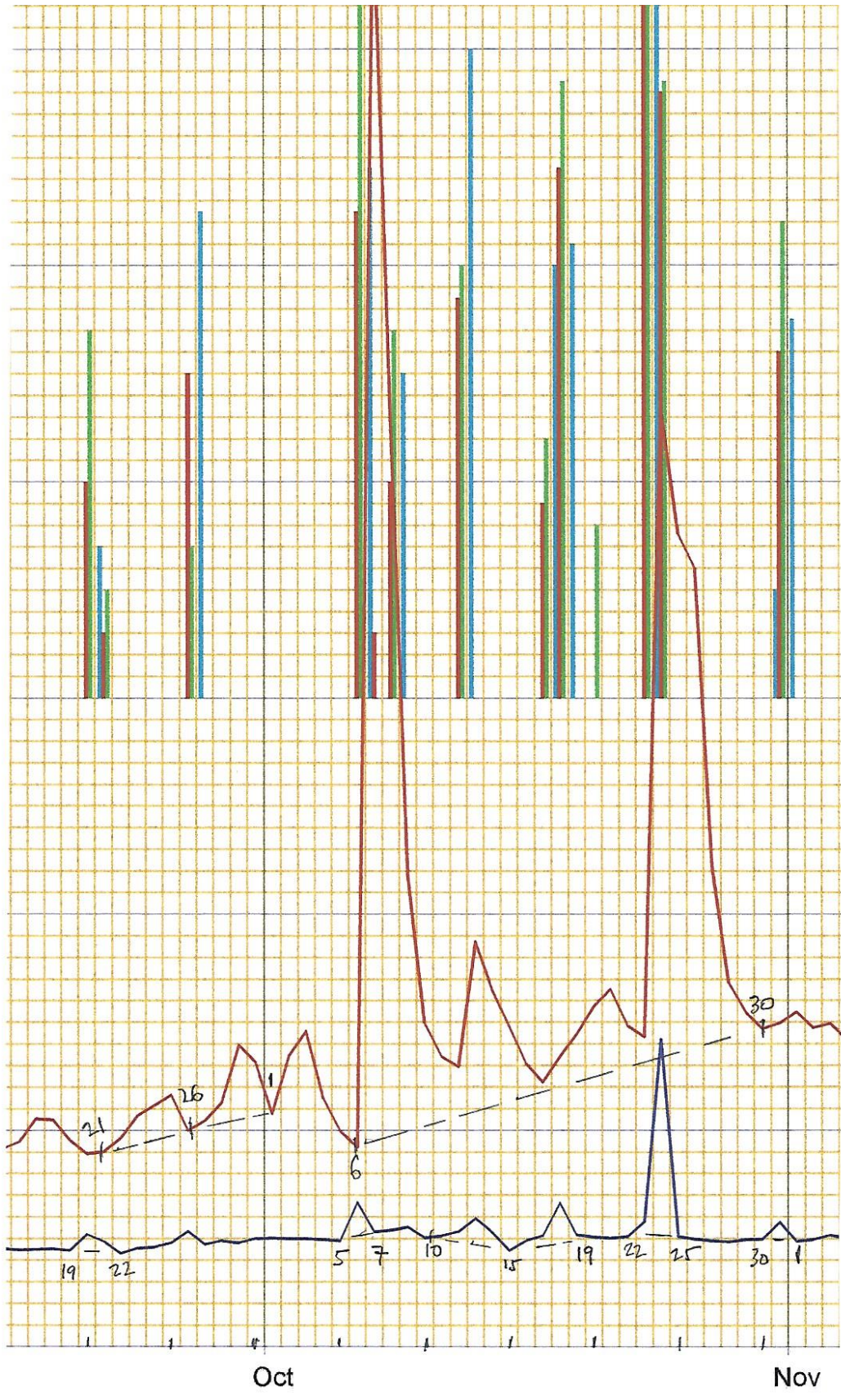


ort, NM NOAA Station No. 93033

RAWS Station, Batdraw New Mexico



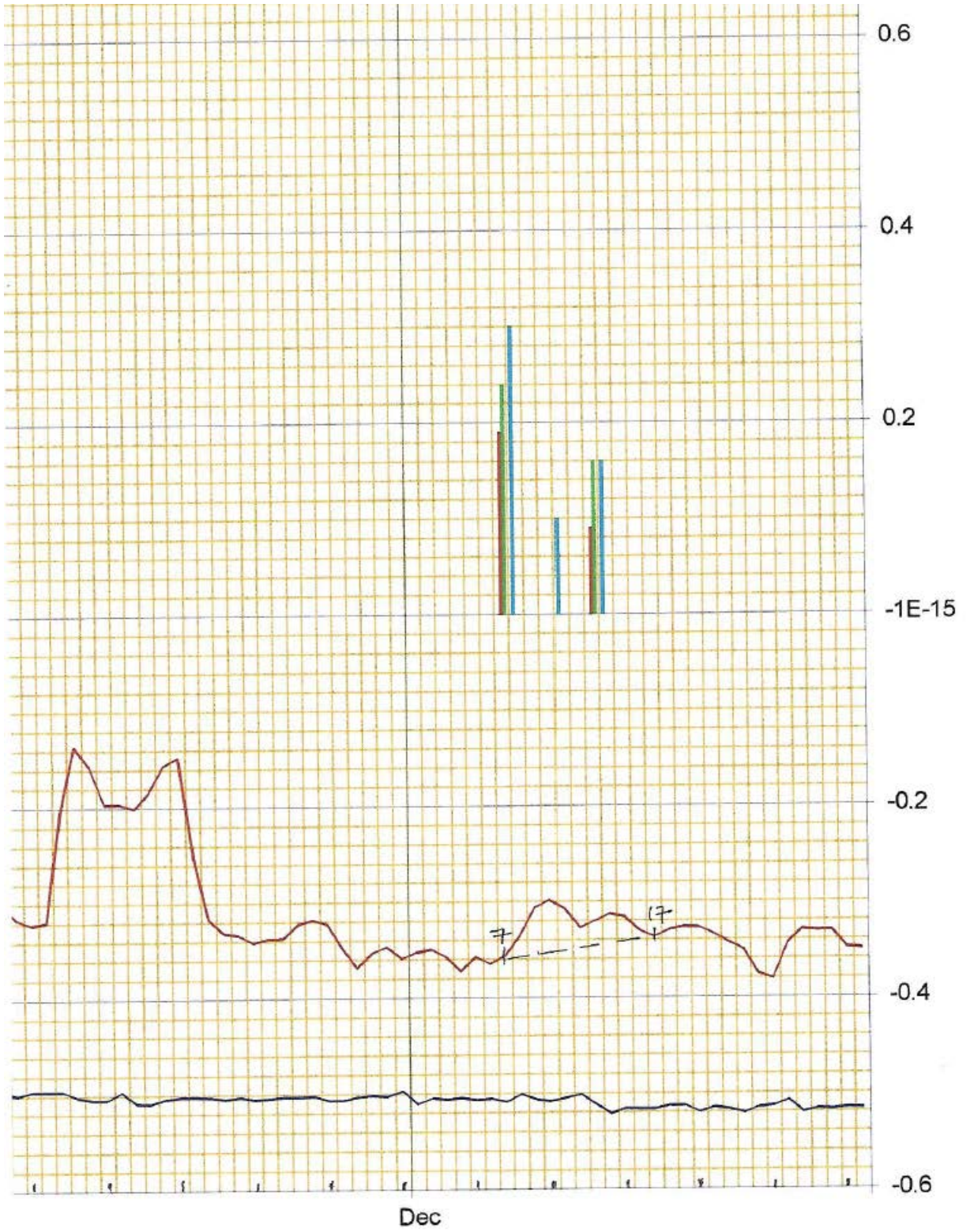
— Pecos River below |



Dark Canyon

— Pecos River at Red Canyon

30a



Bluff

**NEW MEXICO'S OBJECTIONS
TO THE PRELIMINARY REPORT
OF THE RIVER MASTER OF THE PECOS RIVER
FOR THE WATER YEAR 2018**

New Mexico submits the following objections and comments to the Pecos River Master's (River Master) Preliminary Report for the Water Year 2018 (Preliminary Report).

I. Table 3. USGS Carlsbad Main Canal at Head Near Carlsbad, NM Gage Data

The Preliminary Report uses incorrect data for the USGS Carlsbad Main Canal gage for the months of April, May, June, August, September, October, and November. The incorrect values seem to have resulted from the use of 2017 data for the USGS Carlsbad Main Canal gage. New Mexico has conferred with Texas, and Texas has identified the same issue. The table below includes the data used by the River Master in Table 3 of the Preliminary Report and the USGS approved data for the months of April, May, June, August, September, October, and November.

Summary of Data 2018 USGS Carlsbad Main Canal at Head Near Carlsbad, NM Gage (08403500)		
Month	Data Used in WY 2018 Preliminary Report <i>(thousand acre feet)</i>	USGS Approved Data <i>(thousand acre feet)</i>
April	8.7	11.6
May	10.1	9.0
June	11.5	13.4
August	7.1	10.5
September	8.9	6.1
October	6.9	3.4
November	0.5	1.7

II. Accumulated Shortfall or Overage Table

New Mexico notes that the Accumulated Overage in the Preliminary Report contains a one-time credit of 16,600 acre-feet for Water Year 2017 attributable to New Mexico's storage of waters for Texas in Water Years 2014 and 2015. The one-time credit is currently the subject of a Motion for Review filed by Texas in the Supreme Court. New Mexico reserves all rights to receive the full credit to which it is entitled under the Compact related to its storage of waters at Texas's request.

Thank you for your consideration of New Mexico's comments.

Respectfully submitted on this 13th day of June, 2019:

/s/ Hannah Riseley-White

Hannah Riseley-White

Technical Representative for the State of New Mexico

**IN THE
SUPREME COURT OF THE UNITED STATES
OCTOBER TERM, 2018**

STATE OF TEXAS, Plaintiff,

v.

STATE OF NEW MEXICO, Defendant.

Before the River Master:

Neil S. Grigg

**TEXAS' RESPONSE TO THE
PECOS RIVER MASTER'S PRELIMINARY REPORT
FOR WATER YEAR 2018/ACCOUNTING YEAR 2019**

TO THE RIVER MASTER OF THE PECOS RIVER:

The State of Texas has reviewed the River Master's Preliminary Report for Water Year 2018. Texas' comments and objections are contained in Exhibit 1, titled "Texas' Comments/Objections," which is attached here and incorporated fully herein for all purposes. Texas respectfully requests that the River Master make the changes outlined in Exhibit 1.

Respectfully submitted on June 13, 2019.

/s/ J. Amber Ahmed
J. AMBER AHMED
Texas State Bar No. 24080756

Assistant Attorney General
Office of the Attorney General of Texas
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ATTORNEY FOR THE
STATE OF TEXAS

/s/ Scott Van Winkle
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Compact Hydrologist

Texas Commission on
Environmental Quality
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Austin, Texas 78711-3087

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Scott.vanwinkle@tceq.texas.gov

TECHNICAL REPRESENTATIVE
FOR THE STATE OF TEXAS

CERTIFICATE OF SERVICE

On June 13, 2019, a true and correct copy of Texas' Response to the Pecos River Master's Preliminary Report for Water Year 2018/Accounting Year 2019 was sent by email and Certified Mail, Return Receipt Requested to:

Nathaniel Chakeres, OSE
Legal Advisor, Pecos River Compact Commission
New Mexico Interstate Stream Commission
P.O. Box 25102
Santa Fe, New Mexico 87504
Nathaniel.Chakeres@state.nm.us

Hannah Riseley-White, OSE
Engineer Advisor, Pecos River Compact
New Mexico Interstate Stream Commission
P.O. Box 25102
Santa Fe, New Mexico 87504
Hannah.Riseley-White@state.nm.us

/s/ J. Amber Ahmed
J. Amber Ahmed
Assistant Attorney General

EXHIBIT 1

TEXAS' COMMENTS/OBJECTIONS
Water Year 2018 - Accounting Year 2019

Texas' comments and objections to the River Master's Preliminary Report dated May 8, 2019, are described below. These calculations and comments do not take into consideration the open dispute over WY 2014 and WY 2015 accounting concerning reservoir losses and unappropriated flood flows. Texas continues to reserve all of its current and future rights to its objections and assertions in this open dispute.

1. Table 3. Determination of Flood Inflows, Artesia to Carlsbad [B.4], TAF for WY 2018:

CID diversion (Table 12):

The River Master's Preliminary Report's values for the Carlsbad Irrigation District (CID) diversions (Table 3) are inconsistent with the Carlsbad Main Canal values from Table 12, as shown in Exhibit A. The incorrect values for April, May, June, August, September, October, and November calculated from Table 3 resulted in a flood inflow, for Artesia-Carlsbad, of 8.0 TAF. The corrections for Table 3, for CID diversion, result in a total flood inflow from Artesia to Carlsbad of 9.8 TAF instead of 8.0 TAF. Table 3 is shown in Exhibit B.

2. Table 4. Summary Table for Computations, Carlsbad to State Line [B.5], TAF for WY 2018:

Scalped Flood Flows for Carlsbad to Red Bluff

The River Master's preliminary calculation for the Carlsbad to Red Bluff reach in August 2018 failed to include the scalped rises that were marked on the Pecos River at Red Bluff Hydrograph for August 9-16, 2018 and August 20-26, 2018 (Exhibit F). The flood inflow for these periods, scalped by Texas, is 0.413 TAF. Applying the correction, the total revised inflows from Carlsbad to Red Bluff would be 4.96 TAF, as shown in the revised Table 4 (Exhibit H), instead of 4.40 TAF as reported in the River Master's Preliminary Report.

In addition, the Appendix to the Preliminary River Master Report for WY 2018 - scalped rainfall events - were based upon three provided weather stations. The provided weather stations were clustered in the west-central portion of the Carlsbad to Red Bluff sub-basin, as represented in Exhibit C. In previous years, additional weather stations have been used that captured the region's distribution of precipitation and magnitude of rainfall events more accurately. By only scalping rainfall events using weather stations near one another, scalped inflow values do not include periods with regional rainfall per the RMM B.5.a.(1), as shown in Exhibits D and E, which provide locations and rainfall

data from additional weather stations in the area. For example, between June 26 to July 2, 2018, daily maximum observed rainfall for the area was 1.20 inches (in.) in the region, which is consistent with a rise on the hydrograph as shown in Exhibits E and G.

Page 1 of 2

Texas Comments/Objections WY 2018
Page 2

This event, however, was not included in the preliminary scalping. Further, there were numerous additional periods where the area rainfall was greater than 0.05 in., and radar indicated that there was area-wide rainfall which may not have been picked up by gauges. According to the RMM B.5.a.(1), these periods should be considered for scalping. Therefore, we request that the scalping be reviewed using precipitation data from additional weather stations shown in Exhibits D and E. If all rainfall events that meet the minimum area rainfall criteria of 0.05 inches or greater were included, the estimated inflows from Carlsbad to Red Bluff would be 8.1 TAF based on Texas calculations.

3. Table 1. General Calculation of Annual Departures in TAF for WY 2018:

Implementing the corrections from Table 3 into a revised Table 1 (Exhibit I), and, applying the revised scalping from Carlsbad to Red Bluff, the total Annual Departures result in a revised total of 5.31 TAF.

In contrast, if all rainfall events were scalped that meet the minimum area rainfall criteria of 0.05 in. or greater, as represented by Texas calculations, the Annual Departures result in a total of 2.61 TAF.

Attachments: Exhibits A-I

Exhibit A - Table 12

Data Required for River Master Manual Calculations

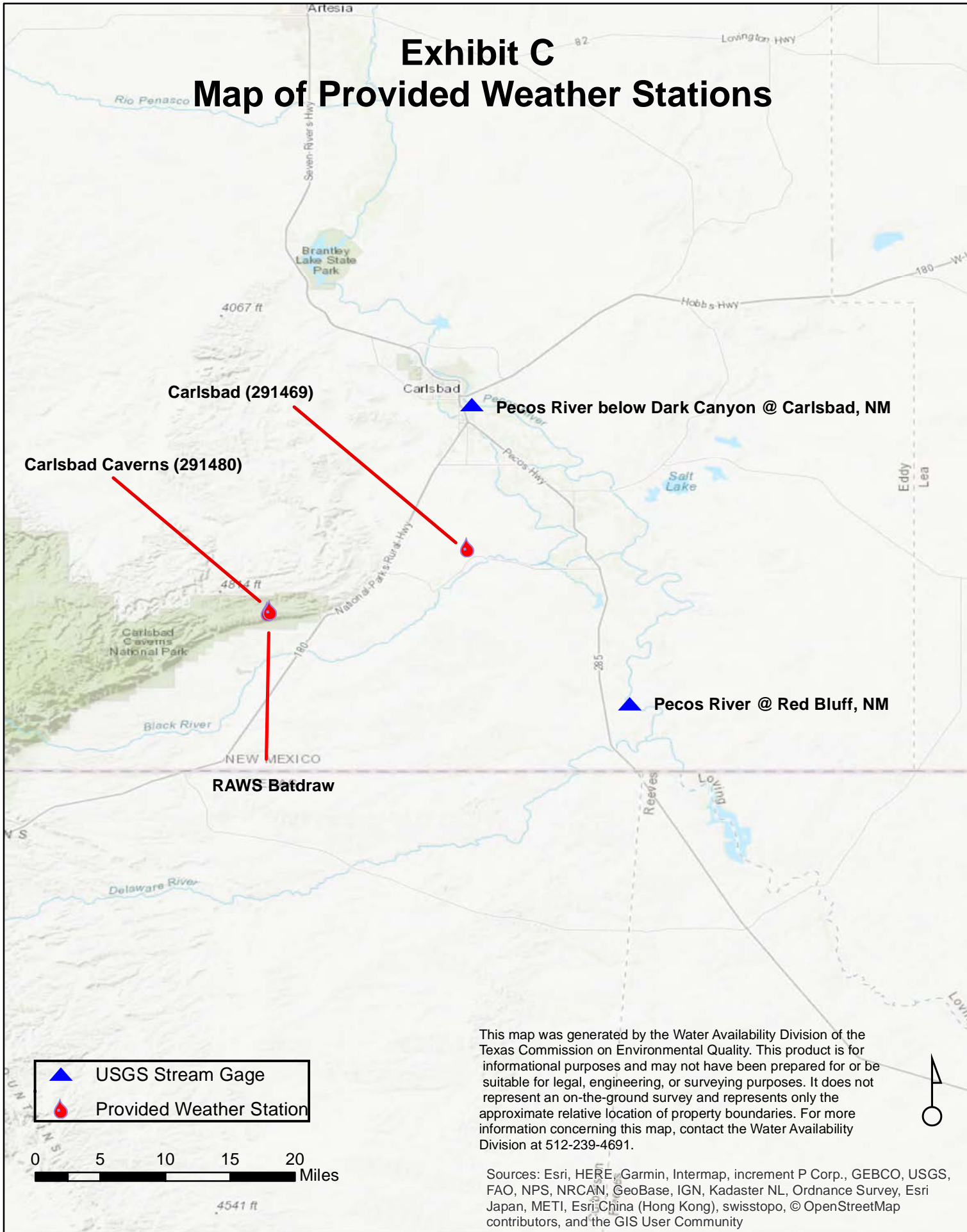
TAF for WY 2018 (CY 2018)

Gage No.	STREAMFLOW GAGING RECORDS, TAF												Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
***USGS data tables													
08384500	1.4	2.5	4.1	15.8	4.8	5.6	39.4	4.3	16.2	2.5	0.3	0.9	97.7
Pecos R b Summer Dam													
08385000	0.0	1.6	4.3	4.8	5.1	6.0	4.9	3.3	3.6	1.5	0.0	0.0	35.3
FSID Main Canal													
08396500	5.1	4.5	3.2	7.8	5.7	1.7	23.8	2.8	14.6	8.7	4.9	4.1	86.7
Pecos River nr Artesia													
Rio Peñasco at Dayton													
08398500	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													
08400000	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
S. Seven Rivers nr Lakewood													
08401200	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
Rocky A at Hwy Br nr Carlsbad													
08401900	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Pecos River at DS3													
08402000	0.0	0.5	10.1	12.7	9.7	15.2	12.0	10.2	6.4	3.1	0.0	0.1	80.1
Pecos River b Avalon Dam													
08404000	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
CID Main Canal													
08403500	0.0	0.0	5.6	11.6	9.0	13.4	10.9	10.5	6.1	3.4	1.7	0.0	72.2
Dark Canyon at Carlsbad													
08405150	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 River b Dark Canyon													
08405200	1.3	1.5	1.4	1.3	1.3	1.3	1.4	1.6	1.5	1.7	1.5	1.3	17.1
Pecos River at Red Bluff													
08407500	3.8	2.9	2.5	3.0	2.3	2.3	3.1	3.4	4.5	6.0	4.8	4.0	42.6
Delaware River nr Red Bluff													
08408500	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.6	0.1	0.1	1.8
***USGS data tables													
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
3160.0	3160.0	3174.7	3175.2	3174.6	3175	3175.2	3174.6	3174	3173.4	3160.0	3160.0	3160.0	
3160.0	3160.0	3175.3	3174.1	3174.4	3174.4	3175.0	3174.4	3174.8	3174.1	3165.3	3160.0	3160.0	
0.0	0.0	808.3	699.0	731.6	699.0	796.8	731.6	775.0	699.0	0.6	0.0	0.0	
4263.1	4263.4	4262.9	4257.4	4256.5	4254.7	4254.1	4254.2	4251.9	4253.6	4255.8	4257.6	4257.6	
Lake Summer gage ht. EOM													
41659.7	42485.2	41116.0	28146.1	26357.4	23026.1	21976.6	22149.5	18384.1	21124.9	25027.8	28555.9	28555.9	
Lake Summer storage, EOM. (2013 table)													
4262.7	4263.4	4263.2	4261.6	4257.0	4255.7	4254.7	4254.3	4252.3	4252.4	4254.8	4256.7	4256.7	
Lake Summer gage ht. avg.													
2679.6	2771.1	2745.0	2535.7	1993.1	1857.0	1774.1	1740.9	1574.9	1583.2	1782.4	1959.7	1959.7	
Lake Summer area, avg. (2013 table)													
40577.4	42485.2	41933.6	37709.0	27340.0	24841.7	23036.1	22323.1	19007.4	19165.3	23203.9	26747.1	26747.1	
Lake Summer storage, avg. (2013 table)													
4747.9	4747.8	4747.6	4747.2	4747.0	4746.5	4736.8	4737.1	4734.3	4734.9	4734.8	4734.8	4734.8	
Santa Rosa gage ht. EOM													
94352.0	93986.0	93257.0	91811.0	91092.0	89313.0	58830.0	59661.0	52200.0	53746.0	53486.0	53486.0	53486.0	
Santa Rosa storage, EOM (2017 table)													
4747.9	4747.8	4747.7	4747.3	4747.0	4746.8	4738.5	4737.1	4734.9	4734.3	4734.8	4734.7	4734.7	
Santa Rosa gage ht. avg.													
3668.0	3658.0	3647.0	3606.0	3578.0	3560.0	2886.0	2782.0	2598.0	2551.0	2590.0	2582.0	2582.0	
Santa Rosa area, avg. (2017 table)													
94352.0	93986.0	93622.0	92169.0	91092.0	90377.0	63628.0	59661.0	53746.0	52200.0	53486.0	53228.0	53228.0	
Santa Rosa storage, avg. (2017 table)													
PRECIPITATION (INCHES)													
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
0.01	0.19	0.08	0.01	0.03	0.78	1.57	1.01	2.38	3.49	0.23	0.5	10.28	
Branley Lake													
0.00	0.19	0.20	0.29	0.11	0.27	6.51	3.26	2.69	3.33	0.10	0.72	17.67	
Las Vegas FAA AP													
0.62	2.05	0.71	0	0.5	0.46	4.18	1.49	1.28	3.07	5.55	0.71	20.62	
Pecos Nat'l Monument													
0.05	0.11	0.21	0.04	0.63	1.4	2.13	1.23	2.52	5.57	0.47	1.84	16.2	
Santa Rosa													
0.05	0.11	0.21	0.04	0.63	1.40	2.13	1.23	2.52	5.57	0.47	1.84	16.2	
Lake Santa Rosa													
0.11	0.11	0.03	0.02	0.9	0.95	2.74	3.9	3.14	3.56	0.25	0.57	16.28	
Summer Lake													
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
3.72	4.98	8.58	9.96	13.14	13.99	11.62	10.69	7.73	4.94	4.44	3.76	97.6	
Lake Santa Rosa													
4.68	4.97	10.56	12.80	15.73	16.05	14.67	11.90	8.09	5.60	4.11	2.50	111.7	
Lake Summer													
4.65	5.80	9.97	12.94	16.93	17.51	15.48	12.30	7.83	6.24	4.80	4.34	118.6	
Branley Lake													
OTHER REPORTS													
2.52	2.33	2.09	1.55	1.29	0.60	0.12	0.43	0.60	1.54	1.96	2.09	17.1	
Base inflow Acme - Artesia (USGS) (TAF)*													
0.00	0.00	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.5	
River pumping Acme - Artesia (TAF)													
0.019	0.051	0.045	0.033	0.032	0.047	0.042	0.030	0.013	0.020	0.012	0.008	0.4	
C-2713, Southwest Salt Co. (Malaga Bend)													
11529													
Irrig acreage above A Dam (acres)													
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	
Water use transfer ab A Dam(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	
TX water stored in 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	
Delaware R water used by TX (TAF)													

**Exhibit B - Table 3
Determination of Flood Inflows, Artesia to Carlsbad [B.4]** **TAF for WY 2018 (CY 2018)**

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	RM Preliminary
Rio Pefiasco at Dayton (Table 12)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.0	0.0
Fourmile Draw nr Lakewood (Table 12)	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.0	0.0
S Seven Rivers nr Lakewood (Table 12)	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.0
Rocky A at Hwy.Br nr Carlsbad (Table 12)	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.02	0.00	0.00	0.00	0.12	0.12
Flood inflow, Artesia-DS3	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.04	0.00	0.00	0.00	0.16	0.16
Pecos R at DS3 nr Carlsbad (Table 12)	0.03	0.48	10.07	12.67	9.71	15.25	12.04	10.24	6.44	3.12	0.03	0.06	80.1	80.1
C Springs new water (Table 7)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.1	-0.1
Total inflow, DS3-Carlsbad	0.02	0.47	10.07	12.67	9.70	15.24	12.03	10.24	6.44	3.12	0.02	0.05	80.1	80.1
L Avalon evap loss (Table 10)	0.00	0.00	0.51	0.58	0.79	0.74	0.69	0.52	0.24	0.08	0.00	0.00	4.1	4.1
L Avalon ch in storage (Table 11)	0.00	0.00	2.22	0.39	-0.47	0.31	0.16	-0.47	-0.43	-0.39	-1.32	0.00	0.0	0.0
CID diversion (Table 12)	0.00	0.00	5.59	11.61	9.04	13.40	10.91	10.50	6.06	3.38	1.66	0.00	72.2	70.2
Net CID diversion (CID Div * 0.93) (B.4.a.(3))	0.00	0.00	5.20	10.80	8.41	12.46	10.15	9.77	5.64	3.14	1.54	0.00	67.1	65.3
Other depletions (hard coded B.4.a.(4))	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.20	0.10	0.10	0.10	0.10	1.4	1.4
Dark Canyon Dr at Carlsbad (Table 12)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0
Pecos R blw D C Dr at Carlsbad (Table 12)	1.32	1.46	1.43	1.26	1.26	1.27	1.45	1.64	1.48	1.70	1.46	1.35	17.1	17.1
Pecos R at Carlsbad	1.32	1.46	1.43	1.26	1.26	1.27	1.45	1.64	1.48	1.70	1.46	1.35	17.1	17.1
Total outflow, DS3-Carlsbad	1.42161	1.56	9.46	13.13	10.09	14.89	12.64	11.65	7.02	4.62	1.77	1.45	89.7	87.9
Flood inflow, DS3-Carlsbad	1.40093	1.09	-0.61	0.46	0.39	-0.36	0.61	1.41	0.58	1.51	1.75	1.40	9.6	7.8
Flood inflow, Artesia-Carlsbad	1.40	1.09	-0.61	0.46	0.39	-0.36	0.74	1.41	0.62	1.51	1.75	1.40	9.8	8.0

Exhibit C Map of Provided Weather Stations



This map was generated by the Water Availability Division of the Texas Commission on Environmental Quality. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact the Water Availability Division at 512-239-4691.

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Exhibit D Map of Additional Weather Stations

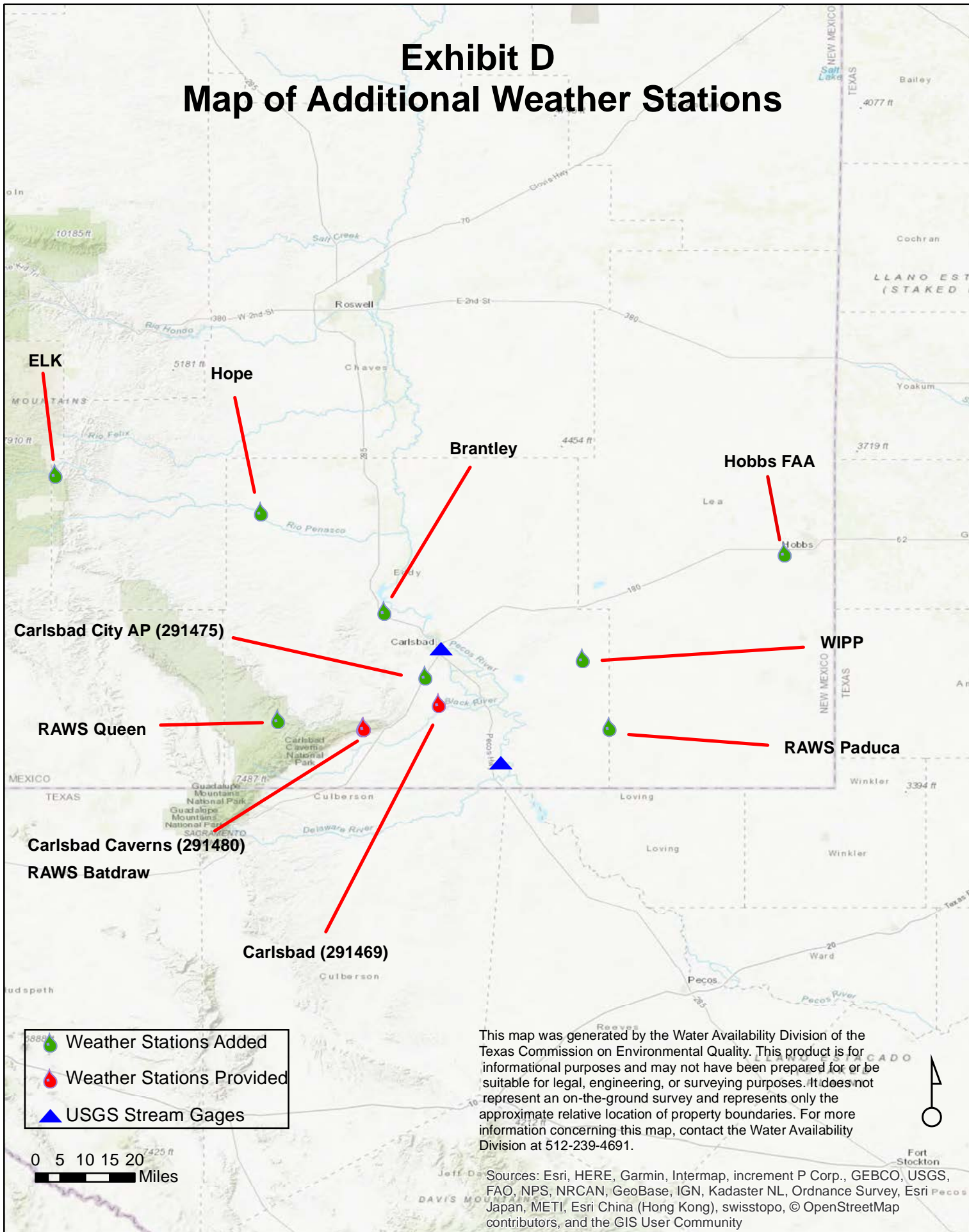


EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

EXHIBIT E CARLSBAD TO RED BLUFF													Minimum value
Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	Max Area Precipitation	
1/1/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/2/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/3/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/4/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/6/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/7/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/8/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/9/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/10/2018	0.00	0.08	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.10	0.10	0.05
1/11/2018	0.00	0.03	0.06	0.06	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.08	0.05
1/12/2018	0.06	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.06	0.05
1/13/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/15/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/16/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/17/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/18/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/19/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/20/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/21/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/22/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/23/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/24/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/25/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/26/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06	0.05
1/27/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/28/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/29/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

EXHIBIT E														CARLSBAD TO RED BLUFF													
Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	Max Area Precipitation	Minimum value														
2/1/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/2/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/3/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/4/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/6/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/7/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/8/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/9/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/10/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/11/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/12/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/13/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/15/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.05														
2/16/2018	0.00	0.25	0.15	0.15	0.00	0.00	0.03	0.05	0.44	0.22	0.02	0.44	0.05														
2/17/2018	0.16	0.01	0.00	0.00	0.38	0.19	0.00	0.01	0.00	0.22	0.00	0.38	0.05														
2/18/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.02	0.12	0.05														
2/19/2018	M	0.14	0.03	0.03	0.00	0.00	0.01	0.00	0.03	0.00	0.00	0.14	0.05														
2/20/2018	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/21/2018	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/22/2018	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/23/2018	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/24/2018	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/25/2018	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/26/2018	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/27/2018	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
2/28/2018	M	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														
3/1/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05														

EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

EXHIBIT E	CARLSBAD TO RED BLUFF												Minimum value
Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	Max Area Precipitation	
3/2/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/3/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.05
3/4/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/6/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/7/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/8/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/9/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/10/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.05
3/11/2018	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05
3/12/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/13/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/15/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/16/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/17/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/18/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/19/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/20/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/21/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/22/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/23/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.05
3/24/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05	0.05
3/25/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/26/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.17	0.17	0.05
3/27/2018	0.00	0.08	0.02	0.02	0.00	0.00	0.01	0.00	0.11	0.03	0.00	0.11	0.05
3/28/2018	0.02	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.08	0.05
3/29/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/1/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

EXHIBIT E	CARLSBAD TO RED BLUFF												Minimum value
Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	Max Area Precipitation	
4/2/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/3/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/4/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/6/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/7/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/8/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/9/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/10/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/11/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/12/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/13/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/15/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/16/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/17/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/18/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/19/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/20/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02	0.05
4/21/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/22/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/23/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/24/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.05
4/25/2018	0.00	0.04	0.00	0.00	0.01	0.00	0.00	0.00	0.07	0.00	0.00	0.07	0.05
4/26/2018	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.05
4/27/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/28/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/29/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
4/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/1/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

EXHIBIT E	CARLSBAD TO RED BLUFF												Minimum value	
	Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP		Max Area Precipitation
5/2/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/3/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/4/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/6/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/7/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/8/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/9/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.05
5/10/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/11/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/12/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/13/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/15/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/16/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12	0.05
5/17/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/18/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/19/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/20/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/21/2018	0.00	0.04	0.06	0.06	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.14	0.14	0.05
5/22/2018	0.07	0.01	0.00	0.00	0.30	0.00	0.00	0.00	0.01	0.02	0.30	0.30	0.30	0.05
5/23/2018	0.12	0.71	0.06	0.06	0.00	0.00	0.62	0.03	1.69	0.00	0.00	1.69	1.69	0.05
5/24/2018	0.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.07	0.07	0.05
5/25/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/26/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.05
5/27/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/28/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/29/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
5/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
6/1/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

EXHIBIT E	CARLSBAD TO RED BLUFF												Minimum value	
	Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP		Max Area Precipitation
6/2/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
6/3/2018	0.00	0.31	0.61	0.61	0.08	0.00	1.22	1.62	0.29	0.14	2.97	2.97	0.05	
6/4/2018	0.47	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00	0.70	0.05	
6/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/6/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.27	0.05	
6/7/2018	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	
6/8/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.11	0.05	
6/9/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.05	
6/10/2018	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.05	
6/11/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/12/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/13/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/15/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13	2.13	0.05	
6/16/2018	0.00	0.00	0.43	0.43	0.00	0.00	0.18	0.44	0.01	0.00	0.02	0.44	0.05	
6/17/2018	0.66	0.00	0.00	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.00	0.66	0.05	
6/18/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/19/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/20/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/21/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.09	0.05	
6/22/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/23/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/24/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/25/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/26/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.21	0.05	
6/27/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/28/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/29/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
6/30/2018	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.05	
7/1/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.30	0.05	

**EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION**

EXHIBIT E	CARLSBAD TO RED BLUFF												Minimum value
	Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	
7/2/2018	0.00	0.04	0.02	0.02	0.00	0.00	0.65	0.00	0.00	0.00	0.00	0.65	0.05
7/3/2018	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.05
7/4/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/6/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.05
7/7/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.11	0.00	0.11	0.05
7/8/2018	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.05
7/9/2018	0.00	0.00	0.47	0.47	0.11	0.00	0.00	0.00	0.03	0.00	0.00	0.47	0.05
7/10/2018	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.61	0.05
7/11/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.02	0.01	0.41	0.05
7/12/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.14	0.29	0.29	0.05
7/13/2018	0.12	0.00	0.55	0.55	0.00	0.00	0.00	0.06	0.35	0.52	0.01	0.55	0.05
7/14/2018	0.44	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.71	0.06	0.71	0.05
7/15/2018	0.00	0.19	0.12	0.12	0.00	0.03	0.00	0.00	0.90	0.28	0.00	0.90	0.05
7/16/2018	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.62	0.05
7/17/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/18/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/19/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/20/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/21/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/22/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/23/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/24/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/25/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.17	0.17	0.05
7/26/2018	0.00	0.05	1.69	1.69	0.00	0.00	0.00	0.00	0.02	0.00	0.00	1.69	0.05
7/27/2018	0.45	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	1.22	0.00	1.22	0.05
7/28/2018	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.03	0.00	0.36	0.05
7/29/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
7/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.97	0.97	0.05
7/31/2018	0.17	0.62	0.83	0.83	0.11	1.20	0.00	0.36	1.18	0.45	0.00	1.20	0.05
8/1/2018	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.31	0.05

EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

EXHIBIT E	CARLSBAD TO RED BLUFF												Minimum value
Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	Max Area Precipitation	
8/2/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
8/3/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.05
8/4/2018	0.02	0.03	0.00	0.00	0.45	0.55	0.00	0.00	0.00	0.03	0.00	0.55	0.05
8/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
8/6/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
8/7/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
8/8/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.34	0.00	0.34	0.05
8/9/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.79	0.79	0.05
8/10/2018	0.00	0.00	0.56	0.56	0.00	0.15	0.14	0.65	0.04	0.32	0.00	0.65	0.05
8/11/2018	0.18	0.04	0.05	0.05	0.48	0.03	0.00	0.00	0.03	0.00	0.00	0.48	0.05
8/12/2018	0.28	0.00	0.00	0.00	0.25	0.00	0.00	0.01	0.00	0.00	0.00	0.28	0.05
8/13/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
8/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.38	1.38	0.05
8/15/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.00	0.00	0.61	0.05
8/16/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.28	0.05
8/17/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.01	0.00	0.00	0.15	0.05
8/18/2018	0.00	1.09	0.00	0.00	0.00	0.00	0.00	0.13	0.37	0.46	0.00	1.09	0.05
8/19/2018	0.24	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.85	0.85	0.05
8/20/2018	0.00	0.36	0.12	0.12	0.00	0.24	0.00	0.21	0.00	0.00	0.00	0.36	0.05
8/21/2018	0.15	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.15	0.05
8/22/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
8/23/2018	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.04	0.05
8/24/2018	M	0.00	0.26	0.26	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.26	0.05
8/25/2018	0.28	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.54	0.54	0.05
8/26/2018	0.00	0.01	0.03	0.03	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.71	0.05
8/27/2018	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.07	0.05
8/28/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.35	0.05
8/29/2018	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.30	0.05
8/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
8/31/2018	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.00	0.41	1.13	0.05
9/1/2018	0.00	0.77	0.24	0.24	0.17	0.06	0.19	0.00	0.43	1.90	0.24	1.90	0.05

EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

Date	CARLSBAD TO RED BLUFF												Minimum value
	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	Max Area Precipitation	
9/2/2018	0.16	0.01	0.01	0.01	0.21	0.26	0.00	0.06	0.19	0.25	0.97	0.97	0.05
9/3/2018	0.00	0.18	0.00	0.00	0.52	0.45	0.58	0.34	0.67	0.39	0.34	0.67	0.05
9/4/2018	0.03	0.01	0.00	0.00	1.23	0.00	0.00	0.11	0.16	0.45	1.79	1.79	0.05
9/5/2018	0.00	0.00	0.32	0.32	0.21	0.00	0.00	0.03	0.00	0.00	0.52	0.52	0.05
9/6/2018	1.22	0.00	0.50	0.50	0.11	0.08	0.00	0.26	0.09	0.00	0.05	1.22	0.05
9/7/2018	0.27	0.14	0.01	0.01	0.25	0.93	0.00	0.39	0.11	0.15	0.00	0.93	0.05
9/8/2018	0.04	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.13	0.00	0.01	0.13	0.05
9/9/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.05
9/10/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02	0.05
9/11/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/12/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/13/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/15/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/16/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/17/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/18/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/19/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.10	0.00	0.10	0.05
9/20/2018	0.00	0.34	0.20	0.20	1.14	0.00	0.00	0.18	0.45	0.14	0.00	1.14	0.05
9/21/2018	0.14	0.10	0.06	0.06	0.32	0.25	0.00	0.01	0.52	0.08	0.00	0.52	0.05
9/22/2018	0.03	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.05
9/23/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/24/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/25/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/26/2018	0.00	0.14	0.30	0.30	0.04	0.00	0.00	0.21	0.21	0.06	0.00	0.30	0.05
9/27/2018	0.45	0.02	0.00	0.00	0.17	0.07	0.00	0.00	0.00	0.00	0.00	0.45	0.05
9/28/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/29/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/1/2018	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.05

EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

EXHIBIT E	CARLSBAD TO RED BLUFF												Minimum value
Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	Max Area Precipitation	
10/2/2018	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.02	0.02	0.00	0.17	0.05
10/3/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/4/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00	0.47	0.05
10/6/2018	0.00	0.70	0.45	0.45	0.00	0.00	0.05	0.06	0.32	0.17	0.00	0.70	0.05
10/7/2018	0.49	0.05	0.06	0.06	0.00	0.33	0.00	0.08	0.09	0.02	0.00	0.49	0.05
10/8/2018	0.00	0.34	0.20	0.20	0.04	0.09	0.05	0.17	0.39	0.04	0.00	0.39	0.05
10/9/2018	0.30	0.01	0.05	0.05	0.00	0.39	0.00	0.06	0.00	0.13	0.00	0.39	0.05
10/10/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/11/2018	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05
10/12/2018	0.00	0.40	0.37	0.37	0.04	0.08	0.28	1.24	0.44	0.13	0.00	1.24	0.05
10/13/2018	0.60	0.02	0.00	0.00	0.26	0.19	0.00	0.11	0.01	0.24	0.00	0.60	0.05
10/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.04	0.05
10/15/2018	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.05
10/16/2018	0.00	0.00	0.00	0.00	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.04	0.05
10/17/2018	0.00	0.24	0.18	0.18	0.23	0.00	0.30	0.55	0.43	0.10	0.00	0.55	0.05
10/18/2018	0.40	0.57	0.49	0.49	0.15	0.37	0.09	0.35	0.58	0.20	0.00	0.58	0.05
10/19/2018	0.42	0.01	0.01	0.01	0.00	0.57	0.00	0.00	0.01	0.00	0.00	0.57	0.05
10/20/2018	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.16	0.05
10/21/2018	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.07	0.05
10/22/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/23/2018	0.00	1.29	1.20	1.20	1.31	0.00	0.13	0.52	0.63	0.23	0.00	1.31	0.05
10/24/2018	1.73	0.57	0.56	0.56	0.02	1.40	0.00	0.99	0.26	1.50	0.00	1.73	0.05
10/25/2018	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05
10/26/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/27/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/28/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/29/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
10/31/2018	0.10	0.44	0.32	0.32	0.00	0.00	0.00	0.40	0.52	0.33	0.00	0.52	0.05
11/1/2018	0.35	0.00	0.00	0.00	0.26	0.20	0.00	0.00	0.00	0.00	0.00	0.35	0.05

EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION

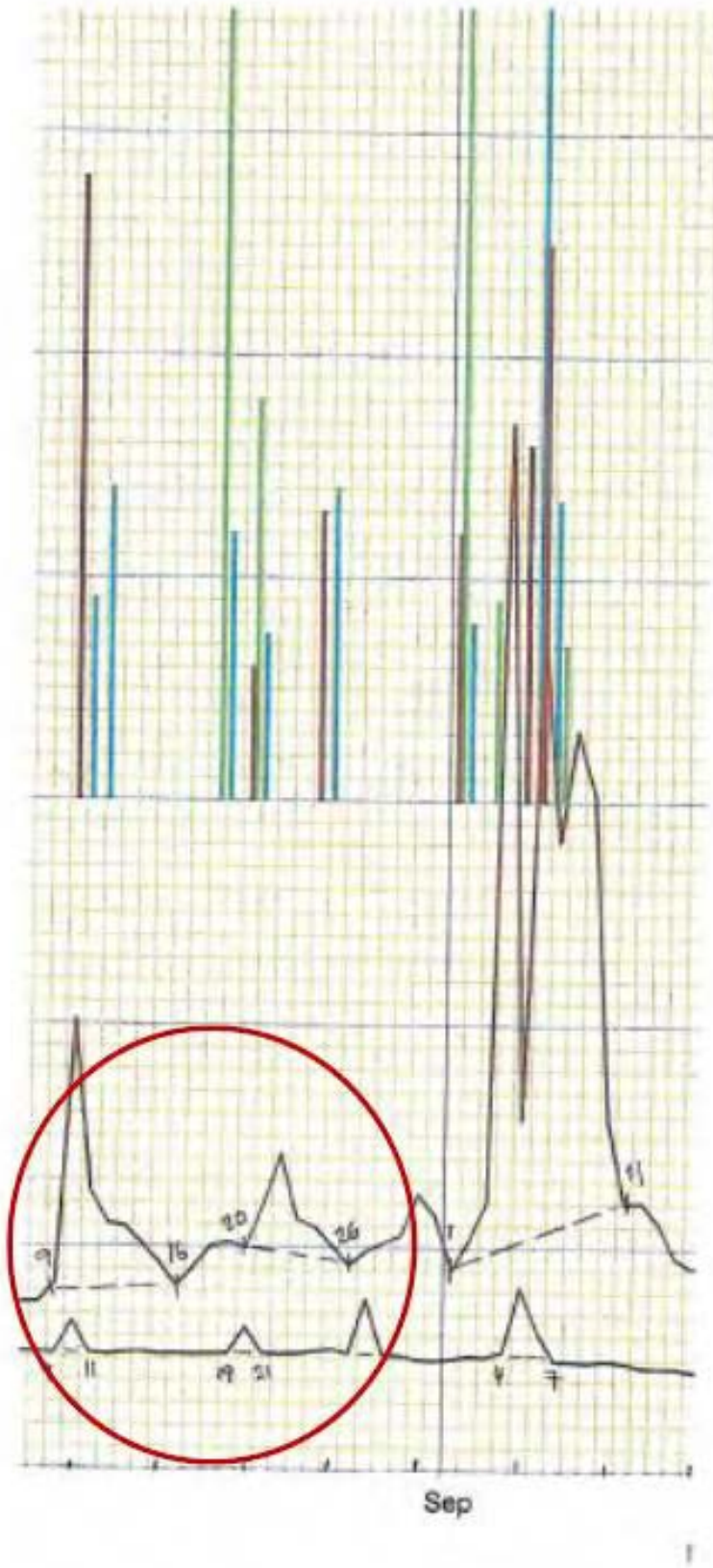
Date	CARLSBAD TO RED BLUFF												Minimum value
	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	Max Area Precipitation	
11/2/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/3/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/4/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/6/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/7/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/8/2018	0.00	0.04	0.00	0.00	0.06	0.00	0.00	0.00	0.05	0.00	0.00	0.06	0.05
11/9/2018	0.03	0.04	0.01	0.01	0.00	0.03	0.00	0.00	0.14	0.00	0.00	0.14	0.05
11/10/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/11/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/12/2018	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.05
11/13/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/14/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/15/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/16/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/17/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/18/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/19/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/20/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/21/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/22/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/23/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/24/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/25/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/26/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/27/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/28/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/29/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11/30/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/1/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

**EXHIBIT E
WY 2018 PECOS BASIN AREAWIDE PRECIPITATION**

EXHIBIT E	CARLSBAD TO RED BLUFF												Minimum value
Date	291469 Carlsbad	RAWS Bat Draw	291480 Carlsbad Caverns	291475 Carlsbad City AP	Hope 294122	Brantley	Hobbs FFA	RAWS Paduca	RAWS Queen	ELK	WIPP	Max Area Precipitation	
12/2/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/3/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/4/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/5/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/6/2018	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.05
12/7/2018	0.00	0.00	0.00	0.19	0.26	0.00	0.00	0.41	0.17	0.26	0.00	0.41	0.05
12/8/2018	0.00	0.24	0.19	0.02	0.20	0.28	0.00	0.03	0.08	0.07	0.00	0.28	0.05
12/9/2018	0.30	0.02	0.02	0.00	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.30	0.05
12/10/2018	0.00	0.00	0.00	0.00	0.16	0.00	0.00		0.00	0.00	0.00	0.16	0.05
12/11/2018	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.05
12/12/2018	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.05
12/13/2018	0.00	0.00	0.00	0.09	0.00	0.15	0.00	0.21	0.00	0.07	0.00	0.21	0.05
12/14/2018	0.00	0.16	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
12/15/2018	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
12/16/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/17/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/18/2018	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03	0.05
12/19/2018	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.05
12/20/2018	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05
12/21/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/22/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/23/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/24/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/25/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12/26/2018	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.07	0.37	0.02	0.00	0.37	0.05
12/27/2018	0.00	0.00	0.01	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.05	0.05
12/28/2018	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.31	0.00	0.31	0.05
12/29/2018	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.02	0.07	0.00	0.15	0.05
12/30/2018	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.03	0.00	0.00	0.03	0.05
12/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

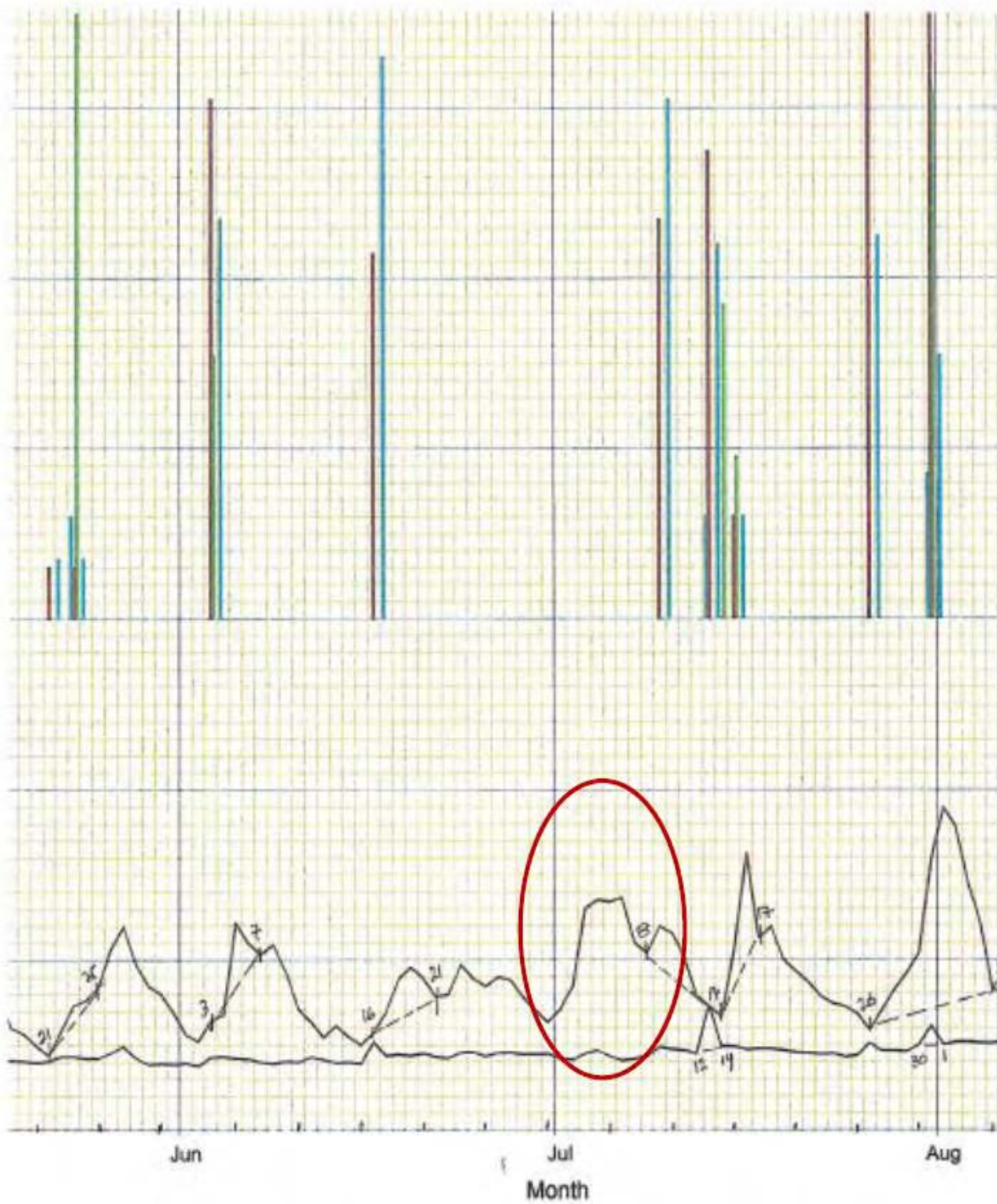
Station Sum	12.47	11.69	12.05	12.05	10.51	10.28	5.81	12.44	16.03	13.99	16.60	59.98
Average Annual	12.17											

EXHIBIT F



— Pecos River below |

EXHIBIT G



ort, NM NOAA Station No. 93033

RAWS Station, Batdraw New Mexic

**Exhibit H – Revised Table 4
Summary Table for Computations, Carlsbad to State Line (B.5)**

Month	Carlsbad to Red Bluff			Delaware River			Dark Canyon		
	RM Prelim	USGS	Texas*	RM Prelim	USGS	Texas	RM Prelim	USGS	Texas
Jan	0.00	0.24	0.12	0.00	0.00	0.00	0.00	0.00	0.00
Feb	0.00	0.03	0.14	0.00	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.20	0.12	0.00	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.62	0.08	0.00	0.00	0.00	0.00	0.00	0.00
May	0.00	0.65	0.48	0.00	0.00	0.01	0.00	0.00	0.00
Jun	0.10	0.64	0.37	0.00	0.00	0.00	0.00	0.00	0.00
Jul	0.30	1.02	0.97	0.00	0.01	0.02	0.00	0.00	0.00
Aug	0.30	0.87	0.79	0.00	0.04	0.04	0.00	0.00	0.00
Sep	1.40	1.69	1.54	0.30	0.25	0.26	0.00	0.00	0.00
Oct	2.20	2.57	2.30	0.40	0.43	0.46	0.00	0.00	0.00
Nov	0.00	0.94	0.68	0.00	0.00	0.01	0.00	0.00	0.00
Dec	0.10	0.45	0.48	0.00	0.000	0.00	0.00	0.00	0.00
Total	4.40	9.91	8.07	0.70	0.74	0.79	0.00	0.00	0.00

* Dark Canyon Draw included in Carlsbad to Red Bluff Flood Inflows

Summary of flood inflows, Carlsbad to State Line, TAF	RM Preliminary	RM Revised	TEXAS	USGS
	Carlsbad to Red Bluff	4.40	4.96	8.07
Dark Canyon	0.00	0.00	0.00	0.000
Delaware River	0.70	0.70	0.79	0.736
Total Flood Inflow, Carlsbad to State Line (for Table 1)	5.10	5.66	8.86	10.65

Exhibit I - Revised Table 1

General Calculation of Annual Departures [B.1]

TAF for WY 2018 (CY 2018)

Water Year 2018

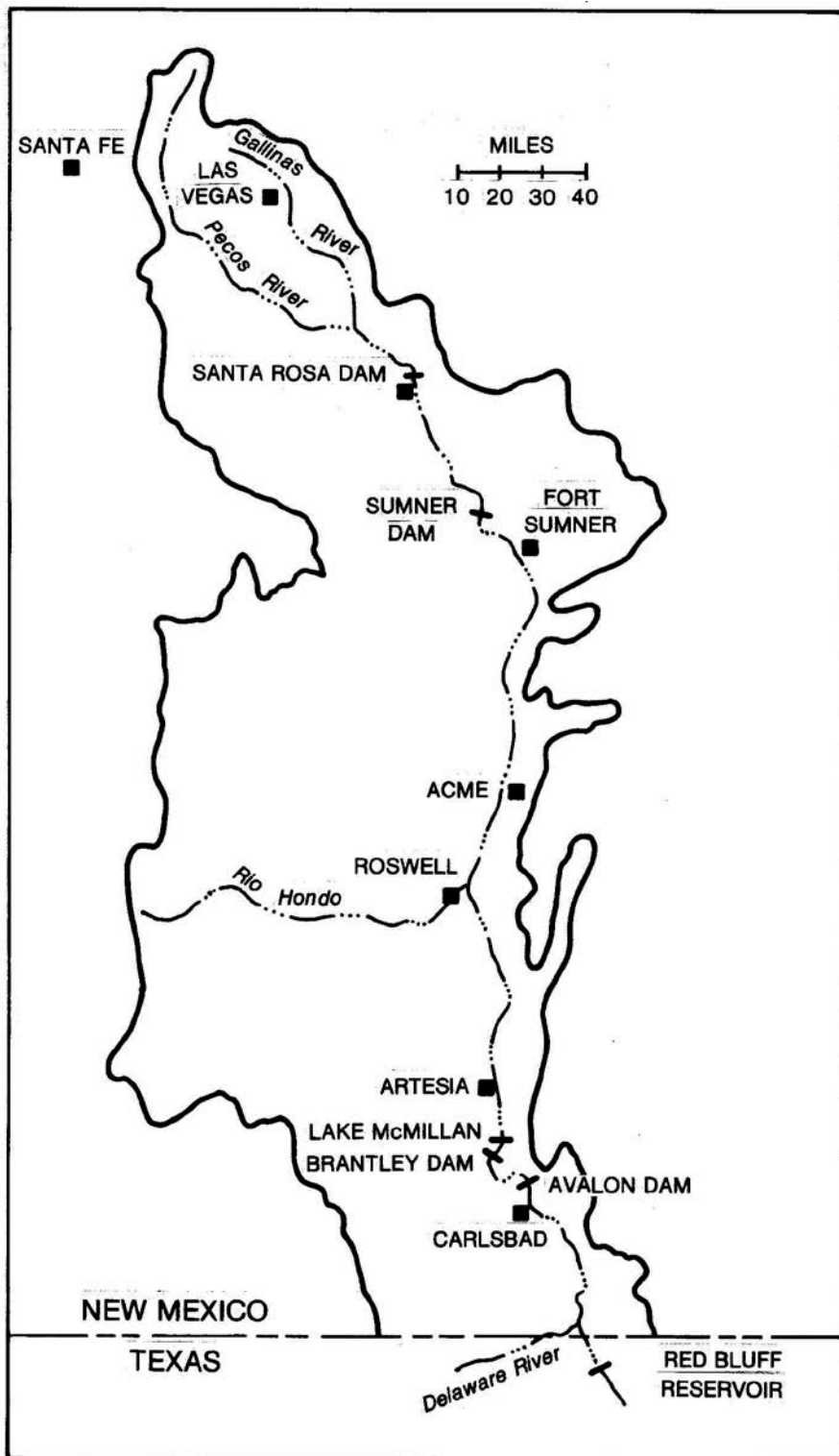
Calculation Item	RM Final	RM Final	TEXAS	RM Revised	TX minus RM
	2016	2017	2018	2018	2018
B.1.a. Index Inflows					
(1) Annual flood inflow					
(a) Gaged flow Pecos R blw Sumner Dam (Table 12)	128.6	89.7	97.68	97.7	0.0
(b) Flood inflow Sumner Dam to Artesia (Table 2)	-2.6	33.0	5.23	5.3	-0.1
(c) Flood inflow Artesia to Carlsbad (Table 3)	15.3	13.1	9.80	9.8	0.0
(d) Flood inflow Carlsbad to State Line (Table 4)	9.5	6.2	8.86	5.66	3.2
Total annual flood inflow	150.8	142.0	121.57	118.46	3.1
(2) Index inflow (3-year average)			138.12	137.09	1.0
B.1.b. 1947- Condition Delivery Obligation			54.46	53.88	0.6
B.1.c. Average Historical (Gaged) Outflow					
(1) Annual historical outflow					
(a) Gaged flow Pecos R at Red Bluff, NM (Table 12)	75.4	46.9	42.65	42.6	0.0
(b) Gaged flow Delaware R nr Red Bluff, NM (Table 12)	6.2	3.3	1.75	1.8	0.0
(c) Annual diversions for C-2713, SWS (Table 12)	0.2	0.4	0.35	0.4	0.0
Total annual historical outflow	81.8	50.6	44.75	44.8	0.0
(2) Average historical outflow (3-year average)			59.05	59.07	0.0
B.1.d. Annual Departure			4.59	5.19	-0.6
C. Adjustments to Computed Departure					
(1) Adjustments for depletions above Sumner Dam					
(a) Depletions due to irrigation (Table 5)	1.3	-1.0	0.59	0.6	0.0
(b) Depl from operation of Santa Rosa Reservoir (Table 6)	-6.3	9.2	0.62	0.6	0.0
(c) Transfer of water use to u/s of Sumner Dam (Table 12)	0.0	0.0	0.00		
C.1. Recomputed Index Inflows					
(1) Annual flood inflow					
(a) Gaged flow Pecos R blw Sumner Dam	123.6	97.9	98.90	98.9	0.0
(b) Flood inflow Sumner Dam to Artesia	-2.6	33.0	5.23	5.3	-0.1
(c) Flood inflow Artesia to Carlsbad	15.3	13.1	9.80	9.8	0.0
(d) Flood inflow Carlsbad to State Line	9.5	6.2	8.86	5.66	3.2
Total annual flood inflow	145.8	150.2	122.79	119.66	3.1
Recomputed index inflow (3-year average)			143.32	138.6	4.8
C.1.c. Recomputed 1947-Condition Delivery Obligation			57.40	54.70	2.7
(Recomputed Index Outflow)					
Recomputed Annual Departures			1.65	4.36	-2.7
C. Adjustments to Computed Departure					
C.2. Depletions due to McMillan Dike			0.96	0.95	0.0
C.3. Salvage water analysis (Table 12)			0.00	0	0.0
C.4. Unappropriated flood waters			0.00	0	0.0
C.5. Texas water stored in NM reservoirs (Table 12)			0.00	0	0.0
C.6. Beneficial CU of Delaware River water (Table 12)			0.00	0	0.0
Final Calculated Departure, TAF			2.61	5.31	-2.71

PECOS RIVER COMPACT
Report of the River Master
Water Year 2018
Accounting Year 2019
Final Report

Neil S. Grigg
River Master of the Pecos River
905 Edwards Street
Fort Collins, Colorado 80524

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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 2018 - Accounting Year 2019
June 24, 2019

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 2018 was an overage of 5,300 acre-feet. The accumulated overage since the beginning of Water Year 1987 is 176,100 acre-feet.

/s/ Neil S. Grigg

Neil S. Grigg

River Master of the Pecos River

Pecos River Compact		
Accumulated Shortfall or Overage		
	June 23, 2019	
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

Table 1. General Calculation of Annual Departures in TAF (B.1)			
Water Year	2018		
6/23/2019			
	WY 2016	WY 2017	WY 2018
B.1.a. Index Inflows			
(1) Annual flood inflow			
(a) Gaged flow Pecos R bel Alamogordo Dam	128.6	89.7	97.7
(b) Flood Inflow Alamogordo - Artesia (Table 2)	-2.6	33.0	5.3
(c) Flood Inflow Artesia - Carlsbad (Table 3)	15.3	13.1	9.8
(d) Flood Inflow Carlsbad - State Line (Table 4)	9.5	6.2	5.6
Total (annual flood inflow)	150.8	142.0	118.4
(2) Index Inflow (3-year avg)			137.1
B.1.b. 1947 Condition Delivery Obligation (Index Outflow)			
			53.9
B.1.c. Average Historical (Gaged) Outflow			
(1) Annual historical outflow			
(a) Gaged Flow Pecos River at Red Bluff NM	75.4	46.9	42.6
(b) Gaged Flow Delaware River nr Red Bluff NM	6.2	3.3	1.8
(c) Metered diversions Permit 3254 into C-2713	0.2	0.4	0.4
Total Annual Historical Outflow	81.8	50.6	44.8
(2) Average Historical Outflow (3-yr average)			59.1
B.1.d. Annual Departure			
			5.2
C. Adjustments to Computed Departure			
1. Adjustments for Depletions above Alam Dam			
a. Depletions Due to Irrigation (Table 5)	1.3	-1.0	0.6
b. Depl fr Operation of Santa Rosa Reservoir (Table 6)	-6.3	9.2	0.6
c. Transfer of Water Use to Upstream of AD	0	0	
Recomputed Index Inflows			
(1) Annual flood inflow			
(a) Gaged flow Pecos R bel Alamogordo Dam	123.6	97.9	98.9
(b) Flood Inflow Alamogordo - Artesia	-2.6	33.0	5.3
(c) Flood Inflow Artesia - Carlsbad	15.3	13.1	9.8
(d) Flood Inflow Carlsbad - State Line	9.5	6.2	5.6
Total (annual flood inflow)	145.8	150.2	119.6
Recomputed Index Inflow (3-year avg)			138.5
Recomputed 1947 Condition Del Outflow (Index Outflow)			
			54.7
Recomputed Annual Departures			
			4.4
Credits to New Mexico			
C.2 Depletions Due to McMillan Dike			1.0
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			
			5.3

Water Year		Table 2. Determination of Flood Inflows, Alamogordo Dam to Artesia (B.3)												
5/4/2019		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
Flow bel Summer Dam	1.4	2.5	4.1	15.8	4.8	5.6	39.4	4.3	16.2	2.5	0.3	0.9	97.7	
FtSummer Irrig Div	0.0	1.6	4.3	4.8	5.1	6.0	4.9	3.3	3.6	1.5	0.0	0.0	35.3	
Ft Summer ID Return	0.7	0.6	1.3	1.5	2.2	2.2	2.2	2.2	2.1	1.9	0.9	0.7	18.7	
Flow past FS IDist	2.1	1.5	1.3	12.5	2.2	2.2	36.7	3.2	14.6	2.8	1.2	1.6	82.1	
Channel loss	0.2	0.2	0.5	2.6	1.4	1.1	5.7	1.6	2.3	0.9	0.6	0.2	17.2	
Residual Flow	1.9	1.3	0.8	10.0	0.9	1.1	31.0	1.6	12.2	2.0	0.6	1.5	64.8	
Base Inflow	2.5	2.3	2.1	1.5	1.3	0.6	0.1	0.4	0.6	1.5	2.0	2.1	17.1	
River Pump Divers	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.5	
Residual, Artesia	4.4	3.6	2.9	11.4	2.0	1.6	31.1	2.0	12.8	3.5	2.6	3.5	81.4	
Pecos Flow Artesia	5.1	4.5	3.2	7.8	5.7	1.7	23.8	2.8	14.6	8.7	4.9	4.1	86.7	
Flood Inflow, AD-Art	0.6	0.8	0.3	-3.7	3.6	0.1	-7.2	0.8	1.8	5.2	2.3	0.5	5.3	
<p>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).</p>														

Table 3. Determination of Flood Inflows, Artesia to Carlsbad (B.4)														
Water Year		2018												
6/23/2019														
		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	0.0	0.0	0.0	0.0	0.0	0.0
Rocky Arroyo at Hwy Br		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Flood Inflow, Art-DS3		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Pecos R at Dam Site 3		0.0	0.5	10.1	12.7	9.7	15.2	12.0	10.2	6.4	3.1	0.0	0.1	80.1
CB Sprgs New Water (from Table 7)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
Total Inflow, DS3 - CB		0.0	0.5	10.1	12.7	9.7	15.2	12.0	10.2	6.4	3.1	0.0	0.1	80.1
Evap Loss, Lake Avalon (from Table 10)		0.0	0.0	0.5	0.6	0.8	0.7	0.7	0.5	0.2	0.1	0.0	0.0	4.1
Storage Chg, Lake Avalon (from Table 11)		0.0	0.0	2.2	0.4	-0.5	0.3	0.2	-0.5	-0.4	-0.4	-1.3	0.0	0.0
Carls ID diversions		0.0	0.0	5.6	11.6	9.0	13.4	10.9	10.5	6.1	3.4	1.7	0.0	72.2
93% CID diver		0.0	0.0	5.2	10.8	8.4	12.5	10.2	9.8	5.6	3.1	1.5	0.0	67.1
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 Csbad		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		1.3	1.5	1.4	1.3	1.3	1.3	1.4	1.6	1.5	1.7	1.5	1.3	17.1
Pecos R at Carlsbad		1.3	1.5	1.4	1.3	1.3	1.3	1.4	1.6	1.5	1.7	1.5	1.3	17.1
Total Outflow		1.4	1.6	9.5	13.1	10.1	14.9	12.6	11.7	7.0	4.6	1.8	1.4	89.7
Flood Inflow, DS3-CB		1.4	1.1	-0.6	0.5	0.4	-0.4	0.6	1.4	0.6	1.5	1.8	1.4	9.6
Flood Inflow, Art-CB		1.4	1.1	-0.6	0.5	0.4	-0.4	0.7	1.4	0.6	1.5	1.8	1.4	9.8

Table 4. Summary Table for Computations, Carlsbad to State Line (B.5)						
Water Year	2018					
6/23/2019						
		BCB - RB		Del R	DC	
		RM				
Jan		0.0		0.0	0.0	
Feb		0.0		0.0	0.0	
Mar		0.0		0.0	0.0	
Apr		0.0		0.0	0.0	
May		0.0		0.0	0.0	
Jun		0.1		0.0	0.0	
Jul		0.3		0.0	0.0	
Aug		0.6		0.0	0.0	
Sep		1.4		0.3	0.0	
Oct		2.2		0.4	0.0	
Nov		0.0		0.0	0.0	
Dec		0.1		0.0	0.0	
Total		4.8		0.7	0.0	
Summary of flood inflows, Carlsbad to State Line, TAF						
Red Bluff - Carlsbad + Dark C RM calcs)						4.8
Delaware River						0.7
Total Flood Inflow, Carlsbad to State Line						5.6

Table 5. Depletions Due to Irrigation Above Sumner Dam (C.1.a)											
	Water Year										
	5/5/2019										
	2018										
	APR	MAY	JUN	JUL	AUG	SEPT	OCT	TOTAL			
Precip Las Vegas FAA AP	0.29	0.11	0.27	6.51	3.26	2.69	3.33	16.46			
Eff prec Las Veg FAA AP	0.28	0.11	0.26	4.1	2.78	2.36	2.83	12.72			
Precip Pecos Natl Monument	0	0.50	0.46	4.18	1.49	1.28	3.07	10.98			
Eff Precip Pecos RS	0	0.49	0.45	3.42	1.40	1.21	2.64	9.61			
Precip Santa Rosa	0.04	0.63	1.40	2.13	1.23	2.52	5.57	13.52			
Eff Precip Santa Ro	0.04	0.62	1.32	1.93	1.17	2.23	3.99	11.30			
Average eff precip, ft	0.01	0.03	0.06	0.26	0.15	0.16	0.26	0.93			
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	0.18	0.33	0.30	0.04	0.12	0.02	0.00	0.99			
Acres (most recent inventory)	11529										
Streamflow depletion (actual use), AF	11398										
1947 depletion, AF	10804										
Difference (actual use - 1947 depletion), TAF	0.6										
Adjustment to Gaged Flow, Pecos River below Sumner Dam, TAF =						0.6					

Table 7. Carlsbad Springs New Water [B.4.c.(2)]					
Water Year	2018				
5/4/2019					
		TAF	AF/day	cfs	Totals
Pecos R bel DC		17.1	46.8	23.6	23.6
Dark Canyon		0.0	0.0	0.0	0.0
Pecos R bel Lake Avalon		0.0	0.0	0.0	0.0
Depletion, cfs					2.0
CID lag seep, cfs (from Table 8)					7.1
Return flow, cfs					1.0
Lake Av lagged seep, cfs (from Table 9)					14.6
PR seepage, cfs					3.0
Carls new water, cfs					-0.09
Carls new wat, TAF					-0.1
Carls new wat monthly, TAF					0.0

Table 8. Carlsbad Main Canal Seepage Lagged [B.4.c.(2)(e)]													
Water Year													
5/4/2019	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
WY 2018													
CID, TAF	0	0	5.6	11.6	9.0	13.4	10.9	10.5	6.1	3.4	1.7	0.0	72.2
days/mo	31	28	31	30	31	30	31	31	30	31	30	31	365
cfs	0	0	90.9	195.1	147.0	225.2	177.5	170.8	101.9	54.9	27.9	0.0	99.3
cfs, qtr avg			31.3			188.7			150.6			27.6	
WY 2017		1Q	2Q	3Q	4Q								
FLows, cfs				147.0	40.5								
SEVEN %				10.3	2.8								
WY 2018 lagged		1Q	2Q	3Q	4Q								
FLows, cfs		31.3	188.7	150.6	27.6								
SEVEN %		2.2	13.2	10.5	1.9								
LAG		3.8	7.8	10.0	6.7	Avg =	7.1	cfs					

Table 9. Lake Avalon Leakage Lagged [B.4.c.(2)(g)]													
Water Year	2018												
5/4/2019													
WY 2018	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
Elev NM rept	60.0	60.0	75.3	74.1	74.4	74.1	75.0	74.4	74.8	74.1	65.3	60.0	
ga ht, avg*	3.0	3.0	18.3	17.1	17.4	17.1	18.0	17.4	17.8	17.1	8.3	3.0	
cfs	0.0	0.0	25.4	19.9	21.4	19.7	24.1	20.9	22.9	19.7	0.0	0.0	
days	31	28	31	30	31	30	31	31	30	31	30	31	365
cfs avg	8.7			20.3			22.7			6.6			14.6
WY 2017													
cfs													
WY 2018 lagged													
cfs		8.7	20.3	22.7	6.6								
lag cfs		10.3	14.2	19.6	14.3	Avg =	14.6	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	2018												
	5/4/2019												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOT
Av WS NM Rept	60.00	60.00	75.28	74.13	74.45	74.09	75.01	74.35	74.77	74.09	65.35	60.00	
Avalon ga ht, avg, ft*	3.00	3.00	18.28	17.13	17.45	17.09	18.01	17.35	17.77	17.09	8.35	3.00	
Avg area Avalon, ac**	0	0	808	699	732	699	797	732	775	699	1	0	
Panevap Brantley, in.	4.65	5.60	9.97	12.94	16.93	17.51	15.48	12.30	7.83	6.24	4.80	4.34	118.59
Lakeevap Brantley, in.	3.58	4.31	7.68	9.96	13.04	13.48	11.92	9.47	6.03	4.80	3.70	3.34	91.31
Precip Brantley, in.	0.01	0.19	0.08	0.01	0.03	0.78	1.57	1.01	2.38	3.49	0.23	0.50	10.28
Netevap, inches	3.57	4.12	7.60	9.95	13.01	12.70	10.35	8.46	3.65	1.31	3.47	2.84	81.03
Evaploss Av, TAF	0.00	0.00	0.51	0.58	0.79	0.74	0.69	0.52	0.24	0.08	0.00	0.00	4.14
* 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	2018													
3/24/2019														
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOT
	2017	2018												
WS NM Rept	60.0	60.0	60.0	74.7	75.2	74.6	75.0	75.2	74.6	74.0	73.4	60.0	60.0	
Gage EOM, ft*	3.0	3.0	3.0	17.7	18.2	17.6	18.0	18.2	17.6	17.0	16.4	3.0	3.0	
Storage, AF**	0	0	0	2223	2617	2147	2457	2617	2147	1715	1323	0	0	0
Change sto, TAF		0.0	0.0	2.2	0.4	-0.5	0.3	0.2	-0.5	-0.4	-0.4	-1.3	0.0	0.0
* Computed as WS elev by NM Report minus Gage datum at 3157.0 (USBR datum)														
** Based on 2006 USBR Area and Capacity Table														

**APPENDIX A
RESPONSE TO STATES'
OBJECTIONS**

RESPONSE TO STATES' OBJECTIONS**Final Report, Accounting Year 2019****NEW MEXICO OBJECTIONS****I. Table 3. USGS Carlsbad Main Canal at Head Near Carlsbad, NM Gage Data**

NM noted that incorrect data were used in the Preliminary Report for April, May, June, August, September, October and November for the Carlsbad Main Canal gage. TX discovered the same error. This objection is accepted and the correction has been made.

II. Accumulated Shortfall or Overage Table

NM noted that the Table of Annual and Accumulated Overage or Shortfall contains a one-time credit of 16,600 AF for Water Year 2017 that is the subject of a motion by Texas before the U.S. Supreme Court. No changes in the Preliminary Report are required to respond to this issue at this time.

TEXAS OBJECTIONS**1. Table 3. Determination of Flood Inflows, Artesia to Carlsbad [B.4]**

This objection has been accepted, see NM Objection I above.

2. Table 4. Summary Table for Computations, Carlsbad to State Line [B.5]

TX noted that in the River Master's spreadsheet, the scalped flood flows marked on the plotted hydrographs for August 9-16 and 20-26 were omitted. This objection is accepted. The River Master recomputed 0.32 TAF for the flood inflows of these periods and added it to Table 4.

TX noted rain events detected by gages other than those reported by NM. The River Master examined Texas' Exhibit E and noted all periods where rain was detected other than the same periods detected by the three gages used in the Preliminary Report. As required by B.5 of the River Master's Manual, the hydrographs at Dark Canyon Draw, Black River, and Delaware River were studied. They did not show any distinct rises in the periods noted by Texas. Also, the gages added by Texas are far distant from the Carlsbad to Red Bluff reach, and some are to the east where the land is flat and less likely to contribute runoff to the reach than nearby steeper and rockier land. One notable example is the gage at Hobbs, which is apparently some 50 miles from the river. A rainfall of 0.65 inches on July 2 seems significant, but no rain was detected on any other gage and the hydrograph rise beginning July 1 seems unlikely to result from this isolated storm so far away on flat land with unclear paths to the reach. A similar conclusion was reached about the 1.38 inch rainfall at WIPP on August 14. The hydrograph at Red Bluff is declining at

that time. For the foregoing reasons, Texas' objection concerning runoff from rains measured by the additional rain gages is rejected.

3. Table 1. General Calculation of Annual Departures in TAF for WY 2018

The final departure has been modified as a result of changes noted above in Tables 3 and

FINAL CALCULATED DEPARTURE

The Preliminary Report had a Final Calculated Departure as an overage of 5.7 TAF. After considering the states' objections, the Final Determination is an overage of 5.3 TAF.